

Mines and Mineral Resources Division

Date: September 30, 2015

- To: Christopher J. Wild, Mine Manager KGHM Ajax Mining Inc., Afton Mine
- Cc: Diane Howe, Deputy Chief Inspector, Reclamation and Permitting, MEM Heather Narynski, A/ Manager, Geotechnical Engineering, MEM

## Re: <u>Review of Letter of Assurance Submission from June 30, 2015</u>

The Ministry of Energy and Mines (MEM) has engaged a consulting firm to evaluate the consistency and compliance of your letter of assurance in response to the Chief Inspector's orders issued on February 3, 2015. This review has determined that your submission satisfies the requirements of the order.

Below is a summary of the assessment made by your Qualified Professional Engineer (QPE), it is understood that no immediate gaps have been identified:

## Status of Foundation Condition

"The borehole data shows that clay and silt (clay/silt) deposits exist in some locations beneath the West and East Dams. The stability analyses performed by the designers of the existing dams did not consider the possibility of normally consolidated clay/silt deposits in the foundation of the dams. Golder evaluated the stability, for undrained shear failure conditions, of the existing West Dam for estimated extents and properties of the clay/silt deposits in the downstream foundation of the West Dam. The results show that the Dam Safety Guidelines (CDA 2007 and 2013), in terms of calculated minimum factors of safety, are satisfied when undrained shear failure of the clay/silt is considered in the analysis for the static condition and post earthquake condition. For the current dam configuration and plans of KGHM, gaps in information do not exist. However, should the West Dam be raised, consideration should be given to drilling and sampling at least three boreholes in the area within 20 m distance from the downstream toe of the West Starter Dam to confirm the estimated extent of clay/silt deposits under the West Dam."

## Status of Water Balance Adequacy

"The TSF is not used for water impoundment as it is currently a non-operating facility. Although the current rate of settlement is not an issue for the East and West Dams, the effect of the Afton Pit operation on the East Dam needs to be investigated and observed. The issue is currently under a joint investigation by KGHM and New Gold Inc."

## Status of Filter Adequacy

"The fine and coarse filters meet standard filter design requirements."

Please ensure that any recommendations made by your Qualified Professional Engineer have been addressed.

The orders issued on February 3, 2015 have been requested to provide assurance the conditions at the Mount Polley dam do not exist in other facilities. Please ensure that you are meeting your other ongoing requirements to ensure Tailings Storage Facility safety with respect to the following:

- Satisfying any outstanding orders from previous Ministry inspection reports.
- Satisfying any outstanding recommendations from previous Dam Safety Inspections (DSI) or Dam Safety Reviews (DSR).

The 2014 Dam Safety Inspection (Knight Piesold, October 1, 2014) highlighted the following conclusions/recommendation with respect to pond level and spillway capacity:

"The tailings pond is at a normal level and has over 4 m of freeboard up to the Spillway outlet. Although this is acceptable from a freeboard point of view, and a larger pond does benefit KGHM in terms of dust control efforts, lowering the pond level will displace water away from the East Dam and will reduce the risk of water and tailings ingress to the underground mine should a crack extend into the TSF in the future. It is recommended that the pond be pumped out or otherwise displaced away from the East Dam."

"The Spillway was designed and constructed for the PMF event based on the conditions at the Afton TSF after the Teck mining operations were suspended. The Spillway routing and hydraulic design should be evaluated and possibly redesigned as part of the New Gold closure planning based on the final site conditions at the New Afton Mine."

• Please provide an update on the status of the above 2014 DSI recommendations which were planned to be carried out by September 30, 2015.

It is expected that you will ensure dam safety management is continuously reviewed, improved and refined throughout the life of mine.

Thank you for your submission to the orders of February 3, 2015.

Sincerely,

Al Hoffman, P. Eng. Chief Inspector of Mines Ministry of Energy and Mines