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PERMIT AMENDMENT APPLICATION

UNDER THE BRITISH COLUMBIA *MINES ACT*

MOUNT POLLEY MINE

Tailings Storage Facility Raise to 987 m

PREPARED FOR

THE MINISTRY OF MINING AND CRITICAL MINERALS

PREPARED BY

MOUNT POLLEY MINING CORPORATION

November 20, 2025

Revision Log

Rev #	Date	Revisions
0	November 2025	Initial development of the application

EXECUTIVE SUMMARY

This permit amendment application is made on behalf of Mount Polley Mining Corporation (MPMC), a subsidiary of Imperial Metals Corporation, owner of Mount Polley Mine (the Mine Site) and property. The Mine Site is an open pit copper/gold mine located in central British Columbia (BC), 56 kilometres (km) northeast of Williams Lake (latitude 52° 33' N and longitude 121° 38' W) and the MPMC property consists of 43 mineral claims encompassing 16,478 hectares (ha) and five mining leases totalling 1,867 ha.

This application is being submitted as a requirement under Section 10 of the *Mines Act* of BC to apply for an amendment to MPMC's existing *Mines Act* Permit, M-200, to raise the tailings storage facility (TSF) to an elevation of 987 metres (m) from the approved elevation of 974 m which will allow for continued mine operations until the life of mine (LoM). BC Ministry of Environment and Parks (BC ENV) has not yet determined whether an amendment of the existing Authorization (permit PE-11678) is needed

Key components include:

- Permanent raise in the elevation of the TSF to 987 m from 974 m through the:
  - Extension of the buttresses along the Main and Perimeter embankments.
  - Construction of a buttress along the South Embankment.
  - Raise the elevation of the crest.
- Relocation of water management infrastructure may include:
  - Relocation of seepage collection channels that direct contact water to the Main Embankment Seepage Collection Pond (MESCP), South Embankment Seepage Collection Pond (SESCP), Perimeter Embankment Till Borrow Pond (PETBP), and Central Collection Sump (CCS).
  - Relocation of PETBP down gradient (southeast) of its current location.

Much of the water management changes associated with the 987 m raise are similar or identical to those required for the 974 m raise, which was intended to be so to avoid unnecessary reworking of the system. This application will include the IFP drawings to install the water management infrastructure for the 987 m raise. Although water management infrastructure will be relocated as a result of the TSF raise to 987 m, there are no changes to water treatment being sought to permit PE-11678.

Wide distribution of project information and consultations with the public and First Nations are key expectations of the mine project review process. Public consultation measures taken will comply with the Ministry of Mining and Critical Minerals (MCM) Public Consultation Policy, and relevant guidance may also be obtained from the Provincial Policy for Consultation with First Nations.

Work presented has been carried out during open discussion with MCM and ENV representatives and reflects a comprehensive and accurate representation of planned TSF and water management infrastructure construction.

On January 7, 2019, MPMC announced a decision to go on suspended operations (Care and Maintenance) beginning May 31 of that year, citing low metal prices. When entering Care and Maintenance, MPMC had been executing Phase 3 of 4 permitted phases for the Springer-Cariboo Pit. As noted in the August 25, 2021, communication regarding "Notice of Mount Polley Mine Restart", operations were planned to restart in 2021. Restart was initiated in response to improving market conditions and, as of November 2021, MPMC has started to return to operations. Mining activities occurring on site follow the activities approved by the March 17, 2014, M-200 amendment Approving Cariboo Phase 4 Expansion and the June 23, 2016, M-200 amendment Approving Return to Full Operations and Use of the TSF.

On March 27, 2025, the M-200 permit was amended to allow the TSF to be raised from 970 m to 974 m to accommodate the additional material that would be processed by the mill upon approval of the proposed Springer Expansion. The proposed Springer Expansion was approved in the M-200 permit on August 28, 2025 which includes mining Phase 5 and Phase 6 in Springer Pit, as well as mining C2 and WX pits which will supplement ore production into the year 2031. Non-acid generating (NAG) waste rock generated from the Springer Pit will be placed in the Southeast Rock Disposal Site (SERDS) or used in construction of the TSF dam, while potentially acid generating waste rock (PAG) will report to the Temporary Northwest PAG (NW PAG). The ENV Permit 11678 was amended on September 2, 2025 to extend the discharge to Quesnel Lake until closure of the mine.

The raise in the elevation of the TSF from 974 m to 987 m will occur in a series of lifts over the course of several years. This proposed permit amendment would provide adequate storage in the TSF to accommodate the 62.8 million tonnes (Mt) of tailings expected to be produced since the restart of operations in June 2022 through the LoM.

TABLE OF CONTENTS

TABLES

FIGURES

LIST OF ABBREVIATIONS

%	percent
°C	degrees Celsius
AP	acid potential
ARD	acid rock generating
ADP	Annual Discharge Plan
AET	actual evapotranspiration
AFPR	Annual Facility Performance Review
AIA	archaeological impact assessment
AOP	area of potential
ARR	Annual Reclamation Report
BC	British Columbia
BC CDC	BC Conservation Data Centre
BC ENV	BC Ministry of Environment and Parks
BC WLRS	BC Ministry of Water, Land and Resource Stewardship
BC WQG	BC Water Quality Guideline
CCS	Central Collection Sump
CEMP	Comprehensive Environmental Management Plan
CFMP	Chance Find Management Plan
cm	centimetre
DFO	Fisheries and Oceans Canada
DOC	dissolved organic carbon
DQO	data quality objective
EAC	Environmental Assessment Certificate
EAO	Environmental Assessment Office
ECCC	Environment and Climate Change Canada
ELU	end land use
EMA	Environmental Management Act
EoR	Engineer of Record
Golder	Golder Associates Ltd.

ha	hectare
HCA	Heritage Conservation Act
HCT	humidity cell test
HSRC	Health, Safety and Reclamation Code
IDF	inflow design flood
IDZ	Initial Dilution Zone
IRT	Information Requirements Table
ISCBC	Invasive Species Council of BC
JAIR	Joint Application Information Requirements
kg/ha	kilograms per hectare
km	kilometre
km^2	square kilometre
LGO	low grade ore
LoM	Life of Mine
LTWMP	Long term Water Management Plan
m	metres
M-200	*Mine's Act* Permit M-200
m^3	cubic metres
M96-07	Mine Development Certificate Project Approval Certificate M96-07
masl	metres above sea level
MCM	Ministry of Mining and Critical Minerals
MeHg/THg	mass of methyl mercury per total mass of mercury in a given water volume
MESCP	Main Embankment Seepage Collection Pond
mg/L	milligrams per litre
mg-N/L	milligrams nitrogen per litre
mg-P/L	milligrams phosphorus per litre
the Mine Site	Mount Polley Mine
ML/ARD	Metal Leaching/Acid Rock Drainage
mm	millimetre
Mt	million tonnes

MPMC	Mount Polley Mining Corporation
MPRP	Mine Plan and Reclamation Plan
m/s	metres per second
N/A	Not Applicable
NAG	non-acid generating
NEZ	Northeast Zone
NP	neutralization potential
NTU	nephelometric turbidity unit
NW PAG	Northwest Potentially Acid Generating
OMS	Operation Maintenance and Surveillance
PAG	potentially acid generating
PET	potential evapotranspiration
PETBP	Perimeter Embankment Till Borrow Pond
PFR	preliminary field reconnaissance
PLC	Public Liaison Committee
the Project	raise in the elevation of the TSF from 974 m to 987 m in a series of lifts over the course of several years
the Project Area	the TSF raise to 987 m area
QA/QC	quality assurance and quality control
QP	Qualified Professional
QPO	Quantitative Performance Objectives
RCP	Reclamation and Closure Plan
RDS	Rock Disposal Sites
RfR	Request for Review
RLCE	Reclamation Liability Cost Estimate
RPD	relative percent difference
SAR	species at risk
SARA	Species at Risk Act
SERDS	Southeast Rock Disposal Site
SESCP	South Embankment Seepage Collection Pond

SMP	Soil Management Plan
sph	stems per hectare
SRK	SRK Consulting (Canada) Inc.
SWE	snow-water-equivalent
SWWBM	Site Wide Water Balance Model
SWWQM	Site Wide Water Quality Model
t	tonne(s)
TAR	Tailings Access Road
TC	Total carbon
TCU	true colour units
TIC	total inorganic carbon
TIC/AP	total inorganic carbon/acid potential
TSA	Terrestrial Study Area
TSF	tailings storage facility
WLFN	Williams Lake First Nation
W/m^2	watts per square metre
WMP	Water Management Plan
WSP	WSP Canada Inc.
WTP	water treatment plant
XFN	Xatśūll First Nation

1 INTRODUCTION

1.1 Project Description

Mount Polley Mine (the Mine Site) is a copper gold mine operating in central British Columbia (BC), approximately 80 kilometres (km) southeast of Quesnel, BC, adjacent to Polley Lake and Hazeltine Creek, which flows into Quesnel Lake and then the Quesnel River.

Mount Polley Mining Corporation (MPMC) has prepared a *Mines Act* Permit Amendment Application for their M-200 permit to support the raise in the elevation of the tailings storage facility (TSF) from 974 metres (m) to 987 m in a series of lifts over the course of several years (the Project). This application builds on the approved *Mines Act* M-200 permit amendment to allow the dam to be raised from 974 m (currently permitted elevation) to 987 m to accommodate the tailings produced from the already permitted mining. The works associated with the amended permit will provide storage to accommodate 62.8 million tonnes (Mt) of tailings since the restart of operations in June 2022 including the recently approved expansion of the Springer Pit.

The full scope of the application includes the following:

- Permanent raise in the elevation of the TSF to 987 m from 974 m through the:
  - Extension of the buttresses along the Main and Perimeter embankments.
  - Construction of a buttress along the South Embankment.
  - Raise the elevation of the crest.
- Associated relocation of water management infrastructure including:
  - Relocation of seepage collection channels that direct contact water to the Main Embankment Seepage Collection Pond (MESCP), South Embankment Seepage Collection Pond (SESCP), Perimeter Embankment Till Borrow Pond (PETBP), and Central Collection Sump (CCS).
  - Relocation of PETBP down gradient (southeast) of its current location.

These components are further described in Section 1.3.4. MPMC is proposing to raise the TSF to 987 m to maintain mining operations through the life of mine (LoM) which was extended under the amended M-200 permit on August 28, 2025. The proposed TSF raise to 987 m and water management structures included in this application are contained within the existing M-200 boundary (August 28, 2025).

1.1.1 Application Outline

This document's structure and content follows the guidance provided in the Joint Application Information Requirements (JAIR) for *Mines Act*. During consultation with Ministry of Mining and Critical Minerals (MCM) and BC Ministry of Environment and Parks (BC ENV)on October 30, 2025, it was determined that the permit amendment application would not be a joint application as the proposed TSF raise does not require amendments to the EMA permit 11678. Since the JAIR was originally used to develop the Information Requirements Table (IRT), the JAIR is referenced in this application. Table 1.1-1 provides the application structure by section number and a high-level description of the information provided. The IRT for the TSF raise to 987 m is provided in Appendix 1-1. To maintain consistent numbering, the heading title from the JAIR has been retained for sections and sub-sections that are not required in the application along with a statement and a rationale as to its exclusion.

Table 1.1-1: Application Structure

Section Number	Chapter Name	Description
1.0	Introduction	Provides the Project background information, including project description, proponent identification, project overview, application background, mine components, regulatory framework, mine design and assessment team.
2.0	Indigenous Engagement	Describes the background between the Mine Site and the First Nations, engagement efforts and information, Aboriginal interests and potential project impacts, and engagement and participation with First Nations.
3.0	Baseline Information	Describes the baseline environmental conditions, and the results of any baseline characterization and monitoring studies regarding biophysical and socio-cultural components (such as meteorology and climate, geology, water quantity, water quality, aquatic resources, ecosystems, wildlife, land use, archaeology, and cultural use).
4.0	Mine Plan	Provides a detailed discussion on the Project Mine Plan, including mine facility designs and development occurring throughout the LoM.
5.0	Reclamation and Closure Plan (RCP)	Summarizes the reclamation planning, approaches, and methods used to meet the end land use (ELU) and land capability objectives for the Project. Presents contingencies to address predicted challenges to achieving this objective.

Table 1.1-1: Application Structure

Section Number	Chapter Name	Description
6.0	Water Quality Mitigation and Water Modelling	Provides an overview of the qualitative hydrology and water quality assessments evaluating the potential effects of the Project. Detailing the operational efficiency and reliability of the water treatment plant (WTP).
7.0	Effluent Discharges to the Environment	This section is not required as part of the permit amendment application per the IRT.
8.0	Environmental Effects Assessment	Assesses potential Project residual effects on the environment and provides an evaluation of the risks on aquatic and terrestrial resources.
9.0	Environmental Monitoring	Summarizes the monitoring programs for the Project that support ongoing evaluation of the efficacy of proposed mitigations and evaluate on-going conditions of the receiving environment. Appendices attached to this application, where the full monitoring program designs are located.
10.0	Management Plans	Provides a summary of each management plan developed in support of the Project with reference to corresponding Appendices attached to this application, where the full site-specific management plans are located.
11.0	Reclamation Liability Cost Estimate (RLCE)	Provides a summary of the RLCE.

1.2 Proponent Information

MPMC is a wholly-owned subsidiary of Imperial Metals Corporation, a Canadian mining company active in the acquisition, exploration, development, mining, and production of base and precious metals, with a focus on western North America. Key properties are: Mount Polley Mine; Huckleberry Mine, an open pit copper/molybdenum mine in west-central BC; Red Chris Mine (30 precent [%] interest), an operating copper-gold property in northwest BC; and Ruddock Creek, a pre-development stage zinc/lead property in southeast BC.

The main contact information for MPMC is:

Imperial Metals Corporation
Randall Thompson, Chief Operating Officer
580 Hornby Street, Suite 200
Vancouver BC V6C 3B6
604.669.8959| www.imperialmetals.com

1.3 Project Overview

1.3.1 Project History

The development of the Mine Site was approved by a Mine Development Certificate issued in October 1992 (Project Approval Certificate #96-07, now called Environmental Assessment Certificate [EAC] #96 07). Clearing of the Mine Site and construction of the entire facility began in 1995, with the mill commissioned in June 1997. In July 1997, MCM approved the MPMC RCP, which resulted in the issuance of the M- 200 *Mines Act* Permit. The first full year of mining and milling at Mine Site took place in 1998. The MPMC suspended operations in October 2001 due to low metal prices, reopening in December 2004, with mill production commencing in March 2005.

On August 4, 2014, a breach occurred in the Perimeter Embankment of the TSF; this event is referred to as the "breach". The breach released tailings, water, and embankment construction materials to the downstream environments of Polley Lake, Hazeltine Creek, and Quesnel Lake.

Following the breach, mine operations ceased, and the Freshet Embankment was constructed to elevation 950 m through the breach area to allow the capture and temporary storage of the 2015 and 2016 freshet flows in 2015. Restricted operation, with tailings being deposited in Springer Pit, commenced on August 4, 2015. As the Mine Site returned to operation, an effluent permit was required and the Long term Water Management Plan – Technical Assessment Report (the "Long term Water Management Plan" or LTWMP) dated October 17, 2016, was produced to support the application process (Golder 2016). On November 6, 2015, MPMC applied for an amendment to the M-200 to allow for a return to full operations, including construction of the TSF to elevation 970 m (Golder 2015a) and the use of the TSF for tailings deposition.
On June 23, 2016, this amendment was provided by MCM, and on June 27, 2016, MPMC resumed deposition of tailings into the TSF. On April 26, 2017, the Minister of Environment and the Minister of Energy and Mines gave their consent to a material alteration of the EAC allowing for discharge to Quesnel Lake in accordance with the LTWMP for the remainder of the operational life of the mine (M. Polak and B. Bennett 2017):

> "NOW THEREFORE:
>
> The undersigned Ministers pursuant to Condition 2 of the EAC hereby do consent to the Long-Term Water Management Plan, involving operational discharge to Quesnel Lake and discharge at closure involving passive water treatment at the mine site, as a material alteration to the EAC."

On January 7, 2019, MPMC announced a decision to go on suspended operations (Care and Maintenance) beginning May 31 of that year, citing low metal prices. The Mine Site was in care and maintenance, which resulted in an extension to the operational period needed to develop Phase 4, as permitted by the *Mine's Act* Permit M-200 (M-200).

As noted in the August 25, 2021, communication regarding "Notice of Mount Polley Mine Restart", operations were planned to restart in 2021. This was initiated in response to improving market conditions, and as of November 2021 MPMC has started to return to operations. Mining activities occurring on site follow the activities approved by the March 17, 2014, M-200 amendment *Approving Cariboo Phase 4 Expansion* and the June 23, 2016 M-200 amendment *Approving Return to Full Operations and Use of the TSF*.

On August 28, 2025, the M-200 permit was amended to expand the Springer Pit which extended the LoM. This amendment supported economic benefits to the community through the development of the Springer Pit. Permit 11678 under the *EMA* was also amended by Ministry of Mining and Critical Minerals (MCM) on September 2, 2025, and extended the discharge period to the Quesnel Lake until mine closure.

As for the TSF, by September 2018, construction of the TSF had been completed to elevation 968 m (Golder 2019). A feasibility design for raising the embankment of the TSF to an elevation of 984 m was completed in 2014 (Golder 2015b). The aim of the feasibility assessment was to identify potential considerations, constraints, or conflicts that may limit the elevation to which the TSF could be raised. The results of the study indicated that a raise of the facility is feasible. In 2021, MPMC updated the LoM plan, and a crest elevation of approximately 987 m was determined to be required to store the LoM tailings. The interim design to elevation 974 m was authorized on March 27, 2025, with an amendment to the M-200, and construction of the TSF began on April 11, 2025.

This permit amendment application is a request to extend the TSF to a crest elevation of 987 m to maintain mining operations through the LoM which was extended under the Springer Expansion permit amendment by MCM on August 28, 2025.

1.3.2 Overview of Products

The Project will provide an additional ~36 Mt of tailings storage to accommodate the Springer Pit Expansion.

When in operation, Mount Polley Mine supports the local economies of Likely, Horsefly, and Williams Lake through employment of residents and purchases in these communities. As the mine returns to operation, benefits to these communities, as well as the province, include:

- Direct support of more than 350 jobs with an average annual salary of $123,000 per annum.
- Indirect support of 700 jobs.
- $75 million per operating year in payments to suppliers in BC.

In addition to economic support within local communities MPMC has signed a Participation Agreement with the Williams Lake First Nation (WLFN) and is in negotiation with Xatśūll First Nation (XFN) as well. The participation agreements are impact benefit agreements that consider financial support, education and training, employment, business and contract opportunities and environmental considerations. These agreements are expected to persist until the end of the mine life and provide continuous support for community members, initiatives and social services.

1.3.3 Location, Access, and Land Use

The Mine Site is an open pit copper/gold mine located in central BC, 56 km northeast of Williams Lake (latitude 52° 33’ N and longitude 121° 38’ W) in BC’s Cariboo Region. The Mine Site location is displayed in Figure 1.3-1 and Figure 1.3-2.

Figure 1.3-1: Location Map

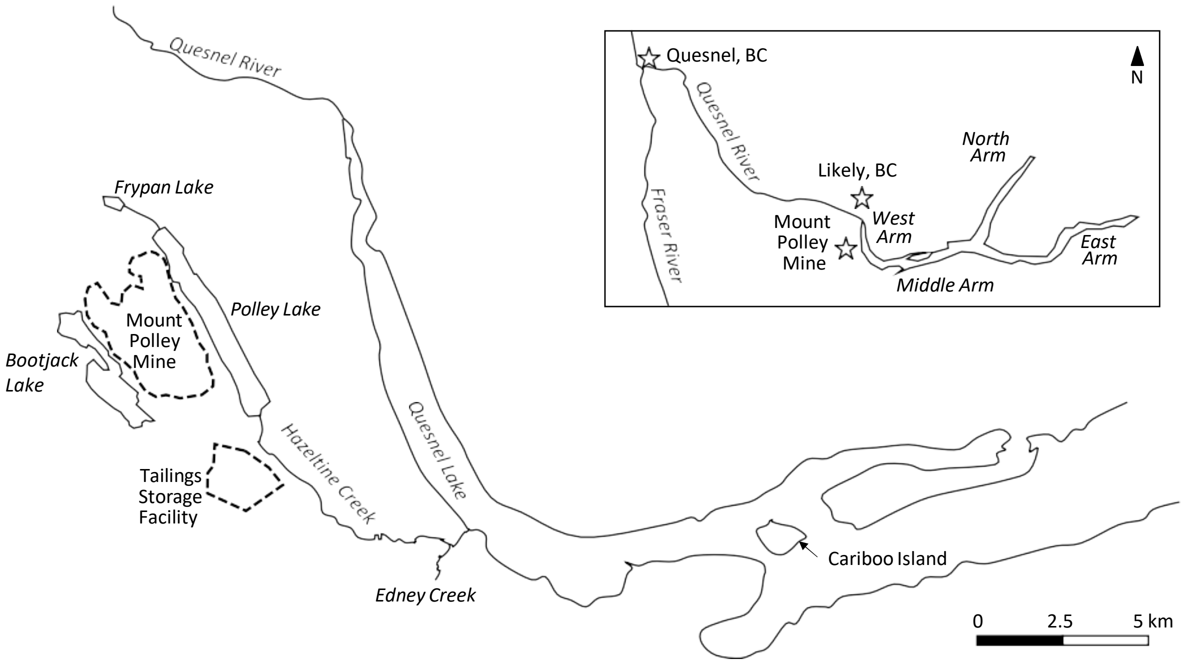


Figure 1.3-2: Mine Site Location

Currently, the property encompasses 24,096 hectares (ha) consisting of seven mining leases (2,007 ha) and 52 mineral claims (22,089 ha) and shown in Figure 1.3-3 below. A production royalty is payable on ore mined from Mining Lease 933970.

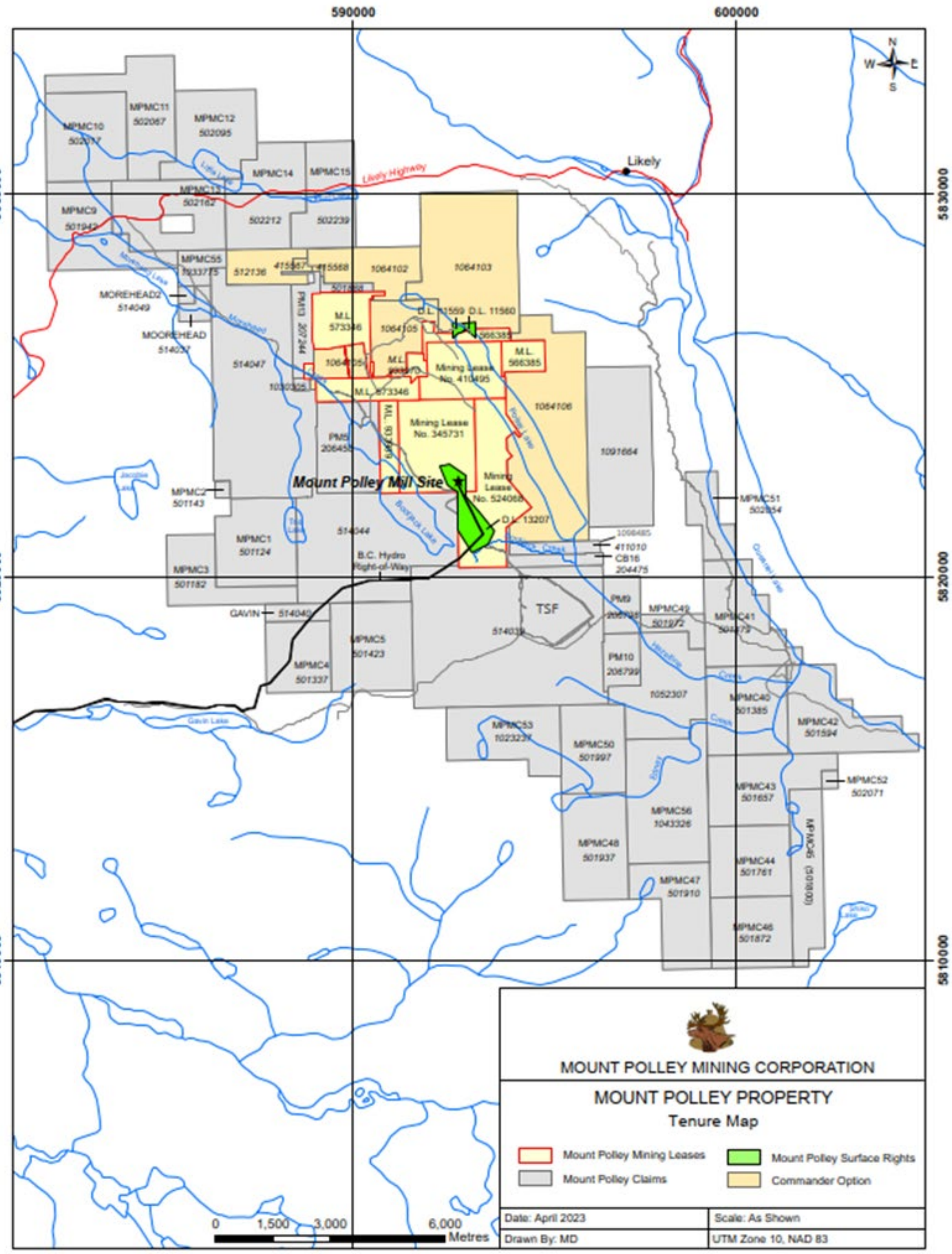


Figure 1.3-3: Figure of the Mining Tenures and Site Access

In October 2019, MPMC optioned seven adjacent mineral tenures (3,331 ha) and the option was subsequently exercised on December 30, 2022. These claims are subject to a production royalty payable on ore mined from the claims and milled in the MPMC processing plant. There is no production royalty payable on the current tenures which are being mined.

Access to the Mine Site occurs via the Morehead-Bootjack Forest Service Road from Likely Road. Traffic is managed by existing traffic and access standard practices and procedures maintained by MPMC.

Regional public land uses associated with the area are fishing, hiking, camping, motorized vehicle use, skiing, snowmobiling, trapping, and hunting. Industrial uses, including forestry, sawmilling, ranching, and fisheries also occur in the area. These uses do not occur within the *Mines Act* M-200 permit boundary, where public access is prohibited under the *Mines* and *Trespass Act*.

The Mine Site operates on the traditional territory of the WLFN and the XFN. Traditional uses including plant and animal harvesting and fishing occur within the region and may, in the future, occur in areas near the Project. Current use of the Project footprint by WLFN and the XFN membership is restricted given that the area is within the existing M-200 permit boundary, which maintains public and worker safety. Representatives of these Nations are engaged through the Public Liaison Committee (PLC), permitting applications, and the terms of the Impact Benefit Agreements.

Contact water from the Mine Site is collected and treated via the WTP system and treated water is discharged to Quesnel Lake under permit PE-11678. Known environmental uses of Quesnel Lake water, particularly with respect to the West Basin, were identified to determine the most sensitive water use for the receiving environment. The following environmental uses were identified for Quesnel Lake by Golder Associates Ltd. (Golder; Golder 2016) and remain applicable in the present day:

- Commercial, recreational, and aboriginal fisheries.
- Recreational uses such as scenery and wildlife viewing, swimming, boating, kayaking, canoeing, and waterskiing/tubing/wakeboarding, and in the winter, snowmobiling and ice fishing when ice conditions allow.
- Drinking and residential water use for domestic purposes.

A site plan identifying the Mine Site and infrastructure is included in Figure 1.3-4.

LEGEND

- GROUND CONTOURS (SEE NOTE 4)
- SITE ACCESS ROADS (SEE REFERENCE 6)
- WATERCOURSE (SEE REFERENCE 7)
- WATERBODY (SEE REFERENCE 6)
- SHORELINE (SEE REFERENCE 6)

NOTES

1. ALL UNITS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES RELATIVE TO UTM, NAD83 AND ELEVATIONS OF MINE SITE REPRESENT GEODETIC DATUM, AND TAILINGS STORAGE FACILITY ARE RELATIVE TO TAILINGS GRID.
3. CONTOUR INTERVAL SHOWN AT 25 m MAJOR AND 5 m MINOR.
4. GROUND CONTOURS REPRESENT COMPOSITE SURVEYS FROM 2013-2024 (SEE REFERENCES 1-5).

REFERENCES

1. 2013 TOPOGRAPHY PROVIDED BY MPMC, FILE NAME: "MTPOLLEY2013-DTM.dwg", SURVEYED: 2013, RECEIVED: 1 OCTOBER 2014.
2. 2014 TOPOGRAPHY PROVIDED BY MPMC, FILE NAME: "MtPolley_20140805_1m_LiDAR_Contour.dwg", SURVEYED: 5 AUGUST 2014, RECEIVED: SEPTEMBER 3, 2014.
3. 2019 TOPOGRAPHY PROVIDED BY MPMC AS MULTIPLE .las FILES, SURVEYED: 18 OCTOBER 2019, RECEIVED: 09 FEBRUARY 2020.
4. 2023 TOPOGRAPHY PROVIDED BY MPMC AS 0.1 m CONTOUR DATA, SURVEYED: 30 OCTOBER 2023; RECEIVED: 01 FEBRUARY 2024; FILE NAME: "231030-TSF Lidar Contor 0.1.dxf" .
5. 2024 TOPOGRAPHY PROVIDED BY MPMC AS 3D FACES, SURVEYED: 10 DECEMBER 2024; RECEIVED: 13 DECEMBER 2024; FILE NAME: "Dec 10th,2024 TSF embankment Flight.dxf" .
6. SITE FEATURES PROVIDED BY MPMC. FILE NAME: "MtPolley2013-Pln.dwg", SURVEYED: 2013, RECEIVED: 5 SEPTEMBER 2014.
7. BASE DATA CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE - BRITISH COLUMBIA.

ISSUED FOR

PERMITTING

0 500 1,000
1:12,500 METRES

CLIENT
MOUNT POLLEY MINING CORPORATION

PROJECT
PERMIT AMENDMENT APPLICATION
TAILINGS STORAGE FACILITY RAISE TO 987 m

CONSULTANT

YYYY-MM-DD	2025-11-18
DESIGNED	M. DALTON
PREPARED	J. HOPSON
REVIEWED	D. KAISER
APPROVED	A. MCINTOSH

TITLE
SITE PLAN

PROJECT NO.	PHASE/TASK	REV.	FIGURE
CA0047730.8440	81100A/81116	0	1.3-4

25 mm

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

1.3.4 Mine Components

This Project consists of five main components and the permit amendments associated with these components are summarized in Table 1.3-1.

Table 1.3-1: Summary of the Project Components and Permit Amendments

Project Component	Condition Reference	Condition	Scope and Function	Section
Raise and extension of the buttresses along the Main and Perimeter embankments Construction of a buttress along the South Embankment Extension of the embankments at the north and south abutments	M-200 5(a)(i)	The Permittee is authorized to construct the TSF to an elevation of 974 m in accordance with Document 48.1.	Raise the elevation of the TSF to 987 m to support mining through the LoM.	Section 4.4.3.4 and Appendix 1-2
Relocation of seepage collection channels that direct contact water to the MESCP, PETBP, and CCS Relocation of the TSF water management ponds (PETBP, MESCP, and SESCP) down gradient of their current locations	Section 1.1.4 of Permit 11678	The Authorized Works associated with this discharge are a septic tank, tailings discharge line, open pits, TSF, water treatment and discharge system, seepage collection and recycle system, surface water collection works, tailings supernatant recycle systems; sediment pond(s) and related appurtenances approximately located as shown on the attached Site Plan A.	Relocation is necessary as the water management infrastructure will be partially or fully covered during construction of the TSF to 987 m. Some elements are identical to those for the 974 m raise, yet to be completed.	Section 4.4.5 and Appendix 5-2

The detailed design report for the TSF raise to elevation 987 m is included in Appendix 1-2

1.3.5 Mine Design and Assessment Team

Table 1.3-2 identifies the professionals, reviewers, and authors with primary responsibility for preparing this Application. Each identified Qualified Professional (QP) author has provided a signed statement, where a signed report is not already included in the Application, specifying the section they are responsible for and confirming that the information is true and complete based on their professional knowledge and judgement. The signed statements are provided as Appendix 1-3.

Table 1.3-2: Project Qualified Professional Team

Company	Project Team			
	Name	Registration Number	Role	Section
WSP Canada Inc. (WSP)	Lee Nikl, MSc, RPBio, Senior Environmental Scientist, Fellow	601, RPBio	Reviewer	Section 3.5.1
	Drew Kaiser, RPBio, Senior Principal Biologist	2332, RPBio	Senior Principal Biologist, Reviewer	Section 3.7, 3.8, All
	Germán Pizarro-Sala, P. Eng, Principal Geotechnical Engineer	40077, P.Eng.	TSF Engineer of Record (EoR)	Section 4.4.3.4 and 4.4.9.3
	Jesse Maddaloni, MASc, P.Eng, Senior Mechanical Engineer	36620, P.Eng.	Author, Reviewer	Section 6.4.2, 6.4.4, and 10.6
	Steve Mitchell, BSc, Water Quality Modeller (under direct supervision of Lee Nikl, MSc, RPBio)	601, RPBio (Lee Nikl)	Author, Reviewer	Sections 6.7

Table 1.3-2: Project Qualified Professional Team

Company	Project Team			
	Name	Registration Number	Role	Section
WSP Canada Inc. (WSP)	Don Kidd, Technical Director Water Resources Engineer	202493, P.Eng.	Reviewer	Section 4.4.5.1 and 4.4.5.2
	Daniel Mullen, B.A.Sc., EIT (BC), Water Resources Engineer	174082	Author	Section 4.4.5.1 and 4.4.5.2
	Jorden Laskosky, MSc, P.Ag, Senior Mine Reclamation and Closure Consultant	4447, P.Ag	Author, Reviewer	Section 5.0
	Connie Romano, Senior Principal Hydrogeologist M.Sc., P.Geo. (EGBC)	25728, P.Geo.	Author, Reviewer	Sections 3.4.2, 3.5.2, and 6.5
	Emily West, Senior Ecologist	3271	Author	Sections 3.8 and 8.2
	Claire Kisko, BSc, P.Ag, Ecologist	4595	Author	Sections 3.8 and 8.2
	Tanya Seebacher, MSc, RPBio, Terrestrial Biologist	2191, RPBio	Reviewer	Sections 3.8 and 8.2
	Chris Dodd, BA, RPCA, Lead Archeologist	NA, RPCA	Author, Reviewer	Sections 3.11 and 3.12
	Alannah Gray Hubbard, P.Eng, Senior Geological Engineer	48028, P.Eng.	Author, Reviewer	Sections 4.4.4

Table 1.3-2: Project Qualified Professional Team

Company	Project Team			
	Name	Registration Number	Role	Section
SRK Consulting (Canada) Inc. (SRK)	Shauna Litke, MASc, P.Eng, Senior Geochemistry Consultant	49392, P.Eng.	Geochemistry Source Terms	Sections 6.1, 6.2, 10.5
	Stephen Day, P.Eng., Corporate Geochemistry Consultant	18467, P.Eng.	Geochemistry Source Terms	Sections 6.1, 6.2, 10.5

1.3.6 Spatial Data

Figures displaying the TSF and water management infrastructure are provided in Figure 10 in Appendix 1-2 and Figure 3.3-3, respectively.

1.3.7 Concordance with Environmental Assessment Conditions

MPMC was initially issued Mine Development Certificate M92-13 on October 6, 1992. This certificate continues in force as Project Approval Certificate M96-07 pursuant to the *Environmental Assessment Act* R.S.B.C. 1996 c. 119 and as EAC M96-07 pursuant to the *Environmental Assessment Act* S.B.C 2002, c.43 (Certificate). This certificate was last amended on May 19, 2016.

The Project does not require an amendment to the M96-07; however, the following conditions have been identified as relevant.

Condition 2: Imperial Metals [MPMC] shall, prior to any material alteration of the Development as described in the Application, obtain the written consent of the Minister of Mining and Critical Minerals and the Minister of Environment and Parks and the Minister may determine what constitutes a material alteration.

Condition 6: This Certificate is not a *Mines Act* Permit nor Part thereof, nor does it limit the ability of the Chief Inspector, District Inspector, or an Inspector of the Ministry of Energy, Mines, and Petroleum Resources to immediately enforce any requirements or exercise any discretion or authority under the *Mines Act*, its Code, or Orders or Directions thereunder.

Condition 8: Imperial Metals [MPMC] shall comply with all applicable orders, directions and conditions, and obtain and comply with all applicable tenures, licenses, regulations, approvals, standards and permits which may include or result from, but are not necessarily limited to, the following:

- Commercial transport Act
- Environment Management Act
- Fire Services Act
- Fisheries Act
- Gas Safety Act
- Health Act
- Heritage Conservation Act
- Highway Act
- Land Act
- Mineral Tenure Act
- Mines Act
- Mining Right of Way Act
- Municipal Act
- Pesticide Control Act
- Pipeline Act
- Power Engineers & Boiler & Pressure Vessel Safety Act
- Railway Act
- Transport of Dangerous Goods Act
- Utilities Commission Act
- Waste Management Act
- Water Sustainability Act

With regard to these conditions MPMC acknowledges the requirement to acquire authorization from the appropriate source. For this Project, MPMC is seeking an amendment to the M-200 and depending on the feedback from BC ENV, PE-11678, no additional amendments or authorizations are required to support the activities.

1.4 Regulatory Framework

MPMC has permits that allow for operation and waste management. In addition, MPMC has certificates and similar instruments that enable provincial ministries to make decisions respecting permits (i.e., approximately equivalent to present day EAC). These include:

- M-200, issued by MCM.
- EMA Permits issued by BC ENV to authorize discharge into the receiving environment (Permits 1678, PE-11678, 15968, 15087, and 14590).

- Environmental Assessment Act Mine Development Certificate Project Approval Certificate M96-07 (M96-07), issued by the Environmental Assessment Office (EAO).

To support the implementation of the Project, and those related projects (Section 1.4), MPMC is seeking an amendment to the M-200 and Permit 11678. The Project does not require changes to the effluent discharge limits or relate to those conditions included in M96-07 (Section 1.3.7).

This Project does not require the alteration of a water way; however, a mapped non-fish bearing tributary (Tributary 1) to Upper Edney Creek will be impacted by the proposed buttress expansion of the TSF. Although the tributary has been mapped previously, no evidence of a channel was observed during a field survey where the TSF buttress is proposed. A Request for Review (RfR) to Fisheries and Oceans Canada (DFO) has been submitted and their review of the RfR application is in progress to determine if they will require a *Fisheries Act* Authorization for impacting the Edney Creek tributary. Additional information is provided in Sections 3.7.2 and 8.1.

1.5 References

Golder. 2015a. Mount Polley mine tailings storage facility detailed design to elevation 970 m. Prepared for Mount Polley Mining Corporation. Golder Doc. No. 1413803-074-R-Rev0-3000. November 3, 2015.

Golder. 2015b. Tailings storage facility life of mine feasibility design. Document prepared for Mount Polley Mining Corporation. Golder Doc No. 1413803-072-R-Rev0-9000. November 3, 2015.

Golder. 2016. "Mount Polley Mine: Long term Water Management Plan. Permit Amendment Application under the Environmental Management Act: Technical Assessment Report," Golder Associates Report No. 1411734-162-R-Rev0- 16000, Vancouver, BC, 2016.

