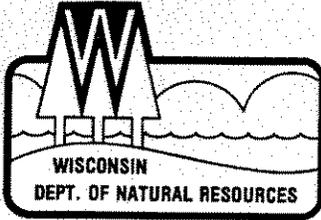


pt 33



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor  
George E. Meyer, Secretary

PO Box 7921  
101 South Webster Street  
Madison, Wisconsin 53707-7921  
TELEPHONE 608-266-2621  
FAX 608-267-3579  
TDD 608-267-6897

February 19, 1998

An Open Letter to the Public  
from Secretary George Meyer:

There's been a tremendous amount of interest and concern by the public and their elected officials regarding mining, and specifically the Crandon Mine project proposed in northern Wisconsin. Unfortunately, some of the issues associated with these concerns have been based upon misinformation.

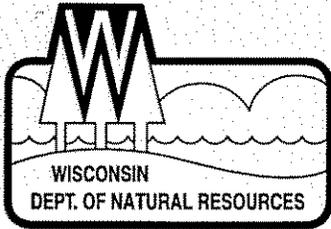
I've asked the DNR staff to document the most common mining misconceptions that we hear about and to prepare forthright written responses. The result is the enclosed brochure entitled "Misconceptions About Mining In Wisconsin".

The public is rightfully concerned about mining. Our laws prohibit any mine that would pollute the environment and the jury is still out as to whether or not the proposed Crandon mine could comply with our laws. If the mine won't meet our standards, it won't be permitted. Our decisions will be based upon legal standards and technical and scientific evaluation. I hope the enclosed brochure will help your understanding of the difficult mining decisions that have to be made.

Sincerely,

A handwritten signature in cursive script that reads 'George'.

George E. Meyer  
Secretary



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor  
George E. Meyer, Secretary

Box 7921  
101 South Webster Street  
Madison, Wisconsin 53707-7921  
TELEPHONE 608-266-2621  
FAX 608-267-3579  
TDD 608-267-6897

January 16, 1998

Mr. David H. Schwarz, Administrator  
Division of Hearings and Appeals  
5005 University Avenue, Suite 201  
Madison, WI 53705

Subject: Crandon Mining Company

Dear Mr. Schwarz:

By this letter to you, I am designating the Division of Hearings and Appeals as the decision-maker at the master hearing on the mine-related permit and approvals which have been requested by the Crandon Mining Company. By law, in addition to decisions on the requested permits and approvals, the decision-making process includes a determination of whether the Department has complied with the Wisconsin Environmental Policy Act in its issuance of the Environmental Impact Statement.

I am writing to you at this time for two reasons. First, I want to make clear to those many citizens of the state concerned with mining that the decisions on the permits, approvals and compliance with WEPA will be made in the same fashion as they are for most other projects that involve contested case hearings. Normally, the designation of the Division as decision-maker is an element of our transmittal of the file to your office. That is, unless we state otherwise in our transmittal letter, it is assumed that your office renders the final decision. However, because of the level of concern over this project, and because of some misunderstanding on how decisions are made, I believe the public is better served if this issue is clarified now, rather than later when the file is transferred to your office.

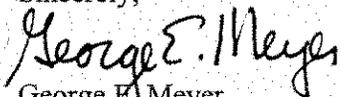
Second, I have a concern for other projects that will be requiring hearings at the same time as the Crandon project. As you know from your own experience in presiding over the Flambeau Mine hearing, the amount of time consumed by such a hearing can be substantial. And, as time-consuming as the Flambeau hearing may have been, we fully expect the hearing on the Crandon Mining project to place a much greater demand on your office.

During my tenure as Department Secretary I have made as one of my objectives the efficient and expeditious processing of all permits and approval requests. I very much would like to avoid a circumstance in which hearings on permits for other projects are being delayed because of significant demands made by the master hearing on Crandon Mining Company's applications. I am also concerned that the other projects receive the same quality of review by your office as has historically been the case. Accordingly, I would appreciate any accommodations you can make to provide for personnel experienced in reviewing natural resources matters to continue to be assigned to other matters that the Department refers to your office during the pendency of the Crandon Mining hearing.

If this request has budgetary implications for the Division, I welcome discussions between the Division and the Department. I am unsure whether we can provide you with additional funds to operate your office during the time of increased demands. However, if you are interested in investigating whether you can obtain funding from the Department, feel free to contact the Department. Because of the sensitive nature of mining-related matters, I request that any discussions you may desire on obtaining funding be directed to Jim Kurtz, our normal liaison with your office.

I hope this early designation of your Division as decision-maker for the Crandon project will assist you in working through any logistical problems associated with the concentrated workload that likely will result from this hearing.

Sincerely,

A handwritten signature in cursive script that reads "George E. Meyer". The signature is written in dark ink and is positioned above the typed name.

George E. Meyer  
Secretary

## Wisconsin Science Advisory Council on Metallic Mining

- Dr. Anders Andren - Dr. Andren is a Professor at the University of Wisconsin - Madison in the Department of Civil & Environmental Engineering and the Water Chemistry Program. He has been on the faculty at the University of Wisconsin - Madison since 1974. Dr. Andren is also the Director of the Sea Grant Institute, a position he has held since 1990. Dr. Andren has served on dozens of councils, technical committees and advisory boards. Dr. Andren possesses undergraduate and advanced degrees in chemistry and chemical oceanography. His primary areas of research and interest include the cycling of nutrients, trace metals and organic compounds in lakes and rivers and their ultimate fate in the environment.
- Dr. Tuncer Edil - Dr. Edil is a Professor at the University of Wisconsin - Madison in the Departments of Civil & Environmental Engineering and Geological Engineering. Dr. Edil has been on the faculty at the University of Wisconsin - Madison since 1973. He has served on numerous nationally recognized technical committees and boards. He has received undergraduate and advanced degrees in civil engineering. Dr. Edil is an expert in a number of facets of the diverse area of geotechnical engineering with an emphasis on waste containment facility design, construction and performance evaluation.
- Dr. Timothy Grundl - Dr. Grundl is an Associate Professor of Chemical Hydrogeology in the Geosciences Department at the University of Wisconsin - Milwaukee. Dr. Grundl has been on the faculty of the University of Wisconsin - Milwaukee since 1988. He also serves as the Chief Scientist at the Center for Great Lakes Studies, a regional research center for the study of natural water systems. Dr. Grundl has undergraduate and advanced degrees in the fields of geology and geochemistry. Dr. Grundl is an expert in the analysis of groundwater systems and the movement and fate of contaminants in groundwater.
- Dr. Bezalel Haimson - Dr. Haimson is a Professor at the University of Wisconsin - Madison in the Department of Material Science and Engineering at the University of Wisconsin. Dr. Haimson has been on the faculty of the University of Wisconsin - Madison since 1969. He currently serves as Chair of the Geological Engineering Program and was a Professor in the former Department of Mining Engineering. Dr. Haimson's formal education is in the field of mining engineering. His research interests include the occurrence and measurement of stresses in the Earth's crust, investigation and design of structures in rock and mechanical behavior of solid rock, rock joints and rock mass.
- Dr. Alphonse Zanoni - Dr. Zanoni is a Professor at Marquette University in the Department of Civil & Environmental Engineering. Dr. Zanoni has been on the faculty of Marquette University since 1964. He also currently serves as Director of the Water Quality Center at Marquette, a position he has held since 1991. Dr. Zanoni holds undergraduate and advanced degrees in civil engineering, sanitary engineering and public health and sanitary engineering and bacteriology. Dr. Zanoni has served on numerous state, regional and national committees dealing with a variety of issues. His primary area of expertise and research is wastewater treatment.

# TALKING POINTS FOR KEY LEGISLATORS

January 21, 1998  
Senate Bill 3

## Let the DNR Process Work Hoven

---

- SB 3 forces us to decide the fate of an entire industry, and the consequential economic development for people in northern WI — even before we've seen any studies.
- We have visions from decades ago of unsafe, unproven mining technology, and these archaic mining methods have changed tremendously.
- That's why our regulatory agencies exist:
  - conduct environmental impact studies
  - collect public input
  - assist the legislature in making informed decisions
- SB 3 not only undermines the DNR, it scraps the already stringent environmental impact study requirements.
- We've all heard the rhetoric: "mining will result in the state's largest toxic waste dump"; but we don't know this will happen — we haven't seen any studies yet.
- It is wrong for this body to be the judge, jury and prosecution on an issue in which we do not have all the details yet.
- I would rather read the conclusive evidence and let the process work before acting as a judge and jury in a situation I know little about—especially when it will impact an entire industry in Wisconsin.
- I will be voting "no" on SB 3 and encourage you to do the same. Let's avoid making a premature, precedent-setting decision. **Let's let the regulatory process work.**

## Wisconsin is Closed for Business Schafer

---

- SB 3 jeopardizes all businesses and potential businesses in Wisconsin.
- Bill changes our state motto from "Forward" to "Backward": ignores the expertise of the regulatory agencies (formed by legislature to assist legislature)...a backward approach, producing el niño-like effects on our business climate.
- Whether it's mining or any other industry: businesses should be given a chance until proven unworthy of locating here.
- Current law reflects this.
- SB 3 created from a knee-jerk reaction by anti-mining extremists, and resulted in the mining industry becoming a scapegoat for unreasonable standards in WI.
- Mining is a significant contributor of jobs, personal income, and federal, state and local revenues.
- Flambeau mine is an example of quality jobs and a quality environment:
  - avg. unemployment rate before mine — 10.2%, number has dropped to 5.4%
  - estimated \$4 million in state and local taxes from mine resulted in \$20 million (over half going to local govt.)
  - half million went to Rusk County Community Library
  - mine operated in full compliance
- No business imaginable will want to relocate here, knowing its return on investment could be threatened if decisions are made by legislators; not regulatory agencies.
- I encourage you to vote "no" on SB 3. Let's continue to move Wisconsin forward. Let's let the process work.

## Local Issue; Local Decision

### Gronemus

---

- SB 3 is forcing us, as legislators, to debate an issue that should not be debated in this forum.
- This is not an issue for us to be deciding.
- There are two participant groups involved here: the DNR and the people of the Northwoods, where the Crandon mine would be located.
- At this point, it is presumptuous for this body of representatives to be deciding on something that won't be effecting their districts.
- How can I in Whitehall or Osseo or Durand decide what industry and consequential economic development should be in the Crandon area--almost 200 miles away?
- The average unemployment rate in my district is around 3%, and the unemployment rate in the Forest County area is substantially higher than the rest of the state. Denying good paying jobs and economic development for the Crandon area or any other part of WI — due to half-truths that aren't substantiated by facts — is unfair and irresponsible lawmaking.
- This issue is not for me or most of us to decide. This body set the laws years ago. The decision should be pointed to the DNR studies and the people of the Crandon and surrounding area.
- I encourage all of you to vote "no" on SB 3. We need to let the local people make their decision and the DNR make its decision: let's let the process work.

