

pt 19

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

Dear Rep. Duff;

I am writing to let you know that I am supportive of environmentally-responsible mining and the benefits that it would bring to Forest, Oneida and Langlade counties. I am not supportive of the mining moratorium, based on among other things, the fact that it is unfair. Mining is a permissible, permittable activity in this state. Crandon Mining Company, and all other mining companies, should be treated fairly and not be subjected to rules and regulations that are aimed at banning, not regulating, mining.

Thank you for considering my point of view on the mining moratorium.

Sincerely,

A handwritten signature in cursive script that reads "John F. Brown MD". The signature is written in dark ink and is positioned below the word "Sincerely,".

5 May 97

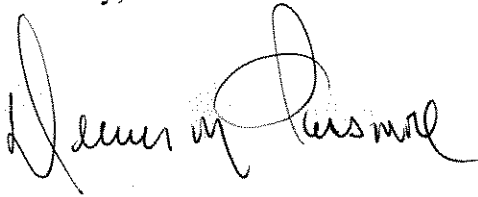
Rep. Marc Duff
Room 306 North
Madison WI 53702

Dear Rep. Duff;

I am writing to let you know that I am supportive of environmentally-responsible mining and the benefits that it would bring to Forest, Oneida and Langlade counties. I am not supportive of the mining moratorium, based on among other things, the fact that it is unfair. Mining is a permissible, permittable activity in this state. Crandon Mining Company, and all other mining companies, should be treated fairly and not be subjected to rules and regulations that are aimed at banning, not regulating, mining.

Thank you for considering my point of view on the mining moratorium.

Sincerely,



3955 Indian Lake Rd

Rhuelander, WI 54501

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

Dear Rep. Duff;

I am writing to let you know that I am supportive of environmentally-responsible mining and the benefits that it would bring to Forest, Oneida and Langlade counties. I am not supportive of the mining moratorium, based on among other things, the fact that it is unfair. Mining is a permissible, permittable activity in this state. Crandon Mining Company, and all other mining companies, should be treated fairly and not be subjected to rules and regulations that are aimed at banning, not regulating, mining.

Thank you for considering my point of view on the mining moratorium.

Sincerely,

A handwritten signature in cursive script that reads "Yvonne Vandenberg". The signature is written in dark ink and has a long, sweeping horizontal stroke at the end.

May 9, 1997

1550 Riverglen Avenue
Rhineland, WI 54501

Rep. Marc Duff
Room 306 North
State Capitol
P.O. Box 8952
Madison WI 53708

Dear Rep. Duff:

I am writing to let you know that I am supportive of environmentally-responsible mining and the benefits that it would bring to Forest, Oneida and Langlade Counties. In addition I am opposed to the Mining Moratorium because it's ambiguous, unfair and unnecessary. Mining is heavily regulated and closely scrutinized in this state and an existing process exists to determine whether a mine should be allowed to be built and operated. Crandon Mining Company, and all other mining companies, should be treated fairly and not be subjected to rules and regulations that are aimed at banning, not regulating, mining.

Thank you for considering my point of view on the mining moratorium.

Sincerely,



Rodney A. Harrill

May 8, 1997

Robert S. Estabrook
4531 Highway 47
Rhinelander, WI 54501

Rep. Marc Duff
Room 306 North
State Capitol
Madison, WI 53702

Re: Mining Moratorium Bill

Dear Marc:

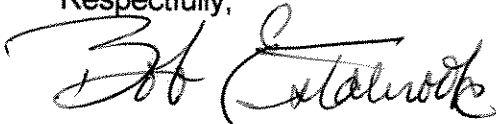
As the Assembly considers the mining moratorium bill I'd like to register my feelings with you.

It would seem most unfair to me to change the rules mid-term such that the many million of dollars already spent by the Crandon Mining Company prior to being threatened by such a change would be largely dollars wasted. And all those citizens who have looked forward (for nearly 20 years now) to enhanced prosperity which the mine would bring will have their hopes shattered.

I am as concerned about the environment as any and more than most. If a mining company cannot demonstrate to the satisfaction of all of the many experts we employ in our state that their operation will meet our environmental standards, then they should not be granted the necessary permits. But they should be given the opportunity to demonstrate that they can! This is especially true for the Crandon Mining Company which is so far into the process already. Call it equity.

I urge defeat of the mining moratorium.

Respectfully,

A handwritten signature in black ink, appearing to read "Bob Estabrook", written in a cursive style.

Robert S. Estabrook

RSE/dh

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

Dear Rep. Duff;

I am writing to let you know that I am supportive of environmentally-responsible mining and the benefits that it would bring to Forest, Oneida and Langlade counties. I am not supportive of the mining moratorium, based on among other things, the fact that it is unfair. Mining is a permissible, permittable activity in this state. Crandon Mining Company, and all other mining companies, should be treated fairly and not be subjected to rules and regulations that are aimed at banning, not regulating, mining.

Thank you for considering my point of view on the mining moratorium.

Sincerely,

Thomas P. Duffy
2919 Crestwood Dr.
Rhineclander WI 54501

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

Dear Rep. Duff;

I am writing to let you know that I am supportive of environmentally-responsible mining and the benefits that it would bring to Forest, Oneida and Langlade counties. I am not supportive of the mining moratorium, based on among other things, the fact that it is unfair. Mining is a permissible, permittable activity in this state. Crandon Mining Company, and all other mining companies, should be treated fairly and not be subjected to rules and regulations that are aimed at banning, not regulating, mining.

Thank you for considering my point of view on the mining moratorium.

Sincerely,

Jule Henry
316 Ridgeway Dr.
Rhinelander Wi
54501

715.369.1091

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

Dear Rep. Duff;

I am writing to let you know that I am supportive of environmentally-responsible mining and the benefits that it would bring to Forest, Oneida and Langlade counties. I am not supportive of the mining moratorium, based on among other things, the fact that it is unfair. Mining is a permissible, permittable activity in this state. Crandon Mining Company, and all other mining companies, should be treated fairly and not be subjected to rules and regulations that are aimed at banning, not regulating, mining.

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Sincerely,

John Rempel

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

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Sincerely,

Harvey J. Mathisen DR.
5837 Massey Bay
Pine Lander, WI

5 May 97

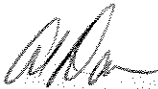
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Madison WI 53702

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Thank you for considering my point of view on the mining moratorium.

Sincerely,



Albert Davis
VP Operations
Rhineland Paper Company
515 W. Davenport St.
Rhineland, WI 54501

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

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Thank you for considering my point of view on the mining moratorium.

Sincerely,

Mary Jane Koweski
4239 Northview Dr.
Rhinelander
WI 54501

5 May 97

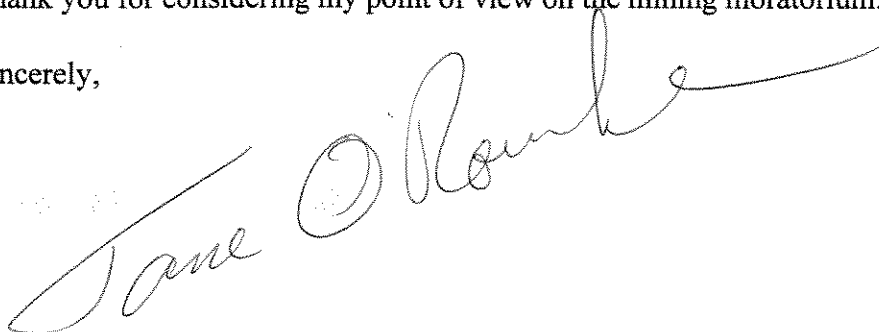
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Madison WI 53702

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Thank you for considering my point of view on the mining moratorium.

Sincerely,

A handwritten signature in cursive script that reads "Jane O'Rourke". The signature is written in dark ink and is positioned below the word "Sincerely,".

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

Dear Rep. Duff;

I am writing to let you know that I am supportive of environmentally responsible mining and the benefits that it would bring to Forest, Oneida and Langlade counties. I am not supportive of the mining moratorium, based on among other things, the fact that it is unfair. Mining is a permissible, permittable activity in this state. Crandon Mining Company, and all other mining companies, should be treated fairly and not be subjected to rules and regulations that are aimed at banning, not regulating, mining.

