

with your blessing. If I threw my beer can into a 50-acre lake I'd get arrested, but a mine could fill that lake - destroy it forever! - with till and you'd do nothing. If I threw that can onto a wetland - of ANY SIZE - I'd get arrested, while the miners could destroy that wetland - of ANY SIZE! - with tailings and trash, while you did the paperwork on me. Do you see anything wrong with that scenario? Or are you inking up your rubber stamp?

"Trust" you? Why? One good reason....?

It's been said that the only thing necessary for the triumph of evil is for good men to do nothing. My wife says those who won't stand for anything will fall for anything. And your DNR fits both, since you will continue to kiss the legislature's ass to protect your precious budget while Wisconsin = West Virginia - West. Not something you can take pride in, but certainly a thing you'll be given credit for!

Again, you don't need public input; you KNOW the truth, the scientific truths about silicosis, the breakdown of polyacrylamides, depletion of groundwater and aquifers, disruption/destruction of surface waters, etc. ad nauseam. You people KNOW all this crap. So why this pretense of "public input"? A waste of time and tax monies. All you're trying to do is get yourselves off the hook! That's pathetic. It's all political games with the ecological health of this state, its residents, and its future.

As an ex-serviceman and -cop, I fully understand the concept of "PIA"; no matter what else happens, don't let the doo-doo stick on you! But this very

real attack — and there's no other word! — on this state vis a vis Big Oil's desire for our Wonegan formation's silica sandstone is threatening the future of what this state will be, what we'll look like, just a few years hence.

Outside of our cities and their industrial efforts, this is still "American Dairyland". New York and California now produce more raw milk, but we still make the most and best cheese, butter and other dairy by-products. Outside of the towns we still have some of the best hunting, fishing, camping and boating and scenery of ANY state. Agriculture and tourism both bring in more taxes, payroll and other revenues than the mining industry, which I understand is less than 1% of Wisconsin jobs, and yet mining has a huge and growing ecological adverse footprint on the state, not to mention that all they create is ugly. My friends and I have checked with our own medical, air, soils, water and demographic experts, and not one of them favors this silica sands gold-rush. They ruin soils and water, among other things, and do NOT insult my intelligence by citing their "reclamation plans." They aren't worth the paper they're printed on.

The Capitol Times flag says, "Give the people the truth and the freedom to discuss it and all will go well." Why don't you try that?

Sincerely,

cc. File

The most important thing I'd like to see included in the DNR's Strategic Analysis of frac sand mining in Wisconsin is how differently these mines affect different areas. Recharge Zones vary greatly across different regions of Wisconsin, making pollution of groundwater more likely in some areas than others. Heavy metal and other toxic substances in the buried geology of an area make the possible release of these substances more likely in some areas than others. Certain wildlife is more prevalent in some areas making the mines' effects on wildlife differ from area to area. The presence of trout streams, lakes, rivers, and other surface water also varies making the effects differ in these areas too. This analysis should include why Wisconsin should not be treated in a one-size-fits-all-manner.

These are specific questions and concerns I have about frac sand mining in Wisconsin, but I am also concerned that whatever standards are set or recommended by the DNR need be minimum standards and not restrictive. If an area has reason to require stricter standards, or new information, problems, tests, etc. develop, other standards can be used instead as long as they are not less restrictive than the DNR determines is safe. I would like to request when regulations are set or suggested that consideration be given to what happens when the DNR's budget, staff, and/or authority is controlled by the legislature instead of by the health and safety issues of the local area.

1. How many acres or per cent of acreage of freshly fractured crystalline silica is safe to be exposed in an area at one time? Shouldn't there be some limit of exposed silica set? The more raw material left exposed, the more stockpiling, the longer the conveyance to transloading stations, the more respirable crystalline silica is picked up by the wind and put into the air we breathe. What should that limit be? Shouldn't contemporaneous reclamation be mandated so people and animals are exposed to as little of this freshly fractured silica as possible? It would also give credence to the sustainability of current reclamation plans.
2. What are the cumulative impacts multiple mines (or one large mine) on an area's air quality?
3. How much crystalline silica is safe to breathe? What standards should ordinances have to safeguard people's health? Should these standards be stricter for children than adults? For the elderly, sick? New York has studied this already. Can we use the standards they already have in place—at least as a starting point?
4. What is a safe setback distance to nearby residents, schools, and medical facilities including nursing homes? Crispin Pierce has measured toxic levels of crystalline silica 2 miles away after blasting. This stays suspended in the air for up to 15 days depending on the weather conditions. He says further testing should be done to determine what levels exist in the air at distances further than 2 miles. The Saudis have 10 kilometer setbacks. Shouldn't we be at least as concerned about our air quality as they are?
5. Blasting causes respirable crystalline silica to go quite high in the air. The higher it goes, the further out it spreads. Can berms be used to adequately prevent this spread? How high would they have to be? Should blasting be prohibited—especially where non-percussive means can be used more safely?
6. What are the cumulative impacts multiple mines (or one large mine) on an area's water quality?
7. What are the cumulative impacts multiple mines (or one large mine) on an area's water quantity? Shouldn't high capacity well use for agriculture and other industries be

- included when considering the impacts these mines have on the water quantity of ground and surface water?
8. How long should groundwater be monitored after reclamation? Chemicals used in settling and wash ponds, as well as toxic heavy metals released from the deep rocks when blasted can leach into ground water long after the mine site has been abandoned. How long should testing and monitoring be done to make sure these don't leach down into the groundwater?
 9. What specific ground and surface water testing should be done to determine pollution, change of pH, temperature or other factors affecting the ability of normal aquatic life to be sustained and its safety for drinking? How can this pollution be prevented?
 10. What water mitigation plans should be required in case of pollution &/or contamination?
 11. How long should ponds and other surface waters be monitored after reclamation? Will the ponds left behind by these mines be safe to swim in, for fish and other aquatic species to live in, for wildlife to drink from?
 12. Invasive plants may be the only type of growth that can be sustained in reclaimed land that may not hold moisture any better than desert sand. How long should plant growth be monitored for sustainability (without irrigation) after reclamation?
 13. If land is going to be reclaimed as residential or industrial sites, what soil compactibility standards should be met in order to put in stable building foundations? The ground is too unstable after blasting and sand removal and exchange for overburden, etc. to support stable foundations for buildings without compaction.
 14. If land is going to be reclaimed as forestland, what tree species and sustainability standards should be required?
 15. What crop productivity levels for land reclaimed to agricultural cropland, or pasture plant density levels for land to be reclaimed as agricultural pasture should be required as standards for reclamation to meet?
 16. If land is to be reclaimed as agricultural cropland, will it be safe for fertilizers, pesticides, and herbicides to be spread without it being washed into the water table every time it rains?
 17. Noise levels affect people's health and hearing among other things. It probably affects wildlife, pets, and livestock also. What noise limitations should be set to maintain the health and safety of nearby populations?
 18. Seismic vibration affects livestock and wildlife at greater distances than it does humans. What seismic limitations should be set for any blasting or other percussive actions used by these mines?
 19. How many animals living around these mines are experiencing health problems? Veterinarians in some areas are noticing increased reproductive &/or other issues in cattle around mine sites. Lower conception rates, more early embryonic deaths, higher stillborn and weak calves at birth. This is seen more with smaller farms with organic & rotationally grazed animals kept outside where frac sand dust is in the air and settling in the grass they eat and wastewater is washed into ponds where they drink.
 20. How do these mines affect the wildlife in the area? Water with much higher than the 40 mg/l TSS is regularly being discharged into our streams. Does the colloidal clay now covering the bottom of these streams affect the reproduction of some of the fish (like trout)? If water with crystalline silica is unsafe for us to drink & food with crystalline silica is unsafe for us to eat, what affects does it have on fish & other aquatic life?
 21. Is it safe to eat produce grown close to the mines? Will lettuce, cabbage, broccoli, and other above ground crops contain crystalline silica that is difficult to rinse off and doesn't

- even have a half-life like some of the herbicides or pesticides? If so, how does this affect the health of those eating their own produce grown in the area of these mines?
22. Light pollution can adversely affect the health of nearby residents. It can be an attractive nuisance for some wildlife and possibly affect the health of other wildlife. What are safe limits of light to keep habitation and recreation areas in the vicinity of NMISM sites free from unwanted light trespass, glare, and over illumination?
 23. What chemicals are safe to use as flocculents? Shouldn't chemicals be banned from use as flocculents until they have been found not to be a contaminant &/or testing measures and standards are developed for them?
 24. What distance above water tables should be maintained? Should soil permeability standards be incorporated into this distance?
 25. What recharge zones are safe for mining without causing a groundwater contamination hazard for an aquifer? Neil Koch (hydrologist from Menomonie) has indicated that recharge zones labeled excellent, very good or good soil type as verified by the exploratory boring should not be mined for groundwater safety reasons. Excellent, very good and good recharges are defined as 2 inches recharge per hour or faster.
 26. How much toxic or respirable crystalline silica escape from both covered and uncovered trucks?
 27. How much toxic or respirable crystalline silica escape from both tanker and open rail cars?
 28. How much toxic or respirable crystalline silica is in the air around transloading stations, processing plants, and conveyer systems?
 29. Crispin Pierce has measured toxic levels in the air by railroad tracks that have frac sand transported along them as opposed to none by those tracks not transporting frac sand. How safe is it to live along these tracks?
 30. How safe is it to live along frac sand truck hauling routes?
 31. How far away from residential areas should transloading stations be?
 32. How far away from residential areas should processing plants be?
 33. How far away from residential areas should conveyer systems be?
 34. If this dust is just as toxic to livestock, pets, and wildlife, these same questions need to be addressed for them.
 35. When considering cumulative impacts of noise and light from either the mining operation or trucking to and from the mine site, processing plant, or transloading stations, shouldn't nearby industrial sites, distribution centers, and other light and noise producing industries be considered?

Thank you for your time,



March 20, 2015



Chris Willger, WDNR
1300 W. Clairemont
Eau Claire, WI 54701

I would like to see the DNR study of the environmental and health impacts of frac sand mining in Wisconsin used to take back the authority and funding that the DNR needs to protect Wisconsin's environment, wildlife and citizens.

1. Put a moratorium in place for any new permitting of this industry until the study is complete and new regulations and enforcement procedures are in place.
2. Charge the mines already permitted for the equipment, personnel, and training needed to enforce those EPA air and water quality standards in place.
3. Set some hefty fines for violations of EPA standards as well as charges for the clean-up of streams and wetlands that have been compromised, spills of crystalline silica, etc. These fines should also cover the personnel and training costs to monitor any clean-ups needed.
4. Request President Obama to send in the National Guard to shut down any mines that do not work with the DNR to enforce EPA standards.

Much of this is similar to how the DNR regulates fishing and hunting in Wisconsin. If certain fish or game populations are low, limits or bans on hunting those species are put in place. Hunting and fishing license costs have gone up considerably to cover the DNR's cost of regulation and enforcement of hunting and fishing. The fines for breaking hunting and fishing violations are hefty enough to make people reluctant to break the regulations. Since the Federal EPA has set the initial standards that the DNR would be monitoring, it stands to reason to request help from the Federal government to enforce those standards.

5. Use the time the moratorium gives:
 - (a) to evaluate the studies done by other states, such as New York, to set their regulations and
 - (b) do an in depth study on what needs to be done about reclamation of the affected lands to a pre-mining state.
 - (c) set new standards, regulations, and enforcement procedures needed to keep Wisconsin's environment, wildlife, and citizens safe from this industry.

Sincerely,



March 9, 2015

Comment on DNR Strategic Analysis of Frac Sand Mining in Wisconsin

Chris Willger
Wisconsin Department of Natural Resources
1300 W. Clairemont Road
Eau Claire, WI 54701

Dear Mr. Willger:

The DNR has been asked to conduct a strategic analysis of frac sand mining in Wisconsin. I am providing this comment about the scope of that analysis. Generally speaking, the DNR issues air pollution control permits, and storm water discharge control permits which are applicable to Frac sand mines. Additionally local communities including cities, towns and counties also provide regulatory oversight for nonmetallic mining dealing with requirements for the posting of reclamation bonds under NR 135 Wis .Admin. Code.

Currently, there are over 60 air pollution control and storm water discharge permits which have been issued by the Department of Natural Resources to Frac sand mines in Wisconsin. Over the last three years there have been numerous incidents where stockpiled waste sand spilled beyond the boundaries of Frac sand mines causing significant negative impacts to waterways, wetlands, fish, wildlife and people. In addition, the air permits issued by DNR are often insufficient to protect the health of people, and dairy herds which are located near to operating Frac sand mines. The current regulatory process does not take cumulative impacts from multiple permitted mines into account when assessing the health of impacted air, impacted surface water, and potentially impacted groundwater and natural resources such as wetlands, fish breeding grounds, and navigable rivers and streams.

Harmful impacts of Frac sand mines include surface water contamination, potential groundwater contamination and fugitive dust including fine particulate sand capable of causing silicosis. Many Frac sand mines are clustered in an area along the Mississippi River ranging from La Crosse County North to Chippewa County, and through Barron County. The fine uniquely round sand which is produced by these mines is used as a pro-pant in hydro fracturing for oil and natural gas. Some counties including Trempealeau, contain as many as 25 DNR permitted mines. The cumulative impacts on air, surface water, soils and human health, as well as the environment, are not considered by DNR when new permits are issued for new mines. Given the already documented and significant impacts of frac sand mining in Wisconsin, DNR should consider the cumulative impacts of existing mines when ruling on applications for new mines or renewal of exiting permits.

Frac sand mining is not simply a process of scooping up sand and loading it for transportation elsewhere. The process requires removing substantial amounts of overburden, sorting the sand, washing the sand, drying sand and loading it. All these processes have the potential for the release of fine particulate silica dust which is a known human carcinogen, and the cause of silicosis. There are many homes and several schools which are located within less than a quarter-mile of Frac sand operations. Currently DNR air monitoring requirements apply only to monitoring for particulate matter and not for smaller size particulates including PM 2.5. It is the smaller size PM2.5 particles which pose the greatest threat for causing fatal silicosis. Thus the air permits which are being issued are not sufficiently protective of human health. It is unknown at this time whether dairy herds that graze within short distances of Frac sand mining may also be impacted by inhaling fine particulate matter.

There been several instances at mines including Preferred Sands in Trempealeau County, and the Great Northern sand processing site near new Auburn Wisconsin, where piles of waste sand, or sediment filled wastewater have discharged into navigable streams, causing harm to aquatic animals and fish habitat.

The processing of sand includes filtration so that fines are washed away from the usable Frac sand. Mining companies treat the mixed sand and wash water with chemicals called flocculants causing suspended particles to sink so the water can be reused. Fines are piled as waste material. As part of its investigation the DNR should investigate the use of the chemical poly acrylamide, which is used to clarify sand processing water. Poly acrylamide contains residual amounts of acrylamide a neurotoxin linked to cancer and infertility. Small amounts of acrylamide have been shown to accumulate in mining wastewater and the chemical is considered to be present in many stockpiles of discarded fines at mining sites. This is an issue which the DNR should investigate.

Mining reclamation plans which are governed under NR 135 Wis. Admin. Code, allow large heaps of waste sand to be buried back in the ground in unprecedented amounts. To the extent that some mines have provided operational plans which project sand mining to extend below the groundwater table, and for waste sand to be used to refill excavations, there should be a concern about contamination of groundwater. In mines such as Preferred Sands where the mine's own documents project that work/excavation will occur beneath the water table, and multiple houses with on-site drinking water wells are immediately down gradient of the mine, DNR should be assessing the potential for drinking water contamination.. This assessment by DNR is needed because in many counties local communities such as cities and towns have annexed sand mines and negotiated reductions in NR 135 Wis. Admin. Code bonding requirements which are supposed to protect neighboring landowners and their water supplies.

When companies apply for new Frac sand mining permits, the cumulative impacts which are already occurring and likely to occur in the future to air quality, surface water quality, groundwater quality, and

fish and wildlife habitat as well as potential health impacts to families who reside near such mines must be considered by the DNR. A comprehensive study of Frac sand mining must include all of these topics.

