

BY PAUL HAMMEL

Omaha World-Herald

*Ultrapure neodymium
under argon, 5 grams.
Original size 1 cm.
Image has been rotated
180 degrees.*



PUBLISHED WEDNESDAY MAY 5, 2010

LINCOLN - The rolling farmland of southeast Nebraska looks nothing like the rocky landscape typically associated with mining.

But in five years, shafts may be sunk 500 feet beneath the soil to mine what one geologist called “the star elements of the high-tech age.”

A Canadian company announced plans Tuesday to explore construction of a multimillion-dollar mining operation about 70 miles south of Omaha.

The mine would seek niobium, used in producing steel alloys for jet engines, and an array of “rare earth elements” that are used in everything from batteries for laptop computers and electric cars to the powerful magnets in wind-power generators.

An official of Quantum Rare Earth Developments said the company was drawn to a 14-square-mile deposit on the Johnson-Pawnee County line because of increasing demand for such minerals and the political uncertainty of current supplies from places such as China and Brazil.

About 15 landowners near Elk Creek and Steinauer have signed five-year leases to allow test drilling on their farmland. The big economic payoff would be later, if a mine and processing facility were built and related support services were required. An official of Quantum, based in Vancouver, called the potential of that happening “quite high.”

“This ranks up there as one of the most important niobium resources known,” said Erin Chutter, a director of the company. “That’s obviously very exciting for miners and very exciting for Nebraska if it comes together.”

The existence of the so-called “Elk Creek carbonatite” formation has been known locally and among state geologists for more than 40 years. More than 100 test drillings were done in the 1970s and 1980s. But with the minerals 500 feet or deeper, it was too expensive to commercially mine. Cheaper and more easily accessible supplies were available overseas.

Last summer, China, which supplies more than 90 percent of the rare earth elements imported to the United

 **QUANTUM**
RARE EARTH DEVELOPMENTS CORP

 **ELK CREEK**
RESOURCES CORP.

States, indicated that it might withhold its supplies for use by only Chinese high-tech industries.

That prompted alarm about the security of the flow of such minerals and renewed interest in the carbonatite formations in North America that hold rare earth minerals and niobium.

So core samples that had been saved by the School of Agriculture and Natural Resources at the University of Nebraska-Lincoln were re-examined. Eventually, Quantum officials met with State Sen. Lavon Heidemann of Elk Creek, who had worked on the exploratory drilling crews back in the 1970s and 1980s and later helped mine gold in Alaska.

Continued

Heidemann, whose farmland is near the center of the rare earth formation, helped officials sign up landowners for the project because, he said, of the economic development potential for his area and the state.

“If it happens, it could be huge for the state of Nebraska,” Heidemann said. “If they decide to put a mine down, it won’t be tens of millions of dollars in investment, it would be hundreds of millions.”

He said a mine might employ several hundred people at good wages. Even the exploratory drilling crews will need places to stay, meals to eat, and fuel and water to do their drilling, Heidemann said.

“I put a lot of time and effort into this, not only for myself but for the community,” he said.

Heidemann credited the agriculture school’s Conservation and Survey Division for faithfully storing and preserving the core samples, which he said were worth “millions of dollars” in terms of showing the potential for mining.

Matt Joeckel, an assistant professor of geosciences at UNL, said the Conservation and Survey Division saves lots of information about underground water and mineral deposits that might have economic potential. He said he traveled to California a decade ago to

retrieve valuable documents associated with the Elk Creek formation.

“It didn’t take a genius to figure out that there might be interest in this deposit again,” he said.

Joeckel called the rare earth elements being sought in southeast Nebraska “the star elements of the high-tech age.”

Many green technologies depend on rare elements like neodymium, which is used in the powerful magnets needed for wind turbine generators and electric cars, and lanthanum, used in batteries in laptop computers and hybrid cars.

Brazil now supplies about 75 percent of the niobium needed by the United States, said Chutter, the Canadian mining company official. It is used in steel alloys that go into jet engines, pacemakers, gas pipelines and superconducting wire.

Chutter and others say the project is in the exploratory stage. It will take four to five months for Quantum to complete a \$10 million purchase of Elk Creek Resources Corp., a Canadian-owned, Nebraska-based company that leased the southeast Nebraska property.

More exploratory drilling, to “prove up” the underground resources, would follow. It could take five years before

mining could begin, due to permit requirements and other work.

Joeckel said a mine would open only if it were cheaper and more reliable to mine deep under southeast Nebraska than it would be to import the minerals from other countries. He said the environmental risks of such mining were not insurmountable.

Chutter said the economics of a U.S. mine appear “very, very sound” over the next decade, with niobium the most promising mineral at this point. “We’re pretty early in the process. We just have to get on the ground and start drilling,” she said.

The U.S. Geological Survey, Chutter said, identified the Elk Creek formation as “one of the biggest resources of niobium globally. It’s certainly the biggest in the U.S.

“It’s one of those lost geological secrets that wasn’t well-known,” she said. “People in Elk Creek knew it. The broader world really didn’t know about it.”

Source: Omaha World-Herald

*For further details on Quantum Rare Earth Developments Corp. visit the corporate website at: www.quantumrareearth.com, or contact Peter Dickie, President and CEO at: Tel: (604) 669 9330
Toll Free: (866) 669 9377 or
Email: info@quantumrareearth.com*

Omaha

World-Herald