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Sincerely,

A handwritten signature in cursive script, appearing to read "Jay Dine". The signature is written in dark ink and is positioned below the "Sincerely," text.

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

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Sincerely,

Alison H. Hess
Phenixander, WI

5 May 97

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Room 306 North
Madison WI 53702

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Sincerely,

Jacqueline M. Davis
4079 N. Bay Rd
Rhinelander, WI
54501

5 May 97

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Room 306 North
Madison WI 53702

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Sincerely,

A. Shirley Larsen

5 May 97


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Madison WI 53702

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Sincerely,



Thomas A Vezek

5 May 97

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Room 306 North
Madison WI 53702

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Sincerely,

Jeffrey J. Brown
General Manager, Maplex Inc.

5 May 97

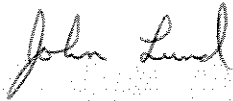
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Thank you for considering my point of view on the mining moratorium.

Sincerely,

A handwritten signature in cursive script, appearing to read "John Lund". The signature is written in dark ink on a white background.

5 May 97

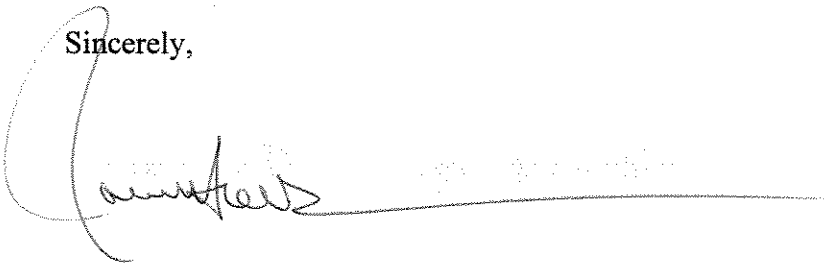
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Thank you for considering my point of view on the mining moratorium.

Sincerely,

A handwritten signature in dark ink, appearing to read "Marc Duff", is written over a horizontal line. The signature is cursive and somewhat stylized.

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

Dear Rep. Duff;

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Sincerely,

A handwritten signature in cursive script, appearing to read "Daniel J. Moran". The signature is written in dark ink on a light-colored background.

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

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Sincerely,

A handwritten signature in cursive script, appearing to read "Freeland Rusch". The signature is written in dark ink and is positioned above the printed name.

Freeland Rusch

5 May 97

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Room 306 North
Madison WI 53702

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Sincerely,

Eugen M. Wojcik

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

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Sincerely,

Lynn Smith
Crandon

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

Dear Rep. Duff;

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Thank you for considering my point of view on the mining moratorium.

Sincerely,

DENNIS A HUEBNER
4454 HARMONY HILL LN
RHINELANDER WIS.

54501

Dear Rep. Duff

I have been forced out of the gas station business after 37 1/2 years because I cannot afford to comply with all the state and Federal retanking laws. Since I have found a job at Rhinelander paper co. I have worked in the water treatment plants and know first hand that waste water can be sent into the Wis. River clean. Its time we knock off all the B.S. and get the mine going. We need jobs I was one who was just lucky getting a good job. Thank you! Dennis A Huebner

5 May 97

Rep. Marc Duff
Room 306 North
Madison WI 53702

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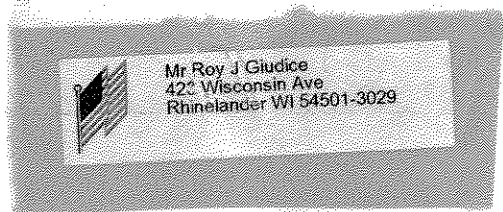
Thank you for considering my point of view on the mining moratorium.

Sincerely,

Mary Eckert

9-22-97

ASSEMBLYMAN MARC C. DUFF
REP. 98 th. DISTRICT
1811 S. ELM GROVE ROAD
NEW BERLIN, WI. 53151



DEAR ASSEMBLYMAN DUFF:

I called your Madison office recently about SUPPORTING the " MINING MORATORIUM BILL", that the State Senate recently passed. The following information and the enclosed TWO ANALYSIS on "THE CONTENTS OF THE CRANDON MINE WASTE EFFLUENT" and " THE METHYL-MERCURY CONTAMINATION IN LAKE ALICE" that I performed should provide you with information " ABOUT MY CONCERNS ".

I am CONCERNED ABOUT:

- A. THE MINING PROCESS AND THE LACK OF SAFEGUARDS IN AN ENVIRONMENTALLY SENSITIVE AREA THAT IS THE HEADWATERS OF THE WOLF RIVER.

- B. THE ENVIRONMENTAL CONSEQUENCE TO THE WISCONSIN RIVER OF "DUMPING" THE CRANDON MINE TREATED WASTE EFFLUENT INTO THE WISCONSIN RIVER WHEN THE WIS. D.N.R. HAS INDICATED THAT THE UPPER WISCONSIN RIVER IS ALREADY FULLY WASTELOAD ALLOCATED FOR B.O.D & C.O.D. USAGE. The Wisconsin River has a FISH POPULATION THAT IS ALREADY SUBJECTED TO HIGH METHYL-MERCURY FISH CONTAMINATION.

The Crandon Mining Co. ie.. Exxon Coal & Minerals of Houston & Rio Algom of Toronto are attempting to cut operating costs by reducing the amount of clay used at the bottom of the Tailings Management area from 3 feet to 1 foot (REFER TO FIGURE 8 TYPICAL DETAIL FOR LEACHATE COLLECTION SYSTEM LATERAL), use of a 60 Mil. GEOMEMBRANE LINER and a Quarter inch thick layer of Bentonite Clay Liner, contained is what I call a close knit " DISH RAG " , that allows the Bentonite to ooze out when it is wet and pressure is applied to it. Mr Bart Sexton, SOLID WASTE ADMINISTRATOR FOR ONEIDA COUNTY, told me that he would feel safer with " 3 - feet of CLAY " THEN THE PLASTIC LINER. I feel certain that the 60 Mil. Geomembrane " PLASTIC LINER " WILL EVENTUALLY LEAK and allow the TOXIC TAILINGS to infiltrate the ground water in the area and eventually contaminate the Wolf River. The SAME TECHNOLOGY WAS USED IN SUMMITVILLE COL., WHERE THE PLASTIC LINER RUPTURED BECAUSE OF TOO MUCH SNOW WEIGHT AND 40 Deg. F. BELOW ZERO TEMPERATURES. That cost us, THE TAX PAYERS, 114 MILLION DOLLARS OUT OF THE SUPER FUND TO ATTEMPT TO CLEAN UP THE MESS THAT THE MINING COMPANY LEFT BEHIND AFTER THE DECLARED BANKRUPTCY AND THE PRESIDENT OF THE COMPANY FLED TO AUSTRALIA.

THIS IS WHY WE NEED A MINING MORATORIUM IN WISCONSIN, UNTIL THE MINING COMPANY CAN PROVE, BEYOND THE SHADOW OF A DOUBT, THAT

THEY CAN MINE A SULFIDE METALLIC MINE SAFELY (DEEP TUNNEL TYPE) AND THAT IT CAN BE CLOSED DOWN FOR AT LEAST 10 YEARS WITHOUT POLLUTION (actually I don't think that is long enough because the SULFIDE TAILINGS CAN STAY ACTIVE FOR THOUSANDS OF YEARS).

The Crandon Mining Company could prevent the DUMPING OF THEIR MINE WASTE WATER EFFLUENT INTO THE WISCONSIN RIVER!!!!!!!!!!!! The two other alternatives for disposing of the Mine Waste Water Effluent were:

- A. DUMPING THE EFFLUENT INTO SKUNK CREEK
- B. DUMPING THE EFFLUENT INTO LEACHING PONDS.
(In my opinion, This is the best solution because it allows the effluent water, 0.8 to 1.7 MILLION GALLONS PER DAY, to regenerate the ground water that being removed during the mining process).

However, both alternatives "A" and "B" would require Crandon Mining Company to build a SECOND FILTRATION PLANT to filter the Mine Waster Water Effluent to a higher degree than the FIRST FILTRATION PLANT. The SECOND FILTRATION PLANT WILL COST CRANDON MINING CO. 12 MILLON DOLLARS IN CAPITAL COSTS AND \$ 449,000 PER YEAR IN OPERATING COSTS (THAT IS 12.6 MILLION DOLLARS OVER THE 28 YEARS THAT THE MINE IS EXPECTED TO OPERATE). That is a total savings of 24.6 MILLION DOLLARS for the Crandon Mining Company (from CMC Memo dated 9-19-95).

