

Mining and Mineral Resources Division Ministry of Energy and Mines

Terms of Reference

Mount Polley Mine Breach
Chief Inspector's Investigation

September 24, 2014 VERSION 1.0

Acceptance

I agree that the *Terms of Reference* enumerated herein conform to the obligations of the Government of British Columbia to serve the economic and environmental values of the citizens of British Columbia, the natural environment of British Columbia, and the best interests of the mining industry and its workers. I agree that these *Terms of Reference* conform to all applicable legislation governing the administration of mining in the Province of British Columbia.

I therefore approve these *Terms of Reference* to govern the implementation and conduct of the Chief Inspector's investigation.

Accepted by:

Al Hoffman, PEng

Chief Inspector of Mines and Executive Director, Health & Safety

Mines and Mineral Resources Division

Document Version Management

Any updates or modifications to these *Terms of Reference* require approval from the Chief Inspector of Mines and should be recorded in the version management table below once the changes are approved.

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1 Introduction

This document provides Terms of Reference for the investigation of the breach in the Tailings Storage Facility (TSF) at Mount Polley Mine that occurred on August 4, 2014.

1.1 Chief Inspector's Statutory Authority

It is under the independent authority of the Chief Inspector of Mines to:

- have full access to all parts of the mine property;
- lead the investigation;
- compel sworn testimony from any witnesses, company officials, employees, or third parties;
- compel the conveyance of any documents or other things deemed relevant to the investigation;
- issue findings of contravention of the *Mines Act*, Regulation, Health, Safety and Reclamation Code for Mines in British Columbia ("Code") and/or the permit;
- issue Orders:
- recommend further action under competent authorities under applicable legislation of the province; and
- apply to the Supreme Court with respect to proceedings for an uncooperative person.

Please refer to Section 3 below for specific terminology from the legislation.

1.2 Goals of the Investigation

In broad terms, the investigation is intended to accomplish three principal goals:

- to establish the root cause of the event, and any contributory causes;
- to reduce the risk that such an event could occur in the Province in the future; and
- to improve the safety of the mining industry in the Province.

1.3 What are the Terms of Reference?

The *Terms of Reference* documents the resources, organization and authority needed to faithfully execute the Mount Polley Mine investigation. It also defines the investigation's context, objectives, scope, required resources, roles and responsibilities, and timeline.

The *Terms of Reference* is not a legal document, nor is it intended to serve as a final or definitive authority in the conduct of the investigation.

The *Terms of Reference* are signed off by the Chief Inspector of Mines, who marshals and controls the resources and directs the overall investigation.

2 Investigation Parameters

2.1 Objectives

The following comprise the objectives of the Mount Polley Mine TSF breach investigation:

- Determine the root cause of Mount Polley Mine Tailings Storage Facility breach on August 4, 2014;
- Determine contributory cause(s), if any, to the dam breach;
- Determine the nature of contraventions of the *Mines Act*, Regulations, *Mines Act* Permit M-200 and/or Code, if any, occurred;
- Determine additional Orders, if any, that should be issued in regards to the event;
- Determine how best to reduce the risk that such an event could occur in the future on this site or any mine site in British Columbia, and which actions, Orders, or recommendations for changes to relevant sections of the *Mines Act*, Regulation, or Code would support this objective; and
- Make recommendations for other remedies, if warranted, under the Mines Act or any other relevant legislation.

2.2 Conduct of the Investigation

The following guiding principles inform the conduct of the investigation:

- Independent conduct of investigation, with respect to influences from Government and interests of industry, labour, other interested parties, and public pressure;
- Independent from any other investigative efforts surrounding the event;
- Objective, evidence-based, thorough, defensible findings and recommendations;
- Conducted with the understanding that time is of the essence, subject to the demands of objectivity and thoroughness;
- Conducted in a manner that respects the court decisions and legal precedents that guide the investigative process;
- Oriented toward enhancing the safety and security of the public, the worker, the environment, and the business climate;
- Respectful of the interests of First Nations, local and regional government, professional organizations, and labour;
- Responsive to permissible requests for information, documents, files, transcripts, photographic and other media, and any other items requested by investigative agencies, subject to the rules of evidence and good practice;
- Confidential in all data that could be considered privileged under guiding legislation, but transparent subject to the Freedom of Information Act and any other relevant legislation; and

 Structured and implemented in accordance with the organizational and operational principles of Major Case Management (MCM) best practices.