## Fairness Issue

### Seratti

---

- SB 3 is a presumptuous bill that undermines both the Department of Natural Resources and my constituents.
- Over the last 5 years of extensive research on mining, I have identified numerous sections in our state mining rules and statutes that needed improvement, and consequently introduced legislation to address these issues without curtailing economic growth (experience in Colorado).
- But an outright ban on the industry is illogical public policy.
- All of you have industry in your districts which impacts the environment...whether it's farming, papermaking, printing, breweries, forestry or any other business. But, none of your businesses are threatened by a moratorium.
- The unemployment rate in Forest County, where the mine would be located is substantially higher than the rest of the state. Right now, another person in the area is packing his or her bags to find a higher quality of life and a salary that is high enough to provide for self-sufficiency.
- All we are asking for is a chance—a chance for a better future for our children and grandchildren, a chance that all of you enjoy. You have your exceptional schools, health care and quality of life—all derived from economic development—and we are asking for the same privilege.
- The Northwoods is our home year-round. We live there and demand a co-existence between nature and jobs. We want both and believe we can have both.
- But it is unfair and poor public policy to mute the findings by the DNR and the input from the local citizenry and impose a moratorium on an industry, which will be several hundred miles from most of you.

- You have your industry and we want ours. We have not asked for a moratorium on farming or papermaking or any other industry, let's not start a precedent now. Vote "no" on SB 3: let's let the process work.

## Regulate Mining Impacts; Don't Ban an Industry

Handrick

---

- I have been hearing from many constituents on this issue, and most of them are telling me they want the mine if the permits are approved by the environmental regulatory agencies.
- They believe that once a comprehensive review of the process is performed, they would be comfortable with the mine being located in their area.
- The mine would bring jobs — good paying jobs, to keep future generations living there. It would bring economic development: new buildings, improved schools, and even more industry.
- Not only that, mining will bring tourism. The Flambeau mine, for example, has had over 100,000 visitors touring the site, which certainly impacted area businesses.
- Mining is part of Wisconsin's heritage. It has changed dramatically since our state's inception, with the changing technology. But nonetheless, it is a part of Wisconsin and it shouldn't be banned.
- (Hold up state flag with missing mining symbols) If we pass this bill, we might as well change the state flag and our seal, and eliminate the mining symbols — because mining would be outright banned.
- Rather than banning a single industry and making a bad precedent, we need to regulate the impacts of mining.
- Milwaukee has its industry. And Madison has its own industry. Even the Green Bay area has its own industry. If mining is proven to be safe for generations to come, my constituents (and the regulatory agencies) deserve to make the choice...for an improved quality of life.

## Policy/Legality Jensen

---

- The legislature should not be passing legislation that will clog up our already overburdened court system, and that's exactly what SB 3 will do.
- Not only will this bill add pressure to our court system — probably for years to come — it undermines the environmental regulatory process that the legislature created.
- Chapter 274, the Laws of 1971, requires all state agencies to report on the environmental impacts of proposed actions that could significantly affect environmental quality.
- Further, a consensus group has already determined the strict mining laws of Wisconsin. The Laws of 1977 were conceived and agreed upon by a variety of interested organizations over a 3 year time span: from the Environmental Decade to the Sokaogan Chippewa, and from legislators to the public intervenor.
- These laws were passed by the legislature; for the state.
- This regulatory regime has been trusted and effective for all industries in Wisconsin, and should continue to be applied to all industries — mining included.
- The knee-jerk reaction to the Crandon mine generated and fueled by rhetoric and scare tactics of anti-mining extremists, should be no excuse to ignore our laws and create a special law for this circumstance — this process is hypocritical, precedent-setting, presumptuous, and simply bad public policy.
- Our predecessors passed these laws to provide for responsible economics development balanced with environmental protection — let's not start a new precedent that will decide the fate of an entire industry and ultimately future industry in our progressive state.

- We need to let the process work. And when the studies have been released, only then can we debate the issue armed with facts and proof.

## Myth Versus Fact

Duff

---

- Throughout the course of the mining moratorium debate, I have found answers to the half-truths that have been spread by those folks who are strongly against mining in Wisconsin.
- I have conducted hearings to allow people to come before the legislature and discuss their viewpoint on mining in Wisconsin — whether supportive of mining or against. I have also toured the Flambeau mine to further understand the mining process and invited members of the legislature to join me.
- After having gathered piles upon piles of information on mining, particularly the Crandon mine, I have learned a great deal about mining.
- It's been said that water from the mine will make the Wisconsin River "a toxic waste dump, affecting our pristine waters."

— Fact is, the water will be safe for the most sensitive creature — a tiny water flea — which means it will be safe for all the walleyes, bass, northerns, birds and other wildlife that use the river.

— Water treatment technology will be similar to the successful Flambeau mine (now under reclamation...).

— Flambeau copper levels in the discharge are significantly lower than drinking water standards (graphic):

*Drinking water standard	1300 parts per billion
*Flambeau copper discharge (required by permit)	50 parts per billion
*Flambeau internal requirement	25 parts per billion
*Flambeau met throughout course of operation	15 parts per billion

— In fact, I drank a glass of water that was discharged from the Flambeau...

- It's been said that there are no current examples that exist anywhere of a sulfide mine that hasn't resulted in severe environmental damage.
  - Fact is, there is proof that modern sulfide mines use current technology to protect surrounding waters, and they are doing so as we speak.
  - The Society for Mining, Metallurgy and Exploration described six exemplary mines: including the Flambeau, which fully protected the scenic Flambeau River....(experience there)
- It's been said that the mine would create a boom and bust economy.
  - Just look at Flambeau (new library, millions in tax base, jobs) and it's under reclamation.
  - New industry brings more industry.
  - In fact, in his editorial, the City Administrator of Ladysmith, Al Christiansen, says the boom and bust economy can be eliminated through planning, "Even before the mine started, local governments began working to prevent the up and down cycles that can go with a brief mine project. Our goal was to produce long-term jobs, and we did that largely by investing mine tax revenue to construct or renovate buildings for sale or lease to businesses. In many cases, matching grants helped us leverage mining dollars to pay for projects we never could have funded on our own." The jobs that have been saved or created is more than 300 (four times the mine's employment).
- Mining has changed over the last few decades. And to prove it, let's review the environmental regulatory agencies' conclusions.

## **Business is Important to Wisconsin: Local and Statewide Plate**

---

- SB 3 will have a tremendous impact on businesses: local and statewide.
- Hundreds of families in my district rely on the mining industry.  
— Harnischfeger and Bucyrus International operates plants in Oak Creek and South Milwaukee
  - design, build and service mining equipment
- Banning this industry sends the wrong signal to working men and women who rely on these highly skilled, well-paying jobs.
- The National Mining Association has estimated that Wisconsin has a combined direct and indirect gain of \$9.7 billion, with 98,800 jobs gained directly or indirectly from the mining industry
- The decision should be based on science — not emotion and rhetoric.
- We need to let the permitting process work (mine will need to comply with some 40 state, federal, and local permits).
- Our focus should change: from a complete ban on mining to prohibiting unsafe mining. Focus on facts and science.
- I have not and will not support mining activities that will destroy Wisconsin's environment.
- And if it's determined through the permitting process that the Crandon mine cannot meet WI's environmental standards — it shouldn't be approved.

## Unconstitutionality Green

---

- According to the U.S. Constitution, it is unconstitutional to place an outright ban on an industry, especially without any grounds for doing so.
- SB 3 will undoubtedly set a precedent that will enable environmental extremists to ban other industries.
- Chapter 274, the Laws of 1971, requires all state agencies to report on the environmental impacts of proposed actions that could significantly affect environmental quality.
- In addition, the Laws of 1977 determined the mining laws for our state. The consensus process, made up of a variety of interested parties, determined the laws for our state over a 3 year period. Because various interests were involved (from Environmental Decade to the public intervenor), these laws became the strictest in the nation.
- None of us here want to harm the environment. And we shouldn't be willing to ignore our already effective regulatory process — a process which was established by our predecessors.
- My local paper, the Green Bay Press-Gazette (12/7/97) editorialized the mining moratorium issue last month. The title was "Science must determine fate of Crandon mine. The article stated that "if federal and state regulators can prove conclusively that the mine can operate safely, without endangering our precious natural resources, it should be given the necessary permits."
- I agree. We need to ensure that mining can be done with both the environment and economic development in mind. And if it can be done, it should be done if the folks up north want it.

## **Mining: A Consensus Process**

### **Ourada**

---

- The Laws of 1977 determined the mining laws for Wisconsin.
- The consensus group was formed as a legislative initiative. Participants over the three year period included:
  - Harvey Dueholm, led the legislative effort to craft and pass the necessary enabling legislation
  - Kathleen Falk, Environmental Decade (now, Dane Co. Exec.)
  - Susan Steingass, Sokaogan Chippewa (now, Dane Co. Circuit Court Judge)
  - Jim Derouin, Exxon (later, WI Attorney General)
  - Mary Lou Munts, first woman elected to the WI legislature
  - Frank Tuerkheimer, Natural Resources Defense Council (later, U.S. Attorney for the Western District of WI)
  - Peter Peshek, public intervenor
- Statement of Purpose, Chapter 421:

It is declared to be the purpose of this act to prevent adverse effects to society and the environment resulting from unregulated mining operations; to ensure that the rights of surface landowners and other persons with a legal interest in the land or appurtenances to the land are protected from unregulated mining operations; to ensure that mining operations are not conducted where reclamation, as required by this act, is not possible; to ensure that mining operations are conducted so as to prevent unreasonable degradation to land and water resources, and, to ensure that reclamation of all mined lands is accomplished as contemporaneously as practicable with the mining while recognizing that the extraction of minerals by responsible mining operations is a basic activity making an important contribution to the economic well-being of this state and nation.
- These laws were written by a diverse group of individuals, and our involvement at this stage in the process undermines the countless hours of research and findings by the consensus

committee. It is presumptuous and precedent-setting to make new law before we see any evidence.

