



**MINISTRY OF ENERGY AND MINES**  
Mines and Mineral Resources Division

**REPORT OF GEOTECHNICAL INSPECTOR**  
(Issued pursuant to Section 15 of the Mines Act)

**Name of Property:** Mount Polley Mine **Permit No.:** M-200

**Mine Manager:** Dale Reimer

**Company:** Mount Polley Mining Corporation  
**Address:** PO Box 12, Likely BC, V0L 1N0

**Persons Contacted:** Dale Reimer  
Luke Moger  
Dave Carpenter  
Ryan Brown  
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**Copies To:** Al Hoffman, Chief Inspector of Mines  
Diane Howe, Deputy Chief Inspector of Mines, MEM  
Stephen Rothman, Health & Safety Inspector, MEM  
George Warnock, Manager, Geotechnical Engineering, MEM  
Heather Narynski, Sr. Geotechnical Inspector, MEM

**Date of Inspection:** September 13, 2013

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**Introduction**

A Geotechnical inspection of the Mount Polley Mine was conducted on September 13, 2013 by Michael Cullen, P.Eng of Michael Cullen Geotechnical Ltd. accompanied by Steve Rothman of MEM. Mr. Cullen completed this inspection on behalf of the Ministry of Energy and Mines. The inspection included a field review, review of technical reports, and technical discussions with Mine staff.

The purpose of this inspection was as follows:

- To assess if the Mine is meeting the intent of the geotechnical requirements of the Health Safety and Reclamation Code for Mines in B.C. (HSRC)
- To assess if the Mine is meeting the intent of geotechnical conditions in Permit M-200.
- To assess if geotechnical practices at the Mine are consistent with generally accepted engineering practices at mines in British Columbia.
- To identify potential ground stability hazards or concerns at the Mine.
- To provide general comment on geotechnical conditions at the mine.

The following technical reports were reviewed:

- "Springer Pit South Wall Rock Fall Assessment" dated February 27 by Golder Associates
- "Springer Pit North East Wall Rock Fall Assessment" dated February 27, by Golder Associates

the exception of the installation of 6ft friction bolts in the back. The stability of the Wight Pit and potential impact on underground infrastructure at the base of the pit is a concern that needs to be properly assessed.

#### **Inspection Orders:**

*As per Permit M-200 The Mine shall install ground support as per the application and shall only vary in accordance with the written directions of a qualified geotechnical engineer. All areas of the mine where the back is supported with 6ft friction bolts shall be re-supported with 8ft rebar on minimum 1.2m pattern.*

*As per Permit M-200 The Mine shall be inspected by a qualified geotechnical engineer to confirm that ground control is adequate and that the conditions are in agreement with the geotechnical design assumptions. Inspections are to occur minimum once per year.*

*As per Permit M-200 prior to commencing mining the Permittee shall provide a plan to MEM that addresses the stability/safety issues of using a cement backfill. The plan shall include a QC/QA program that includes testing procedures to ensure that the backfill support is effectively mixed, installed and secure. This plan should also provide details of the amendments to the proposed backfill operation from those submitted in the permit application.*

*Prior to commencing production mining the Mine shall complete a detailed assessment of the Wight Pit slope stability and rockfall hazard to the infrastructure located within the pit. The analysis should consider the effects of blast vibrations from production blasts. Details of pit slope monitoring program and trigger levels shall be included in the report.*

#### **Location: Springer Pit**

##### **Observations and Comments:**

The Springer Pit is presently mined down to elevation 976m, it is understood that the ultimate pit bottom in the present Phase will be at about 900m.

A pushback of the Springer Pit is underway. At this time the Mine plans to continue mining in the base of the pit while the pushback is underway. To date MEM has not received any design information on the pushback; it is understood that a Permit Amendment application to cover the expanded pit will be submitted to MEM in the near future.

In 2012 MEM noted that the as built bench width ranges from about 6.5 to 8.5m on the Northeast wall. Much small rockfall was noted, but the benches were not full. Loss of the crest compromises the ability to clean off the benches at a later date as well as reduces the effectiveness of the bench to catch rockfall. Going forward a standard operating procedure is required to ensure that future benches are minimum required width and left in a clean condition. Methods to achieve this are left to the discretion of the mine. The Code requires that the minimum catchment bench width is 8m to allow for safe equipment operation; depending upon available equipment larger bench widths may be needed for safe equipment operation.

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*bench and access cannot be gained to clean off the catchment berm as per Section 6.23.2(3).  
A copy of the Safe Work Procedures shall be submitted to the Geotechnical Inspector.*

*No further multibench mining shall be completed until such time as a system has been developed by the Mine and authorized by the Chief Inspector as per 6.23.4 and 6.23.5(2). This should include assessment of impact on bench and pit scale stability, rockfall hazard, mitigative measures to protect workers.*

*No work shall be carried out on, at, or below a face or wall of a surface mine until that face or wall has been examined and declared safe by the shiftboss as per Section 6.5.1.*

**Location: Tailings Storage Facility**

**Observations and Comments:**

The Stage 9 dam raise to elevation 970m was underway at the time of this inspection. MEM has previously reviewed and accepted the designs for this lift. All construction work appears to be well done. A quality control and quality assurance program is in place and it is understood that there have been no significant issues. The Mine reports that instrumentation has responded as expected during construction.

An inspection around the dams revealed no indicators of instability and no significant seepage on the face or toe of the dams.

We reviewed the revised Operation, Maintenance and Surveillance Manual prepared by Mount Polley in July 2013. This document covers tailings and water managements across the site and is considered well thought out.

Based on our observations and information reviewed we consider that the TSF is being designed, constructed, and operated in general conformance with the requirements of the geotechnical components of the HSCR, Permit M-200, and accepted engineering practices.

**Inspection Orders:**

*None*

**Photo 1: Tension Cracks and slump on south west crest of Wight Pit above underground access**



**Photo 2: Tension Cracks and slump on western crest of Wight Pit above underground infrastructure**

