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# Mining company tries to water down WRDA

Should a Crandon Mining Company plan to divert water from the Great Lakes Watershed have to be approved by the governors of all eight states bordering the Great Lakes?

That's the issue being debated these days by environmentalists and company executives.

Mining opponents contend that a proposal to de-water the mine and to send wastewater through a 38-mile pipeline to the Wisconsin River should be subject to the Water Resources Development Act of 1986 (WRDA). That federal legislation requires the governors of all Great Lakes' states to sanction any water transfer out of the basin, which drains into the Great Lakes.

Environmentalists say the legislation should apply because the operation will require the pumping of one million gallons of water a day -- approximately 10 billion gallons over the mine's life -- out of the mine site, which sits in the watershed at the headwaters of the Wolf River. The wastewater would be diverted to the Wisconsin River and flow via the Mississippi Watershed to the Gulf of Mexico: lost forever to the Great Lakes' basin.

The Crandon Mining Company disagrees. According to CMC, the act applies specifically to a diversion "from any portion of the Great Lakes" or "from any tributary thereof." The de-watering process, the company says, does not tap surface water from any of the Great Lakes or its tributaries but draws groundwater from the surrounding basin.

The law also prohibits diversions of Great Lakes water "for use outside the Great Lakes basin." But the company says it is using the water -- that is, treating it -- within the basin and is merely discharging the effluent elsewhere.

Discharge is not considered a use. Who is right? Let's consider the arguments.

Let's look first at CMC's assertion that it

*Opinion*  
*Country Spirit*  
*in Wisconsin*

by  
**Richard Moore**



would be discharging water -- not using it -- outside the basin.

Now it's true that WRDA was enacted to prevent the increasing diversion of basin water for "use" in residential, industrial and commercial projects, and it's also true that CMC does not intend to do this.

But to limit legal interpretation to such a narrow category of uses is excessively constricting and would seem to violate the spirit of the act, which clearly is to protect the basin's water resources.

The point is, it is the diversion of water, not its use, that legitimizes the legislation and which should trigger jurisdiction. It's just silly to say it's okay to take 10 billion gallons of water from the watershed so long as you don't use it for anything.

What is the definition of 'use' anyway? According to the dictionary, it means to put something into action or service for a specific end. How about this for an end: by putting the water "into action" through the pipeline, the company saves \$14 million in treatment costs that would have been necessary to restore water quality to the point of being able to return it to the Great Lakes Watershed.

I would say that's quite a profitable use of the water. And if diversion is a use, the very meaning of the term makes it a use outside the basin.

The real diversion here is CMC's effort to distract attention from its blatant attempts to

maximize profits and to avoid a reasonable alternative to massive water loss in the Great Lakes Watershed.

CMC's other argument is equally absurd, namely, that the WRDA doesn't apply because the mining operations only impact groundwater, not surface waters from the Great Lakes or its tributaries.

Excuse me for the pun, but this argument doesn't hold water. A watershed is a complete ecological entity composed of complex relationships between its constituent parts. Such ecosystems contain a particularly intimate hydrological connection between ground water and surface water.

In fact, that connection is why it's called a watershed.

Again, let's go to the dictionary: a watershed is a drainage basin from which the waters of a stream system are drawn; it is the region *drained* by a river system. In other words, the tributaries that feed the Great Lakes draw water from the ground -- the very water CMC wishes to divert.

DUH.  
It is clear that no matter how you look at it, the provisions of the federal act should apply and CMC should have to gain approval from all eight Great Lakes governors.

Unfortunately, the Department of Natural Resources has again sided with the mining company, concluding that the act is not enforceable. Their position would give them sole authority to grant CMC permission to divert 10 billion gallons of water from the basin.

It's heartening to know that the Environmental Protection Agency, in a preliminary review, is supporting application of the WRDA to the pipeline. In addition, U.S. Senator Carl Levin (D-Mich.) has also gone on record supporting enforcement in this case.

Now the St. Paul District office of the U.S. Army Corps of Engineers has sent the issue to the Pentagon for a legal review. That's a good start, but it's only a start, and no thanks is due to the DNR for once again biasing its approach to mining.

# Stop Crandon mine before it's too late

To the Editor:

I am writing this with the best intention; the intention to educate. Up until now, I was completely in the dark about the issues concerning Exxon's proposed plan for mining in Crandon. It is my belief that many other Wisconsinites are in this same predicament.

Crandon Mining Company (CMC), owned by Exxon Minerals and Canada's Rio-Algom, is seeking a permit for the Crandon Mine. In addition to the sociological-economic impacts the mine would have on Oneida and Forest counties, CMC has a plan to build a 38-mile sewer line which would dump liquid mine wastes into the Wisconsin River at a rate of approximately 2,000 gallons per minute. The mine would result in the siting of the "largest waste dump ever built in Wisconsin," totaling a whopping "55 to 60 trillion tons of metallic sulfide waste." The 365-acre, 90-foot high waste dump would be lined with a plastic and clay type liner which has never successfully confined sulfide tailings. When sulfide wastes come in contact with the water at the surface, and in the air, it makes sulfuric acid, which not only eats away at both the ore and liner, but releases highly toxic chemicals such as "mercury, lead, zinc, cadmium, arsenic, and copper into the ground water." Just imagine how this would affect Wisconsin's ecosystems.

The water table at Crandon is so close to the surface that they would have to drain wetlands and lakes to keep the mine from flooding. Isn't destroying wetlands illegal? Yes it is, but the mining companies have

people lobbying at the state and federal levels to get around these laws. Just because Exxon has power and money does that mean that they can rape our land and leave us to pick up the tab. Millions of dollars in clean up are needed after such a venture. Do you know who pays for this after the mine shuts down, you and I the taxpayers. I really don't understand how we can pay these large companies to turn our back yards into a dump.

People were so angry when the Native Americans spear fished Wisconsin lakes. There was outrage and violence over the killing of mass numbers of fish. What are those people doing now when we are being threatened with not only killing fish, but Wisconsin. If you hear the mining company say that they are trying to protect the environment they are lying. They don't care about us or our environment. Money is the only thing they care about. Remember they don't live here—you and I do. We are the ones who will pay the piper when the disaster hits, not if, because it is just a matter of time. If you aren't going to do this for yourselves, think about your children. Do you want them to have to drink polluted water because you didn't care enough about them to write a letter or make a phone call? I don't think you will want to tell them that you were too busy to make sure there was clean water for them to drink.

I am aware that many people believe that it would create many jobs and boost the economy of the area. This is true. But mining is considered a "boom-and-bust" cycle. Most of these mine workers would not be

from the area so the jobs created for local people would be minimal. The large influx of workers brings "local service costs (such as new sewers and schools), inflation in land and housing prices, and huge social costs when the company decides to withdraw." When ore prices drop the mine will shut down.

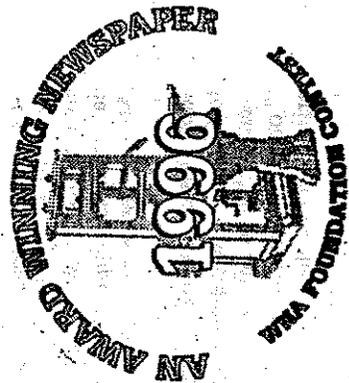
Another point to consider is Exxon's track record. Wasn't it Exxon who was responsible for the giant oil spill in the Pacific which killed thousands of creatures and still affects Alaska and its surrounding waters? Not to mention Exxon is one of the nation's "top ten violators of native rights for using deadly violence against striking workers in Columbia." In 1981 Exxon abandoned a Nova Scotia uranium mine because of flooding. In 1983 it abruptly shut down a large Colorado shale project, laying off over 2,000 workers. The EPA fined Exxon for failing to report chemical releases at a New Jersey oil refinery. As for Rio-Algom's record, they are best known for its devastating Elliot Lake uranium mines in Ontario, which poisoned fish and aquatic life in the Serpent River. This not only caused them to get fined by the Canadian government, but also forced a nearby Ojibwa reservation to stop fishing the river due to chronic diseases, fetal deaths, and abnormal births. Do we really want to put the fate of Wisconsin, its resources and inhabitants, in the hands of companies with that kind of record.

It is going to take a lot of time and effort to stop the mining. Call or write your state and local legislators to let them know how

you, the people of Wisconsin, feel about the mining project. Also, call the Wisconsin Environmental Decade office at (608)251-7020 to find out more about the effects of mining and what you can do to stop it. By working together, we can keep Wisconsin a clean, safe, and beautiful place to live and visit.

For more info: EPA: Don Cozza 312-886-7252; WDNR: issues permits for mining Bill Tans, 608-267-7534; U. S. Army Corps of Engineers: wetland control Dave Ballman, 612-290-5373; U. S. Fish and Wildlife: Ron Spry, 414-433-3803; and Crandon Mining Company: Don Moe, 715-365-1453.

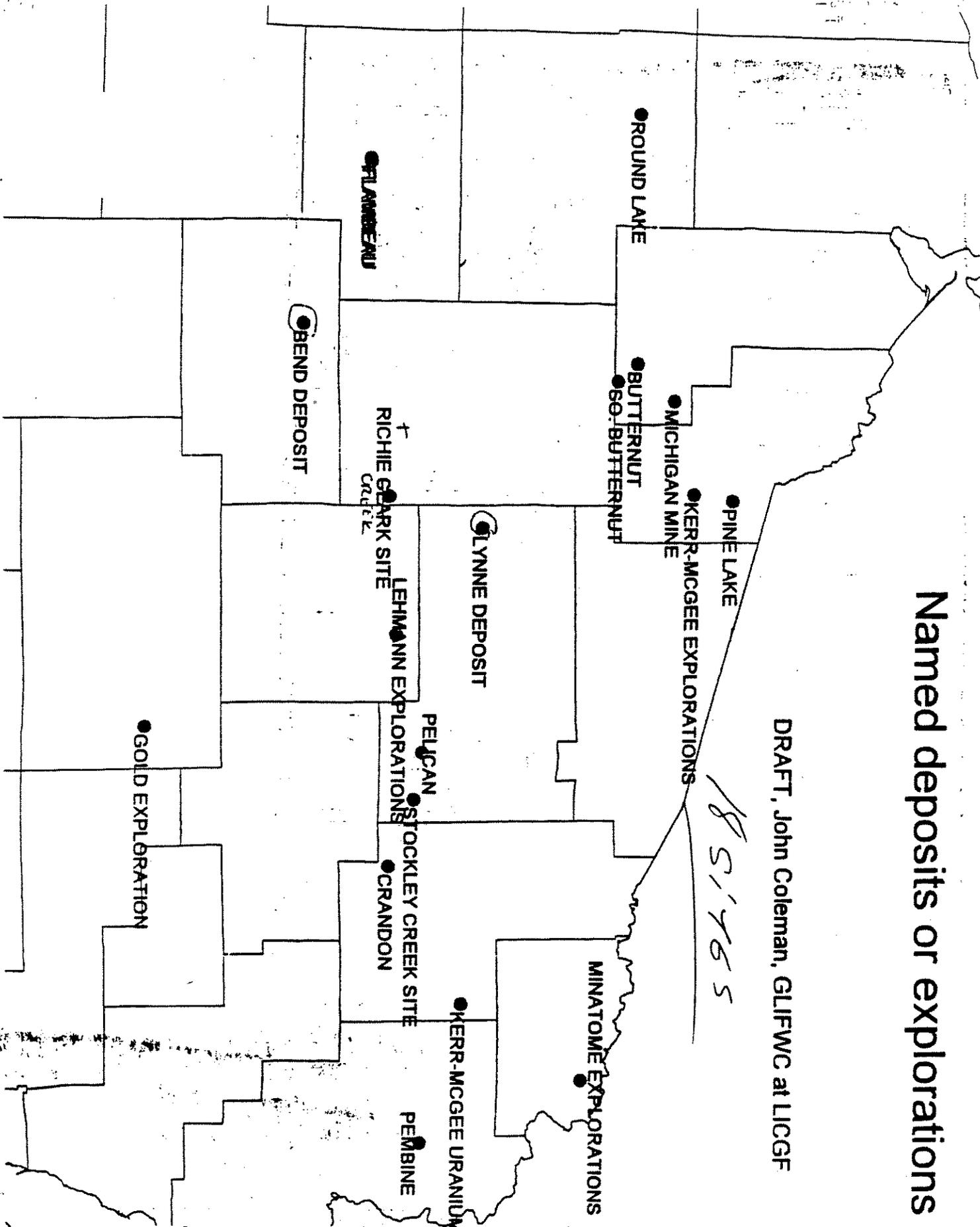
Jon Hansen  
River Falls



# Named deposits or explorations

DRAFT, John Coleman, GLIFWC at LICGF

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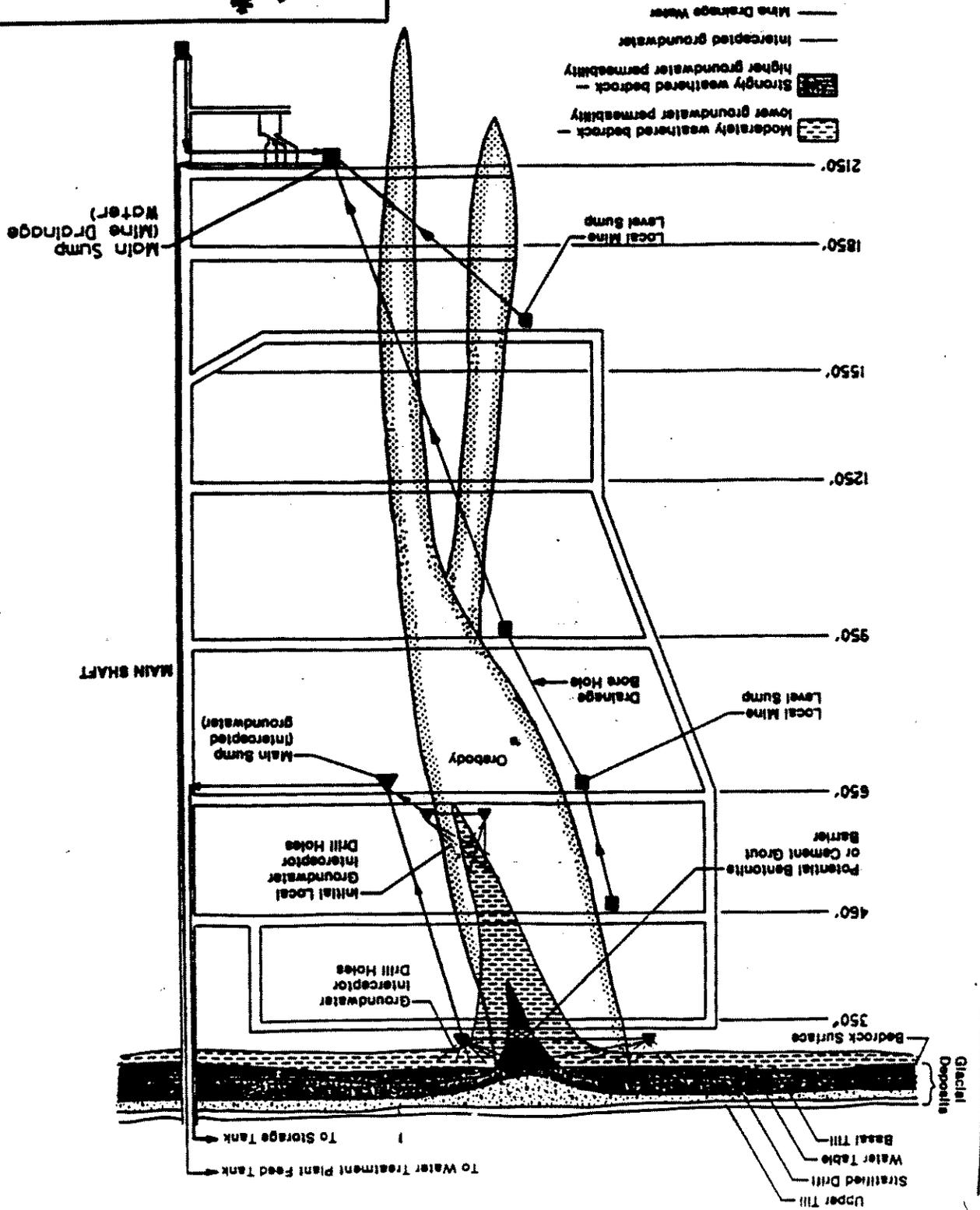
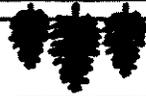


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Prepared By: Foth & Van Dyke  
 Scale: NOT TO SCALE  
 Date: JANUARY, 1994  
 BY: JON

FIGURE 3 - 7  
 MINE DRAINAGE SCHEMATIC

**Grandon Mining Company**





## Wolf River Named One of Most Endangered Rivers in North America

On April 16 the River Alliance of Wisconsin held four press conferences across the state to announce that the Wolf River had been named the Fifth Most Endangered River in North America by the nation's leading river conservation organization, American Rivers.

### Sounding a National Alarm

The River Alliance hopes that this national warning will prompt the Wisconsin Assembly to vote on a bill that would protect the Wolf from unproven mining practices. The legislation, known as the Mining Moratorium Bill, passed the Wisconsin State Senate with overwhelming support earlier this year.

The list of the 10 Most Endangered Rivers, published annually by American Rivers, highlights rivers that face the continent's worst environmental abuse. The Wolf, a National Wild and Scenic River and state-designated Outstanding Resource Water, is endangered because of a proposed metallic sulfide mine in its headwaters area in Wisconsin's Northwoods.

Early this year the River Alliance alerted American Rivers to the threats posed by Exxon's proposed Wolf River mine. After researching the evidence, the experts at American Rivers listed the Wolf as North America's Fifth Most Endangered River.

### Say "No" to Unproven Technology

Speaking at the press conference in Keshena, on the Wolf River, River Alliance Executive Director Sara Johnson explained that "not one mine similar to that proposed by Exxon has ever operated and been reclaimed without polluting ground or surface water. That's like someone wrecking a car every single time they drive, and now they want the keys to **your** car.

Exxon's asking to take a test drive by mining near the Wolf with unproven technology. But sulfide mining has wrecked too many rivers and Exxon has wrecked too many cars -- the citizens are unwilling to turn over the keys."



*Menominee Tribal Chairman Apesanahkwat introduces River Alliance Executive Director Sara Johnson at the Wolf River press conference.*

The listing of the Wolf River received attention in the Chicago Tribune, Milwaukee Journal Sentinel, Wisconsin State Journal, The Capital Times, Green Bay Press Gazette, Shawano Leader, WI Public Radio, NBC, ABC, CBS and FOX affiliates, and many more.

**WHAT YOU CAN DO:** We need you to write your Representatives and ask them to **protect the Wolf River and support the Mining Moratorium Bill**. We encourage you to mention the Endangered Listing in the letter. **NOW IS THE TIME**. If you've been waiting for the best possible time to write your one letter, now is the time. If you don't know the name or address of your Rep or if you have questions call Zev Ross at the River Alliance (608) 257-2424, or call the legislative hotline at (800) 362-9472.

*As a member of the River Alliance, your support made possible our successful efforts to bring national attention to this issue. Thank you for being a part of our growing, statewide network of river advocates. Please tell a friend about the River Alliance. Visit our Web page for more information on the Wolf's listing and the River Alliance [www.igc.org/wisrivers](http://www.igc.org/wisrivers).*





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## River Alliance Comments

Delivered by Zev Ross,  
Conservation Programs Coordinator  
Rhineland, May 12, 1997

The River Alliance of Wisconsin is a non-profit, non-partisan river conservation organization with 600 members statewide. We represent hundreds of anglers and boaters throughout Wisconsin who care deeply about keeping our rivers and streams clean.

