



# *PATTISON SAND COMPANY, LLC*

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Operations:

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November 30, 2012

Mark Cupp, Executive Director  
Lower Wisconsin State Riverway Board  
202 North Wisconsin Ave.  
PO Box 187  
Muscodia, WI 53573

Re: Pattison Sand Bridgeport Mine/Non-Metallic Mining Permit

Dear Mark Cupp and Board Members:

Please allow this letter to serve as additional information regarding the proposed sand mine in Bridgeport Township. There were several areas that we were unable to fully discuss at the previous Lower Wisconsin State Riverway Board meetings that I want to point out in this letter in more detail.

We have provided this same information to the Town of Bridgeport regarding the proposed surface mine (quarry) in Bridgeport. To recap several items: no high capacity wells are proposed; no processing chemicals will be used; all mining will be above the ground water table; residual sand will be left in place for continued stormwater filtration; all land will be reclaimed to agricultural use; all wetlands and streams, archeological sites, and endangered species and habitat will be avoided. We have a self-imposed 500' setback from the Wisconsin River and will keep all mining beyond the highway scenic easements. Reclamation will be accomplished on an on-going basis, with a minimal open quarry at any one time.

I have attached an information sheet about PSC and its operations for your information. As you know, we're a family-owned local operation that has been in business since 1950. Every day we focus on being a good employer, a solid corporate citizen and a good neighbor. After all, we live, work, and play here too. Pattison Sand Company and all of our employees are proud to be providing a valuable product that is essential to developing affordable energy and, ultimately, energy independence for the United States.

We request that the Flansburgh permit application remain included. While a lease has not been negotiated at this time with the Flansburghs, the property may be added in the future.

## Lower Wisconsin State Riverway Board - LWSRB

- The LWSR Boundary has been identified and coordination has occurred with Mark Cupp, Executive Director, and the Board to identify areas of concern that could pose visual impacts to river users. Sensitive mining areas with visual impacts have been *voluntarily* deleted by PSC, even though they are outside the LWSR boundary.
- Proposed mining operations will meet the performance standards of the LWSR: no equipment, stockpiles, or mining activity within the LWSR boundary will be visible during leaf-on season.
- A permit to mine within the LWSR boundary is currently under review by the Riverway Board.

## Safety/Silicosis Prevention/Monitoring

- PSC is required to and does comply with the regulations established by the Federal Mine Safety and Health Administration (MSHA) and the Wisconsin Department of Safety and Professional Services.
- PSC Respiratory Protection Program has been designed to recognize any potential problem areas long before they become an issue. If there is any concern, or a new task started, we do air testing. This program also includes the medical evaluations that are performed by a qualified Physician familiar with the health effects of exposure to respirable silica dust and the diagnostic principles associated with early detection of silicosis. These include pulmonary function testing, chest x-rays and physicals. These tests have the ability to detect any change in a person's respiratory functions before it becomes a significant problem.
- We conduct personal air monitoring for dust and dust as a % quartz. MSHA also conducts personal air monitoring as part of their quarterly inspections. In addition to the required testing, PSC conducts area and perimeter testing to gauge the effectiveness of its fugitive dust control measures. Since airborne respirable silica is the primary health risk, PSC's focus is to prevent this from occurring at the source within the mine site.
- Previous perimeter air monitoring at the Boscobel quarry and the rail load-out area in Prairie du Chien has yielded results well below the Permissible Exposure Limit (PEL).

## Fugitive Dust Control Plan/Air Quality:

- A Fugitive Dust Control Plan has been written to address the prevention of fugitive dust from leaving the site. This Plan will be submitted to the Wisconsin Department of Natural Resources (DNR) based on the proposed operations, if the Town permits are obtained. The Plan will be modified as necessary and re-submitted to the Town.
- Under PSC's proposed Fugitive Dust Control Plan, dust generated from the mining operation will be controlled at the source. This will be achieved by implementing engineering and procedural controls including: wetting surfaces, drop height controls, mandatory truck tarping, routine truck and equipment inspections and maintenance, interior site road maintenance to avoid dust and mud (including the application of calcium chloride as used by the County), on-site slow equipment speeds, dust control minimization techniques during blasting, etc. Control of fugitive dust at the source will assure fugitive dust will not leave the mine site.

- One of the concerns of several citizens at the recent Town Meeting was dust travelling to Wyalusing State Park. The straight distance from Wyalusing to the Bridgeport mine location is 3.28 miles. The implementation of the Fugitive Dust Control Plan will reduce any dust to a distance of feet, and should not impact star gazing from this location, or the health of visitors. Additionally, lighting for the mine site will be chosen for its ability to be directed to where it is necessary for safety and for PSC's ability to control back light (non-essential light scatter). All light will be directional task lighting and should not create issues with star gazing and adjacent property owners.
- Pending Town approval, PSC will submit an air quality permit application to DNR for its proposed operations.