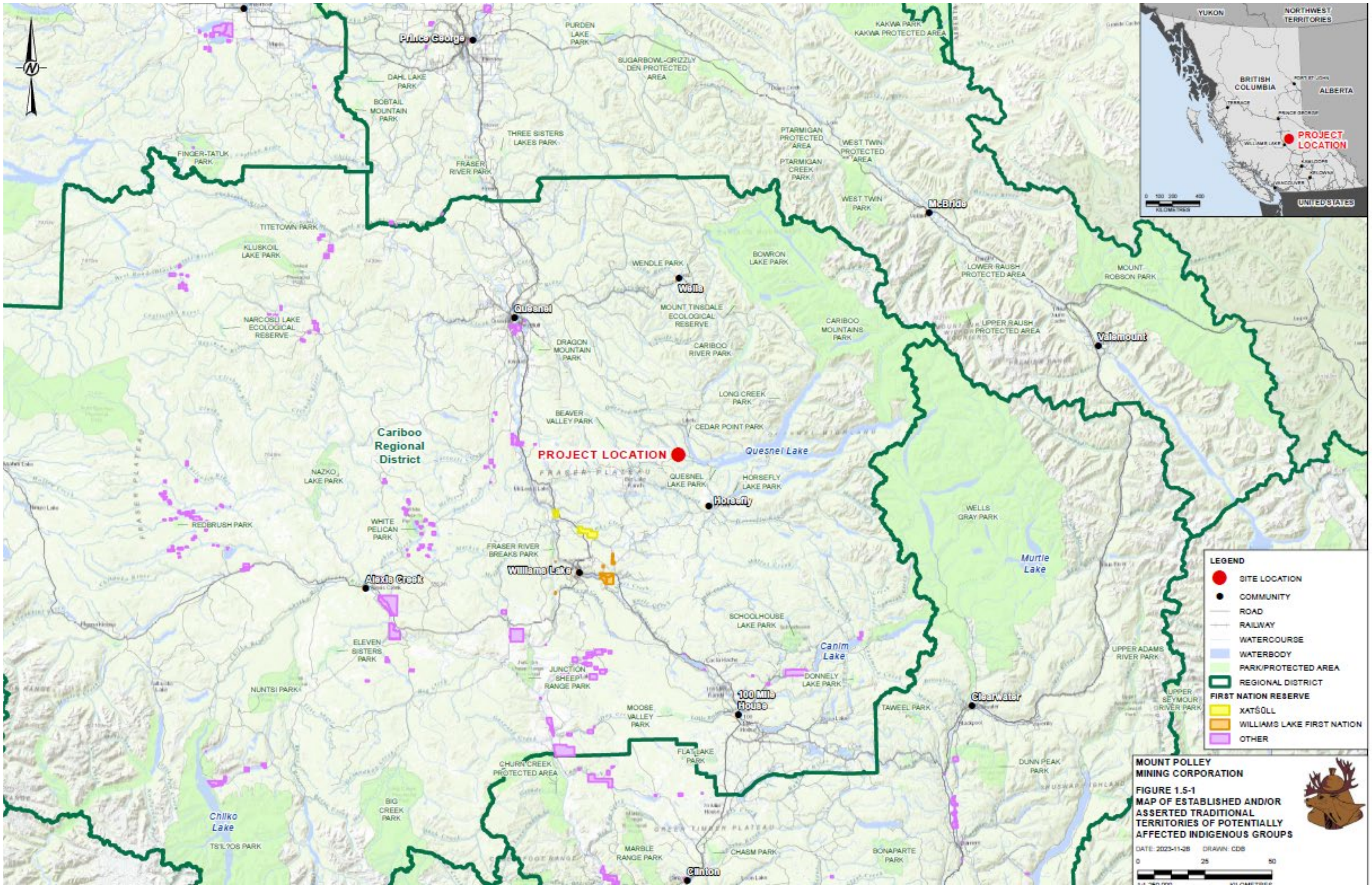
Golder. 2019. 2018 tailings storage facility construction record report. Prepared for Mount Polley Mining Corporation. Golder Doc. No. 1894924-075-R-Rev0-52292; 27 March 2019.

M. Polak and B. Bennett. 2017 Consent for Material Alteration – Pursuant to the Environmental Assessment Act, Victoria, BC: Minister of Environment and Minister of Energy and Mines, 2017.

2 INDIGENOUS ENGAGEMENT

2.1 Background

MPMC operates in the recognized claimed traditional territory of the WLFN and the XFN. The WLFN and the XFN are members of the Secwepemc Nation, located in the Cariboo region of the Central Interior region of BC. The traditional language of the WLFN and the XFN is Secwepemc (or Shuswap). The WLFN reserve land area covers 1983.4 ha. The XFN reserve land totals 2092.7 ha. Established and/or asserted traditional territories are provided in Figure 2.1-1 and use is described in Section 1.3.3.



Source: Mount Polley Mining Corporation

Figure 2.1-1: Map of Established and/or Asserted Traditional Territories of Potentially Affected Indigenous Groups

2.2 Engagement Efforts and Information

In 2011 and 2012, MPMC executed Participation Agreements, which provides mutual benefits to both parties, with the WLFN and the XFN, respectively. WLFN renewed the Participation Agreement with MPMC on April 12, 2022.

Meetings with the WLFN have taken place since March 16, 2012, and since July 19, 2012, with the XFN. Effective October 18, 2012, Joint Implementation Committee meetings have been held with representatives from MPMC, the WLFN, and the XFN. Joint Implementation Committee meetings are held at minimum quarterly. These meetings and associated documentation (Terms of Reference, minutes, and action items) provide a well-defined, constructive forum in which issues, reviews, and comments relating to the current and anticipated future operations of the Mine Site may be discussed.

MPMC engages in a monthly update meeting with representatives of both the WLFN and XFN. These meetings have been taking place quarterly since 2019 and monthly since 2023. The monthly meetings serve as a direct means for the First Nations to receive updates and engage with MPMC on a variety of topics, including permitting activities. MPMC provides the same engagement with regards to the permitting process to both First Nations and has been discussing the proposed TSF raise to 987 m since 2023 (MPMC 2025). In addition, MPMC had discussions with WLFN and XFN prior to the recent archaeological impact assessment (AIA) and ecological impact assessments.

2.3 Aboriginal Interests and Potential Project Impacts

An amendment to the M-200 permit to raise the TSF to 987 m would maintain mining operations through the LoM and does not pose new potential adverse impacts on the First Nation's interests as archaeological work has taken place within the expanded footprint, together with the XFN and under permits issued under the *Heritage Conservation Act* (*HCA*) and by the XFN. XFN previously expressed concerns with the permit amendment to raise the TSF to 974 m; however, the Ministers of Environment and Mines consented to the material alteration and MCM amended MPMC's M-200 permit on March 27, 2025 which authorized construction of the TSF to an interim raise of 974 m. The First Nations feedback and interests regarding the permit amendment were incorporated into the most recent versions of the M-200 and PE-11678 permits, amended on August 28, 2025 and September 2, 2025, respectively. Both the WLFN and XFN are aware of MPMC's intention to submit this application and specific concerns regarding the TSF raise to 987 m have not been raised by either First Nation to MPMC at this time; however, as of writing, the application had not been submitted.as of writing, the application had not been submitted.

2.4 Engagement and Participation Throughout Mine Life

MPMC follows a Communication Plan to engage with the First Nations. Engagement is provided through monthly meetings, quarterly Joint Implementation Committee meetings, PLC meetings, and quarterly Regional (Cariboo) Mine Development Review Committee. MPMC also provides periodic tours of the Mine Site to the First Nations. Recently, the First Nations were provided the opportunity to attend the AIA conducted from September 27, 2025 through October 3, 2025, excluding the Truth and Reconciliation Holiday on September 30, 2025. Additional information regarding the 2025 AIA is included in Section 3.11.

2.5 References

MPMC. 2025. Notification and Engagement Report.

Xatśūll First Nation v. Minister of Mining and Critical Minerals, 2025 BCSC 1798. https://www.bccourts.ca/jdb-txt/sc/25/17/2025BCSC1798cor1.htm.

3 ENVIRONMENTAL BASELINE

The following section will summarize the environmental baseline conditions in areas of the Mine Site affected by the proposed TSF raise to 987 m project. The following environmental components were identified to be assessed for this baseline information section:

- Meteorology and climate
- Geology
- Topography and Surface Drainage Features
- Surface water and groundwater quantity
- Surface water and groundwater quality
- Fisheries and aquatic resources
- Ecosystems and wildlife
- Land status and use
- Archaeology
- Cultural use

3.1 Meteorology and Climate

Appendix 3-1 provides the most recent climate baseline and climate change characterization for the Mine Site, prepared by WSP in 2022. The frequency of climate updates aligns with requirements from the 2020 Global Industry Standard on Tailings Management. The climate of the Mine Site was characterized in the Baseline Climate Update Report (Golder 2022) using historical measurements recorded at local climate stations, supported by data collected from the five nearby regional Environment and Climate Change Canada (ECCC) climate stations.
The baseline climate update report is summarized below, and more details can be found in Golder 2022 (Appendix 3-1). In addition, supplementary climate change information for the Mine Site were provided by WSP (2025b) and are included in Appendix 3-2.

MPMC has operated climate stations on site since 1995, although the station data records are not continuous. From 1995 through 2012, MPMC maintained one climate station at the Mill Site that measured and recorded rainfall (1997 to 2012), temperature (1995 to 2012) and wind velocity and direction (1997 to 2003). In 2012, this station was replaced with two stations: one near the mill site (WS1) and one adjacent to the TSF (WS2). These new stations measure and record wind speed, relative humidity, solar radiation, temperature, and rainfall.

Five ECCC climate stations at Likely, Spokin Lake, Williams Lake, Barkerville, and Quesnel, were selected to support and extend the long-term climate dataset for the Mine Site due to their proximity to the Mine, length of record, elevation range, and concurrent period of record with the local climate stations at the Mine. In addition, the ECCC Prince George climate station was added to include an additional station with solar radiation data. Historical records were retrieved from ECCC's Historical Climate Data web server (ECCC 2022a). More recent records were compiled through e-mail correspondence with ECCC staff (ECCC 2022b).

The details of these stations are shown in Table 3.1-1. The locations of the Mine Site weather stations are shown in Appendix 3-1, Figure 2.

Table 3.1-1: Local and Regional Climate Stations for the Mine Site

Station Name (ID)	Northing (m N)(1)	Easting (m E)(1)	Elevation (masl)	Approximate Distance to Site (km)	Data Type	Period of Record(2)
Mill Site Weather Station	5822420	592495	1,118	-	R, T, WS, WD	1995-2012
Weather Station #1 (WS1) [near mill]	5822420	592792	1,171	-	R, T, RH, SR, E, WS	2012-2021(4)
Weather Station #2 (WS2) [TSF]	5819955	594059	964	-	R, T, RH, SR, E, WS	2012-2021(4)
Likely (1094616)	5828785	599332	724	9	P, R, S, T	1974-1993
Williams Lake A (1098940)	5781820	564666	940	50	P, R, S, T, RH, SR	1961-2021(4)
Spokin Lake 4E (1097646)	5782274	589827	1,033	40	P, R, S, T	1983-2021(4)
Barkerville (1090660)	5880996	599515	1,283	59	P, R, S, T	1888-2021(3, 4)
Quesnel A(5) (1096630)	5873987	546720	545	80	P, R, S, T, RH	1946-2021(4)
Prince George A (1096450)	5971423	521103	691	163	P, R, S, T, RH, SR	1973-1995

1) UTM Coordinate system – Zone 10U.
2) Length of record from start year to end year may not reflect the number of complete years of data.
3) Provisional data for the period January 2016 to December 2021 were provided by ECCC.
4) Station still in operation.
5) Combined record from Quesnel A and Quesnel Airport Auto stations. Stations are located at the same location.

ID = Identification; masl = metres above sea level; km = kilometre.

P = Precipitation; R = Rainfall; S = Snowfall; T = Temperature; RH = Relative Humidity; SR = Solar Radiation.

During the winter, snowpack is measured at four snow course sites at a minimum frequency of once per month, with more frequent measurements typically being taken during the melt phase. The details of these stations are provided in Table 3.1-2, and their locations are shown in Appendix 3-1, Figure 2.

Table 3.1-2: Local Snow Course Sites at the Mine Site

Station Name	ID	Northing (m N)(1)	Easting (m E)(1)	Approximate Elevation (m)(2)	Period of Record
Snow Course # 1 (near mill)	N/A	5823182	592792	1,171	1997–2010, 2015–current
Snow Course # 2 (near TSF)	N/A	5819976	594092	964	1997–current
Snow Course # 3	N/A	5823895	593632	976	2012–current
Snow Course # 4	N/A	5823537	590835	1,112	2015–current

1) UTM Coordinate system – Zone 10U.

2) Elevation for on-site climate stations measured with handheld Global Positioning System device.

masl = metres above sea level; N/A = not applicable; TSF = Tailings Storage Facility.

3.1.1 Air Temperature

Air temperature statistics for the Mine Site were developed using historical data from the nearby ECCC climate station in Likely approximately 9 km northeast of the Mine Site. The historical Likely data set was adjusted to the average elevation of the Mine Site by applying the regional monthly lapse rate (Golder 2022). Data gaps were infilled using data from the four regional ECCC climate stations in a prioritized sequence and applying the monthly temperature lapse rate to adjust for elevation.

Monthly and annual air temperature statistics for the Mine Site (1974-2021) are presented in Table 3.1-3. The estimated mean annual temperature varies between 1.7 degrees Celsius (°C) and 6.3°C, with a long-term mean of 3.9°C. Mean monthly temperatures vary between –6.7°C in January and 15.1°C in July. The historical daily maximum and minimum air temperature from the derived long-term data set was 38.1°C in June 2021 (measured at the Mine Site) and -39.8°C in December 1996, respectively.

Table 3.1-3: Derived Air Temperature (°C) Statistics for Mine Site, 1974 to 2021

Month	Temperature (°C)							
	Minimum	Mean	Maximum	25th Percentile	50th Percentile	75th Percentile	Daily Maximum	Daily Minimum
January	-16.0	-6.7	-0.3	-8.7	-6.3	-4.0	11.2	-39.4
February	-13.0	-4.8	0.7	-7.7	-4.3	-2.1	13.6	-35.4
March	-6.7	-1.0	3.2	-2.2	-0.8	0.5	18.4	-32.7
April	-0.7	3.7	12.0	2.8	3.7	4.3	27.5	-16.7
May	5.2	8.5	13.1	7.5	8.3	9.6	33.1	-7.9
June	8.6	12.2	15.5	11.1	12.2	13.2	38.1	-4.9
July	11.8	15.1	21.2	13.3	14.8	16.4	36.0	0.6

Table 3.1-3: Derived Air Temperature (°C) Statistics for Mine Site, 1974 to 2021

Month	Temperature (°C)							
	Minimum	Mean	Maximum	25th Percentile	50th Percentile	75th Percentile	Daily Maximum	Daily Minimum
August	11.0	14.6	17.1	13.6	14.8	15.7	33.0	-4.1
September	6.8	10.0	14.2	8.7	9.6	11.2	36.3	-7.1
October	0.8	4.1	8.7	3.4	4.1	4.7	31.1	-26.4
November	-13.7	-2.4	2.6	-3.8	-2.1	-0.4	17.3	-36.9
December	-13.7	-6.6	-1.2	-9.5	-5.5	-3.9	11.3	-39.8
Annual	1.7	3.9	6.3	3.2	3.9	4.5	38.1	-39.8

3.1.2 Precipitation

The MPMC precipitation dataset was extended and infilled using the available data record from the five regional stations as described below to derive a daily and 24-hour long-term synthetic precipitation dataset for the Mine Site. The Likely ECCC Station data were used to extend the precipitation record for the Mine Site given the station's length of record and proximity to the Mine Site.

Precipitation data gap infilling was completed following a priority sequence determined by analyzing measured daily rainfall from April to November for all climate stations; it was assumed that precipitation occurring between December and March occurred as snowfall. The regional climate station priority sequence considered the best-fit measured concurrent daily rainfall correlation (Rainfall Correlation), rainfall ranking correlation (Rainfall Rank), and percentage of time rain was recorded on the same day (Concurrent Daily Rain) between the raw data collected at the MPMC climate stations and each ECCC climate station (Golder 2022).

A precipitation-elevation orographic factor was applied to adjust the raw precipitation data from the ECCC climate stations used to infill gaps. The adjustment was based on the April-to-November rainfall ranking factor of the raw ECCC climate station and Mine Site rainfall records.

The Mine Site experiences high summer precipitation due to summer storms, with the lowest monthly precipitation occurring in March. Precipitation typically occurs as snowfall starting in November and accumulates until March. Average annual precipitation at the Mine Site is estimated to be 612 millimetres (mm) with a standard deviation of 118 mm. Frequency analyses of the derived long-term precipitation time series for the Mine Site were undertaken to generate the variability in monthly and annual precipitation of the Mine Site. Estimated annual wet and dry precipitation depths for a range of return periods are shown in Table 3.1-4.

Table 3.1-4: Long-Term Precipitation at the Mine Site

Month[1]	Precipitation (mm)				
	Average	1:200 Year Wet	1:25 Year Wet	1:25 Year Dry	1:200 Year Dry
January	49.4	74.3	66.5	33.2	28.2
February	35.8	54.0	48.3	24.1	20.5
March	29.7	44.7	40.0	20.0	16.9
April	44.7	67.3	60.2	30.1	25.5
May	49.9	75.2	67.2	33.6	28.5
June	70.8	107	95.4	47.7	40.4
July	63.6	95.8	85.7	42.9	36.3
August	50.6	76.2	68.1	34.1	28.8
September	52.3	78.8	70.5	35.2	29.9
October	58.1	87.5	78.2	39.1	33.1
November	49.8	75.0	67.1	33.5	28.4
December	57.6	86.8	77.7	38.8	32.9
Annual Total[2]	612	922	825	412	349

1) Wet and Dry Monthly values assumed to follow the same monthly distribution as the Average.

2) Annual total precipitation depths were rounded to the nearest mm for presentation purposes; therefore, it may appear the sum of the monthly values do not equal the annual total.

3.1.3 Relative Humidity

Relative humidity data are available for the Mine Site from 2019 to 2021, for ECCC climate stations Quesnel (1953 to 2021), and Williams Lake (1961 to 2021). The MPMC WS1 relative humidity record is more complete than WS2's record; therefore, WS1 data were used for the analysis and infilled with WS2 data where necessary and if available. However, relative humidity data for the Mine Site are insufficient for characterizing long-term climatic conditions of the Mine Site due to the short period of record. Therefore, data from Quesnel and Williams Lake stations were reviewed and analyzed to define a representative relative humidity estimate for the Mine. A long-term relative humidity time series for the Mine Site was developed using ECCC Williams Lake A data infilled with ECCC Quesnel A data with an adjustment factor of 1.13 and 1.04 (Golder 2022).

Statistics for relative humidity are presented in Table 3.1-5. Mean annual relative humidity is 68.1%. Monthly mean values vary between 57.7% in April to 82.2% in December. The 25th and 75th percentiles for monthly relative humidity show little variation from the median indicating the Mine Site experiences relatively constant relative humidity on a monthly basis from year to year.

Table 3.1-5 Derived Monthly and Annual Relative Humidity Statistics for the Mine Site (1974-2021)

Month	Relative Humidity (%)					
	Minimum	Mean	Maximum	25th Percentile	50th Percentile	75th Percentile
January	69.2	81.3	90.1	78.9	81.7	84.0
February	65.5	75.0	84.8	72.0	75.6	77.8
March	55.4	64.9	76.2	61.0	64.0	68.3
April	47.9	57.7	69.4	54.9	57.4	60.5
May	45.6	58.1	70.3	54.1	57.8	61.5
June	44.2	60.4	72.4	54.4	60.2	67.7
July	42.2	59.0	72.9	52.6	58.6	65.9
August	48.4	60.2	81.2	55.0	58.8	63.6
September	47.5	66.4	79.1	61.3	66.1	71.3
October	54.3	72.3	86.7	69.7	72.0	76.1
November	61.4	80.1	87.8	77.6	80.4	83.5
December	70.8	82.2	89.3	78.9	82.6	85.0
Annual	54.4	68.1	80.0	64.2	67.9	72.1

3.1.4 Solar Radiation

Solar radiation data are available for the Mine Site from 2001 to 2003 and 2019 to 2021, and for ECCC climate stations Williams Lake (1961 to 2001) and Prince George (1973 to 1995). Solar radiation data for the Mine Site are insufficient for characterizing climatic conditions of the Mine Site due to the short period of record, and as the data recorded in 2001 is incomplete and not concurrent with either ECCC climate station. Solar radiation statistics for the Mine Site were determined from the ECCC Williams Lake data. Missing values were infilled by adjusting the Prince George records by a factor of 1.04 (Golder 2022).

Statistics for solar radiation for the Mine Site are presented in Table 3.1-6. Mean annual solar radiation is 135 watts per square metre (W/m^2), with a minimum of 127 W/m^2 and maximum of 148 W/m^2. Mean monthly solar radiation varies between 20 W/m^2 in December to 257 W/m^2 in July following the same seasonal pattern for monthly air temperature. The 25th and 75th percentiles show greatest variation in solar radiation occurs in the summer months when solar radiation is greatest during the year, and less variation in winter months when solar radiation is lowest.

Table 3.1-6: Estimated Solar Radiation Statistics for the Mine Site (1974-2001)

Month	Solar Radiation (W/m^2)					
	Minimum	**Mean**	**Maximum**	**25th Percentile**	**50th Percentile**	**75th Percentile**
January	16	27	40	23	27	32
February	37	60	86	54	61	67
March	85	114	152	108	113	123
April	143	180	215	161	179	201
May	196	230	275	214	227	250
June	192	246	302	228	244	267
July	211	257	318	234	258	276
August	158	225	261	211	228	248
September	99	152	188	139	149	168
October	55	79	103	71	79	86
November	23	33	50	28	32	37
December	12	20	27	18	20	23
Annual	127	135	148	132	135	140

3.1.5 Evaporation

Evaporation monitoring data are available for the Mine Site from 2019 to 2021; however, the data are not continuous, and the length of record is not sufficient for characterizing the evaporation conditions at the Mine Site. Therefore, a mathematical model (Morton 1983) was used to calculate evaporation and evapotranspiration (actual and potential) for the Mine Site based on the long-term synthetic records for air temperature, relative humidity, and solar radiation. Evaporation is defined as free water evaporation, or the amount of evaporation from open/free water surfaces (i.e., the water is returned to the atmosphere from lakes, ponds, and watercourses). Potential evapotranspiration (PET) is the water loss that occurs from a vegetated natural surface if there is no deficiency of water in the soil for use by vegetation (Thornthwaite 1948). Actual evapotranspiration (AET) is the water loss that occurs from a vegetated natural surface considering the availability of water in the soil for use by vegetation. Estimated monthly and annual shallow lake evaporation, PET, and AET values are provided in Table 3.1-7, Table 3.1-8 and Table 3.1-9 respectively.

The mean annual shallow lake evaporation rate is estimated to be 673 mm, varying between 606 mm and 762 mm. Mean monthly evaporation rates vary between 0 mm in December to 138 mm in July. The 25th and 75th percentiles indicate that greatest variation in monthly evaporation occurs in July when evaporation is greatest, and lowest variation occurs in January and December when evaporation is lowest.

Table 3.1-7: Estimated Monthly and Annual Shallow Lake Evaporation Statistics for the Mine Site (1974-2001)

Month	Shallow Lake Evaporation (mm)					
	Minimum	Mean	Maximum	25th Percentile	50th Percentile	75th Percentile
January	0	1	4	0	0	1
February	1	7	12	4	7	10
March	24	32	43	29	32	34
April	52	66	79	59	67	72
May	86	105	140	96	102	115
June	95	122	155	110	121	132
July	110	138	173	123	136	153
August	80	115	137	107	113	130
September	37	61	80	54	60	70
October	18	22	28	20	21	23
November	0	4	8	1	4	6
December	0	0	3	0	0	1
Annual	606	673	762	648	670	699

The mean annual PET rate is estimated to be 863 mm, varying between 744 mm and 1022 mm. Mean monthly PET rates vary between 1 mm in December and January to 171 mm in July. The 25th and 75th percentiles indicate that greatest variation in monthly PET occurs in July when PET is greatest, and lowest variation occurs in January and December when PET is lowest.

Table 3.1-8: Estimated Monthly and Annual PET Statistics for the Mine Site (1974-2001)

Month	PET (mm)					
	Minimum	Mean	Maximum	25th Percentile	50th Percentile	75th Percentile
January	0	1	5	0	0	2
February	1	7	11	4	7	10
March	24	41	59	34	42	45
April	68	92	112	83	93	102
May	103	134	178	120	131	149
June	113	150	195	125	155	174
July	124	171	240	151	166	191
August	84	151	199	135	152	174
September	54	89	117	71	89	108

Table 3.1-8: Estimated Monthly and Annual PET Statistics for the Mine Site (1974-2001)

Month	PET (mm)					
	Minimum	Mean	Maximum	25th Percentile	50th Percentile	75th Percentile
October	17	24	40	20	23	26
November	0	4	9	1	4	6
December	0	1	4	0	0	1
Annual	744	863	1022	815	856	925

The mean annual AET rate is estimated to be 399 mm, varying between 319 mm and 449 mm. Mean monthly AET rates vary between 1 mm in December and January to 89 mm in July.
The 25th and 75th percentiles indicate that greatest variation in monthly AET occurs in July when AET is greatest, and lowest variation occurs in January and December when AET is lowest.
On an annual basis, AET at the Mine Site is less than shallow lake evaporation and PET rates because AET is limited by the availability of water, particularly during the summer months when the air temperature is highest.

Table 3.1-9: Estimated Monthly and Annual AET Statistics for the Mine Site (1974-2001)

Month	AET (mm)					
	Minimum	Mean	Maximum	25th Percentile	50th Percentile	75th Percentile
January	0	1	5	0	0	2
February	1	7	11	4	7	9
March	15	18	25	17	18	19
April	16	31	47	26	30	35
May	42	64	84	60	63	68
June	48	80	98	75	80	86
July	61	89	105	83	89	99
August	51	63	78	57	63	69
September	10	23	35	18	22	29
October	11	17	22	16	17	18
November	0	4	9	1	4	6
December	0	1	4	0	0	1
Annual	319	399	449	370	409	419

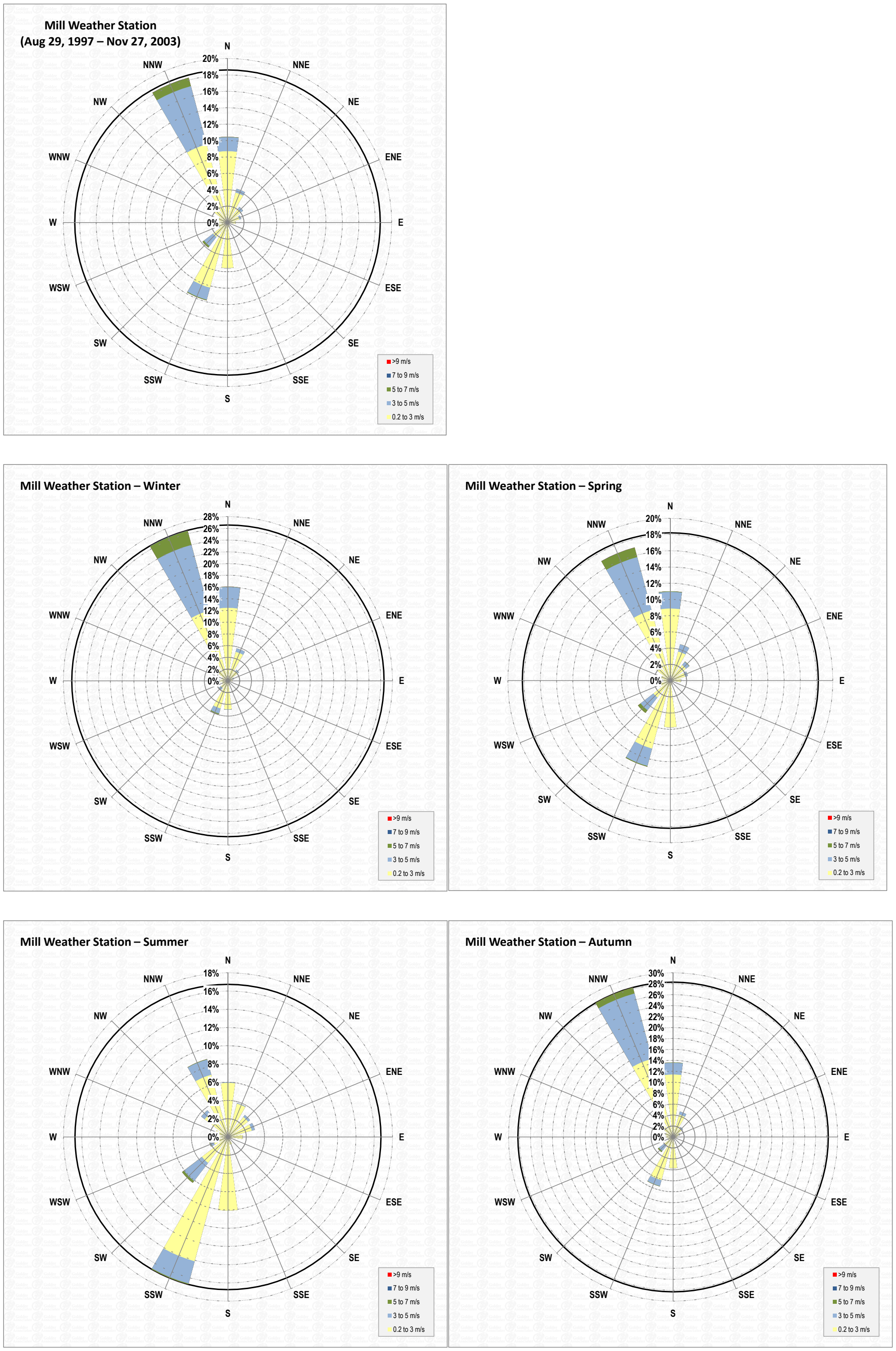
3.1.6 Wind Speed and Direction

Hourly wind speed and direction data are available for the Mine Site from 1997 to 2003, and daily wind speed data are available from 2019 to 2021; however, the data are not continuous. The hourly wind speed and direction data available from 1997 to 2003 were used to develop wind rose plots. A wind rose depicts the relative frequency of wind from a given direction on a 16-point compass. Each ring on the wind rose represents a frequency of 2% of the data period. The length of the shaded bars on each wind rose petal represents the frequency of wind recorded from a given direction within a defined wind speed range. A wind rose is provided for the period of August 1997 to November 2003, and seasonal wind roses are presented to display seasonal variability in wind patterns, where the seasons have been defined as follows:

- Winter – December to February
- Spring – March to May
- Summer – June to August
- Autumn – September to November

Daily wind data recorded from 2019 to 2021 from WS1 and WS2 were wind speed only, no direction. The period of record for WS2 in 2020 are incomplete and are not included in the analysis. The relative frequency (%) of the magnitude of the daily wind speed data recorded at WS1 for 2019 and 2021 were compared to the relative frequency (%) of wind speed magnitude of the data from 1997 to 2003.

A wind rose plot for the Mine Site depicting the relative frequency of mean hourly wind speed and direction, and the seasonal distribution, between 29 August, 1997 and 27 November, 2003 is shown in Figure 3.1-1.



Spring = March, April, May; Summer = June, July, August; Autumn = September, October, November; Winter = December, January, February.

Figure 3.1-1: MPMC Station Monitoring Period and Seasonal Wind Roses – August 29, 1997 to November 27, 2003

Winds measured at the Mine Site typically blew from the north-northwest, north, and south-southwest directions, with minimal winds from the east and the west. The spring, autumn, and winter seasonal wind roses were consistent with the wind rose pattern for the entire monitoring period; however, during the summer months, the majority of winds were from the south-southwest. Similarly, wind speeds in spring, autumn, and winter were generally consistent with the wind rose for the entire monitoring period, while wind speeds in summer were generally lower.

Wind speed measured and seasonal distributions at the Mine Site from 2019 to 2021 were consistent with the relative frequency of wind speed magnitudes and the seasonal distributions recorded between August 29, 1997 and November 27, 2003 (Table 3.1-10). It is noted that the data from 2019 and 2021 are daily wind speed rather than hourly wind speed and only the relative frequency (%) of wind speed magnitude was compared.

Table 3.1-10: Comparison of Relative Frequency of Wind Speed from Mill Weather Station and Weather Station 1 for the Mine Site

Wind Speed (m/s)	Mill Weather Station August 29, 1997 to November 27, 2003[1]	Weather Station 1 January 1, 2019 to December 31, 2021[2]
calm	35%	28%
0.2 to 3 m/s	50%	56%
3 to 5 m/s	14%	13%
5 to 7 m/s	2%	3%
7 to 9 m/s	0%	0%
>9 m/s	0%	0%

1) Recorded as hourly wind speed.
2) Recorded as daily wind speed.
m/s = metres per second

3.1.7 Snow Cover Properties

Snow cover data at the Mine Site are available monthly from manual measurements from 1997 to 2022, recorded as snow-water-equivalent (SWE). Measurements, although not continuous, are typically recorded at the beginning and end of a month, with the latter being representative of the monthly SWE. Snow cover monthly statistics, reported as SWE, are presented in Table 3.1-11. At 50% exceedance, snow begins accumulating in November and achieves its maximum in March, reducing to 0 mm in April. The 5^{th} and 95^{th} percentiles and standard deviation values demonstrate the variability in the amount of SWE at the Mine Site, with March having the greatest variability from year to year.

Table 3.1-11: Snow Water Equivalent for the Mine Site (1997-2021)

Month	Number of Measurements	Mean (mm)	Minimum (mm)	Percentile					Maximum (mm)	Standard Deviation (mm)
				5%	25%	50%	75%	95%		
January	22	147	76	88	120	139	164	327	339	56
February	22	182	99	104	131	193	222	338	344	61
March	22	185	0	6	97	198	257	403	411	108
April	21	33	0	0	0	0	81	177	177	58
November	22	17	0	0	0	9	37	72	72	25
December	22	102	32	50	77	101	122	193	196	44

3.2 Geology

3.2.1 Deposit Geology

This section is not required as part of the permit amendment application per the IRT.

3.2.2 Surficial Geology, Terrain, and Geohazard Mapping

The Mine Site is located near the eastern edge of the Fraser Plateau physiographic subdivision, approximately 10 km west of its boundary with the Quesnel Highland subdivision, as defined by Holland (1976). Within the Mine, the plateau has somewhat stronger relief, with the Mine Site rising approximately 300 m above the surrounding terrain. Topographically, the Mine Site consists of north-south trending ridges of moderate elevation and relief. Local elevations range from 922 masl at Polley Lake to 1,266 masl at the top of Polley Mountain. The area is within the Quesnel Highlands Ecosection as described by Demarchi et al. (1990), and the area has been previously glaciated, which has resulted in the over-deepened Polley and Bootjack lakes. For additional information, the Tailings Storage Facility Site Characterization Report (WSP 2025c) is provided in Appendix 3-3.

3.2.3 Natural and Seismic Hazards Assessment

WSP prepared a report titled “Tailings Storage Facility Site Characterization Report” (WSP 2025c), included in Appendix 3-3, to present the Mine Site characterization for the embankment foundation for the TSF. A site-specific seismic hazard model was developed for the Mine Site based on source models developed for the 6^{th} Generation Canadian National Seismic Hazard Model (Canada SHM6) and a review of geological and paleoseismological features. Both near-field, moderate-magnitude crustal earthquakes and far-field subduction interface earthquakes contribute to the Mine Site seismic hazard. The shallow crustal earthquake sources are dominated by moderate-magnitude earthquakes (M6.0 to M6.5) close to the Mine Site (i.e., less than 60 km away) at annual exceedance probabilities. The contribution to hazard at the Mine Site from Cascadia subduction zone sources is from large earthquakes (M8+) at 450 to 550 km from the Mine Site at annual exceedance probabilities and spectral periods of interest. Additional information regarding seismic hazards can be found in Appendix 3-3.

3.2.4 Soil Survey and Soil Characterization for Reclamation

This section is not required as part of the permit amendment application per the IRT.

3.3 Topography and Surface Drainage Features

The Mine Site is drained by three main watersheds: Hazeltine Creek (30.2 square kilometre [km^2]) at Quesnel Lake, Edney Creek (87.4 km^2) at Quesnel Lake, and the Morehead Lake (62.7 km^2) watersheds (Figure 3.3-1). The Hazeltine Creek watershed also conveys water from Polley Lake, and non-contact water from the east side of the Mine Site and the area surrounding the TSF. The Morehead Creek watershed encompasses the Bootjack Lake catchment area (11.2 km^2). The watershed areas listed here exclude the mine, which covers part of the original watersheds.

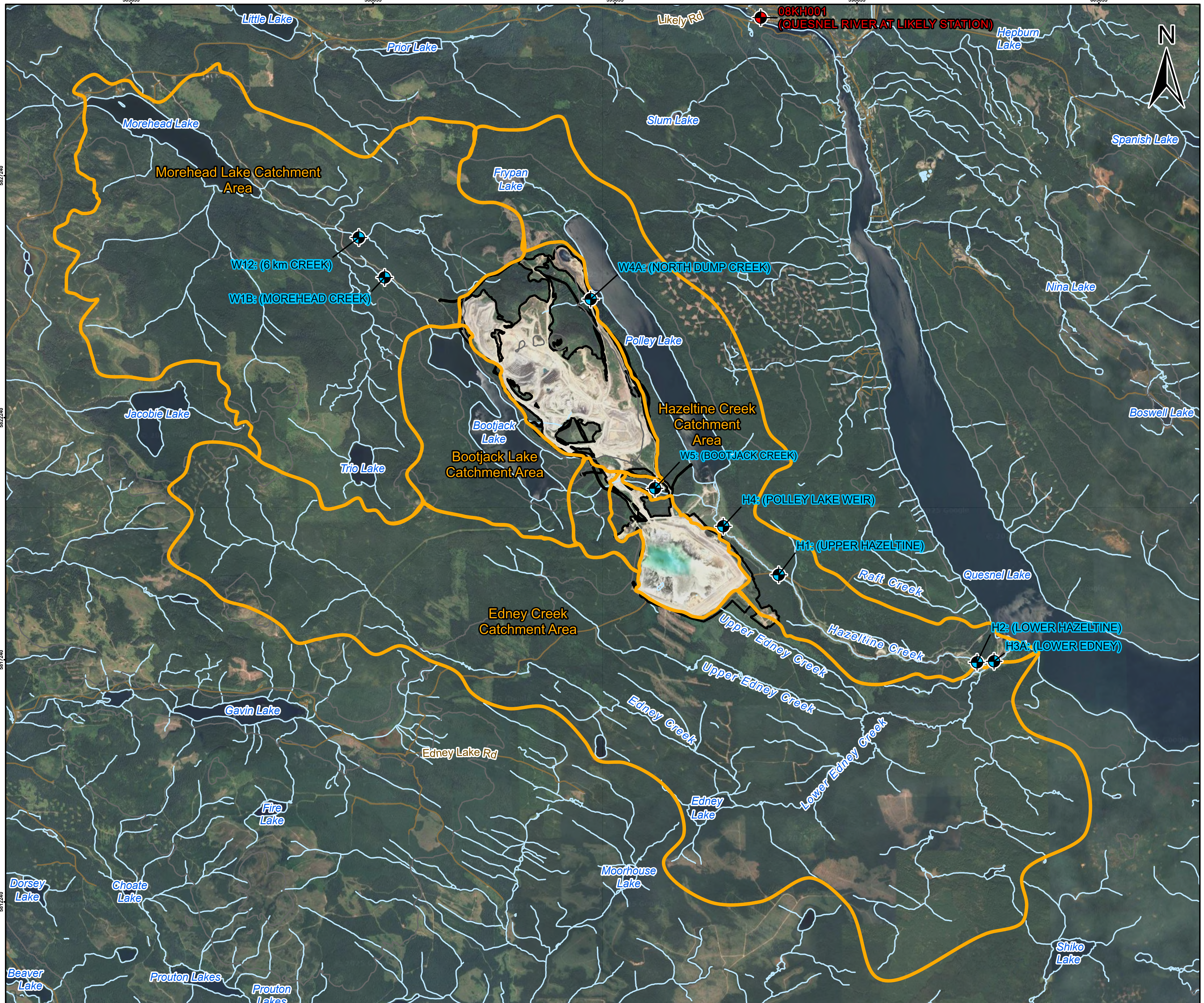
Both the Hazeltine Creek and the Morehead Creek watersheds were significantly altered by historical (i.e., pre-mining) water diversions. Bootjack Creek, a small remnant of which now flows into Polley Lake via a constructed diversion channel, historically conveyed water from Bootjack Lake to Hazeltine Creek. In 1913, flow from Bootjack Lake was reversed by miners (not associated with MPMC) damming the east end of Bootjack Lake and digging a new outlet westward to Morehead Creek. Around the same time, a water control structure was also built at the outlet of Polley Lake (Hazeltine Creek), and Hazeltine Creek water was diverted to Bullion Pit to support hydraulic placer mining. Flow from Polley Lake to Hazeltine Creek was restored with the abandonment of mining at Bullion Pit during World War II. However, the flow from Bootjack Lake to Hazeltine Creek was not restored.

Prior to the TSF breach, Edney Creek and Hazeltine Creek converged just prior to discharging into Quesnel Lake. The mouths of the two creeks were separated following the breach. Interim remediation works were initiated to enable two-way fish passage into Edney Creek as it provides habitat for Interior Fraser Coho. As of late summer, 2020, Edney Creek and Hazeltine Creek have been reconnected, with in-stream habitat features installed, as part of the conclusion of habitat construction works in the lower Hazeltine Creek and Edney Creek area.

MPMC has maintained a hydrological monitoring station on upper Hazeltine Creek (station H1) that was originally installed by the Water Survey of Canada (08KH027) in 1994. A second gauge (H2) was installed in July 2015 on the lower half of Hazeltine Creek. In general, the hydrology of Hazeltine Creek (and by extension, the Mine Site), can be described as snowmelt driven, with the majority of annual runoff occurring during the spring snowmelt in April and May (Knight Piesold Ltd. 2014).

