

Minnesota Attorney General: Administrative Rules Proceedings

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STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

PCA-80-004-AK

ORDER ADOPTING RULES

The above-entitled matter came on for hearing on March 31, 1980, in the Board Room of the Minnesota Pollution Control Agency, Roseville, Minnesota, before Allan W. Klein, Hearing Examiner.

The hearing continued at the following times and places:

April 1-4, 1980, commencing at 9 a.m., Minnesota Pollution Control Agency, Roseville;

April 7, 1980, commencing at 7 p.m., and April 8, 1980, commencing at 9 a.m., Southwest State College, Marshall;

April 8, 1980, commencing at 7 p.m., and April 9, 1980, commencing at 9 a.m., City Admnistration Building, Detroit Lakes;

April 9, 1980, commencing at 7 p.m., and April 10, 1980, commencing at 9 a.m., County Services Building, Brainerd;

April 10, 1980, commencing at 7 p.m., and April 11, 1980, commencing at 9 a.m., St. Louis County Courthouse, Duluth;

April 14, 1980, commencing at 1 p.m. and 7 p.m., Friedel Building, Rochester;

April 28, 1980, commencing at 9:30 a.m., Minnesota Pollution Control Agency, Roseville;

April 29, 1980, commencing at 9 a.m., Holiday Inn, Roseville; and

April 30, May 1, 2 and 7, 1980, commencing at 9 a.m., Minnesota Polution Control Agency, Roseville.

Proper notice, required by Minn. Stat. § 15.0412 (1978), was served upon all persons, associations and interested groups registered with the Secretary of State for that purpose.

After affording interested persons an opportunity to present written and oral data, statements and arguments to Hearing Examiner Allan Klein, after considering the Report of the Hearing Examiner, after considering all of the evidence adduced upon the records, files and proceedings herein, and applicable statutory standards or criteria, and having confirmed the need for the above captioned rules:

NOW, THEREFORE, IT IS ORDERED that the water quality rules, WPC 14, 15, 24 and 25 are hereby adopted as published at 4 State Register 1330, et seq. (1980) with the following changes:

6 MCAR § 4.8014

B. Water use classifications - all intrastate waters of the state. Based on considerations of best usage in the interest of the public and in conformance with the requirements of the applicable statutes, the intrastate waters of the state shall be grouped into one or more of the following classes:

. . .

7. Limited resource value waters. This class includes surface waters of the state which are of limited value as a water resource and where water quantities are intermittent or less than one (1) cubic feet per second at the once in ten year, seven day low flow as defined in section C.7. These waters

shall be protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the water. It is the intent of the agency that very few waters be classified as limited resource value waters. In conjunction with those factors listed in Minn. Stat. § 115.44, subd. 2 and subd. 3 (1978), the agency, in cooperation and agreement with the Department of Natural Resources with respect to determination of fisheries values and potential, shall determine the extent to which the waters of the state demonstrate the conditions set forth below:

. . .

C. General standards applicable to all intrastate waters of the state.

. . .

5. Means for expediting mixing and dispersion of sewage, industrial waste, or other waste effluents in the receiving intrastate waters are to be provided so far as practicable when deemed necessary by the agency to maintain the quality of the receiving intrastate waters in accordance with applicable standards. Mixing zones be established by the agency on an individual basis, with primary consideration being given to the following guidelines: (a) mixing zones in rivers should permit an acceptable passageway for the movement of fish; (b) the total mixing zone or zones at any transect of the stream should contain no more than 25% of the crossectional area and/or volume

of flow of the stream, and should not extend over more than 50% of the width; (c) mixing zone characteristics shall not be lethal to aquatic organisms; (d) for contaminants other than heat, the 96 hour median tolerance limit for indigenous fish and fish food organisms should not be exceeded at any point in the mixing zone; (e) mixing zones should be as small as possible, and not intersect spawning or nursery areas, migratory routes, water intakes, nor mouths of rivers; and (f) overlapping of mixing zones should be minimized and measures taken to prevent adverse synergistic effects. This provision shall also apply in cases where a Class 7 water is tributary to a Class 2 water.

6. . . .

