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# Wisconsin Briefs

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## REGULATION OF METALLIC MINING IN WISCONSIN

Beginning with the lead diggings in the southwest that drew the state's first settlers and continuing through the copper deposits in the northeast that are the subject of controversy today, mining has long been a part of the state's economy. This brief provides an overview of the history of metallic mining in Wisconsin and describes the legislature's response to mining development, including the regulations mining companies must follow, and discusses the revenues that Wisconsin state and local governments derive from mining.

### I. HISTORY OF METALLIC MINING IN WISCONSIN

#### Lead and Zinc Mines – c. 1820-1979

The practice of mining metallic minerals in the Wisconsin region predated statehood by several centuries. French explorers in the 1600s reported that Native Americans in the area decorated themselves with galena, a mineral associated with lead deposits, and French Canadian Julien Dubuque ran mining and smelting operations on the Iowa bank of the Mississippi River in the late 1700s.

Mining activities began in earnest in the 1820s, when lead miners from Illinois and Missouri came north in search of fresh "diggings." The crude methods used by these miners, as they excavated shallow pits in search of easily accessible lead and occupied them during the bad winter months, earned Wisconsinites their "Badger" nickname. Lead mining, which was concentrated in the southwest corner of the current Wisconsin boundaries, was the major economic activity of the Wisconsin Territory at the time of its creation in 1836.

Lead deposits attracted miners from the Eastern states and Great Britain to the territory during the 1830s and 1840s. When Wisconsin became a state in 1848, the image of a miner was included in the state seal in recognition of the important role the industry played in the new state. However, just months before Wisconsin's admission to the Union, gold was discovered in California. Gold's lure was irresistible to Wisconsin's miners, and their departure for the West gradually caused the eclipse of lead mining in the 1850s. It would never regain its premier place in Wisconsin's economy.

Zinc had been a less desirable by-product of lead mining in Wisconsin's early days but, beginning in the late 1850s, it became the state's leading metal product. Like lead, zinc was concentrated in the southwestern part of the state, and its fortunes waxed and waned with the economy and its market price. The peak year for zinc mining in Wisconsin was 1917, when over 59,000 tons were mined. Wisconsin remained one of the leading zinc producing states until the 1970s. Wisconsin's last zinc mine closed at Shullsburg in 1979 due to low prices.

#### Iron Ore Mining – c. 1880-1965

Iron ore was identified in Wisconsin as early as the 1840s. Deposits were found at various sites, including the Baraboo Range, Ironton, Mayville, Florence, and Black River Falls, but the

majority of Wisconsin's iron ore was mined in the Gogebic Range, near the Michigan border and Lake Superior. Many of the mines were concentrated in Iron County.

The Gogebic Range began to produce ore in the 1880s and remained active for 80 years. The surrounding areas soon became economically tied to iron. Ashland, for example, was the port from which much of Wisconsin's ore departed for steel mills in other Great Lakes cities. Production peaked in 1906 when over 2 million tons of iron ore was mined in Wisconsin. Output dwindled during the Great Depression, but defense needs and post-war demands drove the industry in the 1940s and 1950s. Beginning in 1939, Wisconsin produced at least 1 million tons of iron ore for 19 consecutive years. Toward the end of that period, an economic recession and the exhaustion of high-grade ore deposits caused a gradual decline. The last iron ore was taken from the Gogebic Range in 1965.

### **Taconite, 1968-1983**

Taconite is a low-grade iron product found in the vicinity of purer ores. As the high-grade iron ore in Minnesota, Michigan, and Wisconsin was exhausted, mining companies began to devise ways to refine taconite into a salable product. Typically, it is refined near the point of extraction into pellets containing around 60% pure iron and then shipped to processing facilities some distance away.

Wisconsin's only taconite mine was opened in Black River Falls in 1969, shortly after the state's last traditional iron mine closed. The mine produced around 300,000 tons of ore per year for shipment by rail to mills in Chicago. Declining prices and a depressed economy led to the closing of the Jackson County mine in 1983, several years earlier than scheduled. This marked the end of iron production in Wisconsin for the foreseeable future.

### **Sulfide Ore Bodies, 1969 - Present**

During the 1960s, geologists realized that ancient sulfide formations often contained large amounts of copper, zinc, and other valuable minerals. Through magnetic readings from the air and on the ground, it was determined that formations of this type are common in the northern third of Wisconsin. Test drilling in the 1970s revealed numerous deposits of copper in sulfide deposits throughout the northern part of the state.