2.3 Scope

The following are included in the scope of the investigation:

- All documentation, records, reports, and any other things that could be considered relevant to the investigation.
- Actions, plans, designs, operations, engineering, policy, and any other contributing things occurring on Mount Polley Mine, by Mount Polley Mining Corporation, or by its parent company, Imperial Metals Corporation.
- Actions, plans, designs, operations, engineering, policy, and any other contributing things under the aegis of any third parties deemed relevant to the investigation, including engineering firms, subcontractors, outside agencies, or any other person(s) or entities considered relevant to the investigation.
- Findings of contravention of applicable legislation.
- Recommendations for potential legislative and regulatory changes to achieve stated outcomes.

The following is *outside* the scope of the investigation:

Investigation beyond the permitted area of disturbance under Mines Act Permit
 M-200 generally is outside the scope of this investigation.

The final deliverable of the investigation is a report over the signature of the Chief Inspector of Mines.

3 Enabling Legislation

This section provides an informal summary of the legislation that enables the investigation to proceed and provides some statutory guidance as the investigation unfolds.

3.1 Mines Act

Mines Act [RSBC 1996] Chapter 293

- §7 An inspector may, and on the direction of the chief inspector must, make an investigation of and report about an accident that has caused serious personal injury, loss of life or property or environmental damage.
- §8 (1) for the purposes of conducting an investigation under §7, an inspector may make an order requiring a person to do either or both of the following:
 - (a) attend, in person or by electronic means, before the inspector to answer questions, on oath or affirmation, or in any other manner
 - (b) produce for the inspector a record or thing in the person's possession or control.
- §10 (9) An owner, agent, manager or permittee must
 - (a) hold and maintain a permit for the mine,
 - (b) ensure that no work takes place in, on or about the mine, except under and in accordance with a permit, and
 - (c) comply with all the conditions of the permit..
- §18 The inspector may order the owner, agent, or manager to provide at the owner's expense an independent study prepared by an engineer or other licensed professional acceptable to the inspector
 - (a) respecting health and safety at the mine or safety of its equipment, buildings, workings or structures, or
 - (b) in connection with an accident or a dangerous occurrence that the inspector is investigating.
- §37 (1) A person who obstructs, impedes or otherwise interferes with an inspector in carrying out the inspector's duties under this Act commits an offence.
 - (2) A person who contravenes a provision of this Act, the regulations, the code or an order made under any of them commits an offence.
 - (3) A person who commits an offence is liable to a fine of not more than \$100 000 or to imprisonment for not more than one year or both.

- (3.1)The time limit for laying an information for an offence
 - (a) under §10 is one year after the facts on which the information is based first came to the chief inspector's attention, and
 - (b) under this Act, other than §10, is 6 months after the facts on which the information is based first came to the chief inspector's attention.

3.2 Mines Regulation

BC Reg 126/94 Mines Regulation

- §1 An inspector may, during the exploration, development, operation, closure or abandonment of a mine, investigate any matter relating directly or indirectly to the health and safety of any person or the public, including an investigation with respect to
 - (a) death or injury,
 - (b) accidents,
 - (c) dangerous or unusual occurrences, or
 - (d) complaints or allegations relating to health or safety,

and, for purposes of an investigation, management must provide the inspector with access to all of the mine, including the underground and surface portions, and all mine records.

3.3 The HSR Code

The Health, Safety, and Reclamation Code for Mines in British Columbia

The Health Safety and Reclamation Code for Mine (Code) in British Columbia gives clear direction with respect to the requirement for the mine manager to conduct an investigation subsequent to a "dangerous occurrence" occurring on a mine site. Definitions of a dangerous occurrence pursuant to Parts 1.7.3 (2) and (11) of the Code include:

- (2) cracking or subsidence of a dam or impoundment dike, unexpected seepage or appearance of springs on the outer face of a dam or dike; loss of adequate freeboard, washout or significant erosion of a dam or dike, any of which might adversely affect the integrity of such structures, and;
- (11) any other unusual accident or unexpected event which had the potential to result in serious injury.