Substance or Characteristic	Limit Concentration or Range*
5-Day Biochemical Oxygen Demand*	25 milligra~~n~~ms per liter
Fecal coliform group organisms***	200 organisms per 100 milliliters ~~(May 1 through October 31)~~

. . .

***Disinfection of wastewater effluents to reduce the levels of fecal coliform organisms to the stated value is required from ~~May~~ March 1 through October 31 (Class 2 waters) and May 1 through October 31 (Class 7 waters) except that where the effluent is discharged 25 miles or less upstream of a water intake supplying a potable water system, the reduction to the stated

value is required year around. The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of five samples, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. The application of the fecal coliform group organism standards shall be limited to sewage or other effluents containing admixtures of sewage and shall not apply to industrial wastes except where the presence of sewage, fecal coliform organisms or viable pathogenic organisms in such wastes is known or reasonably certain. Analysis of samples for fecal coliform group organisms by either the multiple tube fermentation or the membrane filter techniques is acceptable.

. . .

8. . . .

Item*	Limits**

. . .

**If a discharger is required by the Director to implement a pretreatment program for the control of toxic pollutants from industrial contributors and the program has not yet been implemented, the discharger's effluent limitation for total suspended solids shall be 5 mg/l until such time as the program has been implemented.

. . .

16. Limited resource value waters.

a. For point source discharges to surface waters classified as limited resource value waters pursuant to

section B.7. of this rule and 6 MCAR § 4.8024 the agency shall require treatment facilities which will provide effluents conforming to the following limitations:*

Substance or Characteristic	Limiting Concentration
5-day Biochemical oxygen Demand	15 milligrams per liter**

. . .

d. The classification of surface waters as limited resource value waters pursuant to section B.7. of this rule and 6 MCAR § 4.8024 shall not supercede, alter or replace the classification and designation of such waters as public waters pursuant to applicable provisions and requirements of Minn. Stat. ch. 105.

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*All effluent limitations specified in section C.6. shall also be applicable to dischargers to Class 7 waters, provided that unspecified toxic or corrosive substances shall be limited to the extent necessary to protect the designated uses of the receiving water or affected downstream waters.

** As measured by the arithmetic mean of all samples taken during any calendar month.

17. No person who is in compliance with the terms and conditions of its permit issued pursuant to 6 MCAR § 4.8036 shall be deemed in violation of any water quality standard in this rule for which a corresponding effluent limitation is established in the permit. However, exceedances of the water

quality standards in a receiving water shall constitute grounds for modification of a permit(s) for any discharger(s) to the receiving water who is (are) causing or contributing to the exceedances. 6 MCAR § 4.8036 shall govern the modification of any such permit.

18. For the purpose of establishing effluent limitations to meet the ammonia water quality standard, a statistic which estimates the central value (such as the mean or median) for ambient pH and temperature of the receiving water for the critical months shall be used.

D. . . .

2. Fisheries and recreation.

Class A. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).***
. . .	
Cyanides (CN)	~~0.2~~ 0.02 milligrams per liter
. . .	
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31).

. . .

Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter

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* . . .

$$f = \left[\frac{1}{10^{(pK_a - pH)} + 1} \right] \times 100$$

. . .

** Applies to conditions of continuous exposure where continuous exposure refers to chlorinated effluents which are discharged for more than a total of two hours in any 24 hour period.

*** This dissolved oxygen standard shall be construed to require compliance with the standard 50 percent of the days at which the flow of the receiving water is equal to the lowest weekly flow with a once in ten year recurrence interval (7Q10).

Class B. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).***
. . .	
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed ~~400~~ 2000 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31).
. . .	
Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter

. . .

*** See dissolved oxygen footnote for Class 2A waters.

Class C. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).***
. . .	
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed ~~400~~ 2000 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31).
. . .	
Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter

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. . .

*** See dissolved oxygen footnote for Class 2A waters.

7. Limited resource value waters. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	At concentrations which will avoid odors, or putrid conditions in the receiving water ~~provided that the concentration shall be not less than 1 milligram per liter at all times (instantaneous mini-mum concentration in order to avoid these conditions unless lower concentrations can be shown to avoid these conditions on a site specific basis~~ or at concentrations at not less than 1 mg/l (daily average) provided that measurable concentrations are present at all times.
. . .	