Because Crandon Mining Company decided that they would rather save 24.6 Million Dollars then be RESPONSIBLE CITIZENS OF WISCONSIN, THE CITIZENS ALONG THE WISCONSIN RIVER, AND " ALL " RESIDENTS OF WISCONSIN WILL HAVE TO PAY THE FOLLOWING PRICE, Based on the figures in the E.P.A. APPLICATION THAT CRANDON MINING COMPANY SUBMITTED TO THE E.P.A..

- A. 12,281 Lbs of BOD'S (BIOCHEMICAL OXYGEN DEMAND) being dumped into the Wisconsin River per Year at an Effluent Flow Rate of 294 Million Gallons per Year (560 Gallons per Min.) up to 52,635 Lbs. of BOD's / Year at an Effluent Flow Rate of 631 Million Gallons / Year (1200 Gallons / Min.).
- B. 24,567 to 105,269 Lbs. of COD's (CHEMICAL OXYGEN DEMAND MATERIAL) BEING DUMPED INTO THE WISCONSIN RIVER EVERY YEAR THAT THE MINE IS IN OPERATION.

NOTE: THAT IS A TOTAL OXYGEN DEMAND FROM BOD's + COD's OF 36,844 TO 157,904 LBS. OF OXYGEN DEMANDING MATERIAL PER YEAR.

- C. The TOTAL FERTILIZER TYPES OF MATERIALS (Nitrate, Nitrite, Phosphorus & Sulfides) will amount to 25,177 to 143,167 Pound per Year.
- D. The TOTAL SUSPENDED SOLIDS that THE CRANDON MINING COMPANY will deposit into The WISCONSIN RIVER will amount to 12,281 to 105,270 Lbs. of Suspended Solids per Year.

NOTE: THE EPA APPLICATION DOES NOT PROVIDE A FIGURE FOR THE DISSOLVED SOLIDS THAT THE TREATABILITY STUDY showed a value of 860 mg/L. That amount to 2.1 Million Pounds of Dissolved Solids per Year at a Flow Rate of 560 Gallons of effluent per Min..

- E. The TOTAL OF ALL TOXIC METALS in the effluent amounts to 123 Lbs/Year at a flow rate of 560 GPM and 1,042 Lbs. per Year at a flow rate of 1200 GPM. The toxic Metals are Chromium, Copper, Lead, Silver & Zinc.
- F. The POISONS of Arsenic & Cyanide in the Effluent will be deposited into the Wisconsin River at the rate of 206 to 737 Lbs. per Year.
- G. MERCURY, as I see it, is one of the BIG PROBLEMS!!!! The EPA APPLICATION indicates that Mercury is not detectable in the Effluent. THIS IS NOT ENTIRELY TRUE! The Wis. D.N.R measured the Mercury content of their half of the Split Sample from the Pilot Study as CONTAINING 40 ng of Mercury per Liter of effluent. This is 20 TIMES THE CURRENT D.N.R SPEC. of 2 ng/L, FOR THE CRANDON MINING CO. EFFLUENT. (Refer to Wis. D.N.R. Memo).

Methyl-Mercury Contamination of fish in the Wisconsin River is a " REAL PROBLEM ". REFER TO MY ANALYSIS OF " METHYL-MERCURY CONTAMINATION IN LAKE ALICE.

I sincerely hope that YOU will support the Mining Moratorium and submit or support a Bill to STOP THE DUMPING OF MINE WASTE WATER EFFLUENT INTO THE WISCONSIN RIVER. I lived in New Berlin for 13 years and was a Member of the First Park & Recreation Commission.



ROY J. GIUDICE
423 WISCONSIN AVE.

RHINELANDER, WIS. 54501 PHONE 715-362-8964

CONTENTS OF CRANDON MINE WASTE EFFLUENT PER E.P.A. APPLICATION

I	FLOW RATES OF EFFLUENT:	AVG. FLOW	MAX.FLOW
	Flow Rate in gal. per min.	560 GPM	1200 GPM
	Flow Rate in Gal. per hr.	33,600 GPH	72,000 GPH
	Flow Rate in Million Gal./Day	0.806 MGPD	1.728 MGPD
	Flow Rate in Million Gal./Yr.	294 MGPY	631 MGPY

II B.O.D.(5) - Five Day Biochemical Oxygen Demand:

Per page 21 of the "UPPER WISCONSIN RIVER NORTHERN SUB-BASIN WATER QUALITY MANAGEMENT PLAN - PUBLIC REVIEW DRAFT", multiple point discharges on the main stem of the Wisconsin River between the Rhinelander Dam and the Grandfather Dam, are WASTELOAD ALLOCATED. Despite improvements in water quality since the late 1970's, The DISSOLVED OXYGEN STANDARD OF 5.0 PPM FOR WORM WATER FISHERY IS STILL OCCASIONALLY VIOLATED. NOTE: Trout Lake in Vilas County has an average Oxygen value of 10, with a range of 6 to 12, per Dr. Carl J. Watras. Therefore, THIS STRETCH OF THE WISCONSIN RIVER IS PARTIALLY SUPPORTING ITS INTENDED USE. NOTE: This means that the addition BOD's, COD's and Phosphorus can cause a further degrading of the Oxygen in the water. This may prohibit any INDUSTRIAL EXPANSION IN THE RHINELANDER AREA for the 28 year life of the Crandon Mining Project. A value of 17 mg of BOD's and/or BOD's per Liter of water has the potential for a HIGH DEMAND FOR OXYGEN FROM THE WATER.

BOD's PER EPA APPLICATION:

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
BOD's in mg/L per application	5 mg/L	10 mg/L
BOD's in Lbs. per Min.	0.023	0.100
BOD's in Lbs. per Hour	1.402	6.008
BOD's in Lbs. per Day	33.648	144.205
BOD's in Lbs. per Year	12,281.0	52,634.8

III COD's CHEMICAL OXYGEN DEMAND:

This is an Oxygen Demand that is caused by the chemicals in in the Effluent from the Crandon Mine Waste Water. The same concerns apply for the COD's that were mentioned for the BOD's in section II.

CONTENTS OF CRANDON MINE WASTE EFFLUENT PER E.P.A. APPLICATION

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COD's PER EPA APPLICATION:	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
COD's per EPA APPLICATION	< 10 mg/L	20 mg/L
COD's in Lbs. per Min.	0.047	0.200
COD's in Lbs. per Hour	2.804	12.017
COD's in Lbs. per Day	67.296	288.410
COD's in Lbs. per Year	24,566.9	105,269.7

IV THE TOTAL OXYGEN DEMAND ON THE UPPER WISCONSIN RIVER:

The total Oxygen demand on the upper Wisconsin River by the combined influence of injecting BOD's and COD's from the Crandon Mine are listed below.

TOTAL OXYGEN DEMAND FROM BOD's & COD's:

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
BOD's + COD's in Lbs. per Min.	0.070	0.300
BOD's + COD's in Lbs. per Hour	4.206	18.025
BOD's + COD's in Lbs. per Day	100.944	432.615
BOD's + COD's in Lbs. per Year	36,843.9	157,904.5

V FERTILIZERS (SULFIDES, NITRATES & POTASSIUM):

Sulfides, Nitrates (NO₅), ie . . Potassium Nitrate, Sodium Nitrate, Phosphorus Nitrate will take large amounts of Oxygen from the water. An increase in Sulfates will increase the Methylization of Mercury in the sediments, thus making Mercury much more "BIO" available to the fish in the water (TO BE CONSUMED BY FISH IN THE METHYL MERCURY FORM).

