



WISCONSIN LEGISLATIVE COUNCIL INFORMATION MEMORANDUM

Regulation of Sand Mining in Wisconsin

Sand mining is a growing industry in Wisconsin, due to significant deposits in the state of sand utilized by energy companies to extract oil and gas using hydraulic fracturing technology. This Information Memorandum provides an overview of the regulation of sand mining in Wisconsin. Sand mining in the state is primarily regulated at the local level, through nonmetallic mining reclamation ordinances, zoning ordinances, and ordinances enacted pursuant to general police powers. State law establishes required contents of reclamation ordinances and, in some circumstances, limits local authority to enact other types of ordinances. Various state and federal permits and approvals are also required for certain impacts resulting from sand mining.

In Wisconsin, the regulation of sand mining has garnered legislative interest in recent years, following an increase in sand mining activities in the state. Commonly referred to as “frac sand” because it is used in a process known as “hydraulic fracturing,” the types of sand utilized for oil and gas extraction are particularly round and durable. The round shape and durability enable frac sand to generate fractures in rock through which fluid cannot otherwise flow. Numerous deposits of sand suitable for that purpose are found in Wisconsin, particularly in the western part of the state.¹ The availability of frac sand has spurred numerous sand mining operations in Wisconsin.

Sand mining is a type of nonmetallic mining.² Unlike a metallic mine owner, a person seeking to engage in nonmetallic mining is not required to obtain a permit from the state prior to mining, unless the proposed operation involves environmental impacts that are independently

¹ For a map of frac sand deposits, mines, and processing facilities in Wisconsin, see Wisconsin Geological and Natural History Survey, *Frac Sand in Wisconsin*, <http://wisconsingeologicalsurvey.org/pdfs/frac-sand-factsheet.pdf>.

² Wisconsin law defines “nonmetallic mining” to include all operations or activities for the extraction from the earth for sale or use by the operator of mineral aggregates or nonmetallic minerals such as stone, sand, gravel, asbestos, beryl, clay, feldspar, peat, talc, and topsoil, including such operations or activities as excavation, grading, and dredging. In addition, the term includes on-site processes that are related to the extraction of mineral aggregates or nonmetallic minerals, such as stockpiling of materials, blending mineral aggregates or nonmetallic minerals with other mineral aggregates or nonmetallic minerals, crushing, screening, scalping, and dewatering. [s. 295.11 (3), Stats.]

regulated. Also unlike metallic mining operations, nonmetallic mining operations are not subject to taxes specific to mining.³

The primary state law regarding nonmetallic mining is set forth in ch. 295, Stats. The law, enacted in 1995, establishes standards for nonmetallic mining reclamation, defined to mean the rehabilitation of a nonmetallic mining site to achieve a land use specified in an approved nonmetallic mining reclamation plan.⁴ [s. 295.11 (4), Stats.] It directs the Wisconsin Department of Natural Resources (DNR) to promulgate rules regarding the reclamation of nonmetallic mining sites but delegates the responsibility for adopting and administering such reclamation to counties and other municipal governments.

In addition to reclamation ordinances required under state law, local governments may regulate sand mining through zoning ordinances and ordinances enacted pursuant to general police powers. The potential for general police power ordinances became more prominent following the Wisconsin Supreme Court decision in *Zwiefelhofer v. Town of Cooks Valley*, 2012 WI 7, in which the court upheld a town ordinance that imposed certain conditions on sand mining within the town.

The Information Memorandum describes each of the types of ordinances that a local government may enact to regulate sand mining. It then provides examples of various state and federal permits that might be required for certain environmental impacts secondary to mining.

RECLAMATION ORDINANCES

In Wisconsin, counties must, and towns, villages, and cities may, enact nonmetallic mining reclamation ordinances, which govern the rehabilitation and care of a nonmetallic mining site after the mine operation is terminated.⁵ [ss. 295.13 (1) and 295.14 (1), Stats.] County reclamation ordinances do not apply where a city, village, or town reclamation ordinance is in effect. [s. 295.13 (3), Stats.]

Although local ordinances vary, each nonmetallic mining reclamation ordinance must comply with minimum reclamation standards promulgated by the DNR and set forth in ch. NR 135, Wis. Adm. Code. The DNR must provide assistance to counties and municipalities and

³ A nonmetallic mine is subject to general taxes, including, for example, corporate income taxes. In contrast, metallic mining operations are subject to both generally applicable taxes and a specific tax on the net proceeds from a metallic mining operation. In other states, it is generally not uncommon that metallic mineral extraction is taxed more heavily than nonmetallic mineral extraction. However, at least nine states currently impose severance taxes on the extraction of sand.