6 MCAR §4.8015

B. Water use classifications - all interstate waters of the state. Based on considerations of best usage in the interest of the public and in conformance with the requirements of the applicable statutes, the interstate waters of the state shall be grouped into one or more of the following classes:

. . .

7. Limited resource value waters. This class includes surface waters of the state which are of limited value as a water resource and where water quantities are intermittent or less than one (1) cubic feet per second at the once in ten year, seven day low flow as defined in section C.7. These waters

shall be protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the water. It is the intent of the agency that very few waters be classified as limited resource value waters. In conjunction with those factors listed in Minn. Stat. § 115.44, subd. 2 and subd. 3 (1978), the agency, in cooperation and agreement with the Department of Natural Resources with respect to determination of fisheries values and potential, shall determine the extent to which the waters of the state demonstrate the conditions set forth below:

. . .

C. General standards applicable to all interstate waters of the state.

. . .

5. Means for expediting mixing and dispersion of sewage, industrial waste, or other waste effluents in the receiving interstate waters are to be provided so far as practicable when deemed necessary by the agency to maintain the quality of the receiving interstate waters in accordance with applicable standards. Mixing zones be established by the agency on an individual basis, with primary consideration being given to the following guidelines: (a) mixing zones in rivers should permit an acceptable passageway for the movement of fish; (b) the total mixing zone or zones at any transect of the stream should contain no more than 25% of the crossectional area and/or volume

of flow of the stream, and should not extend over more than 50% of the width; (c) mixing zone characteristics shall not be lethal to aquatic organisms; (d) for contaminants other than heat, the 96 hour median tolerance limit for indigenous fish and fish food organisms should not be exceeded at any point in the mixing zone; (e) mixing zones should be as small as possible, and not intersect spawning or nursery areas, migratory routes, water intakes, nor mouths of rivers; and (f) overlapping of mixing zones should be minimized and measures taken to prevent adverse synergistic effects. This provision shall also apply in cases where a Class 7 water is tributary to a Class 2 water.

6. . . .

Substance or Characteristic	Limit Concentration or Range*
5-Day Biochemical Oxygen Demand*	25 milligr~~a~~ms per liter
Fecal coliform group organisms***	200 organisms per 100 milliliters ~~(May 1 through October 31)~~

. . .

***Disinfection of wastewater effluents to reduce the levels of fecal coliform organisms to the stated value is required from ~~May~~ March 1 through October 31 (Class 2 waters) and May 1 through October 31 (Class 7 waters) except that where the effluent is discharged 25 miles or less upstream of a water intake supplying a potable water system, the reduction to the stated

value is required year around. The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of five samples, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. The application of the fecal coliform group organism standards shall be limited to sewage or other effluents containing admixtures of sewage and shall not apply to industrial wastes except where the presence of sewage, fecal coliform organisms or viable pathogenic organisms in such wastes is known or reasonably certain. Analysis of samples for fecal coliform group organisms by either the multiple tube fermentation or the membrane filter techniques is acceptable.

. . .

8. . . .

Item*	Limits**

. . .

**If a discharger is required by the Director to implement a pretreatment program for the control of toxic pollutants from industrial contributors and the program has not yet been implemented, the discharger's effluent limitation for total suspended solids shall be 5 mg/l until such time as the program has been implemented.

. . .

16. Limited resource value waters.

a. For point source discharges to surface waters classified as limited resource value waters pursuant to

section B.7. of this rule and 6 MCAR § 4.8025 the agency shall require treatment facilities which will provide effluents conforming to the following limitations:*

Substance or Characteristic	Limiting Concentration
5-day Biochemical oxygen Demand	15 milligrams per liter**

. . .

d. The classification of surface waters as limited resource value waters pursuant to section B.7. of this rule and 6 MCAR § 4.8025 shall not supercede, alter or replace the classification and designation of such waters as public waters pursuant to applicable provisions and requirements of Minn. Stat. ch. 105.

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*All effluent limitations specified in section C.6. shall also be applicable to dischargers to Class 7 waters, provided that unspecified toxic or corrosive substances shall be limited to the extent necessary to protect the designated uses of the receiving water or affected downstream waters.

