Klohn Crippen Berger

June 30, 2015

Barkerville Gold Mines Ltd.
11th Floor, 1111 Melville Street
Vancouver, British Columbia
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Kevin McMurren
Mine Manager

Dear Mr. McMurren:

Goldstream Tailings Storage Facility
Response to February 3, 2015 MEM Memorandum

1 INTRODUCTION

The Independent Expert Panel[1] (Panel) appointed by Ministry of Energy and Mines, British Columbia (MEM) released their report on the Mount Polley tailings dam failure on January 30th, 2015. Subsequent to the release of the Expert Panel report, MEM issued a memorandum on February 3rd, 2015 (MEM memorandum) to all tailings dam owners in British Columbia to undertake a specific risk assessment of their tailing dams and report the results to MEM by June 30th, 2015. A copy of the MEM memorandum is included as Appendix I.

This report outlines KCB's assessment of conditions at the two dams forming the Goldstream Tailings Storage Facility relative to the specific aspects raised by the MEM memorandum, based on a review of available documents to prepare a "summary of knowledge". This assessment has been sealed by a qualified professional engineer and complies with generally-accepted professional practice common to the local area.

The report format is based on the MEM wording and numbering system, as requested by MEM. In Sections 3 to 5 MEM items are shown in blue italicized text; KCB's response is shown in normal black text.

We consider this assessment to represent the available knowledge of the facility at the time of writing. Operating, inactive and closed facilities are subject to physical and geochemical changes over time, including ongoing construction activities. It is essential that monitoring and assessment of the facilities continue through regular surveillance, dam safety inspections, dam safety reviews and other stewardship activities.

[1] Independent Expert Engineering Investigation and Review Panel, 2015. *Report on Mount Polley Tailings Storage Facility Breach*. January 30, 2015.

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1.1 Assessment Scope

The MEM memorandum asked that an assessment be undertaken to evaluate whether the dams may be at risk due to the following three conditions:

1. undrained shear failure of silt and clay foundation;
2. water balance adequacy; and
3. filter adequacy

KCB reviewed available historical information on foundation characterization, design, construction, and operations records for the Goldstream Tailings Storage Facility (TSF) dams to prepare responses for sub-items listed in the MEM memorandum. A register of the documents reviewed is included in Attachment II. The responses for the above three items are provided in Sections 2 to 4, respectively, following the numbering system used in the MEM memorandum.

1.2 Overview of the Goldstream Tailings Storage Facility

The Goldstream Mine site is located approximately 70 km north-northwest of Revelstoke, BC. The TSF is located on a terrace above the South bank of the Goldstream River. The area surrounding the TSF is forested and has an annual precipitation of approximately 1,100 mm (KCB, 2009). The Goldstream Mine operated between 1983 and 1996. The Goldstream mine ceased operations in January 1996 and has been under care and maintenance ever since.

The surficial geology (GSC, 1984) of the terrace on which the site is located is described as a relatively thick (up to 18 m) morainal deposit, consisting generally of sandy, silty, and gravelly materials, with small areas of glaciofluvial sand and gravel. In some limited areas, the moraine is thinner, acting more as a blanket (2 m to 5 m thick till units) overlying bedrock. The Goldstream River valley is characterized as alluvial overbank and deltaic deposit material, consisting of sand, gravel, and minor silt, with some limited organics present. Outside of the terrace, exposed bedrock is present at surface.

The TSF is impounded by two compacted earthfill dams, the West Dam and the North Dam. In addition to the two earthfill embankment structures, notable features at the TSF include an Emergency Spillway (now the operating spillway) and a series of diversion ditches which divert runoff from upslope catchments away from the TSF.

2 ITEM 1: UNDRAINED SHEAR FAILURE OF SILT AND CLAY FOUNDATIONS

a. Including a determination with respect to whether or not similar foundation conditions exist below the dams on your site.

Based upon the published geological information together with the site investigation data, the overburden stratigraphy was primarily divided into three units for foundation characterization purposes (KL, 1982b):

1. Near to surface, prior to construction, a surface swamp deposit consisting of a dark brown peat layer was present. This unit was removed prior to construction of the dams (KL, 1984).
2. A silty sand and gravel deposit, consisting of fluvial river and colluvial slide materials is present below the surface swamp deposit, or is at surface in areas where the swamp deposit was not observed (KL, 1984).
3. A medium dense to dense, blue-grey glacial till unit is present below the silty sand and gravel deposit. This unit consists of a low plasticity silt-sand-gravel mixture with occasional to some cobbles and boulders (KL, 1982b).

