Natural Gas Boom Spurs Sand Mining in Midwest

STEVE KARNOWSKI,Associated Press

CHIPPEWA FALLS, Wis. (AP) — The rolling hills and scenic bluffs of western Wisconsin and southeastern Minnesota hide a valuable resource that has sparked what's been called a modern-day gold rush.

The object of desire is not gold but a soft sandstone needed by drilling companies to unlock underground natural gas and oil supplies in a controversial practice called hydraulic fracturing, or fracking.

Largely overlooked in the national debate over fracking is the emerging fight in the U.S. heartland over mining "frac sand," which has grains of ideal size, shape, strength and purity. Mining companies say the work provides good jobs in rural areas, but some residents fear the increase in mining could harm human health and the environment.

"More and more people are waking up to the fact that there are difficulties with this massive explosion," said Pat Popple, a retired school teacher and principal and anti-sand mining activist.

U.S. frac sand producers sold or used more than 6.5 million metric tons of sand worth $319 million in 2009, according to the U.S. Geological Survey. The tonnage likely will have doubled when 2010 data is released, said Thomas Dolley, a USGS mineral commodity specialist who follows the silica mining industry.

"It's huge," Dolley said. "I've never seen anything like it, the growth. It makes my head spin."

Nearly three-fourths of frac sand comes from the Midwest. It's shipped by rail hundreds of miles to the oil and gas fields of Texas, Pennsylvania and North Dakota, where drillers mix it with water and chemicals, then force it deep underground to fracture shale deposits that hold gas and oil that couldn't be tapped conventionally. Critics say the process can diminish water quality and even cause earthquakes.

John Felmy, chief economist with the American Petroleum Institute, said opponents of hydraulic fracturing are "fundamentally misguided" and the environmental fears are unwarranted. The surge in sand mining has extended the domestic energy boom to portions of the country that don't produce much fuel, bringing jobs and economic development, he said.

Frac sand mining has had a foothold in Wisconsin's Chippewa County since 2008. The most visible sign is the huge new EOG Resources Inc. plant in Chippewa Falls, where a steady parade of shiny new trucks delivers a load of orange sand from a nearby mine every few minutes.

The plant, which is still in the start-up phase, will bring 40 to 50 full-time jobs to the community, while mining contractors now employ about 25 people and the trucking company that delivers the sand has added over 70 jobs, company spokeswoman K Leonard said. About 90 percent of the 38 employees EOG has hired so far are from the area, she said.

But not everyone is excited about the growth. On a recent windy day, Heather Andersen, of Bloomer, another retired schoolteacher turned activist, watched as gusts of 30 to 40 mph blew dust off sand piled up at the Superior Silica Sands LLC mine northwest of Chippewa Falls. She said she saw no signs the mine kept the sand watered down to suppress the dust.

"That stuff you see is not dangerous," Andersen said. "It's the stuff you can't see."

Activists say frac sand isn't ordinary sand. They fear fine silica dust from the mines and plants will make people sick, spoil the landscape and contaminate ground water.

Fresh, fine silica dust is a well-documented health risk blamed for lung diseases such as silicosis, cancer and autoimmune diseases, but most published research is about workplace dangers, said David Goldberg, an expert on silica hazards and professor of environmental and occupational health at George Washington University.

Crispin H. Pierce, an environmental public health professor at the University of Wisconsin-Eau Clare, said more information is needed about the risks of frac sand mining. Fresh silica dust has grains with sharp, jagged particles and is more dangerous than the weathered silica found in dirt, although it weathers quickly, he said.

His limited testing for dust outside the EOG plant hasn't found "levels of concern so far," Pierce said. But until more is known, it makes sense for Wisconsin and other frac sand states to follow the leads of states like Texas and California in setting environmental silica standards, he said.

Houston-based EOG Resources, a Fortune 500 oil and natural gas company, says it has worked to address local concerns about dust, safety and the environment at its mines and sand processing plant in Chippewa Falls.

The main mine serving the plant is surrounded by berms, with vegetation to improve aesthetics, Leonard said. Most of the plant's equipment is enclosed and the conveyor, storage and filtration systems are designed to reduce dust. The plant monitors air quality and the company will monitor groundwater at its three mine sites in Wisconsin, she added.

"We look forward to being a good steward of the Chippewa Falls environment and a good community partner with the citizens of Wisconsin," Leonard wrote in an email.

Some counties in Minnesota and Wisconsin have responded to health and

environmental concerns by passing mining moratoriums to buy time for more study. Others are debating whether to hit the brakes on further mine development.

In southeastern Minnesota, Jim Gurley has joined with other residents to try to persuade the Winona County Board to adopt a one-year mining moratorium. Like many activists, they're focusing on local concerns, sounding the alarm over the already increased truck traffic from mines in Wisconsin crossing the Mississippi River to a processing plant in Winona, Minn.

Wabasha and Goodhue counties in Minnesota and Pepin and Eau Claire counties in Wisconsin have already adopted moratoriums, although Eau Claire County's is for just six months.

"It's been described by the mining officials as a gold rush," Gurley said. "It's a sand rush. A lot of us are saying 'What's the rush?' The sand is going to be here a year from now."

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