⁴ The law enumerates various methods that might be used to reclaim a nonmetallic mining site, including removal or reuse of nonmetallic mining refuse, grading of the nonmetallic mining site, removal, storage and replacement of topsoil, stabilization of soil conditions, reestablishment of vegetative cover, control of surface water and groundwater, prevention of environmental pollution and, if practical, restoration of plant, fish, and wildlife habitat.

⁵ Milwaukee County may decline to enact a nonmetallic mining reclamation ordinance if all of the cities, towns, and villages within the county enact such ordinances. [s. 295.13 (2m), Stats.]

periodically review their nonmetallic mining reclamation programs to ensure that the programs are being conducted in compliance with DNR rules. [ss. NR 135.47 and 135.52, Wis. Adm. Code.] Although reclamation requirements often overlap with mining operations, the emphasis of reclamation ordinances is on returning a site to an acceptable condition; the ordinances do not otherwise directly regulate mining operations.

PERMIT REQUIREMENT AND PROCEDURES

Unless an exception applies, no person may engage in nonmetallic mining or in nonmetallic mining reclamation without first obtaining a nonmetallic mining reclamation permit issued under the applicable municipal ordinance. [s. NR 135.16, Wis. Adm. Code.] An application for a nonmetallic mining reclamation permit must include all of the following:

- Specified information regarding the proposed mining operation, including descriptions of the site and contact information for the mine owner and operator.
- An initial annual fee, to be shared by the DNR and the applicable municipal government, calculated to cover the costs to administer nonmetallic mining reclamation for the project.
- A reclamation plan containing specified information about the existing natural and physical conditions of the site; a proposed post-mining land use; a description of the proposed methods and procedures to be used for reclamation; and proposed criteria for successful reclamation.
- A certification that, as a condition of the reclamation permit, the operator will provide required financial assurance upon granting of the reclamation permit and before mining begins.

[s. NR 135.18, Wis. Adm. Code.]

The DNR rules authorize an expedited permitting process for certain short-term, non-commercial projects to mine stone, soil, sand, or gravel for the construction, reconstruction, or maintenance of certain transportation infrastructure. [s. NR 135.23, Wis. Adm. Code.]

STANDARDS FOR NONMETALLIC MINING RECLAMATION

The DNR rules provide the following general standards applicable to nonmetallic mining operations:

- **Refuse and other solid wastes.** Nonmetallic mining refuse must be reused in accordance with a reclamation plan. Other solid wastes must be disposed of in accordance with applicable DNR rules.
- **Area disturbed and contemporaneous reclamation.** Nonmetallic mining reclamation must be conducted, to the extent practicable, to minimize the area disturbed by nonmetallic mining and to provide for nonmetallic mining reclamation

of portions of the nonmetallic mining site while nonmetallic mining continues on other portions of the nonmetallic mining site.

- **Public health, safety, and welfare.** All nonmetallic mining sites must be reclaimed in a manner so as to comply with federal, state, and local regulations governing public health, safety, and welfare.
- **Habitat restoration.** When a reclamation plan requires plant, fish, or wildlife habitat, the habitat must be restored, to the extent practicable, to a condition at least as suitable as that which existed before the lands were affected by nonmetallic mining operations.
- **Compliance with environmental regulations.** Reclamation of nonmetallic mining sites must comply with any other applicable federal, state, and local laws, including those related to environmental protection, zoning, and land use control.

[s. NR 135.06, Wis. Adm. Code.]

In addition to these general standards, the DNR rules establish standards specific to surface water and wetlands protection, groundwater protection, topsoil management, grading and slopes, topsoil redistribution, and revegetation and site stabilization. [ss. NR 135.07 through 135.12, Wis. Adm. Code.] For example, the rules specify that nonmetallic mining reclamation must be conducted in a manner that does not cause pollutant limits set in the state's groundwater quality standards to be exceeded. The rules also require that all surfaces affected by nonmetallic mining must be reclaimed and stabilized by revegetation or other means.

ALTERNATIVE STANDARDS

A county or other municipal government may approve an alternate requirement to the above standards if the mining operator demonstrates, and the municipal government finds, that all of the following criteria are satisfied:

- The nonmetallic mining site, the surrounding property or the mining plan or reclamation plan has a unique characteristic which requires an alternate requirement.
- Unnecessary hardship that is peculiar to the nonmetallic mining site or plan will result unless the alternate requirement is approved.
- Reclamation in accordance with the proposed alternate requirement will achieve the planned post-mining land use and long-term site stability in a manner that will not cause environmental pollution or threaten public health, safety, or welfare.