The Wolf River, in particular, is one of our most precious natural resources. It is one of the few places in Wisconsin that boasts Class III and IV whitewater and has naturally reproducing populations of brook, brown and rainbow trout.

I am speaking here today in favor of the Mining Moratorium Bill because I'm concerned about the long-term economic and natural resource health of the state.

As you know a large part of tourism in Wisconsin is driven by our beautiful natural resources. We don't have the empire state building or the Sears tower but we have the Wolf and Wisconsin Rivers. People visiting our natural resources pump millions of dollars into our local economies.

Just consider the following

- 1) 25 million people live within a days drive of Wisconsin's rivers and
- 2) tourism is projected to be the number one industry in the US by the year 2000

In light of these facts we need to protect our natural resources NOW to ensure the economic health of our state in the 21st century.

The Mining Moratorium Bill has a specific and scientifically based standard and it has broad public support. Sixty-seven citizen, environmental and conservation groups representing hundreds of thousands of Wisconsin citizens support the Mining Moratorium Bill. Thousands of citizens have shown up at rallies and hearings to support the Bill and as we all know the State Senate supports the bill, passing it overwhelmingly 29-3 early this year.

- It's time we step back and make sure a technology works before we risk our most precious resource. The Mining Moratorium Bill is a common-sense approach to protect the economic and natural resource health of our state for our future generations.



# Rivers named to endangered list

Dams, mining cited in environmental group's annual waterways list

Associated Press

Washington — Dams, barge traffic, development even the changing industry all are being named in an environmental group's annual waterways list.

## Mine plan lands Wolf River on endangered list

Environmentalists urge U.S. help

Mill Creek, which flows through the heart of Cincinnati in southwestern Ohio, was singled out as this year's most polluted urban river because "industrialization, urbanization and channelization have eliminated riparian habitat."

Other rivers on this year's list are:

- Wisconsin's Wolf River (see accompanying article)
- Upper Hudson River, New York because of dam construction.
- White River, Washington because of dam construction.
- John Day River, Oregon because of dam construction.

# Wisconsin river among 10 on endangered list

## Wolf among nation's most endangered rivers, group says

Associated Press  
The Wolf River that meanders through northern Wisconsin is imperiled by a proposed mine.

list of 20 most threatened rivers in the country.

The Wolf River is imperiled by a four-lane highway project that would undermine the integrity of the river and the impact of the watershed.

annual American Rivers list of the 10 most endangered rivers.

## Group I

A planned mining venture makes the scenic Wolf River one of the most endangered rivers in the nation, an environmental group says.

# Alarm for Wolf River

Group puts it on endangered list because of mine threat

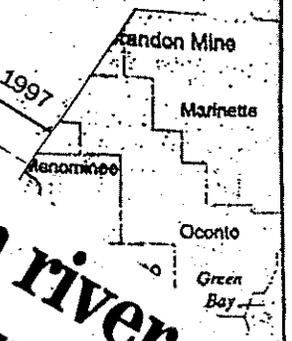
Crandon Mining won't receive permits in Wisconsin, Mary Kay Grasmick said. "The mine will not have any impact on public use of the Wolf nor will it harm even the most sensitive organisms in the river."

Sara Johnson, executive director of River Alliance of Wisconsin, a state river conservation organization, said her group first sounded the alarm about the dangers facing the Wolf River. Johnson said she hoped the list would spur the...

SHEPHERD EXPRESS April 24, 1997

# Crandon Mine Endangers Wolf River

Wisconsin's Wolf River is imperiled by a four-lane highway project that would undermine the integrity of the river and the impact of the watershed.



# The Capital Times

MADISON, WISCONSIN HOME FINAL TUESDAY, JUNE 20, 1995

The Capital Times

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# Students link mining, poverty

By Dave Newhart

The Capital Times

A proposed mine in northern Wisconsin may do little to help small-town economies and could actually increase rural poverty in the area, a report by a University of Wisconsin-Madison class says.

The 48-page report — prepared by eight students in a three-week intensive course on the socioeconomic impacts of mining — also suggests that the company's job projections might be overblown.

The students, directed by rural sociology professor William Freudenberg, completed the report Friday and submitted it to Rep. DuWayne Johnsrud, chairman of the Assembly Natural Resources Committee. His committee could address mining legislation in the future.

For their research, the students traveled 1,000 miles, visiting former mine sites in Wisconsin and other states. They also visited the Kennecott mine near Ladysmith; and Crandon, where the Crandon Mining Co. hopes to mine zinc and other ore. They interviewed at least two dozen people, reviewed the scholarly literature, and combed through all of the Crandon Mining Co.'s per-

mit applications.

"We ate, slept and breathed mining," said Anna Wheelock, saying they worked 12 to 16 hours a day.

While the students didn't focus solely on the Crandon mine proposal, they did take issue with some of the benefits being touted by the company, a partnership between Exxon Corp. and Rio Algom.

One is the "major benefit" the mine will bring to the area.

"The notion that mining will guarantee local economic prosperity has not, to date, been borne out in the research on rural communities," the report states. "In fact, recent research suggests that resource extraction does not cure rural poverty, but rather is highly associated with it."

In addition, the report says, if communities come to rely heavily on a mine for their economic well-being, they can be in serious trouble after the mine closes.

The students cited research from 1979 to 1990 that found a decline in median income and an increase in poverty and unemployment in metallic mining communities in the Great Lakes Region. Other studies showed a rise in poverty in mining communities in Southern Appalachia. The only area that

saw a gain in median income were Western coal-mining regions.

Taken as a whole, the report states, "the preponderance of empirical evidence shows that areas dependent on mining have much higher levels of poverty than do other rural regions and communities."

One of the numbers the students take issue with is the Crandon Mining Co. prediction that the mine will employ 400 people throughout its 28-year life.

Past employment at other mines varied from year to year, and typically wasn't as high as companies predicted, the students said.

"From all the research we've gathered, it's not going to happen that way," said student Paul Van Ryzin. "There is market fluctuation. There's not going to be level employment."

But Don Moe, the technical and permitting manager at the Crandon Mining Co., said Monday that the company stands behind its employment projections.

"We believe there will be steady employment," he said. "We have every reason to believe there will be."

He did not want to respond to other findings in the report until after he read had

read it. But Crandon Mining Co. has already released a variety of projections that indicate the mine would help the area of the mine.

In addition to the 400 jobs the company says it will employ to operate the mine, it will need as many as 500 construction workers to build the mine. The mine will create 320 jobs in related businesses, according to the company.

In addition to the jobs, the company will make \$43 million in local purchases while the mine is being built. Once it is up and running, the company says it will make \$1.2 million a year in local purchases.

Despite those company projections, the students said that research on economic predictions of the past found that companies were usually 100 percent off.

"The predictions used to assess economic impacts are often just shots in the dark," the report says.

While the students had a variety of opinions before the class about whether the mine should open, at least one was swayed by their findings.

"Before this, I was neutral," said Lynn Ruble. "But now I'm against it. The costs are just too great."

## **Executive Summary**

of the report "When Mines Enter Minds: An Investigation of the Economic Impact of the Flambeau Mine and its role in Urban Planning for the City of Ladysmith"  
written by Tim Tynan for the Mining Impact Coalition

### **Rural Economies:**

The economic backbone of rural cities are the permanent residents. Transient or temporary residents have very different reasons for living in a rural area than the permanent residents and have little impact on the prevailing economy. The most successful economic development in rural areas are those which enhance and embrace the values of the permanent residents and those which represent the *reason* people live in the community in the first place.

### **The Rural Area of Northwestern Wisconsin:**

The area of Wisconsin which makes up the Northwest Regional Planning Commission is made up of Taylor, Sawyer, Rusk, Price, Burnett, Washburn, Ashland, Iron, Bayfield, and Douglas counties. This area has long been perceived as suffering from a wide range of economic and social hardships. A few of the most pressing problems have been high unemployment, lack of skilled labor, high outmigration, low incomes and underdeveloped resources. Many of the urban growth centers in NW Wisconsin, however, are going through economic booms namely due to small manufacturing, improved educational systems and the increase in tourism.

### **Ladysmith and Medford, Wisconsin:**

Up until around 1990, Ladysmith and Medford Wisconsin appeared to be almost identical cities in the Northwest Region. Ladysmith is the only urban center in rural Rusk County and Medford is the only urban center in rural Taylor County. Taylor County is just east of Rusk county and the two urban centers housed roughly 4000 people, earned a tax revenue of \$3million annually, and had their respective economic growth anchored in small scale manufacturing in addition to a growing tourism economy.

### **Minerals: The Dividing Resource:**

The major difference between Ladysmith and Medford is the copper deposit now known as the Flambeau Mine. In 1991, The Flambeau Mining Company, a subsidiary of Kennecott Mining Corporation, received permits to mine an open-pit copper-sulfide mine just outside the city limits of Ladysmith. The permits proceeded twenty years of controversy and required two application attempts by the mining company to acquire permission to mine from the local governments.

### **When Mines Enter Minds:**

The presence of the Flambeau Deposit meant that mining executives attended every regional and urban planning meetings for Ladysmith from as early as 1970. From that point on, the priorities and values of the permanent residents would be pitted against the interests of an international mining company. The Flambeau Mining Company and those that favored mineral extraction attempted to convince the planners and residents that the solutions to rural poverty rested in large, lucrative mines. The people were persuaded to

believe mines can offer enormous amounts of cash in a short amount of time and that, if invested wisely in economic development, the money received from the mine would eradicate the economic hardships in the area.

Mining is not the solution to rural poverty. Medford, Wisconsin did not have the option of a large mineral extraction operation as a means to improve the economic situation in the community. The priorities for the planners in Medford were not even economic growth, rather, the number one priority has been the residents. Ironically, Medford has seen an enormous amount of economic prosperity and continues to be a key growth center for the region. More importantly, none of the economic activity in Medford threatens the very environment in which the residents call home.

#### **Economic Evaluation: Ladysmith versus Medford**

Economies grow around people. The success of Medford lies in the fact that if planners build communities where people like to live, economic activity quickly follows. In the past seven years, Medford has spent only 15\$ per adult per year on economic development. Ladysmith, on the other hand has spent over \$115 per adult on development. Medford has spent most of the revenue on schools, road related facilities (like sidewalks, streetlights, benches etc...), highway construction and culture. Ladysmith has spent the largest portion of its revenue on economic development.

Medford has one of the areas best school systems, a beautiful hospital, a spectacular new library and a growing economy. Medford also has a rising population, a lower unemployment rate a higher average wage rate and has managed the same size debt for the past seven years. Ladysmith, on the other hand, no longer has a mine (just the mine waste), has acquired an enormous debt, a donated library a fraction of the size of Medford's and still has a struggling economy. Ladysmith's unemployment rate is as high as it was before the mine, the population has actually *decreased* from seven years ago and the city is now faced with competition for industry by other growing cities in the region and in Minnesota.

#### **Conclusions:**

1. The Flambeau Mine had a negligible impact on the economy of Ladysmith.
2. For the past seven years, a similar city, Medford, Wisconsin, has spent the same amount of revenue as Ladysmith but on different planning initiatives. Ladysmith has spent much more on economic development.
3. Medford has outperformed Ladysmith in terms of economic prosperity over the past seven years.

This investigation adds to the evidence that economic prosperity in rural communities is centered around residential life rather than industrial attractiveness. Businesses which stem from the residential community often enhance, rather than counter, the reason people live there in the first place. It is doubtful that the people who live in Ladysmith are residents because they enjoy living near open pit mines. Until mining is the reason people live in northern Wisconsin, it will be difficult for mining operations to add economic prosperity to the region.

## Salt Royalties Increase

Salt royalties paid by industries which remove salt from the Great Salt Lake will gradually be increased to 50 cents per ton. New rules adopted by the State of Utah and an economic and market analysis conducted by the Office of Energy and Resource Planning determined that royalties should be increased. Counties surrounding the lake will share in the increased royalty payments.

## Raglan Progress

Falconbridge reports rapid progress at its new Raglan nickel mine development in northern Quebec. The Can\$500 million project is being developed as a combined open pit and underground mine. Production is scheduled to start at the end of this year on an orebody estimated to contain some 20 million tons grading 3.13 percent nickel and 0.9 percent copper.

## Kennecott Ranked in Top Ten Spills

The Emergency Response Notification System ranked the release of 904,800 gallons of sulfuric acid in Magna, Utah, by Kennecott Copper as the nation's second largest hazardous spill in 1996. Interlock system failure caused the spillage at the sulfuric acid loading facility of Kennecott Utah Copper.

## First Dynasty Reserves

First Dynasty Mines announced the mineable reserve at the Dublin Gulch gold project near Mayo in the Yukon Territory has increased by 614,000 ounces to 1.51 million ounces of gold in the proven and probable category with a waste-to-ore stripping ratio of 0.8:1. The environmental screening, public hearing and licensing process for the project is expected to be completed in the first half of this year.

## Viceroy Gold Production

Viceroy Resources announced 101,819 ounces of gold production for the 1996 calendar year. The Castle Mountain mine in California achieved total production of 122,192 ounces with the remaining production coming from the Brewery Creek gold mine in the Yukon.

## National Defense Silver Stockpile

The Silver Institute reported stocks of silver from the U.S. National Defense Stockpile could be depleted as early as the first quarter of the year 2000. As of September 1996, the Defense Department's silver stockpile totaled 45.4 million ounces, down 32.5 percent.

## Pegasus Cyanide Spill Cleanup

The spill of 52,000 gallons of low-level cyanide solution at Pegasus Gold's Florida Canyon mine near Imlay, Nevada, has been cleaned up with no ill effects to the environment, according to General Manager Doug Stewart. The solution overflowed when a pipe feeding it into a ditch became plugged. The mine removed 700 cubic yards of contaminated soil to the leach pads for further treatment and has constructed berms to divert any future spills to different containment ponds.

## People

John K. Carrington has been appointed President and COO for Barrick Gold, replacing Robert M. Smith who becomes Vice-Chairman. He had been serving as Executive Vice President, Operations, and COO. His mining career spans three decades.

Burgess Winter has retired as chief executive of BHP Copper, and been replaced by Jim Lewis, 53, previously Broken Hill Proprietary's general manager of corporate development. Winter joined BHP through the Australian company's acquisition of Magma Copper one year ago. Lewis is based in San Francisco. BHP also recently announced the appointment of Anna Lou Fletcher to the position of corporate general manager, financial planning and analysis. Fletcher is based in Melbourne.



Laura E. Skaer has been named the new Executive Director of the Northwest Mining Association. She has served as chairman of the Colorado Department of Natural Resources, Minerals, Energy and Geology Policy Advisory Board. She has 14 years of manager, operations, and legal experience in the oil and gas industry.

Coeur d'Alene Mines has appointed the company's vice president of engineering and operational services, Robert Martinez, to the additional post of vice president of operations for South America. In this position, Martinez will provide corporate support to the company's Chilean group, which includes the wholly-owned Fachinal and El Bronce precious metals mines.

Phoenix-based Phelps Dodge Mining has announced the appointments of Ramiro Peru to the position of senior vice president, organization and development technology; Gregory Stevens to vice president and controller; and Thomas Foster to vice president and treasurer.

Former Bureau of Land Management Acting Director Michael Dombeck has been nominated as chief of the U.S. Forest Service. He will succeed Jack Ward Thomas who retired. Secretary of the Interior Bruce Babbitt announced that Deputy Assistant Secretary for Land and Minerals Management Sylvia V. Baca is interim director of the BLM.

Echo Bay Mines has announced the addition of three management positions. John Antony has been named vice president of technical services. Ward Wimborne as vice president of engineering and construction, and Dr. Dieter Krewedl to the new position of director of exploration projects. ■

Norwegian Oyvind Hushovd, 46, has been appointed as the new president of Falconbridge to replace Frank Pickard, who died of a heart attack. Hushovd was formerly the company's executive vice president, and has been with Falconbridge for 22 years.



# Country

## Mining opponents detail firm's poor track record

BY BUZ SWERKSTROM  
Telegram Correspondent

LADYSMITH — For runner Carl Lewis or auto racer Rick Mears a track record is an accomplishment worthy of pride.

For a corporation, however, a track record — a company's past performance record, that is — can sometimes bring embarrassment and vilification.

Most opponents of the planned 32-acre open-pit copper and gold mine to be developed just south of Ladysmith cite the environmental track records of the mining companies involved as a major reason for their ardent opposition.

London-based Rio Tinto Zinc (RTZ) and Salt Lake City-based Kennecott Corp., an RTZ subsidiary, are accused by mine opponents of being arrogant environmental outlaws that have sown ecological destruction nearly everywhere they have gone.

The Flambeau Mining Co., established to operate the Ladysmith mine, is a wholly-owned subsidiary of Kennecott.

"I'm aware of Kennecott's environmental record around the world, and RTZ's, and would hate to see northern Wisconsin fall victim to that kind of record," Tim Cordon, of Madison, said earlier this summer after being arrested with eight others for blocking an access road at the mine site, where land clearing is currently proceeding at what some opponents characterize as "a feverish pace."

"RTZ has an abysmal environmental record," charges Jan Jacoby, of rural Clayton, a leader of the Flambeau Summer coalition that has staged several civil disobedience-style protests at Ladysmith this summer.

Kennecott's project manager at Ladysmith, Larry Mercado, told mine protesters who confronted him at the Flambeau Mining Co. offices earlier this month that the mine is "an environmentally safe project," repeating an assertion he had made many times before.

Wastewater from the mining operation that is to be treated and discharged into the Flambeau River will not harm river life, including endangered species of clams discovered this summer, Mercado said.

Mercado has argued that mine opponents do not understand that modern mining practices make mineral ore mining more protective of the surrounding environment than was the case 30 or 40 years ago.

Al Gedicks, a professor of sociology at the University of Wisconsin-La Crosse and director of the Center for Alternative Mining Policy, believes that is a spacious argument.

Gedicks and other critics contend that mining as practiced by Kennecott/RTZ is still a dirty business.

They point to this sort of evidence to support their position:

- In 1989 the National Wildlife Federation cited Kennecott's huge Bingham Canyon, Utah, open-pit copper mine as the ninth largest polluter in the United States.

- In March of 1990 Kennecott was fined \$40,000 by a Reno, Nev., court and assessed another \$50,000 in restitution after more than 1,400 migratory birds died in cyanide-tainted tailings ponds at the Alligator Ridge gold mine.

- On July 30 of this year Kennecott agreed to pay nearly \$12 million to the State of Utah "to settle damage to Salt Lake County's surface and groundwater under consent decree filed in U.S. District Court," U.S.A. Today reported the following day.

- A mine opponent reported hearing a TV news report Aug. 1 of this year about a massive fine levied against Kennecott in South Carolina. While that could not be confirmed at this time, the Wisconsin State Journal reported in March that Kennecott was "assessed \$100 each for at least 265 birds killed in cyanide holding ponds" at a Ridgeway, S.C., gold mine "as part of the permit conditions for opening (the) mine."

"They also got fined (\$50,000) in Alaska at one of their other 'ecologically safe' mines, at Green's Creek, Alaska, where they spilled copper concentrate into the harbor as they were loading it," Gedicks said in a recent interview. "This was two years ago."

The real problem, Gedicks charged, is Kennecott/RTZ's "basic attitude toward doing business, which is you get away with whatever you can get away with. It's cheaper to pay a fine than it is to invest in pollution abatement technology."

Gedicks wrote a foreword to a recently published 196-page book about RTZ's worldwide empire called "Plunder!," put together by the PARTIZANS group (People Against RTZ and its Subsidiaries).

According to "Plunder!," RTZ is far and away the world's largest mining conglomerate.

The book accuses RTZ not only of widespread environmental degradation, but also of neocolonial land grabs, an immoral disregard for

workers' health, and unethical political machinations, all in the cause of corporate greed.

