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## **Manganese Demonstration Project Underway in Emily**

### **First-of-its-kind project in Minnesota will test new way to extract valuable Minnesota mineral using a water-based process**

EMILY, Minn. – Cooperative Mineral Resources (CMR) today began a demonstration project that uses pressurized water to extract bulk samples of manganese ore. The results of the demonstration project will help CMR determine whether to pursue a future commercial operation on the site that is located in Emily.

CMR is using an environmentally friendly borehole technique to collect ore through a single well that extends 200-400 feet below the surface. This technique utilizes a high-pressure water jet technology to create an ore/water slurry, which is pumped to the surface. CMR separates most of the water from the ore, filters it, and reuses it. The recovered ore is taken in covered trucks to a University of Minnesota facility in Coleraine, Minnesota, for processing and evaluation.

CMR has a permit to extract up to 12,000 cubic yards of manganese ore during the demonstration project. The ore contains a mixture of manganese, iron and silica. CMR estimates it will take up to 45 days to extract the material, depending on weather conditions.

“The goal for the demonstration project is to determine if the borehole technique is effective on this deposit and if the results and economics of the project position us to pursue a full-scale commercial operation,” said Bruce Kraemer, president of CMR, which is a wholly owned subsidiary of Crow Wing Power. (Kraemer is also CEO of Crow Wing Power.)

#### **What neighbors can expect**

To ensure the demonstration project is as unobtrusive to neighbors as possible, hours of operation during the demonstration project will be limited to weekdays and daylight hours only. Steps have also been taken to minimize noise and dust. The on-site processing building is sound-insulated, and the road into the site has been paved to reduce dust. In addition, trucks’ wheels are washed before they leave to ensure that any potential dust or mud from the site doesn’t leave on the trucks.

“We purchased this site and developed this project to help make sure that a Minnesota natural resource benefits Minnesotans,” Kraemer said, referencing the fact that companies from around the world were interested in buying the site and mining the manganese.

Crow Wing Power used funds from the sale of Hunt Technologies (not ratepayers) to purchase the site in Emily and to develop and conduct the demonstration project.

“We have worked closely with the community to make sure that we have the right process for extracting the manganese,” Kramer continued. “Now that the demonstration project is underway, we will continue to work with our community committee to make sure that we make decisions with the best interests of the Emily area in mind.”

### **Processing and sale**

The University of Minnesota lab in Coleraine will process the bulk sample material, extract the manganese, and remove various levels of impurities to help CMR determine the costs of upgrading the ore. The city of Emily will share in the revenues.

### **After the demonstration project**

Once CMR has extracted its permitted level of ore, the company will examine environmental and financial data from the Emily site and Coleraine lab to determine if it is feasible to pursue the necessary permits for a commercial operation. CMR would need to complete an entirely new permit process that includes an Environmental Impact Statement and involves extensive public and government involvement, much like the work CMR did leading up to the demonstration project.

CMR worked with the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, the U.S. Environmental Protection Agency, Minnesota Department of Health, Minnesota Department of Transportation, the Emily City Council, the Emily Planning and Zoning Commission, and a local Environmental Responsibility Committee created by CMR. If a decision is made to pursue permits for a commercial operation, the permitting process could take up to two years to complete.

“Based on our current information, we estimate that a potential commercial operation could extract about 1 billion pounds of highly concentrated manganese from the Emily site,” Kraemer said. “It would give us the ability to share millions in profits directly with members of Crow Wing Power at a time when our local economy needs the help. We will thoroughly review the results of the demonstration project before we make any decisions about next steps.”

The Emily site has one of the most concentrated deposits of manganese in North America. Currently the U.S. imports all of its manganese, which is used in the steelmaking industry. Manganese is also being considered for new environmentally friendly technologies, including power plant emissions reduction, air and water pollution abatement, water purification, and rechargeable electric car batteries.

Whether or not CMR proceeds with a commercial operation, Crow Wing Power will restore the manganese site when work is completed.

To learn more about the manganese project, visit [www.cwpower.com](http://www.cwpower.com).

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