

27 November 2014

Huakan International Mining Inc.
890-580 Hornby Street
Vancouver, BC V6C 3B6

Attn: Mr. Paul Cowley, P.Geo.
Mine Manager

**Re: Greenwood Gold Project
Independent Third Party Review of Dam Safety Review**

Dear Mr. Cowley:

1. INTRODUCTION

This letter presents the observations and conclusions of a third party review of a Dam Safety Review (DSR) of the Greenwood Gold Project Tailings Pond and Emergency Water Storage Pond. The review was carried out in accordance with Huakan's e-mail authorization October 3, 2014. The third party review was mandated by the British Columbia Ministry of Energy and Mines (MEM), Chief Inspector's Orders, dated August 18, 2014, which stipulated that a Dam Safety Inspection (DSI) be carried out to cover all dam structures for all tailings storage facilities in British Columbia, and that the DSI must be reviewed by an independent qualified engineer from a firm that has not been associated with the tailings dam. In this instance, a full Dam Safety Review was undertaken. The Independent Third Party Review must include a review of the dam consequence classification.

The DSR of the Greenwood Mine dams was carried out by Klohn Crippen Berger (KCB), dated November 25, 2014 (KCB 2014). This third party review is based on that DSR. No site visit was made for the third party review.

2. BACKGROUND

The Greenwood mill is located between Greenwood and Grand Forks, BC, just east of the site of the historic Phoenix Copper mine. Ore from the nearby Lexington-Grenoble underground gold-copper mine was processed in the 200 tpd mill. The mill was constructed in 2007 and 2008 by Merit Mining Corp, and operated for 8 months. Operations were suspended in late 2008. The company name was changed to Huakan Mining in 2010. The property has been under care and maintenance since 2008.

Tailings from the Greenwood mill were deposited in a geomembrane-lined tailings storage facility (TSF). The TSF was designed and constructed under the supervision of KCB. The starter dam is a zoned rockfill embankment, constructed from earthfill and rockfill borrowed mainly from within the impoundment. The starter dam is approximately 15 m high, with the ultimate dam planned to be approximately 25 m high. The crest of the starter dam is at elevation 1197.5m. The downstream toe is built up with a rockfill toe-berm up to El. 1187 m. The starter dam has upstream and downstream slopes of approximately 2H:1V and a crest width of 10 m. The total length of the starter dam is about 300m. The TSF

impoundment is lined with a 40-mil LLDPE geomembrane liner up to the starter dam crest. The TSF contains approximately 52,000 tonnes of tailings, which is approximately 40,000 m³, and currently stores approximately 20,000 m³ of water. The remaining storage volume up to the dam crest is approximately 65,000 m³.

The Emergency Water Storage Pond is formed by a low embankment with a height of about 2.5m, and is lined with a 40 mil thick LLDPE geomembrane. There are reported to be no design and construction records for this pond. KCB (2014) states that the dam embankment appears to be constructed of homogeneous silty sand and gravel fill with side slopes of about 1.5H:1V. The embankment crest is nominally 3 m wide and slopes slightly upstream.

The TSF dam had been assigned a consequence classification under CDA dam safety guidelines of High, based on the expectation that the dam would be raised to its ultimate 25m height, and would be filled with tailings. Under CDA (2007) guidelines for dams with a high consequence classification, a DSR is required every 7 years, which triggered the need for the DSR of the Greenwood facility in 2014. KCB (2014) in the DSR report carried out an inundation study and, based on that study, re-assessed the dam consequence classification. KCB concluded that a classification of Significant would be appropriate for all risk categories, including population at risk & loss of life, environmental and cultural values, and infrastructure and economics. KCB recommended a dam consequence classification of "Significant" for the existing dam.

3. 2014 DAM SAFETY SITE INSPECTION

Steven Ahlfield, P.Eng. of KCB carried out a site on inspection October 29, 2014 to undertake the Dam Safety. Significant findings of the 2014 site inspection included:

Emergency Water Storage Pond

- The geomembrane is in good condition with no visible tears or punctures.
- The water level in the pond was nominally 0.75 m below the lowest point on the dam crest. There was no spillway in place. A 125 mm PVC outlet pipe was installed through the liner at the east edge of the pond, but was judged by KCB to be inadequate to pass a peak flood. Huakan stated that they had subsequently constructed a spillway.

