

Mt. Polley May 24th Freeboard Incident

The following is a summary of the May 24, 2014 freeboard incident that occurred at the Mt. Polley TSF based on MEM's understanding of the event and correspondence records.

Timeline of event

Date / Time	Action
May 26 th / 4:34pm	Informant notifies MEM in confidence by email of an overtopping event at the Mt. Polley TSF: "The tailings dam at Mount Polley has breached on Saturday at "3" corner and is flowing over the top of the till"
May 27 th / 6:35 am	S. Rothman notifies G. Warnock by email of a potential overtopping
May 27 th / 9:08am	G. Warnock requests by email for H. Narynski to follow-up with S.Rothman regarding the notification
May 27 th / 9:16am	H. Narynski responds by email to G. Warnock confirming her commitment to contact S.Rothman by phone as it is known he is currently in the field. H. Narynski indicates that she will involve M. Cullen as he is expected to be in the office that day and is the inspector scheduled to carry out the next site inspection at Mount Polley.
May 27 th	H. Narynski contacts S. Rothman by phone. S.Rothman does not have any additional information beyond that received in the original email from the informant. H. Narynski requests for S.Rothman to fly over Mount Polley that day to observe the TSF and take pictures (this helicopter flight was previously scheduled for reconnaissance of another mine site under shutdown orders in the vicinity).
May 27 th	H. Narynski makes a multitude of calls to the mine site and to various cell phones in attempts to reach D. Reimer (Mine Manager), A. Frye (Operations Manager) and L. Moger (Project Engineer). It takes in the order of 1-2 hours to reach MPMC staff. D. Reimer is the first MPMC staff member reached by cell. He is not at the site and cannot provide details of the incident. He refers H. Narynski to L. Moger. L. Moger responds to messages previously left by H. Narynski. H. Narynski arranges a teleconference meeting with MPMC staff at 2pm to discuss.
May 27 th / 2pm	Teleconference meeting occurs between H. Narynski, M. Cullen, L. Moger and additional MPMC staff (MPMC attendees not documented)
May 27 th / 4:59pm	Email sent from H. Narynski to G. Warnock documenting MEM's understanding of the event and the details of the discussion between MPMC and MEM at the 2pm meeting. [MP00188]. MEM's understanding of the incident based on this meeting is summarized in the associated report text.
May 27 th / 5:01pm	Email sent from H. Narynski to L. Moger requesting and "Advice of Geotechnical Incident" form to be submitted to MEM outlining the details of the event and MPMC's follow-up. H. Narynski also requests that MEM be notified should site conditions change. It is stated that MEM considers this event to be a "dangerous occurrence" as per Section 1.7.3 (2) of the Code.[MP00189]
May 28 th / 5:07pm	Email from L. Moger to H. Narynski [MP00190] with the attached "Advice

Comment [HMN1]: The first 4 items in this table do not have an MP reference number and are covered under one email thread. I have attached the email chain for your consideration in inclusion in the dataset and to provide an associated reference for this email thread. I do not know how you want to handle this email. It is critical that this informant's name is kept CONFIDENTIAL and that the informant email and name is not made public or known to the company. I will refer to the investigation team on how this should be handled in the dataset and summary of the incident.