A. NITRATE + NITRITE (as N):

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
Nitrates + Nitrites per EPA APPLICATION in mg/L	8.2 mg/L	22 mg/L
Nitrates, Nitrites in Lbs per min.	0.038	0.220
in Lbs. per Hour	2.299	13.219
in Lbs. per Day	55.182	317.215
in Lbs. per year	20,141.6	115,796.6

CONTENTS OF CRANDON MINE WASTE EFFLUENT PER E.P.A. APPLICATION

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B. TOTAL PHOSPHORUS:

PHOSPHORUS PER EPA APPLICATION	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
in mg/L	0.05 mg/L	0.2 mg/L
in Lbs./Min.	0.0002	0.002
in Lbs./Hour	0.014	0.120
in Lbs./Day	0.336	2.884
in Lbs./Year	122.8	1,052.7

C. TOTAL SULFIDES:

SULFIDES PER EPA APPLICATION	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
in mg/L	< 2 mg/L	5 mg/L
in Lbs./Min.	0.009	0.050
in Lbs./Hour	0.561	3.004
in Lbs./Day	13.459	72.102
in Lbs./Year	4,912.6	26,317.4

D. TOTAL OF "ALL" FERTILIZERS TYPES OF ELEMENTS:

TOTAL N+P+S	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
in Lbs./Min.	0.047	0.272
in Lbs./Hour	2.874	16.343
in Lbs./Day	68.977	392.201
in Lbs./Year	25,177.0	143,166.7

VI TOTAL SUSPENDED SOLIDS:

The TOTAL SUSPENDED SOLIDS that will be deposited into the Wisconsin River from the Crandon Mine Waste water Effluent will enter the Wisconsin River at the hat rapids Dam, South of rhinelander. A large portion of these solids will be deposited at the next Dam sown river (at the King dam and into Lake Alice) from the discharge point. Diminishing amounts will be deposited at each of the down river Dams. Many of these SOLIDS ARE TOXIC METALS, ie... chromium, Copper, Lead, Silver and Zinc, along with the sulfates & Sulfides of these metals. The total suspended solids of < 5 mg/L for a flow rate of 560 GPM and 20 mg/L for a flow rate of the effluent of 1200 GPM that was submitted to the EPA is SUBSTANTIALLY LOWER THAN THE AMOUNT ON THE TREATABILITY STUDY of < 10 mg/L and less then the PILOT STUDY value of 1,430 mg/L for the TOTAL SOLIDS (The Pilot Study was a split sample that the Wis.D.N.R. ran on 4-26-95).

CONTENTS OF CRANDON MINE WASTE EFFLUENT PER E.P.A. APPLICATION

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NOTE:

THE E.P.A. APPLICATION DOES NOT PROVIDE A FIGURE FOR THE DISSOLVED SOLIDS THAT THE TREATABILITY STUDY SHOWED A VALUE OF 860 mg/L. THAT AMOUNTS TO 2.1 MILLION POUNDS OF DISSOLVED SOLIDS PER YEAR AT AN AVERAGE FLOW RATE OF 560 GALLONS OF EFFLUENT PER MINUTE.

A. TOTAL SUSPENDED SOLIDS:

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
SUSPENDED SOLIDS PER EPA APPLICATION in mg/L	< 5 mg/L	20 mg/L
SUSPENDED SOLIDS in Lbs./Min.	0.023	0.200
SUSPENDED SOLIDS in Lbs./Hour	1.402	12.017
SUSPENDED SOLIDS in Lbs./Day	33.648	288.410
SUSPENDED SOLIDS in Lbs./Year	12,281.4	105,269.7

B. CHROMIUM:

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
TOTAL CHROMIUM PER EPA APPLICATION in mg/L	< 0.005 mg/L	0.01 mg/L
CHROMIUM in Lbs. / Year	12.2	52.6

C. COPPER:

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
TOTAL COPPER PER EPA APPLICATION in mg/L	0.010 mg/L	0.080 mg/L
COPPER in Lbs./Year	52.6	421.0

D. LEAD:

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
TOTAL LEAD PER EPA APPLICATION in mg/L	< 0.003 mg/L	0.006 mg/L
COPPER in Lbs./ Year	7.3	31.5

E. SILVER:

Silver on the E.P.A. REPORT of < 0.001 mg/L is 0.004 mg/L LESS THEN THE TREATABILITY STUDY VALUE OF < 0.005 mg/L and 0.0008 mg/L HIGHER THEN THE PILOT STUDY FIGURE OF 0.024 ug/L (0.000024 mg/L).

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SILVER:

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
TOTAL SILVER PER EPA APPLICATION in mg/L	< 0.001 mg/L	0.002 mg/L
SILVER in Lbs./ Year	2.4	10.5

F. ZINC:

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
TOTAL ZINC PER EPA APPLICATION in mg/L	0.02 mg/L	0.10 mg/L
ZINC in Lbs. / Year	49.1	526.3

G. TOTAL OF "ALL" TOXIC METALS:
Chromium, Copper, Lead,
Silver & Zinc

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
TOTAL OF TOXIC METALS in Lbs. / Year	123.6	1,041.9

VII POISONS IN THE EFFLUENT:

The poisons of Arsenic and Cyanide are contained in the Effluent Water from the Crandon Mine. The Cyanide value used in the E.P.A. APPLICATION is 0.07 mg/L more than the TREATABILITY STUDY value of < 0.01 mg/L and is the same as the < 0.01 mg/L value obtained during the 1995 PILOT STUDY.

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
A. TOTAL ARSENIC:		
TOTAL ARSENIC per EPA APPLICATION mg/L	< 0.004 mg/L	0.01 mg/L
TOTAL ARSENIC in Lbs/Year	9.8	52.6
B. TOTAL CYANIDE:		
TOTAL CYANIDE per EPA APPLICATION mg/L	0.08 mg/L	0.13 mg/L (*)
TOTAL CYANIDE in Lbs/Yr.	196.5	684.2

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NOTE; *

When treated effluent consists solely of TREATED EXCESS MILL PROCESS WATER, THE MAXIMUM WILL BE 0.53 mg/L . THE NORMAL MAXIMUM FROM TREATED MINE DRAINAGE IS 0.13 mg/L.

TOTAL CYANIDE WHEN TREATED
EFFLUENT CONSISTS OF EXCESS
MILL PROCESS WATER in mg/L 0.53 mg/L

TOTAL CYANIDE in Lbs. per Min. 0.005
TOTAL CYANIDE in Lbs. per Hour 0.318
TOTAL CYANIDE in Lbs. per Day 7.643

C. TOTAL OF ALL POISONS:

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
TOTAL OF ARSENIC & CYANIDE UNDER NORMAL OPERATING CONDITIONS in Lbs. per Year	206.3	736.8

VIII MERCURY:

The EPA APPLICATION indicates that "MERCURY" IS NOT DETECTABLE. The Crandon Mining Company, in their E.P.A. APPLICATION, INDICATED THAT THE DETECTION LEVEL FOR MERCURY USING APPROVED ANALYTICAL METHODS FOR THE W.P.D.E.S. PERMIT PROGRAM IS APPROXIMATELY 0.0002 mg/L. The Crandon Project EFFLUENT, when tested is expected to show " A NO DETECT".

THIS IS NOT ENTIRELY TRUE!!!!

The testing capability of Foth & Van Dyke, the engineering firm that The Crandon Mining Company used to evaluate the amount of Mercury in the 1995 PILOT STUDY could only measure the Mercury down to a value of 200 ng/L. HOWEVER, THE WIS. D.N.R. MEASURED THE CONTENT OF THE OTHER HALF OF THE SPLIT SAMPLE AS HAVING A MERCURY CONTENT OF 40 ng/L ,when measured at the State of Wisconsin Lab. THIS AMOUNT OF MERCURY IS 20 TIMES THE CURRENT WIS.D.N.R. SPECIFICATION OF 2 ng/L FOR MERCURY IN THE CRANDON MINE EFFLUENT AT 560 GPM AND AT 1200 GPM. THE WISCONSIN D.N.R. IS LOOKING AT REDUCING THE MERCURY LIMIT OF THE CRANDON MINE EFFLUENT TO 1.3 ng/L.

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A memo from Mr. Bill Tans - EA/6, of the Wis.D.N.R. , on 11-6-96 indicated that - " Because our split sample from the PILOT PLANT TREATABILITY STUDIES came out to 40 ng/L for the proposed effluent, THE COMPANY COULD NOT MEET THE LIMIT." " This assumes that the one sample we have adequately represents the true effluent quality." " As a result, We will need to obtain from the Company alternative methods that could be used to treat the effluent and remove most of the Mercury." " The Company may also have to request a VARIANCE from the limit if it could not meet it." The Wis. D.N.R. also plans to require that C.M.C. use " ULTRA LOW LEVEL TECHNIQUES" TO MONITOR FOR MERCURY.