"Everywhere they've gone they've pushed native populations off the land," said Gedicks. "They've polluted rivers. And then when they were confronted by native populations about the land claims and environmental damage, they refused to talk to them. So now they have a revolution going in Papua New Guinea. They also had a situation like that in Namibia, at one of the uranium mines."

Some of the most disturbing allegations made and evidence presented in "Plunder!" includes:

- RTZ and its Australian associate, CRA (Conzinc Rio Tinto of Australia), not only severely polluted a stretch of the Finnis River, in Australia's Northern Territory, but also "refused to contribute anything towards the clean up," leaving the federal government holding the \$23.8 million bag.

"One of the major pollution problems in the NT is that caused by copper and uranium mining at Rum Jungle," the Australian Senate Select Committee on Water Pollution declared in 1965. "The strongly acidic effluent from the treatment plant flows via the East Finnis River into the Finnis River, making the water unsuitable for either stock or human consumption for a distance of 20 river miles."

- A Melbourne reporter who visited the site of an RTZ/CRA/Comalco open-cast bauxite mine at Weipa, Australia, in 1976 wrote that he found "acres of dead craters unrelieved by a single growing thing."

- "The environmental impact" of a tailings dump at RTZ's Bougainville copper mine in Papua New Guinea "has been catastrophic: the Jaba River has been raised by up to 30 meters and a marine delta covering 8,000 hectares has formed in the Empress Augusta Bay. Scientists concluded that 'All aquatic life in the Jaba Valley has been killed,'" Gedicks wrote in the book.

- People living near Kennecott's Bingham Canyon copper mine near Salt Lake City "recorded an appalling increase in respiratory infections" from 1985 to 1987 when dust blew off mountainous piles of waste rock. "The Utah Health Department registered particulate levels which were eight times the federal air quality standards, as dust blotted out daylight, forcing its way through cracks in windows and door frames, sending residents straight to hospital emergency rooms," Gedicks wrote.

Twenty-five water wells were so contaminated by sulfate minerals from the same mine operation that they became unusable, according to Gedicks. Utah's state groundwater geologist is worried that the groundwater contamination seems to be creeping toward the outskirts of Salt

Lake City.

- A 1976 report by the Ontario Ministry of the Environment concerning an RTZ uranium mine in the Elliot Lake region of Ontario, Canada, "concluded that 18 lakes in the Serpent River system had been contaminated as a result of uranium mining to such an extent that they were unfit for human use, and all fish life had been destroyed."



LARRY MERCANDO

The Elliot Lake mine is one of more than a dozen mines throughout North America that Roscoe Churchill and his wife, Evelyn, have visited during their long struggle to try to stop Kennecott's Ladysmith mine. Churchill, a member of the Rusk County Board of Supervisors, said he has found water pollution near every mine.

The Wisconsin Department of Natural Resources was not required to consider Kennecott/RTZ's track record in deciding whether or not to grant Flambeau Mining its necessary permits, which the company received in January.

The DNR is on record in support of a proposed bill, however, that would require the State of Wisconsin to evaluate a mining company's environmental track records and allow it to deny permits to companies with poor past records.

Supporters of the proposed bill (SB 240) argued at a state senate committee hearing in Medford July 17 that it is only common sense to check a company's past performance record, just as employers check the background of potential employees.

"Funny how the DNR is suddenly interested in a company's background," said Wisconsin Greens activist Jeff Peterson, of rural Luck. "In the course of last summer's contested case hearing the DNR never came to our defense when we tried to inject this subject into the debate. I guess maybe they're beginning to realize the error of their ways!"

If "RTZ'S horrendous environmental track record" had been taken into account by the DNR, Gedicks testified at the Medford

hearing, "Kennecott/RTZ would never have been given a mine permit in Wisconsin."

Kennecott's Larry Mercado was quoted by the Wisconsin State Journal as saying that a mining company's track record is "not relevant" because other states and other countries have different — often less stringent — mining regulations.

Despite assurance from Mercado and DNR officials that new mining technology and stringent safety standards will make the Ladysmith mine an ecologically safe operation, opponents remain as skeptical of that as they would be about a claim of a flying pig.

"The risks to human health and the environment from mining operations are well documented and serious," an unidentified member of the Rusk County Citizen's Action Group wrote in "The Real Mining News" newspaper. "The technologies for reducing these risks are new and uncertain. We should wait until the mining companies prove they have the ability and the will to mine safely at their existing operations before we allow them to operate next to the relatively unspoiled lakes and rivers of northern Wisconsin."

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The Salt Lake Tribune  
**LOCAL & REGIONAL**

WEDNESDAY, July 31, 1991

## Kennecott to Pay State For Water Pollution

By John Keahey  
THE SALT LAKE TRIBUNE

Kennecott Corp. will pay the state \$12 million for its decades of contamination of western Salt Lake County water. But the settlement is minor compared with the company's cleanup costs, state officials said Tuesday.

"Kennecott has spent tens of millions to clean up years of contamination and will probably spend tens of millions more before the job is done," said Kenneth Alkema, executive director of Utah's Department of Environmental Quality.

The director predicted it will take three more years for Kennecott to complete its cleanup work, compared with the more than 30 years it took to cause the problem.

"We've spent \$20 million so far to help solve the problem," said Kennecott spokesman Greg Boyce. But he didn't know how much remains to be spent before all contamination work is completed.

The settlement was announced Tuesday by the company, the department and the state attorney general. The \$12 million covers

the estimated value to the state and its citizens of an underground water supply found to contain dissolved solids, including various metals.

The supply had been contaminated by Kennecott's so-called "dump-leaching" operations where it mined copper by pouring large quantities of water over low-grade ore.

Acids from the process found their way into the ground water, making the water unfit for human use. Eventually, the polluted ground water fouled private wells in the area.

Kennecott settled the private-well contamination issue by buying a new water supply for the handful of affected western Salt Lake County water users.

The state and the company have negotiated for the past eight years to resolve the lost water resource issue, Mr. Alkema said. Kennecott funded a \$5 million study to determine the contamination's extent, and the state paid \$150,000 to determine the value of the lost resource.

# THE

# MILWAUKEE JOURNAL

Thursday, October 9, 1980

## Toxic minerals found in wells

Madison, Wis. —UPI— Toxic levels of arsenic, cadmium and lead have been found in water samples taken from Shullsburg area wells, and officials believe mining could be the cause of the contamination.

A sample taken from one of 12 wells showed 130 micrograms of arsenic and 4,200 micrograms of lead per liter. The Environmental Protection Agency's contamination limit for both is 50 micrograms per liter.

The same well had a cadmium level of 8.6 micrograms, under EPA's 10 microgram per liter limit, according to Charles Goethel, of the Department of Natural Resources, and Bruce Dennis, the University of Wisconsin — Extension agent in Lafayette County Extension.

Landowners had stopped using the wells and began hauling water about six months ago. They complained of high iron concentrations and some said they were suffering from dysentery. High concentrations of sulfates were found at first.

Dennis said the 12 wells were on farms in the Town of White Oak Springs. He said samples taken Sept. 24 and 25 show four contaminated with lead, four contaminated with arsenic and three contaminated with cadmium.

"It's probably an accumulation of things, possibly related to the extraction of ore in the area," said Goethel of the DNR's Bureau of Water Quality.

The well with the highest concentrations of arsenic, cadmium and lead is located near the Bear-hole mine, which was closed in May 1979. A shed well on the same farm had an arsenic concentration of 17 micrograms.

## Shullsburg area affected

The other wells are one to three miles south of the mine in an area the Eagle-Picher Mining Co. mined until October 1979. Since then water the company pumped from its mines during operations has risen 90 feet in the shafts.

Officials have speculated that the rising water might be contributing to the well problem.

Dennis said the group's immediate concern was finding safe water for the 12 landowners. He said one solution might be wells drilled 300 to 400 feet to another sandstone aquifer. The wells would be cased with steel.

Dennis and Goethel said samples would be taken from 300 to 400 foot wells in the area before recommending that landowners tap the deeper aquifer.

Samples also will be taken from wells outside

the contaminated area to determine whether the problem has spread.

Dennis said the contaminated water also posed a hazard to livestock. He said the farmer with the highest concentrations of arsenic, lead and cadmium has had milk production drop 50%.



## Old zinc, lead mines blamed for water pollution threat

### DNR field study warns of arsenic

By Jeff Mayers

State government reporter

An internal Department of Natural Resources report warns of serious water pollution from old zinc and lead mining operations in southwestern Wisconsin.

The report includes an ominous discovery — possibly high levels of arsenic.

"It is readily seen that this study has uncovered mine waste problems of some magnitude," said a re-

port on a 1993 field study of a zinc and lead district near Shullsburg.

But Floyd Stautz, the deputy director of DNR's Southern District, maintained Monday that residents of the Shullsburg-Benton-New Diggings area in southern Lafayette County should not be alarmed.

"We have not at this point told anyone they should not drink the water," Stautz said. "We have to do some more sampling."

The internal report recommends a larger study to determine the extent of pollution and the establishment of "routine screening of private and public water supplies in

'We have not . . . told anyone they should not drink the water.'

Floyd Stautz  
DNR official

the mining district for arsenic and selected . . . heavy metals in order to insure the safety of the drinking water supply."

Skin and other cancers have been strongly linked to arsenic exposure, the report says.

A follow-up is necessary, the re-

port says, "because of the distinct possibility that chronic, low-level exposure to these elements through ingestion or inhalation may negatively impact human health."

The report also notes that lingering effects from zinc and lead mining in the region (it ended in 1979) already have made some surface waters "unsuitable for watering livestock and inhospitable to aquatic life." Heavy metals in ground water "sometimes grossly exceed maximum contaminant levels" set by the federal government, the report says.

The report has been in the works

since last spring's flooding, when the DNR investigated a complaint from a Shullsburg area resident about branches of the Galena (Fever) River running red.

A preliminary report in fall 1993 — recently obtained by Assembly Natural Resources Chairman Spencer Black — bluntly urged more study because of the "troubling" findings from approximately 20 samples of various surface, ground and well waters.

Although a drinking water sample of the Shullsburg and Benton municipal wells showed arsenic below the current recommended

federal levels for arsenic, the authors said: "We suspect that the heavy metals impacts to private wells may be more severe."

Black, D-Madison, also reviewed internal DNR documents that reveal concern about jumping to conclusions on such a small sampling. One bureaucrat warned that the DNR wouldn't want to "over alarm" people.

But Black said, "There's potentially major problems in that area. It's a cautionary note that mining can cause persistent and major environmental damage if done irresponsibly."

FOOTLOOSE

vol. 155  
no. 24

Mike Ivey

# Mine waste plagues state's southwest

By Mike Ivey  
*The Capital Times*



Most of the mining talk in Wisconsin has focused on recent developments in the northern part of the state.

But mining has a long history in the Badger state, which takes its nickname from the 19th century Cornish miners who would burrow into the mineral-rich hillsides of southwestern Wisconsin like animals.

At the turn of the century, mining for lead, zinc and other metals was the major industry from Dodgeville south to the Illinois border, supporting towns like Mineral Point, Belmont and Cuba City.

As many as 73 mines were in full-scale operation in 1906, according to state records. Many of these were large operations, some processing as much as 100 tons of ore each 10-hour shift. Mining continued until 1979, when the Shullsburg Mine finally closed.

All this digging, unfortunately, has left a toxic legacy in parts of Iowa, Grant and Lafayette counties.

Piles of mine waste — bare of all vegetation because the dirt is so contaminated it won't support life — still litter the countryside in places like Lead Mine and New Diggings. These communities once buzzed with activity, but are now as poor and desolate as any in Wisconsin.

With each successive rainfall and snow melt, more contaminants wash from these waste piles into the creeks and streams, where livestock drink and fish swim. Heavy metals, including lead and arsenic, have seeped into the groundwater where rural residents draw their drinking water.

Much of this contamination was detailed by researchers in the state Department of Natural Resources in a report the authors say almost never saw the light of day because of the sensitivity surrounding the mining issue.

The report, "Results of the 1993 Spring/Summer Field Survey of the Southwestern Wisconsin Mining District," was initiated following citizen complaints that the Galena River in southern Lafayette County was running red with pollution after heavy rains last spring.

But even though a draft was completed in the fall of 1993, the report wasn't released until April of this year. By that time, news of the report's existence became widely leaked and DNR officials had no choice but to go public with the 61-page document.

Janet Blabaum, who authored much of the report for the DNR, claims to this day she was pressured, harassed and generally discouraged in her efforts to bring the mining problems of southwestern Wisconsin to public attention.

Blabaum, a certified geologist, is convinced that some in state government and those with a vested interest in opening new mines in Wisconsin didn't want any publicity that could portray mining in a negative fashion.

"For whatever reason, a lot of people didn't want this report to ever be written," she says.

Tom Harpt, a DNR engineer who also worked on the project, says he felt similar pressures, even receiving a harassing phone call at home that left him shaken.

"I guess I feel it's a shame when politics and some of these other issues get in the way of the DNR's main role, which should be protecting the environment," Harpt says.

But Jim Huntton, director of the DNR Southern District, denies there was any effort to bury the report or temper its content.

"If we had really wanted to suppress anything we would

never have done an investigation to begin with," he says.

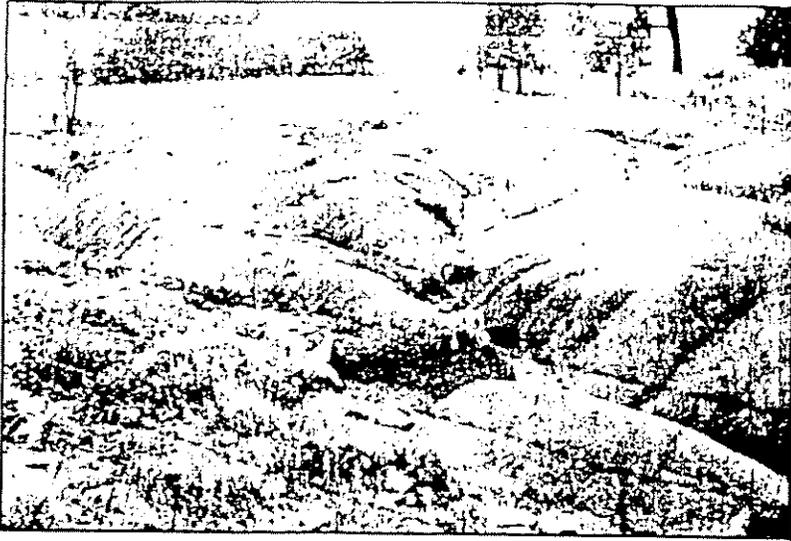
Huntton is also quick to point out that mining today is much more sophisticated than in the past and must operate under strict government controls.

All politics aside, however, the report raises some serious questions about potential health impacts for residents in the area. It also recommends further and more extensive testing.

The DNR has held one public meeting in Shullsburg and promised area residents their water is safe to drink. Tests of municipal water supplies there show contamination is within safe drinking water limits.

The department has also pledged to do further cleanup as time and money allow. A similar contaminated site near Mineral Point has recently been cleaned up and fish are living again in a stream there that once wouldn't support life.

Yet those living daily with mining's toxic legacy say they don't expect anything to be done. This is a region of Wisconsin that doesn't carry much political clout or garner



CRAIG SCHREINER PHOTO

Rain water flows through a pile of mine tailings near the town of New Diggings, just north of the Illinois border.

much public attention.

Earle Griffiths runs his own construction business and has lived his entire life in New Diggings. He rents a home from a Chicago area landlord and has no way of knowing if his private water supply is poisoning him or not.

"All I can tell you, if they think something is in our water they ought to get down here and test it," he says.

But even some landowners in the affected areas have been reluctant to delve into the problem for fear it may reveal heavy contamination and drive down property values. Some are also holding out hope that the hilly, driftless area may one day support a tourist economy and bring some badly needed money into the region.

But Blabaum says trying to ignore the problems left from mining in southwestern Wisconsin isn't going to make them disappear.

"It's great to talk about bringing in tourists and everything," she says. "But tell me, where are they going to find water to drink?"

THE CAPITAL TIMES  
(MADISON, WI)

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# State

La Crosse Tribune

Saturday, February 15, 1997

Wisconsin and Minnesota

## Critics: Revamped DNR losing environmental edge

By **RON SEELY**  
Lee Newspapers

Is the state Department of Natural Resources, once the most feared and tenacious of regulatory bulldozers, losing its bite?

Some close observers of the massive agency say it's so.

They fear a three-year reorganization, which actually got underway last year after two years of study, has left the environmental regulatory giant kinder and gentler and more responsive to the public — but less effective at protecting Wisconsin's landscape.

Concerns are voiced not only by the agency's usual critics in the environmental community, but also by a top environmental lawyer with the state Department of Justice who has seen what she calls a "startling" drop in criminal complaints from the agency.

Top DNR officials deny the reorganization, which was initiated and strongly pushed by Gov. Tommy Thompson, has hurt the agency's pursuit of violators. Yet even some employees within the organization say they are uneasy with the redefined relationship between regulators and the regulated.

They worry that the reorganization, probably the most sweeping ever by a state agency, will result in less enforcement and more coddling of violators.

At the heart of the reorganization is a philosophy that makes everyone who deals with the agency — from anglers seeking licenses to polluters seeking permits — "customers." The vision statement adopted at the outset of the reorganization in 1993 called for the development of "a customer-driven organization" that will operate "in full partnership with others in the public and private sectors."

It's a philosophy, critics say, that may be fine for a grocery store but wrong-headed and possibly dangerous for an agency charged with upholding the

state's environmental laws.

"They're into compliance hand-holding now," says Caryl Terrell, the Sierra Club's legislative coordinator, of the agency's enforcement approach. "Instead of saying 'Here's your obligation and if you haven't done it in a week, we'll be back and start enforcement.' We think it's a slippery slope."

George Meyer, DNR secretary, doesn't waste a breath when asked if polluters have more influence under the new structure.

"Hogwash," Meyer shoots back.

Meyer, who comes from the agency's law enforcement arm, is almost devout in his belief the customer-friendly DNR will be more effective in the long run at gaining cooperation of industry.

"We can get far more done by working with people than by taking an antagonistic attitude toward everyone," Meyer says.

One of the most controversial features of the shake-up is the realignment of field staffs into management teams that are organized around the state's major drainage areas, or water basins. Previously, the agency was organized into geographical regions with each discipline, be it fisheries or water quality, operating independently within each region.

A striking feature of the basin teams is that they will consist of both DNR professionals and private citizens and representatives from local businesses and industries who will help set management priorities.

It's a scary prospect for some, especially agency professionals in the field, who worry about being second-guessed by business people they regulate.

"It's high risk," says Gene Van Dyke, a fisheries specialist in the DNR's Dodgeville office. He says he is uneasy with industry representatives being on the management teams and adds that employees have been told pointedly by upper management

They're into compliance hand-holding now. Instead of saying 'Here's your obligation and if you haven't done it in a week, we'll be back and start enforcement.' We think it's a slippery slope."

— Caryl Terrell, the Sierra Club's legislative coordinator

that the involvement of such individuals will be "beyond advisory."

Meyer says operation of the basin teams is still being refined. But public involvement in setting priorities, including the involvement of industry, is and will remain a priority, he adds. That doesn't mean, he says, that industry will control or weaken the team's enforcement agenda.

### 'Startling trends'

Kloppenburg was alarmed enough to send a Sept. 3 memo to the agency pointing out what she called "two startling trends." Meyer says the drop in hazardous waste referrals prompted a meeting of those involved in hazardous waste enforcement. The conclusion, Meyer says, was that referrals have dropped mostly because hazardous waste programs are working.

"Companies are coming into compliance," Meyer says. "The learning curve is going up."