	of Geotechnical Incident” form completed [MP#?]. The form provides a description of the event as “loss of design operating freeboard allowance at tailings storage facility” with immediate short-term action taken by the mine as “immediate targeted raise (low elevations) of the till core & diversion of TSF inflow water”. L. Moger’s email states “we are still gathering all of the information for a detailed event timeline, and will submit this in combination with a report from our design engineer, who has been on site since Sunday”.
May 29 th /8:26pm	Email from L. Moger to a number of MEM and ENV staff with attached presentation on the TSF prepared by Bruce Geotechnical Consultants (BGC) for discussion on Monday, June 2, 2014 meeting. This meeting was previously scheduled (prior to the May freeboard incident) to discuss the upcoming Stage 10 dam raise application.[MP00191]
June 2 nd / 8:34am	Email from D. Ostritchenko (AMEC) to H. Narynski with AMEC’s attached report of the events that occurred after the incident. [MP00192]
June 6 th / 12:42pm	Email from L. Moger to H. Narynski [MP00194] with attached “MPMC & Design Engineer Plan and Timeline” titled “Advice of Geotechnical Incident Form Follow-up (Design Plan)” [MP00195]. This report indicates that the water has been routed to the Cariboo Pit, the TSF pond elevations have seen no increases over the last seven days, minimum freeboard is 0.6m for a length of 1,225m along the Main embankment (El. 967.0m) and 0.9m (El. 967.3m) for the remainder of the embankment (~3,300m). Additional information regarding construction activities are provided in the report.
June 6 th / 4:54pm	Response email from G. Warnock (on behalf of H. Narynski) to L. Moger indicating “the actions taken to date and the plan moving forward seem appropriate. Continued updates would be appreciated until the normal operating freeboard is re-established”.
June 13 th / 11:41am	Email from L. Moger to H. Narynski with attachment “Advice of Geotechnical Incident Form Follow-up (Design Plan) – Update #1” [MP00196]. Update #1 indicates that the TSF pond elevation remains at El. 966.4m, minimum freeboard is 0.9m for a length of 925 m along the Main embankment and 1,150m along the South Embankment, minimum freeboard for the remainder of the Main Embankment and for the Perimeter embankment (~2,200 m) is 1.2 m (El. 967.6m).
June 18 th / 8:25am	Response email from H. Narynski to L. Moger acknowledging receipt of Update #1 and MPMC’s commitment to continued updates. [MP00197]
June 20 th / 2:32pm	Email from L. Moger to H. Narynski [MP00199] with “Advice of Geotechnical Incident Form Follow-up (Design Plan) – Update #2” [MP00198]. Update #2 indicates that the TSF pond elevation remains at El. 966.4, minimum freeboard is 0.9 m for a length of 400m along the Main embankment and 1,150m along the South Embankment, minimum freeboard for the remainder of the Main embankment (~825m) and for the Perimeter embankment (~2,200m) is 1.2m (El. 967.6m).
June 20 th / 4:38pm	Response from M. Cullen (on behalf of H. Narynski) to L. Moger recognizing receipt of Update #2 and advising of upcoming site inspection.[MP00199]
June 27 th / 11:04am	Email from L. Moger to H. Narynski with “Advice of Geotechnical Incident

Comment [HMN2]: Does the investigation team have a document reference for the actual “advice of geotechnical incident” form? If not, I have attached the form for inclusion in the database. Please update this section with appropriate reference number.

	Form Follow-up (Design Plan) – Update #3” [MP00200]. Update #3 indicates that the TSF pond elevation remains at 966.4m, minimum freeboard is 0.9m for a length of 1,150 m along the South embankment, minimum freeboard for (~200m) of the Perimeter embankment is 1.2 m (El. 967.6m), the rest of the dam (~3,200m) is minimum 1.5m (El. 967.9m)
June 27 th / 11:05am	Response email from G. Warnock to L. Moger recognizing receipt of Update #3. [MP00201]
July 4 th / 9:13am	Email from L. Moger to H. Narynski with attachment “Advice of Geotechnical Incident Form Follow-up (Design Plan) – Update #4” [MP00203]. Email indicates that minimum freeboard of 1m has been established, and weekly reporting to MEM is planned to cease, and that prior to water being re-introduced to the TSF, the 1.3 m standard operating freeboard will be established and a freeboard management plan will be discussed with AMEC and forwarded to MEM.
July 4 th / 1:20pm	Response from H. Narynski to L. Moger acknowledging the final update on the May 24 th geotechnical incident, and requesting MPMC to forward AMEC’s freeboard management plan to MEM when complete. [MP00203]
July 10 th / 1:46pm	Email from L. Moger to H. Narynski providing confirmation that 1.3 m standard operating freeboard at the TSF has been re-established, and that MPMC will be providing a freeboard management strategy update early next week. [MP00203]
July 18 th / 2:57pm	Email from L. Moger to H. Narynski [MP00205] with attached water management plan for the TSF endorsed by AMEC [MP00204]. The water management plan indicates that construction to increase the level of freeboard going forward to a minimum of 1.5m for the entire TSF may result in the existing freeboard dropping below the normal operating level of 1.3m in advance of construction areas. This is proposed to be for a period of less than 2 weeks with freeboard not dropping below 1.1m. The email itself indicates the plan has been discussed with G. Warnock and that he has suggested that the plan is acceptable as the proposed condition (1.1m) is still above the MEM indicator levels (of 1m). MPMC commits to communicating with MEM when the temporary normal operating level of 1.1m is revoked by AMEC and they revert to the 1.3m level.
July 18 th / 4:10pm	Response from H. Narynski to L. Moger that H. Narynski concurs with G. Warnock response and that document will be added to records when back in the office the following week. [MP00205]