#### Blasting/Structural Integrity

- Kurt Oakes, General Manager for Olson's Explosives, of Decorah, IA recommends performing *pre-blast* structural surveys of all structures, to be carried out by Vibra-Tech Engineers, within one-half mile of the mine site to determine a baseline reference of the structures.
- Kurt also recommends performing *seismograph analyses* (to include 4 seismographs sited in a 360 degree array around the blasting site) on the first few shots made at the Bridgeport mine. Kurt states that per Wisconsin regulations, they are required to set a seismograph at the nearest off-site residence prior to each blast and to record those readings on all subsequent shot reports. If in the event of an exceedence of Allowable Blast Vibration or Air Overpressure Levels, the blaster is required by the State of Wisconsin to report such violations to the Wisconsin Department of Commerce in accordance with SPS-307 (formerly Comm 7).
- Kurt does not believe the blasting will adversely impact nearby dairy cattle nor will blasting harm wildlife in the area. PSC will involve adjacent property owners and develop a plan to minimize the risk, as well as address any problems created. Kurt Oakes can be reached for further discussion at Olson's Explosives 563-382-2953.
- Please note that after further calculations, PSC has revised the blasting frequency to 0-2 times/week during full production.

#### Noise

- PSC has a Hearing Conservation Program to safeguard the hearing of its employees. This program addresses sound control at the source, and sound monitoring is a part of this program. Sound readings are taken during mining activities, and if the readings are over the Permissible Exposure Limit (PEL), established by the federal regulations, engineering or administrative controls are implemented to reduce this exposure. As the distance from the source increases, the sound level decreases. Maintaining these sounds at the lowest level possible without compromising the safety of the miners is the goal of PSC.
- Perimeter sound readings were taken at a similar quarry operation at the Boscobel surface mine on 03/27/2012 with an excavator, haul trucks, loader, semi trucks, and grizzly all operating during the sampling. The results were: Time Weighted Average (TWA) of 35.2 dB taken over a 10 hour time period with a peak sound reading of 46.6 dB during a blast at 251 yards distance.

To put this in perspective, a whisper is somewhere between 35.dB and 40.dB. A quiet room with background noise, breathing, a light hum, but no talking is around 36 dB. We feel that this will be representative of the Bridgeport mining operations from that distance (250 yards). Please note, perimeter sound readings are not required by MSHA; PSC measures perimeter sound levels because it gives PSC more data to work with for the safety of its employees, and to determine and control noise at the property line.

- Additional site noise can be minimized with truck turnaround areas to avoid back-up beepers. For safety reasons, all back-up beepers need to be audible over the ambient noise.

#### Lighting

- In order to provide a safe work environment during periods from dusk to dawn, artificial light must be used. To reduce the impact to neighbors, Wyalusing Star Splitters, and users of the scenic Wisconsin River, lighting for the mining operation will be utilized that can be shielded and directed down and focused where needed, and will be chosen for its ability to be directed to where it is necessary for safety and for PSC's ability to control back light (non-essential light scatter).
- PSC will minimize its lighting impacts to the best of its abilities.

#### Trucking:

- PSC received an industrial driveway access permit onto STH 60 (9/25/12) from the Wisconsin Department of Transportation (DOT). No Town or County roads will be impacted.
- At this time, the maximum that we have hauled is an average of 5 trucks per hour. These trucks gross 80,000 pounds and are the same or similar to grain trucks and follow normal DOT requirements. Trucks will be tarped entering and leaving the site.
- This is a quote from the DOT statement PSC received: "This mine is projected to generate 120 trucks/day evenly distributed over 24 hours and will be routed from the new access to STH 60, west on STH 60 to USH 18, and then west on USH 18 through Prairie du Chien into Iowa. The highways you will be using should adequately handle these loads without needing maintenance above and beyond that we normally expect. Therefore we are not seeking a Maintenance Agreement with Pattison for this operation."
- No additional trucks will travel through Wauzeka as a result of the proposed operations.

#### Reclamation Plan

- Shaw Environmental & Infrastructure of Onalaska, WI assisted PSC with preparation of the Reclamation Plan.
- The Reclamation Plan was submitted to the Town of Bridgeport on 10/22/12 along with the Conditional Use Permit application and the Non Metallic Mining Reclamation Permit application.
- PSC will work with the property owners to reclaim their area to productive farmland. Additional farmland will be created with slopes that are 3:1 or less.
- Reclamation will be an on-going process to keep open pit areas to the minimum.