3.4 Mount Polley Investigation and Inquiry Regulation

In addition, a Regulation specifically enacted for the Mount Polley Mine breach was relating to the *Ministry of Energy and Mines Act*, designed to delegate authority to determine and recapture costs for the investigation and inquiry from the Lieutenant Governor in Council to the Minister of Energy and Mines.

Mount Polley Investigation and Inquiry Regulation BC Reg 158/2014

§2 The minister, with respect to the breach of the tailings storage facility at Mount Polley Mine on August 4, 2014, being a matter arising under the *Mines Act*, is authorized to do everything referred to in §8(2) and (3)(a) of the *Act*.

The relevant sections of the Act are as follows:

Ministry of Energy and Mines Act [RSBC 1996] Chapter 298

- §8 (2) The Lieutenant Governor in Council may make regulations authorizing the minister to, on prescribed terms, to
 - (a) employ persons necessary to initiate and carry out investigations and inquiries
 - (i) under §5(b)
 - (ii) into any government corporation, government society, or government agency specified in the order, or
 - (iii) into any matter arising under any Act administered by the minister
 - (b) for the purposes of an investigation or inquiry, confer on investigators
 - (i) the powers set out in §8.2 to 8.4, and
 - (ii) the protection set out in §8.5
- (3) The Lieutenant Governor in Council may, in an order under sub§ (2).
 - (a) authorize the minister or person carrying out the investigation or inquiry to determine by whom, to whom, in what amount and at what time the costs incidental to the investigation or inquiry, including trhe administrative costs of carrying out the inquiry, are to be paid. . . .

4 Governance

4.1 Governance Structure

The investigation draws its organizational structure from the best practices of business architecture, widely applied throughout the public service at all levels across Canada, and from the Major Case Management body of practice, a robust structure designed to support the dynamics of large investigations. MCM is utilized in investigative work throughout Canada, chiefly within the public safety arena.

Governance of the investigation relies on a three-level structure (shown in the Table of Organization, page 16).

The top level structure is the Ministry Executive, consisting of the Deputy Minister and Assistant Deputy Minister for Mines and Mineral Resources. It has no role in the investigation *per se*, but is the body to which the Chief Inspector of Mines reports. With respect to the investigation, the Chief Inspector will provide periodic briefings to the Executive.

The second level consists of the core investigative management structure, the Command Triangle. Led by the Chief Inspector, the Command Triangle also includes the Primary Investigator and the File Coordinator. The Command Triangle is designed to function as a single operational unit, with seamless coordination, communication, collaboration, and administration. Although there are primary responsibilities and reporting streams, the Command Triangle permits all members to support each other's roles redundantly. This fluid and inclusive approach has proven itself robust and flexible in the dynamic and fast-paced environment of major investigations. All contact with legal advice and support are the responsibility of the Chief Inspector.

The third level contains functional roles that comprise the primary focus areas of the investigative team. These roles report to the leadership in the Command Triangle, Each is led by a Ministry staff member (who may also occupy other roles, including Command Triangle positions). The primary focus areas include:

Investigation

Includes field interviews, site investigation, data acquisition, collection of records, documentation; and additional information from the mining company, employees, third parties, and other sources as determined by the team; and curation (technical content review and scrutiny) of all exhibits, evidence, documents, and other physical and electronic records relevant to the investigation.

It also includes active and/or collaborative capture of onsite geotechnical engineering data, including TSF facility drill cores, analysis of geotechnical data, curation of existing geotechnical reports (from internal and external sources) and associated investigative activities.

Onsite

Includes management and administration of onsite presence of Health & Safety inspectors at Mount Polley Mine.

Governance

Includes development and implementation of Terms of Reference, development of other investigative protocols, minuting meetings, overall coordination of the investigation, and production of the Chief Inspector's report on the event.