Extracting valuable minerals from sulfide formations presents environmental challenges not associated with other types of mining. When exposed to air, the sulfur that is extracted with the valuable ore releases acid that can contaminate local waters. It is this danger that makes sulfide mining more controversial. Despite the promising ore deposits in Wisconsin, volatile mineral prices and public opposition have combined to limit the extraction of minerals from sulfide ore bodies. Only one such mine, the Flambeau Mine near Ladysmith in Rusk County, has been opened. This mine, which was opened in 1993 and operated until 1997, produced over \$500 million worth of copper, zinc, gold, and silver.

Much of the controversy about sulfide ore mining has focused recently on a proposed mine in the Town of Nashville near Crandon in Forest County. This site has been described as one of the richest copper deposits in North America, but its location near the Wolf River has raised the fears of mining opponents that acid leaking from tailings (waste rock) will contaminate the river, which is noted for its pristine character and scenic beauty.

Although the Crandon mine has received the lion's share of the attention from environmentalists, legislators and state regulators, numerous sulfide ore bodies in Wisconsin may be suitable for mining, and exploration by mining companies is ongoing. Modern mining is a

capital-intensive endeavor, so the viability of each site depends on the richness of the deposit, the difficulty in extracting the ore, and the price of the metals in question.

## II. THE EVOLUTION OF MINING LAW IN WISCONSIN

**Early Regulation.** Despite Wisconsin's long history of mining, there was relatively little state regulation of the industry before the 1970s. The 19th century laws dealt with basics, such as mining claims, record keeping, and water rights.

Laws focusing on labor and safety issues in mining appeared in the early 20th century. The state Industrial Commission (IC) published orders setting forth safety standards for zinc mines in 1915. By 1922, it was issuing orders applicable to all mines regarding explosives, hoists, shaft ventilation, and other dangerous aspects of mine operation. The 1957 Legislature gave the IC authority to conduct safety inspections and required them every two months.

In the midst of the Great Depression, the legislature petitioned two federal New Deal agencies to create mining projects to provide employment in the "dormant southwestern Wisconsin mineral area" (1935 Enrolled Joint Resolution 122). After World War II, the legislature enacted several measures designed to encourage metallic mining, which was in decline. It provided depletion allowances under the corporate income tax for zinc and lead mining companies, and it asked Congress to stabilize zinc and lead prices. Chapter 110, Laws of 1953, created a separate method of taxing taconite, with a high percentage of the revenue going to county and municipal governments. Rates were adjusted again in 1965 and 1967. Despite these efforts, Wisconsin's last traditional iron mine closed in 1965 – after 80 years of operation – although the opening of the taconite mine in Jackson County in 1969 gave mining a tenuous existence.

**Economic Interests and Environmental Protection.** The focus of mining regulation in recent decades has been to balance the economic interests of mine operators with the concerns of private citizens, local communities, and environmentalists.

Because taconite mining requires large amounts of water and may degrade the environment, the first law that dealt with environmental impacts was Chapter 238, Laws of 1959, which required new mining operations to apply for water diversion permits. The Public Service Commission (PSC) was authorized to determine if enough water was available to sustain the mining operation and whether the rights of downstream riparians might be injured. Fore-shadowing modern mining laws, the PSC was required to impose conditions on the permit that would provide for the orderly disposal of waste; leaving the lands "in a neat and orderly condition"; and furnishing security to the state for compliance.

Chapter 318, Laws of 1973, was the first in a series of laws passed in the 1970s that established the framework for metallic mining regulation still in place today (see Section III, following). It explicitly stated its purpose was "to provide that the air, lands, waters, plants, fish and wildlife affected by prospecting and mining in the state will receive the greatest practicable degree of protection and reclamation." The act focused on reclamation of mine sites by authorizing the Department of Natural Resources (DNR) to establish environmental standards and procedures for mining in conjunction with the newly created permit system for mining and prospecting. The legislature also initiated a system of revenue sharing with county and municipal governments based on a new tax of 1.5% on copper production of the value of minerals produced.

**Recent Legislation.** Plans to begin mining at the Crandon site spurred new legislation in the late 1990s. Most notable was 1997 Wisconsin Act 171, which took effect May 7, 1998, and

placed new restrictions on companies seeking permits to mine sulfide ore bodies such as the one at Crandon. Under the law, before a mine permit can be granted to applicants planning to mine this type of ore, DNR must verify that a mine operated in a sulfide ore body in the United States or Canada has been operated for 10 years without polluting groundwater or surface water. The applicant must also demonstrate that a similar operation in the United States or Canada has been closed for 10 years without causing groundwater or surface water pollution.

