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## The Trouble With Tailings: Toxic Waste 'Time Bombs' Loom Large Over Alaska's Salmon Rivers

By Judith Lavoie • Thursday, September 3, 2015 - 13:48



There are a few unarguable truths about mine tailings, the pulverized rock, water and sludge left over from mineral extraction — mining is a messy business, the leftovers have to be dealt with forever and it's impossible to guarantee against another tailings dam failure such as the [Mount Polley catastrophe](#).

In B.C., there are 98 tailings storage facilities at 60 metal and coal mines, of which 31 are operating or under construction and the remaining 67 are at mines that are either permanently or temporarily closed

That means communities throughout B.C. and Alaska are looking nervously at nearby tailings ponds, which sometimes more closely resemble lakes, stretching over several square kilometres, with the toxic waste held back by earth and rock-filled dams. The water is usually recycled through the plant when the mine is operating, but, after the mine closes, water, toxins and finely ground rock must continue to be contained or treated.

It's the realization that tailings have to be treated in perpetuity that worries many of those living downstream, especially as the Mount Polley breach happened only 17 years after the dam was constructed.

"The concept of forever boggles people minds. In one thousand years is the bank account still going to be there? These people are going to be dead," said Chris Zimmer of Rivers Without Borders.

"There are time-bombs up there without a plan to deal with them. Are they going to be able to build a mine that's going to keep its integrity forever?"

It raises the question of whether there should be any mining in an area that is vital to five species of salmon and sustains the livelihoods of so many Alaskans, said Heather Hardcastle, a Juneau fisherman and coordinator of Salmon Beyond Borders.

“This is why this region of the world is so globally significant and why we care so much,” said Hardcastle, who is among those pushing for the issue to be referred to the [International Joint Commission](#).

## **Two B.C. Tailings Dams Expected to Fail Every Decade: Expert Panel**

The unease is heightened by the [expert panel report on the Mount Polley dam failure](#), which concluded that, without significant changes to current mining practices, two tailings dams could be expected to fail in B.C. every 10 years.

[Karina Brino](#), Mining Association of B.C. CEO, said the association is aiming for a zero failure rate with members committed to implementing the panel’s recommendations for best practices.

But no one controls nature, Brino warned.

“I don’t think anyone can say this will never, ever happen again. It would be irresponsible to say that, because these are man-made structures that may be affected by natural causes,” she said.

Mining experts say that, with proper management, the ponds are safe.

“Different accidents happen, but is a plane safe? There are more accidents with planes than tailings dams. It depends on how you maintain them,” said University of B.C. mining professor [Marcello Veiga](#).

Reclamation is a long-term commitment and communities need to be reassured that there are systems in place to look after the facilities, he said

It’s a claim met with skepticism by those battling for better safeguards for watersheds and an international assessment of the new-age gold rush on the B.C./Alaska border.

“Proposed Canadian mining and energy development on several headwaters within this region pose a major threat to fisheries and local communities downstream,” says a letter from Irene Dundas, Ketchikan Indian Community council member and former president.

“Our concern about Canada’s rush to develop this extraordinary region is compounded by recent legislative initiatives that have weakened Canadian environmental assessment standards and oversight.”

## **Mine Inspections Have Dropped Dramatically**

According to the [Chief Inspector of Mines annual reports](#), the number of mine inspections dropped dramatically from 2,021 in 2001 to 1,496 in 2002, after the B.C. Liberals came to power. The low was 494 in 2011 and in 2013, the latest figure available, there were 904 inspections. Mount Polley had 14 inspections, the highest of all mines.

First Nations land is ground zero for many of the dams and a June [report by the B.C. First Nations Energy and Mining Council](#), which looked at 35 tailings ponds in northern B.C., found that 8,678 kilometres of streams, rivers and lakes, 33 First Nations communities and 208 cities and settlements would be in the path of contaminants if those dams failed.

Copper, a common contaminant in acid rock drainage, is acutely toxic to salmon and the First Nations Mining Council is calling for protection of river, lake and wetland ecosystems from industrial activities, protection for rivers with high numbers of migratory fish and better funding for problems that might arise after a mine closes.

