

## **Pebble proposes vast dams for waste**

**MINE: Largest of the earthen structures would stand taller than Hoover, Grand Coulee.**

By ELIZABETH BLUEMINK  
Anchorage Daily News

Published: October 8, 2006  
Last Modified: October 8, 2006 at 03:40 AM

The company pursuing the Pebble mine prospect recently furnished the state with a proposal for earthen dams so large that some Alaskans are comparing them to the world's biggest dams.

The dams described by Northern Dynasty Mines Inc. would hold back rock waste and water from the potential mine in the headwaters of Bristol Bay.

Though they are only an idea, the dams have unleashed a flood of new debate over the potential copper, gold and molybdenum deposit near Lake Iliamna.

Northern Dynasty's concept calls for a series of five dams that would fill in some valleys and a lake with tailings, or mining rock waste. The dams would also divert some water from three streams in the Bristol Bay watershed, the world's largest salmon fishery.

Many mines, including Red Dog and Fort Knox in Alaska, use tailings dams.

If built, Pebble would essentially be one of the largest mines of the world, and these dams would be similarly big.

"They aren't small. We've never said they are small," said Bruce Jenkins, the Vancouver, British Columbia-based company's chief operating officer.

In its final stages, the largest of the Pebble dams would grow taller than the Lower 48's Hoover or Grand Coulee dams.

That's just incomprehensible, says Lake and Peninsula Borough Mayor Glen Alsworth.

But wait a minute, says Northern Dynasty. These dams wouldn't look or be anything like the Hoover or Grand Coulee, which were built to generate electricity, not to deal with mine waste.

Rather than a vertical concrete massif holding back billions of tons of water, these dams would be steep, rocky embankments stretching for miles in length and holding back billions of tons of tailings and water.

"You have to envision this as a mountain you've created," Jenkins said. "You are creating a new land form. Over time, they (the tailings dams) get more and more stable," Jenkins said.

Jenkins stresses that the dams, and the Pebble project in general, are not final designs. Northern Dynasty doesn't plan to submit a proposed mine development plan for Pebble until 2008.

Yet the project's foes say the dams are too dangerous.

Not only would the dams divert large quantities of water needed by fish, but they'd forever sit on one of the world's most earthquake-prone areas, according to the Renewable Resources Coalition.

According to Northern Dynasty consultants, the dams would be built to withstand a "maximum credible earthquake" of magnitude 7.8.

"It's hard to comprehend the scale of these dams," Alsworth, the Lake and Peninsula borough mayor, wrote in a recent letter to the Alaska Department of Natural Resources expressing his concern about the massive structures.

"Let's analyze alternate methods, if it can be done," Alsworth added in a recent interview.

Alsworth asked DNR to suspend its review of the dams pending further study. DNR says it won't approve any Pebble project applications until the permitting stage.

As proposed, the dams and other water rights applications by Northern Dynasty would divert water from the north and south forks of the Koktuli River and Upper Talarik Creek.

The Bristol Bay Native Association provides economic and social services to Natives in the area. Last week the board voted to oppose all large-scale mining in the Bristol Bay region until studies prove "unequivocally" that it will not cause any net loss of fish to subsistence, commercial and sport fishermen.

"You are going to see more communities and organizations outside of conservation asking tough questions," said Tim Bristol, director of Trout Unlimited of Alaska.

Northern Dynasty has vowed that its project will not cause net loss to Bristol Bay fisheries. The company pitched the series of dams to DNR as its current preferred method to hem in the billions of tons of potential mining waste and water from the Pebble deposit.

Jenkins said Friday that the entire project should not be judged on its dam applications to DNR.

Northern Dynasty is now finding a rich mineralized area deep below the surface on the east side of its exploration zone. "We have a whole bunch of other alternatives to evaluate," Jenkins said.

Northern Dynasty chose tentative locations for the dams -- the drainage basins of the southern and northern forks of the Kaktuli River -- because it believes they are the least environmentally sensitive places in the area to store mining waste, according to its dam applications.

Northern Dynasty projects it would store 2.5 billion tons of tailings behind the dams. An estimated 3 percent of the tailings would be potentially acid-generating rock, according to Northern Dynasty's filing with DNR. The company plans to store the rock permanently under water to prevent water pollution downstream.

Three dams would hem in up to 2 billion tons of mining waste, and two others would hold 500 million tons. One of the dams would grow to 740 feet tall and 4.3 miles long. The second largest would grow to 700 feet high and nearly 3 miles long.

The tailings would eventually form into a high plateau covered in roughly 50 feet of water, Jenkins said.

If any of the dams break, they will hurt the environment, said Bobby Andrew, a spokesman for Nunamta Aulukestai, a consortium of Bristol Bay Native villages that opposes the Pebble project.

If either the land or water becomes contaminated by tailings, "they are going to become worthless. No one will want to use them," Andrew explained.

DNR officials also said they are likely to follow through with a suggestion from Alsworth to convene a panel of national experts to review the dam designs.

Contact reporter Elizabeth Bluemink at [ebluemink@adn.com](mailto:ebluemink@adn.com) or (907) 257-4317.