



Independent Expert Engineering Investigation and Review Panel

Report on Mount Polley Tailings Storage Facility Breach

January 30, 2015

11 | Recommendations

Recognizing that the path to zero failures involves a combination of best available technology (BAT) and best applicable practices (BAP), the Panel recommends the following:

1) To implement BAT using a phased approach:

- a. For existing tailings impoundments.** Rely on best practices for the remaining active life.
- b. For new tailings facilities.** BAT should be actively encouraged for new tailings facilities at existing and proposed mines.
- c. For closure.** BAT principles should be applied to closure of active impoundments so that they are progressively removed from the inventory by attrition.

See section 9.3.

2) To improve corporate governance:

Corporations proposing to operate a tailings storage facility (TSF) should be required to be a member of the Mining Association of Canada (MAC) or be obliged to commit to an equivalent program for tailings management, including the audit function.

See section 9.4.1.

3) To expand corporate design commitments:

Future permit applications for a new TSF should be based on a bankable feasibility that would have considered all technical, environmental, social and economic aspects of the project in sufficient detail to support an investment decision, which might have an accuracy of $\pm 10\%$ – 15% . More explicitly, it should contain the following:

- a.** A detailed evaluation of all potential failure modes and a management scheme for all residual risk.
- b.** Detailed cost/benefit analyses of BAT tailings and closure options so that economic effects can be understood, recognizing that the results of the cost/benefit analyses should not supersede BAT safety considerations.
- c.** A detailed declaration of Quantitative Performance Objectives (QPOs).

See section 9.4.2.

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4) To enhance validation of safety and regulation of all phases of a TSF:

Increase utilization of Independent Tailings Review Boards.

See section 9.4.3.

5) To strengthen current regulatory operations:

a. Utilize the recent inspections of TSFs in the province to ascertain whether they may be at risk due to the following potential failure modes and take appropriate actions:

- i. Undrained shear failure of silt and clay foundations
- ii. Water balance adequacy
- iii. Filter adequacy

b. Utilize the concept of QPOs to improve Regulator evaluation of ongoing facilities.

See section 9.4.4.

6) To improve professional practice:

Encourage the APEGBC to develop guidelines that would lead to improved site characterization for tailings dams with respect to the geological, geomorphological, hydrogeological and possibly seismotectonic characteristics.

See section 9.4.5.

7) To improve dam safety guidelines:

Recognizing the limitations of the current Canadian Dam Association (CDA) Guidelines incorporated as a statutory requirement, develop improved guidelines that are tailored to the conditions encountered with TSFs in British Columbia and that emphasize protecting public safety.

See section 9.4.6.