

## **How the Department of Natural Resources Regulates Metallic Mining**

### ***Introduction***

State law designates the Wisconsin Department of Natural Resources as the primary state agency responsible for regulating the environmental aspects of metallic mining activities. Metallic mining activities include exploration (drilling) for minerals, prospecting (large quantity sampling for bench-scale and pilot plant scale tests), mining, mining waste disposal, and reclamation. The majority of the Department's regulatory oversight regarding metallic mining can be sub-divided into three major stages: permit review process and environmental impacts analysis, operations (construction, mining, and reclamation activities), and post-reclamation.

Department staff are guided and constrained by the mining statute and applicable administrative rules, and must apply the laws of the state in reviewing metallic mining proposals and regulating mining activities. Other specific environmental protection statutes and rules also apply to specific activities related to a given metallic mining project because these activities require other Department approvals, permits, and licenses. In that sense, mines are similar to other industrial or municipal facilities with regulated discharges to the environment. The Department's primary objective is to assure that a proposed mine would comply with all environmental protection requirements and laws.

The Federal Government has a limited role in regulating metallic mining activities in Wisconsin, and is involved in issues that pertain to the dredging or filling of wetlands, oversight of federal clean air and water laws, and serve as a correspondent with affected tribal communities. Of course, the level of involvement would be much greater if the proposed activity was situated on land owned by the federal government. Local Governments also have a limited but significant role and primarily regulate zoning issues. The mining statute states that a local municipality within which a mine site is located -- whether a town, city, village, county, or tribal government -- has zoning approval authority over a proposed mine. Before a proposed mine can receive state authorization, the local municipality must have granted its approval under its zoning or land use ordinances. In addition, local municipalities may have authority on signing exploration and mining leases on public lands under their control and withdrawing public lands for mining-related purposes.

### ***Metallic Mining***

By definition, metallic mineral mining is a process in which metallic minerals are extracted, milled, and concentrated to produce input material for smelters/processors, which produce raw metals for the international market. Metallic minerals are mined for common metals such as copper, gold, iron, lead, silver, and zinc. Sand and gravel mining or rock quarrying are not included under the

*metallic* mineral mining laws, but are regulated separately under a different statutory and regulatory framework.

At the present time, there are no metal mines operating in the state. The Flambeau Mine located near Ladysmith, Wisconsin, is the only example of a metallic mining operation that has been permitted, constructed, operated, and reclaimed under the state's current regulations. The open-pit, copper-gold mine began construction in July 1991, ore production began in early 1993 and ended in 1997. Reclamation activities were completed by the end of 1999, and the site is currently awaiting certification of reclamation. Groundwater at the site will continue to be monitored. Since February 1994, the Department has been engaged in the review of the proposed Crandon Mine. Nicolet Minerals Company is proposing to develop an underground zinc and copper mine near Crandon, Wisconsin.

### ***Regulating a Typical Mining Proposal***

In Wisconsin, metallic mining activities are regulated under the mining law, Chapter 293, Statutes. In addition, mining activities must be regulated by other laws that more specifically address each particular activity that may occur in association with mining. For example, any wastewater discharge from a proposed mine would be regulated by the same laws and rules that regulate wastewater discharges from all other municipal and industrial operations; air emissions from mines are regulated by the state's air pollution control law; and mining waste disposal is regulated by the law that regulates all municipal and industrial solid waste disposal facilities. Most of these permits, approvals, and licenses are not specific to mining projects but are common industrial activities and are regulated accordingly. A typical mining operation will likely need to obtain more than 10 separate permits, licenses, or approvals from the Department of Natural Resources.

Department staff have specific review authority and regulatory oversight on metallic mining projects, as specified in the following administrative rules:

- Chapter 130 - Metallic mineral exploration
- Chapter 131 - Metallic mineral prospecting
- Chapter 132 - Metallic mineral mining
- Chapter 140 - Groundwater quality
- Chapter 150 - Environmental analysis and review procedures for Department actions
- Chapter 182 - Metallic mining wastes

The Department reviews metallic mining proposals using the same standards and criteria that are applied to municipal or industrial proposals except in the areas of groundwater quality and wetlands. Chapter 160, Stats., and Ch. NR 140, Wis. Adm. Code, define the State's approach to protection of groundwater quality. The State's general approach requires that facilities must not exceed numerical standards at specified distances from the edge of the facility at the design management zone (DMZ), which is a three-dimensional compliance boundary set at a specified distance surrounding the regulated facility.

In 1998, the mining codes were amended requiring mining site facilities to meet the same groundwater quality compliance standards applied to other facilities regulated by the Department

through Ch. NR 140. For metallic mining facilities (mining waste disposal sites and underground or surface mines), the maximum distance to the boundary of the DMZ is established at 1,200 feet from the outside edge of the waste disposal facility or the outer edge of the mine workings, extending vertically through all saturated geologic strata. The mining rules also specify that monitoring must occur at and within the design management zone and an intermediate boundary called a mandatory intervention boundary (MIB). The MIB is established at 150 feet from the outer waste boundary or from the edge of the mine workings. In addition, the rules specify that if standards are exceeded at the mandatory intervention boundary, operators must take appropriate remedial action consistent with the procedures specified in Ch. NR 140.