Wisconsin used to be known as a state with a strong environmental ethic and a government which protected that ethic. We should not rush to bow to the needs and demands of the oil and gas industry, to the detriment of the health and beauty of our environment and the well-being of our citizens.

Sincerely,



Note: A good factual summary of all of these issues is found
In *Communities at Risk: Frac Sand mining in the Upper Midwest*,
A Report by Boston Action Research

March 15, 2015

Mr. Chris Willger
Wisconsin Department of Natural Resources
1300 W. Clairemont Rd.,
Eau Claire, WI 54701

Re: Comments on Scoping for Frac Sand Strategic Analysis

The scope should include the cumulative environmental, economic and social effects of multiple mines within a geographical area.

When looking at the economics, the displacement of other activities should be considered.

The effect on the quality of life within the geographical area should be considered. This can't be monetized, but it is real and should be included in the scope. Three years ago when the Buffalo County Comprehensive Land Use Plan was adopted the people who answered surveys and participated in Town meetings urged the adoption of these goals: preserve the natural beauty of Buffalo County, preserve the prime farmland in Buffalo County, preserve the rural character of Buffalo County. These sentiments have been repeated at numerous zoning committee hearings. Diminishing the quality of life is a cost.

The scope should include enforcement provisions. Whatever standards are adopted, by whatever level of government, counties should share in the authority to monitor and enforce compliance. Complaints will come to the county long before they get to the state.

Thank you for your consideration.



Comments for DNR Strategic Analysis of Frac Sand Mining

The Department of Natural Resources is charged with the task of managing Wisconsin's natural resources for the benefit of Wisconsin citizens today and into the future. There are two distinct yet clearly interrelated components to that goal:

1. The state's **natural resources themselves** (water, air, wildlife, woodlands, wetlands, plant communities, geological features, etc.). How can they be best managed to protect and maintain them in balance, diversity and abundance for the future?
2. The state's **people**---Wisconsin citizens and residents. The goal of Natural resource protection is to assure that the state's resources will be sustained not only for their own sake, but also for the benefit of Wisconsin's current and future residents and visitors. So the question must be asked, how do the policies and goals of resource management--or the lack there of---impact **people**? What are the socio-economic benefits of the resources themselves? What are the impacts of management policies and practices that favor 'development' (i.e., extraction and exporting) of a non-renewable 'resource' to the detriment of other renewable resources and the people so severely impacted?

Any complete and credible 'Strategic Analysis of the Frac Sand Mining Industry' must include **both** of these elements or perspectives. It must include **solid data** on **all** the affected natural resources as well as **solid data** on **all** the affected people. We need a risk/benefit analysis.

Obviously, sand mining cannot be considered separately from the woodlands, farmland, streams, wetlands, groundwater, field-woods-edge ecosystems, terrain, drainage patterns, flora and fauna and everything that is part and parcel of the landscape above the sand deposits. They are all connected and must be considered as pieces of the whole. I would expect that a thorough analysis of frac sand mining would most certainly have to include **much more data** on the impacts that sand mines have on these individual components of the natural systems than is currently being considered.

For example, in the parts of Chippewa and Barron Counties and also Trempealeau County where there are many mines operating close together, what data has been or is being collected on the impact on stream flow rates and temperatures? Is data being collected on trout reproduction? It needs to be.

In southern Trempealeau County the mines are located in very hilly, formerly heavily wooded acreages---what impact does that woodland removal and fragmentation have on wildlife? In particular, I'm concerned about the impact on birds (more specifically, woodland warblers and thrushes in the woods, and bluebirds along the field-woods edges). Is there any effort to collect ornithological data on their comparative nesting success and overall population numbers before and after mining? There should be.

Is there any systematic study and data collection on the migration of fugitive polyacrylamide endproducts or coating resins into streams, wetlands or groundwater around sand washing and processing facilities? This simply must be monitored. And so, too, must any evidence of acid mine drainage be tracked and reported. These data sets are essential to gain a clear understanding of the impacts of sand mining.

Until sufficient time has allowed for such data to be collected and analyzed, further permitting of this unprecedented destruction of the hillsides of western Wisconsin---particularly of the coulee region of the driftless area---must stop. It is unwise to continue without knowing the costs, and we won't know the costs until the data has been collected. To allow it to continue apace is not compatible with the mission of the DNR to steward all these resources for the people and the future of Wisconsin.

And that brings me to the second component of the natural resources protection equation, the people. The impacts on us humans must be factored into any credible analysis of frac sand mining. The emphasis in the discussions on site suitability and conditional use and reclamation seems to focus primarily on the physical parameters of the particular site being considered for a mine, almost to the exclusion of the 'people' component, i.e., the socio-economic impact. This needs to change.

Specifically, data needs to be collected, studied and considered, county by county, on PROPERTY VALUES and real estate sales in the areas where there are sand mines:

- Data on impacts on home and land sales within 5 (?) miles of sand mines and plants should include:
 - Fair market value (FMV) before sand mines
 - Selling price
 - Sold under duress?
 - Amicable sale?
 - Distance from mine and/or plant
 - Any other relevant information
- Data on the number of owner-occupied residences in specific townships 5 years before sand mines arrived, and at 3 and 5 and 8 year intervals after sand mines came on the scene.
- Tracking data on where people move, in order to assess whether or not our communities are losing their people. Are our rural areas being systematically depopulated as a result of sand mining? Will western Wisconsin become a place where one can drive for miles and miles seeing fewer and fewer lived-in homes? As rural residents leave, what impact does that have on the villages and businesses and churches and schools they frequented?

Where's the data on the ripple effect? What happens to the people left behind with the sand mines? To give a better understanding of the impact on the community left behind, we need **data** on mine-induced population movements and trends to track where the people driven from their rural homes go:

- Other nearby rural property?
- Nearby town?
- Within 25 miles?
- Between 25 and 50 miles away?
- Beyond 50 miles away?

Data is badly needed (as it is sorely missing) on the HEALTH IMPACTS of frac sand mining.

Statistics on the incidence of a variety of illnesses in local populations, before and after sand mining, need to be collected over a period of several years. Silicosis is certainly a risk, but other serious adverse health impacts are much more likely to be encountered, and yet **no consideration has been given to these impacts on public health**, all of which have high personal as well as financial costs:

- **Respiratory Conditions** from exposure to ultra fine particulate matter in dust and/or silica:
 - COPD
 - Asthma
 - Silicosis
 - Emphysema
 - Bronchitis
 - Lung cancer
- **Stress-related Conditions** from this drastic turn of events in one's living situation and quality of life, including being driven from one's home and experiencing the destruction of community relationships and the animosity that develops between neighbors and even family members when such a contentious issue invades a community:
 - High blood pressure
 - Heart attacks
 - Anxiety and insomnia
 - Depression
 - Anger and related aggression
 - Suicide

- Systemic Auto-immune Conditions from exposure to dust:
 - Rheumatoid arthritis
 - Lupus and Sjogren's Syndrome
 - Kidney disease

Similar health impacts no-doubt affect animals as well as humans, both wildlife and domesticated animals. Data has yet to be collected on the deleterious effects on animals.

In addition to the impacts on health, the impacts on the fabric of community life need to be recognized and assessed. Strong, vital, well-functioning rural communities are themselves a 'natural resource'. Rural communities and the people who came from them built this state and this country. What has taken years (in many cases generations) of energy, attention, dedication, investment and effort to build is being destroyed. In countless townships across western Wis. the bonds of mutual trust, respect and friendship that bind communities and families together are being broken. The socio-economic impact of this disintegration is not even acknowledged, except by those of us living it. What cost, this crumbling of community?

Any credible assessment of the impacts of frac sand mining must take into account **all** these impacts, both to the natural environment and to the people who live in it. And the only credible way to take them into account is to measure the true impact in a scientifically valid manner. **Collect the data!** Meanwhile, until we know the costs, stop permitting more mines.

Sincerely,



My 'standing' for making comment is that I am a lifelong resident of this great state of Wisconsin. And I live in northern Jackson County in a township literally surrounded by operating mines and processing plants, with proposals for more, including in this township. I personally know friends and neighbors deeply affected by this invasion of industrial activity into our rural communities. We feel like we are Wisconsin's 'sacrifice zone'. We fight every day to keep from being driven from our homes of 20, 30, 40, 50 years. Some of us live on land that has been in our family over 100 years. We want Wis.'s precious resources protected, not destroyed. We believe that's what most DNR employees want, too. We want the DNR to steward the state's resources for Wisconsinites, not acquiesce to their destruction by permitting out-of-state oil barons to excavate and haul away our hills. Please stop this cancer.

April 12, 2013

Dear Chris Willger,

I am writing to you about frac sand mining because I need to feel there is a human who cares about natural resources. I trust you do,

as a 73 year old organic farmer who has spent over 40 years resuscitating a very derelict farm, I have deep respect and humility from seeing amazingly complex relationships. It leads me to feel outrage at the hubris of referring to that as "overburden."

I am equally blown away at the acceptance of seeing the vital commons as saleable for private profit. The bases of life are non-renewable; to pillage instead of protect is criminal, or should be. And we are all indicted if we stand by passively.

I don't, I trust, need to preach to you, but I do need to know that someone with authority will speak and act for those of us who are concerned. I have been deeply disappointed in my previous experiences with public hearings, including those in my area about frac sand.

It is past, well past, time for insisting on renewables as a way of life and for total assessments of the real costs and impacts of

such large-scale complex industrial activities.

Hoping you will speak for me, for future generations and for our precious non-renewable resources, I am, most sincerely,



TO: Michael Owecke, Buffalo County Zoning Administrator
FROM: [REDACTED]
DATE: February 9, 2015
SUBJECT: Conditional Use Permit for Frac Sand Mine and Wash Plant Breezy Point Farm

I am writing to you about concerns I have with the proposed frac mine and wash plant at the Breezy Point Farm. My wife and I live in the valley across from the proposed mine and wash plant, and we also have a farm at the far east end of the valley that our son and his family live at.

All of the items listed #1-9 on the cover letter is of concern, but I would like to expand on one of those items. Item #3 states - Diminished water levels due to use of a 500 gallon per minute high capacity well. So far none of the documentation that has been available has an estimate of the amount of water this company plans on using. This is a concern due to the amount of water that is already being used for normal agriculture needs in our valley, along with the potential amount of water needed for a wash plant and dust suppression for this mining operation.

Starting at highway 25 and going east to Urne, you will see the large farming operations have already installed 19 irrigation systems. These irrigation systems are all within 5 miles of each other. Besides these irrigation systems we also have a large number of high capacity wells located at each of these farms for their normal operational needs. This valley has several thousand head of cattle being raised and milked in it, and the normal water supply is needed for these operations. These farms continue to add cattle each year, and are expected to expand more in the coming years. Due to the sheer size of these farms, I don't believe permitting and installing an **industrial plant** (frac mine and wash plant) in the middle of this heavily used agriculture area is a good idea. If water would become an issue in the future which process would or **could** you shut down? I have attached a map of the valley showing the location of each irrigation system.

I am proposing the following.....

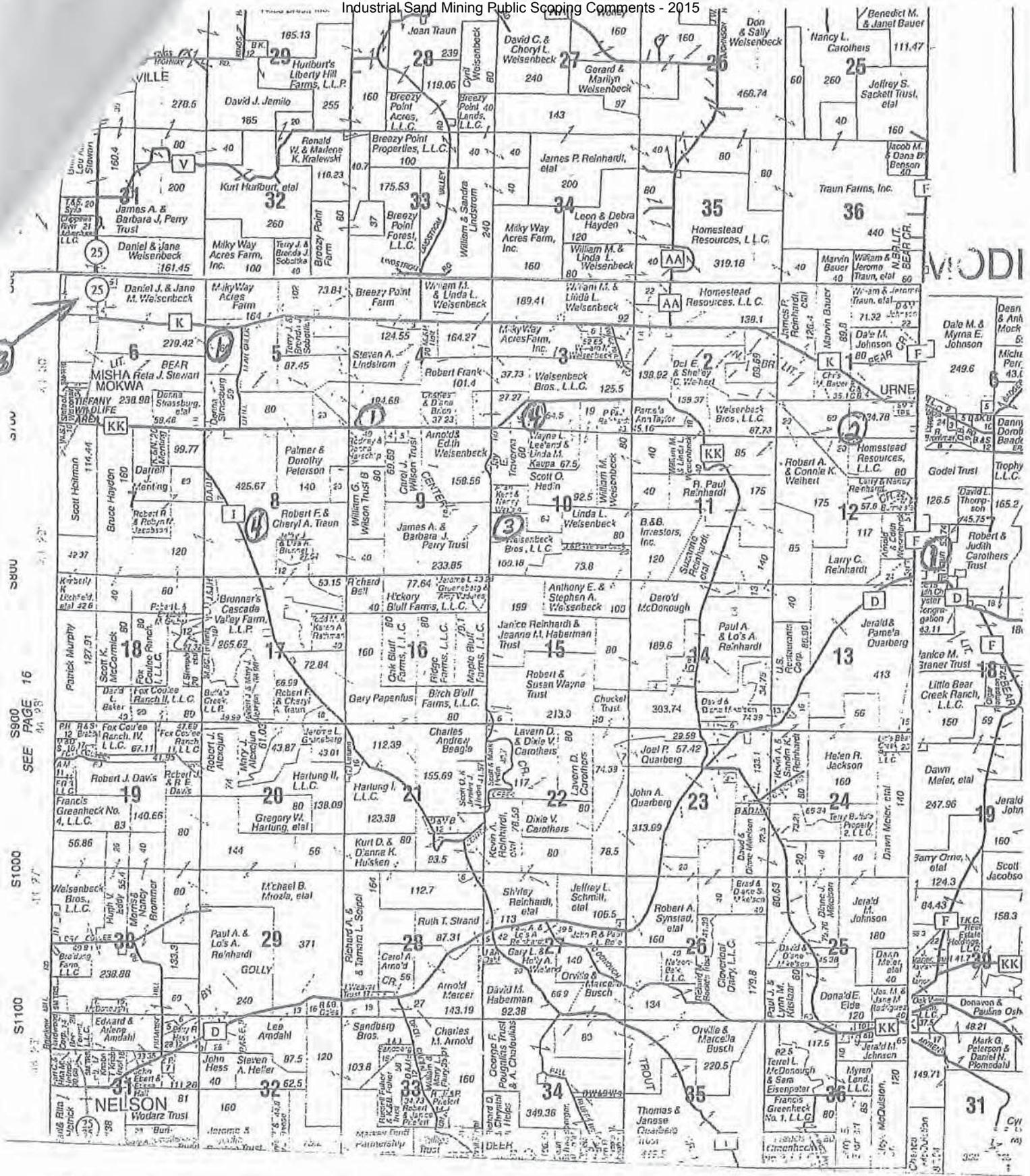
The Department of Natural Resources (DNR) needs to conduct a comprehensive water usage study of this entire valley and not just a study for a single mine and wash plant. Too many times these permits are looked at as just stand alone projects, and do not take into consideration the larger picture. I would be happy to discuss this in more detail with you and the DNR if needed.

Additional thoughts.....

In addition to the water concern, my wife and I are also very concerned with the potential health risk that accompanies this mining operation (dust, potential water contamination, noise, traffic, etc). Besides our own health concerns, we have that of our children and grandchildren, and I know the majority of our neighbors feel the same way about this risk. Last but not least is the loss of our beautiful valley as we know it. We live in a very unique area that was spared by the glaciers, giving us our great bluffs and river valleys. In recent years, there has been an attempt to protect the bluffs along the Mississippi river. I believe this effort needs to be expanded to the valleys that surround this great river valley. As Paul Harvey once said "on the 8th day God looked down on his paradise and said he needed a caretaker, so God made a farmer", I don't believe we are good caretakers if we destroy this great area that we live in. Remember, once it gone, it's gone!

Respectfully Yours,

A large black rectangular redaction box covers the signature area of the letter.