In summary, MEM’s understanding of the incident based on the May 27th teleconference with MPMC, and as documented in the May 27th email from H. Narynski to G. Warnock is as follows:

- The event occurred on Saturday, May 24th as a result of a large rainfall event (approximately 24 mm in 24 hours)
- The water level rose to within 0.7 m freeboard (possibly less freeboard)
- L. Moger indicated that MPMC did not believe the dam overtopped, and would be checking data records (he was away from site when the event occurred)

- MPMC confirmed that no additional water was being directed to the TSF and instead being sent to the mill. MPMC also indicated the option to redirect water to one of the pits, if needed.
- MPMC confirmed no snow remains in the catchment area for additional water
- MPMC indicated that standing water was observed at the toe of the downstream dam, but not able to test to see whether it is from the TSF as the water is now gone. No sediment was observed within this seepage.
- MPMC confirmed that water levels are being monitored daily (and MEM recommended to monitor more frequently as required)
- MEM recommended that all staff are familiarized with emergency response procedures should there be more issues arising with the dam
- MPMC confirmed they are currently raising the dam core at approximately 5 spots including corner "3". MPMC confirmed that all dam raises are within permitted elevation (El. 970m)
- MPMC confirmed that last year's dam raise was constructed as per the design and incorporated the stabilization berm (as-built report was submitted to MEM)
- MPMC confirmed AMEC is currently present on site and are evaluating the situation and any resulting design implications
- MEM requested MPMC follow-up with an "Advice of Geotechnical Incident" form which outlines the details of the event and MPMC's response, and in future to provide MEM with a call regarding similar incidents as this would be considered a "dangerous occurrence"
- MEM/MPMC discussed the previously scheduled meeting on June 2nd as an opportunity to discuss the incident in more detail once MPMC has time to review the data.
- MEM noted (internally) that the upcoming MEM site inspection could be moved forward if considered necessary.

Based on MEM's understanding of the incident from discussions with MPMC during the May 27th teleconference call, it was determined that MPMC appeared to have the situation under control. MEM indicated that follow-up would be required to confirm whether an "overtopping" and possible unauthorized discharge occurred, as well as to discuss future dam design and operations.

The "Advice of Geotechnical Incident" form submitted indicated the incident as "loss of design operating freeboard allowance at tailings storage facility". MEM does not have record of receiving correspondence from MPMC during this incident to clarify whether a dam "overtopping" occurred or what the minimum freeboard was during the event. The first survey of freeboard was received by MEM on June 2nd in AMEC's memo dated May 30th that indicated the pond elevation and the dam elevation at corner "3" to be recorded as the same elevation (zero freeboard) on May 26th. Based on this information, MEM would consider this incident to be classified as a dam "overtopping".

MEM follow-up on this incident included weekly updates from MPMC on the status of the site conditions (freeboard, construction activities etc.), a memo issued by AMEC outlining the timeline and incident daily status, and a water management plan endorsed by AMEC.

It is understood from a February 2, 2015 Vancouver Sun article authored by Vaughn Palmer that emails were obtained of correspondence between AMEC engineers related to this freeboard incident. The accuracy of these emails has not been confirmed. The internal email exchange between the AMEC engineers discusses the incident and indicates that the “freeboard level is basically zero”. The article describes that despite some effort to reduce the amount of water behind the dam, tailings were still being added to the pond because the mine was continuing to operate. An AMEC engineer is quoted: “basically there has not been much (de-watering),” he wrote, “as they are still focused on making sure the mine can operate.”

This was the first time that MEM was made aware that tailings were possibly being disposed in the facility during the incident. Correspondence from both MPMC and AMEC never indicated any of the following:

- Freeboard of the facility being zero (until June 2nd)
- Tailings being actively disposed in the facility during the incident
- Concerns around safety status during the incident