The DMZ for groundwater quality standards at the mining facility is slightly further from the facility edge as compared to other facilities regulated in Wisconsin. For example, the design management zone for a landfill (solid waste disposal facility) is 150 feet. However, it is necessary to distinguish the regulatory differences between solid waste and mining waste disposal facilities. For solid waste disposal facilities, there are prescribed *design standards* specified by administrative rule, such that the review of a landfill proposal or expansion must comply with those standards. If the proposed design conforms to those design standards it is presumed that the facility will comply with the groundwater standards. While on the other hand, mining waste disposal facilities must meet *performance-based standards*. An applicant for a metallic mining permit is required to demonstrate through comprehensive groundwater modeling that their facilities will comply with the groundwater quality standards indefinitely. In turn, the Department conducts a thorough review of the proposed facility design and its potential impacts to groundwater resources (quality and quantity).

In regards to wetlands, the Department has been directed by the Legislature to assure that mining activities, given the constraints imposed by ore body location, result in a minimization of overall environmental impacts and disturbance to wetlands. The Department has promulgated rules that provide very specific criteria on how wetlands are to be characterized and protected, although the presence of wetlands at a potential mining site will not necessarily prevent development for mining. The mining law strictly mandates that impacts to wetlands must be minimized. An applicant for a metallic mining permit must evaluate all of the following wetland functions and values when describing the potential impacts on wetlands:

- biological functions;
- watershed functions (hydrologic support, groundwater, storm and flood water storage, shoreline protection, and others, including nutrient loading or release);
- recreational, cultural, and economic value; and
- scarcity of wetland type.

In addition to the above regulatory review, a proposed metallic mineral mine requires a mining permit and approved plans for environmental monitoring, mining, and reclamation. These approvals must be obtained prior to construction. The Department is required to prepare an environmental impact statement on the mine and its potential impacts and consider alternatives that may reduce overall impacts. The Department is required to involve the public during the project review and during a public hearing after a *Draft Environmental Impact Statement* is published. The scope of the Department's review of a metallic mining project is very broad, and the review process

is comprehensive. If the DNR review concludes that any of the applicable laws and rules would not be met by the proposed mine, then the Department cannot issue a mining permit.

### ***The Department's "Position" on Mining***

Because the Department regulates metallic mining in Wisconsin, it has no formal "position" on mining. Department staff are responsible for assuring compliance with the laws and rules to the best of their professional ability not making decisions based on personal or political views. The policy decision on the acceptability of mining already has been made by the state Legislature, that is: Mining is an essential industrial activity which must be conducted in an environmentally acceptable manner as defined by state laws and rules. In other words, mining is a legal activity if the environment is adequately protected during all stages of the project.

Department staff must work closely with mining company officials and their consultants, not only to familiarize them with the mining regulations, applicable standards, and the environmental and public review processes, but also to minimize potential environmental degradation from a proposed project. The permitting process for metallic mining projects lasts several years. Developing effective communications with company officials makes this process more efficient. The entire process is open to public scrutiny, and the Department welcomes public review of its regulatory activities.

### ***Exemptions***

Authorizations for modifications, exemptions, and variances are common to Wisconsin's environmental protection statutes, and this flexibility is a necessary component of an effective regulatory program. For example, Chapter NR 132 (Metallic mineral mining) allows applicants to make *requests* for exemptions in cases where compliance with the specific requirement is impractical or undesirable. The burden of proof is on the company to determine potential impacts if the exemption were granted, and the Department independently reviews their proposal. In general, if a proposed exemption to the mining code would result in significant negative environmental impacts or violate any environmental laws or rules, the Department would recommend that the exemption be denied. All parties involved in the hearing process have an opportunity to review the exemption request and present testimony and evidence to either support or oppose the request. Contrary to popular opinion, granting an exemption or variance for a mining proposal does not mean environmental protection has been compromised or the law weakened. The final decision to grant or deny the variance is subject to administrative and judicial review.

***For More Information***

If you would like additional information or want to discuss any mining-related issues, please contact:

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*This mining information sheet is one in a series prepared by the Department of Natural Resources to explain how metallic mining in Wisconsin is regulated and to explore other aspects of mining. Copies of the following mining information sheets are available from Department offices in Madison and Rhineland, and the Internet:*

- *The Permitting Process for a Metallic Mineral Mine*
- *How the Department of Natural Resources Regulates Metallic Mining*
- *Protecting Groundwater at Metallic Mining Sites*
- *Reclamation and Long-Term Care Requirements for Metallic Mining Sites in Wisconsin*
- *Local Decisions in Metallic Mining Projects*
- *Addressing Public Concerns With Wisconsin's Laws Governing Metallic Mining*
- *Wisconsin's Net Proceeds Tax on Metallic Mining and Distribution of Funds to Municipalities*
- *Cumulative Impacts of Metallic Mining Development in Northern Wisconsin*
- *Potential Metallic Mining Development in Northern Wisconsin*

*Copies of the mining information sheets and regulations (administrative code) can be obtained at the Department's Mining Web site: <http://www.dnr.state.wi.us/org/aw/wm/mining/metallic/>.*