IRRIGATION Systems
19 TOTAL

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Public Comment re: sand mining

From: [REDACTED]

Sent: Mon 4/20/15 6:27 PM

To: DNROEAAcomments@wisconsin.gov (dnroeaacomment@wisconsin.gov)
OE EA

I commend the department for undertaking this research. As much relevant information as possible should be obtained, consistent with the DNR's mission statement. I believe the process should begin with the applicant not being allowed to lie on their application for permits and not tell lies to the public; no sneaking around and getting signed contracts without public knowledge.

As Abraham Lincoln said, "The function of government is to do for the people what they cannot do for themselves."

I think it is despicable what happened in our township of Forest, WI. Several town residents went to the County hearings and spoke against the McNamara Quarry getting a variance. Then the town board members (my husband was one) got a notice from the county which said "No input from the town." Several residents went to a BOA hearing. On the Board of three, one member said to another, "We already have one lawsuit, do we want another?" so they voted to approve the variance. I believe it is wrong when the mining industry's high-priced lawyers wave their papers in the air and demand, "We want our variance," and the Board is bullied and intimidated into giving it to them because they are afraid of a lawsuit. What's wrong with this picture is that it's not the will of the People. We The People elected our town government and they were helplessly overruled by the county who was intimidated by the mine's lawyers. Is this really how things are supposed to work?

So what's next when the mining company gets their variance? Do we have a lot of confidence that they will seriously abide by all 24 conditions and stipulations? Ha.

What is the point of having the regulations if they are going to flagrantly defy them? I think that when they lie on their application or break any of their conditions, they need to be dealt with. The state attorney general's office is responsible for investigating breach of contracts and enforcing truth-in-advertising laws. We need enforcement. And now is not the time to be cutting DNR staff, Mr. Walker.

When the mining companies proceed to mine, despite violations, what it amounts to is this: Which is more important, the rights of a few special select people to make a ton of money, or the rights of the people who have lived there for 30 or more years to continue to have fresh air, freedom from blasting, freedom from truck traffic? Definitely investigate the socioeconomic factors, the truth, not the mining industry's overinflated conjecture and speculation about how many jobs they hope to create; they promise the moon but don't deliver. They promise local jobs but the people don't necessarily live in Wisconsin, so it's a lie.

One person's rights end where another's begin. Definitely a balance is needed. And information is

power, so gather all the information about silica dust and other potential side effects; create reasonable laws that protect the public health and safety, and enforce them. I believe that is the biggest area that needs improvement now.

Thank you for the opportunity to comment.

Sincerely,



March 25, 2015

I am very concerned about what sand mines are doing to our area. I grew up here and it's very disturbing to see the destruction of the land, the hills being torn down and the huge piles of dirt being piled by the roads. The invasion of the mines are ruining the beauty of our countryside. Not to say what they're doing to the air and water. We may have a railroad spur across from our house with trucks going by our house every 4 minutes. We don't know if we'll be able to stand it - if we have to move it will cost a lot more than they would compensate us. Minnesota isn't allowing Judy Gersick all of this & a lot of people know and need to move there.

To whom it may concern

A few years ago there were 5 sand mines in Wisconsin now with the applications there are 145 We live near Atlas, its just off of highway 12-27 between Merrillan and Hamberd they coat the sand with chemicals and that goes into the groundwater has anyone checked whats going into that groundwater the two smokestacks are putting (dust) (smoke) into our air what does that test at? the stupid governor likes sand corporations and has cut the DNR staff and budget when we need more ~~inspect~~ inspectors for all these sand mines to check and see what they are doing to our water and our air.

Also they are using perfect soil that raises corn & soybeans for railroad yards and extracting sand These crops feed chickens, beef, and hogs, I do eat chicken, pork, and beef. I don't eat sand, oil or drink gas

Sincerely,



March 9, 2015

RE: Frac Sand Strategic Analysis Public Scoping Process

DNROEEA Comments

To: Chris Willger
Wisconsin Department of Natural Resources
1300 W. Clairemont Rd.
Eau Claire, WI 54701

Dear Mr. Willger,

I went to the February 24, 2015 "input session" at the Howard Town Hall feeling it was an objective effort by concerned citizens regarding frac sand mines, with the clear impression given that DNR personnel would be in attendance.

I prepared the enclosed document, and was prepared to address the attendees at the meeting (and DNR personnel).

However, after a short time, and after talking with a couple of the people in attendance, it became very obvious, the "Midwest Environmental Advocates" were not at the meeting with any open-mindedness, and were not interested in learning about (1) any of the volumes of research dealing with their "supposed issues", (2) or that everyone of them are hypocrites by using hundreds of sand products, many of them coming from what they want to call frac sand mines. They can not accept the fact that sand mines more often produce a lot more than frac sand, and that all sand and gravel pits (some bigger than what they want to classify as frac sand mines) produce sand with the same degree of silica, or (3) that more than two years of in-depth research was thrown out by several of the federal court districts as without foundation as relates to health issues.

My perception...their goal was obvious, (by their biased leadership) lets try and find **anything negative to push the DNR to conduct a study refuting all previous research for self serving reasons** (and get as may uninformed or misinformed members of the public to support their position).

I would be glad to discuss any of the enclosed materials at any time...

MY RECOMMENDATION...**NO DNR STUDY IS NEEDED** AS THE CURRENT RESEARCH IS VOLUMOUS. THE REASONS FOR THE REQUESTED STUDY ARE NOT FOUNDED ON ANY SUBSTANTIATED SCIENTIFIC DATA. TO WANT THE DNR TO FOCUS ON GROUND WATER...IGNORING IRRIGATION OR ANY KNOWN ISSUES FROM MINING IN GROUND WATER SINCE THE 1800'S IS NONSENSE. IGNORING AIR ISSUES (BOTH PARICULATES AND SILICA) FROM SOURCES FAR GREATER THAN MINE SITES, AND TRYING TO FOCUS ON JUST SOME MINES THAT PRODUCE SOME FRAC SAND IS A WASTE OF TAXPAYER MONEY.



DEPARTMENT OF NATURAL RESOURCES

&

MIDWEST ENVIRONMENTAL ADVOCATES

February 24, 2015

Howard Town Hall

***“An analysis of issues related to sand mining in Wisconsin, including
frac sand mining”***



OVERVIEW

ANY SAND RELATED STUDY/RESEARCH THAT IS CONDUCTED OBJECTIVELY AND IN A DOCUMENTED SCIENTIFIC MANNER OFFERS THE POTENTIAL FOR HELPING THE SAND INDUSTRY IMPROVE THEIR PRACTICES...INSURING THE SAFETY OF WORKERS AND NEIGHBORS WHILE PROTECTING THE ENVIRONMENT.

ANY STUDY THAT IS GENERATED FOR THE PURPOSE TO “FIND SOME REASONS” TO STOP SAND MINING BASED ON EMOTIONS, NOT-IN-MY-BACK-YARD (nimby) OR I LIKE THINGS THE WAY THEY WERE, IS A WASTE OF TAXPAYER MONEY.

First and foremost, it must be recognized that frac sand mining can not be isolated as “separate” entity from sand mining that has been in operation in Wisconsin since the 1800's. (See attached Menomonie frac sand plant summary).

Chippewa County has 84 active sand and gravel mines, all of which produce sand that is in excess of 95% silica, Barron County has 67 active sand and gravel pits that all produce sand. Some of these pits can sell their sand (if is round rather than angular in shape for frac sand (some do) as well as for concrete or blacktop.

Most sand companies diversify their product sales as a means to remain profitable in down markets and meet the sand needs for the more than 40,000 products made from sand. The same sand used for increasing oil and gas production from 30% - 50% is used for thousands of other products.

There are several examples of where sand mines (sometimes referred to as sand and gravel pits) not used for frac sand production are bigger than frac sand mines. The big Mathy sand mines west of Almena, WI and the one near Lake Tainter in Dunn County that have been in operation for many years and produce sand for multiple purposes. No argument can be made that “sand” produced in mines used primarily for frac sand is “different” from the sand mined for other purposes as relates to the reasons for this study.

This “STUDY” can accomplish the important task informing Wisconsin residents how important sand mining is for them personally. It will assist them in an awareness they are probably using 100 or more sand products on a daily basis. Sheet rock, fiber glass insulation, shingles, windows, dishes, water filters, computer chips, toilets, tooth paste and medicines, etc. in their homes. Molding sand for manufacturing engines for tractors, cars, recreational vehicles, outboard motors used by Wisconsinites are all dependent on sand mining. All sand mining, whether called frac sand mines or sand and gravel pit mines all meet the needs of the residents of Wisconsin and have the same potential issues related to safety, health and the environment.

THE MENOMONIE FRAC SAND MINE AND PROCESSING SITE

HISTORY

The Fairmount mining site on the east edge of Menomonie, WI dates back to probably the 1930's. It was known as the Quilling mine, and sand from the mine was used for icy roads, small concrete projects, fill dirt, and construction projects.

About 30 – 40 years ago, it had a major expansion, as the sand was used in the production of sand used for constructing the new I-94 Interstate Highway, its overpasses, black top edging between Elk Mound and Baldwin. The high volume well pipe used for the concrete mix is still easily visible next to the white shed on the west edge of the property, next to the white shed.

After construction was completed on the Interstate most of the site was reclaimed and became productive farmland for the Quilling family (and major portions of the former mine property are still being successfully farmed).

A small mine remained operational for a variety of local purposes until about 2006.

Cardinal Glass began a permit application process for an expansion of the mine for window glass, use primarily for Anderson Windows...and sublet its mining and processing to Fairmount Minerals...who supply the 260,000 tons of sand annually to the glass plant.

But, with an expanded production capability, it became what some people would call a frac sand mine, and it ships frac sand via a nearby UP rail spur and a CN rail spur in Wheeler, WI.

However, Fairmount supplies the sand to what is probably the largest shingle maker in the mid-west, in Minneapolis. They also produce municipal water filters for cities and villages throughout the USA...along with sand used for other products.

“FIRST OF ITS KIND”

In 2013, area headlines in the local papers, “First of its kind: Dunn County Sand Mine is designated by the state as a Green Tier business”

The attached article describes the many environmental improvement accomplishments, recycling activities, resource management and valued friend of the community activities. All of these accomplishments, in the city with blasting, across the street from the county court house, law enforcement center and highway department...and only a short distance from the Dunn County Health Care Center.

Water Table/Water Quality Quotation

“What we have been able to do at all of our facilities (this the largest sand mining company in the USA) is incorporate a recycling process so that the amount of fresh water we have to draw from our high-capacity wells is a very small percentage – as little as 2 or 3 percent.”

This example just demonstrates this “STUDY” needs to be on sand mining, research, NOT frac sand mining. The longest producing frac sand mine (1960's), producing several products besides frac sand, in Blair Wisconsin has been named “business of the year” a number of times, with health, safety and the environment always a priority.

First of its kind: Dunn County sand mine designated by state as a Green Tier business

By **BARBARA LYON**
 editor@dunnconnect.com

In the past few years, mining the abundant industrial-grade silica sand that can be found throughout western Wisconsin has become big business.

Chippewa County alone boasts eight mines — along with three additional proposed sites — that harvest the strong and perfectly shaped sand needed to extract oil and gas from shale using a drilling process called hydraulic fracturing or “fracking.”

But unlike its neighbors in Chippewa, Eau Claire and other counties extending south to La Crosse and into Winona, Minn., Dunn County only boasts one sand mine: Wisconsin Industrial Sand Co.

Other than the sand and gravel quarries that have dotted the landscape for decades, the 279-acre WISC was actually the first large-scale mine to come to the Chippewa Valley when it opened just east of Menomonie in 2008.

The company is a subsidiary of Chesterland, Ohio-based Fairmount Minerals, and it operates a wet and dry processing plant that supplies sand — up to 60 percent of the mine's output — to the Cardinal FG glass plant located nearby. About 3 to 4 percent goes to the Owens-Corning plant in Minneapolis for the production of roofing shingles, while the remainder is shipped to fracking operations.

First in state

Although the economic impact is generally considered to be favorable, some view the environmental



In May, Wisconsin Manufacturers and Commerce recognized WISC's Menomonie plant as its small-to-medium Business Friend of the Environment for its environmental stewardship.

SUBMITTED PHOTO

On May 7, a geology class from UW-Eau Claire toured Wisconsin Industrial Sand Company's Menomonie mine.

impact of sand mining with suspicion.

Fears about the mining of silica sand range from the effects of blowing sand on air quality and human health, to what washing sand can potentially do to an area's groundwater. Trucking sand — usually to railway transfer stations — also has residents worried about extra traffic as well as wear and tear on roadways.

WISC, however, has been recognized for living up to its motto of “Do good. Do well.”

In January, the Wisconsin Department of Natural Resources designated the company as a Green Tier business — the first mining operation in the state to be named as such.

According to the DNR, the program recognizes

companies “that voluntarily exceed legal requirements related to health, safety, and the environment, resulting in continuous improvement in th(e) state's environment, economy, and quality of life.”

Rich Budinger, WISC regional operations manager, is pleased that the company was singled out for the commendation.

“We work diligently to exceed environmental regulations,” he said. “Our top priorities are ensuring a safer workplace for our employees and continuing our commitment to superior environmental performance.”

One example of WISC's commitment is that over the past five years, all three of the company's mines have reduced water consumption by more than 50

Lauren Evans, WISC's sustainable development coordinator, explained that washing the sand to remove the clay and other waste material uses a considerable amount of water. “What we've been able to do at all our facilities is to incorporate a recycling process so that the amount of fresh water that we have to draw from our high-capacity wells is a very small percentage — as little as 2 or 3 percent,” she said.

WISC also continues to reduce its consumption of dryer fuel, diesel fuel and kilowatt hours. To ensure the most efficient energy use, the company carefully tracks and seeks ways to cut or offset its greenhouse gas emissions so, Evans said, “we're able to see what improvements are making a difference and what isn't working.”

Zero is a good number

WISC's parent company, Fairmount Minerals, set a goal for all its facilities nationwide to be waste to landfill by 2012. However, Evans reports that the Menomonie plant already reached that goal at the end of 2012 through a series of steps.

In addition to enhancing the mine's recycling efforts, Evans found ways to do things that we hadn't thought of before,” Evans said.

For example, the industry uses rubber conveyor belts to transport sand. “We oftentimes have to replace large rolls of strips of that belt,” Evans explained. “We were kind of stockpiling at our facilities. That's not the kind of thing you can dump in the dump or the recyclables at landfill.”

Among the out-of-the-box options they discovered were ski jump clubs and ice rinks. The clubs use the belt practice on with blades during the off-season, and hockey rinks use as flooring to provide traction for people walking their ice skates.

Best of all was the recovery of Atlas Belt in the Milwaukee area, which pays for and picks up the flooring.

WISC has also taken advantage of various commercial compost services. In addition to food scraps, the company management also accepts soiled paper plates, napkins and tissues — and even chewing gum.

- Fiberglass manufacturing
- Oil industry
- Golf Course Construction Sands
- Synthetic Putting Green Media
- Sand Trap/Bunker Sand
- Free Stall-Tube Sand
- Container glass
- Foundry production
- Grinding Media
- Metal Casting
- Wall and Floor Covering Media-Grout
- Roofing materials
- Asphalt production
- Filters
- Pool lining material
- Other Industrial Fillers

Unimin is a worldwide supplier to the glass, fiberglass, ceramic, semiconductor, quartz lighting, paint and coatings, fiberoptics, foundry and oil and gas industries. We also play a major role in the plastics, rubber, paper and paperboard, refractory, metallurgical and construction industries. (Unimin Company- website, 2005)

Badger Mining Corporation Company Profile

Badger Mining Corporation is a privately held, family-owned international corporation that manufactures industrial silica sand, limestone, zeolite, and other aggregates. Industrial markets include hydraulic fracturing, gravel packing, foundry core and molding applications, industrial and construction fillers, boiler sand, wet grinding media, and fluxing agents. (Badger Mining Company-website, 2005)

Environmental markets include water filtration, sewage treatment, monitoring wells, remediation wells, and odor control. (Badger Mining Company-website, 2005) Secondary markets include golf courses and other recreational purposes.

