



TSF Breach Exercise

Mine Emergency Response Tabletop

As per Chief Inspector of Mines order (9) dated August 18th 2014 , (AI Hoffman)

Report Issued: 11/19/2014

Exercise Date: 10/30/14

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EXERCISE OVERVIEW

On October 30th, 2014, at 11:00 hours the Mount Milligan Mine Incident Command Team (ICT) and Knight Piesold (KP) engineer conducted a Dam breach exercise. The exercise was conducted as a tabletop exercise in which a hypothetical dam breach occurred and the actions of all employees involved were recorded in a time / event log. The exercise utilized the mine site Incident Command Structure and followed the mine site Mine Emergency Response Plan (MERP). The exercise ran for 2 hours and 12 minutes and involved a total of 10 individuals. The exercise went very well, lessons were learned and deficiencies were found. The lessons learned are detailed below and include mitigation plans.

Identified Gaps and Lessons Learned

- 1. Internal Emergency Contact Lists** - The common recurring deficiency identified was the Internal Emergency Contacts phone list. During the recent and ongoing transition from the construction phase to production, a constant transition of people has occurred. Several contacts were outdated or missing and need to be updated now and on a regular basis moving forward.
Mitigation - All internal and external Emergency Contact Lists will be immediately reviewed by the Safety Departments Emergency Response Coordinator, revised, and redistributed. Moving forward these Emergency Contact Lists will be reviewed every three months or sooner if required by the Emergency Response Coordinator.
- 2. Incident Command Team Notification** - In the event of an emergency the Incident Command Team members must be notified and be able to respond in a timely fashion to the Incident Command Center.
Mitigation- Primary members of the Incident Command Team will be provided with portable digital radios by the safety department.
- 3. Accountability of Workers Offsite in Field Operations** - A second deficiency noted was the possibility of workers or contractors in the field located downstream when an emergency is called. Once notified of the TSF breach the workers may not be able to get back to site but need to be accounted for as per Site Accountability requirements.
Mitigation – Off site Muster station(s) locations and reporting protocol will be identified and added to site muster station map and Mine Emergency Response Plan by the Emergency Response Coordinator. Site muster station protocol will be developed for potential downstream employees who may be working in areas that may be exposed to a TSF breach.
- 4. Availability of Pumps / Piping** - As the exercise progressed, it was decided to pump effluent from the affected cell to another cell to minimize impacts of a catastrophic failure. Once the decision was made to gather pumps and piping to do this, it was apparent that there was no

designated storage location that the pumps were stored at. Locating pipe / PUMPS was going to be problematic. Secondly, pumping of the TSF tower drains was recommended by the KP engineer, but it was determined that the pumps to accomplish any significant dewatering of the tower drains were not present on site.

Mitigation - An audit of available pumps and piping will be completed by the Engineering Department immediately. Pumps necessary to accomplish these tasks will be sized and ordered, if necessary. Designated storage areas for the pumps and piping will be established.

- 5. Flood Plain Extent** - Although, through the inundation study, flood plain dimensions were determined at each road crossing downstream of the TSF, we were not able to understand the full extent of the flood plain along the entire flood path.

Mitigation – The Engineering Department will investigate developing a map with approximate high water lines and communicate this by posting it to the Thompson Creek Metals Inc. (www.thompsoncreekmetals.com) website for public access.

- 6. Well Informed Communities** – Mount Milligan has maintained communication with local communities about the mine and TSF and answered questions about the Mount Milligan TSF. We are not sure how well the local RCMP and Community Emergency Response Teams (CERT) understand the consequences and effects of a TSF breach.

Mitigation - TCM Community Relations team will make contact with the RCMP and CERTs to ensure that they have adequate information to prepare their community and potentially assist Mount Milligan Mine in the case of an emergency.

CONCLUSION

This TSF Mine Emergency Tabletop Exercise proved to be an excellent learning tool and test of the TSF Mine Emergency Response Plan. All lessons learned have been taken seriously and have been documented and communicated to the proper mine site and corporate levels. Mount Milligan Mine management team and Thompson Creek Metals is committed making all required improvements as identified in the exercise in a timely fashion.