Tim Coughlin, an environmental enforcement specialist for the DNR's south central region, backs Meyer up. "Businesses are getting smarter," Coughlin says.

As for the drop in criminal referrals, Meyer says that is not surprising and does not mean DNR investigators are laying off violators. Sometimes, Meyer points out, investigators figure they can build a more effective case against a polluter by pursuing civil rather than criminal charges.

Meyer says breaking out separate numbers for each enforcement category is misleading and paints an unfair

picture of the agency's work. Meyer says a look at what he calls the "big picture" — the combined criminal and civil referrals to the justice department — shows an increase in total referrals from 103 in 1995 to 114 in 1996.

Beyond this, Meyer says, looking only at the referrals the justice department show a small fraction of the DNR enforcement work. The majority of cases is resolved before it are referred, Meyer says.

Kloppenburg is skeptical. "There is no doubt environmental compliance is a long way," she says. "It defies belief to say there are midnight dumpers out there."

### Job swaps criticized

Kloppenburg is more convinced that the problem lies with the changes, plus drastic budget cuts undergone by the agency in the last couple of years, have led to many enforcement jobs unfilled, she says. Of even greater concern, she says, are reorganization-driven job changes within the agency that have moved some professionals out of their areas of expertise. "The cases are only as good as the DNR staff," says Kloppenburg. "Reorganization has taken people with 10 and more years of experience and moved them into other areas. They taken respected, highly regarded people out of their areas of expertise."

Ron Seely is the environment reporter for the Wisconsin State Journal in Madison, Wis.

# Is DNR losing its steam?

1/26/97

EDITOR, The Daily News:

Some are confident that Wisconsin has tough mining laws? I am concerned that the agency charged with enforcing these laws, the DNR, is slowly being dismantled and under the control of our governor.

The DNR has become a politicized agency. It's secretary (George Meyers) is now appointed by the governor. All members of the natural resources board are appointed by the governor. The public intervenor the only attorney appointed to serve the citizens of Wisconsin by being a watch dog over the DNR has been eliminated by the governor. What's going on? Why must Gov. Thompson have all this control?

Answer: Back in 1982 James Klausner, Secretary of Department of Administration and Gov. Thompson's chief political advisor, was a former lobbyist for Exxon. In 1982, Klausner boasted at a meeting of the Wisconsin Manufacturers and Commerce Association, that northern Wisconsin could have up to 10 major metal mines by the year 2000.

A week after James Klausner joined the Thompson administration he arranged a meeting between Thompson and Ray Ingran, executive vice president of Exxon Minerals. Thompson urged Exxon to resume effort to obtain permits from the DNR for the Crandon Mine. Sen. Lloyd Kincaid who was at the meeting said, "Thompson made a very strong pitch" for revival of the permit process. Is this why the governor wanted control of the DNR, the Natural Resource Board and did away with the public intervenor office? It is not a secret that the mining industry views Mr. Klausner and the Thompson Administration as their ally.

The current state budget slashed \$44 million from the DNR's budget and cut 233 positions. If the DNR loses more scientists and enforcement personnel or has it's budget cut so that no monitoring analysis or even travel is possible, how can our guardians (DNR) protect our environment?

The close association between the mining industry and powerful

politicians places enormous pressure upon the DNR to change the role of the agency from environmental watchdog to "Economic Development" steward. The groundwork for the undermining of the DNR was outlined in 1985 by a paper on "regulatory reform." The paper stated that regulatory reform was needed to create a "Business climate and the DNR secretary needs to be incorporated into the economic development team. Not for the purpose of offering environmental breaks, but for the purpose of speeding people through the process." The paper also urged the governor to eliminate the office of the public intervenor and to adopt a cabinet form of government for the DNR.

The recent revelation that Gov. Thompson has pressured Secretary George Meyer to let him review proposed lawsuits before they are sent to the Justice Department is an example of how the governor has tried to undermine the agencies environmental role. How can we as concerned citizens in the north fight such politics when our governor

favours sulfide mining in northern Wisconsin, and has taken over any watchdog that we had for clean environment.

We are not only the beneficiaries but also the trustees of our natural environment. We have a right to utilize the earth's resources, but also an obligation to conserve them for the benefit of generations to come. The future that confronts northern Wisconsin needs to be managed so that economic prosperity can take place without environmental degradation, and that is, to search for other environmentally safe industries rather than 13 or more sulfide mines that will destroy our clean air, water, lakes, rivers, streams and wetlands.

A Concerned Citizen.  
Lola Strong

**More Letters  
On Page 5**

## JUST ONE DNR VARIANCE OF OUR MINING LAWS THREATENS THE FLAMBEAU RIVER



Note the Flambeau River lapping dangerously close to the mine because of a DNR variance.

State law prohibits mining within 300 feet of a river. County zoning laws further restrict the distance to 500 feet from a river. Yet, through one of the largest loopholes in our mining laws, the DNR gave Kennecott a variance to our "strong" mining laws and allowed them to mine within 140 feet of the Flambeau River.

The photo was taken in 1994, when the precariously high water level threatened to flood the mine and carry acid-laden toxics downstream. This threat will continue long after Kennecott has taken their profits and left the state because the pit is unlined and unable to prevent acid mine drainage from migrating into the groundwater and Flambeau River.

How was this possible? Many of Wisconsin's mining provisions contain exemptions and variances to the very environmental, public welfare and safety standards that the laws allegedly protect. As long as the mining companies can request exemptions from our mining laws, our clean rivers and healthy forests are at risk. Wisconsin needs to protect itself and repeal special loopholes granted to the mining industry.

# DNR employees concerned about impact of politics

## But secretary denies undue influence

By Ron Seely

Environment reporter

One year into the reorganization of the state Department of Natural Resources, employees still worry that the changes will eventually damage the agency's credibility as an enforcer of environmental laws.

Last September the DNR hired a UW-Madison business consultant to meet with employees to talk about their concerns regarding the reorganization.

A survey by the consultant, David Antonioni, showed widespread concern about whether natural resources will be adequately protected under the new structure, as well as concern about politicization of the agency.

There is a growing suspicion that the agency is more subject to political influence than at any time in its history. The suspicion started after Gov. Tommy Thompson eliminated the state Public Intervenor's office last year and grew when he made the DNR secretary an appointee and Cabinet member.

How far does Thompson's influence extend?

A recent open records request to the governor's office turned up printed copies of e-mail messages to a gubernatorial aide from DNR staffers who reported instances when they had been contacted by reporters about the zinc and copper mine proposed by Exxon and Rio Algom in northeastern Wisconsin. The messages gave detailed descriptions of the media contacts and noted whether the re-

**'I can tell you unequivocally and I'd swear to it in a court of law that I have never been politically pressured in any of my cases.'**

Tim Coughlin  
environmental enforcement  
specialist for the DNR's  
south-central region

porters seemed for or against the project.

And this week, there was evidence DNR Secretary George Meyer, as a member of the governor's Cabinet, is less sheltered than ever from political winds.

Thompson noted this week that Meyer was deeply involved in helping him structure environmental initiatives in his budget. Several of those initiatives certainly bore Meyer's fingerprints and one, in particular, seemed to embody the spirit of Meyer's reorganization. Thompson proposed a "money-back guarantee" for DNR permit-seekers under which their money would be refunded if their permit request isn't handled quickly enough.

Meyer vehemently denies Thompson has exerted undue influence on the agency's operation, in enforcement or any other area. "If I had a Bible, I'd take a oath on it," he says.

Tim Coughlin, an environmental enforcement specialist for the DNR's south-central region, agrees. "I can tell you unequivocally and I'd swear to it in a court of law that I have never been politically pressured in any of my cases," he says.

But others say they worry that under the new structure, political influence will only grow.

Gene Van Dyke, a fisheries specialist in the DNR's Dodgeville office, recalls how staffers used to scoff at the Illinois Department of Natural Resources because their counterparts in that agency always seemed to be bucking political pressures. Now, he says, they aren't so quick to criticize.

"We always used to laugh like hell because they were so politically controlled," Van Dyke says. "Now here we are in the same position. Or worse."

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# MILWAUKEE JOURNAL SENTINEL

WEDNESDAY, FEBRUARY 26, 1997 — STATE EDITION

MILWAUKEE  
JOURNAL SENTINEL

## OTHER VOICES

WEDNESDAY, FEBRUARY 26, 1997

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THE MORNING MAIL

### Beware of mining industry manipulating science

As public pressure builds for legislative passage of the mining moratorium bill, the industry is desperate to come up with a single example of a high sulfide mine, such as the one proposed by Exxon/Rio Algom at Crandon, that has been operated and closed for at least 10 years without polluting ground or surface water with acid mine drainage. Debra Struhsacker, a consultant for both Noranda and Exxon,

said the industry can provide those examples and cited the Stillwater Mine in Montana. This example is highly misleading.

First, the mine is still operating. Second, according to the Final Environmental Impact Statement on this mine, prepared by the Montana Department of State Lands in 1992, this is not a high sulfide mine comparable to the proposed Crandon mine and "no indication ex-

ists that this mine would produce acid."

Acid mine drainage from high sulfide metallic mines is the No. 1 unsolved problem of the mining industry. If this example is any indication of the scientific credibility of this industry-sponsored "study," we have yet another example of how the industry will manipulate science in the service of corporate greed.

Al Gedicks  
La Crosse

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TUESDAY, FEBRUARY 25, 1997 MILWAUKEE JOURNAL SENTINEL

## FOCUS ENVIRONMENT

POSSIBLE CHANGE IN ENVIRONMENTAL REGULATION

# Mines may have to set up trust funds

Irrevocable accounts  
would cover costs  
of environmental cleanup

By DON BEHM  
of the Journal Sentinel staff

Madison — The Crandon Mining Co. or any other corporation seeking state permits to excavate metallic minerals, would be required to create an irrevocable trust fund to pay for cleanup of pollution caused by a mine after it closes, under proposed revisions to state environmental protection regulations.

Currently, mine owners are liable for environmental damage caused by their projects, but there is no mandate to set aside a special cleanup fund in advance, says Kevin Kessler, waste management policy chief for the state Department of Natural Resources.

State regulations already require the owners of metal-ore mines to purchase liability insurance and to post a bond sufficient to cover costs of reclaiming a site — such as filling in pits and shafts, restoring wetlands and replanting vegetation.

The new trust fund, however, would ensure pollution cleanup costs are paid at any time in the future, Kessler said. Kessler is scheduled to discuss the rule changes today at a Natural Resources Board meeting in Madison.

"Protection of a site will continue even hundreds of years after it closes," Kessler said in an interview. "Funds will build up in the trust account and be there in case something unexpected happens."

The fund was proposed by state Rep. Lorraine Seratti (R-Spread Eagle) and 18 other legislators as an additional measure of comfort for residents of the

Crandon area, Seratti said. Seratti's Assembly district encompasses the Crandon Mining Co.'s ore body in the towns of Lincoln and Nashville in Forest County.

"This provides a financial guarantee in case remedial action is needed," Seratti said. "As legislators, we don't want to go to the taxpayers to fund any cleanup that might have to be done in the future."

The rule revision does not specify a dollar amount for the proposed trust account, however. The size of the fund will be determined by the DNR on a project-by-project basis to take into account differences in sizes of ore bodies and potential impacts on the environment, according to Kessler.

In a separate proposed rule change, any new metal-ore mine in Wisconsin also would be required to meet the same ground water protection standards as municipal and hazardous waste landfills, sewage storage lagoons and pesticide mixing facilities.

Currently, metallic mineral mines are not unregulated, but they are exempt from the same ground water standards applied to other facilities. Those standards were adopted in 1984 — two years after the state ap-

Kevin Kessler,  
Department of Natural Resources:

"Protection of a site will continue

even hundreds of years after it

closes."

proved rules governing metal-ore mines, Kessler said.

In practice, however, there has been little difference in the DNR's treatment of mines, officials said. The Flambeau Mining Co.'s open pit at Ladysmith, the only metal-ore mine permitted since the mid-1980s, faced standards comparable to those imposed on other industrial and municipal dischargers to the Flambeau River.

But Seratti and the other legislators questioned why a metal-ore mine would be allowed to pollute a larger area of adjacent land and ground water than other facilities. Metal mining regulations currently set a compliance boundary of 1,200 feet.

At this time, the DNR is not recommending a change. Both a metal mine, whether a pit or shaft, and any waste rock landfill would be required to meet state limits on metals and chemicals in ground water at the 1,200-foot limit of the pollution management zone.

The proposed rule is more stringent than current practice because it would, for the first time, require the mines to abide by pollution prevention goals also facing other waste disposal and treatment facilities, Kessler said.

Next month, DNR staff will ask the Natural Resources Board to approve a public hearing on the proposed rule changes.

## New rule for metal-ore mines is proposed

Madison — Metal-ore mines in Wisconsin would face the same ground-water protection standards as landfills and be required to create irrevocable trust funds to pay for cleanup after they close, under a proposed regulation to be considered in May.

The Natural Resources Board on Wednesday approved at least four hearings on the measures, requested last year by 19 state legislators. If adopted by the board, the proposal would directly affect Crandon Mining Co.'s proposed underground zinc and copper mine in Forest County. Company officials could not be reached for comment Wednesday.

Metal-ore mine discharges to ground water currently are regulated, but they are exempt from some of the environmental protection standards facing municipal and hazardous waste landfills, sewage storage lagoons and pesticide mixing facilities.

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*From Journal Sentinel correspondents  
and The Associated Press*

# PIT

FROM

IN MONTANA, THE BILL FOR  
AMERICA'S COPPER COMES DUE

BY EDWIN DOBB

**R**ust-colored, reeking of sulfur, and surrounded by corroded earthen terraces so sterile they appear incandescent in strong light, the 600-acre lake that rests within the man-made cavity known as the Berkeley Pit looks nothing like a refuge, though it must have seemed like one to the ill-starred flock of snow geese that stopped there while passing through southwestern Montana last November. It is uncertain how many birds eventually rose from that bitter pool and flew over the rooftops of Butte, the town that borders and embraces this former strip mine, continuing their winter migration from Arctic Canada to California, but at least 34% of them did not. That is the number of carcasses Pit monitors found drifting in the lake and washed ashore in the weeks following the flock's stopover. Postmortems conducted under the auspices of the University of Wyoming later revealed what most people immediately suspected: that the geese had succumbed to the water, which is acidic enough to lungeby a motorboat's steel propeller, and to its

poisonous mineral contents, principally copper, cadmium, and arsenic. In each bird autopsied, the oral cavity, trachea, and esophagus, as well as digestive organs like the gizzard and intestines, were lined with burns and festering sores. To even so much as sip from the Pit, it seems, is to risk being eaten alive, from the inside out.

A few days after the first dead snow geese were discovered, Steve Blodgett, a friend and neighbor, suggested that we visit the Pit ourselves to see the unprecedented kill at close range, and looking for any opportunity, no matter how oblique, to get reacquainted with my hometown, I eagerly accepted. Besides possessing a talent for grasping situations whole and summing them up in striking ways, Steve happens to be a reclamation specialist with the local city-county planning department, making him the ideal Virgil to lead this unusual descent. "The Pit is the receptacle of all our sins," he offered, half seriously, as we edged down the fearsome receptacle's back wall, foothold by

*Edwin Dobb was born and raised in Butte, Montana, to which he recently returned after a twenty-five-year absence. His last piece for Harper's Magazine, "A Kiss Is Still a Kiss," appeared in the February issue.*



**HOLDING 28  
BILLION GALLONS OF  
TOXIC WATER, THE  
PIT IS PART OF THE  
COUNTRY'S LARGEST  
SUPERFUND SITE**

handhold, one at a time. To be sure, there is a hellish air about the place. In 1982, after operating as a copper mine for twenty-seven years, the Berkeley Pit fell silent. It was then a yawning hole one mile wide, a mile and a half long, and more than a quarter-mile deep. About the same time, mine officials shut down the pumps that had removed groundwater from the huge excavation and the labyrinth of older, inactive shafts and tunnels adjoining it, inaugurating what may turn out to be the most extensive mine flood in the world and precipitating a staggering environmental problem that will haunt Butte long into the future.

On the Hill, the term locals use for the fifteen-square-mile slope that forms the north end of Summit Valley—where the mining district is located, as well as what remains of Butte's original neighborhoods and business district—sulfur permeates the bedrock. When exposed to air and water, long-buried sulfide minerals produce sulfuric acid, a highly caustic compound that, given enough time, can dissolve almost any metal with which it comes into contact. Once the pumps were silenced and water began migrating back into the mine works, the Pit in effect became a mammoth chemical transformer, a highly dynamic, self-perpetuating machine yielding ever-increasing amounts of hazardous soup. Today, at about 28 billion gallons and rising millions more daily, it is without equal in the United States, threatening the alluvial aquifer beneath Summit Valley as well as the Flat—the central and southern parts of the valley where at least half of the town's 33,336 residents now live—along with the upper reaches of the Clark Fork River Basin, from Silver Bow Creek, which flows along the base of the Hill, to Milltown Dam, more than a hundred miles downstream of Butte. Already considerably contaminated after 130 years of mine waste runoff and smelter fallout, the entire floodplain, from the Hill to the dam, has been included on the federal Superfund list, and is the largest such site in the country.

"That's Horseshoe Bend," Steve said, pointing toward a frayed ribbon of silver draped from the northeast corner of the Pit and down a steep, partially staircased slope to the lake several hundred feet below. Through binoculars the ribbon, about a mile away, resolved itself into a raging cataract, the confluence of long-buried creeks and seepages that surface at a

nearby horseshoe-shaped waste dump and, until recently diverted, spilled 2.5 million gallons of surface water into the Pit every twenty-four hours. Like the ribbon, the terraces that form the walls of the Pit are much larger than they at first appear. Built to accommodate the comings and goings of house-size 170-ton haul trucks, each step is forty feet wide and at least that many feet high. The steps also are eerily lifeless, bleached of all color save the palest shades of yellow, gray, and red, and, more than any other part of the mining district, they are haunted by the odor of brimstone. My guide and I had by then clambered down a half-dozen of these infernal terraces, but we could descend no farther, the next cliff being too precipitous, too unstable. Still high above the water, we scanned the Pit for traces of the birds. "If we can clean up this," Steve said, "we can clean up anything." Two cloud-white bodies floated near the east shore, upside down in a reflected sky.

**T**he snow geese were instantly canonized as martyrs to copper mining, yet another sacrifice demanded by the gods of extractive industry. The symbolism was easy to grasp and even easier to exploit, but it was nonetheless misleading because it suggested that innocence died in Summit Valley last November when in fact it had expired many generations earlier, when the mining camp was settled and its fallen character firmly and permanently cast. Whatever the West has stood for in the popular imagination, Butte has always stood for something else, splendid exception and tragic aberration all at once. Encircled by tremendous and more-or-less unspoiled natural beauty, in a state that today some residents, no more troubled by modesty than they are by irony, call the last best place, it was from the start a place apart, far gone and then some, so much so that in 1943 the historian Joseph Kinsey Howard considered it "the black heart of Montana," and this despite a stubborn affection for the people of Butte and their way of life. Summit Valley earned this distinction after the United States entered the age of electricity, the age of house lights, telephones, and plug-in appliances, motors, and generators, to say nothing of the machinery and armaments required to prosecute two world wars, all of which were made with copper. Next to iron, the principal constituent of steel, no metal was more important to the economic growth of the country, and the enriched veins beneath Butte were thick with it. From the late 1800s through the first half of this century, the so-called Mining City yielded about 13.25 billion pounds of copper, which was a third of the total used in the United



States during the period and a sixth of the world supply—all from a mining district covering only four square miles. Overall, the Hill has produced about 20 billion pounds of copper.