BMC strives to offer exceptional quality, service and value to our customers worldwide. We supply a wide range of industrial silica sand and complimentary products and services to a wide range of industries. Our key markets include metal casting, oil and gas, environmental, construction, industrial and recreational industries. (Badger Mining Company- website, 2005)

BMC offers a wide range of industrial and recreational sands and products. These include:

- Golf Course Construction Sands
- Synthetic Putting Green Media
- Sand Trap/Bunker Sand
- Free Stall
- Limestone Aggregate and Gravels
- Agricultural Feedstocks
- Grinding Media
- Traction Sands
- Wall and Floor Covering Media
- And Other Industrial Fillers

Badger Cast TM Foundry Core and Molding Sands

BMC's Foundry Team supplies over 20 grades of foundry core and molding sands from our Fairwater-St. Marie and Taylor production facilities in Wisconsin. The base materials are mined from the St. Peter, Jordan and Wonewoc sandstone deposits. Badger Cast products are offered direct from the plant site, delivered via BMC's dedicated fleet of trucks, or one of our many distribution sites throughout North America. (Badger Mining Company, website, 2005)

AIR QUALITY ISSUES

- 1. The federal Environmental Protection Agency (EPA) conducted an indepth scientific study on the sources of airborne silica. This study conducted by highly trained specialists identified sand mining as being responsible for 1% of the silica in the air. Agriculture Tillage – 15%. Construction – 23%. Wind erosion – 10%. Roads/silica in tread stock of tires – 51%
(See attached Study)**
- 2. Each county health department has hisorical records on recorded illnesses/treatments by medical personel. Although Chippewa County and Barron County (as an example) with over a 125 sand mines, with as many as three generations of workers having their fulltime work career in sand and gravel mining...there is not one record of any employee every having silicosis.**
- 3. A 12 year Occupational Medicine university study of 724 patients (underground miners) who had been diagnosed with silicosis were monitored to see if there was a relationship “...between silica, silicosis, and lung cancer. The results, “...the “slightly increased mortality for lung cancer was significantly associated with other risk factors – such as cigarette smoking, air flow obstruction, and estimated exposure to radon daughters in underground mines...rather than cumulative exposure to crystalline silica dust itself”. (See attached study)**
- 4. Chippewa Herald Telegram: 2-25-09 – SEH Engineering research related to the largest of the sand plants in Chippewa County (EOG).**

Hourly Particulate Emissions

Sand plant particulate air emissions – 4 tons per hour (56 pounds without filters/scrubbers)

UW Stout power plant – 69 pounds

UW Eau Claire Power Plant – 122 pounds

Excel Energy Wheaton Township – 539 pounds

Chippewa County Asphalt plant – 4,600 pounds

*** All companies are understood to have some emission control devices**

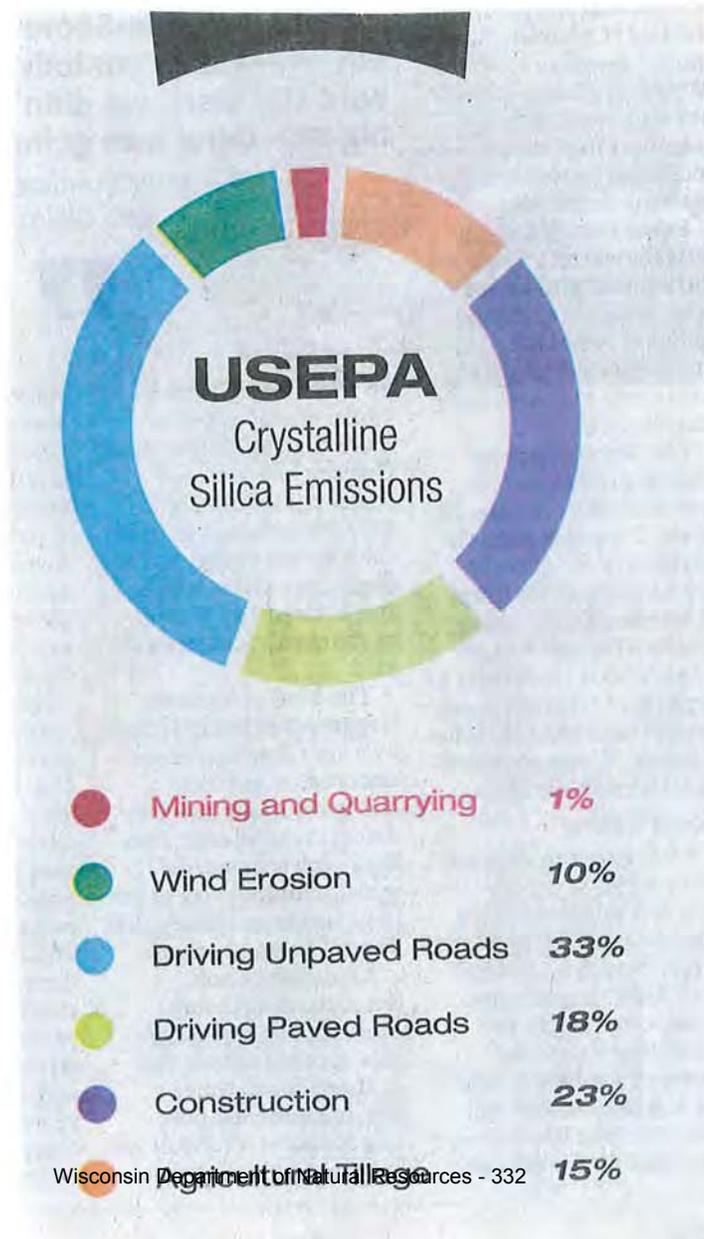
Air quality issues related to sand mining is very small in contrast to other production facilities.

Whether those promoting fear of sand by using the term silica sand, or crystalline silica, or quartz sand, it is all the same...it is sand, and sand is sand. It is the same sand that is around the playground equipment in Irvine Park, in large stockpiles of sand above the Chippewa Falls west well site along highway 53, at the beach, in sandboxes, at the glass plant and at cement and blacktop plants, etc..

Top soil, subsoil, good old garden variety clay, dirt roads and driveways will have an average composition of more than 60% silica. (UW – Extension soil studies)

Is it possible the work of the people (some misinformed) promoting a fear of mining sand or a sand processing plant is summarized in the often quoted literature of Mark Twain when he said, "A lie can travel halfway around the world while the truth is putting on its shoes."

Doctors are prescribing medicine, particularly prescriptions related to bones and joints, with silica an inactive ingredient. As an example, Salley Field's is often in TV ads promoting Boneva, the one-per-month pill to help with patients with osteoporosis or bone loss. A Google search will show silicon dioxide (silica) as an ingredient of Boneva, the most abundant mineral in the earth's crust.



US Department of Transportation

Table of Hazardous Materials, 49 CFR @172.101

**“CRYSTALLINE SILICA (QUARTZ) IS NOT A
HAZARDOUS MATERIAL FOR PURPOSES OF
TRANSPORTATION”**

CERCLA – Comprehensive Response Compensation and
Liability Act – 40 CFR @302

**“Crystalline Silica (quartz) is not classified
as a hazardous substance under (its)
regulations.”**

RCRA – Resource Conservation and Recovery Act, and its regulations (49 CFR @261 et seq

“CRYSTALLINE SILICA (QUARTZ) IS NOT CLASSIFIED AS A HAZARDOUS WASTE”

CERCLA – Comprehensive Response Compensation and
Liability Act – 40 CFR @302

**“Crystalline Silica (quartz) is not an
extremely hazardous substance under
section 302 and is not a toxic chemical
subject to the requirements of Section
313.”**



Groundwater

With more than 150 years of mining and 2,500 nonmetallic mines in Wisconsin – history has shown that mining does not universally have a negative impact on groundwater quality or quantity in Wisconsin! Groundwater quality and quantity are carefully considered by the mining companies, groundwater experts, the WDNR and the local mine permitting authority.

What are the Concerns of Sandstone Mining Impact on Groundwater?

The impact of mining on groundwater is one of the most common concerns of the public and almost every permitting process addresses concerns of groundwater contamination, groundwater depletion, long-term impacts to aquifers, competition with industrial and agricultural use of groundwater, and effects on municipal wells. The most notable comments allege that mining and processing operations will “pollute the aquifer”, “dry up the aquifer”, “dry up water supply wells”, “forever alter groundwater flow”, etc.

Are the Concerns Over Groundwater Genuine?

Concerns over the groundwater are genuine. Due to the nature of rocks, minerals and groundwater; many operations that mine sandstone will also mine, move or use groundwater during mining and or processing. It is nearly impossible to mine, process and ship sandstone and not also interact to some degree with groundwater.

Does All Miners Remove Groundwater During Mining?

Many sandstone underground and surface mines do not interfere with groundwater during the mining process. These operations remove the sandstone from above the groundwater table and have essentially no impact to groundwater.

How do the High Capacity Wells Impact the Groundwater?

Many sandstone processing operations pump groundwater to wash the sand in accordance with high capacity well permits from the WDNR. For each high capacity well application, the WDNR hydrogeologists review geologic and groundwater conditions and evaluate the potential impacts of the high capacity system to nearby private wells, public utility wells, trout streams and exceptional and outstanding resources waters.

Based on their review, the WDNR determines the usage rates that will not negatively impact private or public wells or other important natural resources.

How Does Pumping Millions of Gallons of Groundwater Impact the Groundwater Aquifer?

Millions of gallons of groundwater sounds like a lot of water, and it is. But it is also a plentiful resource that Wisconsin is blessed with and enjoys the benefits of having, for drinking, irrigation and industry.

WISA Members appreciate, utilize and protect that resource in a sustainable manner. Except for relatively small amounts of water that evaporates during the mining and processing, essentially all of the groundwater that is pumped from the aquifer is retained in the water basin that comprises the surface water-groundwater aquifer system. As a result, there is no material net loss of water from the system.

Courts Across the USA Relieve the Fear of Silica Sand

During 2004 and 2005 massive legal action called class action law suits (mass torts) were initiated against companies mining and processing silica sand, and numerous industries and businesses producing thousands of products made from silica sand.

An investigative reporter (Mike Tolson) for the Houston Chronicle (June 8, 2006) wrote: "Exposing the truth behind silicosis...to attorneys who had earned millions from asbestos settlements, it represented the next potential windfall. **But, it all came undone in a haze of dust and deception.** And so it was with silicosis. Then a strange thing happened. The truth began to leak out." "In hindsight, the silicosis gambit appears ill-conceived at best and brazenly cynical at worst. Rarely does any manner of litigation backfire so badly."

"In a packed Texas courtroom last year, a federal judge accused doctors and lawyers of legal and medical fraud... US District Judge Janis Jack ruled that thousands of silicosis claims have been manufactured for money." (National Public Radio – July 26, 2006)

When assessing the motives of the small minority of people distributing misinformation about sand, perhaps Sir Walter Scott, many years ago, appropriately described their efforts when he said, "**Oh what a tangled web we weave, when first we practice to deceive.**"

Asbestos mining and processing sites and the use of asbestos in manufactured products throughout the USA is extremely small compared to the thousands of silica sand mining and processing sites, and manufacturing plants making products from sand.

The potential impact of successful class action law suits (2004 – 2006) on millions of workers, and thousands of industries, distributors and retail centers selling products made from silica sand was IMMENSE!

Thousands of potential plaintiffs exposed to silica were recruited by law firms via nationwide newspaper, TV and radio ads. At the same time, both prosecuting attorneys and legal defense teams were investigating medical research documents, health records, medical school studies and seeking doctors and medical experts (respiratory specialists)...worldwide, to support their respective positions. After more than a year of searching for all available data on silica related health issues, including comprehensive research done at many governmental agency laboratories, litigation in courtrooms began throughout the nation. The result:

In Pennsylvania, U.S. Judge Judith Fitzgerald was shocked..."**I absolutely will not, under any circumstances, give (them – silica plaintiffs) one iota of credence.**" (Houston Chronicle – June, 2006)

The implications of major litigation against industries producing or using silica sand, the most used and most available raw material, making thousands of products critical to the economy of the USA, generated an investigation by the federal government.

Following hearings and an investigation by the House Subcommittee on Oversight and Investigations, Representative Joe Barton, R – Ennis, at a March 8, 2006 hearing stated, "**This is**

a story of medical mercenaries who allege cases of (silica) disease for the purpose of legal action and great financial gain. (March 2006 Subcommittee minutes)

Two small examples of evidence brought out in court cases around the country are examples of why fraudulent claims of silica health problems, that generated fear of silica sand, were dismissed by courts throughout the country.

"The first time Dr. Segarra diagnosed the man as having silicosis. The second time he said the man had asbestosis. And in the second report, he wrote that he found no evidence of silicosis. Segarra did not realize he was diagnosing the same man twice." (NPR – July, 2006)

An Institute of Occupational Medicine university study objective: "Evaluate the association between silica, silicosis, and lung cancer, (and) the mortality of 724 patients with silicosis diagnosed between 1964 and 1970." The study began in 1985 and was extended to December 31, 1997. "CONCLUSIONS – The findings indicate that the slightly increased mortality for lung cancer in this cohort of silicotic patients was significantly associated with other risk factors – such as cigarette smoking, airflow obstruction, and estimated exposure to radon daughters in underground mines – rather than to the severity of radiological silicosis or to the cumulative exposure to crystalline silica dust itself."

In Florida, Circuit Judge David Krathern vowed, **"It's mind-boggling the effect that it (silica claims) has on our economic well-being in this country. They are not legitimate cases."** (Houston Chronicle – June, 2006)

Research related to silica from large federal government agency laboratories resulted in the following stated positions:

"Crystalline Silica (quartz) is not a hazardous material for purposes of transportation under the U.S. Department of Transportation (DOT) Table of Hazardous Materials, 49 CFR @ 172.101."

"Crystalline Silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR @ 302.

"Silica is included in the list of substances that may be included in coatings used in food contact surfaces," according to the Federal Food and Drug and Agency (FDA), 21 CFR @175.300(b)(3)(xxvi).

"Crystalline Silica (quartz) is not a toxic chemical subject to the requirements of Section 313 of the Emergency Planning and Community Right to Know Act (SARA Title III)."

"Crystalline Silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act (RCRA) or its regulations, 40 CFR @ 261 et seq."

HOW IS SAND AN IMPORTANT FACTOR IN IMPROVING THE ENVIRONMENT?

1. Worn out tires, by the millions, have been an environmental problem since cars and trucks began using them. TDF (tire derived fuel) has bad air pollution problems. One major advantage to having sand (silica) as a key component in the tread stock in tires is that it adds wear capabilities and gives additional tire mileage for a vehicle owner...resulting in fewer waste tires, and cost savings for the car owner.
2. Using fiberglass insulation made from processed sand results in using less home heating fuel, less undesirable emissions going up the chimney, less global warming, and cost savings for the homeowner.
3. Road dust is one of the assessment factors evaluated by the DNR when giving air permits for a sand mining site or processing center. Without blacktop and concrete roads, with PROCESSED sand being the major component in both of these road surfacing materials (and the road base structure), major dust issues would exist with today's traffic operating on dirt roads.
4. Perhaps one of the biggest contributions of the space program has been its environmental research, and the by-products of operating in space. Perfecting fuel cell technology that powers the space craft and space station is a major step toward getting off the dependency on oil. The space shuttle heat shield tiles are made from high quality processed sand, and its numerous computer systems are driven by the silicon computer chips.
5. Everyone recognizes the need for glass in homes, cars, businesses, containers, etc., made primarily from sand. Glass is one of the most recycled of man made products...clearly benefiting the environment. Low-E insulated glass windows can now achieve an R factor equal to insulated walls in homes, and reduce heating bills while reducing the dependency on fossil fuels.
6. Using sand as a proppant in gas and oil wells is known as fracking. It increases the amount of gas and oil production by 50% or more. Without using frac sand, the environmental issues of using 50% more oil/gas would not be good, and the cost to consumers would be extremely high.
7. One rail car hauls the equivalent of four trucks. A rail car can move one ton 423 miles on one gallon of diesel fuel. According to the EPA (Environmental Protection Agency), 19.4 lbs. of CO₂ is released into the environment for every gallon of gas burned in cars and trucks. Rail is the safest mode of transportation. Rail will reduce the "carbon footprint" more than any other change in transportation vehicles. The right-of-way for rail lines is far less than freeways. Sand processing companies are one of the leading industries in using rail in getting their product to market...to the benefit of the environment.