The available information from the site investigations (primarily drillholes and test pits) indicate the majority of the foundations are predominantly sand and gravel with little clay and silt and are, therefore, not similar to the problematic soils at Mount Polley.

The geological units present beneath the dams suggest similar foundations to those encountered during the Mount Polley investigations are unlikely to be present beneath the site for the following reasons:

- The regional geology maps for the area do not indicate that glaciolacustrine units are present at the Site. Soil units at the site are believed to comprise till deposits and glaciofluvial deposits overlain by fluvial and colluvial deposits.
- Three Atterberg limit tests were conducted on till samples at the site and indicate the samples contain low plasticity clay or low plasticity silt (KL, 1982b). At the Mount Polley Site, the GLU consisted of “thinly laminated or varved silts and clays, and both classify predominantly as low- to high-plasticity clay (CL to CH)”. The absence of high plasticity clay suggests that GLU is unlikely to be present at the Goldstream TSF.
- Construction records indicate that sand and gravel deposits form the main foundation soil for the West Dam foundation (KL, 1982b). Site investigation conducted at the West Dam indicates that this sand and gravel deposit, inferred as Alluvium and Colluvium, overlie glacial till which directly overlies bedrock.
- Construction records also indicate that the North Dam is founded on glacial till (KL, 1982b). The available site investigation at the north dam and characterization of the sub-surface geology (KL, 1982b) suggests that the North Dam is underlain by glacial till, directly overlying bedrock.
- Two drill holes within the reviewed site investigation data make reference to a laminated or varved structure. These drill holes are believed to contain basal clayey till and till with silt to clayey components rather than glaciolacustrine clays because of the following:
    - The two drill holes are located approximately 1 km apart at the east and west ends of the TSF. Adjacent drill holes do not indicate the presence of glaciolacustrine deposits. While glaciolacustrine units can be deposited within till units as a result of the formation of glacial dams or resulting from isostatically down-warped segments (GSC,

1986), these laminated silt sand clays would likely be more prevalent throughout the site and would be noted in other drill holes.

- Standard penetration tests (SPTs) conducted in the noted unit indicate that the soil is very dense; (i.e., similar to the rest of the Till unit).
- The Atterberg testing conducted indicates that the till contains low plasticity silts to low plasticity clay.

b. Whether or not sufficient site investigation (drill holes, etc.) has been completed to have confidence in this determination.

Three major site investigations were conducted for the Goldstream TSF, comprising the 1977 site investigation by KL, the 1980 site investigation by KL, and the 1981 site investigation by KL.

As noted in (a) above, two drill holes within the reviewed site investigations make reference to a laminated or varved structure. However, given the available information previously described above, the material in these two drill holes is believed to be a till with a clayey fraction which is limited in lateral extent, rather than a glaciolacustrine unit.

Given the site investigation conducted to date, drilling coverage at the West Dam is believed to be adequate for sufficient confidence in the conclusions presented above. There is sufficient foundation characterization data to have confidence in the determination that glaciolacustrine deposits are unlikely to be present at the West Dam.

One drill hole and 10 test pits were advanced at the North Dam. No glaciolacustrine material was logged in either the drillhole or the test pits. While the geological factors described under (a) above would suggest the presence of glaciolacustrine deposits within the foundation of the North Dam is unlikely, there was only one location where the foundations were investigated to a significant depth and this did not penetrate the complete depth of the till unit. On this basis the amount of site investigation conducted is insufficient to confirm the interpreted geological conditions beneath the North Dam.

c. If present, whether or not the dam design properly accounts for these materials.

The dam structures typically comprised a glacial till low permeability zone with a downstream shell of silty sand and gravel (bulk fill). Filter protection is provided by a foundation blanket below the bulk fill zone and a chimney filter between the glacial till and the bulk fill.