**SENATE BILL 3:  
"THE MINING MORATORIUM THAT ISN'T"**

**MEDIA INFORMATION PACKET  
Tuesday, July 15, 1997**

**State Representative Marc Duff  
Chairman, Assembly Environment Committee**

Phone: 608/266-1190 (office)  
414/782-0763 (district)

**CONTENTS:** Message  
Background  
Assembly Republican Proposal

## MESSAGE

- ⊙ According to the non-partisan Wisconsin Legislative Council, Senate Bill 3 would not create a moratorium on mining in Wisconsin. The Legislative Council provides non-partisan legal counsel and policy research to legislative committees and individual legislators.
- ⊙ The Legislative Council report confirms an earlier analysis by the Department of Natural Resources (DNR). The attacks on the DNR by proponents of Senate Bill 3 have been found unwarranted by this independent report.
- ⊙ The DNR was right. Senate Bill 3 adds no assurances over and above current law to protect the Wolf River from unproven mining practices, because the bill will **not** create a moratorium on mining in Wisconsin (*see pages 4 and 5 of attached July 8, 1997 Legislative Council memo*).
- ⊙ A polluting mine following weaker environmental laws in another state where the pollution would be legal would meet the test of Senate Bill 3.
- ⊙ Senate Bill 3 is bad public policy. It disregards the science applied by DNR scientists and engineers during the permitting process and uses arbitrary standards to determine whether a mine is safe or not.
- ⊙ By creating a vague standard which the DNR must meet before permitting a mine, Senate Bill 3 invites litigation by both opponents and proponents of proposed mining operations.
- ⊙ The intention of the supporters of Senate Bill 3 is not to simply allow safe mining if the DNR could comply with the bills prescripts. Rather, Senate Bill 3 is a delaying attempt with the ultimate hope of banning mining in Wisconsin.
- ⊙ As we approach our state's sesquicentennial celebration, it is important to remember that our state's economy was first rooted in mining. A miner is even featured prominently in our state seal.

## BACKGROUND

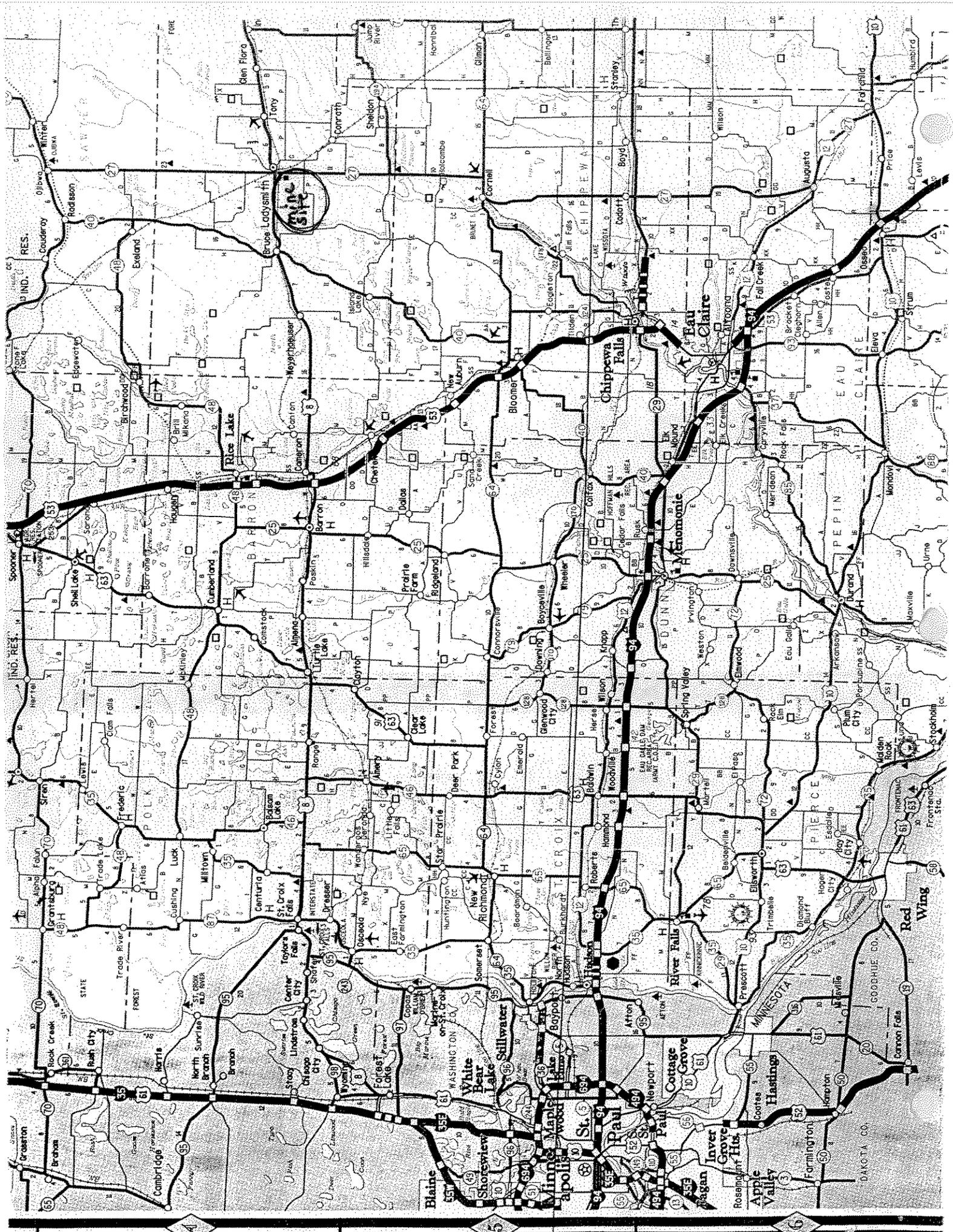
- ☞ Supporters of Senate Bill 3 claim it would ban the Department of Natural Resources from issuing a mining permit to a mining interest until the DNR can prove that a mine in the US or Canada has operated for ten years and has been closed for ten years without polluting surface water or groundwater.
- ☞ Senate Bill 3 passed the state Senate on March 11. The bill is currently in the Assembly Committee on Environment, chaired by state Representative Marc Duff. Rep. Duff held a public hearing in Ladysmith on May 12.
- ☞ During the hearing, the DNR testified that Senate Bill 3 “would not create a moratorium on mining in Wisconsin” (DNR testimony, May 12, 1997). The DNR said a polluting mine could meet the standards under SB 3 as follows:
  1. To determine whether a mine has polluted, the DNR would have to apply the environmental standards *of the government with jurisdiction over that mine*. So, a mine in Colorado would be subject to the laws of the state of Colorado, *even if Wisconsin's standards were tougher.* (see pages 4,5)
  2. DNR legal counsel stated that a violation of an environmental law includes only those that have been taken to court and a regulatory agency has made a final decision. *If no agency violation order or no court action was taken, no pollution would have occurred under Senate Bill 3.* For instance, the bill would approve a mine which operated in the 1870's and was closed in the 1880's under laws of that time, even though, by today's standards, pollution could have occurred. (see pages 4,5)
- ☞ According to the non-partisan, Legislative Council, “The DNR's interpretation that the laws in effect in the state or province where the (test) mine is located are to be used for this determination **appears reasonable** given that *DNR has no effective way of enforcing and monitoring environmental regulations for mines that may be located far away or may have been operated years ago.* In addition, the DNR's interpretation that a violation of an environmental law under the Bill includes a violation adjudicated by a court and a final determination by an administrative agency that can be legally reviewed **appears reasonable.**” (page 5)

## ASSEMBLY REPUBLICAN PROPOSAL DESCRIPTION

- Last session, Assembly Republicans required mining companies to prove they have the financial resources necessary to keep the mining waste site clean for good. (1995 WI Act 377 ).
- On July 10, 1996, a number of Assembly Republicans submitted a petition to DNR Secretary George Meyer to revise administrative rules regarding metallic mining financial assurance and groundwater quality protection. The DNR has promulgated these rules and has been holding public hearings.
- One rule pushed by Assembly Republicans would require mining permit holders to establish an irrevocable trust prior to mining and to maintain the trust into perpetuity. The trust would be large enough to cover preventative and remedial actions necessary to clean the mining facility or mining activity.
- Assembly Republicans also would require mining facilities to comply with the same state groundwater laws that other industries and municipalities must follow. If contaminants are found above the level necessary to protect human health, the DNR can initiate an enforcement action.
- Assembly Republicans have introduced Assembly Bill 236, which would require a mining permit applicant to prove that they will use proven technology to protect surface- and groundwater from contamination.
- In addition, Assembly Republicans will be strengthening this proposal, as an alternative to SB 3, to give the DNR the ability to require even further scientific evidence that proven technology will be used before a mine is permitted in Wisconsin.

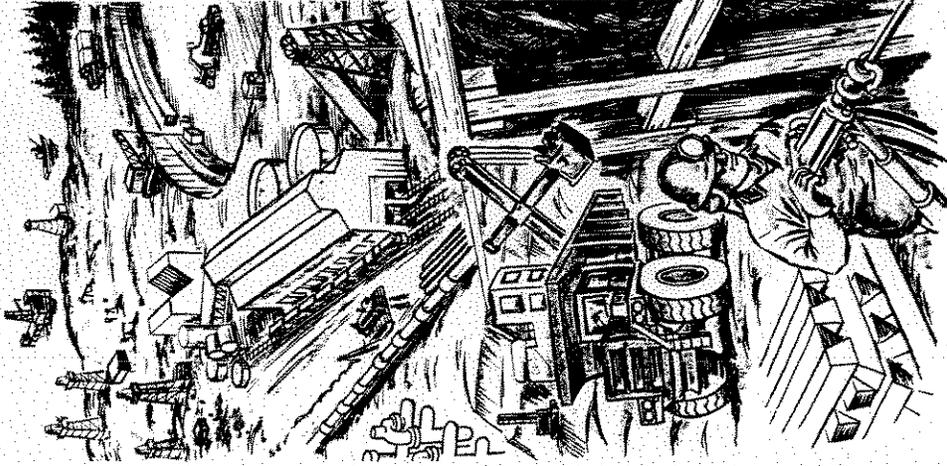
## TALKING POINTS

- ⊛ Assembly Republicans do not believe the myth that economic development and environmental enhancement cannot go hand-in-hand.
- ⊛ While we have expanded our industry by 30 percent over the last decade, we also have reduced our industrial pollution by nearly 30 percent, building upon our environmental heritage as we build new jobs.
- ⊛ Wisconsin already has the toughest mining standards in America, but our proposals add new environmental standards that ensure mining operations identify and utilize proven existing technology that protects state groundwater and surface waters.
- ⊛ The Assembly Republican position is clear: If a mining company can't prove its operation is safe, it will not receive a mining permit in Wisconsin. Period.
- ⊛ We must leave it up to the scientists -- not the politicians and special interests on either side -- to determine if a mining operation is safe.
- ⊛ Assembly Republicans remain committed to giving the DNR the regulatory tools necessary to protect the environment without trying to fool the public with slick political tricks and scare-tactics.
- ⊛ Our agenda ensures that we will leave our environment to the next generation better than we found it.