[s. NR. 135.26, Wis. Adm. Code.]

GROUNDINGS FOR DENIAL OF A NONMETALLIC MINING RECLAMATION PERMIT

The DNR rules require that an application for a nonmetallic mining reclamation permit must be rejected if the administering county or other municipality finds any of the following:

- The applicant has, after being given an opportunity to make corrections, failed to provide an adequate permit application, reclamation plan, financial assurance, or any other required submittal.
- The proposed nonmetallic mining site cannot be reclaimed in compliance with the reclamation standards contained in the applicable reclamation ordinance or state law.
- The applicant, or its agent, principal, or predecessor has, during the course of nonmetallic mining in Wisconsin within 10 years of the permit application or modification request being considered, shown a pattern of serious violations of DNR administrative rules on nonmetallic mining or of federal, state, or local environmental laws related to nonmetallic mining reclamation.

[s. NR 135.22, Wis. Adm. Code.]

PERMIT APPROVAL AND CONDITIONS

If an application for a nonmetallic mining reclamation permit is not denied pursuant to one of the above findings, it must be approved. However, a municipality may issue a nonmetallic mining reclamation permit subject to general or site-specific conditions, if conditions are needed to ensure compliance with the DNR rules. A municipality may not impose conditions as part of a nonmetallic mining reclamation permit that do not relate to reclamation of the nonmetallic mining site. [s. NR 135.21, Wis. Adm. Code.]

PUBLIC HEARINGS AND CONTESTED CASE HEARINGS

A county or other municipality administering a nonmetallic mining reclamation ordinance must provide notice and an opportunity for a public hearing for any application received for a nonmetallic mining reclamation permit. Public notice must be published no later than 30 days after receipt of a complete permit application.

If the county or municipality holds a separate, zoning-related hearing regarding a proposed nonmetallic mining site, it must provide an opportunity for public testimony regarding reclamation and consider that testimony when reviewing an application for a nonmetallic mining reclamation permit. If no zoning-related hearing is held, then any person residing, owning property, or having a principal place of business within 300 feet of the boundary of the parcel or parcels of land in which the nonmetallic mining site is located may request a public informational hearing. The county or municipality must hold a public informational hearing if the request is made within 30 days of the actual date of public notice regarding the permit application. [s. NR 135.20, Wis. Adm. Code.]

In addition to the pre-decision notice and hearing requirements, decisions to issue, modify, or deny nonmetallic mining reclamation permits are generally subject to contested case hearings. [s. NR 135.30, Wis. Adm. Code.] A contested case hearing is a formal hearing conducted by an administrative law judge, in which a record is made, witnesses are sworn, cross-examination is allowed, and parties are typically represented by legal counsel. Only a person who will be particularly harmed by a decision is entitled to a contested case hearing.

ANNUAL REPORTING REQUIREMENTS

Each nonmetallic mining reclamation permittee must be required to submit an annual report with specified information. In turn, the county or other municipal government must submit an annual report to DNR regarding the number of nonmetallic permits in effect in the municipality, the number of acres that are being mined and that have been reclaimed, and other information. [ss. NR 135.36 and 135.37, Wis. Adm. Code.]

ENFORCEMENT

A municipality may suspend or revoke a nonmetallic mining reclamation permit if it finds that the mine operator has done any of the following:

- Failed to submit a satisfactory reclamation plan in a timely manner.
- Failed to submit or maintain required financial assurances.
- Failed on a repetitive and significant basis to follow the approved reclamation plan.

[s. NR 135.25, Wis. Adm. Code.]

ZONING ORDINANCES

Municipal governments also regulate sand mining through their zoning ordinances. Zoning ordinances are ordinances adopted to promote the public health, safety, and welfare by regulating land use, including the regulation of the types of activities that may be conducted in a given geographical area. In general, counties, cities, villages, and towns are authorized to enact zoning ordinances. Special restrictions apply to zoning adopted by towns.⁶

Municipal regulation of sand mining through zoning ordinances is limited in several respects. First, zoning ordinances generally may not be applied retroactively. [ss. 60.61 (5) and 62.23 (7) (h), Stats.] Thus, a zoning ordinance typically may not restrict a land use that was in place prior to the adoption of the ordinance.