HOW IS SAND CRITICAL TO IMPROVING PERSONAL HEALTH?

1. The attached one page summary documents, via major university based studies, the importance of having silica in your diet.
2. Silica is one of many minerals in most vitamin and mineral tablets taken daily by many people.
3. Women unfortunately suffer bone loss and have more osteoporoses than men. Bonevia, the once per month pill being advertized by Sally Fields to combat osteoporoses has silica as a key ingredient.
4. Glucosamine Chondrition is a product taken by both men and women to help with bone and joint deterioration and resulting pain. Osteo-Biflex is a leading product with glucosamine chondrition, and the label clearly identifies silicon dioxide (silica) as an ingredient.
5. Dental health is important for everyone, including young children. A review of ingredients demonstrates most toothpaste has silica. Some of the young child training toothpaste with silica indicates it is safe for children to swallow.

HOW IS SAND IMPORTANT FOR COMMUNITY HEALTH?

1. A major focus in helping poor third world countries with their health problems, from infant mortality, dysentery, and many other polluted water based diseases is to get water filtration systems installed. Similarly, most cities and communities with public water systems install the latest technology in water filtration systems. The basic component of these filter systems is a series of various sized processed sand granules.
2. What is nature's way of filtering air pollution, smog, engine exhaust, coal burning exhaust fumes from utility companies, etc.? Rain brings the pollutants to the ground, and it is filtered by the ground, usually sand, before it reaches the groundwater. (See attached picture).

HOW IS SAND IMPORTANT FOR NATIONAL SECURITY?

1. How national security is achieved is undoubtedly a very debatable topic. But, most people would probably agree on at least the following three items, as a support base for a strong military; (a) spy satellites, missal defense system, high tech guided offensive weapons, etc. , all need computer silica chips; (b) the most advanced engines for water, air and land based ships, planes and vehicles, etc., all need foundry based

molding sand for casting the engines, and (c) a good road transportation system made of concrete or blacktop (made primarily from processed sand).

HOW IS SAND CRITICAL TO ACHIEVING A GOOD QUALITY OF LIFE?

1. Having a good job and being able to pay income and property taxes to support good schools, pay for police protection, fund needed community services, provide recreational areas/parks, and protect the environment (DNR) would be a good start toward achieving a good quality of life. Having enough money to buy a home, car, boat or recreational vehicle, television set, computer or many other products requiring sand based manufactured products is part of the American dream. How many millions of jobs are involved from the many industries producing sheet rock, glass products, concrete and blacktop, tires, electronics, toilets and other ceramic products, abrasives, cameras, television sets, binoculars, cars, steel (all melting furnaces and fireplaces have sand based brick linings), etc., etc.? The list of the hundreds of sand based industries goes on and on and quickly leads to the conclusion sand is a major factor to having a good economy and a good quality of life.
2. **Safety:** New high tech hurricane glass, now required in many states that experience hurricanes, saves lives, greatly reduces economic losses and provides safety for homeowners.

SUMMARY

With the unquestioned need for a successful sand industry, the question quickly narrows to why there is opposition to the sand processing plant or the mining of sand? Everyone can relate to the issue of the sand business being "Important", "Critically needed", or "Essential", **"BUT, NOT IN MY BACK YARD"**. The follow-up question is, "If not in a zoned heavy industry industrial park, under City, DNR, OSHA monitoring, where is the best place for this essential industry?"

Perhaps the issue is one of supporting existing plants, and not wanting new producers? This is not capitalism or the American way. But, like the many small grocery stores, hardware stores, dime stores and other small businesses that were impacted by a new Wal-Mart store or a Home Depot or new shopping mall...there were people affected by these developments who were opposed to these developments.

If the issue is one of not wanting any new sand mines or sand processing plants...thus preventing Competition for existing sand mines or sand plants, it poses some questions. "Who is paying for the opposition legal fees or an opposition website or mailings?" "If there is opposition legal services (or any legal services) provided to a township free of charge, why and by who is a legal question in itself?" If the opposition groups are not paying for legal services...in actions against or making representations before the City, County, Planning Commission or Township, the question is, "Who is paying for these bills, directly or indirectly?" If it is a non-profit, tax exempt organization, "Is it stated part of their charter and stated solicitation of funds to oppose and fund opposition of only new sand mines or sand processing plants by companies that have not been in business for many years?"

February 26, 2015

Stacy Harbaugh
Communications and Outreach Coordinator
Midwest Environmental Advocates

Chris Willger,
Department of Natural Resources

Stacy and Chris:

I very much regret that I am not able to make one of the three public meetings being held in regards to frac sand mining. This issue is probably the most important environmental and health related entity to hit the state in its entire history.

I wish I had been able to attend the hearings because I could have expressed my concerns much better and more thoroughly.

Let me say that I feel the DNR has been derelict in its duty to protect the health of the people of Wisconsin. I do not understand why personnel in the Department have not been clamoring for a thorough study of water use in frac sand mining, and even more importantly, why there has not been an outright rebellion by DNR employees about permitting and licensing sand mines with no safety in regards to fugitive sand particles in the air around mines and processing facilities. I understand that you (the DNR) have a land developer for a commissioner, but that doesn't allow you to abandon your duty, as specified by statutes, to protect the health of the residents of Wisconsin. If you can't do that, then you should demand that the statutes be revised so that you are not in violation of them.

Stacy, let me thank you and your organization for heading up and organizing these hearings. It is long overdue, but now that it is happening, THANK YOU!

Chris, I hope you and your organization take these concerns, not just mine, but everyone's, very seriously, and that you begin to feel the pain and heartache many residents are feeling at the profit of a very few residents and an even much greater profit for a very few sand companies. Also, please begin to do something about the silica dust which is present everywhere around sand mines and processing facilities. I don't know how you are going to be able to do that if the governor's budget is passed with its great decrease in funding for the DNR, especially the science area.

Thank you for allowing me to comment on this issue.



Stacy Harbaugh
Communications and Outreach Coordinator
Midwest Environmental Advocates

Chris Willger
Wisconsin Department of Natural Resources

It has come to my attention that you are holding hearings on frac sand mining for the purpose of actually placing some restrictions on the airborne particles that are being emitted into the air due to the mining. This has been a very serious concern of mine ever since the sand companies began mining in the state. At the present time there are no restrictions on the emissions that are occurring at operating sand mines. In addition, the DNR, even though many in the department know that fine silica dust is dangerous to human health, has ignored the problem, and some personnel have even stated there is no problem, when in truth, there is presently no standard for fine silica dust particles, and there is no initiative in the Department, to develop a standard. The Department has a standard for PM10 particles (10 microns), but these are not the size particles that are of real danger. The Department needs to develop a PM 2.5 (2.5 micron) standard, buy the monitors to sample that size particles, and get at it.

The question becomes, how can you state there is no problem, when you haven't even addressed the issue? The article I am enclosing is from the Minneapolis Star-Tribune (Wed, Feb 18, 2015), and it is about a similar problem that exists with iron mining in Northern Minnesota. Like Wisconsin is doing, the state of Minnesota refused to address the issue of fine particles in the air caused by the mining of iron. Now, many years later, the real problem is coming to light. People associated with the mining of iron are coming down with mesothelioma, a lung disease very similar to silicosis, and it is a fatal disease.

We cannot allow the mining of sand in Wisconsin to continue unabated with no restraints on the industry as far as fine sand particles are concerned. We need to measure the amount of fine sand particles in the air in the mines themselves, as well as the amount of fine sand particle affecting the residents in the surrounding areas of the mines. To deny that there are fine sand particles in the air around sand mines is ludicrous. Just park your car somewhere near an operating sand mine for one week. At the end of that time there will be a substantial layer of fine sand all over your vehicle.

There is some literature available on silicosis and cancer caused by fine sand particles (see enclosure), but much more needs to be done. And lots more needs to be done for the safety of the public. One of your most important charges ((for the Wis DNR) is to safeguard the health of the citizens of Wisconsin. Yet, here you are, denying there is a problem, when you don't have the foggiest idea about the problem itself.



★★

B2 | The moose population in Minnesota continues to decline, says the DNR

Twin cities + region

STARTTribune.com/LOCAL

SECTION B • WEDNESDAY, FEB. 18, 2015

“I don’t think there is any reason to panic at this point in time.” Health Commissioner Ed Ehlinger

“The science goes way over my head, but there is a problem here.” Dave Trach, retired miner

More iron miners stricken with rare lung cancer

By DAVID SHAFFER
david.shaffer@starttribune.com

Minnesota health researchers say a rare, deadly cancer has struck 21 additional Iron Range miners, making a total of 101 workers afflicted in the state’s iron ore industry.

The victims, most of whom have died, suffered from a cancer called mesothelioma that affects the lining of the lungs and other organs. It is linked

to exposure to asbestos, and research has shown that Minnesota taconite workers get the disease at 2.4 times the rate expected under normal circumstances.

The Minnesota Department of Health findings released Tuesday add to the evidence that inhaling mine dust can trigger illness decades after exposure. Mesothelioma takes 30 years or more to develop, and is almost always fatal even with improved treatment.

“We know that mesothelioma is a horrible disease,” said Health Commissioner Ed Ehlinger.

But Ehlinger, on a conference call with reporters, said the uptick in cases isn’t happening in northern Minnesota’s general population. The stricken miners likely inhaled commercial asbestos on the job decades ago before the health threat became clear in the 1960s and early 1970s, he said.

See **CANCER** on B8 ▶

More Iron Range miners die from rare form of cancer

►CANCER from BI

"I don't think there is any reason to panic at this point in time," the commissioner added.

"These are newly identified people whose disease after many years ... came to a point where it could be clinically diagnosed."

At least 18 of the newly identified victims have died, as have all 80 of the earlier-identified miners, the department said.

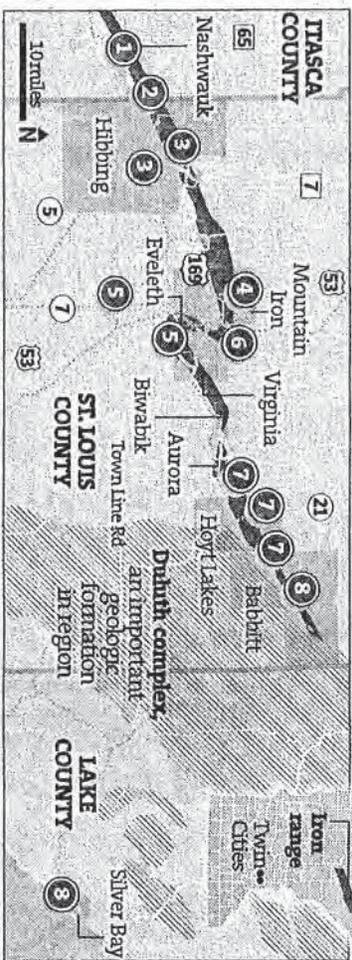
University of Minnesota researchers have linked mining dust exposure to scarring of the lungs and higher rates of mesothelioma. But commercial asbestos, which once was used in the taconite industry, remains a prime suspect. All of the victims are men, and women in the region have a lower-than-expected mesothelioma rates, the department said.

Dave Trach, who retired from the LTV mine in Hoyt Lakes in 1996, said he was saddened but not surprised to hear that more miners have died of the rare cancer. He said the tally of mesothelioma cases doesn't count the many miners who got sick or died from other dust-related ailments.

"The science goes way over my head, but there is a

MINNESOTA TACONITE OPERATIONS - PAST AND PRESENT

The state's second wave of iron mining began in the 1950s, using new technology to process an ore called taconite into pellets.



Source: Mining companies; Minnesota DNR, USGS.

Map Name	City	Began	Workers**	Capacity (tons/yr.)	Current owner	
1	Butler/Essar	Nashwanak	1967	100*	7.0M*	Essar Steel
2	Keetac	Keewatin	1967	395	5.4M	U.S. Steel
3	Hibbing/Taconite	Hibbing	1976	770	8.0M	ArcelorMittal
4	Munntac	Mountain Iron	1967	1,350	14.7M	U.S. Steel
5	United Taconite	Eveleth	1965	514	5.1M	Cliffs Nat. Res.
6	Mironca	Virginia	1977	351	2.8M	ArcelorMittal
7	LTV	Hoyt Lakes	1957	-	-	Closed 2001
8	Northshore	Babbitt/Silver Bay	1955	572	5.7M	Cliffs Nat. Res.

*Butler Pit closed 1986; Essar Steel plans to reopen operation in 2015; worker counts projected; tonnage figure is total capacity; full-time equivalent
 **part-owned and managed by Cliffs
 RAV GRUMNEY • Star Tribune

problem here," said Trach, 80, who coordinates a United Steelworkers retiree group. "When this comes out that there's 21 more, it is bound to be on everybody's mind that, maybe I will have a problem

in later years."

Tracking miners since 2003
 The Health Department has done periodic analyses of miners with mesothelioma since 2003, using the state's cancer-

tracking system. New mesothelioma cases are checked against data on 69,000 miners going back to the 1930s. Nearly 4,000 workers now are employed in Minnesota iron mining.

KEY FINDINGS

Mesothelioma cases in Iron Range miners from the 1930s to 1982:

- 21 new cases
- 101 total cases
- 69,000 Miners employed during that period

Source: Minnesota Dept. of Health

A weakness of the latest findings is that the employment database, assembled years ago by a university researcher, doesn't list miners hired after 1982. Worries about asbestos and cancer on the Iron Range emerged after 1973, when mineral fibers showed up in Lake Superior from tailings dumped by Reserve Mining Co. A scientific debate erupted over the potential risk of taconite fragments, which are shorter than needlelike fibers in commercial asbestos.

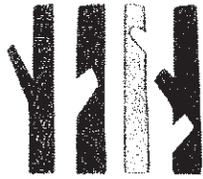
A 2003 study by the Health Department concluded that the first 17 miner mesothelioma cases were most likely caused by exposure to commercial asbestos. The Legislature in 2007 appropriated \$5 million for an in-depth study by the University of Minnesota.

Although the university research team linked dust exposure in miners to disease, the study didn't explicitly associate short taconite fibers with mesothelioma. A key problem is that researchers lack data on how much commercial asbestos floated in the air decades ago at eight current and former mining operations.

"The most difficult thing in this whole project has been that commercial asbestos is far and away the most likely culprit for these mesothelioma," Dr. Jeffrey Mandel, a U.S. epidemiologist who headed the six-year study, said in an interview Tuesday. "It is one exposure area where we don't have any measured information. We will never have that. These exposures took place in the 1950s and '60s."

Mandel said the discovery of 21 additional cases among miners doesn't change the U.S. researchers' findings released in December. He said U.S. scientists, led by Prof. Gurumurthy Ramachandran, already had plans to more closely analyze mineral fibers collected at mining operations to see if exposure to shorter taconite fibers is linked to disease.

David Shaffer • 612-673-7090
 •@ShafferStrib



Midwest
Environmental
Advocates

Speaker Event Report Form

Speaker Name: Kim Wright

Date of event: 2/24/2015

Location of the event: Town of Howard, Town hall

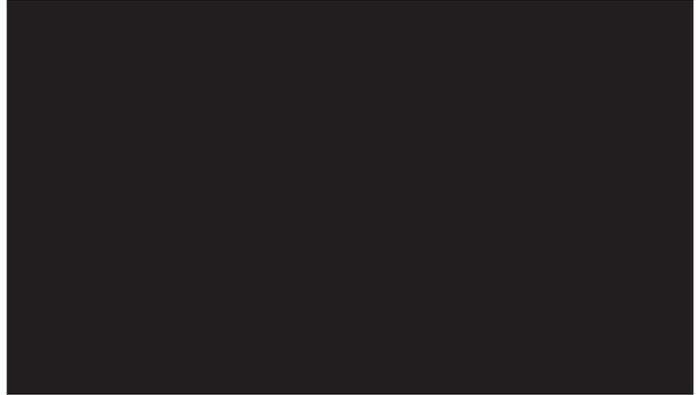
Number of contacts/people in attendance: 55

Short summary of event purpose or topic: DNR strategic analysis
public event on scoping

Other details?