The surface water drainage features located on the Mine Site are provided in Figure 3.3-2. A description of the current drainage system is provided in Section 4.3.1 of the 2025 Water Management Plan (WMP, Appendix 10-5). Topography of the TSF 987 m raise is provided in the “Tailings Storage Facility Site Characterization Report” (WSP 2025c), included in Appendix 3-3.

Figure 3.3-3 provides the proposed surface water management infrastructure for the TSF raise to 987 m.



N

LEGEND

MPMC HYDROMETRIC STATION

ENVIRONMENT CANADA HYDROMETRIC STATIONS

WATER CATCHMENT AREA

EXISTING MINE FOOTPRINT

BASE DATA

CONTOUR (100m)

MAJOR ROAD

ROAD - LOCAL

WATERCOURSE

WATERBODY

0 1.5 3

1:80,000 KILOMETRES

REFERENCES

1. MINE FOOTPRINT AND PROJECT DATA PROVIDED BY CLIENT, FEBRUARY 2025 AND SEPTEMBER, 2025.
2. IMAGE OBTAINED FROM GOOGLE EARTH © 2025 GOOGLE INC. USED WITH PERMISSION. GOOGLE AND GOOGLE LOGO ARE REGISTERED TRADEMARKS OF GOOGLE INC. IMAGERY DATE: JUNE, 06, 2025.
3. BASE DATA CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – BRITISH COLUMBIA.

COORDINATE SYSTEM: NAD 1983 UTM ZONE 10N

CLIENT

MOUNT POLLEY MINING CORPORATION

PROJECT

PERMIT AMENDMENT APPLICATION
TAILINGS STORAGE FACILITY RAISE TO 987m

TITLE

MAJOR DRAINAGES AND FLOW MONITORING STATIONS

CONSULTANT

YYYY-MM-DD	2025-11-19
DESIGNED	KB
PREPARED	CD | JG
REVIEWED	GD
APPROVED	JM

PROJECT NO.	PHASE	REV.	FIGURE
CA0047730.8440	81100A.81116	0	3.3-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25mm

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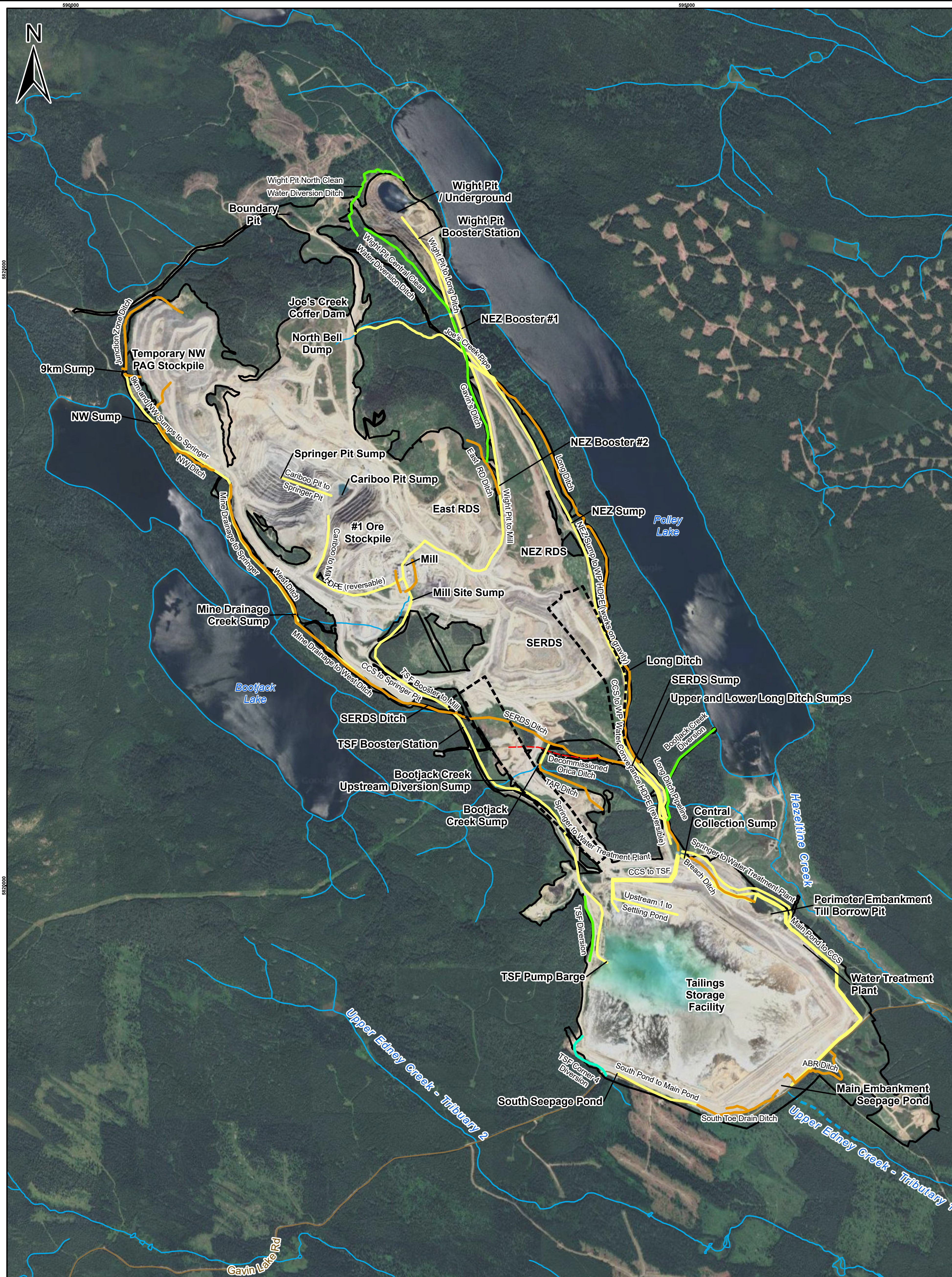

LEGEND

ROAD EXTENT

WATER COLLECTION SYTEMS

- CLEAN WATER DITCH
- CLEAN WATER PIPELINE
- CONTACT WATER DITCH
- DECOMMISSIONED CONTACT WATER DITCH
- CONTACT WATER PIPELINE

BASE DATA

- ROAD - LOCAL
- CHANNELIZED WATERCOURSE
- UNDEFINED SECTION OF WATERCOURSE
- WATERBODY

0 0.75 1.5

1:30,000 KILOMETRES

REFERENCE(S)

1. MINE FOOTPRINT AND PROJECT DATA PROVIDED BY CLIENT, FEBRUARY 2025 AND SEPTEMBER, 2025.
2. WATER MANAGEMENT INFRASTRUCTURE INFORMATION PROVIDED BY MOUNT POLLEY MINING CORPORATION (2025).
3. IMAGE OBTAINED FROM GOOGLE EARTH © 2025 GOOGLE INC. USED WITH PERMISSION. GOOGLE AND GOOGLE LOGO ARE REGISTERED TRADEMARKS OF GOOGLE INC. IMAGERY DATE: JUNE, 06, 2025.
4. BASE DATA CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – BRITISH COLUMBIA. COORDINATE SYSTEM: NAD 1983 UTM ZONE 10N

CLIENT
MOUNT POLLEY MINING CORPORATION

PROJECT
PERMIT AMENDMENT APPLICATION
TAILINGS STORAGE FACILITY RAISE TO 987m

TITLE
WATER MANAGEMENT PLAN

CONSULTANT

YYYY-MM-DD	2025-10-24
DESIGNED	SC
PREPARED	CD | JG
REVIEWED	JDM
APPROVED	JDM

PROJECT NO.	CONTROL	REV.	FIGURE
CA0047730.8440	81100A.81116	0	3.3-2

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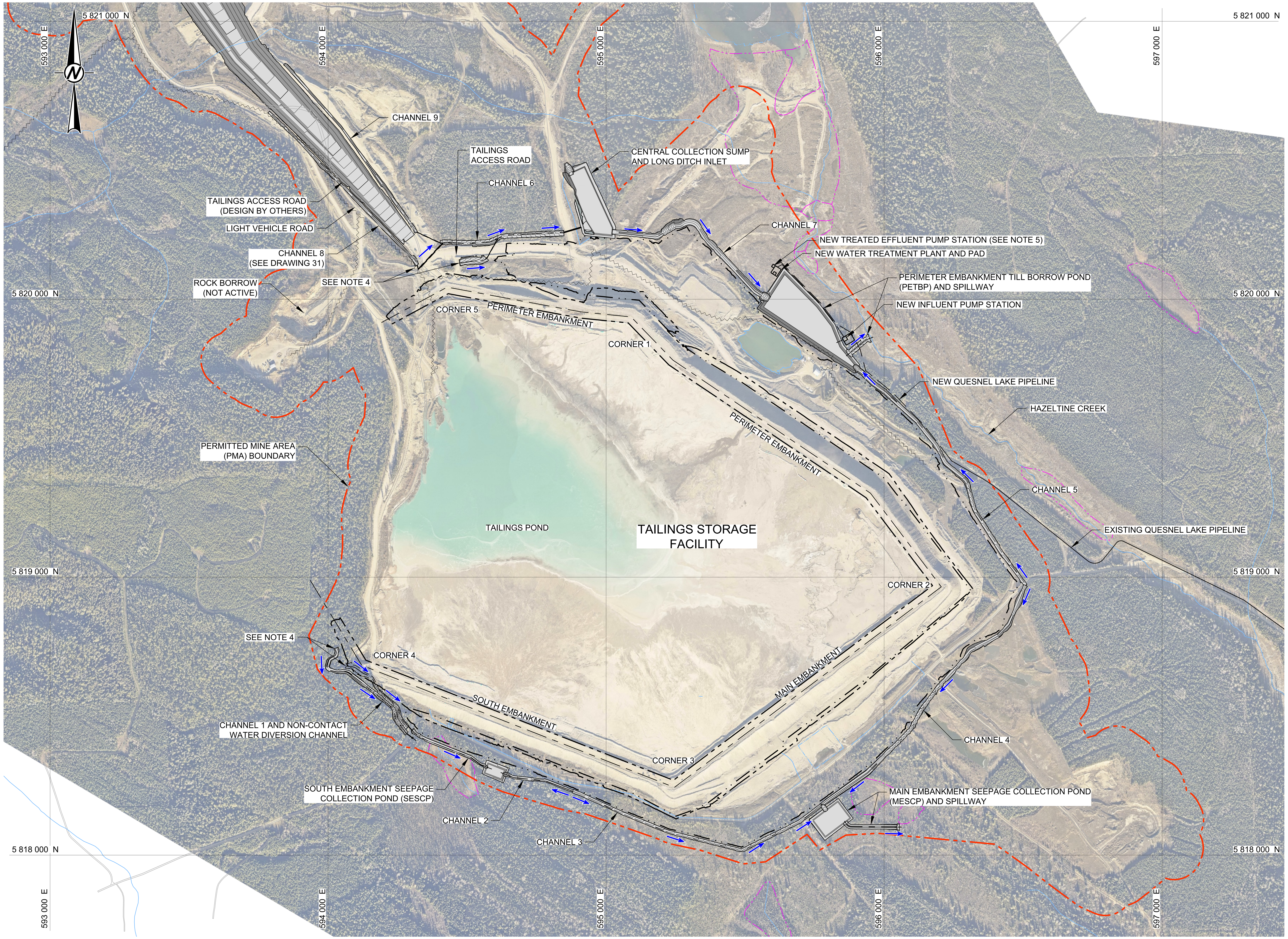


LEGEND

4+400	TAILINGS STORAGE FACILITY (TSF) EMBANKMENT CENTRELINE
	WATER MANAGEMENT CHANNEL FLOW DIRECTION
	WATER MANAGEMENT INFRASTRUCTURE DESIGN CONTOURS
	EL. 987 m TSF EMBANKMENT DOWNSTREAM TOE LIMIT
	EL. 987 m TSF BUTTRESS DOWNSTREAM TOE LIMIT
	SITE ACCESS ROADS (SEE REFERENCE 2)
	WATERCOURSE (SEE REFERENCE 3)
	PERMITTED MINE AREA (PMA) BOUNDARY (SEE REFERENCE 4)
	EXISTING POWER LINE - SEE NOTE 3 (SEE REFERENCE 5)
	HIGH PHREATIC SURFACE AREA

NOTES

1. ALL UNITS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES AND ELEVATIONS ARE SHOWN IN TAILINGS GRID.
3. EXISTING POWER LINES TO BE RELOCATED PRIOR TO CONSTRUCTION.
4. THE INLET LOCATION TO BE FIELD FIT BY QA MANAGER.
5. NEW TREATED EFFLUENT PUMP STATION REQUIREMENT PENDING HYDRAULIC ASSESSMENT COMPLETE BY OTHERS.

REFERENCES

1. 2023 AERIAL PHOTO PROVIDED BY MPMC, FLOWN: 30 OCTOBER 2023, RECEIVED: 29 FEBRUARY 2024, FILE NAME: "231030-Lidar Ortho Reduced.jpg".
2. SITE FEATURES PROVIDED BY MPMC, RECEIVED: 05 SEPTEMBER 2014, FILE NAME: "MtPolley2013-Pln.dwg".
3. BASE DATA CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE - BRITISH COLUMBIA.
4. PMA BOUNDARY PROVIDED BY MPMC, RECEIVED: 27 AUGUST 2025, FILE NAME: "2025 M-200 Boundary Proposed Expansion.dxf".
5. POWER LINES PROVIDED BY MPMC, RECEIVED: 12 OCTOBER 2021, FILE NAME: "211012 SERD Site Plan.dxf".

ISSUED FOR

PERMITTING

0 250 500
1:7,500 METRES

CLIENT
MOUNT POLLEY MINING CORPORATION

CONSULTANT

YYYY-MM-DD	2025-11-18
DESIGNED	M. DALTON
PREPARED	J. HOPSON
REVIEWED	D. MULLEN
APPROVED	D. KIDD

PROJECT
PERMIT AMENDMENT APPLICATION
TAILINGS STORAGE FACILITY RAISE TO 987 m

TITLE
WATER MANAGEMENT INFRASTRUCTURE PLAN VIEW

PROJECT NO.	PHASE/TASK	REV.	FIGURE
CA0047730.8440	81100A/81116	0	3.3-3

25 mm
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

Path: \\corp.pbwan.net\CA\CAVAN400\CAD-GIS\Client\Imperial_Metals_Corp\Mount_Polley_Mine\99_PROJECTS\CA0047730_8440\81100A\81116\02_PRODUCTION\DWG\ | File Name: CA0047730_8440-81100-81116-3.3-3.dwg | Last Edited By: gld_jhopson Date: 2025-11-18 Time:4:00:52 PM | Printed By: gld_jhopson Date: 2025-11-18 Time:4:15:54 PM

3.4 Water Quantity

Existing groundwater and surface water conditions (quality and quantity) are summarized in the Annual Environmental Report required by existing M-200 permit conditions, which also includes the Annual Groundwater Monitoring Report, provided in Appendix 3-8.

3.4.1 Surface Water Quantity

The surface water quantity and hydrological information for Mine Site is provided in Section 3.2.2 of the 987 m raise 2025 WMP (Appendix 10-5). The 987 m raise 2025 WMP summarizes the Mine Site drainage and surface hydrology for the three main watersheds: Hazeltine Creek at Quesnel Lake, the Edney Creek at Quesnel Lake, and Morehead Lake watershed. The Site Wide Water Balance Model (SWWBM) Update and Calibration technical memorandum is also included in Appendix 3-4.

Baseline hydrology for the Mine Site is presented in MPMC's Annual Reclamation Report (ARR). For the 2023 report (Appendix 3-5 of this application), hydrology is discussed in Section 4.8 and in Appendix L of the 2023 ARR.

3.4.2 Groundwater Quantity

The groundwater monitoring program as part of the Comprehensive Environmental Management Plan (CEMP) is described in the 2024 Annual Groundwater Monitoring Report (Appendix 3-8). Groundwater conditions for the TSF and surrounding area, from the start of monitoring (1995) to the end of 2024, are described in this report (Section 6.1.4 in Appendix 3-8).

In addition, geotechnical/hydrogeological investigations, including the installation of several new groundwater monitoring wells, have been completed on the east and north-east side of the TSF to support the construction of water management ponds. The results of this investigation will provide additional information on existing groundwater conditions on the east and northeast side of the TSF. This information will support assessments of groundwater that likely recharges Hazeltine Creek and Edney Creek respectively.

Numerical hydrogeological modelling was conducted to estimate seepage from the TSF that is captured by the seepage collection system, and to estimate uncaptured seepage that migrates to the groundwater environment (discussed in Section 6.5.2). A description of the modelling approach and the predicted seepage results are described in the Mine Site WMP (Section 3.2.4 in Appendix 10-5).

Of relevance to the present application, because of the drains that will be constructed at the to drain the incremental portions of the dam, the proposed amendment is expected to have negligible effect on the seepage volumes.

3.5 Water Quality

3.5.1 Surface Water Quality

Changes to contact surface water conditions (runoff and collected seepage) will be predicted by the SWWBM/SWWQM and presented in the Water Management Plan.

3.5.1.1 Selection of Water Quality Guidelines

BC Water Quality Guidelines (BC WQGs) have been developed by BC Ministry of Water, Land and Resource Stewardship (BC WLRS, formerly BC ENV) to be protective of various water uses, such as aquatic life, wildlife, drinking water sources, recreational contact, and agriculture (livestock watering and irrigation). Based on the uses identified for Quesnel Lake in Section 1.3.3, guidelines protective of aquatic life, wildlife, drinking water sources, and recreational contact are applicable to these receiving environments. Water quality was screened against applicable BC WQGs for the protection of aquatic life, wildlife, and drinking water. In the absence of wildlife guidelines for a parameter, livestock watering guidelines were selected for screening purposes. Where neither wildlife nor livestock guidelines were available, irrigation guidelines were applied for comparison.

Recreational guidelines were excluded as they are generally less conservative than the selected guidelines. BC WQGs for the protection of aquatic life were generally more conservative than those for wildlife and drinking water guidelines. An exception was noted for molybdenum, for which the BC WQG for the protection of wildlife is the most conservative guideline. Water quality screening against long-term chronic guidelines for aquatic life and wildlife is presented for reference only; long-term chronic guidelines apply to the average value of five measurements taken within 30 days. BC WQGs used for screening purposes are presented in Table 3.5-1 and Appendix 3-6.

Table 3.5-1: BC WQGs for Receiving Environment Uses

Parameter	Unit	Drinking BC WQG	Short-Term Acute BC WQG		Long-Term Chronic BC WQG	
			Aquatic Life	Wildlife	Aquatic Life	Wildlife
General Water Quality Parameters						
pH	-	6.5 – 8.5	6.5 – 9	-	6.5 – 9	5 – 9.5[a,b]
Temperature	°C	15[c]	-	-	-	-
Dissolved Oxygen	mg/L	-	5[d]	-	8[d]	-
Turbidity	NTU	1	-	-	-	-
Colour	TCU	15[c]	-	-	-	-

Table 3.5-1: BC WQGs for Receiving Environment Uses

Parameter	Unit	Drinking BC WQG	Short-Term Acute BC WQG		Long-Term Chronic BC WQG	
			Aquatic Life	Wildlife	Aquatic Life	Wildlife
Total Alkalinity	mg/L	-	-	-	20(e)	-
Major Ions						
Calcium	mg/L	-	-	-	-	1000(b,f)
Chloride	mg/L	250(c)	600	600	150	-
Fluoride	mg/L	1.5	0.99 - 1.2(g)	1.5	-	1
Sulphate	mg/L	500(c)	-	-	218(h)	1000
Nutrients						
Total Ammonia	mg-N/L	-	0.85 – 27(i)	-	0.15 – 2.1(i)	-
Nitrate	mg-N/L	10	32.8	100	3	-
Nitrite	mg-N/L	1	0.060(j)	10	0.020(j)	-
Total Phosphorus	mg-P/L	0.01(c)	-	-	0.005 – 0.015(k)	-
Total Metals						
Aluminum	mg/L	9.5	-	5	0.050 – 0.80(l)	-
Antimony	mg/L	0.006	0.25	-	0.074	-
Arsenic	mg/L	0.01	-	-	0.0050	0.025
Barium	mg/L	-	-	-	1	-
Beryllium	mg/L	-	-	-	0.00013	0.1(a,b,f)
Boron	mg/L	5	-	-	1.2	5
Cadmium	mg/L	0.005	-	0.08(b,f)	-	-
Chromium	mg/L	0.05	-	-	0.0025(m)	0.05(b,f,m)
Cobalt	mg/L	0.001	-	-	-	1(b,f)
Copper	mg/L	1 / 2(n)	-	0.3	-	-
Iron	mg/L	0.3(c)	1	-	-	-
Lead	mg/L	0.005	-	0.1	-	-
Manganese	mg/L	0.02 / 0.12(o)	1.0 – 1.4(p)	-	0.79 – 0.93(p)	-
Mercury	mg/L	0.01	-	0.003(b)	0.00001(q)	-

Table 3.5-1: BC WQGs for Receiving Environment Uses

Parameter	Unit	Drinking BC WQG	Short-Term Acute BC WQG		Long-Term Chronic BC WQG	
			Aquatic Life	Wildlife	Aquatic Life	Wildlife
Molybdenum	mg/L	0.088	46	-	7.6	0.034 / 0.284[r]
Nickel	mg/L	0.08	-	-	-	1[b,f]
Selenium	mg/L	0.01	-	-	0.002	0.002
Silver	mg/L	-	-	-	0.00012	-
Thallium	mg/L	-	-	-	0.00003	-
Uranium	mg/L	0.02	0.017	-	0.0075	0.20[b,f]
Vanadium	mg/L	-	-	-	0.060	0.10[a,b,f]
Zinc	mg/L	3	-	-	-	2[b]
Dissolved Metals						
Cadmium	mg/L	-	0.00025 – 0.00043[s]	-	0.00011 – 0.00017[s]	-
Cobalt	mg/L	-	-	-	0.00039 – 0.00045[t]	-
Copper	mg/L	-	0.0007 – 0.0359[u]	-	0.0002 – 0.0059[u]	-
Iron	mg/L	-	0.35	-	-	-
Lead	mg/L	-	-	-	0.0015 – 0.0068[v]	-
Nickel	mg/L	-	0.0249 – 0.0812[w]	-	0.0011 – 0.0098[w]	-
Strontium	mg/L	-	-	-	1.3	-
Zinc	mg/L	-	0.021 – 0.046[x]	-	0.0033 – 0.026[x]	-

Sources:

BC ENV. 2020. B.C. Source Drinking Water Quality Guidelines: Guideline Summary. Water Quality Guideline Series, WQG-01. Prov. B.C., Victoria B.C. [Accessed 28 July 2025]

BC WLRS. 2025a. BC Approved Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture - Guideline Summary. Water Quality Guideline Series, WQG-20. Prov. B.C., Victoria B.C. [Accessed 28 July 2025]

BC WLRS. 2025b. Working Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture. Water Quality Guideline Series, WQG-08-01. Prov. B.C., Victoria B.C. [Accessed 28 July 2025]

Notes:

BC WQGs = BC Water Quality Guidelines; mg/L = milligrams per litre; - = no guideline; °C = degrees Celsius;
NTU = nephelometric turbidity units; TCU = true colour units; mg-N/L = milligrams nitrogen per litre; mg-P/L = milligrams phosphorus per litre.

In cases where toxicity-modifying factors (e.g., dissolved organic carbon [DOC], chloride, hardness) were below detection limits, 0.5 times the detection limit was used to calculate the sample specific guideline.

Toxicity modifying factor-dependent guidelines were calculated based on the individual toxicity-modifying factor of each sample, if unavailable the monthly average or average value for the toxicity-modifying factor was used.

(a) The guideline value is for irrigation. The BC WQGs recommend levels of waterborne chemicals and pathogens for irrigating crops, which may be consumed.

(b) The guideline value is for livestock. The guideline is designed to ensure safe drinking water for livestock.

(c) The guideline is based on an aesthetic objective rather than a health-based objective.

(d) Guideline for dissolved oxygen is the water column instantaneous minimum value for embryo / alevin life stages. The water column 30-day mean for embryo / alevin life stages is 8 mg/L. The guideline is a minimum value.

(e) The total alkalinity guideline is a minimum value.

(f) The guideline is a working guideline.

(g) The fluoride guideline is hardness dependent. The guideline is calculated based on the individual hardness value for each sample. If no hardness value was available, a monthly average was used for guideline calculation.

(h) The sulphate guideline is hardness dependent.

(i) The ammonia guideline is pH and temperature dependent.

(j) The nitrite guideline is chloride dependent.

(k) The total phosphorus guideline is a range (0.005 to 0.015 mg/L inclusive), with the objective of protecting salmonid productivity. The guideline is applied only to lakes with salmonids as the predominant fish species.

(l) The total aluminum guideline is hardness, pH, and DOC dependent.

(m) The guideline is for chromium VI.

(n) The total copper drinking water screening criteria has an aesthetic objective (1.0 mg/L) and a maximum acceptable concentration for short and long-term exposure (2.0 mg/L).

(o) The total manganese drinking water screening criteria has an aesthetic objective (0.02 mg/L) and a maximum acceptable concentration (0.12 mg/L).

(p) The total manganese guideline is hardness dependent.

(q) Mercury long-term chronic BC WQG (mg/L) = 0.0001/(MeHg/THg), where MeHg is mass (or concentration) of methyl mercury and THg is total mass (or concentration) of mercury in a given water volume; assumed = 0.00001 at 1% MeHg.

(r) The molybdenum guideline for wildlife is specific to wildlife physiology, ruminant (0.034 mg/L) and non-ruminant (0.284 mg/L) wildlife.

(s) The dissolved cadmium guideline is hardness dependent.

(t) The dissolved cobalt guideline is hardness dependent.

(u) The dissolved copper guideline is hardness, pH, and DOC dependent. Sample specific guidelines were calculated using the BC Biotic Ligand Model based on the individual hardness, pH, and DOC concentrations in each sample

(v) The dissolved lead guideline is hardness and DOC dependent.

(w) The dissolved nickel guideline is hardness, pH, DOC, and temperature dependent. Sample specific guidelines were calculated using the BC Biotic Ligand Model.

(x) The dissolved zinc guideline is hardness, pH, and DOC dependent.

3.5.1.2 Quesnel Lake

Water quality data collected routinely by MPMC from 2015 to 2025 (through until 17 September 2025) in Quesnel Lake are summarized here to characterize water quality at the point of discharge in Quesnel Lake and compare the water quality to reference locations.

For clarity, the present permit amendment application is for a raise to 987 m of the TSF. There are no amendments being sought to permit PE-11678.

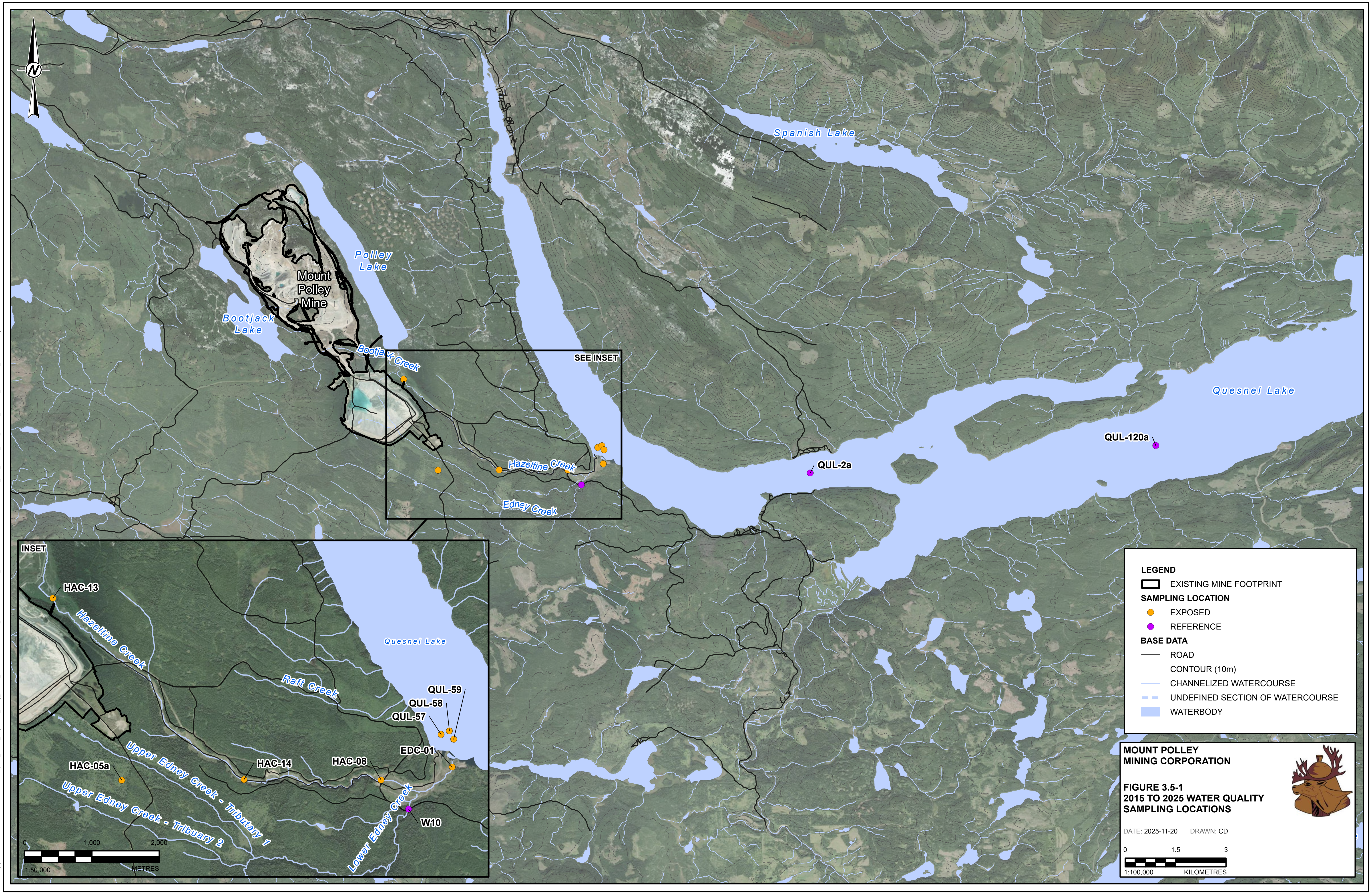
Surface water quality sampling is conducted at a minimum four times per year at the following exposure locations (Figure 3.5-1):

- Stations QUL-57, QUL-58, and QUL-59, which are at the edge of the Initial Dilution Zone (IDZ) 100 m from the point of discharge. Per the CEMP, the objective of this sampling is to “verify that the discharge of treated effluent is not causing an exceedance of the applicable ambient BC WQGs at the edge of the IDZ, as required by the Permit, and to verify the discharge model, as described in the Annual Discharge Plan (ADP; MPMC 2018)”.

Reference samples are collected from the following stations:

- **QUL-2a –** (four times per year) in the West Basin upstream of the mouth of Hazeltine Creek, to monitor for potential eastward flow of effluent due to seiche (wind-driven) events. Per the CEMP, QUL-2a is monitored for the purpose of model verification and is considered a Quesnel Lake reference site.
- **QUL-120a –** (twice per year) east of Cariboo Island in the main portion of the West Arm of Quesnel Lake. Per the CEMP, QUL-120a is monitored for the purpose of model verification and is considered a Quesnel Lake reference site.

Background concentrations were not readily available during model derivation as only one year (2015) of relevant water quality data for Quesnel Lake sites was available at that time, and sites nearest the discharge were potentially affected by the 2014 tailings breach. Considerable effort was made to source pre-breach background data on Quesnel Lake water quality; however, relevant data could not be located (McMahen 2015). Therefore, background conditions were defined based on the most distant upgradient site available, QUL-120a. MPMC continues to collect sample data from both QUL-120a and QUL-2a to fulfill reference requirements and regulatory expectations. Between 2015 and September 2025, sampling events for these locations occurred as required by the applicable Discharge Plan (2018), or CEMP, as summarized in the Annual Environmental Reports. Further details on the monitoring program are provided in Section 9.0.



N
Spanish Lake
Polley Lake
Mount Polley Mine
Bootjack Lake
Bootjack Creek
SEE INSET
Quesnel Lake
QUL-120a
QUL-2a
Hazeltine Creek
Edney Creek
INSET
HAC-13
Hazeltine Creek
Raft Creek
Quesnel Lake
QUL-59
QUL-58
QUL-57
EDC-01
HAC-08
HAC-14
HAC-05a
Upper Edney Creek - Tributary 1
Upper Edney Creek - Tributary 2
Lower Edney Creek
W10
0
1,000
2,000
1:50,000
METRES
LEGEND
EXISTING MINE FOOTPRINT
SAMPLING LOCATION
EXPOSED
REFERENCE
BASE DATA
ROAD
CONTOUR (10m)
CHANNELIZED WATERCOURSE
UNDEFINED SECTION OF WATERCOURSE
WATERBODY
MOUNT POLLEY MINING CORPORATION
FIGURE 3.5-1
2015 TO 2025 WATER QUALITY SAMPLING LOCATIONS
DATE: 2025-11-20
DRAWN: CD
0
1.5
3
1:100,000
KILOMETRES

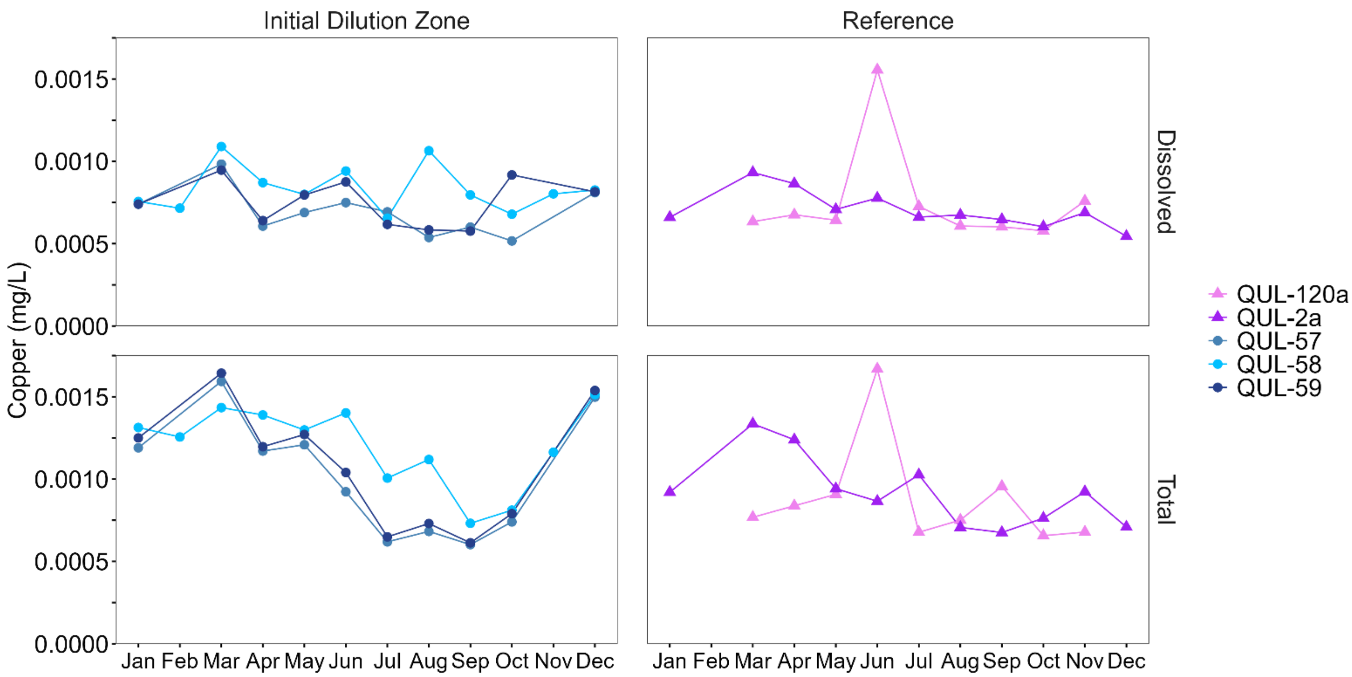
The water quality screening for 2015 to 2025 is provided in Appendix 3-6. Parameters which had concentrations outside of the range of BC WQGs for both reference and exposure stations are:

- Field temperature (aesthetic guideline)
- Field turbidity
- Total phosphorous
- Total aluminum
- Dissolved copper
- Dissolved zinc

The field temperature, total phosphorous, total aluminum, dissolved copper, and dissolver zinc appear to exceed guidelines at similar frequencies at the reference sites and the IDZ. In the IDZ, field pH, field dissolved oxygen, and total mercury were outside of chronic BC WQGs, however these are for single samples. One total iron sample at the IDZ exceeded the aesthetic BC WQG for drinking water. The remainder of measured parameters were consistently below their respective BC WQGs. Copper and selenium have been identified as site-specific contaminants of potential concern and are discussed further in this section. Copper is highlighted due to its frequent exceedances of the BC WQGs at the IDZ. Selenium is also examined in more detail; however, no exceedances were observed at the IDZ.

Water quality samples collected on June 2, 2025 (reference) and June 5, 2025 (IDZ) showed anomalously high copper concentrations; elevated concentrations compared to both historical data and subsequent sampling events. Some samples (i.e., three reference samples and one IDZ sample) exhibited a dissolved copper concentration greater than total, indicating a potential data quality issue. Notably these samples had a relative percent difference (RPD) between total and dissolved concentrations greater than 20%. The anomalously high values and data quality issues suggest these samples may not accurately reflect the water quality and are included in the analysis below for reference only.

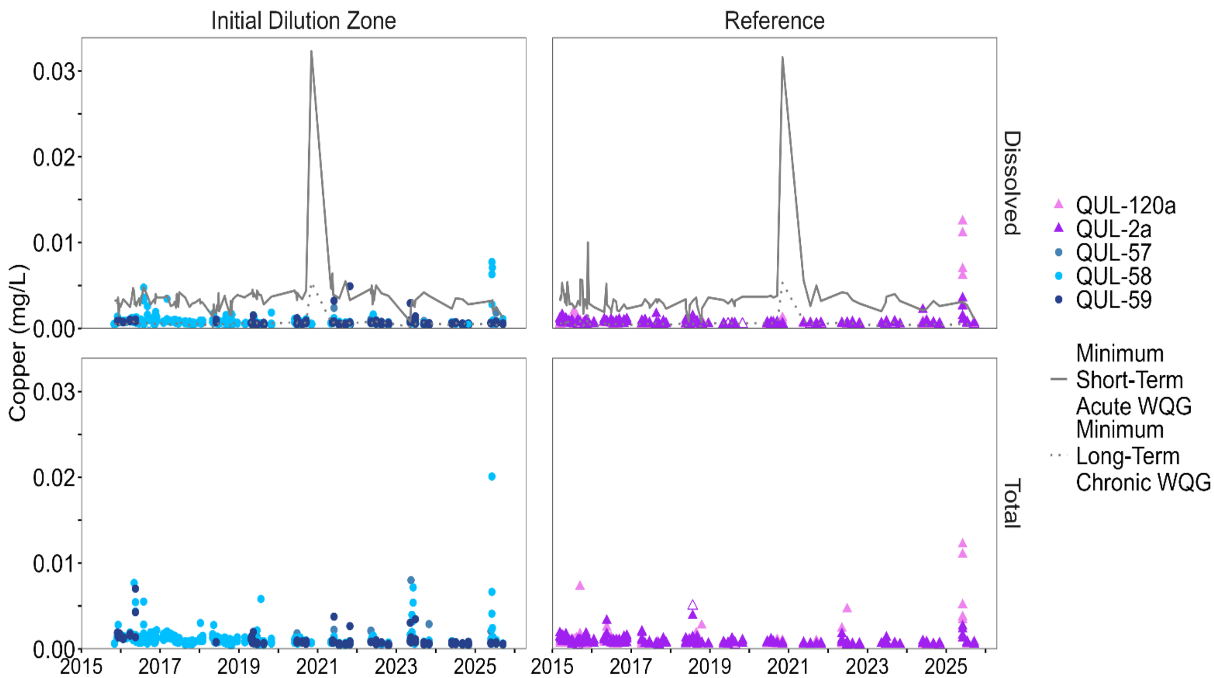
The monthly average concentrations from 2015 to September 2025 for total and dissolved copper were plotted for the reference (QUL-2a and QUL-120a) and IDZ (QUL-57, QUL-58, and QUL-59) stations in Quesnel Lake (Figure 3.5-2). The copper concentrations at both reference and IDZ stations fluctuate throughout the year, with the highest average concentrations in early spring or late fall. Monthly average copper concentrations in samples collected at reference stations are generally within the same range of the monthly average copper concentrations for samples collected at the IDZ. The June average of 0.00156mg/L dissolved copper observed at reference station QUL-120a in Figure 3.5-2 was influenced by anomalous samples collected on June 2, 2025. The dissolved copper concentrations in the samples exceed the total copper concentration in three of five samples taken at QUL-120a on June 2, 2025, with an RPD between the two fractions surpassing the 30% data quality objective (DQO) in samples. The monthly average for June at QUL-120a excluding the samples collected on June 2, 2025, is 0.000598 mg/L in comparison to 0.00156 mg/L.