The foundation review for the West Dam did not find a continuous glaciolacustrine clay layer. There were, however, a few locations within the glacial till unit where finer soils were present, presumably as localized pockets. Such soils could be problematic to dam stability if they are both sufficiently extensive and continuous within the dam foundations and have sufficiently low strengths under the current loading conditions at the dams. These are not believed to be problematic because of the following:

- These zones of finer soils are understood to be very dense soils with high SPT values noted during the site investigation.
- Atterberg testing conducted indicates that the till contains low plasticity silts to low plasticity clay.
- The reviewed borehole and test pit logs suggest this material is limited in extent, with till gradations generally containing a larger fraction of coarser sand and gravel.

The site investigation conducted appears to be insufficient to confirm conditions beneath the North Dam. The following is noted regarding the dam conditions:

- The dam has been stable for more than two decades with no signs of distress.
- The facility has been closed and has not been raised for several years. Construction pore pressures generated as a result of dam construction should, therefore, have largely dissipated, leading to an increase in the Factor of Safety (everything else remaining equal).
- The dam is of moderate height in comparison to dams at Mount Polley.

Due to the limited site investigation information available for the North Dam, KCB also conducted a screening level stability assessment for the dams using the historic parameter values assumed during design, an assumed phreatic surface based on recent observations. The results of the preliminary assessment showed that if a 1 m thick glaciolacustrine clay unit is located at a depth of 2.5 m below the base of the peat layer (which is equivalent to the general level of the test pitting), the factor of safety would be 1.2 (for static conditions), i.e., the dam remains stable for this likely conservative assumption. It should be noted that the preliminary stability analysis performed was based on the assumed design parameters used during the original dam design. This assessment has not considered all loading conditions recommended for dam stability under the CDA guidelines.

Based upon the above, the following conclusions may be made with regard to whether the dam design accounted for the presence of glaciolacustrine clays within the foundations.

- For the West Dam, due to the number of drill holes advanced to bedrock, their spatial distribution, and absence of encountered clay units, it is considered unlikely that a glaciolacustrine unit is present.
- For the North Dam, based upon the local geology, it is considered unlikely that a glaciolacustrine unit is present within the dam foundations. However the presence of such a layer could not be completely ruled out as a result of the limited site investigation information at depth. The original design of the dam did not account for the presence of such a potential weak layer in the foundations. A preliminary stability analysis incorporating a weak layer in the foundations indicated the Factor of Safety was 1.2, i.e., the dam remained stable.
- As indicated in KCB (2014), changes in the phreatic surfaces within the dams have occurred since the last stability analysis was completed in 1994 (KCB, 2014), and the current factors of safety against instability are not known for both dams.

d. If any gaps have been identified, a plan and schedule for additional sub-surface investigation.

Based on the site investigation conducted to date and the screening level stability assessment conducted, no further subsurface investigation is recommended at this time to address the foundation soils. However, it is recommended that a more complete stability analysis be performed in order to verify that the dams have the minimum factors of safety required by the CDA Guidelines under the dams' current configuration, consequence classification, and site conditions.

As part of this evaluation the impact of including a weak layer within the foundations of the North Dam should be considered to assess whether the presence of such a weak layer has a significant impact on the Factor of Safety. Depending upon the results of the analyses, consideration should be given to installation of additional piezometers in the dam fill and foundations.

Barkerville Gold has indicated that they intend to address the above recommendations by the end of 2015.

3 ITEM 2: WATER BALANCE ADEQUACY

a. Including the total volume of surplus mine site water (if any) stored in the tailings storage facility.

The Goldstream Mine ceased operations in January 1996 and has been under care and maintenance since. The TSF is a closed facility and does not receive or hold water from mining operations. The current sources of inflow to the TSF comprise precipitation on the tailings surface and surface runoff from its small catchment. There is no surplus mine water in the Goldstream TSF, as excess water in the facility is passed through the Emergency Spillway.

b. The volume of surplus mine water that has been added to the facility over each of the past five years.

The water level in the TSF fluctuates during the year in response to seasonal variation of precipitation; however, no water has been added to the Goldstream TSF from mining operations over the last five years.

In order to mitigate acid generation by the tailings, the water level in the facility is held constant at, or near, the Emergency Spillway sill elevation. No significant changes in the pond elevation have been observed in the last five years.

An annual water balance for the tailings pond was developed in 2003 and refined in 2006. The water balance concluded that the average outflow from the facility was estimated to be 4.1L/s (357 m^3 per day), consisting of (Lorax, 2014):

- 2.1 L/s of seepage through the West Dam (50% of total outflow)
- 0.3 L/s of seepage through the North Dam (8% of total outflow)
- 0.9 L/s average evaporation (22% of total outflow)
- 0.8 L/s average outflow through the Emergency Spillway (20% of total outflow)

c. Any plans that are in place or that are under development to release surplus mine water to the environment.