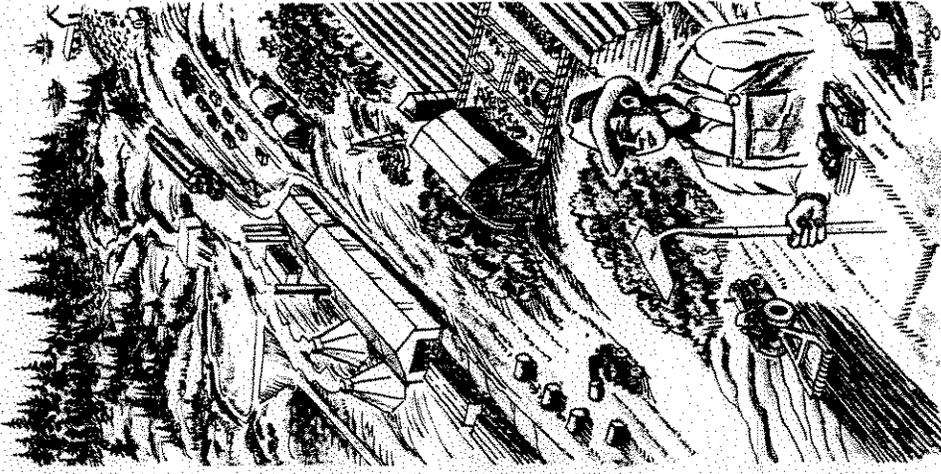
**NUCLEAR SITE**

IF IT CAN'T BE GROWN, IT HAS TO BE MINED



### MINING

- OIL ● GAS ● METALS
- NONMETALLICS ● BUILDING MATERIALS



### AGRICULTURE

- FARMING ● LIVESTOCK RAISING
- FORESTRY ● FISHING

*Everything we have and everything we use comes from our natural resources.*

*Mining and agriculture are the two basic industries that develop our natural resources. They supply all the food, fibre, fuel and materials to feed, clothe and house us, and to provide all of the materials we use everyday. How many things can you think of that do not originate in at least one of these two basic industries?*

**It is impossible to name something that doesn't come from our natural resources.**

Re  
Fred Ponschok  
Shawano

## **Resolutions Opposing the Crandon Mine or Pipeline As of 03/12/97\*\***

**39 counties, cities, villages and towns on the Wisconsin River have passed resolutions or have gone on record in opposition to the Crandon Mine and/or pipeline\*\*:**

1. Opposes mine. 2. Opposes pipeline.

Dane County 2  
Richland County 1,2  
Sauk County 1,2  
City of Lodi Columbia County 2  
Village of Arena Iowa County 1,2  
Village of Biron Wood County 1,2  
Village of Brokaw Marathon County 2  
Village of Lake Delton Sauk County 1,2  
Village of Merrimac Sauk County 1,2  
Village of Muscoda Grant County 1,2  
Village of Necedah Juneau County 1,2  
Village of Plover Portage County 2  
Village of Prairie du Sac Sauk County 2  
Village of Sauk City Sauk County 1,2  
Village of Spring Green Sauk County 2  
Village of Whiting Portage County 1,2  
Town of Birch Lincoln County 2  
Town of Boscobel Grant County 1,2  
Town of Caledonia Columbia County 2  
Town of Dekorra Columbia County 1,2  
Town of Delton Sauk County 2  
Town of Eau Pleine Portage County 2  
Town of Fairfield Sauk County 1,2  
Town of Grand Rapids\*  
Wood County 2  
Town of Honey Creek Sauk County 1,2  
Town of Knowlton Marathon County 2  
Town of Lodi Columbia County 1,2  
Town of Mazomanie Dane County 1,2  
Town of Merrimac Sauk County 1,2  
Town of Millville Grant County 1,2  
Town of Newport Columbia County 1,2  
Town of Prairie du Sac Sauk County 2  
Town of Quincy Adams County 1,2  
Town of Roxbury Dane County 2  
Town of Sumpter Sauk County 2  
Town of Troy Sauk County 2  
Town of Watterstown Grant County 1,2

Town of Wyoming Iowa County 2

\*opposes dumping untreated wastewater from any source into Wisconsin River

**24 other counties, villages, towns and organizations have passed resolutions or have gone on record in opposition to the Crandon Mine and/or pipeline\*\*:**

Menominee County 1

Outagamie County 1

Shawano County 1

Waupaca County 1

Menominee Nation Menominee County 1

City of Appleton, Outagamie County

City of New London, Outagamie County 1, 2

City of Shawano, Shawano County

City of Wisconsin Rapids, Wood County 1

Town of Bartelme Shawano County 1

Town of Fort Winnebago Columbia County 1,2

Town of Lessor, Shawano County 1

Town of Narvarino Shawano County 1

Town of Richmond Shawano County 1

Town of St. Lawrence, Waupaca County 1

Town of Waukechon Shawano County 1

Town of Wescott Shawano County 1

Great Lakes Inter-Tribal Council, Inc. Vilas County 1

Petenwell-Castle Rock Property Owners Assoc. Adams County 1,2

Pickerel/Crane Lake Protection & Rehabilitation District Forest County 1

Portage Canal Society Columbia County 2

Stockbridge Munsee Community Shawano County 1

Trout Unlimited Iowa County 1,2

Walleyes for Tomorrow Fond du Lac County 1

**10 counties, towns and organizations that have passed resolutions or legislation opposing mining in general:**

Clark County

Eau Claire County

Jackson County

Langlade County

Oneida County

Trempealeau County

Town of Ainsworth Langlade County

Town of Bradley Lincoln County

Rolling Stone Lake Protection Rehabilitation Langlade County

Brown County Conservation Alliance Wisconsin

**At least 64 Wisconsin Organizations Support the Mining Moratorium:**

A Job is a Right Campaign  
American Association of Retired People (AARP)  
American Vets Mentoring Alliance  
Audubon Society - Chappée Rapids Chapter  
Audubon Society - Fond du Lac  
Chapter Brown County Conservation Alliance  
Chippewa Valley Earth First!  
Citizens for Safe Water Around Badger  
Clean Water Action Council of Northeast Wisconsin  
Door County Environmental Council, Inc.  
EarthWINS  
E.C.C.O.L.A.  
Gray Panthers  
Great Lakes Indian Fish & Wildlife Commission  
Izaak Walton League - Brown County Chapter  
Izaak Walton League - Wisconsin Division  
Kids for Clean Water  
Ledge Preservation  
Menominee Nation  
Midwest Headwaters Earth First!  
Milwaukee Area Greens  
Mining Impact Coalition of Wisconsin Inc.  
Mole Lake Sokaogon Chippewa Community  
Musky Club Alliance of Wisconsin  
Muskies Incorporated  
National People's Campaign - Milwaukee & Madison  
Native Forest Network  
Navarino Nature Center  
North Forests Earth First!  
North Woods Alliance  
Northern Thunder  
Physicians for Social Responsibility - Eau Claire, Madison  
Progressive Students Network  
Protect Our Wisconsin River  
Protect Our Wolf River -- Shawano, WI  
Purple Earth  
Red Cliff Band of Lake Superior Chippewa Indians  
River Alliance of Wisconsin  
Servite Center for Life  
Shoreline Parks Preservation, Inc.  
Sierra Club - Coulee Region Chapter  
Sierra Club - John Muir Chapter  
Sierra Club-Midwest Office  
Student Environmental Action Coalition - Oshkosh, Eau Claire, Madison

Sturgeon For Tomorrow  
Superior Wilderness Action Network  
Trout Unlimited - Northwoods Chapter  
University of Wisconsin Greens  
UW-Oshkosh Grassroots Collective  
Voigt Intertribal Task Force of the Great Lakes Indian Fish & Wildlife Commission  
Walleyes for Tomorrow - Fond du Lac  
W.A.T.E.R.  
Watershed Information News Service (WINS)  
Waukesha Environmental Action League  
Wisconsin Audubon Council  
Wisconsin B.A.S.S. Federation  
Wisconsin Board of Church and Society, United Methodist Church  
Wisconsin Citizen Action  
Wisconsin Environmental Decade - Oshkosh, Milwaukee, Madison  
Wisconsin Family Farm Defense Fund, Inc.  
Wisconsin Indian Education Association  
Wisconsin Resources Protection Council  
Wisconsin Trout Unlimited  
Wisconsin Wildlife Federation  
Wolf River Watershed Alliance

*\*\* Information provided by Mining Moratorium Campaign, Wolf Watershed Educational Project, Wisconsin Resources Protection Council, Shopper Stopper in Merrimac WI, and Menominee Nation*

EXCERPTS FROM

Review of the Crandon Project Reports Submitted  
by Exxon Minerals Company Assessing Possible  
Uses for Pyrite Tailings

FINAL REPORT

December 21, 1984

by: Reviewer:

Andres A. Trevino  
5118 Sherwood Road  
Madison, WI 53711  
(608) 273-4759

REVIEW OF EXXON MINERALS COMPANY, U.S.A.'s PYRITE PROCESSING STUDY  
( conducted by Davy McKee, November 1979 )

The reviewer's conclusion is that the reports are professional and conform to feasibility studies used in industry. Minor errors and omissions detected in the reports do not affect the final conclusions. The study's more important flaw is the lack of

justification for the elimination of Crandon as a potential processing center. Transporting pyrite to Green Bay adds \$3 million to the operating cost of processing fine tailings and \$13 million to the cost of processing also the coarse fraction.

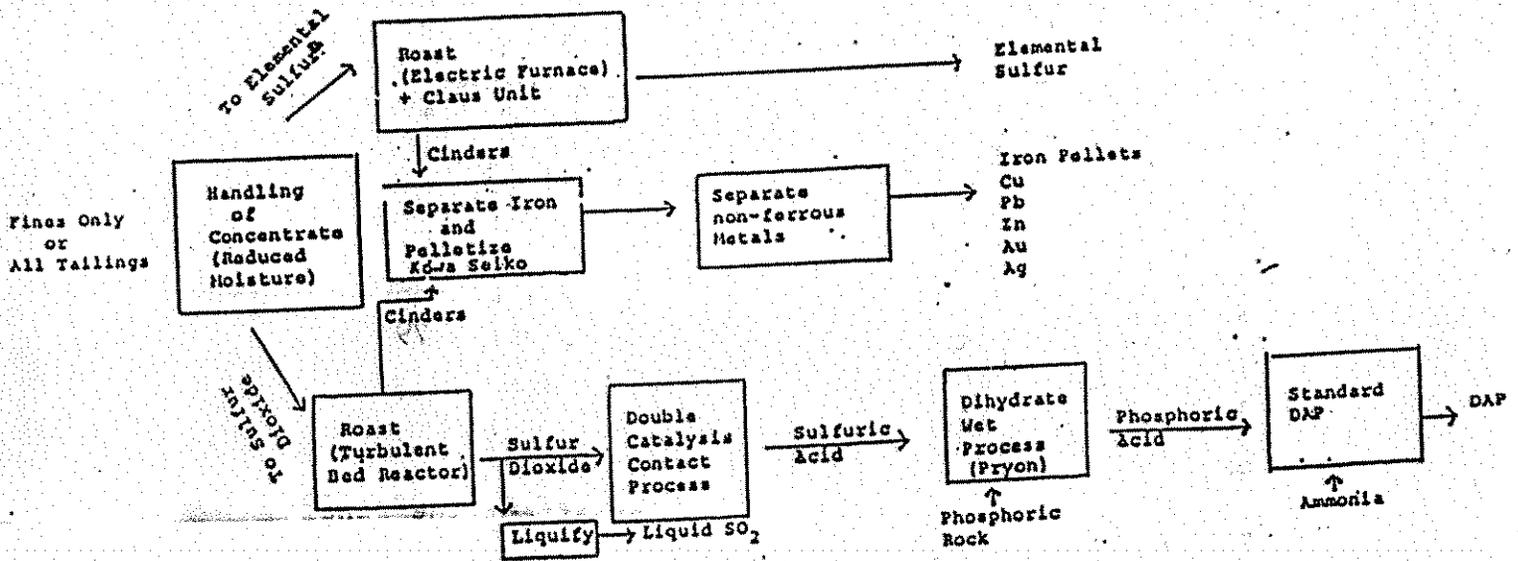
X The concept behind the pyrite processing center is the avoidance of the environmental damage incurred by the impoundment of Exxon's mill tailings. The impoundment area required to hold the estimated 33 million T of tailings produced over the 30 years of

mill operations is 22.1 million m<sup>3</sup> (MWDF Feasibility Report).