## Archeology

- Phase 1 Archeological Surveys have been conducted for the Marfilius, L. Pulda and E. Pulda properties by Bear Creek Archeology Inc. of Cresco, IA. The intent of PSC is to avoid impacts to the previously recorded or newly recorded sites by establishing appropriate setbacks and roping off the sites so operators know to avoid the area. No archeology sites are within the proposed mining or reclamation areas.
- If any human remains or previously unrecorded archeological artifacts or features are encountered within the survey area, the Office of the State Archeologist will be contacted immediately. In the event that human remains are uncovered, the Burial Sites Preservation Office will also be contacted. PSC understands that it is the responsibility of the developer to protect cultural resources from disturbance until a professional examination can be made or until a clearance to proceed is authorized.
- The Archeology Surveys will be submitted to the Wisconsin Historical Society via DNR when the Stormwater Pollution and Prevention Plan is submitted to DNR.

## WI DOT Highway Scenic Easements

- PSC (per DOT plans) has identified the Scenic Easements along STH 60 and has identified proposed mining areas *outside* the easement boundaries.
- Prior to any mining operations commencing, the Scenic Easement boundaries will be staked.

## Wetlands/Waterways

- Stantec Consulting Services Inc. of Independence, IA, performed a wetland and waterway office determination and field review of the proposed mining properties. No wetlands or streams will be impacted or disturbed by the proposed mining activities. If, in the future, a stream crossing is necessary, all permit applications will be submitted to DNR.
- PSC has a self-imposed 500' setback from the Wisconsin River.

## Endangered Resources

- Stantec Consulting Services Inc. performed the Endangered Resources research which was sent to DNR-Bureau of Endangered Resources for their review. DNR review and approval was received on 10/16/12.
- A timing limit condition has been identified by DNR. No woodland activity will occur from May 1 – August 31.

## Water Quality/Well Monitoring

- PSC will hire a professional third party to perform water quality testing on the residential wells within one-half mile of the project area in order to establish a baseline. Should issues arise, PSC will have baseline (pre-mining) information as a comparison.
- No high capacity wells will be installed on site. Pending availability of on-site water from catch basins, a sandpoint well or other approved method may be installed for water for dust control on roads and/or stockpiles.
- All mining will be accomplished above the ground water table. No chemicals will be used for mining.

## Stormwater Pollution and Prevention Plan – SWPPP

- Shaw Environmental & Infrastructure is currently discussing the SWPPP with DNR. The SWPPP will be submitted to DNR if Town permits are issued. Again, no high capacity wells will be installed.
- Residual sandstone will be left in place for continued stormwater filtration, both vertically and horizontally.

## Utilities

- Dairyland Power - Prior to mining near the overhead power lines, poles, and guys, PSC and Dairyland engineers will collaborate on the appropriate procedures for operations.
- Alliant Energy – Prior to constructing the driveway access, PSC and Alliant engineers will collaborate on appropriate procedures for operations.

## Miscellaneous information

- No permanent on-site structures are proposed; only structures such as a mobile office trailer will be used. If there is a need for a maintenance shed, then PSC will place it out of site from the road and neighbors and apply for permits as needed.

It was a common theme throughout the public meetings regarding these Applications (to the LWSRB and Town of Bridgeport) that the DNR was not regulating these areas. That is far from the truth. The DNR regulates air, water, endangered resources, Reclamation Plans, and the Town's Ordinances. If legislative changes are necessary, the changes should be addressed to the politicians in Madison and Washington DC.

PSC does not feel that this Industrial Sand Mine will harm tourism in Wisconsin, for the reasons outlined above.

I am available to answer any questions the Board may have, and I look forward to seeing you at the next Board meeting on December 13, 2012 in Prairie du Chien. We appreciate the opportunity to make a presentation to the audience and Board.

Thank you for your time.

Very truly yours,



Kyle Pattison  
Managing Member  
Pattison Sand Company, LLC

Attachments: Pattison Sand Co. information  
Industrial Sand Mining articles



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Pattison Sand Company, LLC (PSC) operates in Clayton, IA about 13 miles south of Prairie du Chien, WI and about 50 miles north of Dubuque, IA. PSC employs approximately 150-180 people and produces industrial sand for the natural gas and oil industries and, to a lesser degree, to the geothermal industry and cement industry. The majority of the products are shipped by rail, with a small amount leaving by truck.