** As measured by the arithmetic mean of all samples taken during any calendar month.

17. No person who is in compliance with the terms and conditions of its permit issued pursuant to 6 MCAR § 4.8036 shall be deemed in violation of any water quality standard in this rule for which a corresponding effluent limitation is

established in the permit. However, exceedances of the water quality standards in a receiving water shall constitute grounds for modification of a permit(s) for any discharger(s) to the receiving water who is (are) causing or contributing to the exceedances. 6 MCAR § 4.8036 shall govern the modification of any such permit.

18. For the purpose of establishing effluent limitations to meet the ammonia water quality standard, a statistic which estimates the central value (such as the mean or median) for ambient pH and temperature of the receiving water for the critical months shall be used.

D. . . .

2. Fisheries and recreation.

Class A. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).***
. . .	
Cyanides (CN)	~~0.2~~ 0.02 milligrams per liter
. . .	

Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31).

. . .

Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter

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* . . .

$$f = \left[\frac{1}{10^{pK_a - pH} + 1} \right] \text{ x 100}$$

$$f = \left[\frac{1}{10^{(pK_a - pH)} + 1} \right] \text{ x 100}$$

where:

. . .

~~pK_a = 0.0901821 + 2729.92, dissociation constant for ammonia~~
~~T~~

$pK_a = 0.0901821 + \frac{2729.92}{T}$, dissociation constant for ammonia

. . .

**Applies to conditions of continuous exposure where continuous exposure refers to chlorinated effluents which are discharged for more than a total of two hours in any 24 hour period.

*** This dissolved oxygen standard shall be construed to require compliance with the standard 50 percent of the days at which the flow of the receiving water is equal to the lowest weekly flow with a once in ten year recurrence interval (7Q10).

Class B. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen****	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).*****
. . .	
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed ~~400~~ 2000 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31).
. . .	
Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter

---

. . .

**** This standard shall apply to all interstate waters of the state except for the reach of the Mississippi River from the outlet of the Metro wastewater treatment works in St. Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River the standard shall be not less than 5 milligrams per liter from April 1 through November 30, and not less than 4 milligrams per liter at other times.

***** See dissolved oxygen footnote for Class 2A waters.

Class C. . . .

Substance or Characteristic	Limit or Range
Dissolved Oxygen****	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).*****
. . .	
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed ~~400~~ 2000 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31).
. . .	
Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter

. . .

**** This standard shall apply to all interstate waters of the state except for the reach of the Mississippi River from the outlet of the Metro wastewater treatment works in St. Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River the standard shall be not less than 5 milligrams per liter from April 1 through November 30, and not less than 4 milligrams per liter at other times.

***** See dissolved oxygen footnote for Class 2A waters.

7. Limited resource value waters. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	At concentrations which will avoid odors, or putrid conditions in the receiving water ~~provided that the concentration shall be not less than 1 milligram per liter at all times (instantaneous minimum concentration in order to avoid these conditions unless lower concentrations can be shown to avoid these conditions on a site specific basis~~ or at concentrations at not less than 1 mg/l (daily average) provided that measurable concentrations are present at all times.
. . .	

6 MCAR §4.8024

Supplement 1

Class 7 Limited Resource Value Waters

. . . .

~~Bad~~ Red River of the North Basin

. . . .

~~Unnamed~~ Ditch County Ditch No. 63 T116 R30 S19,20,21,28,33
Near Hutchinson
West Lynn Co-op Creamery

. . . .

Mississippi-Sauk Rivers Watershed (No. 19)

. . . .

*Two Rivers, South Branch T125 R31 S~~13~~,21,22,23,~~24~~
Albany

. . . .

Unnamed Creek T121 R23 S30
Albertville T121 R24 S25,~~26~~,36

. . . .

Unnamed Creek T121 R31 S2
Eden Valley T122 R31 S35
~~Rumland~~ Ruhland Feeds

. . . .

Yellow Medicine River Watershed (No. 24)

. . . .

*Boiling Springs Creek T113 R38 S5,8
(County Ditch No. 1 ~~&~~ B) T114 R37 S19,30
Echo T114 R38 S25,26,27,32,33,34

. . . .