When inflows to the facility exceed seepage and evaporation, surplus water is released from the facility through the Emergency Spillway. The current spillway was constructed in late 1993 (KC, 1994) to permit discharge of water from the TSF. The original discharge permit (PE-06168) was issued on December 10, 1981 and was most recently amended on February 28, 2006, allowing discharge through the Spillway.

d. Recommended beach width(s), and the ability of the mine to maintain these widths.

The Goldstream TSF is confined by downstream constructed dams and, as such, the stability of the dams does not rely on a tailings beach. The seepage barrier within the dam is a sloping upstream relatively wide and impervious glacial till zone. The bulk of the dam fill is constructed of competent granular silt-sand-gravel material (KL, 1981, 1982a, 1982b / KCB, 2004). No minimum beach width was recommended for the TSF in the original design.

e. The ability of the TSF embankments to undergo deformations without the release of water (i.e., the adequacy of the recommended beach width).

The main potential source of additional deformation for Goldstream TSF dams is possible earthquake loading. KC (2004) reviewed historical earthquakes within about 600 km of the project site, and carried out a probabilistic seismic hazard analysis for the site. For the designated "High" consequence classification for the facility, the earthquake design ground motion is defined as a 2,500 year return period (CDA, 2013). The probabilistic seismic hazard analysis calculated a Peak Ground Acceleration (PGA) of 0.12 g for this return period. Swaisgood (2013) and Hynes-Griffin and Franklin (1984) methods were used to estimate potential vertical and lateral seismic deformations of the dams, respectively. Based on the available background information regarding expected design yield accelerations for the dams, the calculated seismic deformations can be accommodated by the available normal freeboard of 1.2 m at either dam, to prevent the release of water or tailings due to embankment deformation.

f. Provisions and contingencies that are in place to account for wet years.

The facility is closed and under care and maintenance, and the TSF is not intended to retain or store additional water. In the event of a 'wet year,' assumed to be a 100-year return period event, excess inflows to the TSF will be discharged via the spillway. The spillway is designed for a three-day, 1,000-year event, plus 60% of the runoff from a 100-year wet year. Consequently the inflows from a 100-year wet year would easily pass through the TSF.

g. If any gaps have been identified, a plan and schedule for addressing these issues.

The following recommendations have been made in previous dam inspection reports (KCB, 2010, 2014 / BGC, 2011):

- The discharge capacity of the Emergency Spillway should be confirmed to quantify the available discharge capacity.

- The management of the IDF by the diversion structures, spillway and freeboard provided by the TSF dams should be evaluated.

Barkerville Gold has indicated that they intend to address the above recommendations by the end of the third quarter of 2015.

4 ITEM 3: FILTER ADEQUACY

a. Including the beach width and filter specifications necessary to prevent potential piping.

Beach Widths and Seepage

The Goldstream TSF is confined by downstream constructed dams. The stability of the dams does not rely on a tailings beach, and no design beach width was specified for either the North Dam or the West Dam. Seepage control relies primarily upon the permeability of the whole tailings, which had a fines content of approximately 86% passing the No. 200 sieve (KL, 1992). No information on the whole gradation of the tailings could be located.

Filter Specifications

Within the North and West Dams a glacial till core (Zone E), a filter (Zone B), and Bulk Fill comprise the three major fill zones. Bulk fill for both the North Dam and West Dam was designated “random fill”, and consisted generally of silty sand and gravel. A design gradation for this zone was not found.

As filter design recommendations have changed since the development of the design recommendations for the filter gradations at the Goldstream Mine, KCB has compared the available design information to current design recommendations as per the US Army Corps of Engineers (2004), and Kenney and Lau (1986).

Although the filters were designed according to generally accepted standards typical at the time of design development, the filter design does not meet modern design criteria (USACE, 2004). Based on the assessment conducted, the design criteria specified for the construction of the filter (Zone B) may be susceptible to internal erosion (Kenney and Lau, 1986).

b. Whether or not the filter has been constructed in accordance with the design.