1997 Wisconsin Act 27 created a mining economic development program, designed to provide grants and loans in areas that are affected by mining. These areas are defined as places where: 1) public and private infrastructure are or were provided to support mining; 2) public funds are or were expended for costs associated with mining activity; or 3) construction of a mine has commenced and economic diversification is necessary to reduce dependence on mining activity for the long term economic growth and stability of the area. The program would permit the Development Finance Board in the Department of Commerce to make loans or grants to businesses, local governments, or community organizations for eligible activities, such as: starting, maintaining or expanding businesses in the affected area; developing an economic diversification program by local governments; economic development projects; feasibility studies; market plans; and managerial assistance. Grants or loans may not be awarded to establish a business that will be solely dependent on mining activity. The maximum amount of a grant or loan under the program is \$200,000.

### III. CURRENT MINING REGULATION IN WISCONSIN

#### Opening a Mine

Establishing a mine may require both *exploration* and *prospecting*. Exploration involves drilling for core samples in a search for valuable minerals. Prospecting is the examination of a likely site through excavating or trenching, to evaluate whether mining would be feasible. State law requires different licenses and permits for these two processes and regulates them separately.

**Exploration Licenses.** Applications to DNR for exploration licenses must be accompanied by a bond of \$5,000 or more to ensure proper performance. The department also requires notification at least 10 days prior to drilling on a licensed exploration site. DNR may revoke a license if it finds that the laws or rules for exploration have been violated or if the required bond is not posted.

**Prospecting Permits.** A prospecting permit requires more detailed information and greater scrutiny. The applicant must supply maps and descriptions of the ore body in question, describe the methods of prospecting to be used, and furnish a proposed schedule of operations. DNR must notify local or tribal governments in the affected areas, as well as certain state agencies and regional planning commissions, and hold a public hearing about the proposed prospecting. The applicant is required to provide a reclamation plan, indicating how the site will be restored to avoid environmental degradation after completion of the project. If the permit is granted, a bond will be required to cover the estimated cost of reclamation.

The mine operator must submit an annual report to DNR detailing activities on the site. Prospecting data filed with the state is considered a public record unless the prospector requests confidentiality for economic and geologic data.

**Mining Permits.** The process for securing a mining permit is similar to that for obtaining a prospecting permit, but it involves more extensive examination of the applicant and the proposed activity. The application for a mining permit must be accompanied by a mining plan that includes a map or aerial view of the potentially affected areas, showing how the project will affect drainage, local utilities, and neighboring cities, towns, and villages. The plan must include information about the soil in the area, the nature of the excavation, the amount of tailings to be produced, and how the water table will be affected. It must describe the sequence of mining operations, the processing of the ore, water management, and methods for handling hazardous wastes and protecting air quality.

The application for a mining permit also must provide a reclamation plan that details: 1) the manner, location, sequence, and anticipated duration of the reclamation; 2) reclamation procedures during mining; 3) proposed interim and final topography and slope stabilization; 4) proposed final land use and its relationship to surrounding land and land use; and 5) plans for long-term maintenance of the mining site. The applicant must prove that all toxic and hazardous wastes and other refuse will be disposed of in conformity with state and federal regulations; that all tunnels will be sealed to prevent seepage; and that all underground and surface runoff waters be handled to prevent damage to agricultural lands, livestock, and wildlife or pollution of ground or surface waters. The applicant must guarantee the removal of all surface structures and disturbed topsoil, adequate protection against surface subsidence, and revegetation of disturbed surfaces as soon as practicable.

**Bonding and Insurance.** Before mining can begin, the applicant must give proof that a liability insurance policy is in force and must post a bond to cover the state's cost for fulfilling the reclamation plan if the owner defaults.

**Local Agreements.** Advance preparations with local communities may avoid future conflicting interests. The mine owner and local governments may find it advantageous to negotiate a formal agreement before a mining permit is issued, and county, town, village, city, or tribal governments in areas affected by the mine may form local impact committees to deal with issues relating to the proposed mine. The committees can serve as liaison between the community and the mining operator. Mining operators pay a fee of \$50,000 to the Department of Revenue to cover governmental expenses involved in negotiating a local agreement with the mining company. Further fees may be imposed, as required by the negotiating process, up to a maximum total of \$150,000.