Notes: mg/L = milligrams per litre.

Figure 3.5-2: Monthly Average Copper Concentration from 2015 to September 2025 at Stations Representing the IDZ (QUL 57, QUL 58, QUL 59) and the Reference Stations in Quesnel Lake (QUL 2a and QUL 120a)

The dissolved copper concentrations measured at IDZ stations (QUL-57, QUL-58, QUL-59) and the reference stations (QUL-2a, QUL-120a) in Quesnel Lake from 2015 to present were screened against chronic and acute BC WQGs (Figure 3.5-3, Appendix 3-6). Dissolved copper concentrations at the IDZ and reference stations were consistently above sample specific chronic (47% of sample concentrations) BC WQGs for the protection of aquatic life and sporadically above acute BC WQGs (1.4% of sample concentrations). The majority of dissolved copper exceedances were observed in the spring, coinciding with the onset of freshet. Total copper concentrations remained below BC drinking water screening criteria and acute BC WQGs for wildlife.

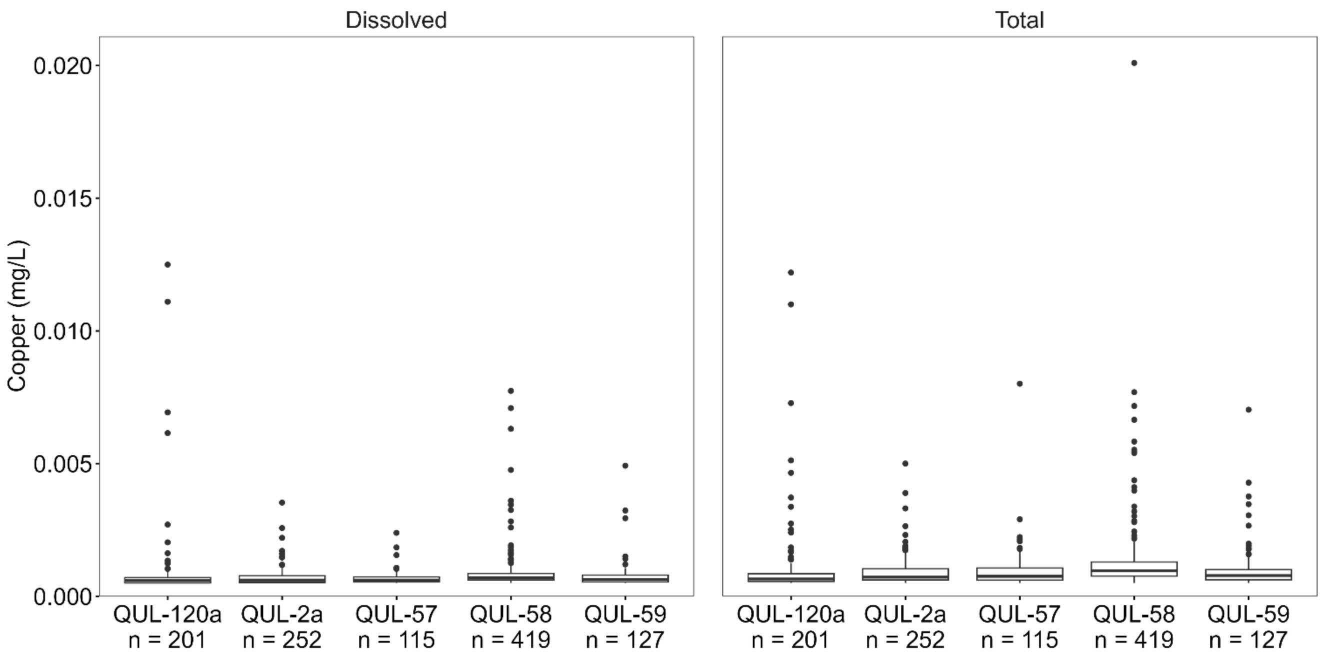


Notes: The copper BC WQGs plotted are the BC WLRS WQGs for the protection of aquatic life are sample-specific and determined using hardness, pH, and DOC in the BC Biotic Ligand Model. The minimum guidelines are plotted; points appearing above the line may not represent guideline exceedances. Samples collected on June 5, 2025 at IDZ stations (QUL-57, QUL-58, QUL-59) and June 2, 2025 at the Reference Stations in Quesnel Lake (QUL-2a, QUL-120a) exhibited unusually high dissolved copper concentrations, which in some cases was greater than total copper concentrations and above the 30% RPD DQO, suggesting these results are unreliable, and are included for reference only.

mg/L = milligrams per litre; BC WQG = BC water quality guideline.

Figure 3.5-3: Copper Concentration from 2015 to September 2025 at Stations Representing the IDZ (QUL-57, QUL-58, QUL-59) and the Reference Stations in Quesnel Lake (QUL-2a, QUL-120a) compared to BC WQGs

Boxplots were also generated with total and dissolved copper concentrations from samples collected from 2015 to September 2025 at reference and IDZ stations (Figure 3.5-4). The boxplots display summary statistics for a large dataset and illustrate water quality parameter variability between monitoring locations (i.e., the larger the box, the larger the interquartile range and increased variability within the dataset). The boxes for the reference stations (QUL-2a, QUL-120a) overlap with the boxes for the IDZ stations (QUL-57, QUL-58, QUL-59) suggesting copper concentrations in Quesnel Lake at the edge of the IDZ are similar to the furthest reference station. The greatest number of outliers (n = 24) were observed for dissolved copper at QUL-58. Outliers were considered based on the Tukey rule (Tukey 1977): values that are greater than 1.5 times the interquartile range above the third quantile (75^{th} percentile).



Note: Boxes enclose the interquartile range (Q1 to Q3) of the data, the horizontal line within the box indicates the median value, the vertical lines extent to 1.5 times the interquartile range above and below the box, and the points show data that is outside of this range.

mg/L = milligrams per litre; n = number of samples.

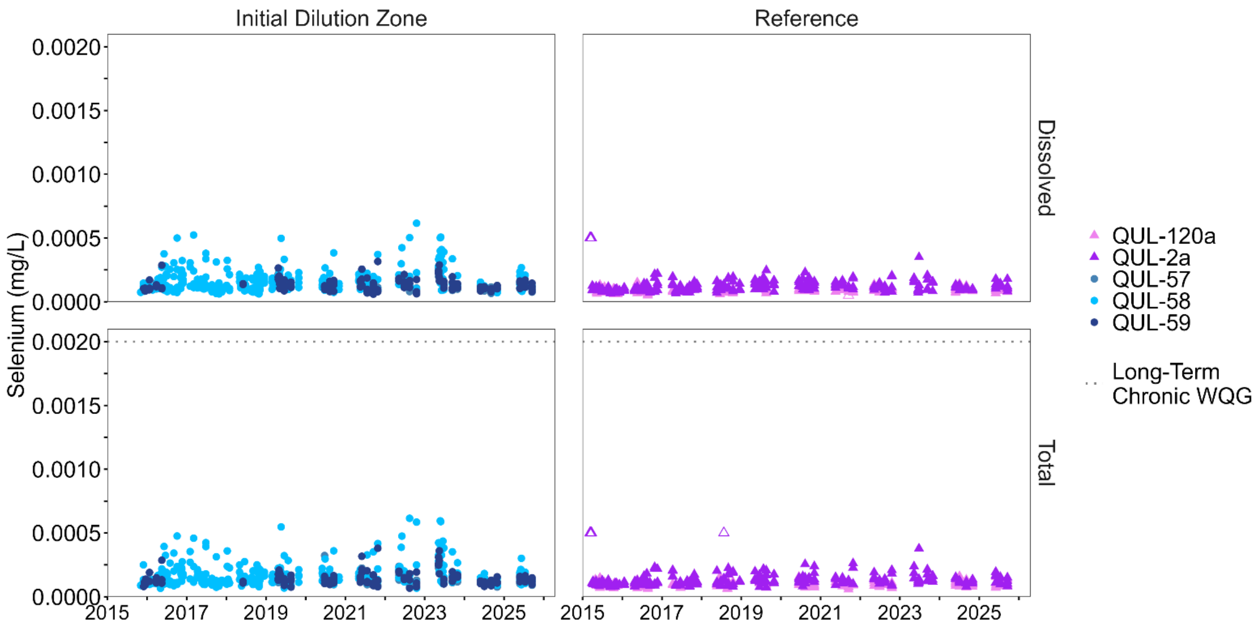
Figure 3.5-4: Boxplot of Copper Concentrations from 2015 to September 2025 Representing the IDZ (QUL-57, QUL-58, QUL-59) and the Reference Stations in Quesnel Lake (QUL-2a and QUL-120a)

Total and dissolved selenium concentrations were similarly plotted as a monthly average time series (Figure 3.5-5), a historical time series (Figure 3.5-6), and boxplots (Figure 3.5-7). Monthly average selenium concentrations were similar from month to month at both the edge of the IDZ and reference stations (Figure 3.5-5). The samples collected from reference stations in March 2015 (2015 was the only year from 2015 to 2025 when water quality monitoring was conducted in March at QUL-2a and QUL-120a) had a detection limit of 0.0005 mg/L, which is above the detected concentrations in samples collected in other months. Total selenium concentrations remain below the BC WQGs for the protection of aquatic life at both the IDZ and Quesnel Lake reference stations (Figure 3.5-6). The boxes for the reference stations (QUL-2a, QUL-120a) overlap with the boxes for the IDZ stations (QUL-57, QUL-58, QUL-59) suggesting selenium concentrations in Quesnel Lake at the edge of the IDZ are similar to the reference stations (Figure 3.5-7).

Notes: The value at reference sites in March was represented by one sampling event in which the detection limit was 0.0005 mg/L (i.e., the illustrated value is the detection limit).

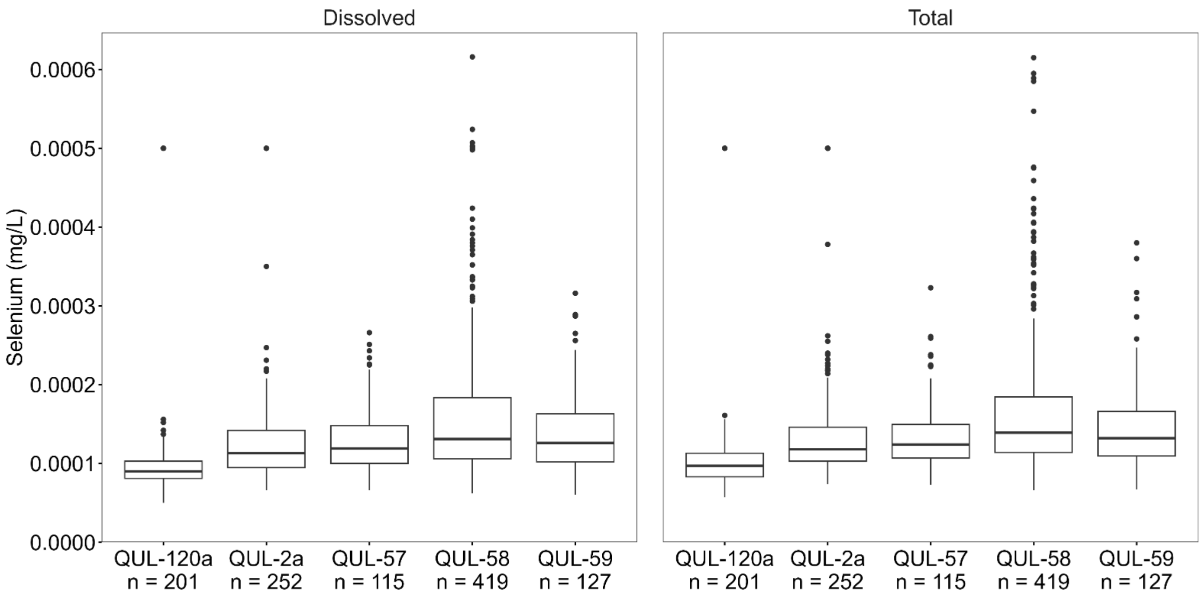
mg/L = milligrams per litre.

Figure 3.5-5: Monthly Average Selenium Concentration from 2015 to September 2025 at Stations Representing the IDZ (QUL-57, QUL-58, QUL-59) and the Reference Stations in Quesnel Lake (QUL-2a and QUL-120a)



Notes: mg/L = milligrams per litre; BC WQG = BC water quality guidelines.

Figure 3.5-6: Selenium Concentration from 2015 to September 2025 at Stations Representing the IDZ (QUL-57, QUL-58, QUL-59) and the Reference Stations in Quesnel Lake (QUL-2a, QUL-120a) compared to BC WQGs



Notes: Boxes enclose the interquartile range (Q1 to Q3) of the data, the horizontal line within the box indicates the median value, the vertical lines extent to 1.5 times the interquartile range above and below the box, and the points show data that is outside of this range.

mg/L = milligrams per litre; n = number of samples.

Figure 3.5-7: Boxplot of Selenium Concentrations from 2015 to September 2025 Representing the IDZ (QUL 57, QUL 58, QUL 59) and the Reference Stations in Quesnel Lake

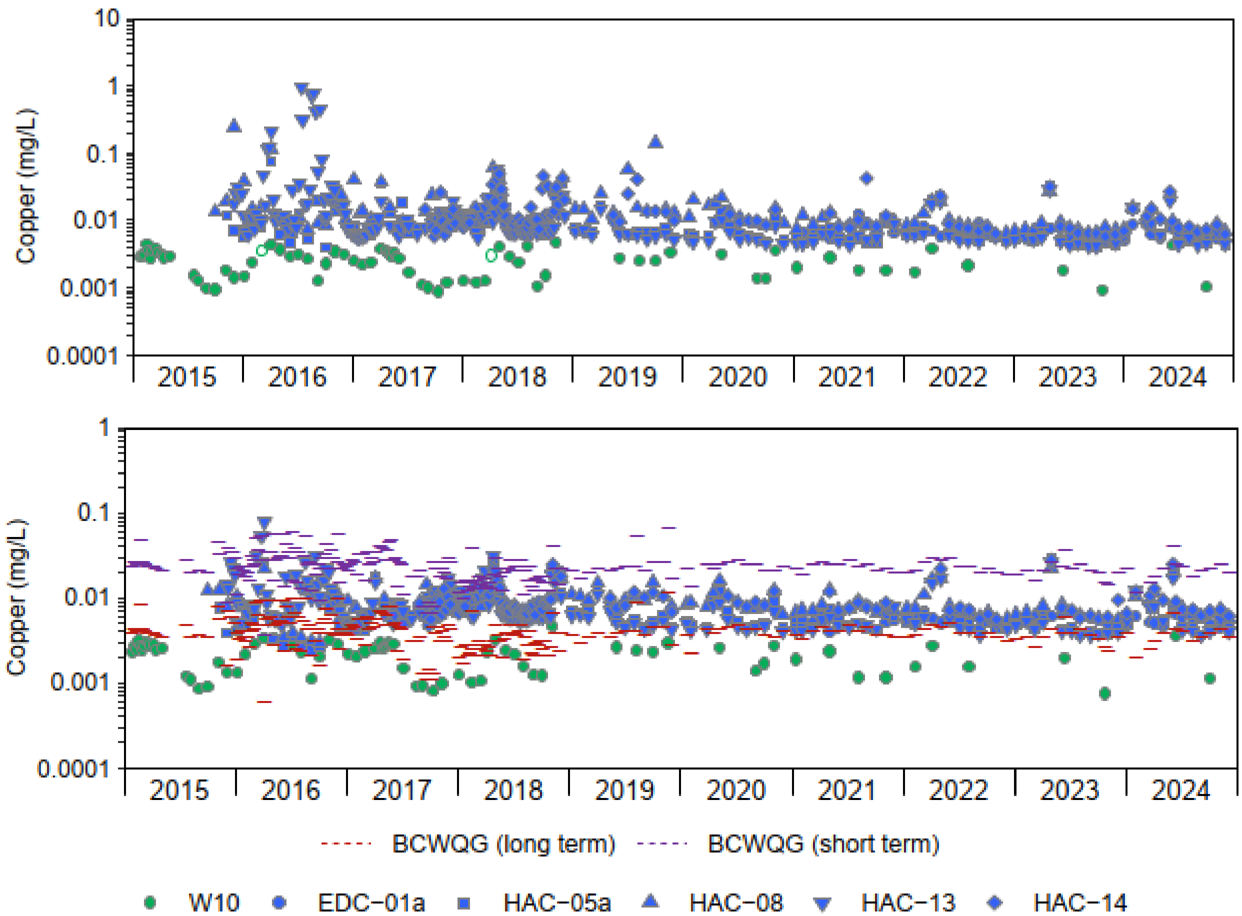
3.5.1.3 Hazeltine Creek

Water quality data collected routinely by MPMC from 2015 to 2024 are summarized here and were originally presented in the 2024 MPMC CEMP – Sediment and Aquatic Life report (Appendix 3-7). The overview of Hazeltine Creek water quality is based on the data contained in that report, which cover the period through to 2024. For clarity, the proposed permit amendment to raise the dam to 987 m does not involve the addition of effluent to Hazeltine Creek; however, Hazeltine Creek is monitored, and those results are presented here because of general interest by First Nations and stakeholders.

For effluent characterization, the following routinely-monitored mine-influenced stations within Hazeltine Creek are reported on (HAC-13, HAC-05a, and HAC-14 [Upper Hazeltine Creek], and HAC-08 [Lower Hazeltine Creek]) and compared to an associated reference area (lower Edney Creek at station W10). In addition to this reference station, lower Edney Creek is also sampled at EDC-01a, which is before Quesnel Lake and is considered mine-influenced. Stream water quality sample collection and analysis methods are described in Section 4.6.1 to 4.6.3 of the 2024 MPMC CEMP (Appendix 3-7).

The water quality results for Hazeltine Creek stations HAC-05a, HAC-08, HAC-13, HAC-14, and EDC-01a, and the reference location in Edney Creek (W10) from 2015 to 2024 were screened against BC WQGs (Appendix 3-6). Copper and selenium are discussed here as their concentrations in Hazeltine Creek were frequently greater than the BC WQGs.

Total and dissolved copper concentrations from 2015 to 2024 in Hazeltine Creek were consistently above concentrations in the associated reference location, Edney Creek (W10; Figure 3.5-8). Total copper concentrations were greatest at HAC-13 in 2016 with maximum total copper concentrations of approximately 1 mg/L, MPMC hypothesized that the elevated concentrations were likely related to spring runoff flows that conveyed higher total suspended solids loads and associated copper to the WTP and discharge was ceased until copper concentrations met the effluent quality defined by the permit (see Table 6.1-1, April 2016 and the Trigger Response Plan [MPMC 2018]). Concentrations of dissolved copper were generally above the long-term chronic BC WQG and below the short-term acute BC WQG. Copper concentrations were relatively consistent from 2019 to 2024, with some seasonal fluctuations associated with freshet.



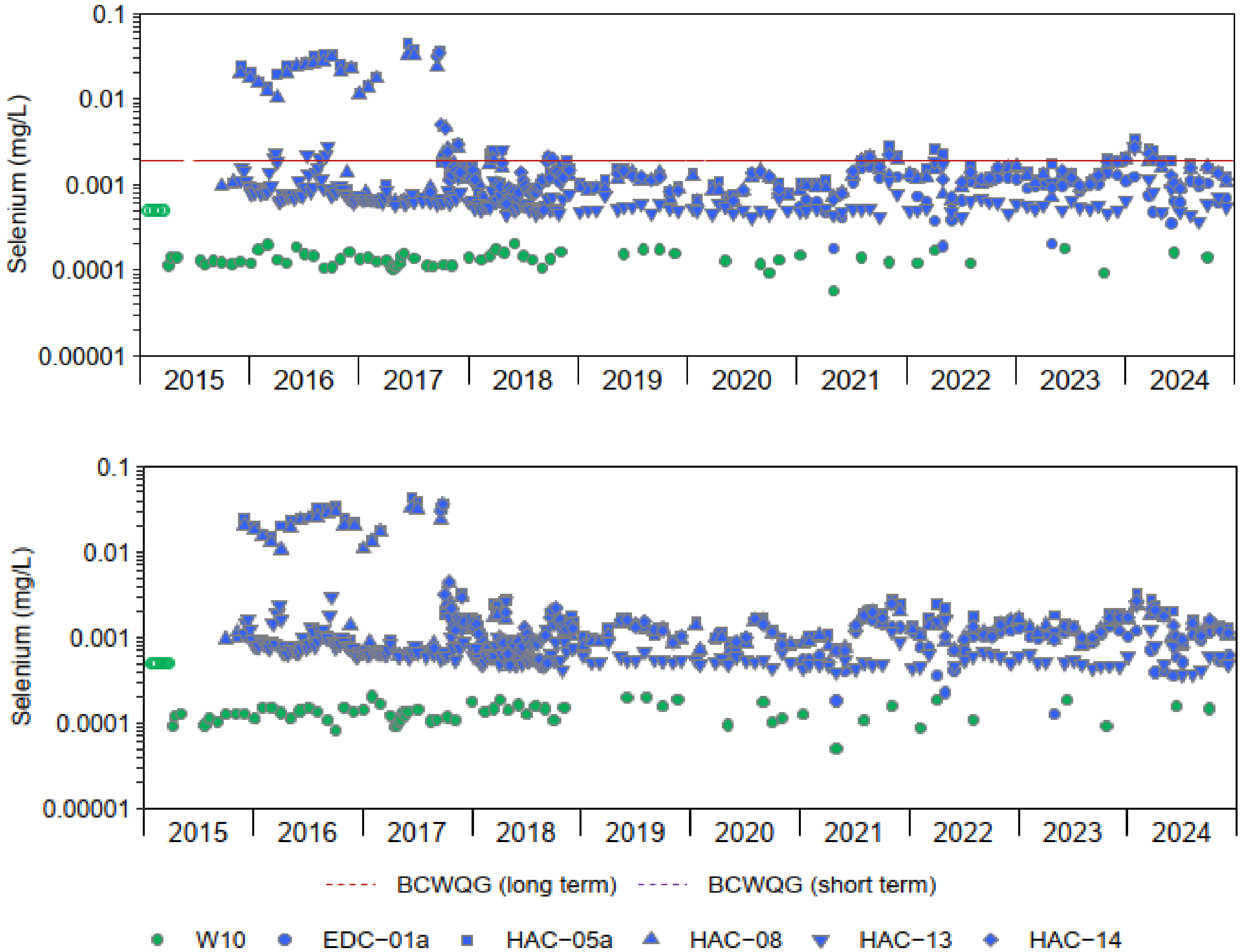
Source: Minnow Environmental Inc. (2025)

Notes: mg/L = milligrams per litre, BC WQG = BC Water Quality Guideline. Green represents reference stations and blue represents exposed stations. Concentrations reported the detection limit are open symbols at the detection limit. Values displayed for the BC WQG are condition specific (based on hardness, pH, and DOC calculated with Biotic Ligand Model). Monitoring station EDC-01 was relocated in Q4 2020 and renamed as EDC-01a for a new monitoring station. Plots exclude data from EDC-01 in 2015 to 2020.

Figure 3.5-8: Total (top) and Dissolved (bottom) Copper Concentrations in Surface Water Samples from Hazeltine Creek (HAC-13, HAC-05a, HAC-14, HAC-08) and Edney Creek (EDC-01a, W10) from 2015 to 2024

Total and dissolved selenium concentrations from 2015 to 2024 in Hazeltine Creek were consistently higher than selenium concentrations in the associated reference location, Edney Creek (W10) and generally lower than the long-term chronic BC WQG (Figure 3.5-9) Exceptions occurred at HAC-05a and HAC-08 in 2016 and 2017. Recent years have shown some seasonal exceedances of the selenium BC WQG, likely associated with freshet conditions.

Permit PE-11678, issued on September 2, 2025 contains a requirement to provide the Director of BC ENV with a report on Selenium Sources. As of the submission date of this application, that report is in preparation.



Source: Minnow Environmental Inc. (2025)

Notes: mg/L = milligrams per litre, BC WQG = BC Water Quality Guideline. Green represents Edney Creek stations and blue represents Hazeltine Creek stations. Concentrations reported the detection limit are open symbols at the detection limit. Total selenium BC WQG is 0.002 mg/L. Monitoring station EDC-01 was relocated in Q4 2020 and renamed as EDC-01a for a new monitoring station. Plots exclude data from EDC-01 in 2015 to 2020.

Figure 3.5-9: Total (top) and Dissolved (bottom) Selenium Concentrations in Surface Water Samples from Hazeltine Creek (HAC-13, HAC-05a, HAC-14, HAC-08) and Edney Creek (EDC-01a, W10) from 2015 to 2024

3.5.2 Groundwater Quality

The groundwater quality monitoring program as part of the CEMP is described in the 2024 Annual Groundwater Monitoring Report (Appendix 3-8). Groundwater quality results for the TSF and surrounding area, from the start of monitoring (1995) to the end of 2024, are described in this report (Section 6.2.3 in Appendix 3-8).

In addition, geotechnical/hydrogeological investigations, including the installation of several new groundwater monitoring wells, have been completed on the east and north-east side of the TSF to support the construction of water management ponds. The results of this geotechnical investigation and targeted groundwater sampling will provide additional information on existing groundwater conditions on the east and northeast side of the TSF. This information will provide additional data on the potential effects of seepage in the northeast and east of the TSF into areas that potentially recharge downgradient sections of Hazeltine Creek and Edney Creek, respectively.

3.6 Sediment Quality

This section is not required as part of the permit amendment application per the IRT.

3.7 Fisheries and Aquatic Resources

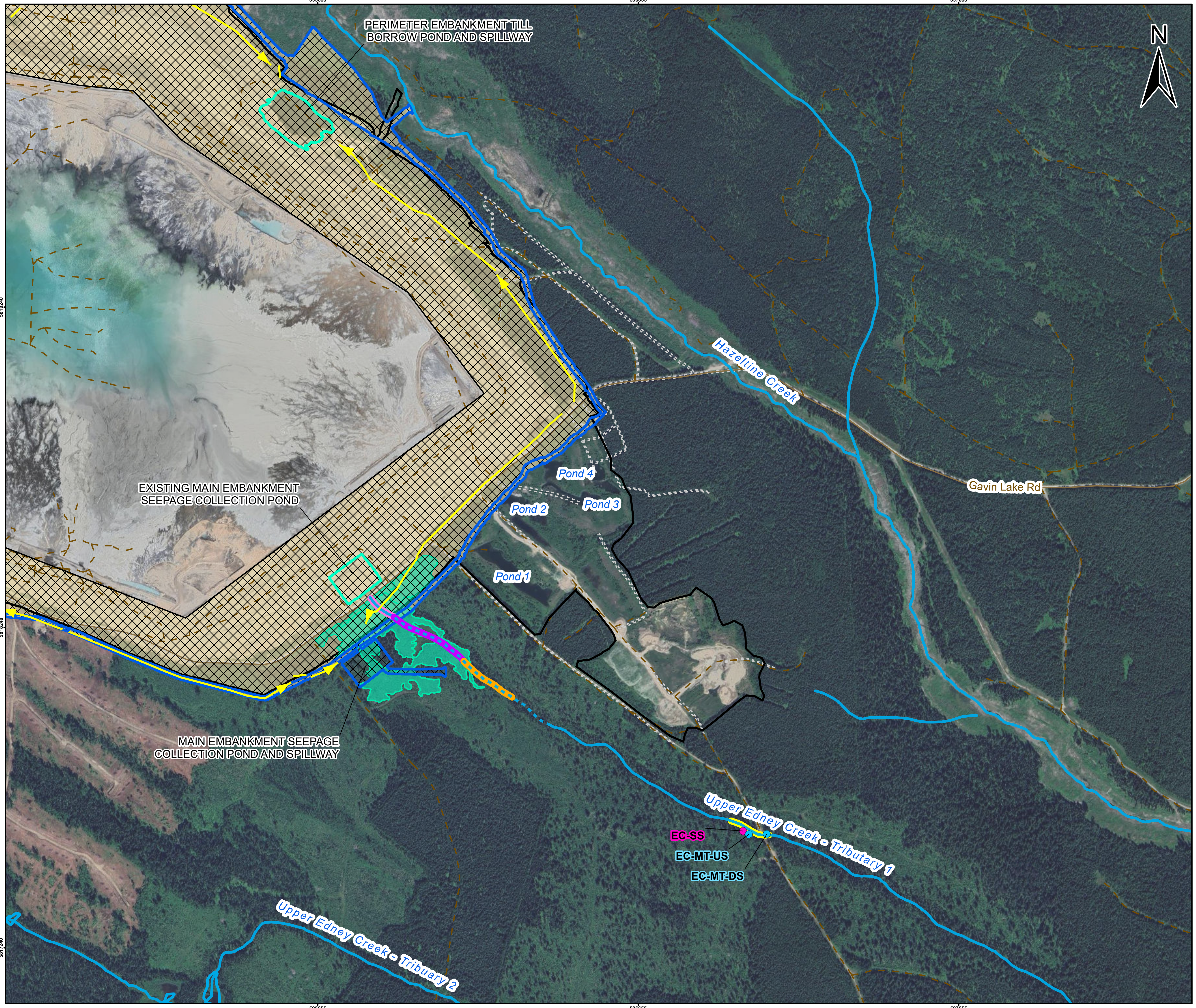
3.7.1 Periphyton and Benthic Invertebrate Community Measures

This section is not required as part of the permit amendment application per the IRT.

3.7.2 Fish and Fish Habitat

An aquatic effects assessment was conducted to characterize the fish and fish habitat within the area proposed to be impacted by the TSF raise to 987 m and associated water management infrastructure shown in Figure 3.7.1. The aquatic effects assessment report, provided in Appendix 3.9, concluded that although the headwater area of Upper Edney Creek – Tributary 1 will be covered by the buttress of the TSF, there is no defined channel present for fish. Additionally, if the area south of the TSF does get seasonally inundated it is unlikely fish would be present at that location given the lack of defined channel. The habitat quality in the area immediately south of the proposed TSF expansion is limited to potential rearing during high water and of low quality.

As described in Section 8.1, adverse effects to fish habitat are not considered significant and can be effectively managed and mitigated through Best Management Practices and the development of a specific Construction Environment Management Plan. Additionally, MPMC has submitted an RfR to DFO requesting a review of MPMC's assessment that the proposed TSF raise to 987 m will not cause a harmful alteration, disruption, or destruction of fish habitat in Upper Edney Creek.



LEGEND

- EDNA SAMPLING STATION
- MINNOW TRAPPING STATION
- FIELD-CONFIRMED WETLAND (2024)

FIELD VERIFIED SECTIONS

- SECTION 1
- SECTION 2
- SECTION 3
- SECTION 4

PROJECT COMPONENT

- POND
- SITE ACCESS ROAD
- FISH AND FISH HABITAT PROJECT AREA
- PROPOSED RAISED TSF EMBANKMENT AND WATER MANAGMENT INFRASTRUCTURE
- EXISTING MINE FOOTPRINT

WATER MANAGEMENT DESIGN

- WATER MANAGEMENT CHANNEL FLOW DIRECTION
- WATER MANAGEMENT INFRASTRUCTURE DESIGN

BASE DATA

- ROAD - LOCAL
- ROAD - RESOURCE / RECREATION / UNCLASSIFIED
- CHANNELIZED WATERCOURSE
- UNDEFINED SECTION OF WATERCOURSE

0 250 500
1:12,000 METRES

REFERENCES

1. MINE FOOTPRINT AND PROJECT DATA PROVIDED BY CLIENT, FEBRUARY 2025 AND SEPTEMBER, 2025.
2. PORTIONS OF WETLANDS WITHIN THE PROJECT FOOTPRINT VERIFIED DURING FIELDWORK BY WSP, JUNE, 2024 AND DESKTOP STUDY SEPTEMBER, 2025.
3. IMAGE OBTAINED FROM GOOGLE EARTH © 2025 GOOGLE INC. USED WITH PERMISSION. GOOGLE AND GOOGLE LOGO ARE REGISTERED TRADEMARKS OF GOOGLE INC. IMAGERY DATE: JUNE, 06, 2025.
4. BASE DATA CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – BRITISH COLUMBIA.

COORDINATE SYSTEM: NAD 1983 UTM ZONE 10N

CLIENT
MOUNT POLLEY MINING CORPORATION

PROJECT
PERMIT AMENDMENT APPLICATION
TAILINGS STORAGE FACILITY RAISE TO 987m

TITLE
ENVIRONMENTAL FEATURES

CONSULTANT
wsp

YYYY-MM-DD	2025-11-06
DESIGNED	KB
PREPARED	CD | JG
REVIEWED	TS
APPROVED	DK

PROJECT NO.	PHASE	REV.	FIGURE
CA0047730.8440	81100A.81116	0	3.7-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm

3.7.3 Tissue Residues

This section is not required as part of the permit amendment application per the IRT.

3.8 Ecosystems and Wildlife

The baseline conditions for ecosystems and wildlife were assessed where the TSF raise to 987 m and corresponding buttress extension will impact previously undisturbed areas, as shown on Figure 5.3-1. Refer to Appendix 3-10 for a description of baseline conditions and Section 8.2 for an assessment of the effects of the proposed TSF raise to 987 m on the terrestrial environment.

3.8.1 Plants and Ecosystems

Between the 2023 and 2024 field surveys, a total of 111 plant species were recorded, including: western redcedar (*Thuja plicata*), white spruce (*Picea glauca*), Douglas-fir (*Pseudotsuga menziesii*), black cottonwood (*Populus trichocarpa*), Sitka willow (*Salix sitchensis*), devil's club (*Oplopanax horridus*), oak fern (*Gymnocarpium dryopteris*), bunchberry (*Cornus canadensis*), stream violet (*Viola glabella*) and common horsetail (*Equisetum* spp.).

No invasive plant occurrences are recorded in the InvasivesBC provincial invasive plant mapping tool within 1 km of the TSF raise to 987 m area (the Project Area) (Government of BC 2025a). However, during the 2023 Field Surveys, one exotic plant species was observed during the 2024 field surveys in the Project Area.

In 2024, twenty-one wetlands were mapped within the Project Area, with fourteen sites visited for field verification. Of these, eleven wetlands are directly affected by the project footprint, covering 6.6 ha of field-verified wetland habitat and 8.6 ha of desktop-mapped wetland and wetland-wet forest mosaic. Further details on the extent and types of wetlands identified can be found in Table 3.8-1.

Table 3.8-1: Extents of Wetlands within the Project Area

Wetland Polygon Type	Description	Area (ha)	Area (%)
Field-Verified Wetland	Wetlands mapped during the 2024 Field Program, including field delineated boundaries within the Project Footprint and desktop-delineated boundaries within the Terrestrial Study Area (TSA). Desktop-delineated boundaries may not be as shown.	6.6	18.4

Table 3.8-1: Extents of Wetlands within the Project Area

Wetland Polygon Type	Description	Area (ha)	Area (%)
Desktop Mapped Wetland	Wetlands mapped during the desktop assessment for the TSF raise to 987 m. These wetlands have not been field-verified, and the boundaries may not be as shown.	0.2	0.4
Desktop Mapped Wetland – Wet Forest Mosaic	Representing areas where depth to groundwater varies based on microtopography, creating a matrix of wetland and non-wetland site associations with similar species composition but different soil moisture regime. These areas were mapped during the desktop assessment for the TSF raise to 987 m, using existing field data. The proportion of wetland/non-wetland areas has not been estimated.	8.4	23.4
	Total	**15.2**	**42.3**

3.8.1.1 Plants and Ecosystem at Risk

The BC Conservation Data Centre (BC CDC) query found 14 provincially listed (red- or blue-listed) ecological communities with the potential to occur regionally; eight wetland community types and six upland community types (BC CDC 2025). None of the provincially listed ecological communities were recorded during field programs in the Project Area. One vascular, one non-vascular, and eight lichen species have the potential to occur regionally with provincial red- or blue-listed designation (BC CDC 2025). No incidental observations of plant (species at risk) SAR were recorded during field programs in the Project Area; however, targeted plant SAR surveys have not been conducted for the Project.

3.8.2 Wildlife

Four amphibian species, western toad (*Anaxyrus boreas*), Columbia spotted frog (*Rana luteiventris),* wood frog (*Rana sylvatica*), and long-toed salamander (*Ambystoma macrodactylum*), have ranges that overlap the TSA. Documented occurrences of western toad, Columbia spotted frog, and long-toed salamander exist in Polley Flats, north of the PETBP (Government of BC 2025c). Although no amphibians have been confirmed in the SESCP or MESCP, both ponds, along with two nearby wetlands, south of the embankments, may offer suitable breeding habitats, further supporting the potential presence of amphibians within the

TSA. Although reptile species ranges [e.g., painted turtle - Intermountain – Rocky Mountain Population (*Chrysemys picta* pop. 2), western terrestrial garter snake (*Thamnophis elegans*), and common garter snake (*Thamnophis sirtalis*)] overlap with the TSA, none have been documented in the area.

Mature and forested areas in the southwestern part of the TSA provide important nesting and foraging habitats for various birds, including raptors such as bald eagle (Haliaeetus leucocephalus) and red-tailed hawk (*Buteo jamaicensis*). These forests also support woodpeckers such as the pileated woodpecker (*Dryocopus pileatus*), whose protected nest cavities benefit other migratory birds (Government of Canada 2022). Grouse species such as ruffed grouse (*Bonasa umbellus*) and dusky grouse (*Dendragapus obscurus*) are common in a variety of forest types (Hallam Knight Piésold Ltd. 1996), while waterfowl and shorebirds such as greater yellowlegs (*Tringa melanoleuca*), spotted sandpiper (*Actitis macularius*), and killdeer (*Charadrius vociferus*) utilize both anthropogenic and natural wetlands for foraging and resting, and upland areas nearby support ground-nesting birds.

The TSA supports a diverse community of mammals, including small species like deer mouse (*Peromyscus maniculatus*), northern red backed vole (*Myodes rutilus*), and meadow vole (*Microtus pennsylvanicus*), as well as meso-carnivores such as least weasel (*Mustela nivalis*) and coyote (*Canis latrans*), which benefit from the forested habitat and abundant food sources. Several bat species are expected to forage in wetlands and roost in older southwestern forests. Ungulates expected in and around the TSA include moose (Alces alces) and mule deer (Odocoileus hemionus), have been regularly observed at the Mine Site. A mineral lick is located approximately 315 m south of the existing south embankment (within the TSA) and is over 250 m from areas impacted by the TSF raise to 987 m. The Mine Site also overlaps with the Wells Gray North sub-population of the Southern Mountain population of caribou (*Rangifer tarandus* pop. 1). Large carnivores such as black bear (*Ursus americanus*), grey wolf (*Canis lupus*), and cougar (*Puma concolor*) may occasionally occur in the area, especially in forested sections, although denning is unlikely due to human disturbance. Bat species, including myotis species like little brown myotis (*Myotis lucifugus*) and long-legged myotis (Myotis volans), as well as tree-roosting species such as silver-haired bat (*Lasionycteris noctivagans*) and hoary bat (*Lasiurus cinereus*), are anticipated to forage and roost in the TSA, utilizing both wetlands and mature forests for habitat.

3.8.2.1 Wildlife Species at Risk

The background desktop search did not return any occurrences of wildlife SAR mapped overlapping the TSA (Government of BC 2025c). The closest non-sensitive occurrence record of a wildlife SAR is woodland caribou (Southern Mountain population) mapped approximately six km east of the TSA. In addition, the Wells Gray North caribou herd boundary (Herd ID No. 11), along with federally mapped critical habitat, overlaps the TSA. A review of SAR, conducted through the BC CDC, identified 87 wildlife species that could potentially inhabit the TSA. Based on habitat and range analysis, 27 of these species are considered potentially to occur, including one amphibian, 16 birds, six mammals, and four invertebrates.