Please return to Stacy on the next business day after your event.

Date:



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

See copy.

Date: 2.24.2015



Are you speaking:

- for yourself
- on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

DNR AIR Standards, monitoring and enforcement.

REQUIRE ALL SAND MINES TO MONITOR HIGH CAPACITY wells for gravelity and quantity standard & enforcement

1

Date: 2/24/15



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

- Legal aspects of leases & confidentiality agreements
 - Borehole drilling - no way to monitor w/ secrecy
 - illusion of support - or at least non-opposition - due to payments
 - scope of claims - on land use + grading history of noncompliance w/ existing regulations
(Two leases circulated in my neighborhood are attached)
- Environmental + quality of life impacts since industry came in
 - Noise - multiple frac sand trains daily. Industrial machinery/trucks from early hours of a.m.
 - Flooding below mine after removal of trees (DKS mine - near Knapp; town of Stanton)
 - Open air, stockpiled sand very close to homes + schools

Date: 2/24/15



Are you speaking:

- for yourself
- on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

Economic impacts
water quality
Loss of Habitat
Reclamation

Date: 2-23-15



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

- A) Number of Acres with Soil Cover removed
A Farmland B grassland C Forests
D Forest Soils
- B) Number of acres of wetlands already degraded (2014) Number of Acres degraded (2016) - house full
- C) statewide - Number of acres of groundwater annually degraded from potable to lesser quality
- D) - Financial - Job lost vs created - Economic loss vs taxes collected

Date: 2-24-2015



Are you speaking:

- for yourself
- on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

- Need for this industry
- Synergistic effect of this activity
- How can these sites possibly be reclaimed

Date: 2/11/15



W

Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

Run-off - preventing run-off
- testing of what is in Run-off
and stormwater ponds

Waste material comes back from other sites. Depending on the natural heavy metals and minerals in the soil, How does adding materials from other sites potentially change make-up of soil. Are there reactions, is there potentially higher concentrated heavy metals in waste material, does it add a new problem to mine sites. Can we test waste material more.



Their analysis of our
petition. Before, they looked at
medical research and ignored
some of their own literature and
said that none of the studies
could identify the exact role of
crystalline silica relative to
other particulate matter from
other sources. In one of their
own research articles it showed
that there was a silicosis risk
of 2.3% in high metropolitan
areas with a concentration of
 $8 \mu\text{g}/\text{m}^3$, but then also it
was talked about in another of
your research articles that downwind
concentrations near a sand and gravel
facility in CA could range from $9.4 \mu\text{g}/\text{m}^3$
to 62.4 . At the high end, that
would increase your risk 8 times or
18.4%. In that study, how many
sand and gravel facilities were
located near by or how by was this
one. I am concerned about
the multiple mines and plants
being in close proximity
Dust plumes seen at our house, dust clouds.

Date: 2-24-15



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

Date: February 24, 2015



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

The issue of reclamation — you can not reclaim a sand mine back to agricultural land. Once the land is used for the sand mine industry, it will not support agriculture for easily generations.

I also believe that the industry is a great polluter —
soil
erosion
air quality
loss of valuable habitat
for birds, deer, plants, and
SCENIC BEAUTY

Date: 2/24/15



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

- ① Study of heavy metals entering water sources as a result of sulfides in formations — sand stone (Hunnel city) along w/ low ph levels & leaching into water supplies — along w/ a report out to citizens.
- ② Study — respirable crystalline silica
- ③ report systems out to public
- ④ impact w/ cumulative effect on air/water etc.
- ⑤ rail travel — impact
- ⑥

Date: 02 24 15



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

- Site reclamation - some gravel pits in the area all black dirt leaving little to close mine one has so little soil sand ~~burrows~~ burrows (weeds) struggle to grow
- water retention ponds and run off
- depths of mine in relation to ground water and aquifer
- Trucking those tarps are eye sandy I followed one and saw a dust cloud following it
more →

1) Flocculating agents and settling ponds -
"lining" of these ponds

Date: 2-24-2015



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

Public Health
Issues of Industrial
Sand Mining:
Respirable Crystalline Silica
Noise
Light

Date:

2-24-2015



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

Date: 2/24/2015

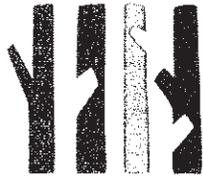


Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:



Midwest
Environmental
Advocates

Speaker Event Report Form

Speaker Name: Kim Wright

Date of event: 2/24/2015

Location of the event: Town of Howard, Town hall

Number of contacts/people in attendance: 55

Short summary of event purpose or topic: DNR strategic analysis
public event on scoping

Other details?

Please return to Stacy on the next business day after your event.

Date: 2/24/15

DWS



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

water study - Deep well
well study - pollution
wind blowing the silica sand
all over, landing on organic
farm crops - grass cows eat.
dyminting - walls + wells that crack
property values - fall -
Breathing in the silica sand -

DNS

Date: Feb. 24



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

- 1 Air Quality
- 2 Water Quality
- 3 - Scientific data already on file in the Courts, Enviro Prot. Agency, federal Courts

Date:

PMS



Are you speaking...

3/1/15

- for yourself
- on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

Main concern: As a professional economist, the glaring problem is the scale of frac sand mines. All negatives will be magnified considerably as the number of sand mines expand exponentially.

The negatives include:

- silica dust (silicosis!)
- groundwater contamination
- traffic (damaged trucks)
- train delays
- noise & lights
- ~~reclamation~~ reclamation
- soil structure, etc.
- landscaping, beauty, etc.

DMS

Date: Feb. 25 2015



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

* off site small ^{silica} particle air pollution. How will you measure it and what standard would you use, since the DNR has refused to set a standard?

DNS

Date: 2-24-15



Are you speaking:

for yourself

on behalf of an organization

WPA Dept Soil

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

- ~~Costs~~
- storm water management plan that doesn't allow storm water to run off the mine site
- study what^{chemicals} the run-off from the mines contains

Date: 2-24-2015

DNS



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

Frac sand mining + it's affects, if any, on water quality

To review

- are ^{front} streams affected w/in 1 mile of a mine

- does the amount of water used for processing affect water quality, or ground level flow

- how are polyacrylamides testing done? does it show that acrylamide is entering drinking water?

To review air quality around mines, or on roads sand is transported, for crystalline silica levels - is it at a constantly safe level?

DNV

Date: 2/24/15



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

How is the amount of fugitive sand measured and by whom?

How much respirable dust is in the fugitive sand?

OSHA has limits on the amount of dust workers can be exposed to in an 8 hour shift. What would be the

limits for people living next door to a mine / processing plant that have to breath dust 24 hrs a day 7 days a week?

According to NIOSH, 79 people in WI died from silicosis in the 1990's, some from non-metallic sand mining.

How many more people will be affected in the future now that we are ~~not~~ probably ^{also sand} mining 100's to 1000's times the amount of sand than we did in the last 50 years?

DNS

Date: 2/24/14



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

Water quality

- how to control stormwater run-off & water with colloidal clay from entering our streams, rivers, ponds, etc.
- Keeping our ground water pure
- fine airborne particles (human health; our ability to breathe)
- Our soil health. We're an agricultural/rural community & this is not a renewable industry. We are using up our natural resources. Please help us, DNR.

Date: 2-24-15

DMS



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

noise impact
well & aquifer impact
air quality
economic (home value)
impact
home foundation impact
visual impact
stress impact (emotional)
how close mines should be
allowed to homes

Date: Feb 24, 2015

DNS



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

- 1) Indian Artifacts
- 2) Noise, Air, water pollution
- 3) Protection from water contamination and/or loss of quality (water).
- 4) Road Damage
- 5) Subterranean compromise.
- 6) Degradation of property and natural terrain.
- 7) When all said and done (i.e. mine) what is left for the future.

Date: 02/24/2015

DNS



Are you speaking: Written Comment!
 for yourself
 on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

The rate of development of the frac sand industry is expanding so fast that effective monitoring cannot keep up.

The negative impact to ground and surface water could be substantial with the high concentration of polyacrylamides due to the washing process. Acrylamide levels can cause major issues with the nervous system and other issues.

Recharge to the aquifer can be greatly affected when these chemicals leech into the soil.

PNS

Date: 2/24/15



Are you speaking:

- for yourself
- on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

Date: 2/24/14

DNS



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

The damage that is being done to the homes and roadways that are in the area of sand mines. Also the noise levels that are associated. We moved to the country for a reason.

Date:

2-24-15

ONS



Are you speaking:

for yourself

on behalf of an organization

I would like the Wisconsin Department of Natural Resources strategic analysis of frac sand mining activity to include the following issues in the scope of its study:

- very concerned about returning waste mat^l to the Pit. This will include polyacrylamide & ~~to~~ heavy metals, that could leach out and/or travel through the groundwater.

Especially study where these wastes are returned to pits that are below ground water levels.

I'm concerned about cancer causing polyacrylamides in my water.

As a farmer, I'm also concerned about dewatering mine pits below groundwater level & numerous wells in a condensation area which will likely affect the natural moisture levels in my farm soils & ~~aff~~ financially, with me having no recourse. (OVER)

(continued)

We Need much more study on fine silica dust (pm 2.5) and the effects on area residents.

Monitoring should be required ~~to be~~ by independent scientific business that is hired by local community, reports directly to local community, and is paid for by the mines.

We need a more responsive DNR to complaints from citizens.

We need a DNR ~~strong~~ ~~strong~~ rules & regs that work for the citizens, ~~not~~ not the mines.

Do Not allow mines to do self monitoring.

Testimony To Guide a DNR Strategic Environmental Assessment of the Impact of Industrial Sand Mining in Wisconsin

The onslaught of large scale sand mining was known prior to the explosion of such mines in Wisconsin. Rather than completing a total assessment of future impacts at that time, Wisconsin chose to attempt using inadequate, inappropriate regulations based on very small sand and gravel pits. The consequence has been dismal. Residents face constant anxieties and threats to their environment and hence their health and welfare. The reclamation plans are lenient and often ineffective. Wisconsin is losing tens of thousands of acres of ag and forest land, as if those areas were worthless unless mined.

There is no wildlife or fauna that is going to thrive on sand. These large sand mines disrupt the environment for plants and animals. Any study in this has been minimal. What happens to bear, deer, birds when they are forced out of their territory? Again, this involves tens of thousands of acres.

Having attended air permit hearings, it is obvious the permit is said and done before the hearing despite what citizens are told. The monitoring is only from stacks and to 2.5pm "where feasible". Ambient air is not monitored except for opacity. Unfortunately for citizens, silica is exceedingly tiny and not seen. The air around industrial sand mine where a citizen is forced to live has not been studied. Over and over citizens complain of sand in homes, coating cars, insides cars, falling out of the air on snow. Nothing changes, neither is any research done by the DNR. When I inquired of the DNR about 1 year ago about research done on air particulates, I was sent study results from the mid 90's. There seems to be no study or consideration to the density or size of sand mines. Why is it that a few states that have industrial sand mining demand air monitored to 2.5pm but Wisconsin doesn't?

The effect of dewatering when used year after year requires special attention. A mine using dewatering can be a significant threat to nearby farms and citizens. Will adjacent cranberry bogs have enough water to operate? Extensive dewatering and it's affect in these sandy soils has to be studied.

With all the disruption of soils, the water filtration system is destroyed. Does buried clay waste stop filtration? A hole refilled with sand is not a natural filtration system. What happens to acrylimide when settling ponds are emptied? Sand does not make berms that are solid. Hence, wash-outs occur. Water flow, groundwater use, surface water paths, and the use of chemicals have not been studied in the situations used by industrial sand mining. Water retention capabilities of the land are destroyed. Neither has any study been done on what is buried in the exposed layers. Arsenic resides in Wisconsin. It has shown up in various parts of the state. Is it being uncovered during industrial sand mining?

Arsenic in water is not acceptable and studies must ensure that it is not being exposed.

Land that is used for forests and for ag has great environmental value. Yet, it is never considered. Land that is not torn apart holds carbon, keeping it out of the air. The loss of forests and ag land contributes directly to polluting the air with more carbon, not to mention the diesel and gas fumes from machinery and processing. The DNR has not considered nor studied how environmentally protective forests and crop covered land are. That has to be done due what is happening to our planet now.

The structure of the underground layers of soil and rock seem to be little studied and understood. The conduction of tremors from blasting is pushed aside as a concern. When your home is shaking and cracks in the basement and walls occur, it is not something to be pushed aside. Are restrictions concerning placement away from homes studied or is old data being used and applied wholesale? The underground rock formations have to be considered, along with the proximity of industrial sand mines to homes. Have studies been made that deal with how ground water is affected by repeated blasts and tremors? How do repetitive underground tremors affect wells?

Reclamation as it is used for industrial sand mining is unstudied. No one knows what will grow best or how to truly "reclaim" the soil. A few small experiments are first beginning now. Erosion occurs. The land is reclaimed, but never restored. Land is not reclaimed with some rye seeding and weeds. What about wetland restoration? Reclamation needs a thorough assessment with attention paid to creating a land capable of sustainability and ability to help preserve the environment.

When the air, water, and land impacts are not adequately researched, when inadequate or inappropriate regulations are applied, it is the people who ultimately suffer. And that is what has been happening. Asthma and health problems occur, nearby wells become affected, domestic and wildlife are affected, and the quality of life for all deteriorates. When I speak to citizens who have been forced to suffer by living next to an industrial sand mine they cannot understand how this is allowed to happen to them. They truly thought the DNR was supposed to offer them protections from the worst impacts. If they are farmers they lament about all the regulations they have to follow, yet watch the neighboring sand mine create havoc with the water, air, and soil and wonder why the mine can get away with it.

The permitting and operating process for industrial sand mining needs to be based on science, not on simply shuffling papers. The background science must be unbiased, not based on something a mine employee writes. That means each individual mine requires significantly more study than has been previously given. A mine in one's neighborhood is never too small to be dealt with, something I have been told by a DNR official. There needs to be an assessment made as to how citizens can ask questions, get information, report problems, be reassured by

the DNR and have the department actually respond to them in a clear manner. If the DNR lacks the money to do an assessment with depth, the huge (national and international) industrial sand corporations will need to pick up the tab.

"Clean air, clean water and healthy landscapes. These are foundations of Wisconsin's economy, environment and quality of life. They are the assets that separate us from the rest of the pack." -DNR website.

The above quote is just words. Now it is time for the DNR to make those words a reality.

Note: This paper will be shared with elected government officials.



February 24, 2015

COMMENTS FOR SCOPING HEARING 2-19-2015

I think with a issue this big and the many different angles of the sand mining industry this study needs to address that DNR needs to submit a outline with the questions to be answered for a short public comment period ~~the study~~ before commencing the study in order that nothing gets overlooked.

This study needs to inventory the following items;

1. How many mines and facilities are currently permitted.
2. Their size and location including their potential expansion
3. The extent of land leased to be mined not yet permitted in the state
4. Inventory the full extent of deposits for potential expansion and their economic viability and proximitinty to railroads in the state.
5. An Inventory of regulations and entities regulating current mines and processing facilities and by what unit of government and under what statutory authority, to what degree current regulations are being enforced and what is their level of effectiveness in dealing with the issues involved.

In addition this study needs to look at all the amount of flocculants and coagulants being used in all phases of mining including washing, storm water treatment etc. These agents chemistry and synergetic reactions in the environment and final disposition in waste sand, in reclamation, in surface and groundwater needs to be studied. Are the current records of usage and record of disposition of wastes adequate?

Cummulative impacts of multiple sites on surface and groundwater and air quality need to be studied in winter as well as summer in both wet and dry periods. Each of these scenarios brings with a seperate set of issues to be addressed.