A. POUNDS OF MERCURY PER YEAR AT 40 ng of Hg/L:

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
TOTAL MERCURY in Lbs. per Year	0.105	0.210
APPROXIMATE NUMBER OF FISH CONTAMINATED per year	21,000	42,000

NOTE: (*)

The approximate number of fish contaminated with Methyl-Mercury is based on a ratio of 10 Lbs. of Mercury producing 1 Lb. of Methyl-Mercury and that one pound of Methyl-Mercury can contaminate Two Million fish.

B. POUNDS OF MERCURY PER YEAR AT W.D.N.R SPEC. OF 2.0 ng of Hg / L:

	EFFLUENT FLOW RATES	
	560 GPM	1200 GPM
TOTAL MERCURY in Lbs/Year	0.005	0.011
APPROXIMATE NUMBER OF FISH CONTAMINATED per Year	10,000	22,000

Form
2D
NPDES



New Sources and New Dischargers Application for Permit to Discharge Process Wastewater

I. Outfall Location

For each outfall, list the latitude and longitude, and the name of the receiving water

Outfall Number <i>(list)</i>	Latitude			Longitude			Receiving Water <i>(name)</i>
	Deg; Min; Sec	Deg; Min; Sec	Deg; Min; Sec	Deg; Min; Sec	Deg; Min; Sec		
007	(see Figure 3, for the location of the outfall)						Wisconsin River

Note: Outfalls 001-006 and 008-012 will discharge only construction and non-contact runoff at the facility.

A "Notice of Intent for Storm Water Discharges Associated with Construction Activities Under a General NPDES Permit", (Wisconsin DNR Form 3400-161) has been submitted to the Wisconsin DNR. Refer to this "Notice of Intent" for information concerning Outfalls 001-006 and 008-012.

II. Discharge Date *(When do you expect to begin discharging?)* (see Attachment 2)

III. Flows, Sources of Pollution, and Treatment Technologies

A. For each outfall, provide a description of (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and stormwater runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

Outfall Number	1. Operations Contributing Flow <i>(list)</i>	2. Average Flow <i>(include units)</i>	3. Treatment <i>(Description or List Codes from Table 2D-1)</i>
007	<ul style="list-style-type: none"> • mine shaft development and underground mining • ore milling & beneficiation, including disposal of waste rock and tailings • operation of sanitation facilities for mine and mill employees • ancillary operations needed for mine & mill operations/maintenance 	560 gallons/minute (total discharge flow rate)	(see Attachment 2)

V. Effluent Characteristics

A. and B: These items require you to report estimated amounts (both concentration and mass) of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instructions for that part. Data for each outfall should be on a separate page. Attach additional sheets of paper if necessary.

General Instructions (See table 2D-2 for Pollutants)

Each part of this item requests you to provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by the permitting authority. For all outfalls, data for pollutants in Group B should be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or NSPS or indirectly through limitations on an indicator pollutant.

1. Pollutant	2. Maximum Daily Value (include units)	3. Average Daily Value (include units)	4. Source (see instructions) (see Attachment 2)
Flow Rate	1,200 gallons per minute	560 gallons per minute	Design Capacity of the WWTS (maximum flow) Water Balance (average flow)
5-Day Biochemical Oxygen Demand ✓	10 mg/L	5 mg/L ✓	Treatability Testing
Chemical Oxygen Demand ✓	20 mg/L	<10 mg/L ✓	Treatability Testing
NOTS ? Total Organic Carbon	10 mg/L	< 5 mg/L	Best Professional Judgement
? Total Suspended Solids	20 mg/L	< 5 mg/L	Best Professional Judgement
? Ammonia (as N)	9 mg/L	3.3 mg/L	Best Professional Judgement
Temperature (winter)	50° F	35° F	Best Professional Judgement
Temperature (summer)	85° F	60° F	Best Professional Judgement
? pH	9.0 (max.) 6.0 (min.)	8.0	Best Professional Judgement
NOTS Fluoride	0.5 mg/L	0.2 mg/L	Best Professional Judgement
? Nitrate + Nitrite (as N) <i>fact</i>	22 mg/L	8.2 mg/L	Best Professional Judgement
Oil and Grease	15 mg/L	< 5 mg/L	Best Professional Judgement
NOTS Total Phosphorus <i>fact</i>	0.2 mg/L	0.05 mg/L	Treatability Testing
? Sulfate (as SO ₄)	1,500 mg/L	1,000 mg/L	Best Professional Judgement
Sulfide (as S) ✓ <i>fact</i>	5 mg/L	< 2 mg/L ✓	Best Professional Judgement
NOTS Sulfite (as SO ₃)	< 1 mg/L	< 1 mg/L	Best Professional Judgement
NOTS Total Aluminum	0.3 mg/L	0.12 mg/L	Treatability Testing
NOTS Total Barium	0.06 mg/L	0.03 mg/L	Leaching Testing
NOTS Total Cobalt	1.0 mg/L	0.5 mg/L	Leaching Testing
Total Iron ✓	0.1 mg/L	0.02 mg/L ✓	Treatability Testing
? Total Magnesium	75 mg/L	30 mg/L	Leaching Testing
(continued on Page 38 of 5)			

NOTS = NOT ON TREATABILITY STUDY TABLE A-8 & A-14
 ? FIGURES DON'T AGREE WITH TREATABILITY STUDY

V. Effluent Characteristics

A, and B: These items require you to report estimated amounts (both concentration and mass) of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instructions for that part. Data for each outfall should be on a separate page. Attach additional sheets of paper if necessary.

General Instructions (See table 2D-2 for Pollutants)

Each part of this item requests you to provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by the permitting authority. For all outfalls, data for pollutants in Group B should be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or NSPS or indirectly through limitations on an indicator pollutant.

1. Pollutant	2. Maximum Daily Value (include units)	3. Average Daily Value (include units)	4. Source (see instructions) (see Attachment 2)
Total Manganese	0.2 mg/L	0.06 mg/L	Best Professional Judgement
Total Antimony	0.1 mg/L	<0.05 mg/L	Treatability Testing
Total Chromium - (TOXIC)	0.01 mg/L	<0.005 mg/L	Treatability Testing
Total Lead - (TOXIC)	0.006 mg/L	<0.003 mg/L	Treatability Testing
Total Nickel	0.04 mg/L	<0.02 mg/L	Treatability Testing
Total Silver (TOXIC)	0.002 mg/L	<0.001 mg/L	Treatability Testing
Total Zinc - (TOXIC)	0.10 mg/L	0.02 mg/L	Treatability Testing
Total Arsenic - POISON -	0.01 mg/L	<0.004 mg/L	Treatability Testing
Total Cadmium	0.002 mg/L	0.0015 mg/L	Treatability Testing
Total Copper (TOXIC)	0.080 mg/L	0.010 mg/L	Treatability Testing
Total Mercury	N.D. ¹	N.D. ¹	Treatability Testing
Total Selenium	0.29 ² mg/L	0.09 mg/L	Leachate Testing
Total Thallium	0.02 mg/L	<0.01 mg/L	Treatability Testing
Total Cyanide - POISON -	0.53 mg/L ³	0.08 mg/L	Best Professional Judgement
Hardness	1,000	700	Best Professional Judgement

¹ N.D. = Not detectable. The detection level for mercury using approved analytical methods for the WPDES permit program is approximately 0.0002 mg/L. Crandon Project effluent when tested is expected to show a no detect.

² Maximum concentration when treated effluent consists solely of treated excess mill process water. Normal maximum concentration when treated effluent includes treated mine drainage is estimated to be 0.24 mg/L.

³ Maximum concentration when treated effluent consists solely of treated excess mill process water. Normal maximum concentration when treated effluent includes treated mine drainage is estimated to be 0.13 mg/L.