Since 1878, there have been several silica sand operations in the area supplying sand to: Rock Island Glass Company for making glass, glass factories in Milwaukee, John Deere (Waterloo) and Oliver (Charles City) and iron foundries for use as coring sand. Other uses included: sand for plaster in houses; marble cutting and polishing; sandblasting buildings, bridges and railroad cars. In 1920, a brick and tile factory was located in this area.

The Concrete Materials Company of Waterloo, IA leased the Clayton silica pit, and in 1945 they decided to discontinue strip mining and initiate the room and pillar method of underground mining. Instead of removing the rocky limestone overlay (which had become an extremely expensive process), the company began to dig into the bluff to mine the sand. In 1959, Concrete Materials was purchased by Martin-Marietta Corporation. Pattison Brothers Mississippi River Terminal purchased the mine in 1983 to use as storage space for their grain and fertilizer operations. Pattison Brothers diversified into the industrial sand business in 2007 and became Pattison Sand Company, LLC.

Ore is mined from the St. Peter sandstone layer in both the underground and surface mines. Sand grains that are naturally cemented together are separated using 3 stages of crushing conducted within the mine. Once the sand is broken into individual grains, it is mixed with water and pumped outside the mine to the wet processing plant where water is used to separate and size the sand. The first stage of wet processing uses large tanks of water to separate the clay and very fine sand from the course sand. The second stage uses large tanks of water to separate the course sand from fine sand. The course sand is then conveyed to the dry processing plant. The fine sand (100 mesh) is pumped to an outside storage area for drying and truck loading. In the dry processing plant, sand is dewatered to 4.5% moisture and conveyed to the sand dryer where it's heated to approximately 190 degrees and <.5% moisture. After drying, sand is conveyed to machines that sift it into 4 size categories (or products) which are shipped to the customer. The size difference of the sand grains from one product to the next is between 2 tenths and 4 tenths of a millimeter.

The room and pillar method used in the sand mine is similar to that used in coal mines. The rooms are thirty-three feet square and fifty two feet apart. For every thirty-three square feet of sand removed, there is a fifty-two foot square pillar left intact. There are approximately 35 acres of underground mine. The surface operations entail approximately 300 acres which include wet and dry plant operations, rail load-out, storage of product, tailings pond, open pit mine, maintenance and fabrication shop, rotary dryer and truck loading facilities and miscellaneous reclamation areas.

Products: Silica Sand 20/40, 30/50, 40/70, 60/100, and 100 mesh. Our clients include oil and natural gas servicing companies, with products going to: Pennsylvania, Ohio, Oklahoma, Arkansas, Texas, Louisiana, Colorado, North Dakota, and Canada.

# Benefits of sand mining outweigh any negatives



**KENT M. SYVERSON**  
Eau Claire

I am an environmentalist. I always walk or bike to my job as professor and chairman of the department of geology at the University of Wisconsin-Eau Claire. I collected aluminum cans in the early 1980s before recycling was cool. And I support responsible frac sand mining in western Wisconsin and southeastern Minnesota.

Several counties have recently approved moratoriums on frac sand mining (Eau Claire and Pepin counties in Wisconsin; and Goodhue, Wabasha and Winona counties in Minnesota), and Wisconsin's Dunn County is considering a similar measure.

I'm writing to supply a geological and personal perspective about the controversy.

Full disclosure: I've been a paid frac sand consultant for firms and private citizens seeking sand, and for people opposed to frac sand mining in western Wisconsin.

A geologist knows everything has an impact. To mine, or not mine, frac sand will have impacts — both good and bad. The positives and negatives must be evaluated to make informed decisions.

What are potential negative impacts of frac sand mining? Mines are not quiet or pretty. Some scenic views will be lost and altered.

Heavy sand trucks degrade roads, and mining companies must contribute to road upkeep. Recent news items have documented Wisconsin sand companies paying money to keep roads in good condition. Bad roads

**I want young people to find jobs, pay taxes and send kids to school in western Wisconsin and southeastern Minnesota. I see good jobs being created in the frac sand industry.**

cost sand companies both time and money.

Sand mining requires water to wash the material. Too much pumping lowers the water table, and the use of flocculants can contaminate groundwater. These are solvable hydrogeology and design issues. At UWEC, we train geologists and geological engineers for jobs such as this.

A public outbreak of silicosis from dust is not a potential impact of frac sand mining. Silicosis is an occupational health hazard. A company must monitor an employee within a sand processing plant to protect the employee's health.