Limited information is available regarding the construction of the filters. The available gradation charts (KL, 1982; KL, 1984) indicate that the tested filter material meets the design specifications. However, the location that these samples were obtained from is not available. A gradation envelope for the eleven tested Glacial Till samples is also available and indicates that the gradations are generally coarser than the specified design limits, particularly in the sand and finer fraction of the distribution curve.

Based on the approximate quantity of fill placed (259,000 m^3 total, consisting of 79,000 m^3 for the North Dam and approximately 180,000 m^3 for the West Dam), an average quantity of fill placed per gradation test is listed below.

- 6,400 m^3 of fill placed / gradation test for the glacial till core
- 4,300 m^3 of fill placed / gradation test for the filter material

The following changes from the design criteria were also noted in the construction records (KL, 1982a, KL, 1984):

- During the Phase I construction of the West Dam, the design of the filter blanket was changed, and a gap in the filter blanket was left at the bottom of the valley in which the West Dam was constructed. The filter blanket extends from where the glacial till core is in contact with the base material, to approximately 12 m downstream of the core.

KCB has compared the available as-built design information to current design recommendations as per the US Army Corps of Engineers (2004), Kenney and Lau (1986), and the assessment of Foster and Fell (2001).

Based on the assessment of the available gradations for the as-constructed dam materials, both soil retention (Foster and Fell, 2001) (USACE, 2004) and permeability design criteria (USACE, 2004) are met. However the assessment also indicates that the as-constructed filters may be susceptible to internal erosion (Kenney and Lau, 1986), and do not meet maximum particle size criterion or gradation requirements to prevent segregation during construction (USACE, 2004).

The soils are susceptible to segregation and possible internal instability however, on the basis of the generally clear seepage, there is no evidence of widespread migration of the base soil or the impounded tailings through the dam.

c. If any gaps have been identified, a plan and schedule for addressing these issues.

As noted previously, information gaps in the construction record are present. In addition, the design and the as-built gradations of the filters do not meet modern standards for filter design.

Despite these shortcomings, no immediate further assessment of the filters is deemed necessary in order to evaluate filter adequacy. This is based on the following:

- No documentation of observations of local deformations / washouts, voids, or piping in the construction, operations and closure records.
- Filter performance has been demonstrated by clear seepage and retention of tailings in the impoundment during operations and closure. Seepage at the West Dam toe has been clear (KCB, 2014). Seepage at the North Dam toe has been generally clear, with the exception of one location where discoloured ponded water was noted (KCB, 2014).

Subsequent observations made by Barkerville at the Goldstream TSF have not found ponded water at the North Dam toe.

There is, however, a requirement for ongoing monitoring of the seepage to check for continuing filter adequacy, based upon the following:

- The gradations of the filter and base soils are such that they are susceptible to segregation and internal stability, and are within the range of gradations where filter performance has often been poor (Foster and Fell, 2001).
- The facility continues to retain water, including water ponded directly against the upstream face of the dams.
- Seepage flows continue to be observed. Flow rates are not currently monitored by weirs.

The above requirement for continued monitoring of the performance of the dam was also recommended in the 2014 DSI (KCB, 2014), and the following specific recommendations were noted with respect to filter adequacy:

- The observations of seepage flows which are no longer being monitored by weir, combined with recent increases in piezometric levels, indicates a dam safety monitoring deficiency. The West Dam toe drain system should be assessed as to whether it should be repaired or replaced. Given the potential for inadequacy in the filters and the high piezometric levels in the dam, seepage should be monitored for both dams on a weekly basis. The seepage should also be monitored for suspended solids.
- The nature of the discoloured ponded water at the North Dam downstream toe, observed during the 2014 DSI (KCB, 2014), should be further investigated, and periodic observations of the North Dam toe should be continued to be made to monitor the ponding of water. It is unknown at this time if the observed discoloured ponded water was due to entrained fine materials from seepage through or beneath the dam, chemical composition of seepage from the TSF, or turbidity associated with runoff from the recent rainfall. If ponded water is noted again, water quality should be determined by particle and chemical analysis as soon as possible.

Barkerville Gold has indicated that they intend to re-establish the weirs on site by July 15, 2015, and continue monitoring the dam on a weekly basis.