3.8.3 Critical Habitat

The TSA overlaps with the designated critical habitat for woodland caribou (Southern Mountain population). Critical habitat, as defined under the federal *Species at Risk Act* (*SARA)*, is legally protected from activities that could damage or destroy it. The woodland caribou critical habitat includes areas known as "unmapped range" that are under review between provincial and federal agencies, as it is not currently being managed as caribou habitat. Further clarification is needed to fully classify the area as core all-season or matrix habitat (Seider 2023, pers. comm.). Updated habitat mapping, obtained specifically for the MPMC Caribou Mitigation and Monitoring Plan (WSP 2025a; Appendix 8-1), includes newly defined core all-season and matrix habitats within the Quesnel Highland Unit 5B, directly related to the Wells Gray North caribou herd. While this mapping is not publicly available, it reveals that the TSA overlays both unmapped and matrix range habitats, with matrix range divided into Type 1 (areas within the annual caribou range not designated as summer or winter habitat, often used for migration or low-intensity use) and Type 2 (areas around annual ranges that influence predator-prey dynamics and connectivity between caribou subpopulations).

3.9 Potential Receptors of Mine-related Influences

This section is not required as part of the permit amendment application per the IRT.

3.10 Land Status and Use

The majority of the Mine Site footprint is located on Crown Lands, with the exception of one private land parcel that overlaps the Project Area, and two private land parcels that are outside of the Project Area on the northeast end of Bootjack Lake and the north end of Polley Lake (Government of BC 2025b). Mineral claims consist of 342 units representing a total surface area of 8,550 ha (MPMC 1996). The Mine Site is accessed via Likely Road and Morehead-Bootjack Forest Service Road (Figure 1.3-3). Transportation within the Mine Site is via access roads for light duty vehicles and large haul roads for heavy equipment.

Prior to mine operations, commercial forestry was the predominant land use activity within the Project Area. Significant portions of the Project Area were clearcut, and the cutblocks were replanted for either commercial timber use or a combination of silviculture and cattle grazing use (MPMC 1996). Seven active forest harvest authorizations and seven active forest cut blocks, owned by MPMC, overlap the Project Area (Government of BC 2025b). There are three additional active forest harvest authorizations that overlap the Project Area owned by other entities, including Imperial Metals (Government of BC 2025b).

Hunting, guiding and trapping are common recreational activities in the region, and the network of active forest service roads around the Mine Site is used by both locals and non-residents (MPMC 1996). The Project Area is entirely within the registered trapping area TR0502T056 (Government of BC 2025b). The northern extent of the Project Area overlaps two active guide outfitter areas, held by Russell Floyd and Gavin Nicol, and active range tenures were not identified in the Project Area (Government of BC 2025b). Outdoor recreational activities around the Mine Site include lake fishing, camping, hiking, snowmobiling and cross-country skiing (MPMC 1996). The campgrounds on Bootjack and Polley Lakes are used throughout the camping season, and the forest service roads are used year-round for recreational purposes.

First nations with recognized claimed traditional territory for the Mine Site are the T'exelcemc (WLFN) and the XFN. Pre-mining studies noted that the Project Area had low heritage resource potential due to the extensive disturbance from logging and earlier mining projects (MPMC 2021).

3.11 Archaeology

Six archaeological assessments have previously been conducted at the Mine, two of which directly overlap the TSF raise to 987 m and four of which are in close proximity. These previous assessments are summarized below.

3.11.1 Previous Archaeological Studies

Heritage Resource Overview Assessment – Points West (1989)

Points West Heritage Consulting conducted a heritage resource overview assessment in 1989 at the Mine Site (Points West 1989). The heritage resource overview assessment focused on the proposed impacts at the time, which partially overlaps the Project Area. A preliminary field reconnaissance (PFR) was conducted during the heritage resource overview assessment but was limited to the east and south edges of Bootjack Lake, as well as the access road connecting the Mine Site to Likely Road.

The majority of the 1989 study area was classified as having low archaeological potential, with some areas classified as having low-moderate archaeological potential (along the access road but outside the Project Area) and one area classified as having moderate archaeological potential at the south end of Bootjack Lake (also outside the Project Area).

Archaeological Impact Assessment – Permit 1996-143 – I.R. Wilson (1996)

I.R. Wilson Consultants Ltd. conducted an AIA in 1996 at a proposed dam enhancement area at the south end of Bootjack Lake and at two areas along a proposed transmission line (I.R. Wilson 1996a). The eastern-most transmission line area is located west of the Project Area, east of the south end of Bootjack Lake. This work was conducted under *HCA* Permit 1996-143.

Archaeological Impact Assessment – Permit 1996-236 – I.R. Wilson (1996)

I.R. Wilson Consultants Ltd. conducted an AIA in 1996 for a proposed pump station and water pipeline (I.R. Wilson 1996b). The pump station is located on the west shore of Polley Lake, and the water pipeline extends southwest from the lake and intersects with the tailings pond area and the TSF raise to 987 m area. Subsurface testing was placed at the substation location; however, no archaeological materials were identified. The water pipeline crossing at Bootjack Creek was described as another area that may have archaeological potential; however, further described as hummocky and ultimately not determined to require subsurface testing. No archaeological sites were identified along the water pipeline route.

Preliminary Field Reconnaissance – I.R. Wilson (2004)

I.R. Wilson Consultants Ltd. conducted a PFR in 2004 for newly proposed developments at the Mine, including what is described as the northeast zone (NEZ), an access road leading south from this area, and a proposed dump location at the south end (I.R. Wilson 2004). These areas are located along the west side of Mount Polley Lake along its northern half. No areas of archaeological potential or archaeological sites were identified during the PFR.

Preliminary Field Reconnaissance – Terra Archaeology (2009)

Terra Archaeology conducted a PFR in 2009 for 13 proposed drill locations and associated access roads, all located north of the Project Area (Terra 2009). No areas of archaeological potential or archaeological sites were identified during the PFR.

Preliminary Field Reconnaissance – WSP (2023)

WSP conducted a PFR in October 2023 (WSP 2023) of the MPMC Springer Expansion, SERDS, and TSF interim raise to 974 m buttress' along the northeast and southeast boundaries of the existing TSF.

The vast majority of the Springer Expansion and SERDS areas was determined to have low archaeological potential due to steeply sloping or rocky and undulating terrain which has been heavily disturbed as a result of previous logging and mining activities. The area in the vicinity of Bootjack Creek, in the southeast portion of the SERDS expansion area, is the least disturbed (still with past logging disturbance observed) and is considered, in part, to have high archaeological potential given the presence of the Bootjack Creek, level areas along the top of the ravine in which the creek is located, and that this may have served as the best route for people to travel between Bootjack Lake and Polley Lake. One area of potential (AOP) in which subsurface testing is recommended was identified during the PFR on the north side of Bootjack Creek; however, systematic survey along the entirety of the creek was not conducted at the time of the PFR and should be done during a subsequent AIA to determine if additional AOPs are present within the area.

The TSF interim raise to 974 m buttress' were determined to have low archaeological potential due to the generally undifferentiated or low-lying terrain and the high degree of previous disturbance that has occurred, including the presence of large berms and other artificially built-up areas.

3.11.2 *HCA* Permitting and 2025 Archaeological Impact Assessment

WSP obtained *HCA* Section 12.2 Inspection Permit 2025-0279 to conduct an AIA in the vicinity of Bootjack Creek, within the SERDS expansion area, and within the TSF 987 raise. WSP further obtained XFN Permit #001 in advance of completing the archaeological assessment. The AIA was conducted between September 27 and October 2, 2025 and consisted of a systematic survey to identify AOPs or evidence of archaeological features (e.g., cultural depressions, culturally modified trees). Surficial exposures encountered during the survey were also inspected for archaeological materials. Six AOPs were identified during the AIA, including three within the SERDS expansion area, of which one had been previously identified during the 2023 PFR, and three within the TSF 987 Raise. Subsurface testing at the six AOPs was carried out with tests placed at approximate 5 m intervals. The tests measured approximately 0.35 × 0.35 m and sediment was screened through ¼ inch mesh.

No archaeological sites were identified during the AIA. An interim report to meet HCA and XFN permit requirements was compiled detailing the results of the AIA. The report was provided to WLFN and XFN for review prior to finalizing. The final interim report was then provided to the Archaeology Branch and all Indigenous groups to which the HCA Permit was referred.

3.12 Cultural Use

There is currently no identified cultural use of the area impacted by the TSF raise to 987 m area. WLFN and XFN traditional territories overlap the area, and both have been consulted on the proposed expansion and participated in both the 2023 PFR (WSP 2023) and 2025 AIA (reporting in progress) to assess heritage potential of the area affected by the proposed Springer Expansion and TSF interim raise to 974 m buttress and 987 Raise.

3.13 References

BC CDC. 2025. BC Species and Ecosystem Explorer. [accessed June 2025]. http://a100.gov.bc.ca/pub/eswp/.

BC ENV. 2020. B.C. Source Drinking Water Quality Guidelines: Guideline Summary. Water Quality Guideline Series, WQG-01. Prov. B.C., Victoria B.C. [Accessed July 28, 2025].

BC WLRS. 2025a. British Columbia Approved Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture - Guideline Summary. Water Quality Guideline Series, WQG-20. Prov. B.C., Victoria B.C. [Accessed July 8, 2025].

BC WLRS. 2025b. Working Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture. Water Quality Guideline Series, WQG-08-01. Prov. B.C., Victoria B.C. [Accessed July 28, 2025].

Demarchi, D.A., R.D. Marsh, A.P. Harcombe and E.C. Lea. 1990. The Environment (of British Columbia). pp 55-142. in R.W. Campbell, N.K. Dawe, I. McTaggart-Cowan, J.M. Cooper, G.W. Kaiser and M.C.E. McNall. The Birds of British Columbia, Volume 1. Royal British Columbia Museum, Victoria, BC and Environment Canada, Canadian Wildlife Service, Delta BC. 514 pp.

ECCC. 2022a. Historical Climate Data. http://climate.weather.gc.ca. Accessed February 2, 2022.

ECCC. 2022b. "RE: Barkerville Data- Station 1090660" by Electronic Mail from ec.climatouest-climatewest.ec@canada.ca on February 9, 2022.

Golder 2022. Mount Polley Mine Climate Baseline Update. Prepared for Mount Polley Mining Corporation. Ref No. 22514095-066-R-Rev0-31547. August 30, 2022.

Government of BC. 2025a. InvasivesBC Application BETA. Database. [accessed August 2, 2025]. https://invasivesbc.gov.bc.ca/home/landing.

Government of BC. 2025b. iMapBC online mapping database. [DataBC]. Victoria BC: GeoBC. [accessed August 29, 2025]. https://maps.gov.bc.ca/ess/hm/imap4m/.

Government of BC. 2025c. Habitat Wizard online mapping database. DataBC. GeoBC. [accessed August 2025]. https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/ecosystems/habitatwizard.

Government of Canada. 2022. Migratory Birds Regulation. SOR/2022-105 under the *Migratory Birds Convention Act, 1994*. Current to October 29, 2025; last amended October 4, 2024. Ottawa ON: Minister of Justice. https://laws-lois.justice.gc.ca/eng/regulations/SOR-2022-105/index.html.

Hallam Knight Piésold Ltd. 1996. Mount Polley mine project reclamation plan.

Holland S. 1976. Landforms of British Columbia – A Physiographic Outline. Bulletin 48. The Government of the Province of British Columbia.

I.R. Wilson Consultants Ltd. 1996a. Archaeological Impact Assessment, Proposed Mount Polley 69 kV Electrical Transmission Line (*HCA* Permit 1996-143). Unpublished report on file with the Archaeology Branch, Victoria, BC.

I.R. Wilson Consultants Ltd. 1996b. Archaeological Impact Assessment, Proposed Mount Polley Pump Station and Water Pipeline (*HCA* Permit 1996-236). Unpublished report on file with the Archaeology Branch, Victoria, BC.

I.R. Wilson Consultants Ltd. 2004. Preliminary Field Reconnaissance of Newly Proposed Developments at the Mount Polley Mine Site. Unpublished report on file with Mount Polley Mining Corporation.

K. McMahen, Baseline/Background Water Chemistry Data Search for the MPMC PEEIAR, Likely, BC: Mount Polley Mining Corporation. Technical Memorandum, March 26, 2015.

Knight Piésold Ltd. 2014. Hazeltine Creek Hydrologic Analysis (Rev 1). Prepared for Mount Polley Mining Corporation, May 14, 2014. VA101-1/32-1.

Minnow Environmental Inc. 2025. Mount Polley Mine Comprehensive Environmental Monitoring Program 2024 – Sediment and Aquatic Life. Prepared for Mount Polley Mining Corporation, Likely, BC. March 2025. Project 247202.0004 (3 to 9).

Morton F. I. 1983. Operational Estimates of Areal Evapotranspiration and their Significance to the Science and Practice of Hydrology. Journal of Hydrology 66: 1-76.

MPMC. 1996. Reclamation Plan.

MPMC. "2018 Annual Discharge Plan," Mount Polley Mining Corporation, Environmental Department, Likely, B C, 2018.

MPMC. 2021. 2021 annual reclamation report for the Mount Polley Mine.

Points West Heritage Consulting. 1989. Mount Polley Mine Heritage Resource Overview Assessment. Unpublished report on file with the Archaeology Branch, Victoria, BC. Steen OA, R Coupé. (1997). A field guide to forest site identification and interpretation for the Cariboo Forest Region. B.C. Min. For., Victoria, B.C. Land Manage. Handb. No. 39.

Seider J. 2023 Geospatial Analyst, Canadian Wildlife Service – Pacific Region / Environment and Climate Change Canada | Government of Canada. E-mail to Seebacher T. Biologist, WSP Canada Inc., June 8, 2023.

Terra Archaeology Limited. 2009. Preliminary Field Reconnaissance of Allnorth Drill Sites. Unpublished report on field with Mount Polley Mining Corporation.

Thornthwaite C. W. 1948. An Approach toward a Rational Classification of Climate. Geographical Review 38: 55-94.

Tukey, J.W., 1977. Exploratory Data Analysis. Addison-Wesley, Reading, MA.

WSP. 2023. Preliminary Field Reconnaissance of the Springer Pit Expansion and Tailings Storage Facility Foundation Area. Unpublished report on file with Mount Polley Mining Corporation.

WSP. 2025a. Mount Polley Springer Pit Expansion. Caribou Mitigation and Monitoring Plan. Prepared for Mount Polley Mining Corporation. May 2025.

WSP. 2025b. Supplementary Climate Change Information for Mount Polley Mine Site. June 2025.

WSP. 2025c. Tailings Storage Facility Site Characterization Report. February 2025.

4 MINE PLAN

4.1 Mine Plan Overview

The Mine Site is an alkalic porphyry copper / gold deposit hosted within brecciated plagioclase porphyry. While the principal copper-bearing mineral is chalcopyrite, other copper minerals are present, especially in oxidized zones. These other minerals include bornite, malachite, chrysocolla, and azurite. Gold is present principally as inclusions in copper sulphides and as free liberated grains. MPMC recovers copper and gold from porphyry-style mineralization by open pit using conventional truck and shovel operation. The plant is capable of processing 22,000 tonnes per day of ore using standard mineral flotation technology. The Mine Site is an established open pit with various smaller satellite pits which were mined from 1997 to 2017. The majority of mining currently occurs in the combined Springer-Cariboo Pit which is also the focus of the LoM. This application has the approved LoM extending to approximately 2031 followed by processing of the stockpiles while the rehandle of potentially acid generating (PAG) material back into the pit occurs until the end of 2033. The open pit mining operation mines would on average produce 6.1 Mt of ore and 7.7 mining tonnes (t) of waste per annum (peaking at 35.5 Mt in 2025).

4.2 Existing and Permitted Mine Plan

Existing development and operations at the Mine Site include the open-pit mining of the Springer and Cariboo pits, with an average daily mill throughput being 20,000 t.

Current mine operations involve the recently permitted Life-of-Mine extension of the combined Cariboo-Springer Phase 4 in the Springer and Cariboo pits. The loading equipment is a combination of P&H 2300 shovel, Komatsu PC4000 and PC3000 diesel shovels, and the haulage fleet includes Caterpillar 785 and Caterpillar 789 trucks. The primary crusher pocket has capacity to accept material from a 180 t truck and ore is processed through a crushing circuit, a three-stage grinding circuit consisting of rod, ball and pebble mills, flotation and dewatering circuits to produce a copper/gold concentrate. The Springer Pit bottom is currently mined to a depth of 856 m, and the north wall pushback has developed down as far as 1096 m. Dewatering from the Springer pit requires establishing temporary sumps in the mine working, usually at the lowest working bench. Electric or diesel pumps will convey water to a large sump located in the Cariboo pit. The Cariboo Pit will be pumped to the West collection ditch and then flow to the PETBP which acts as an influent pond for the WTP. The water may also be used for other purposes, such as directly to the mill to supplement reclaim water.

In the MPMC mill, run-of-mine ore from the open pit is dumped into the feed pocket of the primary gyratory crusher to reduce the rock to a nominal 200 mm. A hydraulic rock breaker is used to break the oversize material, and the crushed ore is discharged onto an apron feeder that feeds onto a conveyor to the coarse stockpile. Ore is reclaimed from underneath the stockpile by four vibrating feeders and conveyed to a vibrating screen.

In preparation for flotation, ore from the feed stockpile is conveyed to a grinding circuit, consisting of parallel rod mill/ball mill circuits and a pebble mill circuit; crusher product is first fed to a rod mill, and then to a ball mill. Ball mill discharge is pumped to cyclones, where the coarse particles are separated to return to the ball mill, while the finer particles proceed to the three pebble mills. Cyclones are again used to return oversize material to the mills, while the fines, now at the necessary size for mineral separation, are pumped to the flotation circuit.

The flotation circuit separates the valuable minerals from the waste rock, producing a concentrate. Initial separation is done in a rougher/scavenger circuit, where tailings flow by gravity to the TSF. Rougher concentrate is further upgraded in a cleaner circuit to produce the final product. Cleaner tailings are recycled to the rougher/scavenger circuit.

The concentrate is dewatered in two stages: settling reduces the water content to roughly 35 – 40%, while pressure filtration further reduces it to approximately 8%. Water removed is utilized as process water. Concentrate is stored in the load-out building and loaded on to 40 t trucks for shipping.

4.2.1 Life of Mine Plan

Figure 4.2-1 illustrates the LoM plan showing the major Mine Site facilities. (Yellow – Pits, Blue – Dumps / Road Development). Appendix 4-1 includes the figures included in the Springer Pit Expansion Application illustrating the LOM sequencing.

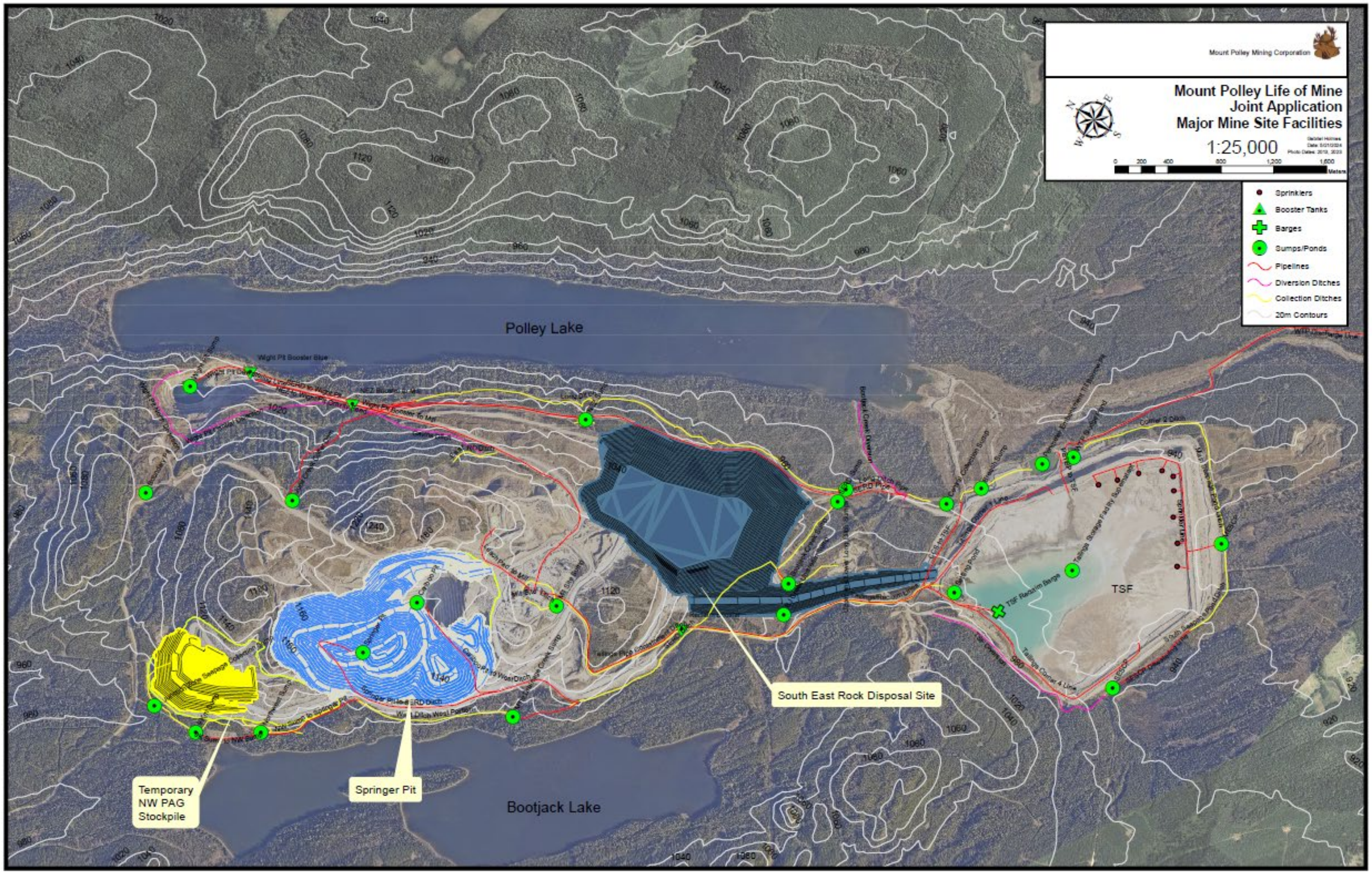


Figure 4.2-1: Mine Site Facilities

4.2.2 Production Schedule and Profiles

The production schedules and profiles are presented in Table 4.2-1 to Table 4.2-3 and Figure 4.2.2. A LoM total material moved is shown in Figure 4.2-3. These tables reflect the recently permitted Springer Pit Expansion, which is currently being developed.

Table 4.2-1: LoM Waste Mined (t)

	Total Waste Mining by Pit Phase (NAG)							Total Waste Mining by Pit Phase (PAG)					
	C2-B/Car RR-NAG	WX-NAG	Springer 4 – NAG	Springer 5 – NAG	Springer 6 – NAG	Un-Prod Waste RH	Spr Tails / Dump Fill	C2-B / Car RR-PAG	WX-PAG	Springer 4 – PAG	Springer 5 – PAG	Springer 6 – PAG	PAG ReHandle
2026				22,028,147		725,000	11,627				386,955		
2027				14,094,795	2,385,013	689,769	18,825				398,216	407,957	
2028				1,476,896	11,813,839	827,026	41,801				732	13,015,868	
2029	840,294	1,999,546			8,114,673	756,210	1,912,244	38,380	12,173			11,060,273	
2030		5,817,474			7,383,626	700,000	9,326		2,869,174			6,503,661	
2031		2,391,839			101,651	841,868	4,110		2,346,898			38,282	22,500,000
2032													30,000,000
2033													21,429,209

PAG = potentially-acid generating; NAG = non-acid-generating; Car = Cariboo Pit; WX = Wight Pit.

Table 4.2-2: LoM Ore Mined (t)

	ORE Above C/O by Pit Phase				
	C2-B/Car-RR	WX	Springer 4	Springer 5	Springer 6
2026				5,795,978	
2027				8,131,599	72,751
2028				4,013,289	1,258,489
2029	1,908,094	48,935			550,232
2030		802,009			6,083,558
2031		495,484			1,802,980
2032					
2033					

Table 4.2-3: LoM Mill Feed by Source (t)

	Plant Feed By Source								
	C2-B / Car-RR	WX	Springer 4	Springer 5	Springer 6	UG/PAG RH	Tailings / BZ OP	STKPL	Total
2026				5,795,978				1,504,022	7,300,000
2027				7,018,688	41,312			240,000	7,300,000
2028				4,013,289	1,258,489			2,028,222	7,300,000
2029	1,908,094	48,935			550,232			4,792,738	7,300,000
2030		802,009			6,083,558			414,434	7,300,000
2031		149,267			1,419,100			38,911	1,607,278
2032									
2033									

Below is a table of the development dates for each phase of the LoM (Table 4.2-4).

Table 4.2-4: Mine Development Schedule

	2026	2027	2028	2029	2030	2031	2032	2033
Springer 4								
Springer 5								
C2-B / Car-RR								
Springer 6								
WX								
PAH RH								

4.2.3 Surface Disturbances

The development of Springer Expansion pit is underway and will require little additional stripping or preparation as the area has been previously disturbed mining the Bell, C2 and Cariboo pits. Tables 5.2-1 and 5.31 provide an inventory of areas disturbed to date, and projection of the land to be disturbed up to the projected end of mine life as a result of the TSF raise to 987 m.

Water flow interacting with mine activities outside of the TSF area will utilize existing water management infrastructure. Currently, mine water is collected in existing ditch systems, and so new construction will require catchment of additional water as created by the proposed work (Figure 3.3-3).

Dewatering from the Springer Pit will require establishing temporary sumps in the mine working usually at the lowest working bench. Electric or diesel pumps will convey water to a large sump located in the Cariboo Pit. The Cariboo Pit will be pumped to the West collection ditch and then to the PETBP which acts as an influent pond for the WTP.

Roads are designed, constructed and maintained in accordance with the *Mines Act*. Haulage roads are designed with a 33 m width plus 3 m for berm width to provide for two-way traffic, and both internal pit roads and haul roads have a maximum grade of 10%. Existing traffic control plans satisfy MCM requirements, and construction and operation of all new roads will adhere to existing policy.

Haul road construction is designed to avoid the potential mobilization and erosion of sediment with potential to enter into water bodies. Where avoidance is not possible, mitigation measures are adopted to reduce and prevent impacts to fish and fish habitat. The projected timing of construction projects will be reviewed to reduce potential downstream effects. For further detail, see Section 10.2: Erosion Prevention and Sediment Control Plan.

4.2.4 Springer Expansion (LoM)

The Springer Expansion pushes back the extents of the combined Springer and Cariboo Pits and deepens it. Additionally, two larger extensions of the main pits (WX and C2) will also be developed throughout the LoM. The WX and C2 zones will follow many of the same design principles as already existing in operating pits at Mount Polley Mine. Modelling was done using the LerchGrossman pit optimization method, with Table 4.2-5 describing parameters used in design of the pits.

Table 4.2-5: Open Pit Design Parameters

Design Parameter	Value
Bench Operating Height	10 or 12 m
Interberm Height	24 m
Bench Face Angle	65 degrees
Safety Berm	8.5 m
Inter-ramp Wall Angle	42-46 degrees
Haul Road Internal Max. Grade	10%
Haul Road External Grade	7%
Haul Road Double Lane Width	27 m
Swell Factor	33%
RDS Angle of Repose	37 degrees
RDS Angle of Reslope	2:1 (H:V)

m = metres

Ten m (Boundary zone) and 12 m (C2 zone) bench heights were chosen after considering ore grade control requirements, blast energy distribution using 9 7/8” blast holes, and muck pile height using P&H 2100 shovels and Caterpillar 992 loaders.

The Springer Expansion pit will supplement ore production through LOM, which, based on present assumptions (including uninterrupted operations), is estimated to be the year 2031.

4.2.5 Waste Rock

Additional PAG and NAG material mined as a result of the development of the Springer Expansion will be placed in two locations:

- Temporary Northwest Potentially Acid Generating (NW PAG) Stockpile
- SERDS

Dumps will be constructed by end-dumping in lifts to an overall slope of 2H:1V (to minimize the need for re-sloping and assist in reclamation work). Quantities of non-acid generating (NAG) and PAG waste are included in Table 4.2-6.

Table 4.2-6: Quantities of NAG and PAG Generated from Mining Phases

Phase	Material (t)	
	NAG	PAG
C2-B/Car-RR	3,063,732	378,681
WX	10,208,858	5,228,244
Springer 5	76,491,195	2,510,716
Springer 6	29,798,801	31,026,041
Totals	119,562,586	39,143,682

Storage and material capacities of each of the project components is as outlined in Table 4.2-7.

Table 4.2-7: Storage Capacity of Facilities

Component	Material (t)		
	NAG	PAG	Total
SERDS	152,000,000	-	152,000,000
NAG Pad for NWPAG	17,612	-	17,612
PAG for NWPAG	-	27,600,000	27,600,000

4.2.6 Southeast Rock Disposal Site Construction

Development of the Springer Expansion pits will require additional rock disposal capacity of approximately 121,000,000 t of NAG waste rock. NAG material will be stored within the SERDS or existing pits. The current approved design of the SERDS has a capacity of 152 Mt (as of the start of the Springer Expansion).

A foundation analysis was conducted in 2022 encompassing 28 test pits and drill holes to ensure adequate information to used to design and update a stability analysis of the proposed rock disposal site.

The SERDS will be constructed in lifts by dump and push method. The design has maximum outer slopes of 2H:1V, which may include benched configurations with angle of repose slopes (near 1.3H:1V) and offsets. The maximum lift thickness is 30 m.

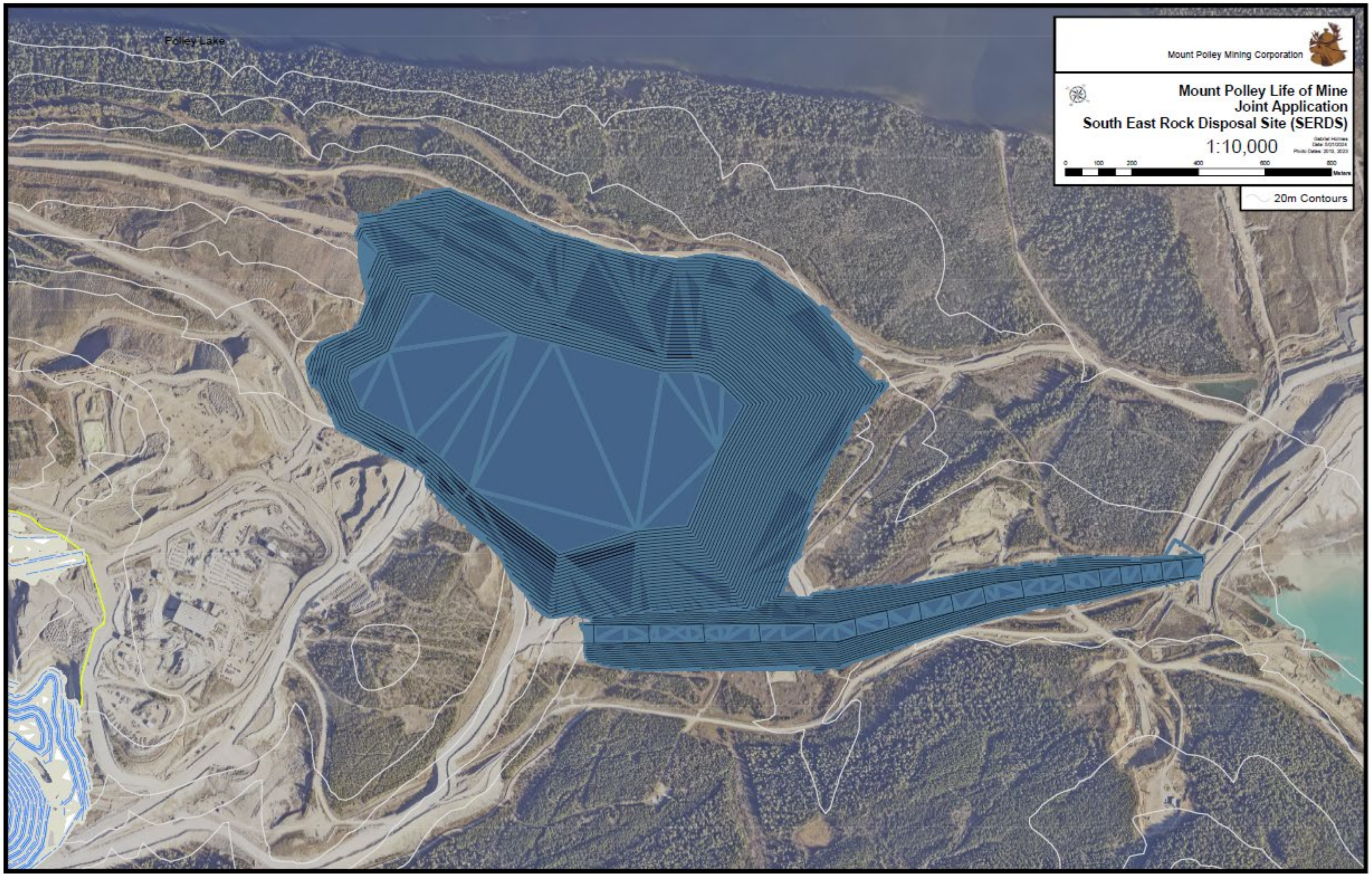


Figure 4.2-2: SERDS LoM

4.2.7 Northwest PAG Stockpile

The PAG will be hauled to the temporary NW PAG Stockpile for short term storage before it is permanently stored in the Springer Pit under subaqueous conditions at the end of mine life. The total amount of PAG material from the Springer Expansion will be approximately 74.0 Mt. A total of 59 Mt is expected to be stored temporarily in the NW PAG Stockpile and eventually re-handled into the pit bottom for permanent disposal once the pit bottom is fully developed. The additional tonnage (15 Mt) is expected to be directly hauled into the pit bottom, avoiding the temporary storage and future rehandle.

Currently, the NW PAG Stockpile contains approximately 35 Mt (January 2025) and is permitted to store an additional 27.6 Mt to an upper elevation of 1150 m.

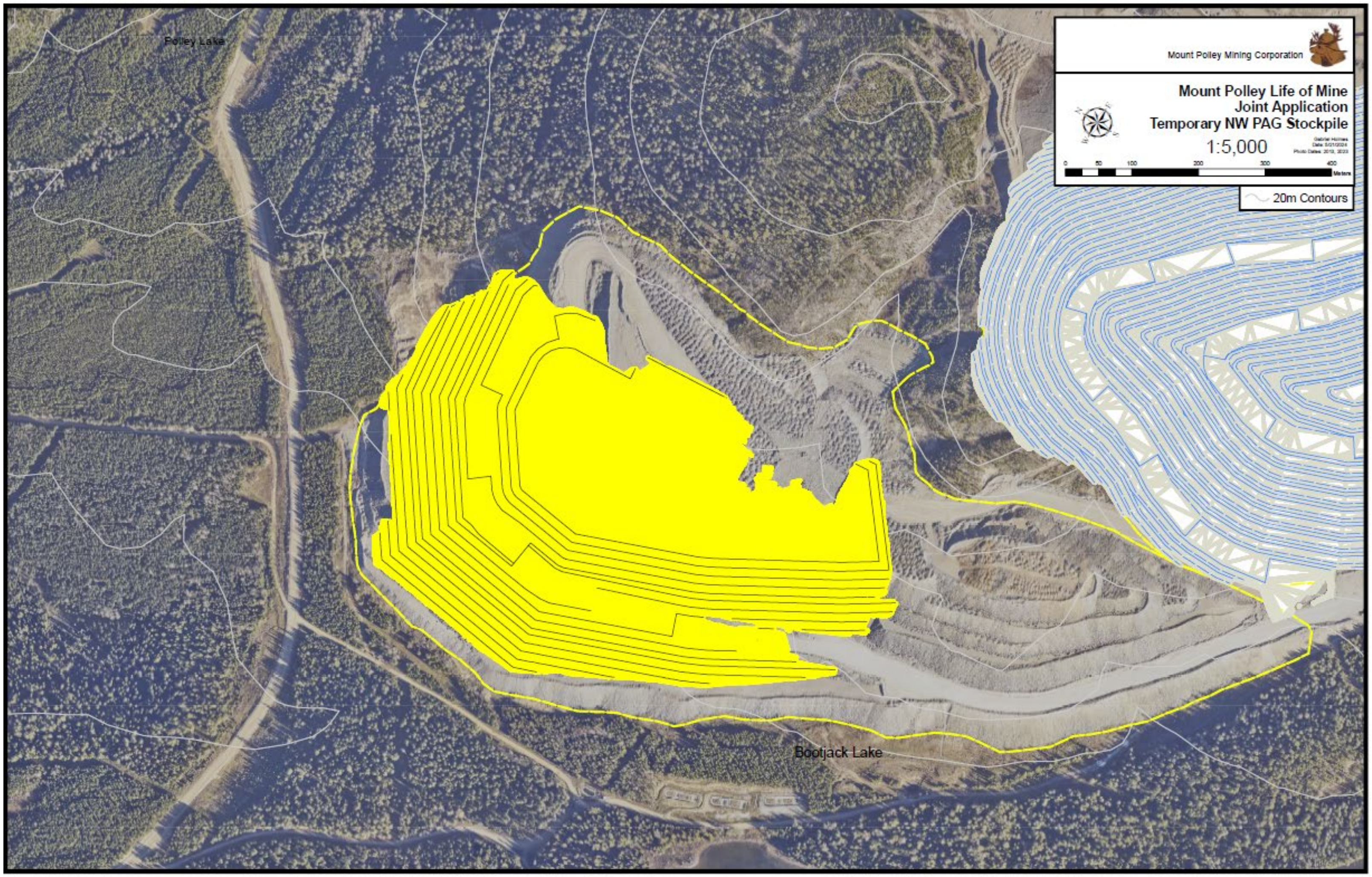


Figure 4.2-3: Temporary NW PAG Stockpile LoM

4.3 Proposed Mine Plan

Though this section is required, there is nothing to add in addition to the information presented in Section 4.2. This application is limited to a raise of the TSF, and Section 4.2 contains relevant mine plan information to accompany the TSF raise application.

4.4 Mine Facility Engineering Designs

This section is not required as part of the permit amendment application per the IRT.

4.4.1 Open Pits

This section is not required as part of the permit amendment application per the IRT.

4.4.2 Underground Workings

This section is not required as part of the permit amendment application per the IRT.

4.4.3 Tailings Storage Facilities, Dams, and Associated Infrastructure

4.4.3.1 Small Dams

This section is not required as part of the permit amendment application per the IRT.

4.4.3.2 Low Consequence Classification Dams

This section is not required as part of the permit amendment application per the IRT.

4.4.3.3 Significant or Higher Consequence Classification Dams

This section is not required as part of the permit amendment application per the IRT.

4.4.3.4 Tailings Storage Facility

Overview of Embankment Raise

The TSF embankment (Main, Perimeter and South embankments) are currently completed to an elevation of approximately 972.2 m and have a permitted maximum crest elevation of 974 m. As of November 2025, construction is in progress with construction to elevation 974 m expected to be completed in summer 2026. The design of the TSF to elevation 987 m provides storage capacity for tailings production for the LoM (approximately 62.8 Mt from restart of operations in June 2022). Approximately 14.6 Mt of this storage capacity has been used within the existing facility from the restart of operations in June 2022 to December 2024.

A detailed design report for the TSF raise to elevation 987 m has been prepared in accordance with Part 10 of the Health, Safety and Reclamation Code (HSRC) for Mines in BC. This design is informed by the LoM siting and best available technology assessment (WSP Golder 2022), the TSF site characterization report (WSP 2025a), an updated dam breach and inundation study (WSP 2025b), and consequence classification assessment (Appendix 1-2). The overall consequence classification for the TSF has been assessed as High according to the HSRC and the design criteria has been developed consistent with the classification (Appendix 1-2). The detailed design report includes engineering analysis for seepage, physical stability, tailings deposition, deformation and freeboard. Issued for Construction Technical Specifications and design drawings have been included as appendices to the design report.

The embankment raise to an elevation of 987 m includes:

- Raise and extension of the buttresses along the Main and Perimeter embankments
- Construction of a buttress along the South Embankment
- Construction of new water management infrastructure downstream of the TSF (i.e., seepage collection ponds and ditches)

The facility will require a rate of rise of about 2.5 m per year to accommodate the planned tailings production.

The embankment raise will consist of the components detailed in Table 4.4-1. Technical specifications detailing placement, compaction, and quality assurance and quality control (QA/QC) requirements for the materials have been developed for construction and are included in the elevation 987 m TSF design report (Appendix 1-2).

Table 4.4-1: Embankment Zoning

Name	Zone	Description and Purpose
Upstream fill	U	Minimum 20 m wide fill zone to provide upstream support to Zone S.
Till core	S	Minimum 5 m wide low hydraulic conductivity element, placed upstream of Zone F.
Filter	F	Minimum 1.5 m wide, placed upstream of Zone T and downstream of Zone S. Zone F is designed to be filter compatible with Zone S and the foundation till, and prevent erosion of Zone S and foundation till into the voids of Zone T.