**Public Hearing; Approval or Denial.** Prior to approving the mining permit, DNR must hold a public hearing in the county where the project is located. Notice of the hearing must be provided to various departments and agencies, as well as regional planning commissions and local governments. Federal agencies and other states potentially affected by the mine must also be notified. The applicant must demonstrate that all local zoning ordinances will be met.

Within 90 days of the completion of the public hearing, DNR must approve or deny the permit. The permit must be denied if: 1) the proposal is for a surface mine and the site is found unsuitable for that type of mining; 2) the applicant is violating statutes or rules relating to mining; 3) the applicant has forfeited a mining reclamation bond within the past 10 years; or 4) the applicant has been convicted of more than one felony in connection with mining practices within the past 10 years and does not submit a plan to avoid recurrence of the kind of events that led to the convictions. Absent these reasons for denial, DNR must issue a mining permit if it finds that the mine will: 1) comply with all statutory requirements relating to environmen-

tal quality; 2) not endanger public health, safety, or welfare; and 3) result in a net positive economic impact in the area most affected by the mine. Prior to approval of the mining permit, DNR must prepare an environmental impact statement describing long- and short-term impacts the mine might have on tourism, employment, schools and health care facilities, private and public social services, the tax base, and the local economy.

### **Operating a Mine**

Wisconsin law places numerous requirements on mine owners regarding the design and operation of mines. Some of these are statutory and apply to all mining operations. Others, such as those relating to the appearance and location of the mines, apply unless an exemption is provided by DNR.

**Appearance and Location Restrictions.** Mine structures must be placed so that they are least observable from off premises and constructed to match their surroundings. Buildings must be maintained and painted to be compatible with surrounding vegetation and earth conditions. No mine may be located within 1,000 feet of any navigable lake, pond or flowage, within 300 feet of a navigable river or stream, or within a floodplain. DNR also prohibits mining within 1,000 feet of state or federal highways, state parks, certain designated scenic areas, or bicycle or hiking trails. Mines are prohibited within wetlands and the Kickapoo Valley Reserve, and no new mines can be opened in the Lower Wisconsin State Riverway.

**Safety and Pollution.** Mine operators must take steps to ensure public safety. Mine areas must be designed in a way that access to the site is limited. Water and other liquids used on the mine site must be handled in such a way that the possibility of ground or surface water contamination is minimized. To the extent possible, liquid effluents must be directed to a common site for treatment before release into local water systems. Mines must follow DNR rules for the protection of groundwater. Acid generating tailings may not be used to construct roads or parking lots, and emergency procedures and equipment must be in place to prevent pollution in case of equipment breakdowns.

**Reports to the State Geologist.** In addition to reporting annually to DNR, mining operations must submit annual reports to the state geologist about the ownership of the mine, mining methods used, the location of excavations, the amount of material removed from mines, and the type of ore found. The courts have ruled that a right of property exists in the contents of these reports, and the data cannot be released without the consent of the mining companies. Information is considered confidential for three years after submission.

**Water Supply.** Mine owners must obtain special permits if their operations require the diversion of surface water. Before granting a permit, DNR must consider public rights to water and the effects of the diversion downstream. Withdrawal of groundwater also requires DNR approval, and the department must refuse approval if it finds that withdrawal would have an unreasonable adverse effect on public or private water supplies.

Individuals who believe a mining operation has damaged their water supply may file a complaint with DNR and obtain water from a municipal water utility. If DNR substantiates the claim, it may require the mine to supply water to the claimant. In addition, the department may award damages to the municipality supplying the water and to the claimant in an amount of up to \$75,000.

**Violations.** DNR may issue compliance orders to mining operations that violate state law or their own mining plans. The department is authorized to require the mining operation to appear at a formal hearing and must notify the Department of Justice (DOJ) if it determines

legal proceedings should be initiated against the mining operation. Penalties for violating state mining regulations may include revocation of the mining permit and forfeitures ranging from \$10 to \$10,000 per violation, or both.

**Citizen Suits.** An individual citizen may commence a civil action against individuals for violating Wisconsin's mining laws or against state agencies for failing to perform their required duties. Wisconsin provides a compensation fund from net proceeds tax revenue to reimburse citizens for the damages they have suffered as a result of metallic mining and their litigation costs. Claims must be commenced within three years of the injury.