The round frac sand grains being mined are many times larger than the respirable, angular silica grains that cause silicosis. The mining process is designed to prevent the crushing of grains. The round grains, if "glued" together at all, are typically cemented by carbonate, not crystalline silica. Although mining generates some dust, this is not a public health issue in open areas.

What are the positive impacts of frac sand mining?

The frac sand industry provides jobs. The UWEC geology department has six recent graduates working in Wisconsin's frac sand industry. One new geology graduate with a 4-year degree received a \$50,000 starting salary.

Sand mines and plants also require engineers, electricians, welders, chemists, safety officers, managers and accountants.

And yes, truck-driving jobs are created. These jobs are needed, too. Not every person will obtain a technical degree, and truck driving is a respectable job.

In addition, the mine-permitting process employs geologists and engineers at local consulting firms. Frac sand projects have been extremely important for these firms during the Great Recession.

Property owners also reap significant financial rewards. Does a moratorium only temporarily deprive these landowners of the right to develop their land? I fear moratoriums are thinly veiled attempts to block sand mining permanently.

Moratorium backers say the sand will always be there. True. However, companies might go elsewhere during this major sand-exploration period and never come back.

I grew up in an economically depressed, non-mining area in northern Minnesota. Most of my high school classmates moved away from the area because good jobs were not available. I want young people to find jobs, pay taxes and send kids to school in western Wisconsin and southeastern Minnesota. I see good jobs being created in the frac sand industry.

My judgment as a geologist and a user of gasoline and plastics is this: The benefits of frac sand mining outweigh the negatives. If moratoriums reduce job opportunities in western Wisconsin southeastern Minnesota during the next 50 years, this should trouble taxpayers.

*Kent M. Syverson received his doctorate in geology from the University of Wisconsin-Madison. He is in his 20th year as a faculty member in the University of Wisconsin-Eau Claire's geology department.*



# NEWS FROM USA TODAY

## Fracking boom gains momentum

by [Dennis Cauchon](#) on Nov. 20, 2012, under [USA TODAY News](#)

Source: [USA TODAY](#)

Political obstacles to oil and gas production are starting to fall away at the state and local levels as voters, elected officials and courts jump on the energy boom bandwagon.

Voters are rewarding local politicians who support production. Ballot measures are distributing potential tax windfalls broadly. And most state legislatures are focused on managing the economic and environmental consequences of hydraulic fracturing, or fracking, so the drilling boom can speed up rather than slow down.

The trend is crucial to the nation's energy future because oil and gas production is regulated and taxed almost entirely by state and local governments. The federal government's role is largely advisory, except on federal lands and on pipelines.

"Fracking is happening and it's not going to stop, so we have to take the high road of good regulation and taxes so communities are better off, not worse off, after it's done," says Ted Boettner, executive director of the liberal West Virginia Center on [Budget](#) and Policy.

Most states were caught off guard when fracking turned Pennsylvania into a major natural gas producer in 2009. Fracking could produce oil or gas in as many as 36 states. Result: The USA will become the world's No. 1 producer of natural gas in 2015 and oil in 2017, overtaking Russia and Saudi Arabia, respectively, predicts the International Energy Agency.

Clearing the way:

**Elections.** Pro-drilling candidates are winning at the local level, including a sweep in southern New York. "It wasn't the only issue, but it was a hot one," says Broome County executive Debbie Preston, who won re-election Nov. 6. She's creating a department to help drillers. The state now has a moratorium on fracking.

**Pipelines.** The industry is winning approval to build pipelines. Williams Partners, the largest pipeline company, got a thumbs-up Nov. 7 to expand one pipeline and has applied to build another to move natural gas to Boston and New York City.

Even the controversial Keystone XL pipeline from Canada looks more likely. Pro-pipeline Democrat Heidi Heitkamp, winner in North Dakota's U.S. Senate race, predicts federal approval early next year.

Natural Resources Defense Council lawyer Kate Sinding says loopholes in federal law make it hard to stop fracking. "A lot of traditional litigation tools are not available," she says.



COMMENTARY

## Rich Budinger: Sand critical part of state's economy



SEPTEMBER 09, 2012 12:45 AM • BY RICH BUDINGER  
| MAIDEN ROCK, WIS.

Sand mining's long Wisconsin history dates back more than a century — mining is even represented on our state symbol and our state flag. Today, sand mining is responsible for thousands of Wisconsin jobs, hundreds of millions of dollars in statewide economic impact and significant tax revenues for local government.

A recent review by the Wisconsin Center for Investigative Journalism found that the number of sand mining operations in the state has nearly doubled during the past year, and the state leads the nation in the production of industrial sand.