Table 4.4-1: Embankment Zoning

Name	Zone	Description and Purpose
Transition	T	Minimum 1.5 m wide, placed upstream of Zone C and downstream of Zone F. Zone T is designed to be filter compatible with Zone F and prevent erosion of Zone F into the voids of Zone C.
Compacted embankment rockfill	C	Minimum 10 m wide up to about elevation 983.2 m and then decreases to a minimum width of 5 m at elevation 987 m, placed downstream of Zone T and compacted in 1 m thick layers.
Embankment rockfill	-	Rockfill placed downstream of Zone C. The downstream face will consist of a composite slope of 2H:1V and 1.3H:1V, with a transition at about elevation 975.6 m along the embankment where the downstream buttresses are located. Near the south and north abutments, where the embankment is shallower and does not include a buttress, the downstream face of the embankment rockfill will have a minimum slope of 2H:1V.
Buttress rockfill	-	Rockfill placed for the downstream buttresses. The downstream face of the buttress rockfill will be 3H:1V, which will impose a lower shear stress on the foundation soils due to the flatter downstream slope and increase the length of potential slip surfaces passing through the foundation soils, thereby increasing the resisting force and improving stability.

Note: Materials are listed in order from upstream to downstream of the embankment.

- = not applicable.

<u>Construction Activities</u>

The following construction sequence is proposed for construction of the TSF to elevation 987 m, although some activities will be performed simultaneously:

- Instrumentation—extension and protection of instrumentation that may be affected during construction.
- Foundation preparation—removal of unsuitable materials. Stripped material will be managed in accordance with MPMC Soil Management Plan (SMP, MPMC 2025).
- Abutment foundation preparation—removal of unsuitable materials and excavation to the underlying competent foundation till or bedrock to provide suitable tie-in for the till core.

- Toe buttress extension—buttress construction must be completed prior to raising the embankment.
- Raise of embankment—till core construction from elevation 974 m, including surrounding upstream fill, filter, transition, and rockfill.

<u>Water Management and TSF Freeboard</u>

The Mine Site has an annual net water surplus, and discharge from site (after treatment) is necessary to manage the Mine Site water and to prevent accumulation of water on the Mine Site year over year.

The water management philosophy will be consistent with practice since the restart of operations in 2016. Temporary detention of water on-site will be necessary to manage large runoff volumes generated during freshet; however, the fundamental basis of the WMP is to not accumulate water on-site (including the TSF) by treating and discharging water and to not carry over water from year to year. In 2024, MPMC introduced changes to the water infrastructure to allow pumping from the CCS to Wight Pit. This change to site water management reduces the volume of water that would need to be temporarily retained in the TSF during large rain events and freshet.

The TSF raise to elevation 987 m is designed to retain the inflow design flood (IDF) defined as the probable maximum flood (probable maximum precipitation plus 1:100 year snowmelt minus outflows) entirely within its storage capacity, with no emergency spillway. The critical duration of the IDF was evaluated using the IDF volumes for durations up to 30 days. The required TSF storage was calculated as the difference between inflow and outflow. Based on this analysis, the controlling event for the TSF design was identified as a 10-day duration, which governs the maximum storage volume required in the TSF. The approach of selecting the critical duration for the TSF results in allowing flood storage capacity that exceeds the 72-hour probable maximum flood.

A freeboard is required to prevent overtopping of the TSF embankment. The freeboard calculations follow the procedures and equations discussed in the Canadian Dam Association (CDA; 2013, 2019) guidelines. Wind speeds, pond depth, and embankment slope geometry were considered to determine the greatest wave uprush value for the normal and minimum freeboard scenarios. The minimum freeboard for the TSF is 0.7 m, which accounts for the wave run-up and setup, as well as a freeboard contingency. The minimum freeboard controls the freeboard requirement. Freeboard calculations are provided in the TSF Raise to Elevation 987 m Design Freeboard and Water Level Analysis memorandum included in Appendix I of Appendix 1-2.

Instrumentation and Monitoring

An instrumentation and monitoring system is in place for the TSF in conjunction with established Quantitative Performance Objectives (QPOs) to monitor performance of the facility. This includes weekly surveillance of the embankments and associated structures by site personnel, a post-freshet TSF walkover by the EoR and an Annual Facility Performance Review (AFPR) by the EoR, and reviews of the Mine Site TSF by the Independent Engineering Review Panel.

The monitoring system is reviewed on a regular basis based on failure modes, critical controls, and the design and operational philosophy. The intention of the monitoring system is to provide early warning indications of changing conditions that may affect the safe and effective management of the TSF.

The TSF instrumentation is monitored and assessed against the QPOs by MPMC staff. The EoR team reviews and interprets the instrumentation data provided by MPMC periodically. MPMC staff is responsible for implementation of specific actions and responses in the event of anomalous data or QPO exceedances, including informing the EoR when the QPO thresholds are triggered.

As part of the design for the raise of the TSF to elevation 987 m, the existing TSF instrumentation monitoring system will be retained. Instrumentation, where required, will be relocated or extended during construction.

Instrumentation and monitoring will follow the requirements set out in the existing Operation Maintenance and Surveillance (OMS) manual for the TSF. The OMS manual is reviewed annually and updated as required to reflect changing conditions for the TSF.

Slope inclinometer casing, VWP cables, and SAA cables will be extended and raised as part of the construction to raise the embankment. Raising inclinometer casings and standpipe wells through the rockfill buttress can be challenging, and some of the existing inclinometers and standpipes may be damaged during construction. Instrumentation coverage will be reviewed if existing instrumentation is damaged. The need to replace instrumentation will be assessed on a case-by-case basis.

4.4.4 Dumps and Stockpiles

The application includes detailed geotechnical assessments for the NW PAG Dump, the SERDS, and the Tailings Access Road (TAR). The geotechnical assessments are included in Appendix 4-2 through Appendix 4-6, respectively. Waste rock from the open pit will be used to construct the facilities. The majority of the waste rock that will be used to construct the NW PAG Dump will be PAG and NAG waste rock will be used to construct the TAR and SERDS.

4.4.4.1 Dumps (Stability Class II or less)

This section is not required as part of the permit amendment application per the IRT.

4.4.4.2 Dumps (Stability Class III or greater) and Major Dumps

This section is not required as part of the permit amendment application per the IRT.

4.4.5 Surface Water Management Structures

As a result of the construction to the TSF to 987 m, some of the existing and designed surface collection and diversion channels and structures around the TSF will be affected. These channels and structures will be partially or fully covered by the TSF embankment or buttress. The following modifications to existing water management infrastructure around the TSF will be required:

- Relocation of seepage and surface water collection channels that direct contact water to the south embankment pond, main embankment pond, PETBP, and the CCS. The south and main embankment ponds designed for the TSF 974 m will remain in a usable location for the TSF 987 m design and are compatible with the TSF 987 m design.
- Relocation of the PETBP.
- Enlarge the storage capacity of the CCS.

The inflow to the ponds includes seepage, runoff, and flow from the upstream drains that will be collected by the collection channels, and direct precipitation to the ponds.

The TSF 987 m water management infrastructure is designed within the current M-200 boundary. The details regarding the new surface water management infrastructure around TSF are provided in Appendix 5-2.

4.4.5.1 Ponds or Impoundments (without Dams)

The inflow to the ponds includes seepage, runoff, and flow from the upstream drains that will be collected by the collection channels, and direct precipitation to the ponds. New ponds are designed to store the inflow generated from the 1:10-year 24-hour rain plus snowmelt event as well as seepage and upstream drain flow plus any pumped flow to and from other ponds while allowing a depth of 0.5 m at the bottom to account for deposition of sediments (dead volume). The pond spillways are designed to maintain a 0.5 m freeboard between the crest of the pond and the maximum water level during the design flow of a 24-hour 1:200-year rain plus snowmelt event.

Details of the new water management infrastructure surrounding TSF can be found in Appendix 5-2.

4.4.5.2 Water Conveyance Structures

The collection channels are proposed to convey the peak flow generated from the 24-hour 1:200-year storm event plus seepage and upstream drain flow rates. The channels include a minimum of 0.3 m freeboard.

A diversion channel is required at Corner 4 to capture surface runoff from the catchment upstream of the TSF. The diversion channel is designed to convey the peak flow generated from the 1:200-year 24-hour storm event, while maintaining a minimum 0.3 m freeboard.

Details of the new water management infrastructure surrounding TSF can be found in Appendix 5-2.

4.4.6 Mine Roads

This section is not required as part of the permit amendment application per the IRT.

4.4.7 Processing Plant (Mill)

This section is not required as part of the permit amendment application per the IRT.

4.4.8 Buildings, Ancillary Facilities, and Other Infrastructure

This section is not required as part of the permit amendment application per the IRT.

4.4.9 Closure Designs

4.4.9.1 Open Pits

This section is not required as part of the permit amendment application per the IRT.

4.4.9.2 Underground

This section is not required as part of the permit amendment application per the IRT.

4.4.9.3 TSFs and Dams

The 2022 Five-Year Mine Plan and Reclamation Plan (MPRP; (MPMC 2022) is the most recent site wide RCP and it is the basis for this application. Based on the 2024 revision of the HSRC (MCM 2024) a feasibility closure design meeting the requirements of 10.6.12(6) is to be prepared within 3 years (i.e., 2027). The EoR prepared a memorandum to comment on the feasibility of constructing the 2022 RCP update (MPMC 2022) with a TSF raise to elevation 987 m which has been included in Appendix 4-7.

4.4.9.4 Dumps and Stockpiles

This section is not required as part of the permit amendment application per the IRT.

4.4.9.5 Surface Water Management Structures

The closure planning update cycle is defined as every five years, with the next update occurring in 2027; therefore, surface water management structures closure design is not included in this application.

4.5 References

CDA (Canadian Dam Association) 2013. Dam safety guidelines 2007 (Revised 2013).

CDA. 2019. Technical bulletin: application of CDA dam safety guidelines to mining dams.

MCM. 2024. Health, Safety and Reclamation Code for Mines in British Columbia. Victoria, British Columbia. Revised April 2024. ISBN 978-07726-6011-4.

MPMC. 2022. Mine Plan and Reclamation Plan Update 2022.

MPMC. 2025. Soil Management Plan.

WSP Golder (Golder, a member of WSP). 2022. Site Selection and Technology. Prepared for Mount Polley Mining Corporation. WSP Golder Doc. No. 22514095-070-TM-Rev0-51343. Submitted October 27, 2022.

WSP. 2025a. 2024/2025 Tailings Storage Facility Instrumentation Installation Factual Report. Prepared for Mount Polley Mining Corporation. WSP Doc. No. CA0047730.8440-020-R-RevA-52191. June 4, 2025.

WSP. 2025b. Dam Breach High-Level Assessment Letter for Tailings Storage Facility Raise Above Elevation 970 m – Mount Polley Mine, British Columbia. Prepared for Mount Polley Mining Corporation. WSP Doc. No. 23590671-063-L-Rev2-51396. Submitted June 19, 2025.

5 RECLAMATION AND CLOSURE PLAN

This TSF 987 m permit amendment application is a continuation of the permitting process needed to extend the Mine Site operation for the LoM. The first step in this permitting process was the Joint Permit Application for the Springer Expansion and the interim 974 m TSF raise.

The M-200 permit authorizing the 974 m TSF raise, and the Springer Pit Expansion was approved Q1 and Q3 of 2025, respectively. The M-200 permit amendment for the Springer Pit authorization allows for MPMC to mine beyond 2026; however, mining is restricted past 2026 (projected) due to 974 m TSF storage capacity. This 987 m TSF application will allow for MPMC to accommodate the entire LoM tailings associated with the Springer Pit Expansion mine plan.

Importantly, as the 2022 Five-Year MPRP ((MPMC 2022) is the most recent site wide RCP, it used as the basis for this application. Upon this basis, new information associated with the 987 m raise is presented within this section in accordance with the *JAIR* table. By operating under the 2022 Five-Year MPRP "*base case*" with regards to closure for this application, MPMC hopes to promote an efficient review process and fast securement of the revised M-200 permit to allow for operation to continue beyond 2026.

5.1 End Land Use Objectives and Capability Metrics for Infrastructure / Disturbance Footprints

Within the *JAIR* (Ministry of Energy, Mines and Low Carbon Innovation and ECCS 2024) guidance document, Section 5.1 consist entirely of sections pre-mining land use and capability (e.g., Section 5.1.1) and post-mining ELU and capability (Section 5.1.2). These sections are not required by the IRT. Please refer to the 2022 Five-Year MPRP for the most recent pre-disturbance and post-closure land use and capability information. These sections will be updated in future iterations of the Five-Year MPRP.

5.1.1 Pre-Mining Land Use and Capability

This section is not required for this application as per the IRT.

5.1.2 Post-Mining End Land Use and Capability

This section is not required for this application as per the IRT.

5.2 Existing Mine Disturbance Footprints and Conditions

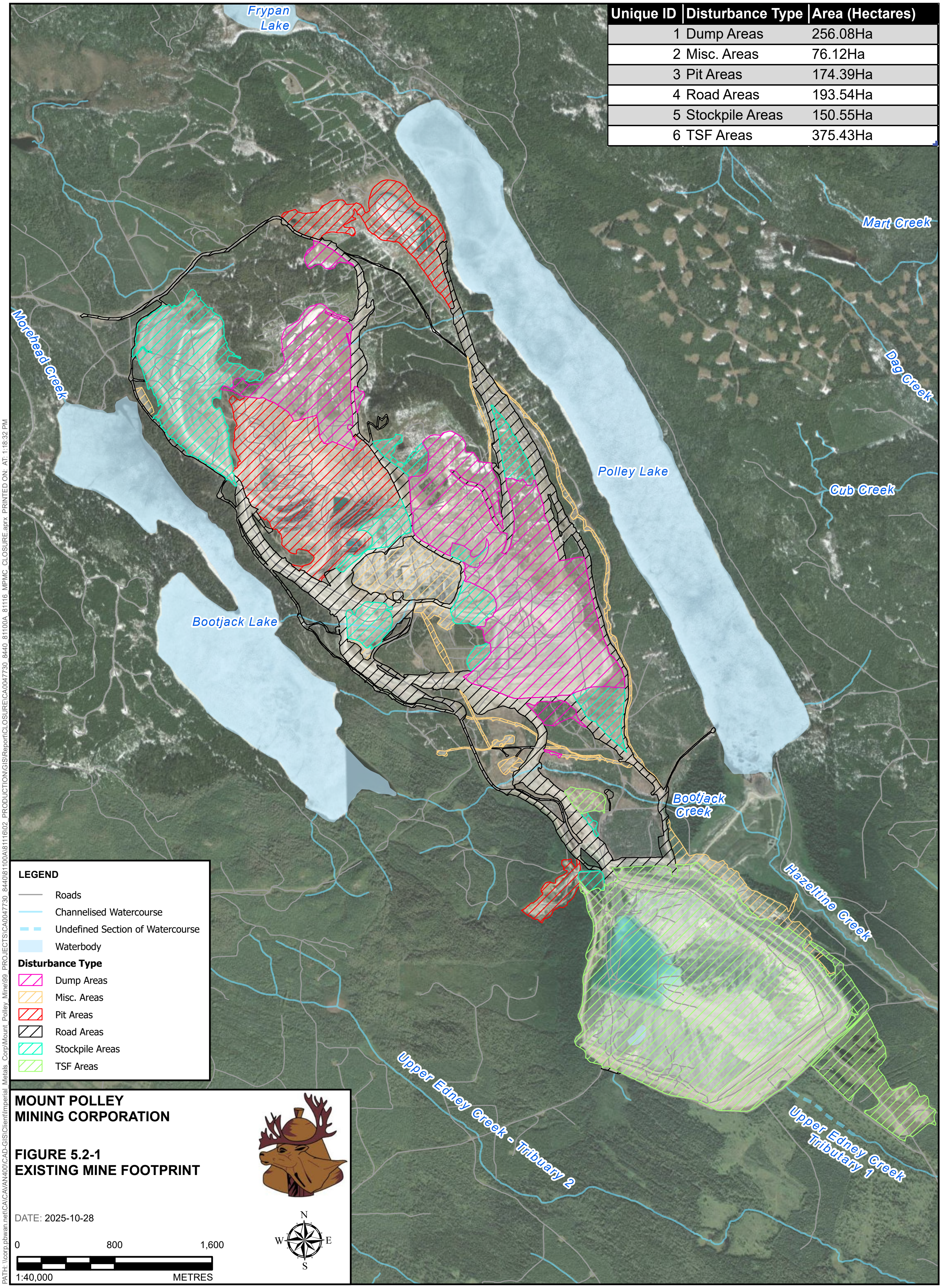
The Mine Site includes various disturbed areas resulting from past and on-going mining activities. These areas include open pits, waste rock dumps, tailing storage facilities, haul and access roads, stockpiles, and supporting infrastructure. The disturbance footprint has developed over time in alignment with the operational needs and is documented in 2022 Five-Year MPRP (MPMC 2022) and 2024 ARR (ARR; MPMC 2025).

The primary disturbed areas of the Mine Site are provided below:

- Open Pits – Pits include the Cariboo-Springer, Wight, and Boundary Pit
- Waste Rock Dumps – Several Rock Disposal Sites (RDS) have been constructed using NAG and PAG materials, with progressive reclamation applied where feasible.
- TSF – The TSF has undergone multiple raises with plans to raise the TSF to an ultimate elevation of 987 m.
- Haul and Access Roads – A network of haul and access roads constructed from NAG rock provides connectivity across the Mine Site.
- Supporting Infrastructure – Additional disturbed areas include the mill area, laydown yards, maintenance facilities, and water management structures.

The total disturbed area is shown in Figure 5.2-1, and is mapped and monitored as part of the environmental management and closure planning processes. Refer to Table 5.2-1 for the existing disturbances by area. The TSF footprint accounts for approximately 384.4 ha of the total 1300 ha of disturbance at the Mine Site.

Unique ID	Disturbance Type	Area (Hectares)
1	Dump Areas	256.08Ha
2	Misc. Areas	76.12Ha
3	Pit Areas	174.39Ha
4	Road Areas	193.54Ha
5	Stockpile Areas	150.55Ha
6	TSF Areas	375.43Ha



MOUNT POLLEY MINING CORPORATION

FIGURE 5.2-1
EXISTING MINE FOOTPRINT

DATE: 2025-10-28

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Table 5.2-1: Existing Disturbance Area and Proposed Adjustments

Current and Post 987 m build Reclamation Areas				
Area Name	**Total Area (Current)**	**Areas Requiring Reclamation**		**Total Area (987 m)**
		Current	**987 m Additional**	
Interior (Lake)	31.03	0		
Interior (Beach)	182.1	182.1		
Embankments	77.42	77.42		
Buttresses	16.97	16.97	**28.12**	
Till Borrows	46.07	0		
Water Management	30.8	0		
Total	384.39	276.49	**28.12**	412.51

5.3 Proposed 5-Year Mine Disturbance Footprint

The TSF is expected to reach an elevation of 973 m by the end of the 2025 build season. With an additional 1 m lift planned for early 2026, it will be able to accommodate tailings until late 2026. To allow for sufficient capacity for the remainder of the life of mine, the TSF embankments must reach an elevation of 987 m. This process will include a marginal increase in TSF footprint (Figure 5.3-1). The raise will include the following:

- Expansion of the TSF embankments and associated infrastructure (e.g., seepage collection systems, access roads).
- Additional tailings depositional area within the TSF basin.
- Updated water management infrastructure.

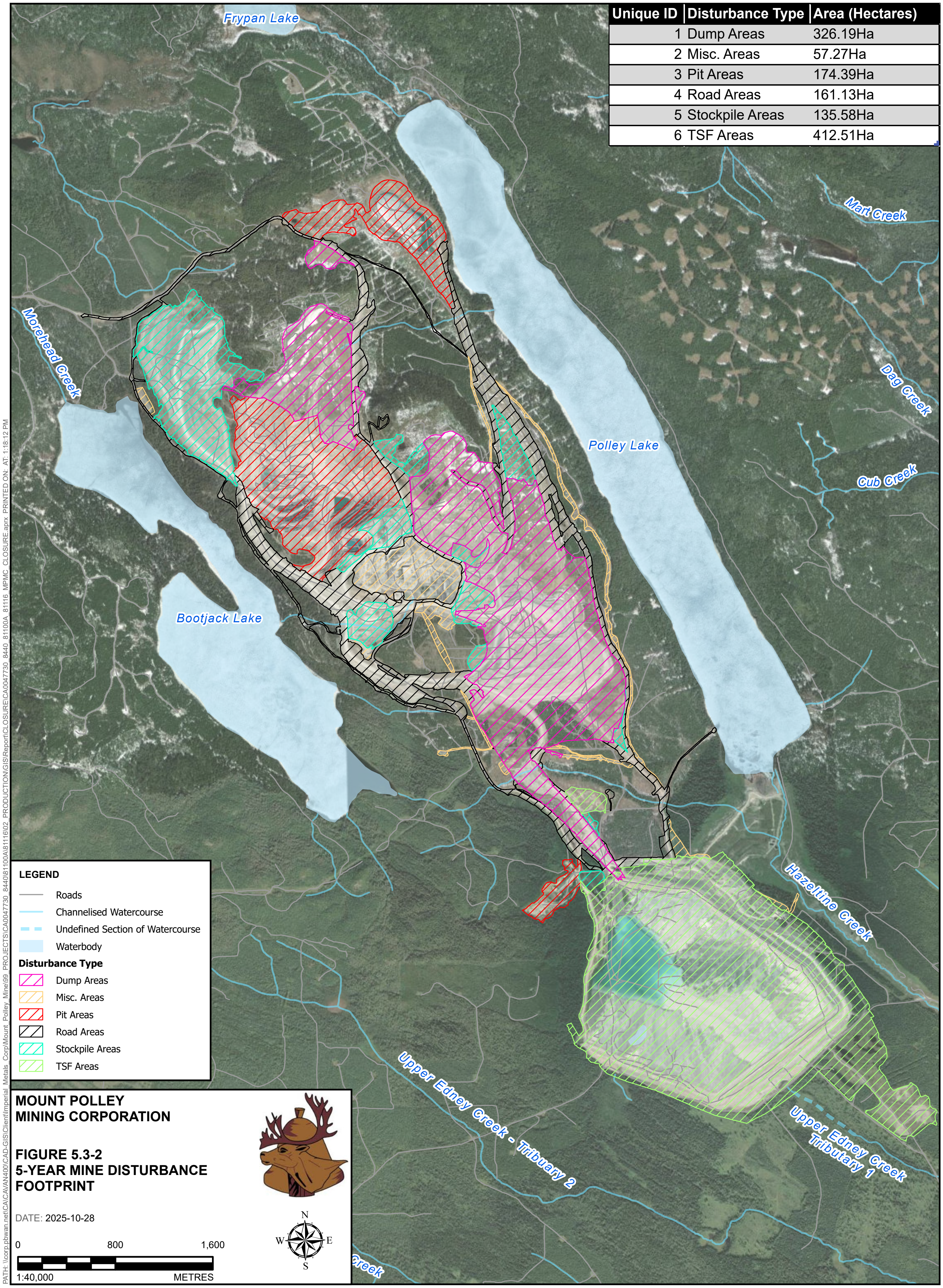
Construction of the TSF buttresses to support the raise will occur first in 2026. Subsequent raises in elevation will occur each year, but the 987 m elevation will not be achieved until 2031.

In post-closure, the final landform will be integrated into the surrounding landscape and will support the ELUs and ecosystems. The change in the Mine Site disturbance footprint resulting from the TSF 987 m raise over the next 5 years is summarized in Table 5.3-1. Due to construction, progressive reclamation of the TSF is not expected within the next five years.

Table 5.3-1: 5 Year Disturbance Footprint Change from TSF 987 Raise

Component	Current Disturbance (ha)	5 Year Total Disturbance (ha)
TSF (987 m)	384.39	412.5
2024 ARR Total	1226.71	1254.83
Total Changes		28.12


Polley Lake
Bootjack Creek
Hazeltine Creek
TSF Pond
Upper Edney Creek - Tributary 1
LEGEND
CHANNELISED WATERCOURSE
UNDEFINED SECTION OF WATERCOURSE
AREA OF NEW DISTURBANCE IN 2025
LIFE OF MINE DISTURBANCE FOOTPRINT
MOUNT POLLEY MINING CORPORATION
FIGURE 5.3-1
TSF 987 m DISTURBANCE DIFFERENCE
DATE: 2025-11-06
DRAWN: AA
0
250
500
1:15,000
METRES
N
S
E
W

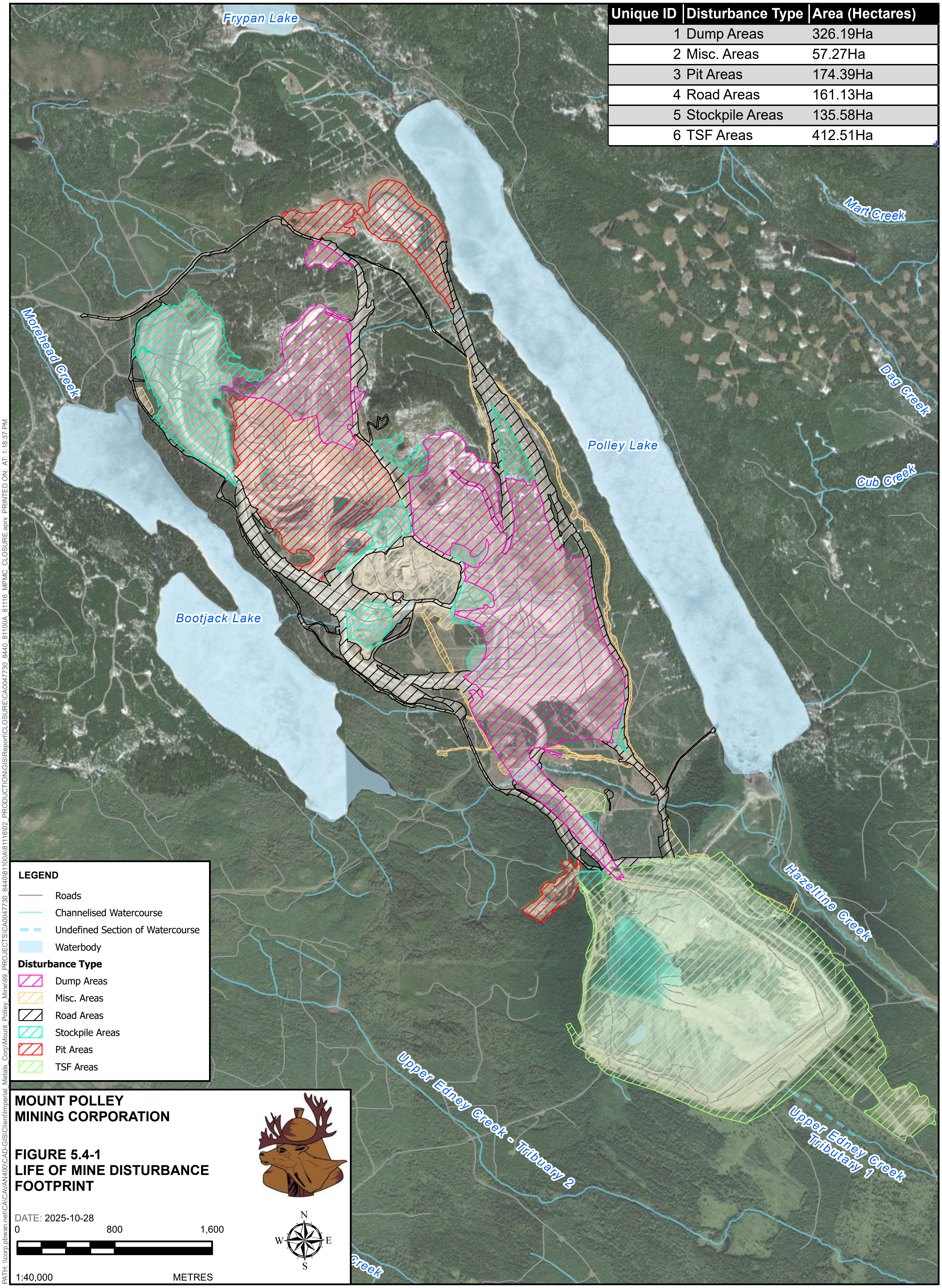


Unique ID	Disturbance Type	Area (Hectares)
1	Dump Areas	326.19Ha
2	Misc. Areas	57.27Ha
3	Pit Areas	174.39Ha
4	Road Areas	161.13Ha
5	Stockpile Areas	135.58Ha
6	TSF Areas	412.51Ha

5.4 Life of Mine Disturbance Footprint

The LoM disturbance footprint for the TSF remains unchanged after Year 5, as the buttresses will have been constructed, and they account for the maximum spatial extent (i.e., in plan view) of the TSF.

Unique ID	Disturbance Type	Area (Hectares)
1	Dump Areas	326.19Ha
2	Misc. Areas	57.27Ha
3	Pit Areas	174.39Ha
4	Road Areas	161.13Ha
5	Stockpile Areas	135.58Ha
6	TSF Areas	412.51Ha



MOUNT POLLEY MINING CORPORATION

FIGURE 5.4-1
LIFE OF MINE DISTURBANCE FOOTPRINT

DATE: 2025-10-28

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5.4.1 Progressive Reclamation

Reclamation and closure strategies are designed to be adaptable and evolve based on findings of progressive reclamation, site monitoring, research, and advancements in engineering and science. Reclamation research and progressive reclamation work synergistically, with progressive reclamation offering up locations to conduct research trials, and research trials informing future closure prescriptions.

Table 5.4-1 provides a tentative schedule for reclamation research as outlined in the Reclamation Research Plan, for the greater Mine Site. The Reclamation Research Plan will be applied on areas that are ready to be progressively reclaimed as trial locations. However, work in the next five years will focus on monitoring progressive reclamation and research projects. For further information, refer to the Reclamation Research Plan, or Section 4 of the 2022 Five-Year MPRP (MPMC 2022), which covers site wide reclamation research in depth.

Table 5.4-1: Tentative Schedule for Research Projects in the Projected 5-year Reclamation Research Plan

Task	Duration	Start	Finish	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10 (mine closure)
Water Management Strategies and Post-Closure Maintenance and Contingency Requirements: Research Requirement (c)	Year 1-Year 10	Year 1	Year 10[1]	Dependent on water management system									
Species-Specific Planting Trials: Research Requirement (d)	Year 1 - Year 10	Year 1	Year 10	Establish New Test Plots	Continue Current Monitoring			Establish Test Plots surrounding the TSF	Monitor				
Methods for Reducing High Competing Grass Cover: Research Requirement (g)	5 year period	Any year	5 years from initiation	As required									
Soil Replacement Plan: Research Requirement (i) **does not include TSF	5 year periods	Year 1	Year 10	Establish Test Plots within areas that do not have plots	Monitor								
Management for Invasive Plants: Research Requirement (i)	As needed	Year 1	Year 10	Survey & Treat	Monitor treatment effectiveness, retreat as required								
Reclamation Prescription for the TSF: Research Requirement (j)	5 year period	5 years prior to mine closure	Year 10					Establish Test Plots	Monitor				
Assessment of Soil Decompaction Methodologies: Research Requirement (k)	5 year period	5 years prior to mine closure	Year 10					Determine Areas of Severe Compaction & Establish Test Plots	Monitor				
Cumulative Effects of Fertilization and Biosolids Application: Research Requirement (o)	Up to 30 days	Prior to application of fertilizer/biosolids	Up to 30 days post-treatment	As required									

5.5 Reclamation and Closure Approaches

The JAIR table requires detailed information based on design basis assumptions, closure designs, landform designs, cover system designs, revegetation designs, and criteria for reclamation and closure (refer to Table 5.11-1). These are provided in subsequent subsections.

5.5.1 Closure Design Basis

As this application is specific to the TSF, the closure design basis of other mine components are not discussed (refer to Appendix 5-1 for site wide closure designs).

Reclamation and closure approaches for the TSF described within this section are conceptual and consider existing and pre-mining conditions (Appendix 5-1; MPMC 2022).

5.5.2 Closure Design of the TSF

5.5.2.1 Physical Stability and TSF Landform Design

Water management is a crucial part of TSF physical stability. Figure 5.5-1 shows an overview of the projected surface water catchments in post-closure. As part of the TSF raise to 987 m, MPMC has updated the SWWMB and Site Wide Water Quality Model (SWWQM) to support long-term closure planning. The updated SWWBM reflects the changes because of the 987 m TSF raise as well as climate change projections using deterministic and stochastic inputs and considers recent monitoring data and climate scenarios to refine water quality predictions. Post-closure water management measures are outlined in The Design Report for the TSF 987 m water management infrastructure (Appendix 5-2), and the site wide WMP (Appendix 10-5). The current closure design will be updated as a part of the 2027 MPRP update and other Code requirements (just prior to closure).

The Physical stability of the TSF will be monitored throughout its life cycle. Visual inspections will be performed at regular intervals (e.g., seasonally), with additional inspections following major rainfall events (e.g., those defined with return intervals). Inspections will note signs of pedestalling stones, rilling, gullying, slope creep/failure of the coversoil, and sheet erosion. Should poor stability of the placed coversoil be observed, contingencies such as rough mounding, placement of coarse woody debris, use of cover crops, and evaluation and subsequent amendment of the coversoil will be implemented. Refer to Sections 5.11 and 5.12 for further details.

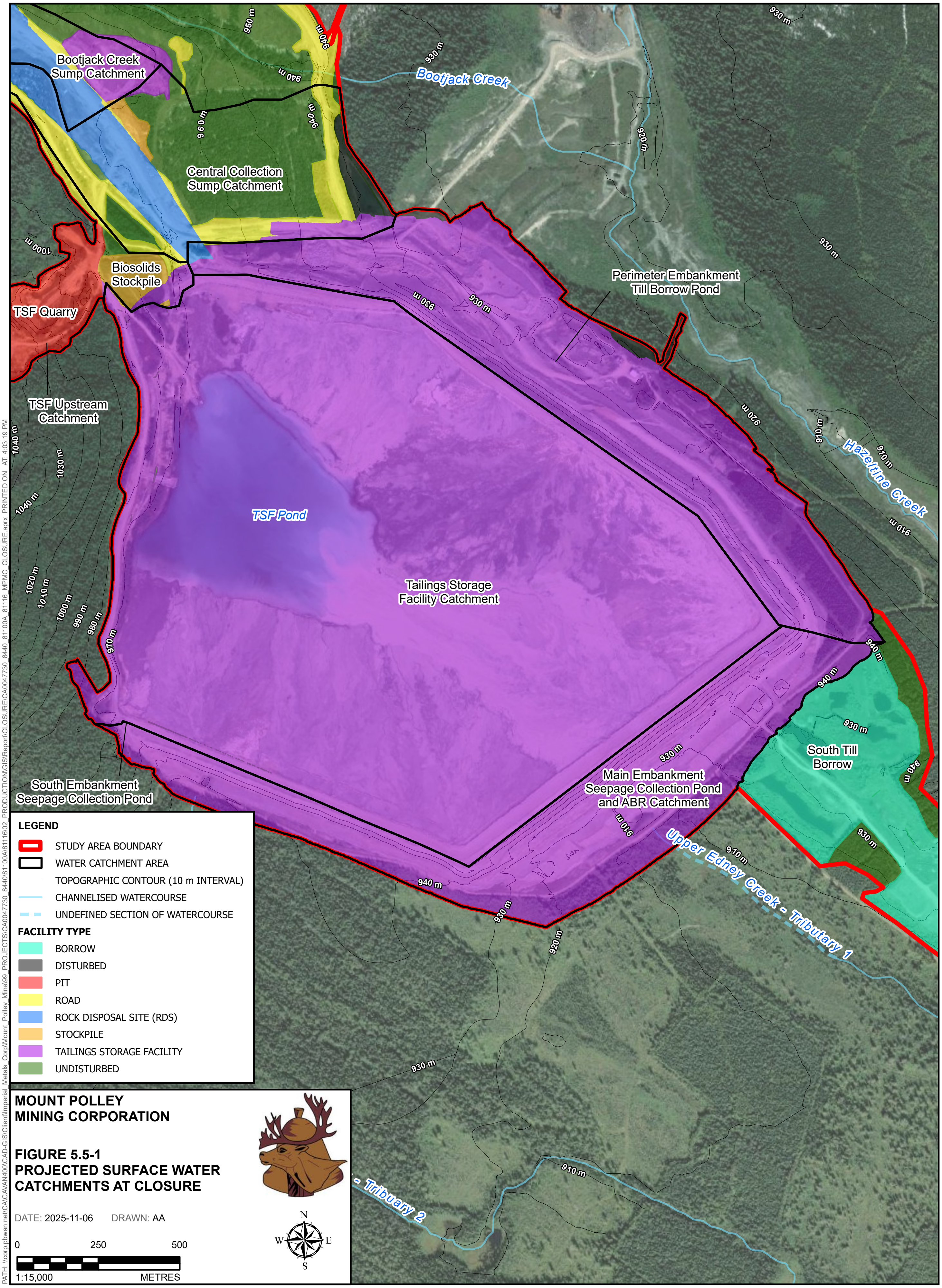

FIGURE 5.5-1
PROJECTED SURFACE WATER CATCHMENTS AT CLOSURE

5.5.2.2 Cover Systems

Currently, the closure design of the TSF does not include engineered closure covers, as the tailings contained within the TSF are not PAG (SRK 2022). The closure design, however, does include a reclamation cover, which will be revegetated. This cover and the revegetation prescriptions are discussed in the following two subsections.

5.5.2.2.1 Reclamation Cover – Soil Resources

Figure 5.5-2 provides details related to the expected soil placement thicknesses for targeted post-closure plant communities. Table 5.5-1 provides the most recent soil and till stockpile inventory. Table 5.5-2 provides an updated material balance. Refer to Appendix B of Appendix10-2 (MPMC SMP) of the 2022 Five-Year MPRP for soil chemistry (MPMC 2022).

The following definitions are used through this subsection, and provided here for clarity:

Coversoil: **Topsoil** or amended **Till** that is placed in layers to establish the growth medium for desirable post-closure ecosystem plants.

Reclamation Cover: The established soil system used to establish post-closure ecosystems. The reclamation cover often comprises of two or more layers of **Reclamation Material.**

Reclamation Material: all soil-like materials used in the establishment of post-closure ecosystems. Refers to **Coversoil**, **Till**, **Biosolids**, and other materials used in the creation of the **Reclamation Cover** collectively.

Topsoil: the uppermost mineral horizon of the soil profile (e.g., the A horizon). This layer is salvaged with any leaf-litter or peat and stored separately from **Till** to prevent the dilution of the nutrients stored within the topsoil horizon.

Till: **Subsoil**, or clean overburden used for reclamation.

Subsoil: the mineral layer, or layers that underlie **Topsoil**. These layers are salvaged together and referred to as **Till.**

To manage soil on site, MPMC has developed an SMP that includes protocols for soil salvage, stockpiling, and placement (Appendix 10-2, MPMC 2022). The SMP provides guidance on the salvage of topsoil (e.g., coversoil), subsoil (till), organic soil, and woody debris. In general, accessible soils will be salvaged, unless soil quality concerns are noted during preliminary sampling, or observed in the field (e.g., excessively high coarse fragment content). The SMP describes the procedure for salvaging materials, and best management practices to maximize soil quality and maintain the integrity of soil stockpiles. Direction for reclamation material application, details regarding placement depths, and directions for reducing compaction are also included.