Communications

Management, control, facilitation and monitoring of all internal and external communications regarding the investigation. The role also includes monitoring and support of Ministry communications, and coordination with Ministry policy and communications groups regarding media response and public, and public meetings.

Records Management

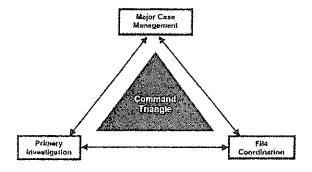
Includes custodianship (logging, security, chain of custody, and other applicable rules of evidence handling) and quality assurance, indexing, database entry, transcription, and logging of items. Administrative functions, including finance, staff support, and logistics (for onsite and Operations Centre) are within this role. The area also includes liaison with facility restoration efforts on site.

On an as-required basis, consultative support or expertise matrixed from other organizations can be incorporated to support these functional roles.

4.2 Major Case Management (MCM)

The overall principles and structure of Major Case Management (MCM) embraced by public safety and investigative agencies across Canada will be adapted for the investigation.

Major Case Management is an organizational program that provides discipline, structure, integrity, flexibility, and responsiveness for the conduct of major investigations. It is particularly well suited to the dynamic and fluid environment that characterizes major investigations, and provides an operating ethos as well as an overall command and execution structure. Given the scope of the Mount Polley investigation, MCM is a prudent approach to organizing the structure and decision making process of the investigation team.



The fundamental structures, organizational rules, definitions of roles and responsibilities, and best practices in communication and records management are applicable to this investigation. The basic MCM template has been modified to adhere to the goals of the

investigation while still offering a sound investigative platform for the Chief Inspector's task.

Central to MCM is the Command Triangle, which establishes a Major Case Management system for the investigation, establishes the significance of management and control of files (all documentation, evidence, and potential exhibits), and lays out operational procedures for primary investigation.

4.3 Roles & Responsibilities

Roles for team members are outlined in the Table of Organization. Individual team members may be expected to manage multiple roles. Team governance also supports designation of alternate persons to fulfill various roles according to scheduling, staff availability, and workloads, respecting the fluid nature of the investigation. Additional roles and responsibilities will be developed as the investigation's structure is refined.

Roles will be reevaluated according to the fluidity of the investigation. Responsibilities for the key roles are as follows:

Role

Responsibilities



- Command Triangle Contribute to seamless, collaborative, singular "mind" of investigation
 - Share duties with other members of Triangle as resourcing and capacity requires
 - Support other members of Triangle in performance of all responsibilities
 - Serve as redundant backup for other members of Triangle

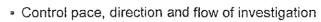




- Develop strategy for direction, flow, and pace of investigation
- Identify, acquire, and deploy appropriate resourcing, including investigative, support, and external expertise
- Chair daily team meetings
- Communicate weekly with Executive.
- Liaise with legal counsel

Principal Investigator

- Report to Chief Inspector
- Conduct and manage investigation; including field, interview, document, geotech, and evidence,



- Supervise, schedule, and support all investigators
- Review and curate incoming documents for relevance to investigation



· Prepare and present daily investigation report

File Coordinator





- Coordinate document and evidence handling and security standards
- Manage IT considerations for investigation
- Catalogue and index all documents according to standards
- Control dissemination and distribution of all documents
- Maintain investigation chronology
- Assess and classify incoming documents for completeness and custody
- Supervise communications of investigation
- Document daily meetings

Investigation Lead

- Report to Principal Investigator
- Develop roster of interview subjects, including company employees, witnesses, and third parties
- Prepare questions for interviews, conducting interviews and followups
- Review and scrutiny of all incoming documents; indexing by subject, source, keyword; providing summaries to team of critical information exposed
- Geotechnical engineering investigation, including site drillcore analysis, forensic analysis, review of engineering design, construction, as-built, and operations reports

- Onsite Lead Report to Principal Investigator
 - Liaise with Ministry Health & Safety staff onsite, and coordinate communication with investigators and site.