Now that the United States is fast developing a postindustrial economy, increasingly trading in such abstractions as service and information while leaving it to the rest of the world to extract, process, and render raw materials into tangible products, the history and fate of Butte may appear irrelevant to the world outside Summit Valley. But they are not, and precisely because we are so eager to shed our industrial past, well in advance of grasping the extent to which industry's shadow is still with us—indeed, is the very stuff of which we are made. The mines, mills, and factories upon which twentieth-century America was founded receive scant attention in the popular stories we tell about the period, and when they are acknowledged, it is usually from the perspective of heroic valorization or naive disdain. Especially regarding the use of such limited resources as timber, energy, and metals, public debate has become so fragmented that it obscures the connections that tie all Americans to places like the Berkeley Pit, thereby precluding well-considered, honest responses to the uncomfortable questions they raise about desire and complicity, capitalism and modern culture.

Photograph by Tony DiFronzo

Butte also deserves the close attention of anyone concerned about recent attempts by the Republicans in Congress, abetted by key western Democrats, to weaken the pioneering environmental legislation of the past three decades, in particular the 1980 Superfund law, which established mechanisms for reclaiming the country's most hazardous waste sites. Especially alarming is a bill sponsored by the chairman of the Senate Environment and Public Works Committee, John Chafee, of Rhode Island, and fellow Republican Bob Smith, of New Hampshire, that would in effect absolve corporate polluters of responsibility for cleaning up about 75 percent of the approximately 1,200 sites now on the federal Superfund list, including Summit Valley. Chafee wanted a floor vote before the close of the 104th congressional session, but compromise negotiations stalled in committee. And although it is true that since the 1994 midterm elections the most extreme members of the majority party have been forced into retreat, environmentalists and corporate executives alike believe that the original Superfund law is deeply flawed, certain of its liability provisions having provoked an enormous amount of expensive and time-consuming litigation and precious little reclamation since its passage. Reform, then, is likely, sooner or later. Whether this effort will accurately reflect the many complexities and persistent ambivalence that inhere

THE  
BERKELEY PIT  
TODAY

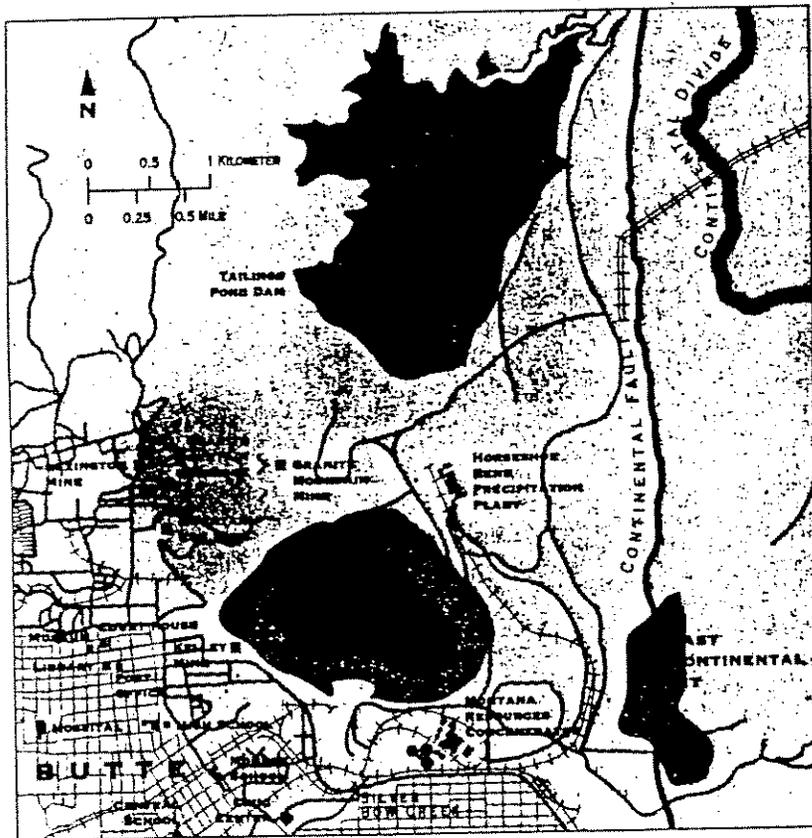
in our relationship with the natural world is probably too much to hope for.

Meanwhile the Hill, set apart from the West yet intimately tied to the country as a whole, provides an ideal vantage point from which to view this relationship, to look beneath the surface of an extractive industry that has been both immensely beneficial and immensely destructive. Like Concord, Gettysburg, and Wounded Knee, Butte is one of the places America came from. Indeed, it can be looked upon as a national laboratory, in which the inner workings of a crucial kind of economic activity are laid bare and U.S. environmental policy is being put to one of its most severe tests. Butte is where we must return, in the manner of a pilgrimage, if we wish to grasp in full the implications of our appetite for metals—for everything from cars and computers to building materials and batteries—an appetite that remains unabated even as we grow more dependent on imports to satisfy it, conveniently displacing the costs and consequences overseas, beyond the reach of conscience.

**“T**he Hill’s had a helluva run,” Steve said, before we began our ascent back to the rim of the Pit. Most mines are short-lived, encouraging a short-run outlook best expressed today in the hundreds of ghost towns

that lie between the Great Plains and the Pacific Ocean. In Summit Valley, by contrast, mining has persisted, one run after another, considerably longer than almost anywhere else. Since 1864, when gold was discovered along Silver Bow Creek, the Hill has been the native home of hard-rock mining in the West, a place where hope favored nomadic gamblers, fickle speculators, and, in the end, financiers and entrepreneurs who would not dream of living here. Though the gold played out within a few years and the silver era that followed lasted little longer, beneath the ramshackle camp and beyond its boom-and-bust start-up lay something of far more enduring value: the largest known deposit of copper ore in the world. The vein that Marcus Daly, an uneducated but shrewd prospector, found at the 300-foot level of his Anaconda mine in 1882 ranged in width from 50 to 100 feet and in places was as much as 50 percent pure, and that was merely the high-grade tip of a subterranean iceberg extending at least a mile below the surface and containing more than 4 billion tons of copper ore. “The world does not know it yet,” Daly is reputed to have said, “but I have its richest mine.” He was right, and from his historic strike forward, geology was destiny in the place that came to be known as the “Richest Hill on Earth.”

The social, economic, and political effects of the ensuing “red harvest,” the term Dashiell Hammett used in his novel of the same name, which was set in the area, are difficult to overstate. In a region dominated by haystacks and cow towns, Butte soon became a boisterous island of urban depravity and unbridled industrial capitalism, in its heyday home to between 75,000 and 100,000 people, the only mining camp in the West to undergo such a drastic transformation. There was nothing in New York or San Francisco that could not also be found in this remote corner of the mountainous West. The Hill produced staggering fortunes for a handful of ambitious, frequently ruthless capitalists, Daly among them, who are collectively remembered and sometimes reviled as the Copper Kings, and a consortium of bankers and investors on the East Coast and in Europe, including the Rockefellers of Standard Oil. It also undergirded a community of great ethnic breadth, a decidedly unwestern cosmopolitanism



that drew from every wave of immigrant—Welsh, French, and German, Chinese, Lebanese, and Greek—to reach U.S. shores in the late nineteenth and early twentieth centuries; helped immensely to turn the labor movement into a progressive force in American life; and, finally, gave rise to one of the most powerful mining firms in the world—the Anaconda Copper Mining Company.

The Company. To the extent that Butte is an archetypal American town, it is so because many of the forces that shaped the country existed here in an undisguised and frequently extreme form, and in no instance was this more true than in the case of corporate power, whose center was the Hill but whose reach extended far beyond Summit Valley. As the late historian K. Ross Toole used to argue, Anaconda maintained a more comprehensive hold on Montana's natural resources, government, and people than any other corporation in any other state. One of the most egregious examples of the Company's willingness to wield this power with thoroughgoing ruthlessness occurred in 1903. Unable to obtain a favorable decision from local judges in a violent conflict over the ownership of certain ore veins, it shut down all of its operations on the Hill. Without warning, 6,500 men were thrown out of work. The Company then announced on the front page of Montana's major newspapers that if the governor were to convene a special session of the state legislature, and if the legislature were to pass a "fair trial" bill that allowed the Company to transfer its legal dispute to a more favorable court, then it would reopen the mines. The governor complied, as did the legislature.

To understand why the governor buckled so easily it helps to know that Butte was not the only town that suffered because of the shutdown. At the time, the Company employed three quarters of the wage earners in Montana, and all of them lost their jobs as well. It also helps to know that the Company owned all but one of the state's major dailies. Thus, when it came to coverage of issues pertaining to mining interests—the shutdown, for instance—it owned the allegiance of most mainstream journalists. By the end of the First World War the Company had taken control of the entire Hill. It owned the world's largest nonferrous smelter complex, in the neighboring town of Anaconda, twenty-three miles west of Butte, as well as numerous lumber mills and millions of acres of timber. City water systems, stores, hotels, banks, railroads—the Company reached into every realm of Montana life, including the capital, where it bought elected officials with suitcases full of cash, liquor by the caseload, women, whatever kind of "hospitality" it might take to swing policy and legisla-

tion its way. During boom times union miners made good money in Butte; it is true, but that also served the Company's purposes by concealing the larger, alarming economic pattern: almost all of the wealth extracted from the Hill—some \$25 billion worth—left the state.

The Company's influence notwithstanding, geology had always been the final arbiter of events in Butte, and eventually geology was the undoing of Anaconda's corporate empire. As early as the 1920s, the labor-intensive underground mines in places like the Hill, where the copper sulfide might be located more than a mile below the surface, started to lose their competitive edge to the open-pit mines of corporations such as Kennecott and Phelps Dodge. In 1923 Ana-

conda purchased a controlling share of the Chile Copper Company, which by then owned the world's most extensive deposits. By that time Anaconda executives knew that if the Butte operations were to stay profitable they would soon have to switch to pit mining on the Hill; there remained only enough high-grade ore to last another thirty years or so. But it was a decision Company officials were reluctant to make, because it called for the destruction of most of the town's original neighborhoods, which had grown up around the mines and directly atop the ore body. Finally, in 1955, the Company announced to the people of the Mining City that it could continue to guarantee them a living wage only if it destroyed a large portion of the place where they lived. There was little anyone could do but get out of the way.

Thus began the final and nearly fatal stage of large-scale hard-rock mining in Butte. One by one the underground operations closed down. By 1975, when the sheave wheels ceased turning atop the last active headframe—the Mountain Consolidated, or Con, whose shaft was 5,291 feet deep—the workings included about 4 miles of vertical shafts, 2,500 miles of tunnels, and 7,000 miles of stopes, for a total of almost 10,000 miles of passageways. Meanwhile the Berkeley Pit had come into being—rather, non-being—an ever-expanding void on the east side of the Hill that had swallowed the Irish neighborhood known as Dublin Gulch; Meaderville, where the Italians lived; and most of Finntown; along with the sections where the Serbs, Croats, Montenegrins, and Albanians had settled; as well as the McQueen Edition, whose

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original residents were Austrian and Hungarian. In all, about one third of the Hill was depopulated. Destroyed, too, were the Columbia Gardens, a seventy-acre refuge of shade trees, flower displays, and broad lawns that included a large dance pavilion, Ferris wheel, merry-go-round, and elaborate wooden roller coaster—Butte's versions of Central Park and Coney Island joined together, and treasured no less.

**D**ASHIELL HAMMETT  
DESCRIBED BUTTE  
AS AN UGLY CITY, SET  
IN AN UGLY NOTCH,  
THAT HAD BEEN ALL  
DIRTIED UP BY MINING

brink of bankruptcy. By 1977 Anaconda, to its relief, had found a buyer for its Montana holdings, the Atlantic Richfield Company, although the purchase turned out to be a regrettable decision for ARCO, an oil and gas enterprise that had grown fat during the energy crisis but possessed neither the savvy nor the stomach for hard-rock mining. Add to that a sudden drop in the price of copper to sixty-odd cents a pound, the lowest in years. By the summer of 1983, ARCO had lost all of the money it cared to lose and suspended operations in Butte. The western edge of the Berkeley Pit then lay only a few blocks from the heart of Butte's old business district, called Uptown, all of which had been slated for destruction. For the first time in more than a hundred years the Hill was completely idle.

**T**oo busy digging ore to worry about appearances, Butte has never fit well in the gallery of wholesome outdoor portraits that makes up the postcard version of Montana. This is how Dashiell Hammett described the town, which in Red Harvest he called Poisonville: "An ugly city . . . set in an ugly notch between two ugly mountains that had been all dirtied up by mining. Spread over this was a grimy sky that looked as if it had come out of the smelters' stacks." The sky is clear now, and, given the mile-high altitude and quicksilver climate of Summit Valley, it frequently undergoes astonishing transformations. More days than not, the sun makes an appearance, perhaps briefly but almost always dramatically, whereupon the expanses of air that lie between the Hill and the

mountain ranges lining the horizon grow immense with light, creating an acute, nearly tangible impression of volume. Sometimes the weather is especially restless, bringing to the valley swift-moving processions of broken clouds, often to such painterly effect that the spectacle overhead surpasses the landscape itself. The Hill does not, when the rest is made of stone, not a single night, remains all dirtied up.

While the Berkeley Pit may be Butte's most forbidding aspect, it is only one of many elements in an extensive and complex mining heritage. Because the acidic, lead-laden soil is in many places virtually devoid of organic matter, little vegetation grows in the mining district, nor does it fare so well on nearby mountainsides, which are largely barren after exposure to decades of smelter fallout. Scattered across the area are piles of waste rock, ranging from truckload heaps to a pyramid-size mound, the Alice Dump, that rests, truncated, at the top of the Hill, in the old village of Walkerville. Interspersed among the dumps are deep holes, gouges in the surface that once inspired dreams of overnight riches but never yielded enough ore to justify sinking a shaft. Add to this somber portrait the Yankee Doodle Tailings Pond, built to accommodate the waste produced by the processing of ore from the Pit and hanging immediately behind and above it. Well over 1,000 acres and at least 600 feet deep, this pond is not really a pond but a slate-gray sea of toxic sand and evaporating water, one of the most extensive dumps in the world. And consider Silver Bow Creek, which by skirting the Hill divides it from the Flat, and might run yellow or bronze or burnt orange, anything but the color of clean water, anything but a current for the living. As a youngster, I knew the stream only as Shit Creek. For many who live here the outstanding feature of the Hill is the mine yards, or, rather, the ruins they have become, especially the iconic headframes that straddle the flooded, crumbling shafts. Thirteen have survived—lampblack skeletons, five to eight stories high, brooding over the mining district. Locals call them gallows frames, and with more reverence than irony.

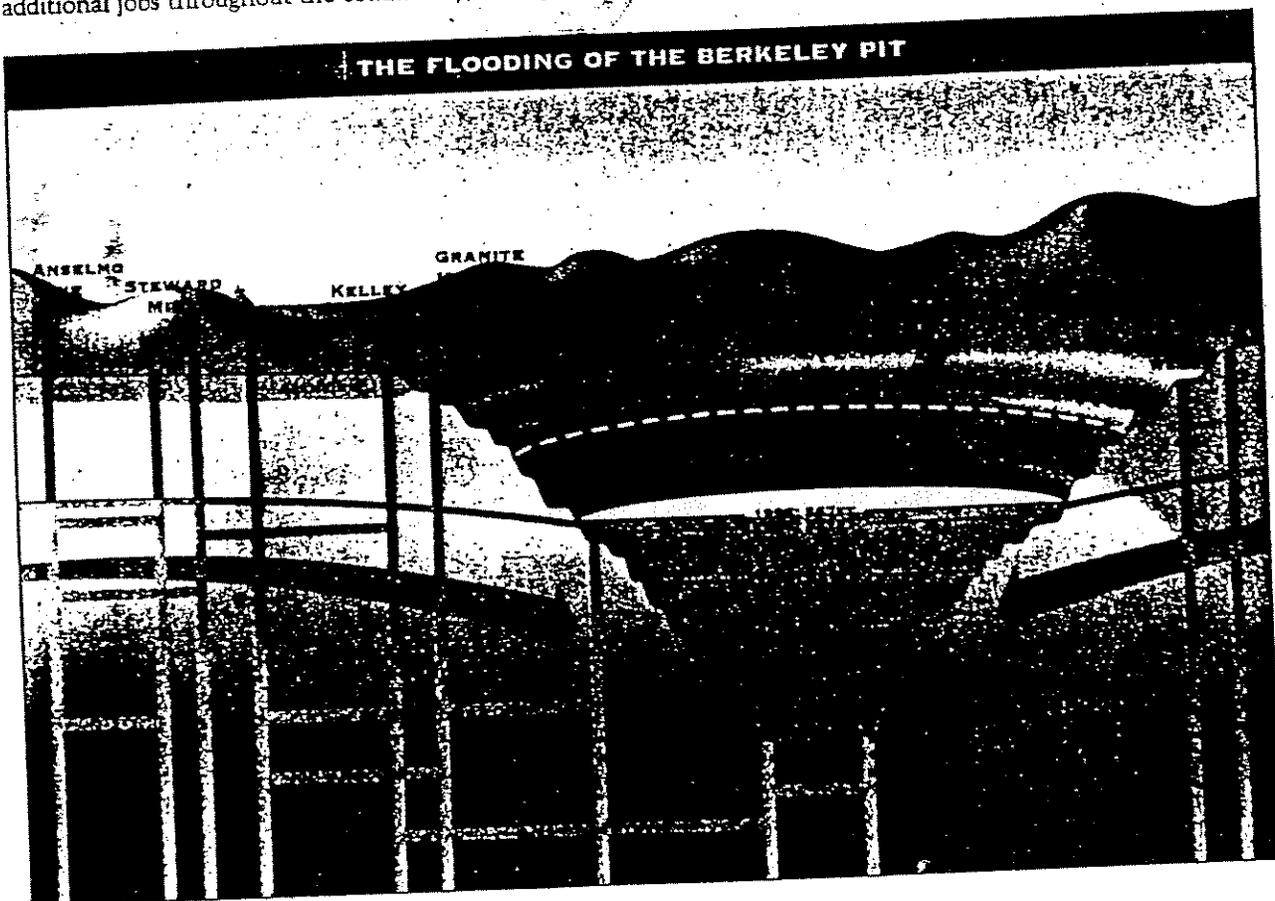
What may most surprise the visitor to Butte, however, given the environmental damage already wrought, is the presence of a second strip mine, the East Continental Pit, located between the Berkeley Pit and the mountain range, part of the Continental Divide, that forms the eastern boundary of Summit Valley. Now the only active mine here, the East Pit was inaugurated in 1980, shut down, along with everything else on the Hill, three years later, and revived in late 1985, when ARCO, poised to scrap everything it

owned, sold the former Anaconda properties to Dennis Washington, a prosperous entrepreneur from nearby Missoula. Washington also had been thinking of the Hill as a salvage operation, until Frank Gardner, a third-generation miner and old Anaconda hand, devised a plan to streamline the East Pit that came to rely on a much smaller force of nonunion laborers. At the same time, Don Peoples, then chief executive of the Butte-Silver Bow local consolidated government, arranged a number of critical concessions: a three-year tax break, reduced power and freight costs, excluding the East Pit and the Yankee Doodle Tailings Pond from the Superfund site. The mine, it seemed, could once again turn a profit. A small one, to be sure, but a profit nonetheless. Not long after Washington purchased the East Pit, the copper market rebounded, and it has remained well above the mine's break-even point ever since, so much so that *Forbes* magazine recently estimated Dennis Washington's net worth at more than \$1 billion, the bulk of which he made in Butte, on an investment of only \$18 million, the fire-sale price ARCO accepted for the Richest Hill on Earth.