Table A-8

Phase II Treatability Study
Step III - Full Treatment¹

Parameter	Unit	Raw Wastewater	Lime Treated	Filter Effluent	Filter Control
Arsenic ✓	mg/L	0.15	<0.004 ✓	<0.004 ✓	<0.004 ✓
⊗ Cadmium	mg/L	0.13	<0.005	<0.005	<0.005
⊗ Calcium	mg/L	110	180 ²	170 ²	0.11 ²
Chromium, Total ✓	mg/L	0.007	<0.005 ✓	<0.005 ✓	<0.005 ✓
⊗ Copper	mg/L	8.4	0.043	<0.005	<0.005
⊗ Cyanide	mg/L	N/A	N/A	<0.01	N/A
Hardness ✓	mg/L	700	640	640	N/A
Iron ✓	mg/L	19	0.056	<0.020 ✓	0.022 ✓
Lead ✓	mg/L	0.64	<0.003 ✓	<0.003 ✓	<0.003 ✓
⊗ Magnesium	mg/L	39	33	32	0.040
Mercury ✓	mg/L	0.0002 ✓	<0.0002 ✓	<0.0002 ✓	<0.0002 ✓
Nickel ✓	mg/L	0.030	<0.020 ✓	<0.020 ✓	<0.020 ✓
Selenium ✓	mg/L	0.064	0.052	0.055	0.0066 ²
⊗ Silver	mg/L	<0.005	<0.005	<0.005	<0.005
⊗ Sulfate	mg/L	460	460	500	N/A
⊗ Total Dissolved Solids	mg/L	880	N/A	860	<10
Zinc ✓	mg/L	33	0.20 ✓	<0.020 ✓	<0.02 ✓
⊗ Total Suspended Solids	mg/L	75	N/A	<10	<10
BOD ₅ ✓	mg/L	<6 ✓	N/A	<6 ✓	N/A
COD ✓	mg/L	<10 ✓	<10 ✓	10	<10 ✓
Sulfide ✓	mg/L	<0.4	0.6	1.6 ✓	N/A
⊗ pH	S.U.	3.3	10.0	10.5	N/A

N/A = No Test Performed.

¹All values for metals expressed as "total" metal.

²Parameter found in the laboratory blank as well as in the sample.

⊗ ON EPA LIST, BUT VALUES DON'T AGREE
✓ ON EPA LIST, ✓ (CHECKED) VALUES AGREE.

PAUL LUEBKE (DNR) METALS - 608-266-0234
 PILOT STUDY DATA

The Crandon Mining Company conducted treatability studies to evaluate treatment processes and optimum treatment conditions. Synthetic wastewater was generated from actual rock, ore, and groundwater from the mine site. This wastewater was treated in bench scale (large beakers as treatment vessels) pilot tests at the Foth & Van Dyke laboratory where the effectiveness of various treatment processes were evaluated. The effluent was analyzed to the characterize the expected discharge quality. Bench scale tests can accurately simulate full scale processes. The following effluent sample from the bench scale treatability pilot study was collected on April 26, 1995. (DNR split sample analysis done by the State Lab of Hygiene.)

PARAMETER CONCENTRATION

Total Solids	1.430 mg/L
COD*	17 mg/L
Hardness	830 mg/L
Alkalinity	14 mg/L
pH	7.14 su
Conductivity	1600 μ mhos/cm
Ammonia N	0.804 mg/L
Nitrate N	0.217 mg/L
Total Kjeldahl N	1.0 mg/L
Chloride	41 mg/L
Fluoride	0.21 mg/L
Phosphorus	0.026 mg/L
Boron	0.046 mg/L
Cyanide ✓	<0.01 mg/L
Aluminum	61.7 μ g/L
Antimony ✓	<2 μ g/L
Arsenic ✓	0.3 μ g/L
Barium	150 μ g/L
Beryllium ✓	0.005 μ g/L
Cadmium	0.03 μ g/L
Calcium	190 mg/L
Chromium	0.38 μ g/L
Copper	5.7 μ g/L
Iron	50 μ g/L
Lead ✓	0.016 μ g/L
Magnesium	87 mg/L
Manganese	4.7 μ g/L
Mercury ✓	40 ng/L
Molybdenum	4 μ g/L
Nickel	4.9 μ g/L
Potassium	14 mg/L
Selenium	110 μ g/L
Silver	0.024 μ g/L
Sodium	51 mg/L
Sulfate	900 mg/L
Thallium	<1 μ g/L
Zinc	2.9 μ g/L

STATE LAB
 < 200 μ g/L, For C.M.C.

* COD stands for chemical oxygen demand. COD will always be a larger number than BOD (biochemical oxygen demand). (No results were obtained from the BOD analysis due to problems in running the test.)

DNRNC::JAEGEW
MARTIRE

"BILL JAEGER, RHINELANDER, (715)365-8971" 6-NOV-1996 13:04:50.47

CC:
Subj: fyi'

From: DNRVAX::TANSW "Bill Tans EA/6" 6-NOV-1996 11:22:31.66
To: DNRNC::WILSOA, CARLSC, DNRNC::JAEGEW
CC: WITM, WEBBD, ALBRIG, TANSW
Subj: Mercury Releases from the Crandon Project

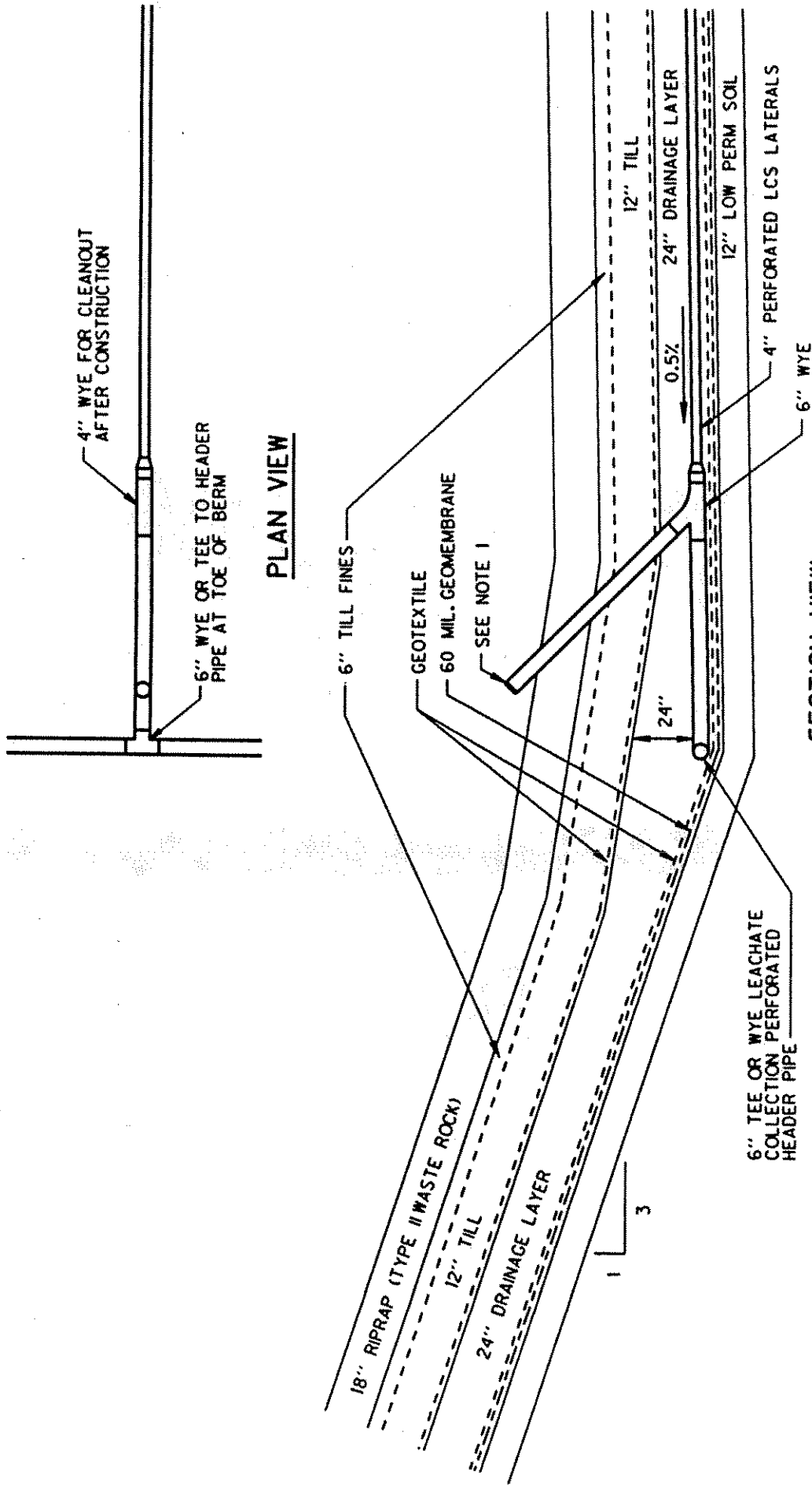
There have been several discussions with staff regarding the proposed discharge of treated wastewater into the Wisconsin River and how we will handle that in the permit. Today we reviewed this issue with Susan Sylvester, Paulette Harder and Maryann Sumi and have developed a strategy for mercury in the discharge.