Governance Lead

- Report to File Coordinator
- Develop and maintain Terms of Reference
- Minuting of meetings
- Produce final report of the Chief Inspector

Communications Lead

- Report to Chief Inspector
- Manage and support internal communications
- Media/public inquiry/public meeting liaison
- Liaison with onsite emergency works

Records Lead Report to File Coordinator

- * Serve as (or delegate) Exhibit Custodian
- Develop protocols and business rules
- Responsible for physical security of all records, and archiving of all electronic records
- Implement all records management protocols under MCM
- Catalogue incoming (and extant) documents, exhibits, and other items under the rules of evidence
- Manage and support IT elements, including records management database tools
- Manage administration including finance and team logistical support
- Coordinate transfer and documenting copies to other investigations

4.4 Shared Responsibilities

As members of the investigative team, all employees and contract staff share significant responsibilities. These include:

- Maintain integrity of investigation by strictly maintaining confidentiality of all information, discussions, conclusions, and evidence connected to the investigation.
- Coordinate all activities with other team members, participating in daily meetings (by telecom if necessary)
- Document all tasks and activities according to the investigation protocols
- Maintain an open, objective, critical stance in all consideration of evidence
- Conduct all investigative activities in a legal, moral, and ethical manner

4.5 Operational Protocols

Operational protocols will be developed and collected in the investigation's Operating Manual and communicated to all team members. To date, the following operational protocols have been identified:

Security A core protocol for the investigative team is security. All documents, notes, and other reference material should be considered privileged and confidential for the course of the investigation. Any disclosure, information sharing, transmittal to other investigative units, the Privacy Commissioner, or under an FOIA request, must be confirmed by a member of the Command Triangle.

> Any materials must be physically secured in locked rooms, locked file cabinets, or locked vehicles (while operating in the field). Staff are responsible for appropriately securing all documentation when

carried on their person.

Conference calls shall be conducted on a dedicated and confidential call-in number to eliminate the potential for inadvertent participants.

All investigative team members, contract staff, and support staff, as well as any Ministry staff onsite at the mine (for whatever reason) shall sign a Memorandum of Investigative Integrity reinforcing the special requirements of the investigation on confidentiality, disclosure (deliberate or inadvertent) of any information, findings, speculation, or other information relative to the investigation.

Independence The independence of the investigation is essential to ensure its integrity. This includes independence from any concurrent investigation(s) external to the Ministry, and from Crown prosecutor staff. Any requests for documentation will be managed by the exhibit custodian following the rules of evidence and chain of custody.

Coordination The investigative team will meet regularly, in person or by conference call at a time designated by the Chief Inspector. The daily meeting is essential to communicate findings, coordinate activities, and ensure that all team members are adhering to organizational protocols. Meetings also afford an opportunity for the team to objectively contemplate and answer questions relative to meeting the test for "crossing the Rubicon" of Jarvis and Ling. Guidelines for invoking Jarvis will be developed and communicated to all investigative team members.

> The Chief Inspector will provide a periodic brief to the Executive, to ensure that relevant findings, status of the investigation, and any requirements for additional resources are communicated appropriately.

Communication External communications management is critical to the integrity of the investigation. The Chief Inspector will designate a communications lead, who will be the principal conduit for addressing relevant media requests and inquiries from the public.

> In brief, while the investigation is ongoing there is no disclosure of sensitive or specific information from the investigative team. Communications protocols will be developed; general statements may be issued under this protocol. The primary means of communicating the investigation's findings will be through the Chief Inspector's report.

The Chief Inspector will designate team members for public meetings, and will provide guidance on the flow of information to these meetings.

4.6 Interested Parties

There are a number of interested parties that have been identified who do hold an interest in the outcome of the investigation, and/or who may be contacted by the Chief Inspector to contribute expertise, documents, or other supportive information to the investigation as required.