The processing alternative involves the separation of these tailings into 8 million T of pyrite concentrate (slimes) and 25 million T of coarse fraction. By processing the slimes, the impoundment area and containment specifications can be reduced.

X If all the tailings are processed the need for impoundment is eliminated. The pyrite processing train, however, is not pollution-free.

Figure 4.1  
SELECTED PROCESSING TECHNOLOGIES



Any of the products after roasting can be sold without further processing.

Source: Figure 2, Chapter 4, Phase I Report, Section 4.2, Phase I Report.

- DAP = Diammonium Phosphate
- Cu = Copper
- Pb = Lead
- Zn = Zinc
- Au = Gold
- Ag = Silver

Impounded pyrites, however, generate an acid leachate that could contaminate the groundwater. As an alternative to impoundment, further processing of the pyrites to marketable products is suggested. Potential products include sulfur, sulfuric acid, phosphoric acid, diammonium phosphate fertilizer, iron pellets and several nonferrous metals. This best case has a Return On Investment (ROI) of 5.3% The second highest ROI corresponds to the case where all the pyrites are processed, but no additional H<sub>2</sub>SO<sub>4</sub> is brought in from external suppliers.

EXCERPTS FROM

COMMENTS ON WASTE CHARACTERIZATION STUDIES

CONDUCTED BY THE CRANDON MINING COMPANY

David W. Blowes, Ph.D.

July 26, 1995

The waste characterization studies conducted by the Crandon Mining Company have been extremely limited in their variety and their number. To base the design of a 20 million cubic yard waste disposal facility on a single test conducted on a 30 gallon sample is a huge leap of faith. These waste rock materials should be handled as acid-producing waste rock. These calculations indicate that all of the tailings produced will have an extremely high acid generating potential attributed to the 40-50 wt.% sulfide content of the Crandon tailings.

Section 10.3.2.1 Sulfide Mineral Removal

This section does not examine the potential for removal of sulfide minerals, merely the potential for monetary return by doing so. In this respect the Feasibility report reflects attitudes held in the early 1980's and does not incorporate recent research conducted under the Canadian MEND Program. Presently, two major Canadian mining companies, Inco Ltd. and Noranda Minerals Inc., are examining the potential benefits of removing the majority of the sulfides from their waste for disposal underground or underwater. These studies have not been reviewed by the Crandon Mining Company. According to these studies the collection and disposal of a sulfide-rich tailings material is sufficiently beneficial, on a solely environmental basis to make the additional sulfide removal cost efficient. The recent literature needs to be reviewed.

Mine Permit Application makes no provision for perpetual stewardship of the Crandon site, other than a \$682,600 (1995 dollars) waste management fund and groundwater fee. This fund is inadequate to assure the perpetual isolation of the Crandon Mine Wastes. Consequently, conservative waste management impact calculations should be based on the potential failure of the synthetic geomembranes, and dissolved sulfate and metal concentrations presently observed in inactive mines of compositions that are similar to those observed at Crandon.

UPDATED PYRITE PROCESSING REPORT

Table 6-1  
Annual Revenues - 1995 \$

Product	Annual Production		Values per Unit	Yearly Revenues	Total Revenues			
	Amount	Units			Acid Only	Acid and Pellets	DAP Only	DAP and Pellets
<u>Process Only Fines</u>								
Sulfuric Acid	729,068	tons	\$ 36	\$26,246,448	\$26,246,448	\$34,157,298	\$80,024,420	\$87,935,270
Iron Pellets	263,695	tons	\$ 30	7,910,850				
Diammonium Phosphate	571,603	tons	\$ 140	80,024,420				
<u>Nonferrous Metals</u>								
Zinc	2,921	tons	\$ 780	2,278,380				
Copper	529	tons	\$1440	761,760				
Lead	485	tons	\$ 360	174,600				
<u>Precious Metals</u>								
Silver	234,379	ozs	\$ 3.96	928,141				
Gold	10,609	ozs	\$319.78	3,392,546				
Subtotal				\$ 7,535,427				
Nonferrous & Precious					X 29 years =	\$ 218,527,383.00		
<u>Process All Pyrite</u>								
Sulfuric Acid	1,889,800	tons	\$ 36	\$ 68,032,800	\$68,032,800	\$87,818,820	\$206,662,120	\$226,448,140
Iron Pellets	659,534	tons	\$ 30	19,786,020				
Diammonium Phosphate	1,476,158	tons	\$ 140	206,662,120				
<u>Nonferrous Metals</u>								
Zinc	4,178	tons	\$ 780	3,258,840				
Copper	2,083	tons	\$1440	2,999,520				
Lead	1,168	tons	\$ 360	420,480				
<u>Precious Metals</u>								
Silver	592,859	ozs	\$ 3.96	2,347,722				
Gold	27,328	ozs	\$319.78	8,738,948				
Subtotal				\$ 17,765,510				
Nonferrous & Precious					X 29 years =	\$ 515,199,790.00		

\* metals alone recovered would finance the construction cost of the pyrite processing plant.

Table 1-5  
Reagent Use, Consumption Rate, and Storage

Chemical	* = toxic	TO BE BROUGHT TO THE SITE FOR METALS EXTRACTION	Receive By	Estimated Monthly Consumption (pounds)	TONS PER YEAR Form	Storage Capacity (pounds)	Shipment Size (pounds)	TONS used in 29 yrs
<u>Ore Flotation</u>					600			
* Sulfur Dioxide (SO <sub>2</sub> )		Depressant	Truck	100,000	Liquid	150,000	60,000 or 100,000	17,400
* Copper Sulfate (CuSO <sub>4</sub> · 5H <sub>2</sub> O)		Activator (Resurfacing Agent)	Rail	160,000	Granular	300,000	100,000 minimum (100 lb bag)	27,840
* Sodium Cyanide (NaCN)		Depressant	Truck	14,400	Briquette	36,000	36,000	2,505.6
Polypropylene Glycol Methyl Ether (Dowfroth 250)		Frother	Truck	4,000	Liquid	50,000	36,000	696
Sodium Sulfide (Na <sub>2</sub> S · 9H <sub>2</sub> O)		Activator and Precipitant	Rail	5,000	60% Flake	80,000	80,000 minimum (400 lb bag)	870
Xanthates		Collectors	Truck	36,000	Granular	63,000	40,000	6,264
* Zinc Sulfate (ZnSO <sub>4</sub> · 7H <sub>2</sub> O)		Depressant	Truck	48,000	Granular	54,000	24,000 minimum	8,352
Starch (CMC-7LT)		Depressant	Truck	22,000	Powder	30,000	25,000 minimum (50 lb bag)	3,828
Carcinogen Sodium Dichromate (Na <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> )		Depressant	Truck	32,000	Liquid	117,000 (12,000 gals.)	78,000 minimum (8,000 gallons)	5,568
Sodium Silicate (Na <sub>2</sub> SiO <sub>3</sub> )		Dispersant	Rail	92,000	Liquid	175,500 (15,000 gals.)	117,000 (10,000 gallons)	16,008
Activated Carbon		Absorbent	Rail	50,000	Powder	75,000	24,000 minimum (50 lb bag)	8,700
* Methyl Isobutyl Carbinol (MIBC)		Frother	Rail	16,000	Liquid	82,000 (12,000 gals.)	40,000 minimum (6,000 gallons)	2,784
Lime (CaO)		pH Modifier	Rail	882,000	Pebble	1,320,000	190,000 minimum	100,815.6 tons used in 29 yrs + lime 153,468

<u>REAGENTS USED</u>	<u>REAGENTS USED</u>	<u>REAGENTS</u>	<u>NON-TOXIC</u>	<u>TOXIC REAGENTS</u>	<u>TOXIC REAGENTS SHIPMENTS BY:</u>
29 yr. use in Tons	Lime	Total REAGENTS	NON-TOXIC	TOXIC REAGENTS	TOXIC REAGENTS SHIPMENTS BY:
Metals Extraction	153,468.0	100,815.6	41,934.0	58,881.6	Truck 41,829.6
Water Treatment	6,960.0	109,122.3	95,550.3	13,572.0	Rail 30,624.0
Totals in TONS	160,428.0	209,937.9	137,484.3	72,453.6	72,453.6

315 Hiawatha Drive  
Waterloo, Ontario  
Canada N2L 2V9

July 26, 1995

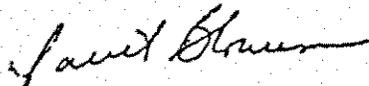
Ms. Laura Sutherland  
Office of the Public Intervenor  
123 West Washington Avenue  
P.O. Box 7857  
Madison, WI  
53707-7857

Dear Ms. Sutherland,

Attached are my comments on the Crandon Mining Company Environmental Impact Report. As you are aware the Crandon Mining Company's long-term management program relies on the use of synthetic covers and liners to prevent sulfide mineral oxidation and the release of contaminated water. The warranty life of synthetic material used in the cover system is typically 50 years. This is a sufficient warranty to protect the Crandon Mining Company during the 40 year long-term site management period following mine closure, but it is not sufficient to protect the people of Wisconsin in the following decades and centuries.

Using CMC figures the cost of complete replacement of the tailings cover system is in excess of \$16,000,000 (1995 dollars). Although it is likely that the synthetic cover material will survive beyond the 50 year warranty period it is also likely that the cover system will require replacement. The replacement cost can be expected to be less than the initial installation cost. It seems that no provision, has been made for monitoring the efficiency of the cover/liner system into the future beyond the 40 year post closure period, or the perpetual replacement of the cover system upon failure. It seems further, from the meetings I have attended, that it is the assumption of the Crandon Mining Company and the Wisconsin Department of Natural Resources, that the people of the State of Wisconsin will cover these costs. I am not confident that the people of Wisconsin are aware of the magnitude of the financial liability being assumed under their name.