⁶ In general, a town may exercise zoning authority only if it is located in a county that has not enacted a county zoning ordinance. [s. 60.61 (2), Stats.] An exception applies in towns that have been granted authority to exercise village powers; such towns may enact zoning ordinances despite the existence of a county ordinance, subject to approval by town meeting or referendum, and by the county board. [s. 60.62, Stats.]

Second, all local zoning ordinances generally must be consistent with a comprehensive plan adopted by the unit of local government. [s. 66.1001 (3), Stats.] Some units of local government--typically towns--might lack a comprehensive plan. In such cases, the statutes generally prohibit the enactment of new zoning ordinances by the local government before a comprehensive plan is enacted.

A final restriction applies specifically to nonmetallic mining. Zoning authority may be restricted for land that has been registered as having a marketable nonmetallic mineral deposit under ch. NR 135, Wis. Adm. Code. Under state law, a marketable nonmetallic mineral deposit is one which can be or is reasonably anticipated to be commercially feasible to mine and has significant economic or strategic value.

In general, a county or municipality that has received notice of intent to register such land may not, by zoning, granting a variance, or other official action or inaction, permit the erection of permanent structures on, or otherwise permit the use of any subsequently registered land containing a marketable nonmetallic mineral deposit in a manner that would permanently interfere with the present or future extraction of the nonmetallic mineral deposit on the registered land. However, a municipality may rezone land that contains a marketable nonmetallic mineral deposit and upon which mining has not yet begun if the rezoning is necessary to implement a master plan, comprehensive plan, or land use plan that was lawfully adopted at least one year prior to the rezoning. [s. NR 135.62, Wis. Adm. Code.]

ORDINANCES ADOPTED PURSUANT TO GENERAL POLICE POWERS

A municipal government may also regulate sand mining through general (i.e., non-zoning) ordinances adopted pursuant to general police powers. Municipal governments exercise police powers to regulate public health, safety and welfare, other than by means of zoning ordinances.

MUNICIPAL POLICE POWERS

Cities and villages have home rule powers, and may adopt police power regulations on any appropriate subject of local concern. Wisconsin Constitution, Article XI, Section 3, provides that cities and villages “may determine their local affairs and government, subject only to [other provisions of the Wisconsin] Constitution and such enactments of the Legislature of statewide concern as with uniformity shall affect every city or every village.” The statutory expression of cities’ and villages’ police power is found in ss. 62.11 (5) and 61.34 (1), Stats.:

Except as elsewhere in the statutes specifically provided, the [city council or village board] shall have the management and control of the city property, finances, highways, navigable waters, and the public service, and shall have power to act for the government and good order of the city, for its commercial benefit, and for the health, safety, and welfare of the public, and may carry out its powers by license, regulation, suppression, borrowing of money, tax levy, appropriation, fine, imprisonment, confiscation, and other necessary or convenient means. The powers hereby

conferred shall be in addition to all other grants, and shall be limited only by express language.

Towns generally may adopt village powers and therefore exercise the police powers described above, except where such powers conflict with statutes specific to towns. [ss. 60.10 (2) (c) and 60.22 (3), Stats.]

The Wisconsin Constitution does not grant broad “home rule” authority to counties, as it does to cities and villages. Section 59.03, Stats., grants counties “administrative home rule” over organizational and administrative matters, subject only to the Wisconsin Constitution and to any enactment of the Legislature which is of statewide concern and which uniformly affects every county. However, this administrative home rule power is more limited than the home rule power afforded to cities and villages. [*Jackson County v. Department of Natural Resources*, 2006 WI 96 at ¶ 17.]

ZWIEFELHOFER V. TOWN OF COOKS VALLEY

In *Zwiefelhofer v. Town of Cooks Valley*, 2012 WI 7, the Wisconsin Supreme Court reviewed a town ordinance that required a mine operator to obtain a “conditional use” permit from the town before beginning a sand or gravel mining operation. Despite the town’s characterization of the ordinance as a general police powers ordinance, the ordinance was challenged as being a zoning ordinance that did not follow procedures required by state law for the enactment of a zoning ordinance.

The Wisconsin Supreme Court rejected the challengers’ argument in the case. The court held that the ordinance lacked many of the traditional characteristics shared by zoning ordinances. The court specifically mentioned the following factors shared by traditional zoning ordinances and not applicable to the town’s “conditional use” permit:

- The division of a geographic area into multiple zones or districts.
- The allowance and disallowance of certain uses by landowners within established districts or zones.
- A purpose of directly controlling where, rather than how, a use takes place.
- The classification of uses in general terms and the attempt to comprehensively address all possible uses in a geographic area.
- A fixed, forward-looking determination about what uses will be permitted as opposed to a case-by-case, ad hoc determination of what the landowner will be allowed to use.
- The allowance by certain landowners to maintain their use of the land even though such use is not in conformance with the ordinance because the landowners’ use of their land was legal prior to the adoption of the zoning ordinance.