Potential interested parties include, but are not limited to:

BC Government Agencies

- Ministry of Aboriginal Relations & Reconciliation
- Ministry of Agriculture
- Ministry of Environment
- Environmental Assessment Office
- Ministry of Forests, Lands and Natural Resource Operations and Range
- Ministry of Health/Interior Health Authority
- Ministry of Justice
- Emergency Management BC
- WorkSafe BC

Independent investigation and inquiry panel

Federal Government Agencies

- Environment Canada
- Department of Fisheries & Oceans (DFO)

Local/Regional Government

Cariboo Regional District

Industry

- Mining Association of British Columbia
- Association of Professional Engineers and Geoscientists of BC

Labour

United Steelworkers Local 1-425

The First Nations of British Columbia

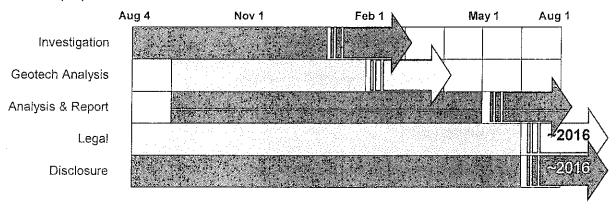
The Citizens of British Columbia

5 Resourcing & Timeline

5.1 Timeline

While the investigation is at its early stages, a definitive projected timeline will not be possible. Going forward, the uncertainties inherent in any investigative action also make a more precise timeline difficult to project at a future date.

Our best "as-is/where-is" estimate of the investigative timeline is shown below. Three major deliverable components are shown: the primary investigative work surrounding statements, onsite investigation, and document analysis; the geotechnical engineering analysis, including obtaining and analysing drillcores; and root cause analysis and report preparation.



5.2 Resourcing

It is difficult to determine the amount of resourcing that will ultimately be required. This is driven by the necessary uncertainties related to the dynamic nature of a major investigation.

A dedicated, secure Project Room would provide meeting and collaboration space, computer display, secure storage, and wall space for exhibits, timelines, plots, and other visuals. This resource is considered essential to the efficiency of the investigative team.

In accordance with the provisions of the *Mount Polley Investigation and Inquiry Regulation* (see section 3.3 above), all costs relating to the investigation, including administrative costs, are recoverable at the direction of the minister.

Contract expertise and expertise outside the Division will be required to provide a complete investigation. To date, contract resources have been identified and engaged for investigation, records, and report preparation. Additional expertise may be required for database application development, clerical support, and other functions yet to be identified.

Ministry staff will form the core of the investigative team. Staff will provide subject-matter expertise, investigation and analysis activities, clerical and cataloguing support, and other services as required by the investigation; resources from all regions may be matrixed in as required for briefer periods of time.

The following table is our best engineering estimate for human resources for the balance of the fiscal:

Estimated resources (September 15, 2014– March 31, 2015)

Resource	Deliverables & Roles	Fulltime Equivalent (FTE) Commitment	Contractor/ Staff				
Ministry Staff							
Executive	Receive briefings	1hr/week	Executive staff				
Chief Inspector of Mines	Overall responsibility and management; Final determinations and reporting	1 FTEs	Ministry staff				
Deputy Chief Inspector/inspectors	Investigation Analysis	4 FTEs	Ministry staff				
Geotech engineers	Geotech analysis	2 FTEs	Ministry staff				
Policy & Communications	Coordinate communications and policy support	2 FTEs	Ministry staff				
Admin/support staff	Records management, clerical and administrative support, DBMS	5 FTEs	Ministry staff				
Onsite Inspectors	Onsite H&S, coordination	3 FTEs	Rotating Ministry staff				
FOI Response	Investigation, analysis, operation, admin support	1.5 FTEs	Ministry Staff				
External Consultative Ex	pertise						
Primary Investigation	Investigation, MCM support	1 FTE	Contractor				
Records Management	Exhibit and document continuity, integrity, indexing, management	0.5 FTE	Contractor				
 DBMS Applications 	Database setup, customization, maintenance	0.6 FTE (cost portion: 0.2 FTE)	Contractor No-cost: RCMP/SSBC				
 Report Coordinator 	Report coordination and preparation	0.8 FTE	Contractor				
≭ Geotech	Investigation, document analysis, forensic examination, drillcore analysis & assessment	4-5 FTEs	Contractor				

Note: FTE allocations of Ministry staff do not reflect substantial overtime requirements, especially in the earlier stages of the investigation.