### **Red Chris, KSM Mines to Use Tailings Ponds Despite Expert Recommendation**

However, in northwest B.C., the two newest mines, Red Chris and KSM, are both close to important salmon rivers that flow into Southeast Alaska and both will use tailings ponds — despite a recommendation after the Mount Polley disaster that companies look at other methods, such as dry stack tailings, a method that involves filtering out water and piling dry tailings.

Several other mine proposals in the province's northwest also specify the use of tailings ponds. The exception is the recently approved Silvertip project, owned by JDS Silver, which will use dry stacking and underground storage, despite the extra expense.

Red Chris, owned by Imperial Metals, which also owns Mount Polley, is close to the Iskut River, in the Stikine watershed. In June, Red Chris was handed its final operating permit by the province, following an evaluation of the tailings dam.

The dam is different from Mount Polley and has no lacustrine clay layer in the foundation — something that was instrumental in the Mount Polley breach — said Energy and Mines Ministry spokesman David Haslam.

“The Red Chris tailings storage facility has been the subject of three independent reviews done to assess seepage and design considerations,” he said

The province has been assured that Red Chris and its consultants have done extensive reviews of the site's hydrogeology and made the necessary adjustments, Haslam said.

### **B.C.'s Push for New Transboundary Mines 'Astonishing'**

But the decision to approve the Red Chris tailings pond has horrified Alaskan groups, who call the decision ill-conceived.

It is reckless for B.C. to permit a new mine with the same type of tailings technology that failed so catastrophically at Mount Polley, said a statement from Salmon Beyond Borders and the United Tribal Transboundary Mining Work Group.

“It’s astonishing to me how B.C. is dead set on getting these transboundary mines operating at all costs — even when their own experts say that current mining technology will fail,” said Rob Sanderson Jr., co-chair of the United Tribal Transboundary Mining Work Group.

Seabridge Gold’s KSM mine, which will stash its tailings behind a 239-metre high dam, making it among the highest in the world, is located in the Unuk River watershed, which drains into Alaska’s Misty Fjords National Monument.

Each mine has to be looked at individually and, for some, water management of tailings continues to be sound technology, Brino said.

“Dry stack is not new technology. It has been around for a long time and it’s more appropriate for dry climates and small operations because a lot of material needs to be hauled to the site,” she said.

“B.C. has a very wet climate and most are very large tailings facilities,” she said.

One of two mines operating in Southeast Alaska, Greens Creek, an underground silver and gold mine, uses dry-stacking and Pretium’s Brucejack, an underground mine in the Unuk watershed, recently approved by the province, plans to backfill waste underground or in lakes.

The province is moving to a requirement to have all mines with tailings ponds establish Independent Tailings Dam Review Boards, something Red Chris already has in place and a requirement that will apply to KSM, Haslam said.

Some additional requirements will not apply to those two mines as they have already received environmental assessment certificates, but, any changes to the Health, Safety and Reclamation Code for Mines, following a review this summer, will also apply to Red Chris and KSM, Haslam said,

### **No Compensation for Downstream Losses in Case of Tailings Dam Failure**

Hardcastle, looking at the risks Southeast Alaska is facing, wants B.C. to take on more of the onus with an adequate bonding mechanism.

“There’s currently no mechanism for compensation for downstream losses when pollution occurs,” she said.

Security deposits the province requires from companies to ensure reclamation have gone from \$10 million in 1984 to more than \$791 million by the end of 2013, according to the Chief Inspector of Mines annual report.

The province currently holds \$12 million in reclamation securities for Red Chris and \$19 million for Mount Polley. The securities, which will be returned only when the sites are reclaimed, may change over the life of the mining operations.

However, the securities do not include cleaning up after disasters. Imperial Metals, which last year estimated the cleanup costs for Mount Polley at \$67.4 million, is raising \$100 million through debentures to cover the mop-up .

That should make all Alaskans feel insecure about corporate promises, said Zimmer, who has seen companies walk away after going bankrupt.

*Photo: [Cariboo Regional District](#)*