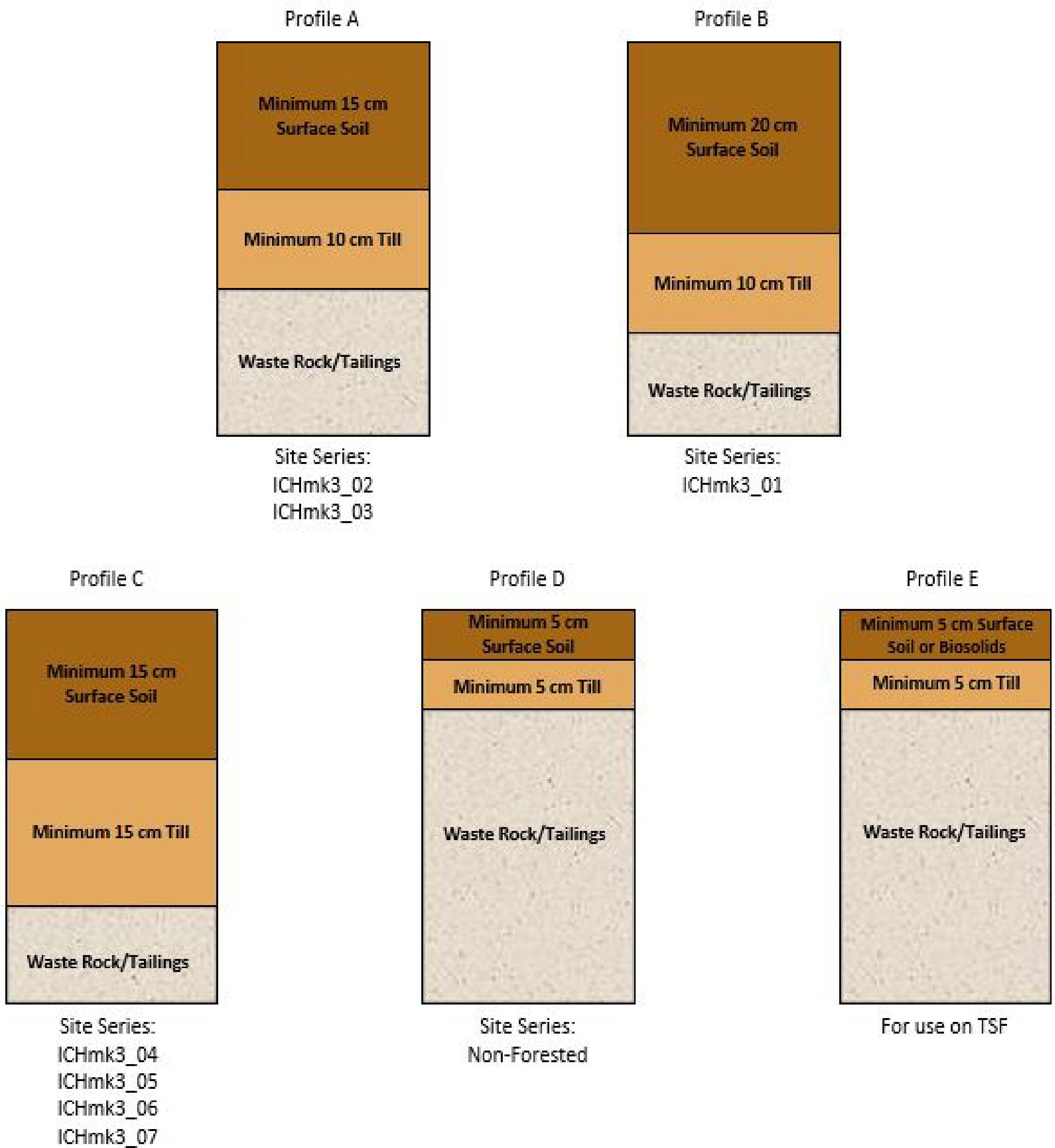

Figure 5.5-2: Proposed Coversoil Profiles Based on Desired Ecosystem and ELU

Table 5.5-1: Stockpiled Soil and Till Inventory as of Dec 31, 2024

Stockpile Name	Location	Soil Volumes (m^3)	Year Established
TSF Corner 1 – Windrow	TSF Corner 1	5,100	1995
Upper Plug Access Road – Windrow	Along upper Plug Access Road	1,700	2015
Plug – Stockpiles	Polley Lake Plug	127,017	2015/2016
Perimeter Pond – Stockpile	Bottom of Corner One (near old Perimeter Pond)	4,700	2013
Till Borrow – Windrow	North of (Perimeter) Till Borrow	42,800	1995 2013 – 2016
Perimeter Embankment – Windrow	Edge of Perimeter Embankment	3,800	2013/2015
Main Embankment – Stockpile	SE of Main Embankment	94,900	1995
South Till Borrow – Stockpile 1	NW stockpile in South Till Borrow	28,638	2014
South Till Borrow – Stockpile 2	S stockpile in South Till Borrow	112,500	2000
South Till Borrow – Stockpile 3	NE stockpile in South Till Borrow	9,600	2016
Gavin Lake Road-3	Gavin Lake Road (along South/Main Embankment)	19,261	1995
TAR – Windrow	Adjacent to TAR (TAR1-5)	43,500	2013/2014
Tailings Reclaim Road – Windrow	Tailings Reclaim Road (TRR 2-6)	44,300	1995
Cariboo Stockpile – Stockpile	Below Cariboo Stockpile	33,967	2015/2016
Upper Cariboo Stockpile	Upslope from Cariboo Stockpile	68,494	2021
Mill Site – Stockpile	East of Mill/Admin Building (includes berms)	10,700	1995
Access Road km 11.5 – Stockpile	Across from NBD Reclamation Parcels 1 - 10	8,200	Unknown
Access Road km 12 – Stockpile	S-SW of Mount Polley Peak (by km 12 on Access Rd)	83,700	1995
East RDS – Stockpile	Top of East RDS	58,500	2000
Leach Pad – Stockpile	Top of East RDS	4,800	2015
Highway to Heaven – Windrow	Highway to Heaven Access Road	21,500	2010/2015/2016
NEZ Dump Top – Stockpile	Top of NEZ Dump	6,500	Unknown
		14,365	2009
		25,000	2014
NEZ Dump Lower – Stockpile	Off Wight Pit Haul Road	71,300	2005 – 2008/ 2014/2015
Wight Pit Till – Stockpile	Bottom of Wight Pit Haul Rd	135,100	2005 – 2008
Wrap Around Road – Windrow	Wight Pit - TSF Connector Road (below NEZ Dump)	101,600	2010
North Bell Dump Till – Stockpile	North Bell Dump	271,914	2007 – 2012
North Bell Dump Top and 2	Top of North Bell Dump	8,500	2012
Springer North 1,2,4	Between North Bell Dump and Springer Pit	20,000	Unknown
Northwest Sump Road – Windrow	Northwest Sump Road	7,500	2012
PAG Dump – Windrow	Below PAG Dump	39,300	2014
SEZ 1 – Stockpile	Top of Old Pond Zone Pit	108,687	2012/2013/ 2015/2016
SEZ 2 – Stockpile	Top of SERDS (near SEZ - 1)	14,000	2012-2014
SEZ-3	Below Co-mingling Project	620,000	2009
SERDS – Stockpile	Below SERDS Dump	58,000	2012/2013
SERDS – 3	Edge of SERD near old Pond Zone	14,800	2021
Old TSF Haul Road	Along old TSF Haul Road (SERDS)	27,200	2016
Lower SERDS – Stockpile 1	Below SERDS Dump	27,870	1995/2014
Lower SERDS – Stockpile 2	Below SERDS Dump	27,539	2015
Lower SERDS v Stockpile 3	Below SERDS Dump	140,100	1995/2014
TAR 1	Below TAR	2,811	2013
TAR 6	Adjacent to TAR	175,487	2023/2024
TDAR Sand/Soil Stockpile	Tailings Dam Access Road	91,812	2017
Total Volume of Stockpiled Soils	-	**2,837,062**	-

m3 = cubic metres; NEZ = Northeast Zone; RDS = Rock Disposal Stockpile; SERDSs = Southeast Rock Disposal Stockpile; SEZ = Southeast Zone; TAR = Tailings Access Road; TDAR = Tailings Dam Access Road; TSF = Tailings Storage Facility.

Table 5.5-2: Coversoil Balance for TSF 987 m Raise and Entire Mine Site

Reclamation Media Needs	Area	Soils / Till Volume	Comment
Current	(ha)	(m^3)	
Open Pits	6.86	20,580	Pits are largely left as pit lakes and wall faces.
Tailings Storage Facilities	276.49	440,188	Includes embankments, beach area and buttresses.
Rock Disposal Sites	184.29	552,870	NAG stockpiles not already reclaimed.
Ore and PAG Stockpiles	122.61	365,395	
Soils Stockpiles	32.45	0	
Rock Quarry	8.93	26,790	
Linear Features	169.66	508,980	Primarily roads and laydowns.
Miscellaneous	6.89	20,665	
Total	808.18	1,935,468	
Added by 987 m Raise	**28.12**	**84,360**	**Same Reclamation Prescriptions as for Buttresses.**
Total Site Wide	**836.3**	**2,019,828**	Required for reclamation.
Total Available Reclamation Media		**2,837,062**	Total for both soils and till.
Additional Recovered through 987 m raise			
Till		350,000	Estimate of added till recovered. Primarily sump excavation.
Soils		120,000	Estimate of added soils. Primarily due to buttress extension.
Total Material Balance		**1,287,234**	

The Mine Site has a greater material balance compared to that indicated in the 2022 Five-Year MPRP (MPMC 2022), as previously, there was a shortage of reclamation material. Recent stockpile assessments have identified more reclamation material than previous estimates, and the mine also has recently added significant volumes as a result of TSF buttress and SERDS stockpile expansion. The Mine Site currently has 2,837,062 m^3 of soil and till in stockpile, with the ability to recover an additional 470,000 m^3 or more with the 987 m raise. This will result in a 1,287,234 m^3 positive balance.

5.5.3 Revegetation Prescriptions

The TSF currently has assigned post-closure ecosystems (MPMC 2022). As the 987 m raise only marginally changes the footprint of the TSF, the existing revegetation prescriptions will be extended where necessary (e.g., embankments). Overall, the composition of post-closure ecosystems on reclaimed TSF will remain similar to that already provided in the 2022 Five-Year MPRP (MPMC 2022). Table 5.5-3 and Table 5.5-4 provide revegetation prescriptions by Biogeoclimatic Ecosystem Classification site series and the MPMC seeding mix. As with other components of the MPRP, its closure strategies and revegetation prescriptions will be updated to reflect current best management practices, the current state of knowledge, and refined designs as part of the 2027 MPRP update.

5.5.3.1 Planting Strategies

To achieve desired ecosystems on the post-closure landscape, conifer and deciduous species (e.g., Douglas fir, black cottonwood) will be planted at a roughly uniform density, while targeting moist, protected microsites. Land features, such as depressions, on recontoured landscapes will be targeted for planting or used as densely planted biodiversity islands of deciduous trees and shrubs. These features will be important as revegetation takes hold, possibly acting as a seed catch for seeds of more diverse species. Timing will also be considered; grass species benefit from fall seeding while tree and shrub planting will be timed to occur in the spring.

Table 5.5-3 Revegetation Prescriptions of the Mine Site

Site Series		Moisture	Gradient (%)	Slope Position	Aspect	Soil Profile Type [7]	Grasses/Forbs[1,2]	Deciduous Trees [3]	Coniferous Trees [4]	Shrubs [5] 200 – 500 stems per hectare (sph)
Zonal	ICHmk3/01	Mesic/submesic	0 to 20	Middle	Variable	B	native grasses/ forbs (30 kilograms per hectare [kg/ha])	black cottonwood – 200 (sph) trembling aspen – 50 sph paper birch – 50 sph	Douglas fir – 1400 sph lodgepole pine – 600 sph hybrid spruce Western redcedar alpine fir [5]	Sitka alder, saskatoon, prickly rose, willow, huckleberry, blueberry, common juniper [8], soopolallie
Xeric to Subxeric	ICHmk3/02	Xeric, subxeric	0 to 10	Crest	South or west facing	A		trembling aspen – 200 sph	Douglas fir – 1400 sph lodgepole pine – 600 sph hybrid spruce	
	ICHmk3/03		50 to 70	Upper	Variable	A		trembling aspen – 200 sph	Douglas fir – 1400 sph lodgepole pine – 600 sph Western redcedar hybrid spruce	
Mesic to Moist Nutrient Rich	ICHmk3/04	Subhygric, mesic	10 to 35	Lower, middle	Variable	C		black cottonwood – 200 sph trembling aspen – 50 sph paper birch – 50 sph	Douglas fir – 1400 sph hybrid spruce – 600 sph alpine fir Western redcedar lodgepole pine	
	ICHmk3/05	Subhygric		Middle, lower	Variable			black cottonwood – 200 sph trembling aspen – 50 sph	hybrid spruce – 1400 sph lodgepole pine – 600 sph Western redcedar [5] alpine fir [5]	
Moist, Very Rich	ICHmk3/06	Subhygric, mesic	0 to 25	Lower, middle	Variable	C		black cottonwood – 200 sph trembling aspen – 50 sph paper birch – 50 sph	Douglas fir – 1400 sph hybrid spruce – 600 sph Western redcedar alpine fir lodgepole pine	
	ICHmk3/07	Hygric	0	Toe of long slopes or depression	Level			black cottonwood – 200 sph	hybrid spruce – 1400 sph western redcedar – 600 sph alpine fir lodgepole pine	
Organic non-Forested	Non-forested	Subhygric	0	Depression	Level	D		n/a	n/a	
TSF		Hygric	0	Lower	Level	0		black cottonwood – 500 sph	n/a	

1) Grass and forb seeding rate should be reduced (5 to 10 kg/ha) if amendments such as biosolids or fertilizer are used.
2 Grass and forb mixture shown in Table 5.5-4.
3) Species chosen based on BC Forest Development Stocking Standards (ICHmk3 biogeoclimatic subzone).
4) Species chosen based on BC Forest Development Stocking Standards (ICHmk3 biogeoclimatic subzone).
5) Later successional species to be considered for underplanting after primary canopy is established.
6) Shrub species to be selected appropriate for each site based on research and availability.
7) Refer to Figure 5.5-2, for profile descriptions. 8) Juniper will be targeted for drier sites. n/a not applicable.

Table 5.5-4 Mount Polley Native Species Grasses and Forbs Seed Mix

Species	% (by weight)	% (by seed count)
Mountain brome	20	8.61
Native red rescue	10	17.81
Rocky mountain fescue[1]	15	28.94
Bluebunch wheatgrass[1]	25	10.76
Blue wildrye[1]	25	3.34
Junegrass[1]	3	17.81
Ticklegrass	1	11.87
Big leaf lupine	0.97	0.07
Fireweed	0.03	0.81

1) Forage species.

5.6 Habitat Compensation

The TSF raise to 987 m will occupy a section of a mapped non-fish bearing tributary (Tributary 1) to Upper Edney Creek as the buttress expands to the southeast. Although the tributary has been mapped previously, no evidence of a channel was observed during a field survey where the TSF buttress is proposed or downstream of that buttress (Refer to Figure 5.3-1). An Authorization for the construction of the original TSF was previously issued by DFO. An RfR to DFO has been submitted and their review of the RfR application is in progress. Additional information on fish habitat is provided in Sections 3.7.2 and 8.1.

5.7 Trace Elements in Soils and Vegetation

This section is not required as part of the permit amendment application per the IRT.

5.8 Contaminated Sites and Ecological Risk Assessment

This section is not required as part of the permit amendment application per the IRT.

5.9 Disposal of Chemicals, Reagents, Hazardous Materials, and Contaminated Materials

This section is not required as part of the permit amendment application per the IRT.

5.10 Groundwater Well Decommissioning

An inventory of groundwater wells is provided in Table 5.10-1. Wells in Table 5.10-1 that have been used to monitor groundwater conditions around the TSF (i.e., the 'functional' monitoring wells) are described in the 2024 Annual Groundwater Monitoring Report (Appendix 3-8). Most of the monitoring wells will need to be decommissioned for the TSF dam raise and replaced at suitable locations, as outlined in Table 5.10-1. One of the following three well decommissioning methods will be used to meet the minimum requirements for decommissioning wells as outlined in the Groundwater Protection Regulation:

1. **Over Drilling Method:**

- Enlarge the borehole to eliminate potential contaminant migration;
- Over drill the well within a drill bit (e.g., tri-cone) and remove the casing;
- Remove the remaining casing, concrete, and sand-pack with an under-reamer; and
- Seal to surface.

2. **Perforating and Pressure-Grouting Method:**

- Perforate the casing and annular material with denotation or cutting tools. Perforations should consist of a minimum number of shots to sufficiently fracture the casing and annular material and
- Pressure grout to force fractures in the casing and annular material to seal off any possible conduits to contaminant migration along the borehole.

3. **Tremie-pipe Method:**

- Install PVC pipe and grout to surface.

The Tremie-pipe method is a typical standard for well decommissioning. However, if the well cannot be decommissioned using the three methods outlined above, alternative specifications prepared by a qualified person may be used.

The decommissioned wells will be replaced with appropriately positioned replacement monitoring wells following well decommissioned or earlier. Locations of replacement monitoring wells are currently under consideration and planning work in progress.

Groundwater monitoring and dewatering wells decommissioning, for wells not required for closure and post-closure monitoring, will occur once operations cease. The remaining groundwater monitoring and dewatering wells will be decommissioned once closure and post-closure monitoring indicates alignment with post-closure water quality targets.

Table 5.10-1: Summary Inventory of Monitoring Wells

Year	Consultant	Monitoring Well ID	Borehole	Location Description	Coordinates		Ground Elevation (masl)	Collar Elevation (masl)
					Northing (m)	Easting (m)		
1989	Knight Piesold	MP89-231	MP89-231	Perimeter Embankment	5,819,929.90	595,178.85	927.2	-
1989	Knight Piesold	MP89-232	MP89-232	Tailings Basin	5,818,944.44	595,471.80	919.4	-
1989	Knight Piesold	MP89-233	MP89-233	Perimeter Embankment	5,819,358.58	596,015.13	933.9	-
1989	Knight Piesold	MP89-234	MP89-234	Main Embankment	5,818,369.54	595,625.93	909.3	-
1989	Knight Piesold	MP89-235	MP89-235	South Embankment	5,818,356.15	595,016.85	946.2	-
1989	Knight Piesold	MP89-236	MP89-236	Abutment (near South Embankment)	5,818,961.71	594,395.20	949	-
1996	Knight Piesold	GW96-1A	GW96-1A	Perimeter Embankment	5,819,939.06	595,415.82	927.89	928.49
1996	Knight Piesold	GW96-1B	GW96-1B	Perimeter Embankment	5,819,935.22	595,416.16	927.81	928.41
1996	Knight Piesold	GW96-2A **	GW96-2A	Perimeter Embankment	5,819,449.92	596,065.40	931.42	931.92
1996	Knight Piesold	GW96-2B **	GW96-2B	Perimeter Embankment	5,819,447.08	596,074.73	931.42	932.02
1996	Knight Piesold	GW96-3A **	GW96-3A	Main Embankment	5,818,308.97	595,768.75	912.06	912.56
1996	Knight Piesold	GW96-3B	GW96-3B	Main Embankment	5,818,306.52	595,765.16	912.06	912.56
1996	Knight Piesold	GW96-4A **	GW96-4A	South Embankment	5,818,164.58	595,147.94	940.56	941.26
1996	Knight Piesold	GW96-4B **	GW96-4B	South Embankment	5,818,162.87	595,151.26	940.46	941.16
1996	Knight Piesold	GW96-5A	GW96-5A	Northwest side of TSF	5,819,626.68	594,330.34	973.55	974.15
1996	Knight Piesold	GW96-5B	GW96-5B	Northwest side of TSF	5,819,629.64	594,329.79	973.44	974.04
1996	Knight Piesold	GW96-9	GW96-9	Main Embankment	5,818,277.14	595,503.89	916.18	916.78
2000	Knight Piesold	GW00-1A **	GW00-1A	South Embankment	5,818,476.10	594,367.95	939.19	940.02
2000	Knight Piesold	GW00-1B **	GW00-1B	South Embankment	5,818,475.85	594,371.11	939.2	940.05
2000	Knight Piesold	GW00-2A **	GW00-2A	South Embankment	5,818,337.64	594,651.69	943.42	944.17
2000	Knight Piesold	GW00-2B	GW00-2B	South Embankment	5,818,336.36	594,657.64	943.43	944.39
2000	Knight Piesold	GW00-3A **	GW00-3A	South Embankment	5,818,237.66	594,899.91	943.34	944.04
2000	Knight Piesold	GW00-3B **	GW00-3B	South Embankment	5,818,238.09	594,896.22	943.06	943.79
2011	AMEC	GW11-2A	GW11-2A	North of TSF	5,821,031.81	594,939.05	934.4	935.15
2011	AMEC	GW11-2B	GW11-2B	North of TSF	5,821,029.90	594,937.74	934.47	935.24
2014	-	GW14-01	GW14-01	Northwest side of TSF	5,819,742.90	593,765.90	1036.3	-
2016	Golder	GW16-2A **	GW16-2A	Perimeter Embankment	5,819,731.19	595,831.15	925.1	925.9
2016	Golder	GW16-2B **	GW16-2B	Perimeter Embankment	5,819,734.31	595,832.84	924.95	925.52
2016	Golder	GW16-3A **	GW16-3A	Main Embankment	5,818,752.04	596,335.81	938.19	938.91
2016	Golder	GW16-3B **	GW16-3B	Main Embankment	5,818,757.46	596,337.84	938.35	939
2016	Golder	GW16-4A **	GW16-4A	Main Embankment	5,818,106.62	595,491.16	922.16	922.9
2016	Golder	GW16-4B **	GW16-4B	Main Embankment	5,818,109.50	595,489.47	922.26	922.97
2016	Golder	GW16-5A **	GW16-5A	South Embankment	5,818,539.05	594,207.62	963.64	964.29
2016	Golder	GW16-5B **	GW16-5B	South Embankment	5,818,541.45	594,206.42	963.91	964.57
2021	Golder	GW21-06	CPT21-06	Perimeter Embankment Buttress	5,819,066.00	596,228.05	946.12	947.08
2021	Golder	GW21-09	GA21-09	Main Embankment Buttress	5,818,304.68	595,544.37	930.53	931.44

(green shading) Functioning monitoring wells installed around the TSF.

** Wells that will be decommissioned and replaced as part of the 987 m dam raise.

5.10.1 Reclamation Monitoring

The TSF raise to 987 m elevation introduces the following reclamation considerations:

- Expansion of the TSF footprint and associated reclamation areas.
- Additional monitoring of tailings surface revegetation, soil stability, and seepage water quality.

Key aspects of the monitoring program are detailed in Table 5.11-1. All monitoring will be conducted by or under the supervision of QPs, including environmental/soil scientists, reclamation specialists, and wildlife biologists as outlined and detailed in Table 5.11-1. In addition, MPMC has numerous monitoring plans (appendices of Appendix 5-1; MPMC 2022). These monitoring plans will be used throughout the closure life cycle to minimize environmental risk, and to provide quality control during closure activities. Generally, reclamation monitoring (e.g., revegetation) will include the following steps:

- **Post-placement soil inspections:** after placement of coversoil, test pits are dug to determine placement depth and to verify if recommended reclamation methods described in Section 5.5.3 and the SMP (Appendix M of Appendix 5-1; MPMC 2022) were appropriately implemented.
- **Revegetation establishment assessments:** assessment of revegetated areas following the first growing season to determine the following:
  - survival and establishment of trees, shrubs, and herbaceous species
  - species composition (including presence of invasive species)
  - percent cover
  - observations of wildlife or grazing occurrences and usage
  - incidental signs of erosion issues
- **Periodic assessments:** includes all items identified in the revegetation establishment assessments; occurs at semi-regular intervals (e.g., year five and ten), and includes assessment and mensuration of trees.
- **Geotechnical Monitoring:** The inspection and monitoring of the TSF will be aligned with the recommendations of the Canadian Dam Association in closure by a qualified geotechnical engineer, with additional extra inspections possible after extreme events (such as rainfall exceeding a selected design return period).

- The inspections will focus on conditions that could adversely impact the long-term function and stability of the structure. Inspection reports will be submitted to MCM for review.
- In post-closure (approximately 10 years following end of operations), it is anticipated that the monitoring frequency may be reduced, potentially supplemented by remote monitoring of site instrumentation.

Table 5.11-2: Mine Reclamation Closure Objectives and Criteria

Closure Objective	Indicator	Criteria
Landform Function		
Landforms have geotechnical stability.	Geotechnical stability	Visual inspection for the presence / absence of subsidence, erosion, deposition of sediment in low lying areas, ponding, gullying, rilling or slumping, including bank stability round watercourses and waterbodies.
Landscape enhancements are appropriate to the ecosystem and increase the diversity of the landscape.	Landscape enhancements	Presence of rocks, coarse woody debris, standing woody debris, brush piles, snags, bird / bat boxes.
Water		
The Mine Site water balance meets the needs of the post-closure landscape.	Successful function of the TSF and Expanded Springer Pit spillways	Assessment of water levels in the TSF and expanded Springer Pit. No signs of instability of the TSF, or the TSF and expanded Springer Pit spillways.
	Water quality parameters	Water quality parameters support discharge of water to the receiving environment.
	Pit lake elevation	Pit lake elevations align with projected modelling. Pit lake elevations successfully cover PAG material.
Geochemical Stability		
Mine Site components with potential for Metal Leaching / Acid Rock Drainage (ML/ARD) generation have covers that prevent oxygen from interacting with ML/ARD sources.	Water quality parameters	Cover Run-off and seepage water quality, if a dry cover is used.
		Overall water quality of the pit lake, if a wet cover is used to contain ML/ARD generating waste rock.
	cover stability (or elevation, if water is used)	Visual inspection for the presence/absence of subsidence, erosion, or slumping.
		Measurement of waterbody (e.g., pit lake) elevation.
Soil		
Reclamation materials are placed appropriate to the landform.	Soil depth	Average placement depth (m).
	Soil pH	Soil pH.
	Soil moisture regime	Soil texture/particle size analysis (percent sand, percent silt, percent clay), placement depth, topography.
Vegetation		
Terrestrial and aquatic vegetation common to the surrounding area is established.	Plant community composition (terrestrial, riparian and, marsh/aquatic)	Presence, percent cover, distribution of noxious and prohibited noxious weeds.
		Species inventory and percent cover by layer and species. Include damage codes (e.g., insect, browse).
The reclaimed landscape provides commercial forest (where designated as an ELU within the reclamation plan).	Regeneration of trees (commercial stocking)	Stocking (the percentage of a polygon that contains acceptable tree regeneration) (Information gathered to support this includes height, diameter at breast height and age for potentially commercial tree species).
	Mortality of trees	Percent mortality between planting and ten years after planting.
	Insects and disease	Percent of trees with signs of chewing, spots, eggs, nests, or galls.
	Browsing pressure	Percent of trees with signs of browsing on new shoots, bark damage.
	Limitations to vegetation growth	Percent of trees with signs of chlorosis, stunting, unusual formations.
Emergent Properties		
The reclaimed landscape provides for biodiversity.	Patch size and shape	Patch sizes (ha).
	Food vegetation species.	Food species for target wildlife species are present.
	Plant community composition – diversity, richness, evenness, and abundance	Species inventory, percent cover and density (stems/ha).
Traditional Ecological Value.	Wildlife habitat that supports traditional use	Derived from Plant Community Composition.
	Biodiversity that supports traditional use	Derived from Plant Community Composition and incidental wildlife observations.
	Vegetation that supports traditional use	Derived from Plant Community Composition.

5.11 Post-closure Reclamation Maintenance

It is possible that during post-closure monitoring, maintenance is required. Risks to successful closure will be partially mitigated through adaptive planning and decision-making.
The underlying strategy for reclamation and closure is that it is founded on a management approach that is based on iterative inputs from reclamation monitoring results, research findings, and changes to best practice and regulations. To this end, progressive reclamation activities provide opportunities to test, monitor, and adapt reclamation strategies, where required.
MPMC will use a ground-based sampling program as an effective method to measure success of reclamation and to help support the adaptive management approach to reclamation by identifying areas for mitigation and improvement in the reclamation design.

Maintenance is planned for, and is included in, MPMC's long-term reclamation planning. Long-term monitoring and maintenance will be conducted until the Project is ready for certification. If, during monitoring, sites are found that are not performing as expected, mitigations may be applied including, but not limited to those listed below:

- Infill planting
- Fertilization
- Mulching, weed control and pest control
- Irrigation
- Further investigations into soil and foliar chemistry

If required, MPMC will work with the MCM to determine appropriate mitigations based on best practices, experience at other mines, and results of academic and on-site research. Where uncertainty remains about the performance of reclamation activities, adaptive management strategies will be used to formulate an appropriate response. Whether or not adaptive management approaches are required will depend on the reclamation achieving the Success Criteria for the Mine Site Table 5.11-1.

5.12 Care and Maintenance

There are two scenarios where operations are suspended due to unplanned events; these are temporary Care and Maintenance and unexpected Care and Maintenance. The definitions of these two scenarios are provided below:

- **Temporary Care and Maintenance:** An unplanned halt in production and operations due to changes in economic conditions.

- **<u>Unexpected Care and Maintenance:</u>** an unplanned halt in productions and operations due to a more rapid development of unfavourable conditions. This definition includes cases such as an engineering failure or a shutdown due to environmental conditions.

In both cases, a Care and Maintenance Plan will be developed and submitted to the MCM for review, as resumption of activities is anticipated in the foreseeable future. This plan will include infrastructure preservation and health, safety and environmental maintenance, and surveillance programs. During Care and Maintenance, MPMC employees will conduct ongoing inspections of the Mine. Reasonable measures will be taken by MPMC to maintain both the safety of the public and the security of infrastructure and equipment, including:

- Locking access road gates.
- Posting signs prohibiting access by unauthorized personnel.
- Restricting site access, via foot or recreational vehicle traffic, to authorized persons only through use of fencing, where required, or by using existing topography and vegetation (i.e., dense forest) as barriers.
- Conducting regular security walk arounds and inspections (e.g., signs of erosion).
- Securing buildings and equipment against vandalism using a combination of fencing, video surveillance, and security personnel.
- Maintaining roads within the Mine Site to allow safe access for monitoring and maintenance.
- Conducting routine monitoring programs (e.g., water quality and water balance)
- Continued operation of site contact water management systems, including the WTP.

As the size of the Mine Site does not allow for exclusion fencing of the entire area, priority will be placed on preventing public access to high-risk areas in the Mine Site. A contact person(s) will be designated for authorized access to the Mine Site, and the name and telephone number of the contact person(s) will be kept clearly posted on access gates.

Section 10.8 of the HSRC in BC, requires that proponents notify the MCM prior to entering Care and Maintenance. Table 5.13-1 provides an overview of these notification requirements.

In some scenarios, the conditions that triggered Care and Maintenance do not relent, and a mine progresses to a state of unexpected closure. In the event of unexpected closure, the procedures detailed in Appendix 5-1 (MPMC 2022) will be implemented, as appropriate, given the mine plan status and the degree of permanence of the closure. Site water management requirements within the *EMA* permit continue during mine operation suspensions, including capture, conveyance, storage, treatment, and discharge of contact water on the Mine Site.

Table 5.13-1: Temporary Care and Maintenance Notification Requirements

Length of Mine Closure	Notice Required	Type of Closure
<1 year	▪ Continue to carry out the conditions of the Permit ▪ Carry out a program of site monitoring and maintenance	Care and Maintenance
>1 year	▪ Apply for an amendment to the Permit setting out a revised program for approval by the Chief Inspector ▪ Identify the hazards and provide detailed engineering drawings respecting such hazards to local emergency agencies, and update the drawings as required ▪ If practicable, make such plans available on-site at a conspicuous location	Unexpected Closure*

* Unexpected Closure = unplanned closure of the mine; care and maintenance activities are not conducted, and the RCP is executed.

The majority of site water management infrastructure will remain operating during care and maintenance: contact water is still generated, and treatment and discharge is still required. Pits may be temporarily filled, and the process mill will not consume site water for processing. WTP waste sludge will be managed as per existing permit conditions during care and maintenance and sent to TSF. Site water monitoring, management, and mitigation will remain as per the CEMP and existing permit requirements.

5.13 References

EMLI (Ministry of Energy Mines and Low Carbon Innovation), ECCS (Ministry of Environment and Climate Change Strategy). 2024. Joint Application Information Requirements (JAIR) Guidance Document.

MPMC. 2022 Five-Year Mine Plan and Reclamation Plan Update - Mount Polley Mine. p 2526.

MPMC. 2025. 2024 Annual Reclamation Report. Mount Polley Mining Corporation.

SRK. 2022. Review of Geochemical Source Terms – Mount Polley Mine. SRK Consulting Inc.

6 WATER QUALITY MITIGATION AND WATER MODELLING

6.1 Metal Leaching and Acid Rock Drainage Characterization

The geochemical characterization study design, conceptual geochemical models, and findings are provided in the report titled “Mount Polley Mine Springer Expansion Project Metal Leaching and Acid Rock Drainage Geochemical Characterization” (SRK 2025b, Appendix 6-1). The main conclusions from the geochemical characterization are summarized in the sub-sections below.

The Mount Polley deposit is classified as an alkalic porphyry copper gold deposit. The deposit has been mined from several mineralized zones (Springer, Cariboo, Bell, Southeast, Northeast, Boundary). An extension of the existing Springer and Cariboo pits was approved in August 2025 and includes further mining in the Springer Pit (Phase 5 and 6), C2 Pit, and pushback west of the Cariboo (described as the “WX Zone”). With the exception of the distinctive small Pond Zone skarn deposit, all other zones have common geological features including mainly a monzonitic plutonic host rock, association with breccia bodies in the intrusion, dominantly potassic hydrothermal alteration, lack of pronounced pyrite haloes, enrichment in copper and selenium relative to global norms, pervasive calcite, and natural oxide alteration. As a result, geochemical characteristics are consistent between zones, allowing a site-wide approach to geochemical characterization.

The existing sampling of waste rock materials has identified PAG and non-PAG materials. The PAG and non-PAG waste rock materials occur locally as pyrite zones, but non-PAG dominates. The acid rock generating (ARD) potential was used to segregate waste rock, with non-PAG waste rock being placed in several waste rock dumps and PAG waste rock either deposited in completed pits that are projected to flood following closure of the mine (in accordance with the management practice of subaqueous disposal) or placed in a temporary stockpile for final disposal in the Springer-Cariboo Pit. Based on review of operational processes and data, non-PAG waste rock is expected to be non-acidic in perpetuity.

6.1.1 Existing and Future Mined Rock

SRK (2025a) presented geochemical characterization of existing and future waste rock (including rock exposed on pit walls and rock used for construction purposes), ore, and low grade ore (LGO) according to MPMC’s updated mine plan and geological model. The main conclusions of the geochemical characterization are as follows:

- General findings from existing and future waste rock, ore, and LGO geochemical characterization were that sulphur content was the primary control on ARD potential. For future rock, Springer 6 and WX had the highest sulphur content and therefore the highest proportions of PAG rock on the basis of both the mine plan and ARD classifications using ABA data.

- Existing and future waste rock, ore, and LGO had a similar list of elements that were enriched relative to the screening criteria. Copper and selenium concentrations were comparable for existing and future mining areas.
- Humidity cell test (HCT) trends for samples representing existing mined rock and future waste rock were similar, as were leachate concentrations.
- For existing mined rock, future waste rock, ore, and LGO, lithological classification was determined to not be a control on ML/ARD potential.
- Delay to onset of ARD for PAG materials is of the order of decades due to the presence of calcite.

The similarities of the mineralized zones, including their host rocks (SRK 2025b), indicate that source terms can appropriately be developed on a site-wide basis rather than considering significant differences between the zones.

6.1.2 Tailings

Because the processing of the ore for the Springer Expansion will use the same standard flotation technology that is currently being used, ore and LGO from these zones were initially compared to previously mined rock in SRK (2025a) to determine if similar characteristics of future ore and LGO are anticipated in these zones. SRK (2025a) concluded this was the case, but also recommended geochemical characterization of tailings from metallurgical test work be completed on samples from Springer 5, Springer 6, WX, and C2 areas. Testing to characterize metallurgical tailings from Springer 5 and Springer 6 was started in September 2025, while testing of metallurgical tailings from C2 and WX is planned when tailings become available.

The main conclusions of geochemical characterization of tailings at the Mine Site were:

- Sulphur concentrations in Mount Polley tailings are uniformly low, with total sulphur ranging from 0.01% to 1.1% (median concentration of 0.10%). The majority of tailings samples (99%) were found to be NAG based on their total inorganic carbon/acid potential (TIC/AP) values.
- Median concentrations of copper and selenium were present in the tailings at an order of magnitude higher concentrations compared to average crustal concentrations for low calcium granite. Copper is partially deported in silicate minerals. Selenium is associated with the sulphide component of the tailings and is also correlated with copper content.
- Kinetic testing on tailings samples has to-date confirmed they are NAG.

Initial static results of metallurgical tailings from Springer 5 and Springer 6 were received in October 2025 and are summarized in the technical memo prepared by SRK titled "Static Geochemical Characterization of Mount Polley Springer Expansion Metallurgical Tailings and Head Samples from the Springer 5 and Springer 6 Areas" (Appendix 6-2). Results of mineralogical analysis are pending and HCT samples will be selected following the receipt of mineralogy results. The main conclusions of static geochemical characterization of the Springer 5 and Springer 6 metallurgical tailings samples are as follows:

- Total sulphur content was higher in all Springer 6 samples compared to Springer 5 samples, which is consistent with previous geochemical characterization (SRK 2025b). Cleaner tailings had the highest total sulphur content, followed by head and rougher tailings.
- Neutralization potential*[1][footnote] (NP*) was highest in the cleaner tailings and lower and similar in the head and rougher tailings. NP* was lower than modified NP for all samples, which indicates the contribution of silicates to NP determined by the modified method and probably also low concentrations of iron carbonates, which is consistent with previous geochemical characterization (SRK 2025b).
- Most head samples were PAG, whereas all rougher and combined tailings samples and most cleaner tailings samples were non-PAG. Rougher tailings samples were non-PAG due to lower sulphur content and cleaner tailings samples were non-PAG due to lime addition in the metallurgical process.
- The statistical distributions of future combined tailings samples were within the range of existing composite tailings samples at the Mine Site.

6.2 Geochemical Source Terms

Supporting analyses for this application involves modelling of water quality at the Mine Site and in the receiving environment. Inputs to this model are geochemical source terms which are estimations of the chemistry of water in contact with materials and surfaces exposed by mining activity. Source terms mainly consider the potential for ML/ARD. This section provides a summary of the geochemical sources at the Mine Site that were used to develop source terms as inputs to the water quality model for the Springer Expansion. Geochemical source terms were updated in 2025 by SRK, in the report titled "Mount Polley Mine Geochemical Source Terms – 2025 Update" (SRK 2025a, Appendix 6-3).

Major geochemical sources were identified as waste rock stockpiles (including waste rock used as construction) and the tailings. Other sources include backfilled waste rock, ore processing, pit walls, ore stockpiles, NAG waste rock influenced by the elemental sulphur stockpile, and

[1] As TC equals TIC, NP is represented by carbonate content as represented by TC (NP*).

magnetite stockpiles. Source terms were mainly developed from conceptual geochemical models then interpretation of rock geochemical characteristics and seepage data rather than scale-up of laboratory kinetic test data. Pit wall source terms (including PAG walls) were obtained by scaling of kinetic test data. Source terms were not specifically developed for the magnetite stockpiles because they are small sources.

The main conclusions that provided input into the source terms are:

- While several ore zones at the Mine Site have been mined since 1997, all except the relatively small Pond Zone are alkalic porphyry mineralization centred on magmatic-hydrothermal breccia bodies with similar geological characteristics. The host rock for the mineralization is the MPIC which is mainly monzonite (MPMC 2025). The similarities of the mineralized zones, including their host rocks (SRK 2025b), indicate that source terms can appropriately be developed on a site-wide basis rather than considering significant differences between the zones.
- As a result of geochemical segregation of waste rock based on ARD potential through the mine life, PAG waste rock has been or will be placed in open pits where it will be permanently flooded thereby preventing ARD from developing.
- It is expected that operational inefficiencies will have resulted in PAG waste being incorporated into the NAG waste rock, but the segregation approach was conservative and mass balance excess of acid neutralizing minerals over acid generating minerals means that future development of ARD is unlikely. Weathering conditions are predicted to be pH-basic in perpetuity.
- Tailings are non-PAG (SRK 2025b).
- As a result of the pH-basic weathering conditions, chemistry of seepage from the existing full-scale facilities reflects solubility limits for weathering minerals. Chemistry is affected by dilution which was corrected using the solubility limit of gypsum.

Water quality inputs derived from geochemical source terms developed by SRK were applied to the SWWQM as an additional scenario in the 2016 LTWMP (Golder 2016a). Updates to these geochemical source terms were completed by SRK in 2023 (SRK 2023) and were recently updated again in March 2025 (SRK 2025a). WSP recently evaluated model sensitivity using the geochemical source terms developed by SRK and the water quality model from the 2023 WMP (WSP 2025). Results from that sensitivity indicate that some metals, including copper, may have divergence in their long-term concentration trend compared to the results presented in WMP (Appendix 10-5). The 2026 WMP will also include a summary of the 2025 SRK geochemical source term SWWQM results and treatment impacts. Although preliminary, the 2025 WMP for the TSF raise to 987 m does discuss some predicted long-term pit water quality trends using the 2023 SRK geochemical source terms, as well as potential treatment mitigations (Section 4.6 of Appendix 10-5).

6.3 Conceptual Site Model

This section is not required as part of the permit amendment application per the IRT.

6.4 Water Quality Mitigation Measures

6.4.1 Source Control

This section is not required as part of the permit amendment application per the IRT.

6.4.1.1 Management Practices

This section is not required as part of the permit amendment application per the IRT.

6.4.1.2 Engineered Controls

This section is not required as part of the permit amendment application per the IRT.

6.4.2 Water Management Measures

Water management measures are outlined in two major documents supporting this application:

- The Design Report for the TSF 987 m water management infrastructure, presented in Appendix 5-2.
- The site wide WMP, presented in Appendix 10-5.