Yours sincerely,

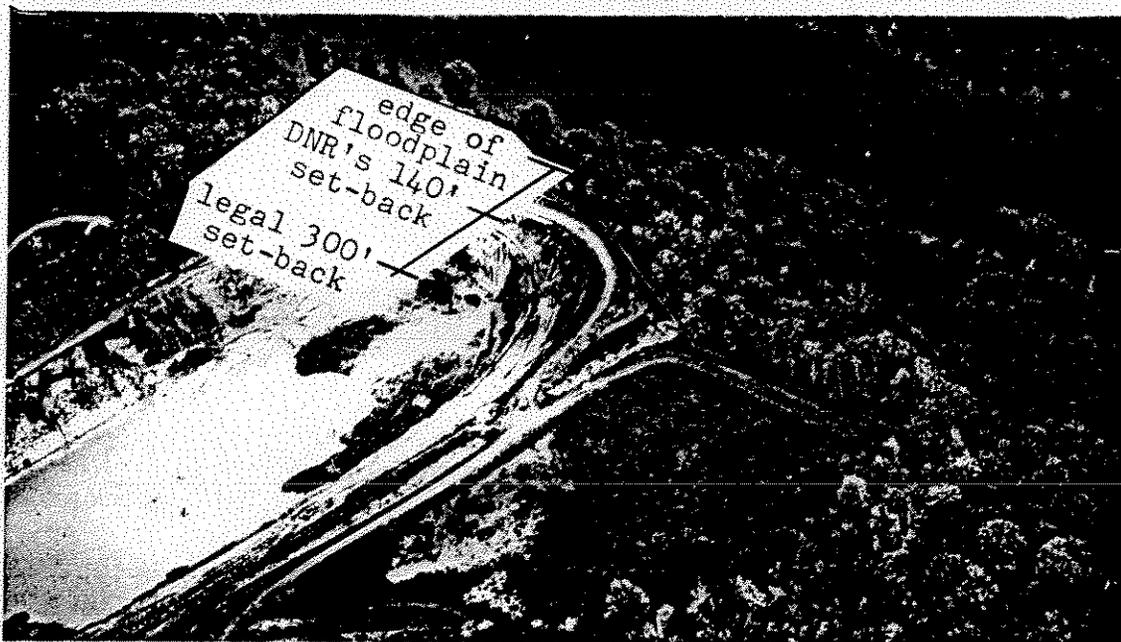


David W. Blowes, Ph.D.

## THE ULTIMATE QUESTION ---

CAN WE, THE PEOPLE, TRUST OUR POLITICIZED DNR PERSONNEL ASSIGNED TO SULFIDE ORE MINING PROJECTS TO FULFILL THEIR LEGALLY STATED RESPONSIBILITIES TO PROTECT OUR CLEAN WATERS?

By law, a setback of 300 feet from the high-water mark of a stream was established for mining activities. The DNR, however, granted Flambeau Mining Company a 160 foot variance to that law thus allowing construction beyond 140 feet from the high water mark of the Flambeau River. The DNR person in charge stated, "that variance would only increase the flow of groundwater through the mine berm by 5 gallons per minute, according to their modeling." But visitors on a tour of the mine saw the water in the river within 20 feet of the mine constructed berm, which means that the mining company, after having been given a 160 foot variance, violated the 140 foot setback by 120 feet! When a DNR person on the tour was confronted as to that fact, he simply stated, "It isn't hurting anything". Aerial photos taken that day confirm it.



A view from the river side verifies the high water line.



## The Problem

Exerpt from

### ACID DRAINAGE FROM MINES ON THE NATIONAL FORESTS

BY

The U.S. Dept. of Interior's  
Bureau of Mines



The Forest Service has identified acid drainage from mine sites as the most difficult and costly reclamation problem it faces with western metalliferous mining operations. Acid drainage persists at many active and abandoned mine sites, with some significant environmental problems dating as far back as the late 1800's.

There are also concerns that current and future mining operations may generate acid drainage for years or decades after the mines cease operation. Unfortunately, major technical uncertainties are associated with the prediction of acid drainage potential at the time of mine plan approval as well as with mitigation or treatment techniques for post-mining use.

Over 1,500 western mining sites with significant acid drainage problems have been identified on National Forest System lands. Many of these sites in remote locations that are not accessible the year around often represent small, but ecologically damaging flows. Such sites require either permanent control measures to prevent or mitigate acid formation, or low-cost, passive treatment technology to neutralize and detoxify the waters. The problems of acid drainage from the sulfide-bearing rock present at many western metal mines are exacerbated by contamination that occurs when acid waters contact exposed mineral zones and dissolve heavy metals. Many of these metals are toxic to aquatic and terrestrial life, if the concentrations are high enough.

Forest Service land managers, who face increasingly complex and controversial decisions regarding mineral development, need new research information. One major problem affecting the future of metal mining in the West is the absence of technology to predict the potential of new mining ventures to generate acid drainage. State and Federal permitting and regulatory agencies need information on the acid-forming potential of ore deposits in order to analyze the impacts of new mining operations and provide for the development of necessary environmental controls. Gold and other precious metal operations, which have experienced a 30- to 35-percent growth in domestic production in each of the last 5 years, are expected to continue. Without additional research information, it is almost certain that a significant percentage of existing

and new mining ventures will experience unexpected acid drainage situations. These situations could result in expensive and difficult remedial actions to prevent adverse environmental impacts, primarily to surface and ground waters, due to metal-contaminated drainage.

The fact that acid drainage has been a persistent problem for more than 100 years is indicative of one of the major difficulties in dealing with it—that there are currently no widely applicable technologies to mitigate or stop a fully developed acid drainage situation. Only stopgap prescriptions are available and at considerable cost. On the other hand, the application of State and Federal regulatory controls on some modern mines has, in some instances, been able to limit the development of acid mine drainage and consequently reduce the long-term environmental effects. However, regulatory controls do not always work. In the case of old, abandoned mines it is too late for regulatory controls. New technologies are needed to effectively deal with these problems.

Currently, reliable data on the total number of mines producing acid drainage and on the number of miles of streams affected by acid and metal drainage are not available for the Western United States. However, various estimates have placed the number of these mines in the range of 20,000-50,000, seriously affecting 5,000-10,000 miles of streams. The cumulative effect of these mines, whatever their actual number, is significant.

The basis for the production of acid drainage is well understood. Pyrite and other sulfide minerals are exposed to air and water in the mining process. Air and water oxidize the sulfide minerals, releasing sulfuric acid and sulfates. This process is catalyzed by iron-oxidizing bacteria and permits a host of site-specific secondary reactions, principally ion exchange and acid-induced metal dissolution. The metals that may be involved in this process cover the range of heavy metals: arsenic, cadmium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc. Once the chemical reactions are fully realized, the discharge of acid and metal ions is known to persist.

## THE FLAMBEAU MINE - UNANSWERED QUESTIONS

Reports indicate that the Flambeau Mine is ending its metallic ore extraction phase and will soon begin the site reclamation and closure. Already, mining proponents are claiming it as an example of safe sulfide ore mining to justify approval of the proposed Crandon Mine in the headwaters of the Wolf River watershed. In both cases the metallic minerals are in sulfide rock and surface and groundwaters are polluted and would be treated and discharged and there the similarity ends.

The Flambeau Mine is a relatively small (about 30 acre) open pit quarry excavated to less than a hundred feet deep, while the proposed Crandon Mine would be an underground shaft mine up to a mile long and about 1,500 feet deep.

The ore in the Flambeau Mine was blasted into chunks, loaded on trucks and hauled up to a crusher which broke it into a smaller size for loading onto railroad cars for shipment to Canada for processing, leaving no tailings at the site. The proposed Crandon Mine would bring the ore to the surface for removal of its metals by a chemical flotation process at the site. That would require a vast amount of chemicals to be brought to the processing plant and would produce over 50 million tons of sulfide tailings and other toxic waste to be disposed of safely along with up to 2 million gallons of water polluted each day.

The Flambeau Mine did not dewater the area groundwater table but the proposed Crandon Mine would. It is in a fragile ecosystem of numerous spring-fed lakes and streams, wetlands and residential wells dependant of the present water table.

The aerial view of the Flambeau Mine, below, shows the pit with accumulated precipitation and groundwater in it and its close proximity to the Flambeau River. To the left is the ore crushing and rail car loading area and beyond that is the water treatment plant, laboratory and office facilities.



## WILL THE RECLAIMED FLAMBEAU MINE EXPERIENCE MINE ACID DRAINAGE?

Program Aid 1505, Acid Drainage from Mines on the National Forests, produced by the U.S. Dept. of the Interior's Bureau of Mines, describes the problem, the acid producing process and the difficulty of economically mitigating the problem.

From that study it appears that all of the ingredients for generating mine acid drainage are there; sulfide rock rubble, air and water. It is just a matter of time for nature to run its course.

If it is fact, as stated by a DNR person involved in the permitting of the Flambeau Mine and granting a setback from the river variance, the shoreland water table is above the river level and there will be groundwater drainage from the bank to the river when the reclamation is completed and the natural groundwater level is reestablished. Precipitation will also provide oxygenated water to the site.

The report states, "it is almost certain that a significant percentage of existing and new mining ventures will experience unexpected acid drainage situations." The severity may depend on the amount of drainage. If the 160 foot variance granted by the DNR would increase the out-flow by 5 gallons per minute that indicates that at 300 feet of setback there already was a flow expected. But the berm was constructed only 20 feet from the high water or 120 feet closer than the modeled increase of 5 gpm so the drainage could eventually be substantial. Only time will tell and if so, future generations will experience the effects and pay the price for remedial action or the long-term adverse effects on public waters.

The "show-case" Flambeau Mine may prove that the moratorium on sulfide rock mining in Wisconsin is needed now to adequately fulfill the state's trust responsibilities of the people's waters. The Flambeau deposit was a relatively "rich" deposit as compared to the Crandon deposit and with metal prices today just as depressed as they were when Exxon abandoned its permitting process eleven years ago, it appears that the Crandon Mining Company is going all-out for the permits now, while the still have their committed proponents in line, but factually would not develop the mine until metal prices improve considerably. For, after all, they are here in Wisconsin for only one reason, maximum profits, without any real concern for the long-term adverse effects after they got what they came for and have left the state.

Only then will history indicate whether political lust for wealth and power abandoned its sacred trust to our children and grandchildren; to use but not abuse our life-sustaining natural resources so they will be passed on to succeeding generations undiminished in quality or quantity. For only with wise use and responsible regulations can we have the clean healthful waters we all need daily to sustain our lives and also enjoy the many products of mining which enhance it.