County Ditch No. 12 (Rice Creek) Belview	T113 R36 S~~4~~,~~5~~,7,8,18,19 T113 R37 S15,21,22,23,24

. . . .

Des Moines River Watershed (No. 38)

*Okabena Creek	T102 R38 S6,7
Worthington	T102 R39 S7,8,9,10,11,12, 14,15,16,18
Worthington Lagoons and Allied Mills	T102 R40 S13 ~~T103 R38 S21,22,28,29,30,31~~

. . . .

Rock River Watershed (No. 39)

~~Judicial Ditch No. 6~~	~~T101 R40 S2~~
~~Worthington~~	~~T102 R40 S25,26,35~~
~~Campbell Soup Co.~~	

. . . .

Unnamed Ditch	T109 R45 S17,19,20
Lake Benton	

IT IS FURTHER ORDERED that WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31, and 32 are repealed in their entirety.

IT IS FURTHER ORDERED that this matter is remanded to the Hearing Examiner to reopen the hearing for the receipt of additional evidence relating to a dissolved oxygen standard for the reach of the Mississippi River from the outlet of the Metro wastewater treatment works (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815) and for further consideration of an appropriate dissolved oxygen standard for that reach of the Mississippi River. The Board directs the staff and the Hearing Examiner to schedule this hearing on remand to coincide with any public hearing or other proceedings on a NPDES permit or other authorization for a discharge to the waters of the State from the MWCC Metro Plant.

Dated this 28th day of October, 1980.

MINNESOTA POLLUTION CONTROL AGENCY

ART ENGELBRECHT
Chairman

TERRY HOFFMAN
Executive Director

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

PCA-80-004-AK

SUPPLEMENTAL ORDER ADOPTING RULES

On October 28, 1980, the Agency adopted certain amendments to WPC 14, 15, 24, and 25. The Agency has now determined to make minor corrections in the rules as adopted.

NOW, THEREFORE, IT IS ORDERED that the water quality rules, WPC 14, 15, 24, and 25, as adopted on October 28, 1980, are hereby amended in the following respects:

6 MCAR § 4.8014

C. General standards applicable to all intrastate waters of the state.

. . .

16. Limited resource value waters.

. . .

b. The agency ~~may~~ shall allow treatment works to be constructed and/or operated to produce effluents to limited resource value waters at levels up to those stated in C.6. of this rule provided that it is demonstrated that the water quality standards for limited resource value waters will be maintained during all periods of discharge from the treatment facilities.

D. Specific standards of quality and purity for designated classes of intrastate waters of the state. . . .

. . .

2. Fisheries and recreation.

Class A. . . .

Substance or Characteristic	Limit or Range
Dissolved Oxygen	Not less than ~~5~~ 7 milligrams per liter at all times (instantaneous minimum concentration).***

6 MCAR § 4.8015

C. General standards applicable to all interstate waters of the state.

. . .

16. Limited resource value waters.

. . .

b. The agency ~~may~~ shall allow treatment works to be constructed and/or operated to produce effluents to limited resource value waters at levels up to those stated in C.6. of this rule provided that it is demonstrated that the water quality standards for limited resource value waters will be maintained during all periods of discharge from the treatment facilities.

D. Specific standards of quality and purity for designated classes of interstate waters of the state. . . .

. . .

2. Fisheries and recreation.

Class A. . . .

Substance or Characteristic	Limit or Range
Dissolved Oxygen	Not less than ~~5~~ 7 milligrams per liter at all times (instantaneous minimum concentration).***

6 MCAR § 4.8024

. . .

B. All known present uses and/or uses which may be made of the waters in the future are included. In addition to the classification given below, all of the waters named herein are also included in classes ~~2C,~~ 3C, 4A and B, 5, and 6, where such uses are possible~~, provided that waters specifically classified as limited resource value shall only be included in the following additional classes: 3C, 4A, 4B, 5 and 6~~. All other waters not specifically named herein shall be classified as 2B, 2C 3B, 3C, 4A and B, 5 and 6. Where specific criteria are common to two or more listed classes the more restrictive value shall apply. For additional information refer to 6 MCAR § 4.8014, Criteria for the classification of the intrastate waters of the state and the establishment of standards of quality and purity.