Reopening the East Pit put a partial brake on Butte's decline by providing good incomes for the more than 300 men who work in the mine and mill, or concentrator, which translated into additional jobs throughout the community, and

by generating tax revenues, which have come to represent a sizable portion of the city-county budget. But even under the best of circumstances, the mineable reserves in the East Pit will be exhausted in about twenty-five years. As was true during Anaconda's reign, the threat of shutdown is omnipresent, never mentioned, of course, but always implied during disputes with regulatory agencies and a certainty if market conditions were to change drastically. The lasting physical legacy of Washington's Montana Resources will be the same as that of every mining company that has operated in Summit Valley—a landscape "all dirtied up." True, Washington's firm, working within a more demanding regulatory climate, has begun to cap and revegetate the waste rock and tailings it is producing and, as required, has posted a \$14.3 million bond with the state, a kind of environmental insurance policy, though a woefully inadequate one. But the mine itself will not be reclaimed. Given present market conditions and the state of excavation technology, the restoration of large hard-rock strip mines is prohibitively expensive, so it is simply not done.

When the East Pit ceases operation it, too, will begin filling with groundwater, not as toxic as that in the Berkeley but, when the level rises high enough, in need of treatment all the same. What is more, the East Pit will rival the



Berkeley as the most prominent man-made feature in Summit Valley. If, as Montana Resources officials hope, the excavation continues for another two to three decades, the East Pit's eventual footprint will be roughly half as large as that of the Berkeley. The two cavities are separated by the Continental Fault, however, the eastern, uplifted section forming the Continental Divide while the western section serves as the valley floor. Thus the bedrock and ore body on the Divide side of the fault are elevated by 3,500 feet, making the mine's terraced back walls considerably more visible. From some parts of the valley the two pits and the intervening waste seem to merge into a single

be obscured elsewhere, though it is no less problematic. Pit mining, mostly for gold, is increasing throughout the West—in Alaska, British Columbia, Nevada, even Montana. Fifteen years ago U.S. mines produced about one million ounces of gold. Last year the total approached 11 million, a tenfold increase. The rush is driven by consistently high prices for the metal and a new technology, cyanide heap-leaching, which enables mines to extract microscopic amounts of gold yet creates extraordinary volumes of hazardous waste rock. Almost three tons of ore is needed to produce enough gold for one small wedding band, and 76 percent of the gold refined throughout the world in 1995 was used to make exactly that—jewelry.

Outside the United States, in countries that lack conservation laws or the will to enforce them, pit mining has become the preferred method for extracting metals of all kinds, in some cases leading to ecological destruction on a scale that makes the scars on the Hill look like the backyard scratchings of children. A typical example is the Grasberg Mine, in Irian Jaya, Indonesia; the world's largest-known deposit of gold and the third-largest of copper. Creating acidic tailings at the rate of 120,000 tons per day, Grasberg has already produced more than 400 million tons, and plans call for the generation of another 2.8 billion. Members of the Amungme tribe have repeatedly protested the clogging and contamination of streams and the flooding of rain forest and agricultural lands. This March several thousand villagers rioted, closing the mine for two days; Indonesian President Suharto responded by flying in soldiers. At about the same time, an Australian human-rights group released a report contending that dozens of local people had been murdered or disappeared during the previous year. Such are the environmental and social legacies of large-scale pit mining in the international arena.

colossal wound, fully occupying not only a third of the Hill but the lower half of the Continental Divide.

Wherever one may stand on the difficult issues raised by extractive industry, it is fair, I think, to say that the juxtaposition of these two holes, one the uppermost section of the largest Superfund site in the country, the other a productive mine whose fruits—molybdenum, used in lightweight alloy products such as surgical instruments, airplane parts, and mountain bikes, and, of course, copper—are today enjoyed by the residents of Missoula and Manhattan no less than by those of Butte, reflects the schizophrenic attitude the United States has adopted toward an appetite whose consequences it cannot yet face forthrightly. And like much else about Butte, what is transparent here tends to

WATER QUALITY COMPARISON		
	EPA DRINKING WATER STANDARD LIMITS (MG/L)	BERKELEY PIT (MG/L)
ALUMINUM	0.050	287.000
ARSENIC	0.050	0.740
BARIUM	2.000	<0.010
CADMIUM	0.005	2.123
CHROMIUM	0.010	0.062
COPPER	1.000	204.000
IRON	0.300	1135.000
LEAD	0.015	0.102
MANGANESE	0.050	210.000
MERCURY	0.002	<0.100
NICKEL	0.100	1.063
SILVER	0.100	<0.002
ZINC	5.000	619.000
CHLORIDE	250.000	20.000
FLUORIDE	4.000	40.000
NITRATE	10.000	<0.250
SULFATE	250.000	9000.000
SILICON	250.000	112.000
PH	6.5-8.5	2.110

late afternoon. Somehow his hand-held carbide light touched a frayed and oily edge of insulation, setting it on fire. With the cable serving as a fuse and the updraft acting like a chimney, flames shot toward the surface, igniting the surrounding timber and transforming the shaft into a 3,000-foot inferno. That night, 168 men perished in what turned out to be the worst hard-rock mining disaster in U.S. history.

Just three years earlier, a fight for control of the American Federation of Labor-backed Butte Local No. 1 had broken out between factions representing the militant Industrial Workers of the World, or Wobblies, and the moderate Western Federation of Miners. It led to ten days of mayhem during which Miners' Union Hall was obliterated by dynamite, Butte's socialist mayor was forced out of office, and Montana's governor declared martial law, sending the National Guard to enforce order in Summit Valley. Following the Granite Mountain fire, a new union, the Metal Mine Workers, immediately demanded additional safety measures. Rebuked by the Company, the union called a strike, and in response more than 15,000 men walked off the job. Once again martial law was invoked.

For the next sixteen months Butte was ruled by National Guard troops, surreptitious Pinkerton detectives (of which Dashiell Hammett was one), and gun-wielding Anaconda thugs. In the early hours of August 1, 1917, Frank Little, an especially persuasive IWW leader, was abducted from his boarding house by a half-dozen vigilantes, dragged behind a car until his kneecaps were scraped off, and hanged from a railroad trestle. Seven thousand mourners joined the funeral procession. A year later, alarmed by the increasing unrest and impatient with civil liberties, particularly when exercised by immigrant Sinn Feiners and Finnish anarchists who had no desire to fight the Germans and said so, the state legislature outlawed the IWW and passed the Montana Sedition Act, which banned, among other things, "disloyal, profane or scurrilous" antigovernment writing and speech, and legalized summary deportations. The act was considered such a sterling display of patriotic fervor that the U.S. Congress adopted similar terms in the federal version it passed later that year. The strikes and provocations continued. On April 21, 1920, Company guards opened fire with machine guns on IWW pickets gathered along Anaconda Road, at the gates of the Neversweat mine yard. Two men were killed, thirteen others wounded. This time the governor called in a contingent of regular U.S. Army troops to patrol the streets while work resumed on the Hill.

The inscription on Frank Little's headstone

reads, "Slain by capitalist interests for organizing and inspiring his fellow men." Although some may quarrel with that verdict, there is no question that the IWW organizer's death was an unusually violent instance of the sacrifice

that ordinary men, under much less dramatic circumstances, made every day in Butte. Those killed in the Granite Mountain fire were among an estimated 2,000 whose lives ended underground before the Berkeley Pit came into being. At least ten times that number were seriously injured and disabled, and it is anyone's guess

how many tens of thousands died prematurely from miner's lung and other occupational illnesses, to say nothing of the nonmining residents whose lives were shortened due to exposure to heavily polluted air. To honor the fire victims, along with all those the victims have come to represent, a memorial plaza, the Granite Mountain Overlook, was constructed recently, some eighty years after it was authorized. A prow-shaped battlement of concrete and brick, the Overlook is perched on the easternmost edge of the Hill, between the Berkeley Pit and the Yankee Doodle Tailings Pond, offering a bird's-eye view of the Granite Mountain headframe.

The day before I descended into the Pit in search of dead snow geese, I visited the Overlook with Mark Reavis, Butte-Silver Bow historic preservation officer. "Here we can tell the whole story of hard-rock mining in America," he said, explaining that the Overlook anchors a project known as the Anaconda-Butte Heritage Corridor. The idea, reduced to essentials, is this: In 1962, Uptown Butte, a six-square-mile district that contains several thousand structures, was designated a National Historic Landmark. In the 1980s, when the mining district, which overlaps Uptown, was added to the Superfund list, that designation took on unexpected significance; cleanup projects would now have to meet federal guidelines regarding the maintenance of historic resources. Instead of simply reducing the risks of waste dumps by covering them with a layer of clean soil, say, and planting hardy grasses, or erecting chain-link fences around mine yards, the dumps and mine yards would have to be made safe without doing damage to their historic character.

Not all of the tailings and headframes fall within this dual jurisdiction, of course, but the

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fact that some of them do has led Reavis and other community activists to an unusual vision of environmental reclamation, one that assumes that clean does not always mean pretty and that pretty is not always attractive. Butte's heart may indeed be black, but it would forfeit whatever heart it has if its mining past were erased or replaced by a sanitized theme park full of virtual mines and signs that explain away everything forbidding and controversial about the place. This is why a good part of the waste that lies before the Granite Mountain Overlook will not be reclaimed or, viewed from an historic angle, already has been reclaimed, but as a memorial to what actually happened here. This is also why, if the Anaconda-Butte corridor is acknowledged as a Labor History Landmark—the National Park Service recently added the area to its short list—the Wobblies

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and the gun-toting goons and Anaconda's century-long stranglehold on the community will be included in the official story of the Hill. And it is why some mine yards will be preserved as they are or restored to their original condition whereas others will be made to serve the social needs of the community; the Belmont hoist house, for example, which once contained the motors that raised and lowered cages into the Belmont mine shaft, will soon be converted into a senior citizen center—a building inside a building, the present abiding within the past.

"History has to be usable," Reavis said, nodding toward the ravaged landscape below the Overlook. "If it's not usable, it's forgotten."

**M**ining the past is a theme that is almost as pervasive in Butte as the threat of shutdown, and no holdover from the past is more in need of attention than the water. The condition of streams, lakes, and aquifers is the surest gauge of the meaning we actually assign—through what we consume, not what we say we value—to the metals we extract from the ground, yet it is the only element in the mining equation that we literally cannot live without.

Water in the Upper Clark Fork River Basin, as in most hard-rock mining districts throughout the world, is everywhere contaminated, and where there is no water—in dumps, along stream banks, around and downwind of smelter sites—there is rainfall, and thus contaminated

runoff, which eventually winds its way to existing streams. Follow the flow: The bedrock aquifer, lying some distance below the alluvial aquifer in Summit Valley, contains highly elevated levels of arsenic, lead, and cadmium, as well as copper. Although no one has ever devised a successful method for controlling the migration of groundwater through bedrock, much less for purifying it, the cost of merely trying to do so here has been estimated at between \$7 billion and \$10 billion. For all practical purposes, the aquifer is polluted beyond repair. (Having ruined all local sources, Butte early on built a pumping and diversion system that carries drinking water from a neighboring, undisturbed valley.) As for surface water, until 1911, when the Company constructed the first of three sedimentation ponds near Warm Springs, about twenty-five miles downstream of Butte, mine-waste runoff that flowed into Silver Bow Creek migrated as far as Milltown Dam, just outside Missoula. During spring floods, contaminated water often breached the pond dams anyway. It still does. Consequently, all of Silver Bow Creek is an industrial sewer. The Clark Fork River from Warm Springs to Missoula is laced with arsenic, manganese, lead, copper, and zinc, and some six million cubic yards of toxic-metal sediment rest at the bottom of Milltown Reservoir, behind the dam.

The site that best exemplifies the sorry condition of water in Summit Valley is, of course, the Berkeley Pit, and it always will, though only partly because of the size of its lake and the nature of its contaminants. More alarming still are the dynamics of the flooding; whereas the surface water entering from above, about half of the total flow, can be controlled, the groundwater seeping in from below cannot, not ever. Imagine that. Water will always migrate into the Pit from the highly fractured and heavily mined bedrock that surrounds it; the infernal receptacle will always be cursed. Not for a hundred years, not for a thousand, but always.

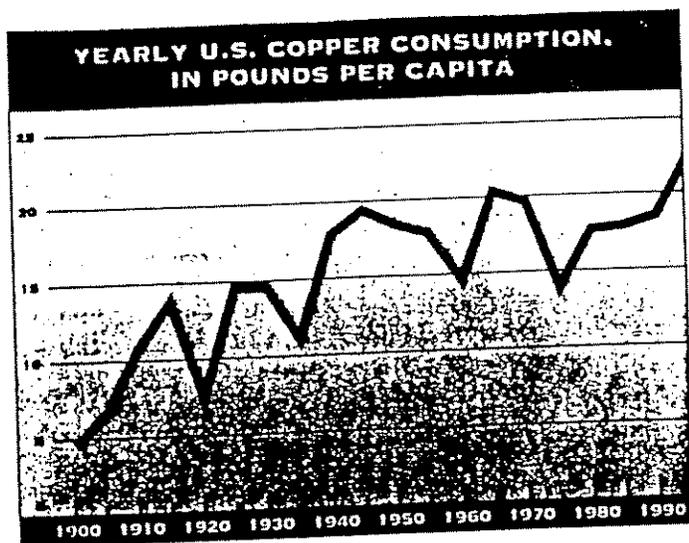
That is why Butte residents like Fritz Daily, school counselor, former state representative, and all-around gadfly, have been losing sleep since the pumps were shut down fourteen years ago. "Mine flooding could easily destroy the town, environmentally, economically, and socially," he says, envisioning a catastrophe that would force the evacuation of a good part of the valley. Daily also insists on the following: "The most valuable resource in the Pit is the water, once you figure out how to make it water again." What he means is that the copper, iron, and other minerals are present in such large quantities that they would be worth something, perhaps a great deal, if extracted in a cost-effective manner—if, in other words, the

mine water could be mined. Of all the schemes to repair the environmental damage in Summit Valley this is by far the most intriguing, because it holds out the hope that the biggest liability on the Hill might be transmuted directly into an asset, which is as close to realizing the alchemical dream of medieval times as we are likely to get in the late twentieth century. Whether this modern version of the dream can be fulfilled is far from certain, however.

Three years ago a Canadian firm, Metanetix, declared amid much fanfare that it was going to extract dissolved metals from the water in the Kelley shaft, west of the Pit. "What is perceived by everybody as a major disaster, we see as being a major opportunity," one official boasted to the local newspaper, while pledging to invest \$10 million in the facility and predicting that it would employ as many as 200 workers and turn an annual profit of \$50 million or more. But by last fall precious little metal had been shipped, all operations had been curtailed, and the firm was busy salvaging part of the Kelley headframe. More hopeful are the waste-treatment studies being conducted at several new businesses in this area. One of these is MSE, Inc. (formerly Mountain States Energy), a research-and-development firm headed by Don Peoples, now some seven years out of local government and determined to help the Mining City overcome its dependence on mining through the encouragement of businesses that specialize in innovative technologies. Butte would seem to be an ideal location for such an effort, not least because it is home to the Montana School of Mineral Science and Technology, long one of the outstanding engineering institutions in the world. But the most fitting new arena into which the local economy might expand is environmental cleanup. What better place to design and test reclamation strategies than the Hill? Under contract with the Department of Energy, MSE has to date studied six mineral-recovery technologies and is scheduled to examine several more, though no approach has yet proved capable of separating dissolved metals from mine water at anywhere near a profitable cost.

That the concept of mining water remains less a promise than a prayer could not have been more evident than in the fall of 1994, when the Environmental Protection Agency and the Montana Department of Health and Environmental Sciences (now the Montana Department of Environmental Quality) decided on a remedy for the flooding of the Berkeley Pit and other mines on the Hill. The plan calls for the diversion of surface water at Horseshoe Bend, between the back wall of the Pit and the rock impoundment that holds in place the Yankee Doodle Tailings Pond. Assuming that the water within the Pit will not

pose a threat to human health or the environment until it rises to an elevation of 5,410 feet, 50 feet below where the EPA projects pit water could seep back into the groundwater system, the agency also ordered a pumping and treatment plant to be constructed by 2021, four years before the critical level likely will be reached. Although



the plan allows for the use of new treatment technologies, should one ever prove feasible, the only method now available is considerably less than ideal: adding lime to the water to neutralize its acid content and draw out metals en masse, a process that, ironically enough, would yield vast amounts of hazardous sludge—between 500 and 1,000 tons daily—that would have no economic value. Where the sludge would be disposed of, whether back into the Pit or in a nearby repository, would be determined later as well.

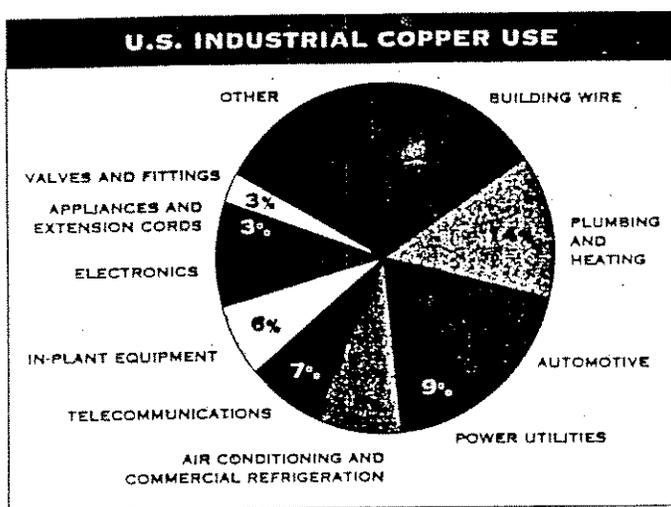
Having waited since 1987, the year the Pit was added to the federal Superfund list, everyone in Butte was pleased that the EPA and the state had finally selected a remedy, though many interpreted the plan as a decision not so much to take action as to postpone it. Granted, this past spring ARCO and Montana Resources began diverting water at Horseshoe Bend, reducing pit flooding by about half. On April 15, Jack Lynch, the current chief executive of Butte-Silver Bow, pushed the button at a new pumping station, diverting the stream through an eighteen-inch pipe to the Yankee Doodle Tailings Pond, where lime was added to remove metal and reduce acidity. The water was then discharged into the pool at the far end of the impoundment, to be recycled through the concentrator, and this should continue as long as the East Pit remains active. But the more incorrigible and unpredictable source of flooding, groundwater—about 2.5 million gallons of it every day—will not be ad-

dressed for some thirty years. This is what disturbs Daily, who is skeptical of all forecasts of water behavior on the Hill, especially those based on the assumption that the hydrologic system in Summit Valley is now returning to a natural, pre-mining state. "Everything underground has been altered," he says. "Nature's gone." In this view, allowing the flooding to continue—specifically, allowing the Pit water, already more than 800 feet deep, to rise another 300 feet, as the EPA proposes—is to gamble with the future of Butte in a way that is more reckless, because potentially more ruinous, than Anaconda ever did. If the water were to enter the alluvium, the layer of soil that rests on top of the bedrock, it would tend to flow downward, off the Hill, to-

bears the impress of the land no less than the land is molded by human ambition. If he is right, and in matters of geography Durrell's instincts seem to me unerring, then as hopeless as the Hill may sometimes appear, there could scarcely exist a better place to find something more valuable than hope—clarity. For it is those whose lives begin and end in Summit Valley, whose dead are buried here, who are in the best position to take the full measure of hard-rock mining—by virtue of their long intimacy with it. When the bills come due for the metals the country consumes, the costs are not apportioned according to use; they are paid in Butte, and in places like Butte. The Hill is unique among such sites in that it is both a mining district and a town, a culture as well as a highly disturbed geological formation, and the two are inseparable. Larger hard-rock strip mines certainly exist—Bingham Canyon, southwest of Salt Lake City, is more than twice as large as the Berkeley—but none so dangerous rests so near the heart of an urban center.