**Public Concerns  
Regarding the Proposed  
Crandon Mine & DNR Responses**

**A Summary of Public Comments and Questions  
from the July 31, 1997  
Public Meeting at Rhinelander, Wisconsin,  
with DNR Responses**

**Wisconsin Department of Natural Resources  
Bureau of Integrated Science Services  
P.O. Box 7921  
Madison, WI 53707**

**October 6, 1997**

## LIST OF ACRONYMS AND ABBREVIATIONS

BOD:	Biochemical Oxygen Demand
CMC:	Crandon Mining Company
DEIS:	Draft Environmental Impact Statement
DNR, or "Department":	Wisconsin Department of Natural Resources
DOT:	Department of Transportation
EIS:	Environmental Impact Statement (to be produced by DNR)
EPA:	U.S. Environmental Protection Agency
GCL:	Geosynthetic Clay Liner
MPA:	Mine Permit Application
mg/L:	milligrams per liter; also 1 part per million (ppm); roughly equivalent to 2½ ounces of a substance diluted in one 20,000 gallon railroad tanker car full of water
µg/L:	micrograms per liter; also 1 part per billion (ppb); roughly equivalent to 2½ ounces of a substance diluted in 1,000 railroad tanker cars of water
ng/L:	nanograms per liter; also 1 part per trillion (ppt); roughly equivalent to 2½ ounces of a substance diluted in 1,000,000 railroad tanker cars of water
NR 103:	Wis. Adm. Code, "Water Quality Standards for Wetlands"
NR 105:	Wis. Adm. Code, "Surface Water Quality Criteria for Toxic Substances"
NR 115:	Wis. Adm. Code, "Wisconsin's Shoreland Management Program"
NR 212:	Wis. Adm. Code, "Waste Load Allocated Water Quality Related Effluent Limitations"
TMA:	Tailings Management Area
TMDL:	Total Maximum Daily Load: a DNR/EPA initiative targeting impaired waters of the state
WGNHS:	Wisconsin Geological & Natural History Survey
Wis. Adm. Code:	Wisconsin Administrative Code

## Table of Contents

Introduction .....	1
Wisconsin River & Proposed Discharge Issues .....	2
Biochemical Oxygen Demand (BOD), Dissolved Oxygen Levels, and the Re- Allocation Process .....	2
Wastewater Treatment & Discharge .....	5
Mercury .....	12
The Tailings Management Area .....	14
The Concentration of Minerals .....	21
The Review Process, Decision, & Role of the DNR .....	24
Wetlands .....	26
The "Mining Moratorium" Bill .....	27
Plants, Wildlife, & Endangered Species .....	28
Socio-economics .....	30
Other mining projects .....	30
Air Pollution .....	32
Groundwater Drawdown .....	32
Who will pay (for the process, the reclamation, etc.) .....	36
Transportation Risks .....	38

## Introduction

The Department of Natural Resources (DNR) wishes to thank all of the citizens who attended the July 31 public meeting at Nicolet College. As intended, the Department received many comments and questions during the meeting. Many of these questions raised issues that the DNR intends to analyze before publication of the Draft Environmental Impact Statement (DEIS).

Additional information is available in a number of recently updated mining information sheets available from the Department's Rhinelander (call Cathy Cleland at 715-365-8997) and Madison (call Shannon Fenner at 608-267-2770) offices. These are: *Potential Mining Development in Northern Wisconsin*, *The Cumulative Impacts of Mining Development in Northern Wisconsin*, *How a Mine is Permitted*, *Local Decisions in Mining Projects*, *Protecting Groundwater at Mining Sites*, *Reclamation and Long-term Care Requirements for Mine Sites in Wisconsin*, *How the Department of Natural Resources Regulates Mining*, *Addressing Public Concerns with Wisconsin's Laws Governing Mining*, and *Wisconsin's Net Proceeds Tax on Mining and Distribution of Funds to Municipalities*.

For a comprehensive description of how mining is regulated, refer to: *An Overview of Metallic Mineral Regulation in Wisconsin*, by Thomas J. Evans, published by the Wisconsin Geological and Natural History Survey (WGNHS) as Special Report 13, 1996 (revised edition). The document is available from the WGNHS office in Madison (phone: 608-263-7389).

The following pages contain Department of Natural Resources (DNR) responses to the questions and comments that arose at the public meeting. By reviewing the videotape of the meeting, the Department has made an effort to include each comment. In the instances that several individuals asked similar questions, an attempt was made to accurately capture the essential meaning in a single paraphrased question. Of course, with the number of comments received, it is possible that one or more questions have been accidentally overlooked. This is not the Department's intent, and any questions not answered within this document should be sent to Bill Tans at the following address: Bill Tans (SS/6), Department of Natural Resources, P.O. Box 7921, Madison, WI 53707. The questions and comments are written in bold type, and the Department responses follow each question in regular type. Where Wisconsin Statutes or Administrative Codes are paraphrased, the reader is advised to check the original language if more complete information is desired.

## Wisconsin River & Proposed Discharge Issues

### *Biochemical Oxygen Demand (BOD), Dissolved Oxygen Levels, and the Re-Allocation Process*

1.

**Q:** How long will the BOD reallocation process for Segment A of the Wisconsin River take? Does the reallocation involve revising NR 212? Please explain the process and need for revising NR 212.

**A:** Chapter NR 212, Wis. Adm. Code, specifies how BOD discharge is to be allocated among dischargers on the Wisconsin River. Monitoring on the Wisconsin River between Rhinelander and Grandfather Dam has revealed that the dissolved oxygen concentration (DO) along that stretch occasionally falls below 5 ppm. This is the level necessary to protect the health of fish and other aquatic organisms. Low DO levels indicate that we should consider changing the amount of oxygen-depleting BOD that enters the river from both point source (permitted) dischargers and non-point sources (runoff from the land surface).

If a decrease in the total amount of BOD being discharged to the river will indeed be necessary, then NR 212 will need to be revised to reflect the decrease. The process for creating and revising administrative rules is detailed in Chapter 227, Wis. Stats. Typically, Department staff invite representatives from the entire spectrum of interests in an issue to participate in drafting a rule revision. Meetings held during this process are open to the public. The rule proposal may or may not be revised based upon the testimony presented during the public comment period. The draft rules are sent to the Natural Resources Board for review and approval. If approved, the Department then submits the rule proposal to the Legislature for review.

We anticipate that the waste load allocation process for Segment A of the Wisconsin River would take approximately one and a half to two years to complete. The exact schedule would be determined by the technical issues associated with waste load allocation, including the sampling and computer modeling tasks.

2.

**Q:** If there are problems already with the amount of dissolvable oxygen going below the allowable number of 5 mg/L, why are we even considering adding more pollution? Won't we be far below what should be allowed? Your pie chart shows that the Wisconsin River is 97% of the time at 5 mg/L oxygen, and 3% of the time it falls below. But how often, if ever, was it above the 5% minimum - can the river even take the additional load of Crandon Mining Company) CMC? How much waste can the river handle over the years?

**A:** The level of dissolved oxygen in Segment A of the Wisconsin River has dropped below 5 mg/L on limited occasions. The pie charts that were used at the Rhinelander meeting were meant to demonstrate that the dissolved oxygen in the Wisconsin River was above 5 mg/L for 97% of the time. The exact reason why it falls below 5 mg/L has not yet been determined. We are currently involved in field studies to examine this very issue.

The waste load allocation process will first need to determine what the assimilative capacity (how much the river can absorb and naturally degrade without harm to the fish and wildlife) is for Segment A. Unless we can determine the cause of the low dissolved oxygen, it will be unlikely that our assessment of the assimilative capacity would go up. A later step is to determine how that total capacity is allocated to industries, municipalities, non-point sources, margin of safety and other demands.

If the Crandon Mining Company's discharge goes to Segment A, it would either need to receive a portion of the total allocation for BOD (biochemical oxygen demand), or discharge below detectable levels for BOD. Discharging below detectable levels of BOD means that there would be almost no BOD in the discharge - it would not be zero, but not measurable either. If Crandon Mining Company (CMC) were eventually to receive an allocation, the allocation would be designed to maintain the dissolved oxygen levels at or above 5 mg/L at all times and at all points in Segment A of the Wisconsin River.

3.

**Q:** Why was the BOD measuring meter at Hat Rapids shut down three years ago? What was the thinking about doing this? Especially knowing that Crandon Mining was looking at possible discharge points?

**A:** The decision to stop servicing the dissolved oxygen meter at Hat Rapids was based solely on budgetary constraints. A number of other monitoring devices also were terminated at the same time. Budget cuts within the statewide program required some very difficult decisions be made. One of those decisions was to stop service on the dissolved oxygen monitor at Hat Rapids Dam. The decision had nothing to do with the Crandon Mine. In fact, at the time of the decision, CMC had not yet proposed sending its treated wastewater to the Wisconsin River. The monitor at Hat Rapids was put back into service in the spring of 1997.

4.

**Q:** It is my understanding that toxic metals loading in the discharge to the river does not necessarily affect the BOD loading. For this proposal, are you looking at toxins in the water and/or sediment and, if not, why not?

**A:** The concentrations of heavy metals discharged to the Wisconsin River would not affect the BOD loading, since BOD results from the decay of organic materials. We are reviewing the extent to which other toxins could adversely affect the aquatic life, wildlife, and human health. Wisconsin has water quality standards for many substances, including the metals in the proposed discharge. Water quality standards represent concentrations of substances in surface water which cannot be exceeded in order to protect aquatic life, wildlife, and human health. If, according to the application of laws pertaining to surface waters, a water quality standard has the potential to be violated by a particular substance, that substance would be limited in the discharge permit. Limits would be calculated to be protective of the environment to prevent the significant lowering of water quality and any toxic effects. We are also reviewing the extent to which sediments could be impacted. Monitoring is ongoing to establish baseline conditions in the sediment. The build-up of pollutants in sediments is a legitimate concern that the Department is analyzing. See also Response #5.

5.

**Q:** You have addressed one type of pollution, which is BOD. Is the Wisconsin River routinely monitored for other types of pollution that could result from the Crandon mine (such as heavy metals)?

**A:** The Wisconsin River is routinely monitored for other types of pollution that could result from the Crandon Mine. Historically, the Wisconsin River has been perhaps the most intensely monitored river in Wisconsin. The monitoring data enables the Department to calculate or predict whether the addition of treated mine wastewater would cause a violation of water quality standards.

To make certain that site-specific, accurate information was available, the Department collected water quality samples on the Wisconsin River at Hat Rapids three times in 1996 for verifying background concentrations of a large list of substances, including heavy metals.

In response to concerns that the Crandon Mine could contribute to the deposition of metals in Wisconsin River sediment downstream, we are also monitoring existing conditions in Lake Alice and other nearby deposition areas.

6.