As sand mining continues to be an important and growing part of the Badger State economy, it's imperative that it be done right, with a demonstrated commitment to safety, strong communities and a healthy and sustainable environment.

With that in mind, four of Wisconsin's leading industrial sand mining and

processing organizations recently formed the Wisconsin Industrial Sand Mining Association. WISA's members — Badger Mining Corp. in Berlin, Fairwater and Taylor; U.S. Silica in Sparta; Unimin in Portage; and Fairmount Minerals in Menomonie, Wheeler, Maiden Rock and Hager-Bay City — have high operating standards, care greatly about environmental, economic and social sustainability, and are committed to following all local and state regulations.

We view regulatory compliance as a starting point, not the endpoint.

At WISA's core is a strict — and mandatory — code of conduct. The code reinforces members' commitment to promoting responsible operations, fostering fact-based discussion and creating positive, two-way communication among the public, the sand mining industry and government officials.

Wisconsinites will benefit from more factual information about our industry, a business that can easily be misunderstood. Sand mined and processed in the state is an important

ingredient in a wide variety of products. While much is used outside Wisconsin to help develop our nation's energy resources and capture natural gas and oil from deep wells, a lot also is used to build roads, schools and more.

Industrial sand is the primary ingredient in all types of glass — from the windows in your house and the windshield of your car to the food jars in your pantry, the drinking glasses in your kitchen, the fiberglass insulation that helps keep your house comfortable, and the screens on your TV, computer monitor and smartphone.

Foundries use industrial sand to make the molds and cores used to make metal castings found in your car as engine blocks, brake rotors and more. Industrial sand is used in the manufacture of ceramics such as the sink and tub in your bathroom, and in the filtration of drinking water and on playgrounds and golf courses. The bottom line is that industrial sand has a significant role in much of what we do and how we live our lives.

WISA's goal is to foster healthy, safe and environmentally responsible sand mining in Wisconsin and to work transparently and openly to develop a better public understanding of this important part of our state's economy. The right and responsible approach to sand mining offers many positives for Wisconsin. With a proper balance between sound operations, responsible regulations and good community relationships, we can operate safely, protect the environment, help build what needs to be built and generate more tax revenue, job growth and other economic benefits for our state.

*Rich Budinger is regional manager of Fairmount Minerals and Wisconsin Industrial Sand Mining Association's president.*

## (1) Comments



**btippetts** - September 09, 2012 9:23 am

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<http://lacrossetribune.com/news/opinion/rich-budinger-sand-critical-part-of-state-s-econom...> 9/11/2

Frac sand mining needs to have and can have more than short-term benefits. Repatriating closed sand pits with a healthy connection to the environment is a part of responsible frac sand mining. Making and implementing such plans can provide a livable legacy and in some cases create substantial added benefits to the area.

# Fracking Spurs Demand for the Stuff, Sparking a Mining Boom—and Vexing Some

By MARK PETERS  
AND ISABEL ORDÓÑEZ

WINONA, Minn.—Scouts armed with geological maps and elevations from Google Earth are knocking on doors in the upper Midwest in search of what seems too common to mine: sand.

The sedimentary material is in high demand among U.S. oil and natural-gas producers, setting off a sand rush in Wisconsin, Minnesota and other Midwestern states. While adding jobs, the mining boom is prompting push-back from some local residents, who are surprised by the frenzy and leery of its impact on their communities.

Sand mined in the Midwest is used in places such as North Dakota and Pennsylvania to tap oil and gas reserves. U.S. producers' demand for sand reached 28.7 million tons in 2011, up from six million tons in 2007, according to independent laboratory PropTester Inc. and consultancy Kelrik LLC. The surging demand is making sand the Midwest slice of a national energy boom.

Oil and gas producers in recent years have greatly boosted the use of horizontal drilling and hydraulic fracturing to tap reserves once out of reach. Sand, injected deep underground to prop open fractures in shale formations and allow oil and gas to flow out, is important in "fracking."

Wisconsin and Minnesota have abundant supplies of the type of sand that oil and gas producers need. Geological conditions were right hundreds of millions of years ago to form sand hard enough to withstand the pressure thousands of feet underground, while also having round grains that leave space so the oil and gas can escape. Fracking sand can fetch around \$50 a ton, depending on quality.

Paul van Eijl, land-acquisition manager for Superior Sand Systems Inc., a Calgary mining company, recently set up a tiny office in this Mississippi River port city, a color-coded map of sandstone formations behind his desk. Mr. van Eijl spends his days looking to strike deals with landowners for sand just below the surface, using county land records and Google Earth elevations to target properties.