### **Closing a Mine**

Mines are expected to remain in production throughout the period stated in the approved mining plan. If a mine ceases production on another date, the owners must notify DNR within 48 hours, and begin stabilizing the mine site. If DNR finds the stabilization inadequate or that there will be an extended interruption in production, it must order additional measures to stabilize the site, including implementation of the approved reclamation plan. A mine is considered abandoned if no mining activity takes place on the site for six consecutive months.

Mines that have terminated operation are required to adhere to their mining reclamation plans. DNR may also revoke the operation's mining permit or any other mining permits the operator has in Wisconsin and may ask DOJ to initiate proceedings against the operator. DNR may take whatever action is necessary for the reclamation of the site at the expense of the mine owner.

If DNR finds that a mine has satisfactorily completed its entire mining and reclamation plan, it issues a certificate of completion. After the issuance of the certificate, the amount of the operator's bond is reduced, but the bond, calculated as a percentage of the reclamation costs, may be held for an additional period of up to 20 years.

## **IV. WISCONSIN INCOME FROM MINING**

### **Taxes on Mining Activity**

The state's major source of revenue from mining is the "net proceeds tax." Each year, mining operations in Wisconsin must report to the Department of Revenue (DOR) regarding the type, amount, and current market value of all minerals taken from Wisconsin mines. The tax ranges from 0%-15% of the net proceeds of the mining operation and is annually indexed to the Gross National Product deflator. Mining operations may use a number of deductions in calculating their net proceeds. Among items that may be deducted are actual mining expenses, administrative expenses, amortization of preliminary costs, interest charges, and certain federal and state taxes. In recent years, operation of the Flambeau Mine in Rusk County has generated millions of dollars in net proceeds revenue. Recent revenue totals include over \$6.1 million in fiscal 1995; \$6.4 million in fiscal 1996; and over \$1 million in fiscal 1997.

### **Fees Relating to Mining**

Mining or prospecting concerns must pay a one-cent-per-ton groundwater fee and solid waste tonnage fees (also known as "tipping fees") of 0.1 to 1.5 cents per ton, based on the mining waste disposed of by an operation. When a mining company begins construction at a mine site, a construction fee is imposed by DOR in an amount sufficient to meet payments to municipalities required by rule.

### **Distribution of Mining Revenue to Local Governments**

As noted, the bulk of mining revenue in Wisconsin is derived from the net proceeds tax, which is deposited in the Investment and Local Impact Fund. The fund, which is managed by the Investment and Local Impact Fund Board, may distribute mining revenues through direct payments or discretionary payments to local governments that apply for aid.

Direct payments to local governments may take several forms. *First dollar payments* equal an amount indexed to inflation, but not less than \$100,000, to be distributed to each county in which a mining operation is located, each city, town, or village containing at least 15% of the taxed ore body, and each Native American community located within an eligible municipality. As the name implies, first dollar payments have the first claim on mining revenues in Wisconsin. *Construction fee payments* are funds collected by DOR from construction fees. Counties and municipalities eligible for first dollar payments are eligible for construction fee payments of \$100,000 each. *Notice of intent distributions* are the funds collected by DOR from mining companies when they file their notice of intent to mine. These funds are distributed to entities involved in negotiating a local agreement with a mining company in order to defray costs realized from the negotiation. Ten percent of the net proceeds tax revenue is deposited in a *project reserve fund*. The board distributes this revenue to municipalities containing mining operations for the purposes of ensuring annual payments based on the previous three first dollar payments, reimbursing municipalities for the costs of mine closing, and for reclamation costs.

The board may also make discretionary payments to local governments or local or joint impact committees who apply for them. Applicants must include information about what the impact of mining has been on their communities and how activities funded by a grant from the board might help ease them. Applications must address the severity of mining's impact on the region; the extent to which the applicant is prepared to use available resources to deal with mining impacts; the need for the grant funds; the applicant's ability to use funding effectively; and the amount of funding the applicant has previously received through direct payments. The board may make payments to school districts that experience significantly increased enrollment due to mining activity.

### **V. CONCLUSION**

Metallic mining has gone through several distinct phases during Wisconsin's history. From the primary industry of lead mining that gave birth to Wisconsin, to the regional industry of iron mining, to the very localized modern mines of northern Wisconsin, the evolution of the industry and public reaction to it have caused the state to enact stricter mining laws in recent decades than were previously thought necessary. With new mines operating and applying for permits under the mining regulations adopted since 1973, the latest chapter in Wisconsin's long history of mining is now being written. Several known ore deposits have not yet been mined. The varying interests of mining companies, local governments, and environmentalists ensure that the issue of metallic mining will be before the people and the legislature again in the years to come.