**Q:** How much dissolved oxygen is added by spillways and above ground or water discharge? Can oxygen be added to the Wisconsin River? If so, why isn't someone oxygenating the Wisconsin River?

**A:** Low head dams and spillways do add some oxygen to the water; however, it is normally an insignificant amount. This is largely because the water is not agitated (turbulent) for a long enough period of time to absorb much oxygen.

Oxygenating a river could be done and has been considered at some locations in the state. However, to oxygenate the river could involve a significant amount of money. There would be capital expenses to install aeration equipment, such as surface aerators or air diffusers at the bottom of the river and air compressor equipment to supply the air. Plus there would be operational and maintenance costs. Who would or should be responsible for oxygenating the river is another difficult issue. Though re-aerating or oxygenating the river is possible, it is probably not a viable option. Aeration could *treat* the symptoms of too much BOD in the river, but doesn't *solve* the problem. Only reducing the BOD will. Pollution prevention is always better than treatment of the pollutant after it is discharged.

The mine wastewater would be very low in BOD content due to the nature of the wastewater. However, in order to comply with the water quality requirement of 5 mg/L dissolved oxygen, further BOD discharged to this segment is prohibited. Consequently, the Crandon Mining Company has proposed an additional final step in its wastewater treatment to add oxygen to its effluent prior to pumping it through the pipeline. This would be done as a means to control any BOD to comply with a proposed BOD effluent limit of 'no detection' during the BOD wasteload allocation period of May through October. Adding dissolved oxygen to reduce BOD may be done chemically by addition of hydrogen peroxide (which degrades to oxygen and water) or potassium permanganate (which degrades to oxygen, potassium, and manganate), or by mechanical aeration.

7.

**Q:** The people who currently live near the Wisconsin river and fishermen state that humans cannot eat the fish due to contamination. Now additional waste from the Exxon pipeline will further cause problems. When can the fish be eaten safely if we can not eat them now?

**A:** It is true that a number of the flowages on the northern sections of the Wisconsin River have fish consumption advisories. The advisories are explained in the publication *Important Health Information for People Eating Fish from Wisconsin Waters*, Wisconsin Division of Health and Wisconsin Department of Natural Resources, Publication No. FH 824 97. (This document can be obtained by calling 608-266-2621.) The advisory in this document does not prohibit consumption of fish from the Wisconsin River. Instead, it presents information concerning the levels of mercury found in fish in some of the flowages and suggests limiting consumption, especially for pregnant women. Mercury is extremely bio-accumulative, which means that it becomes more concentrated in each step up the food chain. Hence, animals near the top of the food chain, such as certain fish or

eagles, are more susceptible to mercury. Mercury is present in the fish of many surface waters primarily due to high concentrations in historical discharges and to atmospheric deposition. It is more bio-accumulative in some waters than in others due to water chemistry differences. Wisconsin's current water quality standards account for the bioaccumulation potential of mercury. Since wildlife that eat fish are the most sensitive to bioaccumulation of mercury, the most stringent water quality standard for mercury is that for the protection of wildlife. This standard, 1.3 ng/L (parts per trillion), is applicable to the proposed discharge from the Crandon Mine.

#### *Wastewater Treatment & Discharge*

8.

**Q:** A May 1997 DNR publication reads: "For this reason our interpretation of the 1986 Federal law is that it does not apply to the proposed mine." [Referring to the interbasin transfer of water] Who made that decision? The DNR says that only groundwater would be diverted from the mine site into another watershed. Doesn't the DNR understand the connection between groundwater and surface waters?

**A:** The interpretation of the law was made by Department legal staff. The Army Corps of Engineers subsequently issued an identical decision. Although the Water Resources Development Act of 1986 pertains only to surface water, we recognize that ground and surface waters are indeed interconnected. However, the history of water regulation has been to address different kinds of waters differently. For instance, the Great Lakes are regulated differently from inland lakes in this state. The dominant law in this country affecting water quality is the Clean Water Act, but that act applies to surface waters only, not to groundwater. These are just a few of the many instances in which legislative bodies have determined that the public interest is best served by acknowledging differences between types of waters.

Wisconsin's statute which regulates inter-basin transfers of water, s. 281.35, Wis. Stats. (previously numbered 144.026), does not distinguish between surface and groundwater. However, the Wisconsin Legislature specifically stated that no such transfer, be it of surface water or of groundwater, requires a permit from the state unless the transfer exceeds 2 million gallons per day. Based on our preliminary figures, the Crandon Mine transfer would be well under the legislatively established amount for which a permit is required.

9.

**Q:** The Environmental Protection Agency (EPA) has written that in their opinion, the Water Resources Development Act applies to groundwater. How will this affect the project?

**A:** The EPA's project manager for the Crandon Mine has stated his opinion as identified in the question. However, his opinion does not necessarily reflect an official opinion of EPA's Region V or the agency as a whole, and it was not a legal opinion. The U.S. Army Corps of Engineers, which has direct permitting authority for wetland dredging and filling at the proposed project site, and which has primary responsibility for administration of the Water Resources Development Act, has provided its legal opinion that the act does not apply to the proposed groundwater withdrawal. This is consistent with both current practice in Wisconsin and the Department's legal opinion.

10.

**Q: Is all the waste going to the Wisconsin River? Why is the DNR letting the company discharge at Hat Rapids Dam rather than in the Wolf River, which is closer? Publicity has mentioned the Wolf River. You did not.**

**A: All of the treated mine inflow wastewater would go to the Wisconsin River, with the exception of any treated wastewater used for mitigation purposes. However, mining solid wastes, such as tailings and waste rock, would be managed at the site.**

The DNR can't specify to any discharger where it must discharge, but instead must analyze whether the location selected by the permit applicant is acceptable based on state statutes and administrative codes, and if the proposed level of treatment would meet the effluent requirements. The level of required wastewater treatment is dependent upon the use classification of the receiving water. The Wolf River is an Outstanding Resource Water (the highest water quality classification); any discharges to it must be of higher quality than a discharge to the Wisconsin River, which is a lower use classification (a warm water sport fish water).

If CMC proposed a discharge to the Wolf River system, it would require a very expensive and sophisticated treatment system. Such a system would be costly to operate, consume a lot of energy, require complex monitoring, and be less reliable than the more conventional treatment systems. Based on those criteria, and following an analysis of alternative discharge methods and sites, the company chose the Wisconsin River as its proposed discharge location. The Department must now analyze this proposed discharge to see if it would comply with all relevant laws and regulations.

There has indeed been a great amount of publicity given to concerns over the proposed mine's potential impacts to the Wolf River. Since all treated mine wastewater would be discharged to the Wisconsin River, these concerns involve the potential for groundwater to carry heavy metal contaminants, from both the closed mine and the tailings stored in the Tailings Management Area (TMA), into the Wolf River via its tributaries. Once the Department's work on groundwater flow and contaminant transport is complete, the Department will have the means to predict the impacts to the Wolf River watershed. If any violations of Wolf River water quality standards are predicted, then the project could not be permitted.

11.

**Q: What care will be taken to see if the 38 mile pipeline does not leak or cause toxic effects? Who finds the leaks in the pipeline that's underground? Who checks the toxic effect of toxic problems? Who stops the use of the pipeline when leaks occur?**

**A: The pipeline would contain treated wastewater that must comply with permit effluent limits. The water would meet all drinking water standards except for sulfate (the drinking water standard is 250 mg/L and CMC's pilot wastewater treatment study showed 900 mg/L) and selenium (the drinking water standard is 50 µg/L and CMC's pilot wastewater treatment study showed 110 µg/L). The permit wouldn't allow the discharge of toxic substances at toxic concentrations. Any leakage from the pipeline would likely not be environmentally significant because the effluent meets water quality standards of most receiving waters.**

The pipeline design will be reviewed by the Department to determine the acceptability of the proposal. Flow in the pressurized pipeline would be monitored at three locations: the pump station located at the mine site, the booster pump station located at about the half-way point, and the point of discharge at Hat Rapids Dam on the Wisconsin River. Any discrepancy in flow could indicate a leak in the pipeline which must be investigated and repaired by the Crandon Mining Company.

12.

**Q: NR 115 prohibits waste pipelines from crossing shoreland-wetland areas. With 7 streams and rivers to cross, how can this be legally done?**

**A:** Pipelines for gas, water supplies and wastewater commonly cross shoreland and wetlands. The proposed Crandon Mine pipeline would be bored beneath all major streams and rivers along its route (see map, Appendix B), and thus would cross some wetlands as well. Chapter NR 115, which is the state's administrative code overseeing protection of shoreland and wetlands, allows for utilities to cross these areas without amendment of the controlling ordinances. NR 115 also makes provisions for private pipelines to cross shoreland-wetland areas, but it becomes more complicated. A privately owned pipeline across shoreland-wetland areas requires rezoning out of the shoreland-wetland district by the county. Rezoning the pipeline corridor is only permissible under NR 115 if the construction of the pipeline through the wetland will not result in a significant adverse impact on the wetland values listed in NR 115. As with all other pipeline projects, the costs associated with construction and post-construction reclamation is borne by the project sponsor, in this instance, the Crandon Mining Company.

13.

**Q: The 38-mile pipeline proposal will impact Oneida County and the Town of Crescent at Hat Rapids. Why aren't Oneida County and the Town of Crescent included in the "parties" element of the decision making process? Forest County, and the Forest County Towns of Nashville and Lincoln are included. Why the exclusion of Oneida County and the Oneida County Town of Crescent from the local agreement process?**

**A:** This question addresses several different elements of the approval process for mining operations. If the question relates to participation by the County or Town in the trial-like Master Hearing process, there is no bar to their participation. Anyone willing to take on the responsibilities as 'parties,' will be allowed to so participate. These responsibilities include being subject to orders from the Hearing Examiner regarding: making their witnesses available for deposition, answering interrogatories, and participation in exchange of documents.

The Master Hearing, or final decision-making process, is entirely different from the local agreement process. By state law (s. 293.41, Wis. Stats.), only government entities containing any portion of the mining site in their boundaries or those which have zoning or land use control over a part of the project have the right to enter into a local agreement with the mining company. A mining company must satisfy local zoning requirements before the mining permit can be issued, and a local agreement is one way to accomplish this goal. Because a portion of the mining site (the wastewater pipeline) would be constructed within the Town of Crescent and Oneida County, both municipalities are eligible to negotiate local agreements with the mining company. The Department does not have a role in the administration of this statute - that is between mining companies and local municipalities.

14.

**Q: Has the Department of Transportation given the okay to allow a pipeline along the state highways?**

**A:** No, the Department of Transportation (DOT) has not given final approval for the wastewater pipeline to be constructed along the state highways. The Crandon Mining Company has contacted the DOT for permission, and it appears that construction of the wastewater pipeline would be consistent with DOT policy. DOT could not provide final approval until after the environmental