Sand mines are popping up across the region. Wisconsin officials estimate that the number of mines in the state has doubled to more than 60 since just last fall. Those doing the mining range from Houston-based oil-



Aaron Scott of Fairmount Minerals with a screen used to test the quality and density of the sand.

and-gas producer EOG Resources Inc., which opened a mine in Wisconsin to supply its own production, to tiny operators.

"Everyone knows about it. You'd have to live under a rock not to hear of it in this region," Mr. van Eijl said.

Mining has provided an economic boost to places like Wood County in central Wisconsin. The area has been struggling for the last decade with layoffs and mill closings as the paper industry shrinks there. The county now has an estimated 14 sand mines and added three sand-processing plants in the last year, said Lance Pliml, chairman of the county board of supervisors.

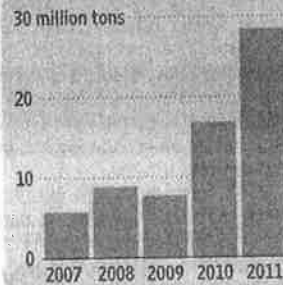
A study of Wood County by Economic Modeling Specialists Inc. projects that sand mining could add nearly 930 jobs over the next eight years, mostly in mining, processing and trucking, while new annual revenues to county and local governments could reach nearly \$2.6 million. "It has been an absolute benefit to the economy," Mr. Pliml said.

But some residents are calling for a slowdown in the mining, others a halt. They fear that sand production will pollute the air with tiny particles that could cause lung diseases, that it could use up or contaminate groundwater supplies and that it will bring a constant stream of tractor-trailer trucks to rural roads.

"This just came out of the blue for everyone," said Joe Morse, a 68-year-old resident of Winona who has become a student of sand mining recently. "It

## Pay Dirt

U.S. fracking-sand demand by oil and natural-gas industries



Sources: PropTester; Kelrik LLC

will change the character of the community completely."

Sand mining has long been done in the upper Midwest, but not on this scale. Mr. Morse wants to know what effects mining could have on groundwater, which relies on layers of stone to act as a filtration system. A group of Wisconsin residents late last year petitioned the state government to put in place new air standards in response to concerns about dust emissions.

The Wisconsin Department of Natural Resources rejected the petition, saying existing regulations addressed health concerns about mining. But the regulators said in a report last year that a lack of data on emissions prevents a conclusive determination on the public-health effects.

Fairmount Minerals, one of largest sand-mine operators in Wisconsin, has told residents

and state officials that excessive exposure to dust while working with sand can lead to serious illness. The company says that safeguards are in place for mine employees and that there isn't any evidence that sand or dust is a danger to communities surrounding the mines.

Sand mining is properly regulated and has little environmental impact, said Dave Fellon, president of Progressive Rail Inc., a Minnesota railroad firm that transports sand. "All the safeguards are there," he said.

Some in the mining industry think the boom is already coming to an end. Much of the sand is used to drill for natural gas, and some major gas producers have begun scaling back production in response to the lowest prices in more than a decade. Still, new sand mines are being planned, particularly since oil production isn't seeing a similar pullback.

The industry is starting to face a slowdown as counties and towns declare moratoriums. The board of county commissioners in Winona put a three-month ban on new sand mining after eight mines were proposed, and has laid out an environmental-review process and created a fee on trucks carrying sand. Several other counties and municipalities in Wisconsin and Minnesota have put in place moratoriums on new sand mines.

"We don't know what is going to come," said Winona County Attorney Karin Sonneman at a recent commission meeting. "We have a sense this could be huge."

## EOG plant providing Chippewa Falls with a greater than expected boost in revenues

By ROD STETZER | [rod.stetzer@lee.net](mailto:rod.stetzer@lee.net) | Posted: Sunday, June 24, 2012 2:00 pm

Before EOG Resources' sand processing plant was built in the Chippewa Falls, the city was expecting it would have a tax value of \$30 million. Then that estimate was bumped up to \$35 million.

But its true value is nearly double that, \$65.8 million. That's the tax evaluation the city received the week of June 18. It includes the cost of the site's real estate, land improvements and personal property on the site.

The \$65.8 million will generate \$1.4 million in revenue for the city. It is enough money to pay the expenses in the city's Tax Increment Financing district for the plant, wipe out a deficit in two TIF districts and improve the cash flow of another.

"It's amazing. It is an unbelievable number," city Planner Jayson Smith said. He said it will benefit all of the city's taxpayers.

To put it in perspective, the \$65.8 million valuation for the EOG plant dwarfs the \$13 million valuation for the TIF district including Riverside Industrial Park.