Here is a direct quote from the 2011 DNR Silica Study; "Citizen comment: Every emission source from every process at sand mines should be identified in the report and evaluation of how far the silica travels from the source should be included in the report.

■
DNR Response: Not enough is known about each source's emissions and the particle sizes to include this much detail in this report and sand mining is just one source category. That level of detail is not possible to achieve in a report such as this. In addition, since particle sizes are not known and emission estimates are uncertain it is not possible to quantify how far silica travels from a source."
I believe we as citizens of the state of Wisconsin are long overdue the answer to this question as well as what are the cummlative impacts from multiple sources such as in the New Auburn area where we currently have 4 operating dry plants, of which 2 are undergoing massive expansions, 7 more between Hwy 64 and Chetek in various stages of either construction, permitting or planning and at least 1 resin plant, not to mention that each of these have at least 1 mine and many have multiple mines associated with them. We are literally talking about thousands of acres open and being mined at one time 365 days a year in a very small geographical area, making this a very concerning source of particulates degrading the air quality for many people. Each of these facilities has been or will be permitted based on the same ambieant air information with no consideration given to any of the other mines or processing facilities in the area. I for one expect better answers in this study then this, if it is not possible to get a good scientific answer to questions such as this by the time this study is completed I believe we need to have a process where a addendum can be added after the main body of the study is released Those areas needing to be put in an addendum need to spelled out with a

timetable for completion in the main study. I also believe that every 6 months there needs to be an update given to the NRB on parts of this study not completed by the first part of next year when this study is slated to be completed.

This study should include an inventory of reclaimed sites, a detailed inventory of projected use of reclaimed sites and a projection of their value post mining as well as the affect of mining on property values in mining districts now and after the industry has left an area.



Good Evening; [REDACTED]
tonight to stress my concern of what Silica
in. I want to let you know that I am not a
before you wonder if you really care about
not been the first dog and pony show that



The other dog and pony shows went nowhere. Shame that you are out again and I expect nothing out of you as your just here for show. Your right; I'm done with the political game you are playing. It is all about money and your failure to act has been seen. Your lack of concern of safety and health issues toward the humans of this state are lacking. I see more concern with enforcing the hunting and fishing rules against its citizens. Yet you fail to enforce what this sand industry does to the citizens.

Case in point the DNR has no problem filling in wet lands for this industry. However a land owner fills his or creates his own wet land you're on his tail and taking him or her to court.

Case in point the DNR failed to fine Superior Silica Sands for their waste water spilling and going into a trout stream. That was in the Bloomer area and in the paper; water that has carcinogens chemicals in it. The DNR has shown its true colors of ignoring this violation and looking the other direction. Their actions have shown many in the state that you are protecting the silica industry.

Case in point again there was a recent article that I read on how an individual that was living in the country has had his well dry up. Concern was with the sand plant that was taking water from the ground for their industry; because they ignore or given the liberty to take as much water as they want.

The case has been made already that a person with common sense has seen that there have been no environmental impact studies with this industry. Yes, in other states and yet Wisconsin fails to check out those studies. They want to reinvent the wheel.

Good Evening; I'm [REDACTED] I'm here tonight to stress my concern of what Silica Sand is doing to the community I live in. I want to let you know that I am not a politically correct individual. I'm here before you wonder if you really care about my or anyone else's concerns. It has not been the first dog and pony show that I've spoken to.

The other dog and pony shows went nowhere. Shame that you are out again and I expect nothing out of you as your just here for show. Your right; I'm done with the political game you are playing. It is all about money and your failure to act has been seen. Your lack of concern of safety and health issues toward the humans of this state are lacking. I see more concern with enforcing the hunting and fishing rules against its citizens. Yet you fail to enforce what this sand industry does to the citizens.

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New Auburn is a community that has a government that has opened its arms and spread its legs to allow the industry in. It has two sand plants within the community and there are many issues.

My wife and I own property at 147 W. Pine Street in New Auburn. It is within a residential section of the village. It now sits in front of Superior Silica Sand Plant. A drive way to a residential home turned into a two way street. At one point silica sand blew out of these grounds. OSHA was called by a Union OSHA trained individual renting our property and it was ignored. OSHA only deals with what happens within the plants property and not outside. We don't even have our DNR or our state government protecting us.

This property on W. Pine Street and its owners, us; were never informed about this plant entrance going in through a residential section of the village. The local government continued the pleasure of opening its legs wide to enjoy the fruits that would benefit certain individual while it harmed many other residents.

My wife and I live a block away from this entrance of Superior Silica Sands. Our qualities of lives is no longer there. The noise of train engines for this industry sits within the residential area and has driven us into our basement. We no longer use our master bedroom. Let's not talk about the dust from this industry that gets into the home or seen on our vehicle that are parked outside. This dust is not able to be seen with the naked eye.

Our neighbors right next door to us; the Mettner's left New Auburn. Why did they leave? I know you don't care but I'll tell you why. They left because of the problems with this industry within a village. The dust that is not able to be seen with the naked eye resulted in Mrs. Mettner going from one inhaler to three. The noise from this industry; trucks, heavy equipment and the train engines idling lowered their quality of life and their health took a toll. The health of two adults and three children was getting worse. They had lived at this location for over 10 years. They owned their home and walked away from 10 years of investment. Additionally they removed their three children from the New Auburn School District. Let me say that the sand industry agents even threaten them because they spoke out against this industry and the harm it was doing.

As I mentioned the Mettner's children I want to talk about what this industry is doing to the New Auburn School. I know you don't care but I'm going to let you know. Many know about this and it is no secret that these fine particles of silica sand travel east from the plant in the village and is sucked into the schools filters just a short distance from it. These unseen particles were making it past the current filters that the school had and into the air that the children, teachers, and employees breathe in. The school may say nothing about it; but we hear they enjoy the money that is tossed to them by the industry.

I want to let you know too that the numerous train derailments have caused concern. Within the last few months there have been three derailments. An I hear there is propane cars coming. Are you concerned about that? Probably not.

I am by no means a tree hugger. My father worked building refineries and even worked for a refinery until he retired. However these refineries were outside villages/cities. My father from Saskatchewan, Canada gave our family trips to that area to visit relatives. There in Estevan, SK, Canada was Saskatchewan Power. They have a few power plants in the area that produce electricity for a large area and it uses coal. Saskatchewan Power digs for coal like the silica industry digs for silica sand. However Saskatchewan Power before they dig buys everyone out in a two mile radius. They do that and yet the amounts of individuals/homes in that radius are few. My point with this is that in Wisconsin there is no such guideline to protect its citizens. There are many citizens/homes in a two mile radius. Silica mines and plants are close to homes, business, and even schools. Wisconsin could take a page from Canada to protect its citizens.

As I close I wonder if you really care. This is not the first time you, the DNR has listened to the concerns of the public affected by this silica industry. We are educated individuals, retired educators, retired geologist and others that have educated themselves on this issue are ignored because we don't work for the silica industry. I find it a shame that no one seems to care. Care means to stop the dog and pony shows and do something to help the citizens. Are you going to start listening? Or are you going to continue ignoring individuals that live in these areas as they know what is going on. As I told you what is going on in New Auburn, the

residential areas opened to silica traffic, fugitive silica dust, and even affecting the school have gone by the wayside by the DNR and the state of Wisconsin. Who can we count on? There have been no environment studies on this industry and you continue to allow this industry to grow.



The most important thing I'd like to see included in the DNR's Strategic Analysis of frac sand mining in Wisconsin is how differently these mines affect different areas. Recharge Zones vary greatly across different regions of Wisconsin, making pollution of groundwater more likely in some areas than others. Heavy metal and other toxic substances in the buried geology of an area make the possible release of these substances more likely in some areas than others. Certain wildlife is more prevalent in some areas making the mines' effects on wildlife differ from area to area. The presence of trout streams, lakes, rivers, and other surface water also varies making the effects differ in these areas too. This analysis should include why Wisconsin should not be treated in a one-size-fits-all-manner.

These are specific questions and concerns I have about frac sand mining in Wisconsin, but I am also concerned that whatever standards are set or recommended by the DNR need be minimum standards and not restrictive. If an area has reason to require stricter standards, or new information, problems, tests, etc. develop, other standards can be used instead as long as they are not less restrictive than the DNR determines is safe. I would like to request when regulations are set or suggested that consideration be given to what happens when the DNR's budget, staff, and/or authority is controlled by the legislature instead of by the health and safety issues of the local area.

1. How many acres or per cent of acreage of freshly fractured crystalline silica is safe to be exposed in an area at one time? Shouldn't there be some limit of exposed silica set? The more raw material left exposed, the more stockpiling, the longer the conveyance to transloading stations, the more respirable crystalline silica is picked up by the wind and put into the air we breathe. What should that limit be? Shouldn't contemporaneous reclamation be mandated so people and animals are exposed to as little of this freshly fractured silica as possible? It would also give credence to the sustainability of current reclamation plans.
2. What are the cumulative impacts multiple mines (or one large mine) on an area's air quality?
3. How much crystalline silica is safe to breathe? What standards should ordinances have to safeguard people's health? Should these standards be stricter for children than adults? For the elderly, sick? New York has studied this already. Can we use the standards they already have in place—at least as a starting point?
4. What is a safe setback distance to nearby residents, schools, and medical facilities including nursing homes? Crispin Pierce has measured toxic levels of crystalline silica 2 miles away after blasting. This stays suspended in the air for up to 15 days depending on the weather conditions. He says further testing should be done to determine what levels exist in the air at distances further than 2 miles. The Saudis have 10 kilometer setbacks. Shouldn't we be at least as concerned about our air quality as they are?
5. Blasting causes respirable crystalline silica to go quite high in the air. The higher it goes, the further out it spreads. Can berms be used to adequately prevent this spread? How high would they have to be? Should blasting be prohibited—especially where non-percussive means can be used more safely?
6. What are the cumulative impacts multiple mines (or one large mine) on an area's water quality?
7. What are the cumulative impacts multiple mines (or one large mine) on an area's water quantity? Shouldn't high capacity well use for agriculture and other industries be

- included when considering the impacts these mines have on the water quantity of ground and surface water?
8. How long should groundwater be monitored after reclamation? Chemicals used in settling and wash ponds, as well as toxic heavy metals released from the deep rocks when blasted can leach into ground water long after the mine site has been abandoned. How long should testing and monitoring be done to make sure these don't leach down into the groundwater?
 9. What specific ground and surface water testing should be done to determine pollution, change of pH, temperature or other factors affecting the ability of normal aquatic life to be sustained and its safety for drinking? How can this pollution be prevented?
 10. What water mitigation plans should be required in case of pollution &/or contamination?
 11. How long should ponds and other surface waters be monitored after reclamation? Will the ponds left behind by these mines be safe to swim in, for fish and other aquatic species to live in, for wildlife to drink from?
 12. Invasive plants may be the only type of growth that can be sustained in reclaimed land that may not hold moisture any better than desert sand. How long should plant growth be monitored for sustainability (without irrigation) after reclamation?
 13. If land is going to be reclaimed as residential or industrial sites, what soil compactibility standards should be met in order to put in stable building foundations? The ground is too unstable after blasting and sand removal and exchange for overburden, etc. to support stable foundations for buildings without compaction.
 14. If land is going to be reclaimed as forestland, what tree species and sustainability standards should be required? I have had Black Walnut trees planted to replace groves ruined by tower construction without enough taproot or other means to sustain their growth. How can this type of thing be prevented with reclamation done by NMISM's?
 15. What crop productivity levels for land reclaimed to agricultural cropland, or pasture plant density levels for land to be reclaimed as agricultural pasture should be required as standards for reclamation to meet?
 16. If land is to be reclaimed as agricultural cropland; will it be safe for fertilizers, pesticides, and herbicides to be spread without it being washed into the water table every time it rains?
 17. Noise levels affect people's health and hearing among other things. It probably affects wildlife, pets, and livestock also. What noise limitations should be set to maintain the health and safety of nearby populations?
 18. Seismic vibration affects livestock and wildlife at greater distances than it does humans. What seismic limitations should be set for any blasting or other percussive actions used by these mines?
 19. How many animals living around these mines are experiencing health problems? Veterinarians in some areas are noticing increased reproductive &/or other issues in cattle around mine sites. Lower conception rates, more early embryonic deaths, higher stillborn and weak calves at birth. This is seen more with smaller farms with organic & rotationally grazed animals kept outside where frac sand dust is in the air and settling in the grass they eat and wastewater is washed into ponds where they drink.
 20. How do these mines affect the wildlife in the area? Water with much higher than the 40 mg/l TSS is regularly being discharged into our streams. Does the colloidal clay now covering the bottom of these streams affect the reproduction of some of the fish (like trout)? If water with crystalline silica is unsafe for us to drink & food with crystalline silica is unsafe for us to eat, what affects does it have on fish & other aquatic life?

21. Is it safe to eat produce grown close to the mines? Will lettuce, cabbage, broccoli, and other above ground crops contain crystalline silica that is difficult to rinse off and doesn't even have a half-life like some of the herbicides or pesticides? If so, how does this affect the health of those eating their own produce grown in the area of these mines?
22. Light pollution can adversely affect the health of nearby residents. It can be an attractive nuisance for some wildlife and possibly affect the health of other wildlife. What are safe limits of light to keep habitation and recreation areas in the vicinity of NMISM sites free from unwanted light trespass, glare, and over illumination?
23. What chemicals are safe to use as flocculents? Shouldn't chemicals be banned from use as flocculents until they have been found not to be a contaminant &/or testing measures and standards are developed for them?
24. What distance above water tables should be maintained? Should soil permeability standards be incorporated into this distance?
25. What recharge zones are safe for mining without causing a groundwater contamination hazard for an aquifer? Neil Koch (hydrologist from Menomonie) has indicated that recharge zones labeled excellent, very good or good soil type as verified by the exploratory boring should not be mined for groundwater safety reasons. Excellent, very good and good recharges are defined as 2 inches recharge per hour or faster.
26. How much toxic or respirable crystalline silica escape from both covered and uncovered trucks?
27. How much toxic or respirable crystalline silica escape from both tanker and open rail cars?
28. How much toxic or respirable crystalline silica is in the air around transloading stations, processing plants, and conveyer systems?
29. Crispin Pierce has measured toxic levels in the air by railroad tracks that have frac sand transported along them as opposed to none by those tracks not transporting frac sand. How safe is it to live along these tracks?
30. How safe is it to live along frac sand truck hauling routes?
31. How far away from residential areas should transloading stations be?
32. How far away from residential areas should processing plants be?
33. How far away from residential areas should conveyer systems be?
34. If this dust is just as toxic to livestock, pets, and wildlife, these same questions need to be addressed for them.
35. When considering cumulative impacts of noise and light from either the mining operation or trucking to and from the mine site, processing plant, or transloading stations, shouldn't nearby industrial sites, distribution centers, and other light and noise producing industries be considered?





Speaker Event Report Form

Speaker Name: Kim Wright

Date of event: 2/24/2015

Location of the event: Town of Howard, Town hall

Number of contacts/people in attendance: 55

Short summary of event purpose or topic: DNR strategic analysis
public event on scoping

Other details?

Please return to Stacy on the next business day after your event.

MINERAL LEASE

This Mineral Lease (the "Lease") is dated this ____ day of _____, 2011 ("Effective Date"), by and between _____, (relationship) _____, hereinafter called "Lessor", whose address is _____, Wisconsin and Glacier Sands, LLC, a Wisconsin limited liability company, hereinafter called "Lessee", whose address is 17730 Breconwood Road, Wayzata, Minnesota 55391. Lessor and Lessee are sometimes collectively referred to herein as the "Parties".

WITNESSETH:

THE LEASE

For and in consideration of the mutual promises and covenants set forth herein, the sufficiency of which is hereby acknowledged, Lessor and Lessee agree as follows:

1. **Due Diligence Period.** Lessor hereby grants Lessee the exclusive right to enter upon the Leased Premises (defined below) to conduct due diligence on said Leased Premises for the feasibility of removing any and all Minerals (defined below) located thereon, said due diligence to include the right to conduct exploratory drilling, assess the requirements for wetland mitigation and mine permitting, perform a boundary survey, and to do and perform any and all environmental investigations and activities necessary and incidental for the development of the Leased Premises and to exercise Lessee's "Option to Lease" the Leased Premise as provided below.