[*Zwiefelhofer*, ¶¶36, 38-42.]

The court emphasized that the review of any particular ordinance is fact-specific. In future cases, an ordinance that has several of the characteristics of a traditional zoning ordinance may be struck down under *Zwiefelhofer*, assuming that the ordinance was not a properly adopted zoning ordinance. That result occurred in *Town of Bradford v. Merriam*, 2012 WI App 97, in which the Fourth District Wisconsin Court of Appeals applied *Zwiefelhofer* to hold that an ordinance establishing set back requirements and other parameters for mobile homes was a zoning ordinance and was therefore subject to limitations applicable to zoning, including a limitation on the regulation of non-conforming uses.

Thus, under *Zwiefelhofer*, a city, village, or town with village powers generally may enact an ordinance pursuant to general police powers to regulate sand mining. However, to be upheld by Wisconsin courts, any such ordinance must not have a significant number of characteristics that make it appear like a zoning ordinance.

EXAMPLES OF STATE AND FEDERAL PERMITS AND APPROVALS THAT MIGHT BE REQUIRED

Depending on the characteristics of the site and the nature of the operation, a person proposing a sand mine may be required to obtain one or more approvals from the state or the federal government for environmental or other impacts resulting from the mine operation. Examples of state and federal permits that might be required include:

- **Navigable waters.** If a mining operation will disturb one or more navigable waters, the mine operator may need to obtain a permit under ch. 30, Stats.
- **Wetlands.** A sand mining operator who proposes to fill a wetland in Wisconsin must obtain a permit under ch. 281, Stats. If the wetland is a “federal wetland” (i.e., a wetland that is navigable and not isolated), the person must obtain a permit from the U.S. Army Corps of Engineers (ACE), and the DNR must certify that the activity will not violate the state’s water quality standards for wetlands.
- **Water withdrawals.** DNR approvals are required under ch. 281, Stats., if a sand mining operator proposes to withdrawal large quantities of surface water or groundwater, for example, for the purpose of dewatering a mining excavation.
- **Solid waste facility.** If a proposed sand mining operation includes a facility for processing solid waste, DNR approval may be required for the facility. Solid waste facilities must be located, designed, constructed, operated, monitored, and maintained in compliance with standards set forth by the DNR under ch. 289, Stats.
- **Wastewater and stormwater discharge.** Under ch. 283, Stats., a Wisconsin Pollution Discharge Elimination System (WPDES) permit is required for any discharges into navigable waters in the state from a discernible, confined and discrete conveyance, and for proposed discharges from a facility or activity that the DNR determines either contributes to a violation of a water quality standard or is a significant contributor of pollutants to the waters of the state. A stormwater permit

is also required for construction projects that disturb at least an acre of land. [s. NR 216.42, Wis. Adm. Code.]

- **Air pollution.** An air pollution control permit is required under ch. 285, Stats., for the construction and operation of a facility, building, structure, or installation that directly or indirectly emits or may emit air contaminants from a fixed location.
- **Endangered species.** Under ch. 29.604, Stats., a permit is required if a project has the potential to result in injury, damage, death, or removal from the wild of any animals listed on the state endangered and threatened species list. In addition, a permit from or consultation with the U.S. Fish and Wildlife Service may be required under SECTION 7 of the federal Endangered Species Act if the project may have an impact on endangered species.
- **Mine safety.** A sand mine operator may be required to obtain approval of a miner training plan from the federal Mine Safety and Health Administration. [30 C.F.R. s. 46.]
- **Eagles and migratory birds.** If a sand mining operation requires the removal or relocation of eagles or certain migratory birds, or the nests of such birds, the mine operator may need to obtain a permit from the U.S. Fish and Wildlife Service. [50 C.F.R. ss. 21 and 22.]
- **Hazardous materials.** If hazardous waste will be transported as part of a mining operation, an applicant for a mining permit may be required to obtain a hazardous materials registration number from the U.S. Department of Transportation. [49 C.F.R. ss. 107.601-107.620.]

This memorandum is not a policy statement of the Joint Legislative Council or its staff.

This memorandum was prepared by Anna Henning, Staff Attorney, on June 28, 2013.

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