

## LOCAL

# Iron Range mine could pollute water for up to 500 years

State's first copper-nickel mine would require billions of dollars in long-term cleanup, regulators say.

By Josephine Marcotty (<http://www.startribune.com/josephine-marcotty/10645336/>) Star Tribune |

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A proposed copper-nickel mine in northeast Minnesota would generate water pollution for up to 500 years and require billions of dollars in long-term cleanup costs, state regulators have concluded as they near a key stage in the project's review.

The mine would require what critics say is essentially perpetual water treatment — a first in Minnesota's long history of mining — to remove pollutants and heavy metals that would otherwise flow into nearby streams and rivers and eventually Lake Superior, according to a draft environmental impact statement.

The analysis, which regulators expect to release for public review in November, was prepared as part of the state's review of a mining complex proposed by PolyMet Mining Corp., at a site near Hoyt Lakes.

The prospect of centuries of water treatment illustrates the scope of the environmental challenges facing what would be Minnesota's first copper-nickel mine — and why it has generated intense environmental scrutiny and divided communities on the Iron Range. PolyMet is the first of many companies lining up to tap into one of the world's largest copper-nickel deposits. The deposits offer the promise of a new era of mining for Minnesota, but one that comes with significant ecological risks for the wildest and most treasured corner of the state.

“What they are saying is we have to treat in perpetuity,” said Dave Chambers, a geophysicist with the Center for Science in Public Participation, a Montana consulting nonprofit that has examined the PolyMet review. “And you can make mistakes. Those

mistakes can and have cost a lot of money.”

A spokeswoman for PolyMet said long-term water treatment systems are a common part of modern mining operations, as operators comply with mandatory environmental standards. PolyMet expects to meet them as well, she said.

Mining regulators from the Minnesota Department of Natural Resources (DNR) declined to discuss the issue in detail because the environmental impact statement is not finished. But they said the analysis calls for “long-term” — not perpetual — treatment, potentially a crucial distinction. Moreover, final decisions on water treatment will be made when PolyMet applies for a permit, probably sometime next year, said Jess Richards, the DNR’s director of lands and minerals.

How taxpayers would be protected from any long-term cleanup costs remains an open question and one of the most contentious issues in the ongoing debate over copper-nickel mining’s future in Minnesota.

State law requires mining companies to put up financial instruments, such as bonds or insurance, in advance to pay for mine closures and any ensuing cleanups. The DNR says it will require adequate “financial assurance” before granting PolyMet a permit, and that the appropriate time to decide specifics is when the company applies for a permit.

But the U.S. Environmental Protection Agency (EPA) and other groups have urged state regulators to address that issue now, as part of the environmental review, so the public has a chance to understand what’s at stake. The release of the final environmental impact statement in November will be followed by hearings and a public comment period.

“It is a critical question for the environmental impact of this project,” said Kathryn Hoffman, an attorney with the Minnesota Center for Environmental Advocacy, a nonprofit law firm. No corporation is likely to exist for hundreds of years, Hoffman said, and accurately predicting the costs of water treatment for centuries is difficult if not impossible.

Chambers, who has studied other mining projects across the country, said even those that start with financial safeguards can end up costing taxpayers millions of dollars. The Zortman-Landusky gold mine in Montana, he said, is an example. When it went



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Tailings from the old taconite mine that PolyMet has purchased to mine copper and nickel, Wednesday, September 7, 2011, in Hoyt...

bankrupt in 1999, the operator turned off its water treatment plant and left. Some financial assurance had been built into the project, but the state had underestimated the volume of water needing treatment, and state taxpayers had to create a \$34 million trust fund to pay for it.

“If you are going to agree to take that risk, then all the risk takers should be involved,” Chambers said.

### **Sulfide byproducts**

PolyMet, a Vancouver-based company that is one-fourth owned by Swiss commodities giant Glencore Plc., has proposed an open-pit mine near Babbitt and an ore processing center at the old LTV taconite mine north of Hoyt Lakes.

The \$650 million project would create about 350 jobs for the duration of the 20-year-mine, plus spinoff jobs — a prospect that has won support among a number of elected officials on the Iron Range.

In addition to an open pit mine, the project would include a state-of-the-art metallurgical processing plant that would extract small amounts of precious metals from tons of rock. The metals are in high demand for computers, smartphones, wind turbines and many other technologies related to green energy.

But unlike Minnesota’s familiar iron ore deposits, the sulfide-bearing waste rock and tailings from copper-nickel mining produce acid when exposed to air. That can then leach heavy metals, change the acidity of surface waters, and damage fish and other aquatic life.

Hard rock mines have a long history of environmental damage, according to the EPA. Agency documents show that sulfide rock mining of various kinds have polluted 10,000 miles of rivers and streams, mostly in the western United States. Between 1998 and 2007, the federal government spent at least \$2.6 billion to clean up polluted hard-rock mines, some of which are now Superfund sites.

### **Safeguards**

Mining officials say new technologies and engineering techniques can handle such

challenges. In addition to liners for the waste pits, walls and other protections, PolyMet plans to install a state-of-the-art “reverse osmosis” water treatment system for water from its pits during operation. It also plans to recycle the water used in the ore-processing facility. The company says the project will meet all of the state and federal laws governing water quality.

PolyMet spokeswoman LaTisha Gietzen said long-term water treatment is a routine requirement for mines and other facilities like landfills.

“Modern rules and regulations require water quality standards to be met long-term,” she said.

But the waste rock and the mine site can produce pollution long after a mine has stopped producing, a problem that has plagued mines across the country.

The DNR says in the environmental review that PolyMet would be required to operate the reverse osmosis water treatment systems for as long as necessary. PolyMet would also work on developing so-called passive water treatment systems, typically wetlands or other natural features, that at some point could replace the water treatment plants.

Computer projections in the environmental impact statement say that either active or passive water treatment will be needed for 200 years for the mine site, and up to 500 years for the metallurgical site. The document says water treatment would cost between \$3.5 and \$6 million per year after the mine closes.

“While long term,” the document reads, “These time frames for water treatment are not necessarily perpetual.”

Environmentalists who oppose the project say that with that language, regulators are trying skirt a Minnesota law that specifically prohibits mines requiring perpetual treatment after closing. The statute, passed in the 1990s, requires mines to be reclaimed and maintenance-free, they said.

“That law was written to prevent exactly what they are intending to do,” said Betsy Daub, policy director for Friends of the Boundary Waters Canoe Area Wilderness, an advocacy group.

Richards disagreed. In an e-mail, he said DNR rules allow for active treatment until the state certifies the mine as closed, and there are no time limits for that. Until the DNR says the mine is closed, Richards said, the company will be not released from environmental and financial liabilities.

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