



Mining disasters show cost of cheap waste-storage solutions

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As miners globally review the way they store waste in the wake of another horrific dam spill, the solution may be as simple as it is dramatic: spend a lot more.

Images of sludge spewing into towns and rivers could be a thing of the past if mines used different types of storage such as removing water or building on more stable ground. While that can be as much as 10 times costlier for companies already squeezed by slumping prices, the cost is much higher when things go wrong.

The cleanup bill for the Nov. 5 spill at the Samarco iron-ore venture in Brazil, owned by BHP Billiton Ltd. and Vale SA, probably will exceed \$1-billion (U.S.), Deutsche Bank AG said. Then there's lost output and potential lawsuits.

"A failure is a lot more expensive than doing it right," said Dirk van Zyl, professor of mining engineering at the University of British Columbia and one of three experts on a panel into a dam spill in Canada last year.

Samarco says its dams were deemed safe in a July inspection and that it's too early to determine reasons for the spill. On Monday, BHP chief executive officer Andrew Mackenzie said the company is "carrying out a thorough review of all of our dam facilities of scale." On the same day, Vale said it's open to improvements, even after concluding that its other installations, which use state-of-the-art safety practices, were fully compliant.

The Samarco breach, which propelled about 49 billion litres of mud into communities below, comes a year after Imperial Metals Corp.'s Mount Polley mine in B.C.'s interior also dumped billions of litres into lakes and rivers. A common trait in the two cases was the fluidity of the waste.

Tailings are the ground rock and effluents left over after milling. And when it comes to storage, the dryer the better, Mr. van Zyl said in an interview.

Dry-stack tailings facilities, used in Chile, where earthquakes are common, can cost 10 times more than so-called upstream ponds, in which discharged tailings become

the foundation for future embankment raises, Mr. van Zyl said. The next best option, building storage on virgin ground and limiting the amount of water, could cost twice as much, he said. Still, those higher investment and operating costs pale next to the expenses associated with a catastrophic accident.