For Butte, the chief implication of this precarious arrangement concerns how it might continue to live, and even flourish, in the presence of a legacy that could well betray it, and at any time, for as long as anyone dares imagine. As Jack Lynch puts it, "Butte not only has to live with the problem, it has to live with the solution." For those who live outside Summit Valley but nonetheless benefit from mining, the implications of Butte's twofold nature revolve around recognition—acknowledging that the Hill also is America's unsettling backdrop, that we all live on the edge of the Pit, and taking that often overlooked connection into account when rendering judgment of extractive industry. Almost everyone who resides here today either worked underground or knows someone who did. There is nothing quite like the hair-raising tension that gathers in a bar full of Anaconda retirees, say, when someone, outsider or not, glibly states that the Hill is an abomination. You cannot long survive as an environmentalist in Summit Valley without arriving with or coming to a respect for mining and miners, and not only because you may be ostracized but, more important, because it is so transparently hypocritical not to admit your indebtedness.

For those who do acknowledge that indebtedness and wish to grasp what it means in human terms, the challenge lies not in finding people willing to talk freely about themselves but in sorting through the welter of tales, fables, and downright lies they tell about the place. As the longtime residents of Butte continue to mine history, reworking their memories for images of themselves and of the town, the past remains



ward the eastern side of the Flat, percolating into basements; making former wetlands, now neighborhoods, wet again; and eventually contaminating the alluvial aquifer.

Risks aside, this much is certain: once the new pumps start they can never be stopped. The Pit was excavated in one generation, the dozens of underground mines that surround it in five or so, but the aftereffects of these engineering feats will be felt for hundreds of generations, until the next ice age or geologic cataclysm, a perpetual problem in need of a perpetual solution. Just as there is no foreseeable end to the flow of toxic water, there is, under the EPA remedy, no end to the production of toxic sludge. Holding this image in mind may be unsettling for the residents of Summit Valley, but it is now the backdrop to everything that happens here.

**N**ovelist Lawrence Durrell has written that a place expresses itself through the people who inhabit it, that a community

ever on the verge of revealing itself, but without ever fully and finally doing so. This is surely true in the Silver Dollar Saloon, a haven of easy conviviality and large tolerance located at the corner of Main and Mercury, in the center of Butte's Uptown. Since its construction in 1894, the Dollar building, a handsome two-story structure of red brick and forest-green wood trim, has housed several bars, a carriage works, Chinese retailers, and a brothel, called the Lucky Seven, after its address, 7 West Mercury, the notorious street that still served as Butte's red-light district when I attended high school, only a few blocks away. One recent evening I found myself on a stool there, accompanied by half-glimpsed ghosts, listening to Dan Price, an eighty-year-old resident, who paused now and again, quinting, as if to assay each stone he had quarried from his life before revealing it to the stranger beside him. "I was a ten-day man," he said. "I'm not proud of it, but that's how it was." Whenever he was broke, Dan rustled a job on the Hill, usually underground, worked through his first payday, then went on a binge until the money ran out again.

Dan's self-induced boom-and-bust habits afforded him the opportunity to see the insides of more mines than most of his contemporaries; it also gave him the leisure to explore the insides of a great many books. Well acquainted with Western literature and always poised to recite favorite passages, Dan evidently read, and continues to read, as enthusiastically as he once drank. He reserves a particular fondness for deceased writers who shared his double passion for the alcoholic and verbal arts and who, more often than not, were undone by it, Thomas Wolfe most fondly and most tragically. "You know that Baudelaire poem, Ed, the one about drinking?" Sorry to say, I had not committed the lines of "Get Drunk" to memory, but somehow I unloosed a couple of hobbled fragments, enough to satisfy his wish to revisit the poem's meaning, if not its music: "It is Time to get drunk! If you are not to be the martyred slaves of Time, be perpetually drunk! With wine, with poetry or with virtue, as you please."

Baudelaire's advice seemed at home in the Silver Dollar Saloon, or, for that matter, Butte as a whole. Though now considerably less rambunctious than it once was, the town has little use for the neo-Puritanism that has recently swept across the country. And that tolerance is of a piece with the wide-open atmosphere of its early years, when Butte not only exercised exceptional leniency in the matter of debauchery and dissipation among its citizens but openly promoted them, as Carry Nation learned when she brought her temperance crusade here in 1910. Nation chose Mae Malloy's Dance Hall

and Cafe, located at 9 East Mercury, as her starting point, a decision whose consequences everyone in the Mining City but she could foresee, and surely would see, such entertainment being too rich to miss. A rowdy crowd fell in step behind Nation as she marched along Mercury to the brothel, where Madame Malloy, informed that the patron saint of sobriety was headed her way, stood waiting atop the front stairway. Ignoring Malloy's repeated warnings to take her crusade elsewhere, Nation marched up the stairs and straight into the arms of a conviction more formidable than her own. Malloy ripped the habit from Nation's head, then slammed her against a wall and pummeled her with her fists. The crowd cheered. When Nation collapsed to the floor the crowd roared again. Just as Malloy was about to demonstrate an exceedingly painful two-step called the Mercury Street Stomp the police arrived to escort the battered missionary back to her hotel. For Nation, who was sixty-three years old at the time, the incident marked the end of a colorful if bizarre career; she never again set foot in a saloon. For the people outside Mae Malloy's Dance Hall and Cafe, the thrashing of the country's leading advocate of abstinence was a delicious moment, one that warranted immediate celebration—with drinks all around.

The encounter between Nation and Malloy is nothing to be proud of, certainly, but that is how it was on the Hill—flamboyant, promiscuous, grotesque, cruel, the heart revolving ever blacker and turn by turn ever harder in a crucible of copper ore. Mining made it so, historians agree, by forging a bond between corporate self-interest and a certain kind of human temperament. The ready availability of bars, gambling halls, and warehouses served Anaconda's needs by distracting miners from the manifold hazards of their labor and keeping them in financial circumstances so precarious that quitting to find safer, more reliable work was unthinkable. By the same token, underground hard-rock mining tended to attract men with a high tolerance for uncertainty, physical danger, and uprootedness, men for whom the prospect of disabling injury or crushing indigence was always present, instilling in them an almost religious devotion to the pleasures of the moment. While timbering a shaft or dynamiting a drift somewhere in the oppressive recesses of the Con, Lexington, or Never-

**IF THE PIT WATER**

**WERE TO ENTER**

**THE SOIL ABOVE THE**

**BEDROCK, IT WOULD**

**TEND TO FLOW**

**TOWARD THE TOWN**

sweat, the miner may have been time's martyred slave, but not after the shift whistle blew.

Although miners now make up only one percent of the population, people here still answer the call of the mine whistle, and it is good that they do, because, like the revelry at an old-fashioned Irish wake, such spirited celebration helps

**B**UTTE INTENDS  
TO STAY IN THE HIGH-  
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dispel the demons that would otherwise plunder the soul—dispel them only temporarily, of course, but long enough to enable one to face the morning, when the clock starts again. It is no accident that in a town where for decades the communal dream was striking it rich but more often than not the reality was impoverishment, there still exists, on the one hand, a degree

of levity and romanticism out of proportion to circumstances, and, on the other, a fatalism so thorough it induces passivity, even paralysis, especially in the face of large, outside entities capable of delivering the ultimate threat: shutdown. When the two tendencies are combined, however, something very different emerges—a talent for fully recognizing a troublesome situation while at the same time not being bested by it—and it is the most promising example of mining's impress on the Mining City.

**“M**y biggest fear is that cleanup will go undone,” Jack Lynch told me. We were sitting in his spacious office in the county courthouse, discussing the many different bills that have been proposed in Congress since the Superfund law came up for reauthorization six years ago. Lynch, a slender, energetic man in his late forties, knows full well that Butte is once again facing the threat of shutdown—in this instance, the sudden end of reclamation projects—but he and his staff are determined to stay in the high-stakes poker game that goes by the name Superfund, as long as the game lasts.

Included at the table with Lynch are ARCO, Montana Resources, EPA, the Montana Department of Environmental Quality, businessmen and business developers, and an array of city-county officials. One game, several conflicting interests and competing loyalties. For ARCO and Montana Resources the risks are largely economic; after years of disputing overlapping liabilities, they wish most to settle their differences and meet federal requirements while losing as little money as possible. The regulato-

ry agencies have a different aim: to fulfill the mandate of the Superfund law—to protect “human health and the environment.” And the entrepreneurs, for their part, are betting on any form of reclamation they believe will make Summit Valley more attractive to new business and, in some instances, on specific remedies that might benefit them directly, through construction contracts, for example, or the leasing of waste-treatment technologies. The gamble is by far the most perilous for Lynch and his staff, because they represent the people who have the most to lose—the residents of Butte, those alive today and those who will be living here long after ARCO and the EPA have departed.

Further complicating the Superfund game are the plays made away from the table. To take the most significant example, ARCO, which in its local publications and advertisements calls itself a “partner in responsible reclamation,” tried mightily to dissolve that very partnership by lobbying for changes to the original Superfund legislation that, taken together and in their most extreme form, would have allowed the corporation to walk away from Montana without having to spend another dime on reclamation. Three features of the law that ARCO has always found particularly objectionable are “retroactive liability,” by which a corporation can be forced to pay for pollution that occurred prior to the passage of a law forbidding it; “joint and several liability,” which stipulates that all responsible parties, regardless of the size of their contribution to an environmental problem, must share cleanup costs; and “successor liability,” by which the purchaser of a site is required to assume the liabilities associated with that site. When Sandy Stash, ARCO general manager in Montana, says, “Superfund’s been a failure,” she is referring to the practical results of these provisions—a muddle of suits and countersuits that has consumed corporate resources while stalling reclamation efforts throughout the country. Stash believes that ARCO, having taken control of the Hill in 1977, three years before Superfund was enacted and following a hundred years of intensive mining, should not be held liable for the actions of Anaconda. The EPA’s position, by contrast, is that in an imperfect world the only way to guarantee that big polluters pay for the environmental damage they cause is to make them pay for the costs of reclaiming any damaged site they own. Buy an asset, in this view, and you buy all associated liabilities.

ARCO’s position may be extreme, but the corporation is far from alone in its dissatisfaction with the Superfund law. For several years critics of all persuasions have been charging that the program has produced little beyond the enrich-

ment of lawyers and technical consultants. As frustrated as anyone else, Montana senator Max Baucus, a Democrat, led an effort in 1993 and 1994, when he was chairman of the Environment and Public Works Committee, to amend the act by exempting from liability small businesses and municipalities, setting up a more equitable allocation system to resolve multiparty disputes, and allowing local communities a larger role in the selection of remedies. Stash was a member of the advisory group that had worked for more than a year to reach agreement on these compromises, as were other industry leaders, along with insurance company representatives, EPA scientists, and local government officials, including Jon Sesso, director of the Butte-Silver Bow Planning Department. But anticipating the outcome of the midterm elections, Republicans refused to entertain Democratic initiatives of any kind, merit be damned. In September 1994, when Baucus's carefully crafted reauthorization bill finally made it out of committee, Bob Dole, soon to become Senate Majority Leader and now the Republican presidential candidate, prevented it from reaching the floor for debate.

The reauthorization bill that Republican John Chafee, Baucus's successor to the chair of the Environment and Public Works Committee, and Bob Smith introduced this past April envisions a very different solution to the problem of costly, protracted litigation—eliminating all sites contaminated prior to December 11, 1980, when the original Superfund law was enacted. Fewer sites, fewer disputes, a proposition of impeachable logic and disastrous implication. Here in Summit Valley the Chafee-Smith bill would absolve ARCO of all responsibility for areas it has not already signed agreements with the EPA to clean up, including the metal-laden sediment behind the Milltown dam, all of the Upper Clark Fork River, and, most worrisome to Lynch, the contaminated soils on the Hill. ARCO has promised to honor decisions already reached regarding mine flooding, the tailings alongside and pollution within the stretch of Silver Bow Creek in Summit Valley and within the creek floodplain between Butte and Warm Spring Ponds. But if Congress were to open the door by deleting the retroactive liability provision, ARCO might have the grounds to contest the decisions in court, since they, too, address environmental problems created before 1980. Estimated costs of remedies already negotiated or presently under design are well in excess of \$250 million and likely will climb much higher in the coming years. "The county doesn't have the money," Lynch told me, "nor does the state."

Under no illusions about the motives of the other players at the Superfund table, Lynch

hopes only that the game will continue long enough to allow him to negotiate lasting solutions to the valley's problems. He and his staff have already managed to gain a measure of control over the decision-making process, in particular persuading the EPA and ARCO that land use should be taken into account in cleanup remedies. In keeping with the philosophy behind the Anaconda-Butte Heritage Corridor, Lynch is trying to integrate reclamation and economic development into a single ambition, in the hope that the remedies will produce outcomes a good deal more useful to the community than fields of weeds and

locked mine yards, especially on the Hill, where the targeted fields and yards are of a piece with the old parts of town.

But "lasting" no longer means what it did when Congress enacted the original Superfund law. Later that day I met with Jon Sesso, Lynch's point man in the Superfund negotiations. "What everyone is starting to realize," he told me, a slightly pained look on his face, "is that most cleanups will need long-term maintenance of some kind." The Pit remedy—pumping and treating ever-rising toxic water—is not the only one that will continue long after ARCO and the EPA have forgotten the Hill. So will several of the others, requiring a range of responses, from neutralizing the aftermath of unexpected erosion to filling in and securing caverns, a problem that can only get worse over time, given the thousands of miles of failing shafts and tunnels beneath the Hill. Thus, Lynch and Sesso argue, Summit Valley needs an insurance policy, in the form of a trust fund, say, large enough to provide the county with the staff, equipment, and other resources it needs to oversee the remedies—in perpetuity. This is another reason why Lynch has insisted on a place at the Superfund table, and is willing to run the risk that the local government's give-and-take style of advocacy will be viewed by environmentalists as capitulation. The truth is that without ARCO's financial help neither "responsible reclamation" nor an insurance policy to maintain reclamation measures is even remotely possible. ARCO may be a reluctant partner in the Superfund program and, at times, a conniving one, but it has been willing to compromise, repeatedly, it has already spent a great deal of money, and it will continue to do so as long as the Superfund process remains intact. The gam-

**T**  
**THE BERKELEY PIT,**  
**WHATEVER IS DONE**  
**WITH IT, WILL STILL**  
**BE HERE LONG AFTER**  
**ARCO AND THE EPA**  
**HAVE FORGOTTEN IT**



blers in the courthouse know better than to turn away a player with such deep pockets.

As in any game, it must be remembered, chance, too, may assume a critical role, and it is increasingly likely to do so as time passes. What if Fritz Daily is right, and water leaves the Pit before it reaches the level the EPA and ARCO deem critical? And what impact would an earthquake have? The Continental Fault, which runs underneath the middle of Yankee Doodle Tailings Pond, has been silent for as long as anyone can remember. To some seismologists that means Summit Valley is very stable. To others it means that the area is long overdue for a nasty tremor. Would the impoundment hold? The engineers at Montana Resources say yes, unequivocally, and doubtless they believe it. This is their home, too. But if Dennis Washington lived in Butte, within the shadow of his dam, within sight of his mine, might there now be in place some kind of early warning system and evacuation plan, as has been recommended by at least two consulting firms? Were the dam to collapse, some of the fine-grained waste would behave like a liquid, surging into the Berkeley Pit, possibly displacing a toxic tidal wave, while the rest slid down the Hill. If either the water or the sand reached the Flat, the damage to property could be catastrophic. If either arrived without warning, in the middle of the night, say, people could be injured or killed. Failure may indeed be unlikely, but the enormity of the consequences would seem to call for extraordinary protective measures. My guess is that if those who really benefit from mining, not just stockholders but consumers, lived beside the pits, waste piles, and contaminated water, like the people of Butte, there would be more enthusiasm for erring on the side of caution in this and all other environmental matters in Summit Valley.

**S**ince moving back to Butte three and a half years ago, I have lived near the top of the Hill, in one of the frontier zones where mine ruins adjoin the remnants of mine-side neighborhoods, headframes towering above rooftops, tailings lapping at back doors. From my three-room shanty in Walkerville it is less than a quarter-mile to the Granite Mountain Overlook. I go there often, following my crooked, one-lane street, past a row of empty lots, all but two of the original houses having been destroyed to make room for the Berkeley Pit. I walk through the expanse of rolling dumps that separates Walkerville from the back wall of the pit, toward the Granite Mountain mine, the fire-darkened axis of the mining district. All that can be seen today is the top

half of its headframe, resting within a recess in a randomly stepped cascade of waste rock. To the north, where the waves of tailings crest, lies the high berm of the Yankee Doodle pond, a constantly expanding delta of hardened slurry, and beyond that Sunflower Hill, often sunlit but never in flower. Visible to the south are the uppermost levels of the Berkeley Pit, the concentrator, and the back wall of the East Pit, where the ore zone resembles a massive blue-gray stain on the flesh-colored foundation of the Continental Divide and the mammoth trucks that creep along the terraces newly carved in its side seem in the distance like toys. Only after several visits to the Overlook did I notice midway between the Berkeley and East pits an acre or less of flat, mostly undisturbed land where a few scrawny pine trees yet grow, all that remains of the east-side neighborhoods. If the earth has ends, this surely is one of them.

Sometimes a crow will appear, loud and raucous, angling across the bow of the Overlook, then gliding over the waste sea that stretches to the Divide. The crow, I have come to believe, is to the Hill what the albatross is to the ocean—bearer of omens, the essence of the place embodied, black heart aloft. Making its home on the Hill year round, living well in a dangerous landscape, the crow is much more emblematic of Butte than the snow goose, a migratory bird that passes through the valley twice a year, rarely stopping and, rarer still, staying, not unlike the tourists who travel Interstate 90 all summer long, in search of innocence and prettiness. Western Montana has of late induced a kind of lightheadedness in people long gone from wild places, and the romance is not misplaced. Raw natural beauty is here, in abundance, on an overwhelming scale, and it can sweep one away. But every moon has its dark side, and Butte is Montana's dark side, as necessary as night, as necessary as the nocturnal work that took place here.

Like whiskey straight, the Hill is an acquired taste, but it is well worth cultivating, even if one goes no further than to contemplate the American landscape from the perspective of the Granite Mountain Overlook. Today, bearing the social and physical scars of one of the most long-lasting and lucrative mining runs in the world, a run that is not yet over, the Hill contradicts some of our most cherished beliefs: that history is necessarily progressive; that any problem is fixable, given enough goodwill and technical ingenuity; and, closest to home, that it is possible to consume immense quantities of raw materials without creating ethical and environmental dilemmas of immense consequence. Not one of these notions will survive the corrosive waters of the Berkeley Pit. ■

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# AN OVERVIEW OF METALLIC MINERAL REGULATION IN WISCONSIN

Thomas J. Evans

Wisconsin Geological  
and Natural History Survey

Special Report 13 • 1991

Metallic mineral mining is defined as the commercial extraction of metal-bearing minerals and includes all aspects of the development and reclamation of the mining site.

Mining metallic minerals is regulated through a permitting process that covers all aspects of the commercial production of metals. On the basis of ss. 144.80-144.94, Wis. Stats., the DNR uses ch. NR 132, Wis. Admin. Code, to specifically establish the regulatory requirements.