See the Table of Concordance within the WMP (Table 1) for specific plan sections that discuss water management measures.

6.4.3 Technology Selection

6.4.3.1 Best Achievable Technology Evaluation

This section is not required as part of the permit amendment application per the IRT.

6.4.3.2 Technology Readiness Assessment

This section is not required as part of the permit amendment application per the IRT.

6.4.4 Water and Effluent Treatment

Effectiveness and capacities are provided in Sections 4.3 (SWWBM), 4.4 (SWWQM), 4.6.1 (summary of existing effluent treatment), and 4.6.2 (Treatment Technology Update) of the site wide WMP (Appendix 10-5).

6.4.4.1 Description

The WTP process and configuration will not be modified from the existing permitted system. The WTP will still draw influent water from the PETBP, treat water using the Actiflo process, and discharge treated water to Quesnel Lake via the treated effluent pipeline and submerged diffuser. Performance of the WTP and site water quality mitigation is discussed in the WMP (Appendix 10-5, Sections 4.1 and 4.6). A detailed description of the WTP treatment process and use of settling aids is provided in the Flocculant Management Plan (Appendix 6-4).

6.4.4.2 Location

The WTP will be relocated for the TSF 987 m design, due to the shifting of the PETBP which is the influent pond for the WTP. The Water Management Infrastructure Design Report (Appendix 5-2) shows the relocated position of both the PETBP and the WTP. The shift in WTP location is not expected to impact the hydraulic performance of the treated effluent discharge system to necessitate an effluent pump station. This is currently under consideration and will be determined prior to construction approvals.

6.4.4.3 Detailed Design

This section is not required as part of the permit amendment application per the IRT.

6.4.4.4 Site-specific Treatment Effectiveness

This section is not required as part of the permit amendment application per the IRT.

6.4.4.5 Performance Risks

This section is not required as part of the permit amendment application per the IRT.

6.4.4.6 Influent and Effluent Water Quality

This section is not required as part of the permit amendment application per the IRT.

6.4.4.7 Waste By-products

MPMC are not seeking any amendments to the effluent permit (PE11678) other than those related to the storage of tailings as a waste, if such amendments are needed. WTP waste production and treatment management infrastructure remain the same.

Waste by-product from the WTP will be managed following the same procedure as currently permitted: piped discharge to TSF. This is the proposed method of sludge disposal for the remainder of the operations period. If the existing WTP is to continue operation into closure and post-closure, then suitable discharge methods will be discussed and considered for closure phase permitting.

6.4.4.8 Maintenance

This section is not required as part of the permit amendment application per the IRT.

6.4.4.9 Emergency Response Procedures

This section is not required as part of the permit amendment application per the IRT.

6.4.4.10 Contingency Plans

This section is not required as part of the permit amendment application per the IRT.

6.4.4.11 Monitoring Plans

No changes to WTP operations or monitoring are being considered, monitoring will continue as per existing permitted CEMP.

6.4.4.12 Schedule

Scheduling of WTP relocation will be aligned with a period when site water treatment and discharge is not required and when site storage is sufficient to store site contact water during the relocation. This specific timing is dependant on environmental factors. Operational decisions will be made prior to WTP relocation to facilitate sufficient storage for the WTP relocation outage period.

6.5 Hydrogeologic Modelling

6.5.1 Conceptual Hydrogeologic Model

The conceptual hydrogeological model is described in Section 4.0 of the 2024 Annual Groundwater Monitoring Report (Appendix 3-8).

6.5.2 Numerical Hydrogeological Model

Numerical hydrogeological modelling was conducted to estimate seepage to and from major pits and the TSF. A description of the modelling approach and the model-predicted seepage results are described in full in the Mine Site WMP (Sections 3.2.3 and 3.2.4 in Appendix 10.5).
A summary of TSF seepage prediction approach and estimates for the raised TSF facility to 987 m crest elevation is reproduced below and described in more detail in the WMP.

WSP has modelled seepage from the TSF at 987 m crest elevation assuming two seepage paths: a) captured seepage that reports through the TSF embankment drain system to the three TSF seepage collection ponds, and b) uncaptured seepage to the environment. The approach taken for estimating these two seepage paths is summarized below:

- Captured seepage reporting to collection ponds is modelled as a function of TSF water pond level / volume and TSF embankment tailings beach width, supported by two-dimensional numerical analysis.
- Uncaptured seepage to the environment was estimated previously by Golder (2016b) using a three-dimensional numerical groundwater flow model of the TSF area for the 'then planned' dam raise to 970 m. The TSF 987 m embankment design includes the permitted upstream drain system at elevation 970 m which is designed to minimize increases to the hydraulic gradient imposed on the embankment for raises to the TSF above elevation 970 m. As increases to the hydraulic gradient will be minimized to close to elevation 970 m by the drainage system, the previously estimated uncaptured seepage rate is considered reasonable for the TSF 987 m seepage modelling predictions presented in this application.

An updated estimate for TSF uncaptured seepage is currently under development by WSP and is expected to be available by the end of 2025. This update will consider the new LOM design for the TSF and will support the TSF water balance and site wide water balance, and the site wide WMP. This timeline is in alignment with the current EMA permit (September 02, 2025) in which Section 4.2 requires update of the site wide numerical groundwater model (including TSF uncaptured seepage assessment) by January 31, 2026.

6.6 Site Wide Water Balance

A SWWBM was developed as part of the WMP which describes proposed water management quantities for operations, closure, and post-closure phases of the Mine. Refer to Appendix A of the WMP (Appendix 10-5) for a detailed description and results of the SWWBM.

6.7 Surface Water Quality Model

A SWWQM was developed as part of the WMP which describes proposed water management quality for operations, closure, and post-closure phases of the Mine. A discussion of water treatment during operations and closure/post-closure is also provided, including treatment design bases for these LoM phases. Refer to Appendix B of the WMP (Appendix 10-5) for a detailed description and results of the SWWQM.

An additional objective of the WMP is to provide updates on treatment technology development and alternative water treatment strategies that are being assessed by MPMC for implementation both in operations and upon closure of the Mine Site.

6.8 References

Golder. 2016a. Mount Polley Long Term Water Management Plan Permit Amendment Application under the Environment Management Act: Technical Assessment Report. Prepared for Mount Polley Mining Corporation. No. 1411734-162-R-Rev0-16000. October 17, 2016.

Golder. 2016b. Predictions of Hydrogeological Conditions near the Tailings Storage Facility During Closure – Long-Term Technical Assessment Report – Mount Polley Mine. Ref No. 1411734-161-TM-Rev0-16000. Prepared for Mount Polley Mining Corporation, Likely, BC. October 17, 2016.SRK Consulting (Canada) Inc. 2023. Mount Polley Mine Geochemical Source Terms – 2023 Update. Prepared for Mount Polley Mining Corporation. Document No. CAPR002434. October 2023.

MPMC. 2025. Deposit Geology Summary – Springer Expansion Plan. February 28, 2025.

SRK. 2023. Mount Polley Mine Geochemical Source Terms – 2023 Update. Prepared for Mount Polley Mining Corporation. Document No. CAPR002434. October 2023.

SRK. 2025a. Mount Polley Mine Geochemical Source Terms – 2025 Update. Prepared for Mount Polley Mining Corporation. Document No. CAPR002434. March 2025.

SRK. 2025b. Mount Polley Mine Springer Expansion Project Metal Leaching and Acid Rock Drainage Geochemical Characterization.

WSP. 2025. Mount Polley Mine Water Quality Model – Springer Expansion LOM Water Quality Model Geochemical Source Term Sensitivity. Document No. CA0047730.8440-024-R-Rev0-31281. April 2025.

7 EFFLUENT DISCHARGES TO THE ENVIRONMENT

7.1 Domestic Water/Sewage Treatment

This section is not required as part of the application per the IRT.

7.2 Effluent Discharge

This section is not required as part of the application per the IRT.

7.2.1 Non-point Source Discharges

See Section 6.5.2 for a description of non-point source discharge from the TSF.

7.3 Receiving Environment Modelling

7.3.1 Initial Dilution Zone

This section is not required as part of the application per the IRT.

8 ENVIRONMENTAL EFFECTS ASSESSMENT

8.1 Aquatic Environment

Effects on aquatic resources are limited to the immediate TSF expansion area, where a mapped, non-fish bearing, watercourse identified as Tributary 1 in the headwaters of Upper Edney Creek will be affected by the footprint of the TSF. The total wetland and riparian area impacted by the TSF expansion and associated water management infrastructure is approximately 3.7 ha (Figures 3.7-1). However, the mapped watercourse lacks a defined channel and is not fish-bearing.

Aquatic resources overlapping the fish and fish habitat project area (Section 1: Upper Edney Creek – Tributary 1) demonstrates limited and low-quality habitat. Upper Edney Creek – Tributary 1 is ephemeral and does not have a defined channel; however, it may have limited seasonal connectivity to fish-bearing habitat downstream (e.g., Section 4: Upper Edney Creek – Tributary 1 and Lower Edney Creek), which may contribute to nutrients and base flows received in downstream sections of Lower Edney Creek. As a result, potential adverse effects on fish and fish habitat due to the proposed TSF raise to 987 m, if unmitigated, have been identified as using DFO Pathways of Effects (DFO 2024), together with an analysis specific to the proposed project in Table 8.1-1.

Table 8.1-1: Pathways of Effects Assesment

Pathway of Effect	Mechanism of Potential Effect	Assessment
Change in dissolved oxygen	Removal of riparian vegetation and change in hydrology has the potential to impact oxygen levels in creeks.	Overstory vegetation in the footprint of the TSF expansion is limited, with mostly shrubs prevailing. There is no defined channel and the area in question is dry. Dissolved oxygen is unlikely to see any reductions in downstream fish-bearing portions of Edney Creek.

Table 8.1-1: Pathways of Effects Assesment

Pathway of Effect	Mechanism of Potential Effect	Assessment
Change in base flow	An alteration in the quantity of groundwater flowing into Upper Edney Creek – Tributary within Section 1: Upper Edney Creek – Tributary 1.	Since the Authorization was issued (when the mine was developed), MPMC no longer require make-up water from Polley Lake, and water needs are met through recycling of contact water. Clean water diversions are in place. The groundwater regime is not expected to be altered by the TSF raise. Changes in base flow are therefore unlikely.
Change in contaminant concentrations	Construction activities adjacent to Upper Edney Creek – Tributary 1 have the potential to result in elevated concentrations of hydrocarbons (e.g., hydraulic oil, fuel) from machinery if accidentally spilled on soil and water.	A specific Construction Environmental Management Plan will be in place for this work, as will spill prevention measures. The area in question is not wetting and in the unlikely event of contaminants leaving the work zone, would be readily amenable to remediation.
Change in food supply	Removal of riparian vegetation can result in a decrease in the quantity or composition of the food supply (i.e., plants and organic debris entering a watercourse) as a result altering the structure of the aquatic community.	There isn't a defined channel or year round water, nor are there fish in the area of the TSF footprint. Riparian vegetation, which is comprised mostly of shrubs and grasses, is not likely to have a significant effect on fish habitat.
Change in access to habitat ./ migration	Expansion of the TSF buttress will cover a mapped section of Upper Edney Creek – Tributary 1 changing access to that section of Tributary 1 if seasonally inundated.	The area in question lacks a defined channel and is of low quality habitat for direct use and migration. There are no upstream reaches above the TSF.

Table 8.1-1: Pathways of Effects Assesment

Pathway of Effect	Mechanism of Potential Effect	Assessment
Change in nutrient concentrations	Removal of riparian vegetation and riparian planting can cause changes in nutrifying elements such as nitrogen and phosphorus and mineral compounds such as ammonia, nitrates, nitrites, and orthophosphates.	There is unlikely to be a significant change to the nutrient regime of the reaches of Edney Creek that are occupied by fish.
Change in sediment concentrations	Removal of riparian vegetation can lead to increased erosion of stream bank soils, resulting in fragmentation and transport offsite of organic and inorganic material.	There are no stream banks in the area in question, and the topography is flat and vegetated, mostly by shrubs and grasses, meaning that the risk of erosion is low. This pathway of effect is considered negligible. The footprint of the buttress will not result in habitat fragmentation as there are no upper reaches beyond the buttress.

Based on the above assessment, adverse effects to fish habitat from the proposed TSF raise to 987 m are not considered significant and can be effectively managed and mitigated through Best Management Practices and the development of and adherence to a specific Construction Environment Management Plan. Additionally, MPMC has submitted an RfR to DFO requesting a review of MPMC's assessment that the proposed TSF raise to 987 m will not cause a harmful alteration, disruption, or destruction of fish habitat in Upper Edney Creek.

8.2 Terrestrial Environment

8.2.1 Ecosystems and Vegetation

Effects on vegetation resources are expected to be primarily limited to the immediate TSF expansion area, where vegetation removal is required for the buttress construction to support the TSF raise to 987 m. This area is contained within the *Mines Act* Permit Area.

Project-related interactions with vegetation include the following potential effects:

- Loss or alteration of ecosystems, vegetation, and wetlands during Project expansion.
- Introduction and proliferation of invasive plants.

- Effects to ecological communities from fugitive dust during construction.
- Effects to ecological communities from spills of deleterious substances.
- Change in area of suitable habitat for at-risk ecological communities and plant species during the Project.
- Loss of at-risk ecological communities and plant species during Project construction.

8.2.1.1 Loss or Alteration of Ecosystems, Vegetation, and Wetlands

The proposed TSF raise to 987 m and associated water management infrastructure will require the removal of vegetation adjacent to the existing TSF for buttress construction and water management infrastructure installation to support the TSF raise to 987 m. The total area that is currently undisturbed by the existing mine footprint within this proposed footprint is approximately 28.1 ha. Of this, 9.1 ha has been previously disturbed, including 6.7 ha of cutblock cleared between 2005 and 2009, 1.4 ha of cutblock cleared between 2024 and 2025, and 1.0 ha of roads. The remaining 19 ha area is presently undisturbed and will be removed as part of the TSF raise to 987 m. A total of eleven field-verified wetlands will be removed as part of the TSF raise to 987 m which includes 6.4 ha of swamp wetland and 0.2 ha of fen wetland. An additional estimated 12.4 ha of wetland-wet forest mosaic is also overlapped by the proposed TSF raise to 987 m area. All of this area is contained within the mine permit area and ground clearing and preparation of this area is approved in the permit amendment for the raise to 974 m. Habitat loss and proposed reclamation are summarized further in the RCP (Section 5).

8.2.1.2 Introduction and Proliferation of Invasive Plants

The Project has the potential to result in the accidental introduction and/or proliferation of invasive or non-native plant species, particularly those 23 species observed in the area such as bull thistle, common burdock, orange-red king devil, oxeye daisy, scentless mayweed and yellow salsify. The introduction and proliferation of invasive species can lower the habitat quality of remaining native vegetation by outcompeting native species and reducing plant diversity.

Transportation of equipment and material to the Mine Site from off-site during vegetation clearing, demobilization of equipment post-construction, and disturbance of new areas may result in the introduction of new invasive plant species, or the proliferation of invasive species existing in the area. Plant seeds and parts can be transported in various ways, including via the tracks of machinery, treads of boots, or on clothing. Invasive plants can proliferate from seeds and remanent parts of plants, such as roots or stems, on work truck tire treads.

Vehicles, equipment, and clothing can also carry parts and seeds of invasive plants from infested areas of the Mine Site, especially during muddy conditions, depositing them in new locations (BC MFLNRO and ISCBC 2013). Invasive plants may also be introduced to an area through gravel and soil placement contaminated with seeds and parts of plants (BC MFLNRO and

ISCBC 2013). Activities that disturb soil and vegetation, such as clearing/grubbing for the TSF raise to 987 m and transport of rock material along roads to construct the buttress and raise the TSF crest, can contribute to proliferation of invasive plants as freshly disturbed soils are especially susceptible to the establishment of invasive species (BC MFLNRO and ISCBC 2013).

An Invasive Plant Management Plan (Section 10.8) including a monitoring program will be implemented to reduce the potential for ingress of invasive plants.

8.2.1.3 Effects to Ecological Communities from Fugitive Dust

Various construction activities, such as vegetation clearing, TSF construction, and transportation of rock materials for buttress construction could produce dust. Dust may affect the health, growth, and development of affected vegetation, and may shift plant community structure (Prusty et al. 2005). The primary effects of dust are generally confined to the immediate area next to access roads or other disturbance areas (Bignal et al 2004; Everett 1980). The Mine Site controls dust emissions and monitors air quality with more detail found in the Fugitive Dust Management Plan (Section 10.10).

8.2.1.4 Effects to Ecological Communities from Spills of Deleterious Substances

Accidental spills of deleterious substances, such as hydrocarbons, during the TSF raise to 987 m may potentially adversely affect vegetation resources through loss of extent (e.g., removal of plants during clean up resulting in loss of vegetation). Further, spills may result in effects to vegetation communities via soil contamination. A fuel management and spill control plan is in place to address avoidance of spills, responses, notification and remediation (Section 10.12).

8.2.1.5 Change in Area of Suitable Habitat for At-Risk Plant Species

A rare plant survey was not conducted as part of the field reconnaissance for this permit amendment application so the current abundance and distribution of at-risk plant species in the TSF expansion areas are unknown; however, the reconnaissance-level surveys completed previously on the Mine Site have not identified the presence of at-risk plants.

8.2.1.6 Loss of At-Risk Plant Species

While the majority of the Mine Site has been previously disturbed and the reconnaissance-level surveys to date have not identified the presence of at-risk plants, their absence cannot be confirmed. The current abundance and distribution of at-risk plant species in vegetated areas proposed to be cleared during the TSF raise to 987 m are unknown.

8.2.2 Wildlife

Effects on wildlife resources are expected to be primarily limited to the immediate expansion area, mainly where vegetation and habitat loss occurs. Potential Project-related interactions with wildlife resources include the following general effects:

- Direct habitat loss
- Indirect habitat loss
- Barriers to Movement
- Change in mortality rates

Habitat fragmentation is not anticipated as the Project will result in an outward expansion of current disturbance areas. No new disturbances bisecting undisturbed habitat are anticipated.

8.2.2.1 Direct Habitat Loss

Direct habitat loss will result from vegetation clearing during the TSF raise to 987 m area, with the Project anticipated to result in the incremental loss of 19 ha of mature seral stage forests, immediately adjacent to the TSF within the M-200 mine permit boundary. Removal of vegetation will result in the loss of habitat, specifically breeding and foraging habitat for some wildlife species. The removal of vegetation, wildlife trees, slash, and general woody debris present within the proposed expansion area may result in a loss or alteration of:

- Upland habitat for adult western toad
- Living habitat for garter snake
- Nesting and foraging habitat for various bird species
- Roosting and foraging habitat for bats
- Foraging, denning, and movement habitat for various terrestrial mammal species

An additional 9.1 ha of currently disturbed area overlaps with the Project. Although the Project will result in changes to this area, it is largely anthropogenic and considered to have less value to wildlife than undisturbed habitat. However, features such as debris piles, where present, may provide a source of anthropogenic habitat for wildlife such as snakes and small mammals.

Habitat alteration in support of industrial activities (e.g., oil and gas drilling, mining, renewable energy, logging) is one of the main threats to southern mountain caribou populations (Committee on the Status of Endangered Wildlife in Canada 2014). Changes in habitat composition can lead to increased predation rates on caribou because of facilitated predator movement. The TSF raise to 987 m will result in the direct loss of some southern mountain caribou critical habitat (unmapped range and matrix habitat). Additional information on caribou is included in the Caribou Mitigation and Monitoring Plan (WSP 2025; Appendix 8-1).

8.2.2.2 Indirect Habitat Loss

Indirect habitat loss refers to the collective change in wildlife habitat quality due to Project-related changes in habitat condition and wildlife behavioural response. Indirect habitat loss does not result in the removal of habitat, but rather in a change in the quality of habitat, such as ambient noise or artificial light, which may reduce habitat function for wildlife species. Quantifying indirect habitat loss can be challenging because of limited research on species' response to anthropogenic changes in the landscape and human activity. Generally, indirect habitat loss is associated with either:

- Displacement—Project-related disturbances could cause displacement of wildlife from nearby habitats due to sensory disturbances, such as noise and visual distraction, which can effectively cause habitat loss (Drewitt and Langston 2006; Bayne et al. 2008). For example, multiple studies indicate that bird and mammal abundance decreases with increasing proximity to infrastructure (Drewitt and Langston 2006; Benítez-López et al. 2010a,b; Smith et al. 2016).
- Change in behaviour—Species may change their behaviour to avoid specific components of a Project or adjust behaviours to compensate for certain activities. For example, birds may alter their flight paths to avoid contact with Project components or amphibians may change calling patterns during periods of increased noise disturbance. The changes can affect wildlife energy expenditure, which in turn affects individual fitness and breeding success. As such, the affected habitats provide lower quality habitat than prior to the introduced influence.

Indirect habitat loss may occur as a result of the Project. However, the TSF raise to 987 m area overlaps with and occurs immediately adjacent to existing disturbance (i.e., the Mine Site), so a degree of habituation to sensory disturbance is expected for wildlife that use these areas.

8.2.2.3 Barriers to Movement

Barriers to movement occur when infrastructure bisects a movement corridor or habitat, reducing or preventing wildlife movement between habitat patches. These barriers can be physical constraints, such as fencing, but also include perceived barriers, such as forest openings, roads, and power lines. While linked to habitat fragmentation, barriers to movement can occur in already fragmented landscapes where wildlife persists. Barrier effects on wildlife can be relatively short term and limited to the construction phase of projects, or can be long term over the life of a project until restoration occurs. Vehicle traffic and construction activities can also result in barriers to movement on a daily or seasonal scale.

Disruption to movement patterns may occur during all phases of the TSF raise to 987 m; however, as the Project results in the outward expansion of existing disturbance within a relatively small footprint in the regional context, only smaller terrestrial wildlife that have smaller home ranges that overlap with the TSF raise to 987 m area, such as amphibians, reptiles, and small mammals, are anticipated to be impacted. Although larger wildlife may exhibit avoidance due to sensory disturbance, it is expected that regional movements will remain unaffected.

8.2.2.4 Changes in Mortality Rates

Mortality to wildlife has the potential to occur during clearing activities, rock placement for buttressing the TSF, and as a result of increased construction traffic in and adjacent to the TSF raise to 987 m area. Less mobile wildlife, such as amphibians and garter snakes, are susceptible to vehicle-wildlife collisions, especially during migration to and from breeding sites and hibernacula and dispersal of young. Existing access roads to the proposed TSF raise to 987 m area are adjacent to suitable amphibian habitat. Mine Site activities that require ground disturbance (e.g., clearing and grubbing) during winter months may result in mortality of hibernating amphibians while disturbance to natal ponds during the breeding season could adversely affect amphibian egg masses and tadpoles. Garter snakes have the potential to be harmed through the removal of coarse woody debris, rock piles, and other structures that provide shelter sites. Finally, increased mortality in birds may occur due to the inadvertent destruction of active nests during vegetation clearing if this activity overlaps with the nesting season.

It is anticipated that the majority of potential adverse effects to terrestrial wildlife can be avoided, reduced, or mitigated through the Best Management Practices described in the Wildlife Management Plan (DWB Consulting Services Ltd. 2021) and the Caribou Mitigation and Monitoring Plan (WSP 2025) provided in Section 10.9 and Appendix 8-1 of this application, respectively.

8.3 Human Health

This section is not required as part of the permit amendment application per the IRT.

8.4 References

Bayne E, Habib L, Boutin S. 2008. Impacts of chronic anthropogenic noise from energy-sector activity on abundance of songbirds in the boreal forest. Conserv Biol. 22(5):1186–1193.

BC MFLNRO and Invasive Species Council of BC (ISCBC). 2013. Best Practices for Preventing the Spread of Invasive Plants during Forest Management Activities. 2013 Ed. Victoria BC; [accessed September 2023] https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/land-based-investment/forests-for-tomorrow/forestry-bp-09-11-2013-web.pdf.

Benítez-López, A., R. Alkemade, and P. A. Verweij. 2010a. Are Mammal and Bird Populations Declining in the Proximity of Roads and Other Infrastructure? CEE review 09-007 (SR68). Collaboration for Environmental Evidence. Accessed November 2023. https://environmentalevidence.org/project/are-mammal-and-bird-populations-declining-in-the-proximity-of-roads-and-other-infrastructure-systematic-review/

Benítez-López A, Alkemade R, Verweij P. 2010b. The impacts of roads and other infrastructure on mammal and bird populations: A meta-analysis. Biol Conserv. 143(6):1307–1316. doi:10.1016/j.biocon.2010.02.009.

Bignal K, Ashmore M, Power S. 2004. The Ecological Effects of Diffuse Air Pollution from Toad Transport. Prepared for English Nature. Peterborough UK: Joint Nature Conservation Committee. 97 p.

Committee on the Status of Endangered Wildlife in Canada. 2014. Committee on the Status of Endangered Wildlife in Canada assessment and status report on the Caribou Rangifer tarandus, Northern Mountain population, Central Mountain population and Southern Mountain population in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxii + 113 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).

DFO. 2024. Pathways of Effects. [accessed October 2025]. https://www.dfo-mpo.gc.ca/pnw-ppe/pathways-sequences/doc/poe-sde-eng.pdf.

DWB Consulting Services Ltd. 2021. Wildlife Management Plan. Prepared for Mount Polley Mining Corporation Environmental Department.

Drewitt A, Langston R. 2006. Assessing the impacts of wind farms on birds. Ibis. 148(1):29–42.

Everett KR. 1980. Distribution and properties of road dust along the northern portion of the haul road. In: Brown J, Berg RL, editors. Environmental Engineering and Ecological Baseline Investigations along the Yukon River Prudhoe Bay Haul Road. Whitehorse YT: Cold Regions Research and Engineering Laboratory. p. 101-128.

Prusty BAK, Mishra PC, Azeez PA. 2005. Dust accumulation and leaf pigment content in vegetation near the national highway at Sambalpur, Orissa, India. Ecotoxicology and Environmental Safety. 60(2):228-235.

Smith J, Dwyer J. 2016. Avian interactions with renewable energy infrastructure: An update. Ornithol Appl. 118(2):411–423.

WSP. 2025. Mount Polley Springer Pit Expansion. Caribou Mitigation and Monitoring Plan. Prepared for Mount Polley Mining Corporation. May 2025.

9 ENVIRONMENTAL MONITORING

9.1 Mine Site Water Monitoring Program

Refer to the CEMP in Appendix 9-1 for the existing monitoring program.

9.2 Discharge Monitoring Programs

Refer to the CEMP in Appendix 9-1 for the existing monitoring program. Discharge monitoring and reporting is a requirement of *EMA* Authorization PE-11678.

MPMC is also currently developing two Trigger Response Plans (TRP) under new EMA Permit Conditions, with a Groundwater TRP due to BC ENV by December 31, 2025 and a WTP TRP due to BC ENV by February 28, 2026.

9.3 Environment Monitoring Program

Refer to the CEMP in Appendix 9-1 for the existing monitoring program.

9.4 Aquatic Effects Monitoring Program

As part of the annual CEMP, a sediment and aquatic life assessment is conducted. The objectives and overview of monitoring programs for sediment, benthic invertebrates, fish, periphyton, and plankton and chlorophyll a are described below. The detailed monitoring programs, which have not been revised as part of this application, are provided in the CEMP (Appendix 9-1).

10 MANAGEMENT PLANS

10.1 Environmental Management System

This section is not required as part of the permit amendment application per the IRT.

10.2 Erosion and Sediment Control Plan

The Surface Erosion Prevention and Sediment Control Plan was updated in 2025 and is provided in Appendix 10-1.

10.3 Soil Management Plan

The SMP was updated in 2025 and is provided in Appendix 10-2.

10.4 Construction Environmental Management Plans

Construction Management Plans are required per the conditions described in M-200 permit condition C.6. Plans are to be created in anticipation of development within previously undisturbed areas and are specific to the particular task or tasks to be undertaken. These plans will be created throughout the development of the project as the need arises.

10.5 Metal Leaching and Acid Rock Drainage Management Plan

The ML/ARD Management Plan is provided as a standalone document in Appendix 10-3.
The objective of ML/ARD material management at the Mine Site is to prevent acid generation and reduce metal leaching from waste materials to support long-term water management goals.

10.5.1 Definition of PAG and Metal Leaching Materials

10.5.1.1 Acid Rock Drainage Potential

<u>Definitions of Acid Rock Drainage</u>

According to the M-200, PAG materials are defined as:

- Neutralization potential (NP) is calculated using total inorganic carbon (TIC).
- Acid potential (AP) is calculated using total sulphur.
- All waste rock, quarry rock, borrow materials, and tailings are classified as PAG if they have an NP/AP ratio of less than 2.0.

Acid generating (AG) materials are defined as those with a paste pH < 6 or a rinse pH < 5.

Sulphur Speciation and Acid Potential

As established in SRK (2025) total sulphur is a proxy for sulphide sulphur in rock and tailings because other forms of sulphur (including sulphate) are rare at the Mine Site.

Accordingly, AP is calculated using total sulphur:

$$AP\ [kg\ CaCO_3/t] = 31.25 \times Total\ Sulphur\ [\%]$$

Carbon Speciation and Neutralization Potential

Total carbon (TC) was determined to be a reliable proxy for reactive carbonate minerals (SRK 2025). The assumption is supported by the observed dominance of calcite confirmed by detailed mineralogy, the lack of reported iron carbonate and the strong correlation and equivalence of total carbon and total inorganic carbon TIC. The dominant plutonic geological setting also supports the lack of non-carbonate carbon. As TC equals TIC, NP is represented by carbonate content as represented by TC (NP*). NP* is calculated as follows:

$$NP^*\ [kg\ CaCO_3/t] = TC(\%) \times 83.33$$

10.5.1.2 Definition of Metal Leaching Potential

According to the Mines Act Permit M-200, potentially metal leaching materials are defined as borrow material or waste rock containing soluble metal levels (as determined by the shake flask test) higher than the receiving water objectives.

10.5.2 ML/ARD Management

Specific aspects of ML/ARD management are detailed in the ML/ARD Management Plan provided in Appendix 10-3.

10.5.3 L/ARD Monitoring

The ML/ARD Monitoring Program is provided as a standalone document in Appendix 10-4.

10.5.4 ML/ARD Reporting

Specific aspects of ML/ARD reporting are detailed in the ML/ARD Management Plan provided in Appendix 10-3.

10.6 Mine Site Water Management Plan

The Mine Site WMP was updated specifically for this permit application and is provided in Appendix 10-5.

10.7 Vegetation Management Plan

The Vegetation and Invasive Plant Management Plan was updated in 2025 and is provided in Appendix 10-6.

10.8 Invasive Plant Management Plan

The Vegetation and Invasive Plant Management Plan was updated in 2025 and is provided in Appendix 10-6.

10.9 Wildlife Management Plan

The Wildlife Management Plan was updated in 2025 and is provided in Appendix 10-7.

10.10 Fugitive Dust Management Plan

The Fugitive Dust Management Plan was updated in 2025 and is provided in Appendix 10-8.

10.11 Archaeological Management and Impact Mitigation Plan

Archaeological sites are protected under the HCA, whether in an intact or disturbed context and impacts to an archaeological site can only be conducted under an HCA Section 12.4 Alteration permit. In order to acquire an Alteration permit, additional site inspection under an HCA Section 12.2 Inspection or Investigation permit may first be required.

On behalf of Mount Polley Mine, WSP obtained HCA Inspection Permit 2025-0279 and conducted an AIA for the TSF raise to 987 m, during which no archaeological sites were identified (see Section 3.11). The HCA Permit also allows WSP to respond to any chance (incidental) finds that might be encountered. A stand-alone Chance Find Management Plan (CFMP) has been provided in Appendix 10-9. The CFMP outlines the process to follow should chance finds occur and will be made available to mine employees and contractors prior to construction activities occurring. The CFMP further provides relevant contact names and details and examples of archaeological materials or features that might be encountered (i.e., what to look for). As no registered (i.e., known) archaeological sites are located within the TSF raise to 987 m, specific impact mitigation plans have not been provided. Should archaeological sites be identified through the chance find process, these mitigation plans will be developed should site avoidance not be possible. Should archaeological sites need to be impacted under an Alteration permit, the CFMP will be presented by a WSP archaeologist to the construction crew, in addition to reviewing the methods under which the construction can proceed under the Alteration permit (i.e., monitoring or post-impact assessment using methods outlined in the Inspection permit).

10.12 Fuel Management and Spill Control Plan

The Emergency Spill Response Contingency Plan is provided in Appendix D of the Emergency Response Plan (Appendix 10-10).

10.13 Combustible Dust Management Plan

This section is not required as part of the permit amendment application per the IRT.

10.14 Chemicals and Materials Storage, Transfer, and Handling Plan

This section is not required as part of the permit amendment application per the IRT.

10.15 Waste (Refuse and Emissions) Management Plan

This section is not required as part of the permit amendment application per the IRT.

10.16 References

SRK. 2025. Mount Polley Mine Springer Expansion Project Metal Leaching and Acid Rock Drainage Geochemical Characterization.

11 RECLAMATION LIABILITY COST ESTIMATE

The RLCE was updated for the Springer Pit Expansion Permit Amendment. At the outset of this application, the 987 m raise of the TSF was included. As the permitting process progressed, it was determined that the 987 m portion of the application would need to be removed in order to obtain the Springer Pit Expansion amendment before the previously allowed pit development was exhausted. However, the RLCE retained the elements of the fully constructed TSF to 987 m in its closure and post closure considerations. As such, there are no changes to the RLCE from those resulting from the Springer Pit Expansion Amendment.

The current RLCE, dated August 2025, is based upon the 2022 MPMC Closure Plan. Costs were derived from the application of the closure and post-closure activities described within that plan, with some changes to include updated site disturbance and material quantities associated with the Springer Pit Expansion and TSF construction to 987 m.

The current site liability is set at a total of $185,752,000 as stated as condition E.1 in the M-200 permit, amended August 28, 2025. The next update is expected to accompany the 2027 Closure Plan Update, following the 5-year update requirement.

11.1 RLCE Parameters

The parameters guiding the RLCE were obtained from the HSRC and various guidance documents prepared by MCM related to the development of an RLCE. They are discussed in more detail in the following sub-sections.

11.1.1 Time Period

The RLCE considers a 100-year period of site stewardship, starting from the year of the submission (2025).

11.1.2 Costing Scenarios

The costs within the RLCE are presented for the prescribed 100-year period on a yearly basis and are presented with undiscounted totals and a total with discounting applied.

11.1.3 Progressive Reclamation

The RLCE includes costing for progressive reclamation as it is described within the 2022 Reclamation and Closure Plan.

11.1.4 Third-party Costs

Third Party costs for equipment are included in the cost considerations for the RLCE. They consist of a mixture of externally supplied contractor rates and rates derived from the 2024-2025 Blue Book.

The exception to this is the use of the Mine Site's electric Wire Rope Shovel to facilitate the rehandle of the NW PAG stockpile. This unit is fully owned by MPMC and will be available for this purpose. Further, the size and power system (electric) make it the most efficient and cleanest option, making it the best option towards the lowering of Greenhouse Gas emissions.

11.1.5 Revenue Streams

The only revenue streams are those related to the permitted mining activities. They are not considered in the RLCE and there are no other revenue streams going into Closure or Post-Closure.

11.1.6 Mobilization / Demobilization

Costs for Mobilization and Demobilization were included as a percentage of a majority of the Site Remediation and Conventional Reclamation activities. The lone exclusion was the rehandle of the NW PAG Stockpile, which due to the magnitude of the works involved, would result in a cost for this activity that would far exceed what would be realized.

To support this, a summary of quoted mobilization / demobilization costs from a local contractor for a similarly capable fleet of equipment was provided. The costs presented in the RLCE are greater than those for the contract fleet. This was presented to MCM during the RLCE negotiations and accepted within the final liability value.

11.1.7 Project Management

Project management for activities through Closure and Post-Closure were added at 10% of the calculated value for the activity. As with mobilization/demobilization, the exception to this is for the NW PAG stockpile, whose size and cost outweighs a 10% addition for such a simple task. 7% was added to the NW PAG stockpile between mobilization/demobilization and project management as a result of discussions with MCM.

11.1.8 Engineering / Consulting Costs

Engineering / consulting costs are applied throughout the RLCE. They cover a range of activities, including ongoing stewardship of the TSF, Hazardous Waste Assessment and Disposal and construction of future works (primarily the future spillways).

11.1.9 Contingency Fees

Contingency fees are applied at the required 15% according to MCM guidance or as otherwise determined through discussions with MCM. Contingencies are at least 15% and can be seen in Table 1 of the RLCE Summary Report, provided as Appendix 11-1.

11.1.10 Discount Rates

Costs subject to discounting are done at 4%, as prescribed by MCM guidance.

11.2 Required Components

The RLCE is comprised of the following:

- RLCE Summary Report; and
- RLCE Spreadsheets

The final value of the Liability was determined internally by MCM. MPMC has attempted to recreate this value based upon the descriptions provided and present the results in the 2025 09 24 RLCE Summary Report (Appendix 11-1) and the Excel spreadsheet 2025 09 23 RLCE Cost Category Summary M-200 Compliant.xlsx.

MPMC was unable to achieve the exact value that MCM did. The value of $185,752,000 within the M-200 is the official total.

11.2.1 RLCE Summary Report

The RLCE Summary report is provided as Appendix 11-1.

11.2.2 RLCE Spreadsheets

The RLCE summary report is based upon the RLCE spreadsheet. As a part of the RLCE submission, open (write-able) copies of the RLCE Spreadsheet are to be provided to MCM. MPMC has updated the RLCE Spreadsheet as a result of discussions leading to the final liability determination and has provided it directly to MCM as file: 2025 09 23 RLCE Cost Category Summary M-200 Compliant.xlsx.

11.3 Cost Categories

The Cost Categories included in the RLCE are as required by MCM Guidance. They include:

- Cost Category 1 – Infrastructure Removal.
  - This is a conditional cost which is provided, but subject to future decisions regarding the status of the district lot that the infrastructure is on.

- Cost Category 2 – Site Remediation
- Cost Category 3 – Conventional Reclamation
- Cost Category 4 – Source Controls and Treatment
- Cost Category 5 – Site Staffing
- Cost Category 6 – Site Maintenance
- Cost Category 7 – Site Monitoring and Reporting.

Cost categories 1-3 are short-term activities and not subject to long-term discounting. Cost Categories 4-7 refer to work over the full 100-year period and are discounted at 4% per MCM guidance.

A summary of the Cost Categories can be seen in Table 1 of the RLCE Summary Report (Appendix 11-1). Table 1 of Appendix 11-1 includes contingencies and is presented as both discounted and un-discounted values.

11.3.1 Cost Category 1 – Infrastructure Removal

See Section 5 of Appendix 11-1.

11.3.1.1 General Requirements

See Section 5 of Appendix 11-1.

11.3.1.2 Infrastructure Types

See Section 5 of Appendix 11-1.

11.3.2 Cost Category 2 – Site Remediation

See Section 6 of Appendix 11-1.

11.3.2.1 Contaminated Sites Investigations

See Section 6 of Appendix 11-1.

11.3.2.2 Soil Treatment

See Section 6 of Appendix 11-1.

11.3.3 Cost Category 3 – Conventional Reclamation

See Section 7 of Appendix 11-1.

11.3.3.1 General Requirements

See Section 7 of Appendix 11-1.

11.3.3.2 Mine Components

See Section 7 of Appendix 11-1.

11.3.3.3 Reclamation Activities

See Section 7 of Appendix 11-1.

11.3.3.4 Costs

See Section 7 of Appendix 11-1.

11.3.4 Cost Category 4 – Water Quality Mitigations

See Section 8 of Appendix 11-1.

11.3.4.1 General Requirements

See Section 8 of Appendix 11-1.

11.3.4.2 Capital Costs

See Section 8 of Appendix 11-1.

11.3.4.3 Operating Costs

See Section 8 of Appendix 11-1.

11.3.5 Cost Category 5 – Site Staffing

See Section 9 of Appendix 11-1.

11.3.5.1 General Requirements

See Section 9 of Appendix 11-1.

11.3.6 Cost Category 6 – Site Maintenance

See Section 10 of Appendix 11-1.

11.3.6.1 General Requirements

See Section 10 of Appendix 11-1.

11.3.6.2 Site Maintenance Items

See Section 10 of Appendix 11-1.

11.3.7 Cost Category 7 – Site Monitoring and Reporting

See Section 11 of Appendix 11-1.

11.3.7.1 General Requirements

See Section 11 of Appendix 11-1.

11.3.7.2 Monitoring Programs

See Section 11 of Appendix 11-1.

11.3.7.3 Monitoring Costs

See Section 11 of Appendix 11-1.

11.3.7.4 Reporting Costs

See Section 11 of Appendix 11-1.