Dated this 16th day of December, 1980.

MINNESOTA POLLUTION CONTROL AGENCY

ART ENGELBRECHT
Chairman

TERRY HOFFMAN
Executive Director

6 MCAR §4.8015 CRITERIA FOR THE CLASSIFICATION OF THE INTERSTATE WATERS OF THE STATE AND THE ESTABLISHMENT OF STANDARDS OF QUALITY AND PURITY

The official policy and purpose of the State of Minnesota in regard to these matters is set forth in the Minnesota Water Pollution Control Statutes as amended by Minnesota Laws 1973, Chapter 374:

Sec. 115.42. It is the policy of the state to provide for the prevention, control and abatement of pollution of all waters of the state, so far as feasible and practical, in furtherance of conservation of such waters and protection of the public health and in furtherance of the development of the economic welfare of the state.

... It is the purpose of Laws 1963, Chapter 874, to safeguard the waters of the state from pollution by: (a) preventing any new pollution; and (b) abating pollution existing when Laws 1963, Chapter 874, become effective, under a program consistent with the declaration of policy above stated.

Sec. 115.44 Subd. 2. In order to attain the objectives of Laws 1963, Chapter 874, the Agency after proper study, and after conducting public hearing upon due notice, shall as soon as practicable, group the designated waters of the state into classes and adopt classifications and standards of purity and quality therefor. Such classification shall be made in accordance with considerations of best usage in the interest of the public and with regard to the considerations mentioned in subdivision 3 hereof.

Sec. 115.44 Subd. 8. If the Agency finds in order to comply with the federal water pollution control act or any other federal law or rule or regulation promulgated thereunder that it is impracticable to comply with the requirements of this section in classifying waters or adopting standards or in meeting any of the requirements thereof, compliance with the requirements of such section are waived to the extent necessary to enable the agency to comply with federal laws and rules and regulations promulgated thereunder. The agency may classify waters and adopt criteria and standards in such form and based upon such evidence as it may deem necessary and sufficient for the purposes of meeting requirements of such federal laws, notwithstanding any provisions in chapter 115 or any other state law to the contrary. In the event waters are classified and criteria and standards are adopted to meet the requirements of federal law, the agency shall thereafter proceed to otherwise comply with the provisions of this section which were waived as rapidly as is practicable. This authority shall extend to proceedings pending before the agency on May 20, 1973.

... Wherever advisable and practicable the agency may establish standards for effluent or disposal systems discharging into waters of the state regardless of whether such waters are or are not classified.

Sec. 115.03 Subd. 5. Notwithstanding any other provisions prescribed in or pursuant to chapter 115 and, with respect to the pollution of waters of the state, in chapter 116, or otherwise, the agency shall have the authority to perform any and all acts minimally necessary including, but not limited to, the establishment and application of standards, procedures, regulations,

orders, variances, stipulation agreements, schedules of compliance, and permit conditions, consistent with and, therefore, not less stringent than the provisions of the Federal Water Pollution Control Act, as amended, applicable to the participation by the state of Minnesota in the National Pollutant Discharge Elimination System (NPDES)...

In accordance with this declaration of policy and legislative intent, and under the powers delegated to the Agency, the following interstate water use classifications and corresponding standards of quality and purity are hereby adopted by the Pollution Control Agency as provided by law.

A. Introduction

1. Scope. The following classification, criteria and standards of water and effluent quality and purity as hereby adopted and established shall apply to all interstate waters of the state, notwithstanding any other interstate water quality or effluent regulations of general or specific application, except that any more stringent water quality or effluent standards or prohibitions in the other applicable regulations are preserved.

2. Severability. All provisions of this rule shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not void any other lettered paragraph or subparagraph, subdivision or any part thereof.