The location of metallic mineral operations is restricted on the basis of criteria designed to protect certain environmentally sensitive areas; exemptions from these criteria and standards are permitted only when doing so would not result in compromising any other state or federal environmental law or rule. Some designated areas in the state are defined as unsuitable for surface mining, reflecting the state's policy to protect certain land because of the presence of unique features. Land protected from metallic mining activities includes wilderness areas, wild and scenic rivers, national and state parks, wildlife refuges and areas, historical landmarks, and scientific areas. Disturbance of wetland areas must be minimized to the satisfaction of the DNR, and all environmental standards for the protection of surface water, groundwater, air quality, and endangered and threatened species must be met.

(from page 8)

SUBMITTED BY: Herbert Buettner  
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White Lake, Wis. 54491

REGARDING: The proposed Crandon Mine in the upper Wolf River watershed

The UPPER WOLF RIVER WATERSHED is a very delicately balanced sensitive ecosystem of forests, wetlands and numerous clean lakes and streams which are fed by its abundant supply of potable groundwater. Its headwaters sustain the rare and sensitive wild rice beds of the Mole Lake Native Americans. It was reported that an Exxon engineer assigned to survey the area for mining stated that it may well be one of the most difficult places in the world to attempt to conduct an environmentally safe mining operation.

From the mouth of the Hunting River downstream the Wolf River is a large, clean and primarily undeveloped trout and white-water recreational river. On its 60 mile course to Keshena it rushes down a boulder-strewn course with bed-rock outcroppings through well forested rugged glacial terrain dropping 640 feet in elevation creating the unique natural beauty of a mountain stream in our state which has no real mountains. Here its sensitive native brook trout, brown and rainbow population must be protected by maintaining its high water quality to protect the fishery and the quantity of its flow must be maintained to sustain its white-water recreational uses to comply with the provisions of Wisconsin Statutes 31.14, which states that no water shall be diverted to the injury of the public uses.

In Shawano County the Wolf River is the spawning and rearing area of the unique and sensitive Lake Winnebago sturgeon population and downstream it supports a good population of walleye and other warm-water fish, wildlife and recreational boating which contributes substantially to the tourism economy of the area. ( over )

Page 2, REGARDING: The proposed Crandon Mine in the upper Wolf River watershed.

Before the state Wild and Scenic Rivers designation program was enacted, a special preservation program for the upper Wolf River was appropriately initiated. Responding to its trust responsibilities of the people's water resources, the state legislature in a joint session unanimously, by a voice vote, enacted a bill to protect the Wolf River in a free flowing state free of any dams from Keshena upstream, henceforth. A proposed dam at Pearson would have warmed its waters threatening the sensitive trout population downstream and would have reduced the flow degrading navigation. Following that action in 1963, the National Wild and Scenic Rivers Act was passed and through the urging of local conservationists the upper 25 mile segment of the Wolf River, which is the life-blood of Native American Menominee Nation, was designated as a part of the National Wild and Scenic Rivers System. To protect the river upstream and its sensitive trout population, the state initiated a shore-land acquisition program and has purchased over 80% of the well forested shorelands on the 35 mile segment in Langlade County at a cost of over 6.5 million dollars. Thus, its uniquely rare scenic and aesthetic beauty, its wild nature of eagles, osprey and abundant wildlife and its clean cool waters are protected for future generations to enjoy. The clean waters of the Wolf River was given the protection of Outstanding Resource Waters which are managed as a state trout fishery.

The upper Wolf River (downstream to Keshena) provides well over 100,000 hours of unique outdoor recreation for its visitors annually with no adverse effects on the resource. The small businesses accomodating the visitors add about five million tourist dollars to the local economy and provide about 250 jobs annually.

The proposed Crandon mine is a grave long-term threat to the water quality of the upper Wolf River watershed and its environmentally sensitive aquatic plants, fish, wildlife and public use and enjoyment. To fulfil its trust of the people's water resources and to protect their rights to them, the state should pass a law now "prohibiting sulfide mining in the headwaters of the Wolf River upstream from Keshena, henceforth!" For then, and only then, will this priceless resource of national renown be forever protected for future generations to enjoy --- as the state's trust provides.

THE REAL MINING FACTS !!!

This fact sheet is in reaction to Exxon's latest PR campaign which involves radio and newspaper messages, ads and commercials. The messages give you a phone number to call to get the "real" facts about mining in Wisconsin. That number is 1-800-440-6084, call and give them your opinion of Mining in our Northwoods. Exxon's PR effort is aimed at the credibility of this growing citizens alliance that is united in opposition to the proposed Exxon/Rio Algom copper and zinc mine near Crandon, Wisconsin. Exxon's spokespeople are also calling radio stations and saying that "we are a well organized environmental alliance, and that we are spreading mis-information about mining in Wisconsin."

Well, the first part is true. We are well organized: this is collectively the largest, broadest, well educated multi-racial environmental alliance ever formed over a single issue in Wisconsin, with member groups and individuals representing such interests as sportsmen, tribal, conservation, students, tourism, small business and more. In response to Exxon's claims that we are mis-informed, below is a listing of various statements made by made by various government, scientific and industry experts regarding metallic sulfide mining.

WHAT THE EXPERTS SAY ABOUT METALLIC SULFIDE MINING:

- \*\* "Mine wastes have poisoned over 10,000 miles of rivers" in the United States. *US Bureau of Mines*
- \*\* "Currently, there is no technology available that can prevent or mitigate acid mine drainage from a metallic sulfide mine located within wetlands." *US Department of Agriculture - Forest Service*
- \*\* Over one year ago, we challenged the DNR to give us even one example of a successfully reclaimed mine, where the mine is closed down, and the waters are run clean and pure. *Larry Lynch from the DNR* admitted, "there are no idyllic metallic mining sites which can be pointed to as the model approach in preventing acidic drainage industry wide."
- \*\* Exxon's own geologist was quoted saying that "you couldn't find a more difficult place to mine."
- \*\* "In any project of this magnitude, environmental tradeoffs are inevitable... Contamination is bound to occur no matter how diligent are the operators." *Robert Schilling, manager of new mines Kennecott Corp and Edward May, project manager for Flambeau Mining Corporation*
- \*\* "Potential for damage from acid mine drainage may be so severe as to require perpetual monitoring and maintenance similar to that done by federal authorities with radio active waste material. Even facing a probability of an occurrence on this level of catastrophe, public agencies must explicitly acknowledge its likelihood during land use planning and budget design." *Michael McNamara from the Center for Geographic Analysis*
- \*\* *The Environmental Protection Agency (EPA)* admits that tailings ponds are "regulated...loosely", and that leaks from even the best dumps "will inevitably occur".
- \*\* "The Crandon dump could poison groundwater with acid drainage for up to 9000 years," Exxon plans to monitor it for only 40 years after the mine closes. *The Interior Department's US Fish & Wildlife Service.*
- \*\* The plastic liner underneath the toxic mine waste will dissolve in 140 years. "We're saying after 140 years it vaporizes. It's gone." *According to Jerry Goodrich, president of the Crandon Mining Company, Post Crescent - Appleton 12/3/95*
- \*\* "The techniques and costs associated with reclamation of high sulfur waste rock are unknown. There are no proven cost effective technologies for the acceptable long-term mitigation of potential impacts." *Non-Ferrous Metal mining, Impact and Mitigation Research, Minnesota Department of Natural Resources, 1989.*



State of Wisconsin

1995-1996

Blue Book

Compiled by  
Wisconsin Legislative Reference Bureau

Department of  
NATURAL RESOURCES

*Natural Resources Board:* HERBERT BEHNKE (northern member), *chairperson:* TRYGVE A. SOLBERG (northern member), *vice chairperson:* NEAL SCHNEIDER (member-at-large), *secretary:* STEPHEN D. WILLET (northern member); BETTY JO NELSEN, MARY JANE NELSON, JAMES E. TIEFENTHALER, JR. (southern members). (All are appointed by governor with senate consent.)  
Secretary of Natural Resources: GEORGE E. MEYER, 266-2121.

Statutory References: Section 15.34; Chapters 23, 26-33, 87, 88, 144, 147, 159, 160, and 162.

Agency Responsibility: The Department of Natural Resources is responsible for implementing state and federal laws that protect and enhance Wisconsin's natural resources - its air, land, water, wildlife, fish, and plants. It coordinates the many state-administered programs that protect the environment and provide a full range of outdoor recreational opportunities for Wisconsin residents and visitors.

Organization: The 7 members of the part-time Natural Resources Board serve staggered 6-year terms. They direct and supervise the department and appoint a full-time secretary as the department's chief executive officer. The board receives citizen input at its monthly meetings. Persons who wish to speak must contact the board secretary's office at (608) 267-7420 prior to the board meeting.

## JUST FOLLOWING ORDERS? - WHOSE ORDERS?

The DNR claims it is "just following orders", that state law - not public opinion - guide DNR's hand in proposed mining. The Agency says it takes no position on mining, neither in favor of it nor against it. It simply must follow the laws and rules. But is that altogether the way it really is? (*See Blue Book Responses, 6:1-125*)

Let's go back a bit. During the 1980s, Kennecott Copper Corp., Exxon, U.S. Steel and Wis. Manufacturing & Commerce played leading roles in what was called "consensus" to draft and get passed mining laws and administrative rules for mining.

The law put the regulation of mining totally in DNR rulemaking, giving the DNR further flexibility by authorizing it to grant variances and exemptions which are even less restrictive than the rules. Bureaucratic government in the extreme!

At this point, the DNR had the choice of adopting rules that truly protected the environment as the law mandates, or go along with the mining companies and adopt rules that facilitated mining.

The DNR chose the later route, even to the point of adopting rules that allow toxic levels of pollutants in the groundwater of the mining and waste site areas and quite a distance beyond. In essence, the DNR chose to give these waters, a source of drinking water for future generations, to the mining companies to use as sewers for their pollutants.

The DNR adopted rules in 1988 to further facilitate the Flambeau Mine, that allow toxic waste rock and poisonous sludge from the water treatment plant to be dumped back into the unlined pit, where the groundwater can perk through the mixture FOREVER, and flow on into the Flambeau River and/or nearby wells with its poisonous cargo. This saved Kennecott the expense of building a lined waste facility for storing the toxic sludge and waste rock.

The DNR also adopted rules that allow Exxon/Rio Algom to stuff toxic tailings back into mined-out tunnels, where again the groundwaters will pick up the heavy metals generated from wastes.

Flambeau Mine, as now operating, is an open-pit project, squeezed between the Flambeau River and State Highway 27, shoulder to shoulder with a city, pop. 4000, in a farming community, thus exposing a tremendous number of local people, their drinking water and a beautiful fishable river to the ultimate degree of jeopardy generated by the mining of massive sulfide minerals.

This could never have happened without the DNR choosing to grant variances to the mining company to make it possible.

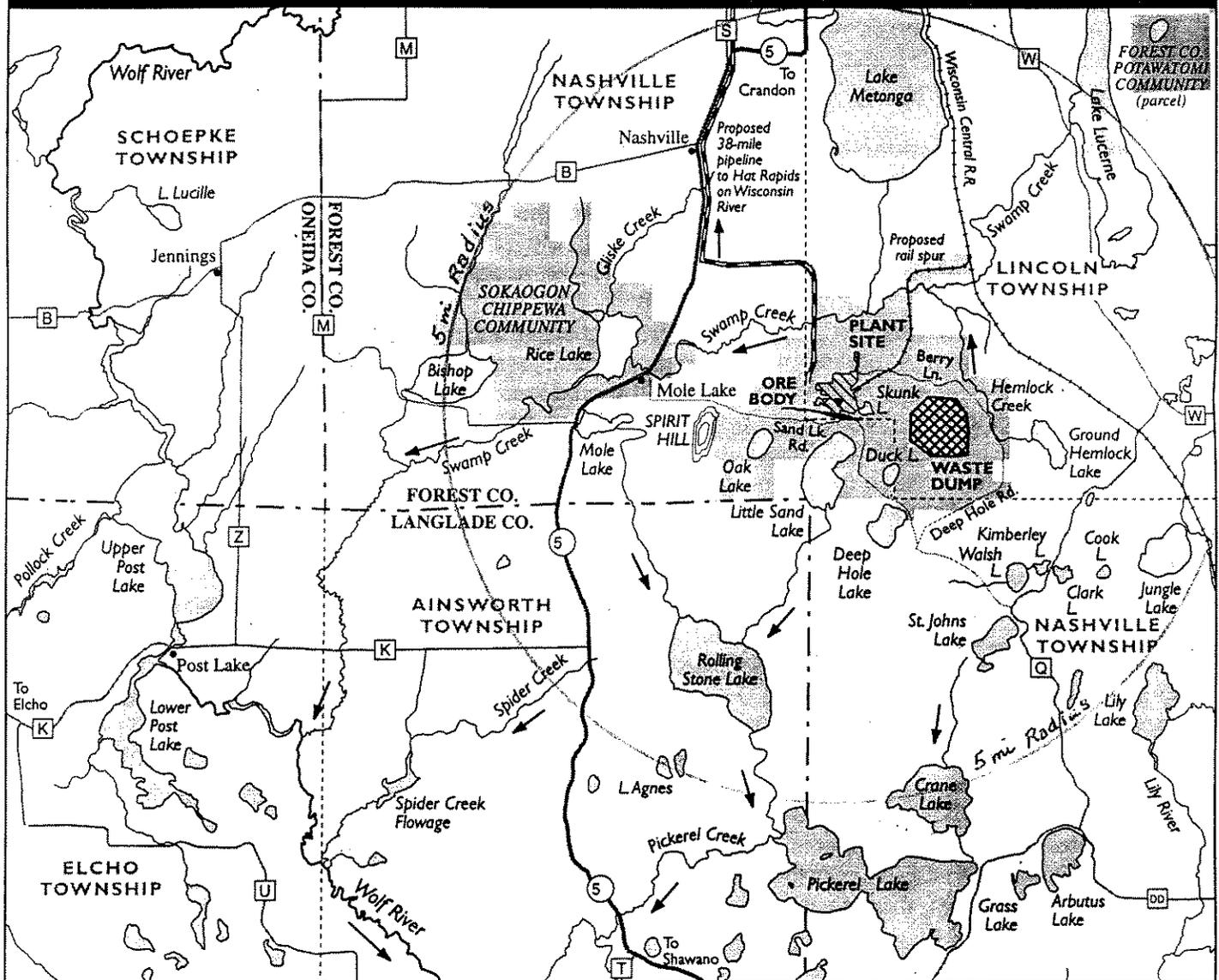
Please, please, DNR, recognize and stand accountable for the decisions you made and are making on proposed mining projects, fulfill your responsibility.

*To facilitate mining - Blue Book*  
Members: JIM GALLOWAY, *chairperson*; DAWN BERGLUND, JIM BERLIN, BOB DAVENPORT, DICK GURNOE, BRIDGET HAGERTY, JIM LANDRU, JR., ROGER LA PENTER, AGNES R. MILLER, PAUL A. NOREEN, BUTCH ST. GERMAINE, MYRON SCHUSTER, FRANK SLIZ, JOHN J. VRABLEC, DIRK VAN DUZEE, JOHN VAN HOLLEN, BUD WAHL.

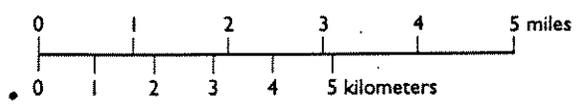
*Contact person:* WILLIAM SMITH  
Address: Department of Natural Resources, Highway 70W, Box 309, Spooner 54801.  
Telephone: (715) 635-4010.

Governor Thompson established the council in Executive Order 100, July 2, 1990, and continued it in Executive Order 241, January 20, 1995. The council was directed to study policies to manage and use natural resources in northern Wisconsin and to recommend programs to ensure the availability of these resources. To cost-effectively MINING Corporations

# Exxon's Proposed Crandon Mine



- |   |                           |   |                         |
|---|---------------------------|---|-------------------------|
|  | Reservation lands         |  | Proposed waste pipeline |
|  | Proposed mine site        |  | County boundary         |
|  | Mine complex              |  | Township boundary       |
|  | Tailings Management Area  |  | State highway           |
|  | Ore body                  |  | County highway          |
|  | Water flow from mine site |  | Town road               |



Map by Zoltán Grossman, 1997; GIS linework supplied by John Coleman, Great Lakes Indian Fish & Wildlife Commission. Company property from TMA Feasibility Report/Plan of Operation, and 1995 Forest County plat book.

## ***Is Crandon Mining Company creating Voodoo Science? Where is the proof for their claims?***

Exxon's current television ad is extremely misleading in its claim that the proposal will not harm the environment. The truth is that the experts charged with review of the proposal are very critical of Exxon's rosy predictions.

Exxon has repeatedly rested these claims on its computer modeling. This "modeling" is an effort to simplify reality into numerical equations for the purpose of predicting impacts. In other words, a gross simplification of a highly complex and sensitive ground and surface water system. Accurate computer modeling cannot take place without accurate inputs to the model itself; this problem is referred to as "*Garbage in, garbage out.*" Moreover, models can never adequately depict reality; they are only tools.

Where Exxon's claim falls apart, is that the experts charged with reviewing the model continue to focus on the "*garbage in*" portion of the model. Any suggestion by Exxon that the current model can accurately or conclusively predict impacts from the proposed mine is highly misleading since the data that forms the modeled system, even before it is "turned on," is in dispute. Chris Carlson, a Wisconsin DNR hydrogeologist, concluded in a January 9, 1997 memorandum to Don Moe, CMC, that "*Until the issues raised by these comments are addressed, we will be unable to use the model to assess projected impacts from your proposal.*"

There are several important areas of concern raised by WDNR and the USGS in the memo from January 9, 1997 and in the most recent meeting with Exxon on January 22, 1997. They include:

--Incorrect modeling of upper Pickerel Creek and the wetlands surrounding it. This important tributary of Mole and Rolling Stone Lakes and the Wolf River, discharges groundwater from its headwaters and receives groundwater from adjoining wetlands as it travels south. Yet Exxon's model has artificially isolated Pickerel Creek from the wetlands feeding it groundwater, thereby limiting affects to the Creek from the "cone of depression" caused by de-watering the mine. In a January 22 meeting between CMC and DNR/USGS, experts from both agencies reiterated that this was an important problem due to the potential drawdown impacts to both Swamp Creek, Rice Lake and Rolling Stone Lake. DNR and USGS stated that 82% of cells in the model that are meant to represent discharging wetlands were simply turned off, thus disconnecting the wetlands from their true connection to groundwater.

--Problems with the boundaries of the model itself. At the beginning of their modeling efforts, Exxon agreed that if the model showed that the drawdown of the aquifer would impact resources outside of what it expected, it would have to expand the size of the model. The January 9 memo point out that this is exactly what is showing up in two areas: the western part of the model (upper Pickerel Creek and Mole Lake) and to the south-east towards Walsh Lake. Additionally, the boundary at upper Pickerel Creek influences the model at Hoffman Springs and along Swamp Creek below Rice Lake. Unforeseen impacts from groundwater drawdown at this boundary endanger trust resources of the Mole Lake Sokaogon Chippewa, as well as Rolling Stone Lake in Ainsworth Township downstream.

--Finally, all of Exxon's modeling runs fail to "converge." All computer models must reach a final numerical solution or converge to be considered accurate for use in predicting impacts from any proposal. DNR and USGS stated in both the Jan. 9 memo and in the Jan. 22 meeting that there is no precedent for trusting non-converging models for prediction of impacts. In the Jan. 9 memo, Chris Carlson stated "*We are not aware of any published literature that demonstrates that a non-converging model yields precise results or that such a model would be appropriate for use in making predictions.*" This lack of convergence is another strong indication that the model does not accurately reflect reality. This problem is exacerbated by changes made by Exxon to the model's code. These modifications have not been independently reviewed for use in MODFLOW, the model Exxon is using.

The critiques of Exxon's model by state and federal experts amply demonstrate that the modeling is currently unacceptable and therefore can't support Exxon's claims of no harm to the environment.