5 SUMMARY OF GAPS AND SCHEDULE TO ADDRESS

MEM Memorandum		Schedule to Address
Item No.	Gap Identified	
1.	**Undrained shear failure of silt and clay foundation**	
	▪ No further subsurface investigation is recommended at this time to address the foundation soils. ▪ Carrying out a stability analysis on both dams is recommended.	▪ Stability analysis to be performed in 2015.
2.	**Water balance adequacy**	
	▪ The discharge capacity of the Emergency Spillway should be confirmed. ▪ The management of the IDF by the diversion structures, the Emergency Spillway and the freeboard provided by the TSF dams should be evaluated.	▪ Discharge capacity of Emergency Spillway to be confirmed in Q3 2015. ▪ Management of IDF by the diversion structures will be evaluated in Q3 2015.
3.	**Filter adequacy**	
	▪ The nature of the discoloured ponded water at the North Dam downstream toe should be further investigated. ▪ The seepage from both the North Dam and the West Dam should be monitored on a weekly basis for the seepage rate and for the presence of any suspended solids. Weirs should be re-established.	▪ Ongoing monitoring of North and West Dam to be carried out on a weekly basis. ▪ Weirs to be re-established by July 15, 2015.

6 CLOSING

This report is an instrument of service of Klohn Crippen Berger Ltd. The report has been prepared for the exclusive use of Barkerville Gold Mines Limited (Client) for the specific application to the Goldstream Tailings Storage Facility. The report's contents may not be relied upon by any other party without the express written permission of Klohn Crippen Berger. The review is based on available design and as-constructed documentation. In this report, Klohn Crippen Berger has endeavoured to comply with generally-accepted professional practice common to the local area. Klohn Crippen Berger makes no warranty, express or implied.

Yours truly,

KLOHN CRIPPEN BERGER LTD.

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JUNE 30, 2015

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MO/JC/RAC/eeb

Attachments:

Attachment I – MEM Memorandum to Barkerville Gold Mines Ltd.
Attachment II – Referenced Reports Reviewed

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ATTACHMENT I

MEM February 3, 2015 Memorandum

February 3, 2015

To: Dave McMillan, President - Goldstream – Bethlehem Resources (1996) Corporation

As you know, the Expert Panel that was convened to examine the Mount Polley tailings dam breach has issued a report on their findings. This report has been made public and you may already be familiar with the conclusions of this report. Chief among these was the determination that the failure at Mount Polley was related to the presence of weak glacio-lacustrine soils in the dam foundation. The Panel also indicated that the severity of the consequence of failure was in large part owing to the quantity of stored water and the proximity of this water to the dam embankment (i.e. lack of beach). The Ministry of Energy and Mines (MEM) requires confirmation that the conditions that lead to the incident at Mount Polley are not present at other mines in B.C.

More specifically, you are required to undertake an assessment to determine if the dam(s) associated with your tailings storage facility/facilities may be at risk due to:

1. Undrained shear failure of silt and clay foundations;
    a. Including a determination with respect to whether or not similar foundation conditions exist below the dams on your site,
    b. Whether or not sufficient site investigation (drill holes, etc.) has been completed to have confidence in this determination,
    c. If present, whether or not the dam design properly accounts for these materials, and
    d. If any gaps have been identified, a plan and schedule for additional sub-surface investigation.

2. Water balance adequacy;
    a. Including the total volume of surplus mine site water (if any) stored in the tailings storage facility,
    b. The volume of surplus mine water that has been added to the facility over each of the past five years,
    c. Any plans that are in place or that are under development to release surplus mine water to the environment,
    d. Recommended beach width(s), and the ability of the mine to maintain these widths,
    e. The ability of the TSF embankments to undergo deformation without the release of water (i.e. the adequacy of the recommended beach width),
    f. Provisions and contingencies that are in place to account for wet years, and
    g. If any gaps have been identified, a plan and schedule for addressing these issues.

3. Filter adequacy;
    a. Including the beach width and filter specifications necessary to prevent potential piping,
    b. Whether or not the filter has been constructed in accordance with the design, and
    c. If any gaps have been identified, a plan and schedule for addressing these issues.

The Ministry is cognizant of the demands that were placed on your company by the Chief Inspector's Orders of August 18, 2014, and does not wish to place any additional undue burdens on your company. However, the previous Orders were issued before the mechanism of failure was known. Consequently, you are asked to provide a letter of assurance to respond to the items listed above. The letter is to be prepared and sealed by a qualified professional engineer, and is to be submitted to the Chief Inspector of Mines by June 30, 2015. To facilitate MEM's review, you are asked to maintain the above numbering system in your response to each item.