3. Definitions. The terms "waters of the state" for the purposes of this rule shall be construed to mean interstate waters as herein below defined, and the terms "sewage," "industrial wastes," and "other wastes," as well as any other terms for which definitions are given in the Water Pollution Control Statutes, as used herein have the meanings ascribed to them in Minnesota Statutes, Sections 115.01 and 115.41, with the exception that disposal systems or treatment works operated under permit of the Agency shall not be construed to be "waters of the state" as the term is used herein. Interstate waters are defined as all rivers, lakes, and other waters that flow across or form part of state boundaries. Other terms and abbreviations used herein which are not specifically defined in applicable federal or state law shall be construed in conformance with the context, and in relation to the applicable section of the statutes pertaining to the matter at hand, and current professional usage.

4. Uses of the Interstate Waters. The classifications are listed separately in accordance with the need for interstate water quality protection, considerations of best use in the interest of the public and other considerations, as indicated in Minnesota Statutes, Section 115.44. The classifications should not be construed to be an order of priority, nor considered to be exclusive or prohibitory of other beneficial uses.

5. Determination of Compliance. In making tests or analyses of the interstate waters of the state, sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered necessary by the Agency from the viewpoint of adequately reflecting the condition of the interstate waters, the composition of the effluents, and the effects of the pollutants upon the specified uses. Reasonable allowance will be made for dilution of the effluents, which are in compliance with Section C.6., following discharge into waters of the State. The Agency by allowing dilution may consider the effect on all uses of the interstate waters into which the effluents are discharged. The extent of dilution allowed regarding any specific discharge shall not violate the applicable water quality standards. The samples shall be preserved and analyzed in accordance with procedures given in the 1971 edition of Standard Methods for the Examination of Water and Waste-Water, by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, and any revisions or amendments thereto. The Agency may accept or may develop other methods, procedures, guidelines or criteria for measuring, analyzing and collecting samples.

6. Natural Interstate Water Quality. The interstate waters may, in a state of nature, have some characteristics or properties approaching or exceeding the limits specified in the water quality standards. The standards shall be construed as limiting the addition of pollutants of human activity to those of natural origin, where such be present, so that in total the specified limiting concentrations will not be exceeded in the interstate waters by reason of such controllable additions. Where the background level of the natural origin is

reasonably definable and normally is higher than the specified standard the natural level may be used as the standard for controlling the addition of pollutants of human activity which are comparable in nature and significance with those of natural origin. The natural background level may be used instead of the specified water quality standard as a maximum limit of the addition of pollutants, in those instances where the natural level is lower than the specified standard and reasonable justification exists for preserving the quality to that found in a state of nature.

In the adoption of standards for individual interstate waters, the Agency will be guided by the standards set forth herein but may make reasonable modifications of the same on the basis of evidence brought forth at a public hearing if it is shown to be desirable and in the public interest to do so in order to encourage the best use of the interstate waters or the lands bordering such interstate waters.

7. Non-Degradation. Waters which are of quality better than the established standards shall be maintained at high quality unless a determination is made by the Agency that a change is justifiable as a result of necessary economic or social development and will not preclude appropriate beneficial present and future uses of the waters. Any project or development which would constitute a source of pollution to waters of the state shall be required to provide the best practicable control technology currently available not later than July 1, 1977 and the best available technology economically achievable not later than July 1, 1983, and any other applicable treatment standards as defined by and in accordance with the requirements of the Federal Water Pollution Control Act, 33 U.S.C. 1251 et. seq., as amended, in

order to maintain high water quality and keep water pollution at a minimum. In implementing this policy, the Administrator of the U. S. Environmental Protection Agency will be provided with such information as he requires to discharge his responsibilities under the Federal Water Pollution Control Act, as amended.

8. Variance from Standards. In any case where, upon application of the responsible person or persons, the Agency finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship, that disposal of the sewage, industrial waste or other waste is necessary for the public health, safety or welfare; and that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances; the Agency in its discretion may grant a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these classifications and standards and the intent of the applicable state and federal laws. The U. S. Environmental Protection Agency will be advised of any permits which may be issued under this clause together with information as to the need therefor.

B. Water Use Classifications - All Interstate Waters of the State.

Based on considerations of best usage in the interest of the public and in conformance with the requirements of the applicable statutes, the interstate waters of the state shall be grouped into one or more of the following classes:

1. Domestic Consumption. (To include all interstate waters which are or may be used as a source of supply for drinking, culinary or food processing use or other domestic purposes, and for which quality control is or may be necessary to protect the public health, safety or welfare).

