

Grand Rapids Business Journal

Potash: a gold mine for Michigan?

A new company has secured nearly 400 mineral leases in Osceola and Mecosta.

September 20, 2013

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With potash core samples stored by Western Michigan University in the background, Bill Harrison, Ted Pagano and Linda Harrison, from left, examine some of the cores that are being opened for the first time since being sealed. **Photo courtesy of Western Michigan University**

A nearly forgotten deposit of high-grade potash under two West Michigan counties is being touted as a potential multibillion dollar industry that could make the state one of the world's leading sources for one of the most important ingredients in agricultural fertilizer.

The rediscovery was made by testing samples from a trove of geologic drilling cores housed at Western Michigan University's Michigan Geological Repository for Research and Education.

WMU issued an announcement in early September stating that geologists believe this could be the start of a new industry in Michigan worth as much as \$65 billion in the long run, easily surpassing the state's historical oil and gas production revenues and triggering explosive job growth in Osceola and Mecosta counties.

Potash — potassium chloride — is an essential plant nutrient and critical ingredient in fertilizer. Currently mined in only three locations in the nation, supplies are dwindling and prices skyrocketing, according to WMU.

William B. Harrison III, WMU professor emeritus of geosciences and director of the Geological Repository for Research and Education, said that when tested by an independent lab in Saskatchewan, the drilling cores from Michigan “turned out to be the highest grade of potash anywhere in the world. It was just remarkable.”

“This is conceivably one of Michigan's most valuable resources,” said Theodore A. Pagano, a potash geologist, engineer and general manager of Michigan Potash Co. LLC.

The company, formed in late 2011, now controls the rediscovered potassium ore reserve called the Borgen Bed that lies under more than 14,500 acres in the two counties. Pagano said his company has secured nearly 400 20-year leases of mineral rights after Michigan Potash worked quietly over the past three years to confirm the reserve could be technically, economically and logistically put into production and compete head-to-head with the New Mexico and western Canadian mines that are now the major North American sources of potash.

“This is the United States’ only shovel-ready potash project,” said Pagano. “Michigan is New Mexico untapped. What we’re looking at is the introduction of an industry that is critical to the economic health of the state. We’ll be producing a Michigan product for Michigan farmers that would dramatically reduce the expensive transport costs on the more than 300,000 tons of potash consumed in our state annually.”

Harrison said much of the Borgen potash is between 7,000 and 8,000 feet below the surface. It would be extracted via deep wells, using the liquid solution mining technique, like the salt wells used for many decades across the central Lower Peninsula.

A small plant in Hersey, near Reed City in Osceola County, for extracting and refining potash was opened in the early 1980s by IMC Global, once a major potash supplier to the agricultural industry. Harrison said the company extracted subterranean rock cores all over Michigan back in the 1980s and he was aware of their test drilling, but the company never revealed its findings to the public.

IMC eventually encountered financial difficulties and did not invest the capital the Hersey plant needed to expand production, thus it remained “under the radar.”

Eventually, a partnership of IMC Global and Cargill Inc., one of the world’s largest producers of food and products for agriculture, founded Mosaic Co., which was spun off in 2004 as an independent, publicly traded company.

Mosaic, which owns the Hersey plant today and is based in Plymouth, Minn., is a major producer of potash and phosphate fertilizers, with most of its potash mined in western Canada. A spokesman for Mosaic said there are about 90 employees at the Hersey location, and the facility can produce up to 150,000 Canadian tonnes per year.

Harrison said Mosaic’s Hersey plant contacted WMU’s geology department in 2008 stating it no longer wanted to store the Michigan geological core samples it had amassed, and offered to donate them to the university.

Harrison accepted on behalf of WMU, and drove up to Hersey in his pickup truck — only to discover there were 4,000 80-pound core samples — approximating 12,000 feet of drilling. A moving van had to be hired to bring the boxed cores to the Michigan Geological Repository for Research and Education, where they were cataloged and stored.

Around 2010, Harrison got a call from Pagano inquiring if he had any samples of Michigan potash formations. Pagano had heard about Michigan potash, and when he saw the core samples at WMU, he became excited. He had some of it tested by the Saskatchewan Research Council in Canada, which he said has a great deal of expertise in potash since so much comes from there.

Pagano said Michigan's potash deposits were discovered by a Canadian mining engineer working for Pittsburgh Plate Glass about 1980. PPG had been solution mining potash in Belle Plaine, Saskatchewan, and was actually prospecting for oil and gas in Michigan when the potash was discovered. The high quality of the ore led to further exploration of the Michigan reserves, he said, and many of the original leases of mineral rights dated from the early 1980s and expired after 20 years.

The core samples given by Mosaic to WMU were all produced by PPG early on.

According to WMU, potash is found in just a few areas once covered by ancient inland saltwater seas. The Michigan deposit, according to Harrison, is the purest and highest-grade potash being produced globally — 600 percent higher than that being produced in New Mexico's vast Permian Basin and twice the grade of deposits found in Canada and Russia, the two nations that control more than 80 percent of the world's potash reserve.

“One of the things that makes this so valuable is that it is an incredibly rich deposit that is in easy reach of the enormous demand from Midwest corn and soybean farmers who operate within a 500-mile radius of this deposit,” Harrison said. “This is an opportunity for new wealth to come from the use of natural resources never tapped before.”

Linda Harrison, Bill's spouse and an administrator with the WMU geologic repository, said the Michigan potash was obviously known about, and Pagano said it was “booked as proven and probable” in SEC documents filed by IMG Global when the company stock traded on the New York stock exchange. However, the promising discovery in Michigan was apparently forgotten within IMC Global during its financial difficulties.

“We were the first ones to cut open these vacuum-sealed cores from the time they were originally packed,” said Pagano, referring to himself and the Harrisons.

Pagano said Michigan Potash has been negotiating with potential partners to develop the potash.

The Harrisons are not hired consultants nor investors, and have no financial involvement with Michigan Potash, according to Pagano.