TSF and Tailings Dam

- Surface water interception ditches upslope of the TSF were not lined with erosion protection as recommended in the KCB's design report. Some shrub and small tree growth were noted in the interceptor ditches and some sand deposition was noted in the ditches. Control gates or alternate methods to prevent inflow to the tailings pond had not been installed.
- The dam was in good condition with no indications of cracking or instability.
- There were no indications of seepage flows in the seepage recovery ditch.

- The LLDPE geomembrane was generally in good condition. Some local punctures and tears were noted. It was noted that, although the liner is in good condition, it is not designed for long term UV exposure and should be monitored with time.
- The freeboard in the TSF at the time of the DSR inspection was about 3.7 m and the historic low freeboard was about 3.0 m, indicating the facility has never filled. The observed condition of the pond suggests that the pond is near a neutral water balance.
- The spillway appeared consistent with the design intent although KCB did not monitor its construction.
- TSF pond water quality data is within BCWQ criteria for freshwater aquatic life.

4. DSR RECOMMENDATIONS

Recommendations of the 2014 DSR were as follows:

- Install gates or other barriers on inlet culverts at dam abutment to control in-flow of surface water from diversion ditches while under Care and Maintenance conditions.
- Provide a training workshop for custodians, which would include potential failure modes and effects, dam safety monitoring, emergency preparedness and emergency response procedures and refresh annually.
- Annual inspections to be conducted by a professional engineer registered in British Columbia with experience in dam safety.
- Document inspections of the tailings facility and maintain records at the mill office. The document management system should include a system for incident reporting.
- Review the OMS annually and update as required.
- Clean out remaining site drainage ditches and install erosion protection in ditches and at culvert outlets, as per design, to reduce maintenance frequency.
- Survey the existing tailings beach surface to assess existing tailings volume.
- Monitor piezometric levels quarterly and document in annual inspection report. Piezometers should be clearly labelled in the field to facilitate collection of readings.
- Monitor groundwater and tailings pond water quality annually.
- Install 4 survey monuments on dam crest for monitoring settlement and lateral displacements. Monitor quarterly for one year and annually thereafter. Document results in the annual report.
- Clear trees and small shrubs on emergency water pond embankment and tailings dam from upstream crests to downstream toes.
- Clear vegetation between downstream toe of tailings dam and seepage recovery ditch and pond to permit visual assessment of seepage in weekly inspections.

- Inspect pond liner and repair damaged areas using sealants or procedures approved by the LLDPE liner manufacturer.
- Install a water level gauge at the Emergency Water Pond and correct the water level marks on the geomembrane liner at the tailings pond.
- Monitor water quality impact of potential acid generation from exposed tailings.

5. CONCLUSIONS AND RECOMMENDATIONS OF 3RD PARTY REVIEW

5.1 The DSR is thorough and provides a good summary of the status of the Greenwood tailings dam and Emergency Water Storage Dam. The DSR has addressed the key issues as per the Ministry of Energy and Mines Guidelines for Annual Dam Safety Inspection Reports. Recommendations provided in the DSR are considered appropriate and should be followed.

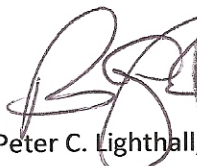
5.2 The Greenwood tailings dam is currently assigned a CDA consequence category of High, based on the expectation that the dam would be raised to its originally designed final height of about 25m, with a large volume of tailings storage. Given that the 15m high starter dam is only partially filled with tailing, and that the assessed failure risks and consequences are low, KCB recommends that the classification be revised to Significant. The writer agrees with KCB that a Significant dam safety consequence classification is appropriate for this facility.

5.3 The tailings dam embankment as described by KCB is apparently in good condition and there appears to be a low risk of any mode of failure.

6. CLOSURE

Thank you for the opportunity to undertake this 3rd party review of the DSR of the Greenwood tailings and water storage dams. I would be pleased to provide any additional information or clarification you may require.

Yours truly,


Peter C. Lighthall, P. Eng
Consulting Geotechnical Engineer



November 27, 2014

REFERENCES

British Columbia Ministry of Energy and Mines, August 2013. Guidelines for Annual Dam Safety Inspection Reports.

Canadian Dam Association, 2007. Dam Safety Guidelines.

Canadian Dam Association, 2014. Mining Dams Technical Bulletin.

Klohn Crippen Berger, 2014. Greenwood Gold Project Tailings Storage Facility, Dam Safety Review 2014. Report prepared for Huakan International Mining Inc., November 25, 2014.