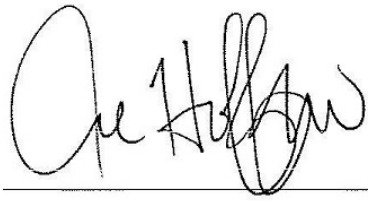
It is envisioned that the above items would best be addressed through a fulsome review of existing information. Where this information has not been compiled, it will be necessary to conduct a review of historical information to determine if any gaps remain in the understanding of the relevant conditions for the tailings storage facility dams on your site. Where appropriate, follow-up actions shall be identified that will be taken to address any opportunities for improvement.

Documents supporting the letter of assurance shall be maintained on-site and shall be made available to any Inspector of Mines upon request.

It should be noted that the Panel made a number of additional recommendations in Chapters 9 and 11 of their January 30, 2015 *Report on Mount Polley Tailings Storage Facility Breach.* MEM is in general agreement with all of the recommendations, and will be examining each of them to determine how they can be implemented over the coming weeks and months. You are asked to do the same.

Thank you for your prompt attention to these matters,

Regards,



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

Cc: Diane Howe, Deputy Chief Inspector, Reclamation and Permitting, MEM
George Warnock, Manager, Geotechnical Engineering, MEM
Heather Narynski, Sr. Geotechnical Inspector, MEM

ATTACHMENT II

Referenced Reports Reviewed

Appendix II
Referenced Reports Reviewed

Document Tile	Author	Date of Issue
Goldstream Project - Tailings Dam (Feasibility Report -Draft)	Klohn Leonoff (KL)	Dec-1977
Report on Tailings Storage Facility for Goldstream Mine	KL	Apr-1981
Tailings Storage Dams Phase I Construction - Special Construction Requirements and Specifications for Construction	KL	May-1981
Tailings Storage Facility - Alternative Design for West Dam	KL	Jun-1981
Supplementary Report on the Tailings Storage Facility at Goldstream Mine	KL	Jan-1982
Construction of Tailings Storage Dams Phase I	KL	Oct-1982
Construction and Performance of the Tailings Storage Dams, Phase 1	KL	Mar-1984
1984 Annual Review	KL	Feb-1985
Annual Review of Tailings Dams for 1989	KL	May-1989
Annual Review, Tailings Impoundment (1990)	KL	Oct-1990
Tailings Impoundment Goldstream Mine - 1992 Annual Review	KL	Jul-1992
Tailings Impoundment Goldstream Mine - Dam Raising Design	KL	Jun-1993
Tailings Impoundment Goldstream Mine - 1993 Annual Review	Klohn Crippen (KC)	Apr-1994
Tailings Impoundment Goldstream Mine - 1994 Annual Review	KC	Mar-1995
Goldstream Mine Tailing Impoundment - Hydrology Study for Mine Closure	KC	Jun-1995
Tailings Impoundment Goldstream Mine - 1995 Annual Review	KC	Mar-1996
Tailings Impoundment Goldstream Mine - 1996 Annual Review	KC	Jan-1997
Tailings Impoundment Goldstream Mine - 1997 Annual Review	KC	Mar-1998
2003 Annual Tailings Dam Inspection	Brodie	Jan-2004
Goldstream Tailings Facility - Feasibility Study	KC	Oct-2004
Goldstream Tailings facility - 2005 Annual Review	Klohn Crippen Beger (KCB)	Mar-2006
Goldstream Tailings Facility - 2006 Annual Review	KCB	Mar-2007
Goldstream Tailings Facility - 2007 Annual Review	KCB	Mar-2008
Goldstream Tailings Facility - 2008 Annual Review	KCB	April-2009
Goldstream Tailings Facility - 2009 Annual Review	KCB	July-2010
2011 Dam Safety Inspection - Goldstream Tailings Storage Facility	BGC Engineering (BGC)	Aug-2011
2011 Annual Reclamation Report, Goldstream Mine, B.C	Lorax Environmental	Mar-2012
Goldstream Mine Tailings Storage Facility - 2014 Dam Safety Inpsection and Review	KCB	Nov-2014
2014 Independent Review/Audit of Tailings Dam Safety Inspection and Consequence Classification: Goldstream Mine, BC	BGC	Dec-2014