We plan to put a limit on mercury in the discharge permit of 2 ng/L. This could be reduced to 1.3 ng/L if the standard changes, or could go up to background levels (almost 4 ng/L) if the company successfully argues this. We also plan to require the company to use ultra low level techniques to monitor for mercury in its effluent.

Because our split sample from the pilot plant treatability studies came out at 40 ng/L for the proposed effluent, the company could not meet the limit. This assumes that the one sample we have adequately represents the true effluent quality. As a result, we will need to obtain from the company alternative methods that could be used to treat the effluent and remove most of the mercury. The company may also have to request a variance from the limit if it could not meet it. There may be ways of segregating its wastewater streams and using a more powerful treatment technology on the stream with the most mercury. Perhaps such a technology could be used in conjunction with a surface water mitigation plan.

Staff in Watershed Management Bureau are reviewing this regulatory stance with EPA, and assuming it agrees, we will then inform CMC of how we are going to proceed. I suspect that CMC will want to meet with us to discuss this further.

In related issues, mercury coming from the TMA and moving through the groundwater ultimately will reach Hemlock Creek and other downstream locations. We are getting some assistance from Dave Krabbenhoft of the USGS, who will attempt to sample groundwater near Hemlock Creek for mercury concentrations. He may be able to perform that work in November. Dave Webb will work with Jim Hurley to conduct an estimate of the mercury that will move into Hemlock Creek, but will first need the groundwater mercury data, and source term data for the TMA leachate, and then can make some estimations of how much mercury might reach Hemlock Creek. Increased levels of sulfate reaching surface waters also could affect the availability of mercury in the stream, and that has to be factored in also. Bill.



TYPICAL REPRESENTATION
REFINEMENTS MAY BE MADE
PRIOR TO CONSTRUCTION

Foth & Van Dyke		Crandon Mining Company	
REVISED	DATE	BY	DESCRIPTION
CHECKED BY:	JRSI	DATE:	FEB. '96
APPROVED BY:	NXP	DATE:	FEB. '96
APPROVED BY:	GWS	DATE:	FEB. '96
Scale: NOT TO SCALE		Date:	FEBRUARY 1996
Prepared By: Foth & Van Dyke		By: JRB2	

NOTE:
1. 6" PIPE STUBBED OUT FOR TEMPORARY CLEANOUT FOR PIPE CLEANING AFTER CONSTRUCTION IS COMPLETE. CAP AFTER CLEANING.

METHYL-MERCURY CONTAMINATION IN LAKE ALICE

The 1994 and the 1997 WIS. D.N.R. FISH ADVISORY for Lake Alice indicates that there has been NO INCREASE in Methyl-Mercury fish contamination in Lake Alice. Northern Pike that are less than 10 inches in length to a length of 18 inches are still classified as " GROUP - 1 FISH " in the " MERCURY FISH ADVISORY". Group # 1 fish fillets average 0.5 ppm (parts of Mercury per million parts of fish) or less. PREGNANT WOMEN SHOULD EAT NO MORE THAN ONE MEAL A MONTH OF GROUP ONE FISH, EVERYONE ELSE MAY EAT UNLIMITED AMOUNTS OF GROUP # 1 FISH.

Northern Pike that are 18 to 26 inches in length are classified as GROUP # 2 FISH, in Lake Alice. PREGNANT OR BREASTFEEDING WOMEN, WOMEN WHO PLAN TO HAVE CHILDREN, AND CHILDREN UNDER 15 SHOULD NOT EAT GROUP # 2 FISH. EVERYONE ELSE SHOULD EAT NO MORE THAN 26 MEALS OF GROUP # 2 FISH A YEAR. EAT NO MORE THAN 13 OF THESE MEALS IN ANY ONE MONTH. SPACE THE REMAINING 13 MEALS OVER THE REST OF THE YEAR AT THE RATE OF ONE OR TWO MEALS A MONTH.

Walleyes that are 10 inches to 15 inches, in length, are CLASSIFIED AS GROUP # 1 FISH IN LAKE ALICE.

Walleyes that are a length of 15 inches to 18 inches are CLASSIFIED AS GROUP # 2 FISH IN LAKE ALICE.

Walleyes that are a length of 18 to 22 inches are CLASSIFIED AS GROUP # 3 FISH. PREGNANT OR BREASTFEEDING WOMEN, WOMEN WHO PLAN TO HAVE CHILDREN, AND CHILDREN UNDER 15 SHOULD NOT EAT GROUP # 3 FISH. EVERYONE ELSE SHOULD EAT NO MORE THAN 13 MEALS OF GROUP # 3 FISH A YEAR AND EAT NO MORE THAN 7 OF THESE MEALS IN ANY ONE MONTH WITH THE REMAINING 6 MEALS SPREAD OUT OVER THE REST OF THE YEAR, WITH NO MORE THAN ONE MEAL PER MONTH.

The fact that there has been no change in the Mercury FISH ADVISORY BETWEEN THE 1994 AND 1997 FISH ADVISORY REPORTS FOR LAKE ALICE INDICATES THAT WE ARE " ON THE RIGHT TRACK " . WE SHOULD NOT ALLOW AN INCREASE IN THE MERCURY FISH CONTAMINATION IN LAKE ALICE OR IN ANY OF THE WISCONSIN RIVER WATERS DOWN STREAM FROM RHINELANDER BECAUSE THE CRANDON MINING COMPANY WANTS TO SAVE 24.6 MILLION DOLLARS BY DUMPING THEIR MINING WASTE EFFLUENT INTO THE WISCONSIN RIVER RATHER THAN PERFORMING A SECOND FILTRATION OF THE MINE WASTE WATER AND THEN PUMPING THE EFFLUENT INTO LEACHING PONDS (This was one of the other two alternatives that the Crandon Mining Co. rejected). In my opinion, THE LEACHING POND ALTERNATIVE IS THE BEST SOLUTION BECAUSE IT ALLOWS THE EFFLUENT WATER TO REGENERATE THE GROUND WATER THAT IS BEING REMOVED FROM THE LOCAL WATER TABLE, DURING THE MINING PROCESS.

METHYL-MERCURY CONTAMINATION IN LAKE ALICE

Following are some of the Mercury Fish samples that were taken from Lake Alice, as reported in the "UPPER WISCONSIN RIVER - NORTHERN SUB-BASIN WATER QUALITY MANAGEMENT PLAN" on pages 43 to 46. The AVERAGE MERCURY CONTAMINATION OF FISH IN LAKE ALICE BY THE STUDY YEAR IS SUMMARIZED BELOW.

MERCURY CONTAMINATION OF FISH IN LAKE ALICE BY STUDY DATE:

STUDY DATE	TOTAL # SAMPLES	MERCURY PPM	ADVISORY GROUP
1979	18	0.54	# 2
1980	15	0.36	# 1
1981	8	0.20	# 1
1982	13	0.50	# 2
1984	11	0.39	# 1
1988	17	0.34	# 1

Because Methyl-Mercury contamination in fish BIO-ACCUMULATES IN THE FISH (The Methyl-Mercury contamination increases dramatically as the WEIGHT AND SIZE OF THE FISH INCREASE), I have summarized the METHYL-MERCURY CONTAMINATION OF FISH BY FISH TYPE.

MERCURY CONTAMINATION OF FISH IN LAKE ALICE BY FISH TYPE:

A. WALLEYES:

STUDY DATE	TOTAL # SAMPLES	MERCURY PPM	ADVISORY GROUP
1979	3 fillets	0.60	# 2
1980	1 fillets	0.30	# 1
1984	1 fillets	0.80	# 3
1988	4 fillets	0.33 to 0.50 RANGE	# 1 & # 2
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AVERAGE	9 - TOTAL	0.51 AVERAGE	# 2

The Walleye Methyl-Mercury contamination ranged from a high of 0.80 PPM in 1984 to a low of 0.30 PPM in 1980 & 0.33 PPM in 1988. The small sample size indicates that Walleyes are HIGHLY CONTAMINATED IN LAKE ALICE with an average Methyl-Mercury content of 0.51 PPM for a total of 9 samples (Group # 2 on the Fish Advisory).

