



Analysis of four B.C. mines questions tailings dam safety

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The Red Chris Mine in the Stikine River watershed began operations in 2015. (Photo courtesy of imperialmetals.com)

A coalition of environmental groups [released a new report last week claiming](#) that four British Columbia mine projects near Southeast Alaska do not follow safety recommendations made by experts after the Mount Polley tailings dam disaster.

After a tailings dam at the Mount Polley mine broke and spilled waste into surrounding creeks and lakes, an [independent panel of mine experts developed recommendations](#) to help British Columbia prevent similar failures.

The B.C. Mines Minister committed to implementing all of those recommendations, which address safe storage of mine waste.

One recommendation is to implement the “best available technologies” for tailings storage facilities in order to reduce the number of dams that are subject to failure.

Chris Zimmer of Rivers Without Borders said the report from environmental groups shows the B.C. government is not pushing for the best technologies to be applied at four mines near Southeast Alaska. Three of the mines are in the Stikine River watershed.

“They’re largely ignoring the fundamental and most important recommendation from the Mount Polley review panel, which was not to have tailings facilities that store both water and tailings. They should go to a dry type of technology,” Zimmer said. “B.C. is simply not requiring that; they’re not implementing that.”

The B.C. Mines Ministry is still working on changes to its mining code. According to [an update on the ministry’s website](#), they are considering the recommendation related to best available technologies. In [an interview with CoastAlaska News](#), Mines Minister Bill Bennett said the panel’s findings have been misunderstood. He said dry storage is one of several safe technologies for storing mine waste, and decisions depend on the specifics of the mine site.

The four mines in the new report—KSM, Red Chris, Galore Creek and Schaft Creek—already have, or plan to build, tailings facilities that mix water with mine waste. These facilities will also be larger and contain more tailings than Mount Polley’s, have higher dams, and could contain waste that is more toxic than Mount Polley’s.

Mine companies assert they *are* using the safest technologies in their tailings facility designs. But the expert panel wrote its idea of “best available technologies” involves eliminating surface water from tailings facilities and making sure the tailings are drained. This would basically make the mine waste more compact and stable so it couldn’t flow out through a broken dam. The panel wrote this is the only strategy that can totally prevent a catastrophic tailings release.

The panel wrote that [filtered tailings technology, or dry-stack tailings](#), would fit those requirements. According to the expert panel, there are “no overriding technical impediments to more widespread adoption” of dry-stack tailings, and its use has been limited because it is too expensive.

Zimmer said the environmental groups behind the new report agree with the expert panel that existing tailings impoundments, like the one at the Red Chris mine, cannot be changed.

“But with other mines that are in design and review processes, basically still on paper, there’s no reason why they couldn’t move to this type of technology,” Zimmer said.

According to the report by environmental groups, KSM could change its design to drain two of its three tailings impoundments, instead of leaving all of the impoundments saturated after mine closure. The report suggests designs for Schaft Creek and Galore Creek could be altered so the tailings impoundments have drains that would allow for a dry closure after mine operations end.

According to the expert panel and environmental groups, these changes would increase the physical stability of the tailings impoundments.

Water is often added to tailings facilities to prevent waste rock from reacting to air and generating acidic water. But the expert panel wrote there are ways to simultaneously use dry-stack technologies and keep tailings chemically stable.

Some contend that the wet climate of B.C. is not right for dry-stack tailings, but the expert Mount Polley panel points out that the Greens Creek mine in Southeast Alaska uses that method in similar weather.

The expert panel recommends their definition of “best available technologies” should be actively encouraged for the operation and closure of new and proposed mines. The panel wrote, “alternatives to water covers should be aggressively pursued.”

B.C.’s [Environmental Assessment office added information requirements](#) related to best technologies for tailings dams. Bennett said proposed mines will have to prove that they are choosing the safest method for storing waste.

But Schaft Creek is the only mine that has not been through an environmental assessment yet, so it is the only one of these four mines affected by the new requirements.

B.C. approved the permit for the Red Chris mine and its saturated tailings impoundment last year just days after the expert panel report came out. As for the mines that still have potential for change, it remains to be seen what the B.C. government will do when it rolls out changes to its mining code.