"EOG by far exceeds any of the other ones," Smith said.

A Tax Increment Financing (TIF) district is a way cities subsidize redevelopment and infrastructure. With a TIF, loans are repaid with increased tax dollars generated by the increased value of the developed project as the project is built.

Smith cautioned that \$1.4 million in revenue from the TIF district with EOG will change from year to year because personal property depreciates each year. He said \$22 of the \$65.8 million valuation was for personal property.

The EOG plant, which refines frac sand, is in the city's TIF District 11. Smith said the city has made it a "donor," meaning that its revenues can be shifted to other districts that aren't making enough money to cover expenses.

That would include TIF District No. 5, which includes Riverside Industrial Park, Seymour Cray Sr. Boulevard and Chippewa Crossing, and TIF No. 4, which is part of the downtown redevelopment plan.

"The (city's) general fund has been basically carrying on a lot of money for that," Smith said.

And the money will improve the cash flow in a new TIF District, No. 12, another part of the downtown redevelopment. Smith said it will allow the city to continue to work with the consulting firm SEH to relocate its offices to downtown and either redevelop or tear down the Empire Building, the former O'Connor's sports bar.



## Murchison: Sand by the numbers

FEBRUARY 18, 2012 10:00 AM • TODD MURCHISON | PLANT MANAGER, PREFERRED SANDS OF WISCONSIN, BLOOMER

In the daily sand debates that are happening in Wisconsin's communities, essential economic facts are too often overlooked. Thousands of local people have a job directly because of the sand industry. We know this first-hand because of the activity taking place every day in our Bloomer sand pit.

For 10 months of the year, at least 100 trucks are transporting sand out of the site. Here's a snapshot of the economic impact these trucks have:

- Each semi truck costs between \$40,000 and \$120,000 to purchase. This puts money directly into the pockets of local auto dealers.
- Every truck pays approximately \$8,000 in taxes annually to use state and county roads.
- One truck spends, on average, \$85,000 each year on diesel fuel at community gas stations.
- About \$3,500 a year is spent on tire purchases and repairs.
- An average truck spends \$27,000 a year on general repairs at local mechanic shops.
- Each driver spends an average of \$4,000 a year in insurance with neighborhood insurance agents.
- The average salary for a driver is \$50,000 a year.

Multiply all of these figures by 100 and it is easy to see the positive impact that sand has on our economy. And don't forget that just this single sand mine has 20 full-time employees, all making an average of more than \$40,000 a year.

When you choose to support the local sand industry, you are supporting the economic future of western Wisconsin.

2-8-12

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## Area Update

# Dozens of new jobs being created in northeast Iowa

CLAYTON COUNTY—While many Northeast Iowans are still feeling the effects of a deep and painful recession, there are signs of recovery in one important sector: job creation. Two local companies—Caterpillar-Elkader and Pattison Sand Co., Clayton—have expanded their workforce over recent months and have plans to add even more jobs in 2012.

Currently, Pattison has 186 employees on its payroll, a nearly 80-percent increase from a year ago when 104 people worked there. According to Jennifer Peak, human resources director, another 13 positions need to be filled. In addition to their own expansion, growth at Pattison has resulted in 35 new trucking jobs and 10 to 60 jobs created for the company's on-site contractor.

The company paid out gross wages of over \$7 million in 2011. Another \$19 million was spent with vendors in northeast Iowa and southwest Wisconsin.

Job creation is also happening at the Caterpillar facility in Elkader where less than a year ago only 38 workers were employed. Today the plant has 75 workers with another 10 expected to join the ranks later this month.

The plant recently started its first-ever second shift. The plan also recently hired its first female plant employee.

## Wisconsin DNR says no to citizens on silica regulations

The DNR has rejected a request from citizens for more regulation of air pollution linked to sand mining in Wisconsin.

Ten people living in west central Wisconsin had petitioned the DNR for rules to govern crystalline silica that can get in human lungs. With more sand mining going on in the state to supply the hydraulic fracturing oil and natural gas business,

there's been concern about blowing sand harming people's health. But the DNR's Jeffery Johnson said the petition has been denied, partly because there are existing regulations covering fine particles of air pollution.

Johnson also said there isn't enough data about air quality, or a federally approved test method for silica. Petitioner Ken Schmitt of Chippewa Coun-

ty said his initial reaction is disappointment with the DNR.

Schmitt said his group will take a closer look at the DNR's decision, and likely remain worried about air pollution from sand mines.

The DNR said it's adding 3,000 more staff hours to address concerns about sand mining, and is aggressively reviewing applications for sand mining permits.