METHYL-MERCURY CONTAMINATION IN LAKE ALICE

B. NORTHERN PIKE:

STUDY DATE	TOTAL # SAMPLES	MERCURY PPM	ADVISORY GROUP
1980	4 fillets	0.51	# 2
1981	1 fillets	0.25	# 1
1984	2 fillets	0.45	# 1
1984	6 fillets	0.17	# 1
1988	3 fillets	0.35 to 0.55 RANGE	# 1 & # 2
<hr/>			
AVERAGE	16 TOTAL	0.38 AVERAGE	# 1

The Northern Pike Methyl-Mercury contamination had a high of 0.55 PPM in 1988 and a low value of 0.17 PPM in 1984 with an average for 16 total samples of 0.38 PPM that would be classified as Group # 1 Fish. The test samples of 0.51 PPM taken in 1980 and the test sample in 1988 of 0.55 PPM INDICATES THAT THE METHYL-MERCURY CONTAMINATION OF NORTHERN PIKE IN LAKE ALICE HAS NOT CHANGED MUCH OVER THE 8 YEAR PERIOD AND SHOULD NOT BE ALLOWED TO INCREASE BY THE AN INCREASE IN THE AMOUNT OF MERCURY INTRODUCED INTO LAKE ALICE.

C. WHITE SUCKER:

STUDY DATE	TOTAL # SAMPLES	MERCURY PPM	ADVISORY GROUP
1979	5 fillets	0.68	# 2
1980	5 fillets	0.39	# 1
1981	3 fillets	0.16	# 1
1982	5 fillets	0.58	# 2
1982	3 fillets	0.35	# 1
1984	2 fillets	0.15	# 1
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AVERAGE	23 TOTAL	0.38 AVERAGE	# 1

The White Sucker is a fish that most people don't fish for or eat. However, because this fish is essentially a bottom feeder and subjected to the Methyl-Mercy in the sediment of Lake Alice, the amount of variance of 0.53 PPM in the Methyl-Mercy of fish samples is difficult to explain (a high of 0.68 PPM in 1979 to a low of 0.15 PPM in 1984).

METHYL-MERCURY CONTAMINATION IN LAKE ALICE

D. BLUEGILL:

STUDY DATE	TOTAL # SAMPLES	MERCURY PPM	ADVISORY GROUP
1979	5 whole fish	0.55	# 2
1982	5 fillets	0.57	# 2

AVERAGE	10 TOTAL	0.56 AVERAGE	# 2
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Although there are only two study dates in which Bluegill samples were taken, THE TEST RESULTS INDICATE THAT THE BLUEGILL'S IN LAKE ALICE MAY BE EXPERIENCING A HIGH LEVEL OF METHYL-MERCURY CONTAMINATION. BECAUSE THIS IS A FISH THAT CHILDREN LIKE TO FISH FOR AND EAT, IT IS IMPERATIVE THAT FURTHER TESTS BE PERFORMED TO DETERMINE IF THIS HIGH DEGREE OF METHYL-MERCURY CONTAMINATION CONTINUES TO BE ENCOUNTERED IN TEST SAMPLES. THIS IS ANOTHER INDICATION THAT ANY FURTHER MERCURY CONTAMINATION OF LAKE ALICE SHOULD NOT BE ALLOWED.

E. CRAPPIE & YELLOW PERCH:

STUDY DATE	TOTAL # SAMPLES	MERCURY PPM	ADVISORY GROUP
1979	5 - Crappie W. Fish	0.35	# 1
1980	5 - Y. Perch fillets	0.22	# 1
1981	4 - Y. Perch W. Fish	0.18	# 1
1988	5 - Crappie fillets	0.14 to 0.27	# 1

AVERAGE	19 TOTAL	0.23 AVERAGE	# 1
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The Methyl-Mercury contamination of Crappie and Yellow Perch seems to be MINIMAL.

A listing of the Methyl-Mercury fish samples from Lake Alice that were recorded in the " UPPER WISCONSIN RIVER - NORTHERN SUB-BASIN WATER QUALITY MANAGEMENT PLAN " are listed on pages 5 & 6 of this report.

METHYL-MERCURY CONTAMINATION IN LAKE ALICE

Following are the Methyl-Mercury fish samples from Lake Alice that were recorded in the "UPPER WISCONSIN RIVER - NORTHERN SUB BASIN WATER QUALITY MANAGEMENT PLAN" on pages 43 to 46.

STUDY DATE	FISH TYPE	NO. OF SAMPLES	SAMPLE TYPE	MERCURY PPM	GROUP #
1979	Walleye	3	Fillets	0.60	# 2
1979	W. Sucker	5	Fillets	0.68	# 2
1979	Bluegill	5	Whole fish	0.55	# 2
1979	Crappie	5	Whole fish	0.33	# 1
1979	AVERAGE	18 - TOTAL		0.54 AVERAGE	# 2
1980	Y. Perch	5	Fillets	0.22	# 1
1980	Walleye	1	Fillets	0.30	# 1
1980	W. Sucker	5	Fillets	0.39	# 1
1980	N. Pike	4	Fillets	0.51	# 2
1980	AVERAGE	15 - TOTAL		0.36 AVERAGE	# 1
1981	Y. Perch	4	Whole Fish	0.18	# 1
1981	W. Sucker	3	Fillets	0.16	# 1
1981	N. Pike	1	Fillets	0.25	# 1
1981	AVERAGE	8 - TOTAL		0.20 AVERAGE	# 1
1982	W. Sucker	5	Fillets	0.58	# 2
1982	W. Sucker	3	Fillets	0.35	# 1
1982	Bluegill	5	Fillets	0.50	# 2
1982	AVERAGE	13 - TOTAL		0.50 AVERAGE	# 2
1984	Walleye	1	Fillets	0.80	# 3
1984	W. Sucker	2	Fillets	0.15	# 1
1984	N. Pike	2	Fillets	0.45	# 1
1984	N. Pike	6	Fillets	0.17	# 1
1984	AVERAGE	11 - TOTAL		0.39 AVERAGE	# 1
1988	N. Pike	3	Fillets	0.35 To 0.55 - RANGE	# 1 # 2
1988	L. M. Bass	3	Fillets	0.20 To 0.34 - RANGE	# 1 # 1
1988	Walleye	4	Fillets	0.33 To 0.50 - RANGE	# 1 # 2
1988	Carp	2	Fillets	-	1.0 PCB's
1988	Crappie	5	Fillets	0.14 To 0.27 - RANGE	# 1 # 1

METHYL-MERCURY CONTAMINATION IN LAKE ALICE

STUDY DATE	FISH TYPE	NO OF SAMPLES	SAMPLE TYPE	MERCURY PPM	GROUP #
1988	AVERAGE	17 - TOTAL		0.34 AVERAGE	# 1

Prentiss, Mike

From: test[SMTP:bwoolever@fab.net]
Sent: Friday, May 09, 1997 9:05 PM
To: Rep.Duff
Subject: SB 3

Dear Representative Duff,

I am a constituent of Representative Wood (my name is Bryan Woolever : 513 Center Ave., Janesville, WI 563545) I would like to voice my support for SB 3, the mining moratorium bill. He tells me that the bill will probably not reach a vote even though the senate passed it overwhelmingly 29 to 3. He says the Republicans will not allow SB 3 to come to a vote in the assembly. Apparently it is in the committee you are chair of and is expected to emerge for a vote as a different bill. As I understand from others, this new bill will favor the mining companies more.

I do not understand how a bill can win so overwhelmingly in the senate within a legislature that is fairly evenly split proportionately between parties only to be foiled by a few republicans. This is not democracy when it does not honor the majority who obviously favor SB 3. Please tell me why and who is involved in the disenbowelment of a perfectly common-sense bill like SB 3.

I hope that you will honor the wishes of the people of Wisconsin and not foreign corporations like Crandon Mining Co. Let's not fall victim, as so many places before us have, to sulfide mining. Let's wait until it is a proven ecologically safe in reality before we take the word of the unproven THEORIES that companies like Exxon purport to be true. The minerals will still be here and worth a lot more money when it is proven by actual safe operation and closures of similar mines.

Please let me know how the committee work is going on this issue.

Thank you, Bryan Woolever.