The above-granted due diligence period shall commence on the Effective Date and extend for a period of up to twelve (12) months from the Effective Date of this Lease, expiring upon the earlier of the Commencement Date (defined below) or (month,date) _____, 2012 (hereinafter, the "Due Diligence Period"). As consideration for said Due Diligence Period, Lessee hereby agrees to pay: _____ (\$ _____) to said Lessor upon execution of the Lease. Lessor agrees that during the Due Diligence Period, and during the lease term, if applicable, it will not enter into any discussions, negotiations or transactions with any other person or entity with respect to the Leased Premise or the Minerals located thereon without the prior written approval of Lessee, which may be granted in Lessee's sole and absolute discretion. Lessee will pay Lessor the value equal to One Thousand Two Hundred and No/100 (\$1,200) per acre for any disruption or damage caused by Lessee's operations to the farming operations on the Leased Premises in 2011 and/or 2012.

2. **Option to Lease.** In addition to the due diligence rights granted in Section 1 above, Lessor hereby grants Lessee the option to lease the Leased Premises on the terms and conditions set forth herein (the "Option to Lease"). At any time prior to the end of the Due Diligence Period,

Lessee may exercise the Option to Lease, by sending to Lessor written notice of such exercise. The lease rights described herein shall commence on the date set forth by Lessee in such notice (the "Commencement Date"), and shall terminate as provided herein below. If Lessee exercises its Option to Lease, as consideration for said Option to Lease, Lessee hereby agrees to pay _____ (\$ _____) to said Lessor upon the exercise of said option (i.e. the Commencement Date). If the Lease is not exercised by the end of the Due Diligence Period, this Lease is hereby terminated and the Lessee will place of record a release of the Memorandum of Lease with the Register of Deeds of _____ County, Wisconsin.

3. **The Lease.** Lessor hereby leases, demises and grants to Lessee and Lessee hereby leases and takes from Lessor, for the sole and exclusive purpose of prospecting for, exploring for, producing, developing, mining, extracting, removing, storing, transporting, transloading, and marketing the Minerals (herein defined), the surface and subsurface estate of the approximately _____ acres more or less of real property less and except _____ acres surrounding the current home site and out buildings (hereinafter referred to as the "Leased Premises"), lying and being situated in the _____, Wisconsin including thereon all minerals and all construction materials including but not limited to any and all sand, industrial sand, sandstone and silica sand (hereinafter collectively called "Minerals") in, on and under said real property, all as more particularly described in Exhibit "A", attached hereto and incorporated herein. Included is the reasonable right to ingress and egress, the right to make excavations, stockpiles, impounds, treatment, tailings or settling basins, roads, utilities and other improvements as may be necessary to produce, save and take care of such Minerals on or from the Leased Premises. The location of all such activities are subject to the reasonable consent of Lessor (which consent shall not be unreasonably withheld, conditioned or delayed) and on mutually agreeable terms between the Parties that will minimize the disruption to any farming operations to the extent possible.

In conjunction with the lease of the Leased Premises granted herein, Lessor hereby grants to Lessee the exclusive right to prospect for, explore for, produce, sample, drill and test for, develop, mine, quarry, extract, process, sell, remove and market Minerals during the term of this Lease, and the non-exclusive right to the use of any surface and subsurface water on the Leased Premises. The rights hereunder shall also include the right to blast, excavate, remove, pile up and dispose of overburden and waste.

Notwithstanding the foregoing, there is hereby excepted and reserved to Lessor and Lessor's successors and assigns the full use of the Leased Premises and all rights with respect to the surface and subsurface thereof for any and all purposes except those granted and to the extent herein granted to Lessee, together with the rights of ingress and egress and use of the Leased Premises by Lessor for all purposes (including, without limitation, any and all agricultural/farming purposes and hunting activities) not inconsistent with the rights granted to Lessee in this Lease. All of the rights in and to the Leased Premises retained by Lessor and all of the rights in and to the Leased Premises granted to Lessee shall be exercised in such a manner that neither shall unduly interfere with the operations of the other.

4. **Lease Term.** Subject to termination as hereinafter provided, the primary term of this Lease shall be for ten (10) years, commencing on the Commencement Date (the "Primary Term"),

and provided that this Lease has not terminated prior to the expiration of the Primary Term and subject to termination as hereinafter provided, the term of this Lease shall continue following the expiration of the Primary Term for so long thereafter as Minerals are sold and removed from the Leased Premises or the Minimum Royalty is being paid by Lessee.

5. Production Royalty. As a production royalty (herein sometimes called "Royalty"), Lessee shall to pay to Lessor a sum equal to \$1.50 per ton of the Minerals produced from the Leased Premises and sold (and any additional production royalty due under Section 7 of the Lease). The price per ton will have an annual adjustments of up to three percent (3%) per year based on the cost of living index established by the federal government annually (effective one year after the date of the first shipment of sand and each year thereafter). The Royalty adjustment will never decrease. To confirm the tons produced from the Leased Premises, a third party surveyor will establish the amount taking from the Leased Premises and compare against the bills of lading that have been completed evidencing the Minerals sold. As used herein, a ton equals 2000 pounds.

6. Minimum Royalty. In no event shall the Royalty due under this Lease for any calendar year beginning at the later to occur of (i) obtaining all required permits and licenses, if any, related to all sand excavation activities; or (ii) with calendar year 2012 be less than \$ _____ per calendar year (the "Minimum Royalty"). If the required permits and licenses are not received by October ____, 2013, either party has the right to cancel this Lease, unless mutually agreed to extend. The Lessee has the option to exercise the Option to Lease, at any time prior to October ____, 2012 whether the permits and licenses have been received or not. Notwithstanding anything in this Lease to the contrary, Lessor and Lessee acknowledge and agree that during the term of this Lease, so long at the Minimum Royalty is paid to Lessor as provided herein, Lessee shall have no obligation to produce, explore, market, and/or develop the Minerals or otherwise develop the Leased Premises, and this Lease shall remain in full force and effect.

If the Royalties on Minerals produced from, removed and sold from the Leased Premises during any calendar year beginning with the calendar year that the Option to Lease is exercised shall not equal or exceed the Minimum Royalty, then Lessee shall pay to Lessor the difference between the total aggregate amount of Royalty for such calendar year and the Minimum Royalty due under this Lease. *Any such shortfall in Royalty that is then paid to meet the Minimum Royalty will be credited toward the Royalty of the next or subsequent calendar years.*

7. Wash and/or Dry Plant. The Lessor hereby grants permission and hereby leases, demises and grants to Lessee, approximately 40 acres of the Leased Premises for a wash and/or dry plant. The Lessee will pay Lessor a production royalty of \$00.10 (Ten Cents) per ton for the Minerals (i.e. sand) that were washed and/or dried at this location but were not removed and produced from the Leased Premises. The location of the wash and/or dry plant will be as described in "Exhibit B" attached hereto and incorporated herein. The rights hereunder, shall also include the right to erect, use and maintain on the Leased Premises such wash and/or dry plants, buildings, plants, equipment, machinery, offices, shops, tracts, storerooms, tipples, scale houses, pump houses, drainage ditches, power and telephone lines, haul roads and any other improvement as may be necessary or desirable in performing the aforesaid operations and the removal and processing of the Minerals (all of the same being herein called "Improvements").

Lessor hereby agrees to execute all necessary documentation and to reasonably cooperate with Lessee (in any all respects) in applying for and obtaining any required permits and approvals required in connection with the lawful conduct of the wash and/or dry plant on the Leased Premises; provided, however, that Lessor shall not be obligated to incur any expense in connection therewith and Lessee shall reimburse all reasonable expenses therefore. A third party surveyor/engineer firm will be appointed to calculate the amount of Minerals processed and sold at the plant that were not produced and removed from the Leased Premises; such payments will be made within the manner prescribed in Section 8 below. Lessee shall have the right, but not the obligation, to remove any Improvements during the term hereof, or within one hundred eighty (180) days following the expiration or termination of this Lease.

8. Payments and Reports. All Royalties are to be mailed to Lessor, at the address on page one hereof, or at such other place as Lessor may specify in a written notice given by Lessor to Lessee, on or before the 45th day following the last day of each calendar month for the Minerals sold during the immediately preceding calendar month. The Royalty payment shall be accompanied by a report of Lessee completed in the following form and manner. The report shall be based on the type and exact number of tons of Minerals sold during the preceding calendar month. Said report will include bills of lading to confirm the amount of Minerals sold and the third party reporting relating thereto to confirm the amount of Royalty payments to be paid each calendar month. The Lessor will have the right to audit the documents relating to the calculations of tonnage sold.

9. Interest. Royalty payments which are not made when due shall accrue interest as follows: If Lessee fails to pay a Royalty payment when due and such failure continues for more than ninety (90) days after the Royalty payment was due, Lessee shall pay to Lessor interest at a rate per annum equal to the Prime Rate plus five percent (5.0%) (starting on the date the payment was due). As used herein, the "Prime Rate" shall mean the rate of interest in effect for such day as publicly announced from time to time by Bank of America, N.A., a national banking association, as its Prime Rate.

10. Records. Lessee shall maintain appropriate books and records with respect to the Minerals produced and sold from the Leased Premises. All such books and records shall be retained and preserved for at least three (3) years after the end of the calendar year to which they relate. Lessor, at Lessor's own cost and expense (except as otherwise provided herein), shall have the right (once per calendar year), during normal office hours, to examine Lessee's pertinent books, and records, reasonably necessary to verify the Minerals produced from the Leased Premises. Lessor shall have the right to use a profession auditing agency of their choice to complete such audit. If there is an underpayment discovered, the Lessee shall pay Lessor an interest penalty at a rate per annum equal to the *lesser* of (i) the Prime Rate plus five percent (5%) or (ii) the highest lawful rate of interest per annum that Lessor is permitted by applicable law to charge, on the portion of the Royalty underpayment that is due (such interest will begin to accrue on the day following the date on which such Royalty payment was due and shall continue until the Royalty payment is paid in full).

11. Termination of Lease. This Lease may be terminated: (a) upon mutual written consent of the Parties; (b) when sand reserves in approved excavation areas are depleted as determined by

Lessee in its sole and absolute discretion; (c) by Lessor for failure by Lessee to make monthly Royalty payments or the Minimum Royalty Payments, if due, within ninety (90) days after written notice thereof by Lessor to Lessee; or (d) by Lessor based upon any default or other failure of Lessee to obey or perform any of its obligations under this Lease within ninety (90) days after written notice from Lessor to Lessee notifying Lessee of such default. If Lessee is not reasonable capable of curing such default within 90 days and Lessee commences to cure such default within such ninety (90) day period and diligently pursues such cure, the cure period shall be reasonable extended.

12. Operations. Lessee shall, in its reasonable discretion, and in accordance with all applicable laws, determine at what times and in what manner all of its operations on the Leased Premises shall be conducted and the amount of Minerals that are merchantable, i.e., that amount of Minerals which can be economically mined and removed from the Leased Premises, as determined by Lessee in Lessee's reasonable discretion.

13. Reclamation. Should a plan of operation be required by a jurisdictional state or federal agency, Lessee shall work in conjunction with the Lessor and furnish a copy of the plan of operation required by such state or federal agency to Lessor. Any necessary mining and reclamation plan will be drawn up in a cooperative manner and by mutual agreement between the Parties, and be done in a way that will minimize the disruption of farming operations to the extent reasonable possible. Lessor will seek County support at the time a reclamation plan is completed by Lessee for the establishment of a sand and gravel pit in the Township of Arcadia, Wisconsin. Lessor, at Lessee's expense, will apply for the reclamation plan permit with the County Land Conservation Department, and such permit shall be promptly transferred to Lessee. Any necessary overburden removal and any required annual reclamation activities will be the responsibility of Lessee, at Lessee's expense. Lessee shall restore the surface of the Leased Premises to substantially its original condition to the extent feasible and reasonably practical, as determined by, as and when required, and in accordance with applicable state and federal laws and regulations governing reclamation of lands affected by this Lease and the mining permit and related reclamation plan applicable to the Leased Premises and shall satisfy all requirements of such permit and plan. Lessee shall have the right to use the Leased Premises without charge for the purpose of complying with its reclamation obligations hereunder, including after the expiration or termination of this Lease.

14. Damages. The compensation to Lessor herein provided shall be deemed to be full payment for all damages including surface subsidence which may be caused to the Leased Premises by Lessee's operations hereunder; provided, however, Lessee agrees to pay Lessor for, or repair damages to, Lessor's permanent improvements including, but not limited to, buildings on the Leased Premises, incurred in the course of Lessee's operations hereunder, provided the foregoing shall not in any way limit Lessee's obligations to reclaim the disturbed property as provided herein. If Lessee deems it necessary or convenient to cross through Lessor's fences, Lessee may, at its own expense, install adequate cattle guards or gates so as to permit passage by Lessee.

15. Certain Duties and Obligations of Lessee and Lessor.

a. If required by the county, Lessee will pay in a timely manner for any road entryway

damage that might result from hauling sand from the Leased Premises. Lessee will pay in a timely manner for and provide for a road bond insurance policy, for road use if there is a need for sand to be trucked over such roads.

b. The ingress and egress granted herein will include road access to any road necessary for moving the raw sand to the wet plant and/or dry plant and/or the rail spur/load-out area. The Lessor does not warrant that the County or Township will approve these accesses. It is the Lessee's responsibility to apply for these accesses.

c. During the term hereof Lessee shall have the right to the free use of water of whatsoever nature or kind, including water from ponds or water from wells drilled by Lessee and currently existing on the Leased Premises, in such quantities as Lessee deems necessary or desirable for the conduct of its operations; Lessor shall have use of all water developed by Lessee and all other water available on the Leased Premises provided such use does not interfere with Lessee's operations (except the water well that the homestead currently uses). If Lessee causes the current homestead well to go dry, Lessee will as soon as practical drill a new well for the Lessor at no expense to the Lessor.

16. Compliance with Laws. Lessee shall comply with all applicable statutes, codes, ordinances, orders, rules, regulations, and other legal requirements of any jurisdictional, governmental entity, including all laws pertaining to the environment, pollution and health and safety, regarding the operation of Lessee's business and the conduct of Lessee's operations on the Leased Premises.

17. Title Warranty. To the best of Lessor's knowledge (after due investigation), Lessor represents and warrants that Lessor is the owner of fee simple absolute title to the Leased Premises, has good and indefeasible title to the Leased Premises and to all Minerals in, on and under said Leased Premises. Furthermore, Lessor covenants that Lessor has the unrestricted right to enter into and fully perform all its obligations under this Lease, subject to the pre-existing rights of holders of servitudes, rights of way, easements, restrictions and mineral interests of record. Should there be *unrecorded* documents of the kind and character referenced in this paragraph that exist and are presented for enforcement during the term of this Lease or any part thereof which result in the interference with or diminution (i.e. lessening or reducing) of Lessee's rights under this Lease, Lessee, at its sole option, shall have the right to cancel without penalty the remainder of the Lease, and/or demand Lessor defend, indemnify and hold Lessee harmless from the demands of the holder of such unrecorded document including, without limitation, paying all reasonable expenses incurred by Lessee including, without limitation, all reasonable attorney fees, as a result of the unrecorded document sought to be enforced by its holder.

18. Undisturbed Enjoyment. Lessor hereby agrees that what within its legal rights and control, Lessee, its officers, partners, employees, agents, contractors, subcontractors, guests and/or invitees are entitled to the undisturbed enjoyment of its rights in and to the Leased Premises provided for in this Lease (including, but not limited to, the right and the legal noise levels associated with prospecting for, exploring for, producing, developing, mining, extracting, removing, storing, transporting, transloading, processing and marketing the Minerals). Furthermore, Lessor hereby agrees that what within its legal rights and control, Lessee, its