2. Fisheries and Recreation. (To include all interstate waters which are or may be used for fishing, fish culture, bathing or any other recreational purposes, and for which quality control is or may be necessary to protect aquatic or terrestrial life, or the public health, safety or welfare.)

3. Industrial Comsumption. (To include all interstate waters which are or may be used as a source of supply for industrial process or cooling water, or any other industrial or commercial purposes, and for which quality control is or may be necessary to protect the public health, safety or welfare.)

4. Agriculture and Wildlife. (To include all interstate waters which are or may be used for any agriculture purposes, including stock watering and irrigation, or by waterfowl or other wildlife, and for which quality control is or may be necessary to protect terrestrial life or the public health, safety or welfare.)

5. Navigation and Waste Disposal. (To include all interstate waters which are or may be used for any form of water transportation or navigation, disposal of sewage, industrial waste or other waste effluents, or fire prevention, and for which quality control is or may be necessary to protect the public health, safety or welfare.)

6. Other Uses. (To include interstate waters which are or may serve the above listed uses or any other beneficial uses not listed herein, including without limitation any such uses in this or any other state, province, or nation of any interstate waters flowing through or originating in this state, and for which quality control is or may be necessary for the above declared purposes, or to conform with the requirements of the legally constituted state or national agencies having jurisdiction over such interstate waters, or any other considerations the Agency may deem proper.)

7. Limited Resource Value Waters

This class includes surface waters of the state which are of limited value as a water resource and where water quantities are intermittent or less than one (1) cubic feet per second at the once in ten year, seven day low flow as defined in section C.7. These waters shall be protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the water. It is the intent of the Agency that very few waters be classified as Limited Resource Value Waters. In conjunction with those factors listed in Minn. Stat. § 115.44, subd. 2 and subd. 3 (1978), the Agency, in cooperation and agreement with the Department of Natural Resources with respect to determination of fisheries values and potential, shall determine the extent to which the waters of the state demonstrate the conditions set forth below:

a. The existing fishery and potential fishery are severely limited by natural conditions as exhibited by poor water quality characteristics, lack of habitat, or lack of water; or

b. The quality of the resource has been significantly altered by human activity and the effect is essentially irreversible; and

c. There are limited recreational opportunities (such as fishing, swimming, wading or boating) in and on the water resource.

Conditions "a" and "c" or "b" and "c" must be established by the Agency water assessment procedure before the waters can be classified as Limited Resource Value Waters.

C. General Standards Applicable to All Interstate Waters of the State.

1. No untreated sewage shall be discharged into any interstate waters of the state. Effective disinfection of any discharges, including combined flows of sewage and storm water, will be required where necessary to protect the specified uses of the interstate waters.

2. No sewage, industrial waste or other wastes shall be discharged into any interstate waters of the state so as to cause any nuisance conditions, such as the presence of significant amounts of floating solids, scum, oil slicks, excessive suspended solids, material discoloration, obnoxious odors, gas ebullition, deleterious sludge deposits, undesirable slimes or fungus growths, or other offensive or harmful effects.

3. Existing discharges of inadequately treated sewage, industrial waste or other wastes shall be abated, treated or controlled so as to comply with the applicable standards. Separation of sanitary sewage from natural runoff may be required where necessary to ensure continuous effective treatment of sewage.

4. The highest levels of water quality, including, but not limited to, dissolved oxygen, which are attainable in the interstate waters by continuous operation at their maximum capability of all primary and secondary units of treatment works or their equivalent discharging effluents into the interstate waters shall be maintained in order to enhance conditions for the specified uses.

5. Means for expediting mixing and dispersion of sewage, industrial waste, or other waste effluents in the receiving interstate waters are to be provided so far as practicable when deemed necessary by the Agency to maintain the quality of the receiving interstate waters in accordance with applicable standards. Mixing zones be established by the Agency on an

individual basis, with primary consideration being given to the following guidelines: (a) mixing zones in rivers shall permit an acceptable passageway for the movement of fish; (b) the total mixing zone or zones at any transect of the stream should contain no more than 25% of the crossectional area and/or volume of flow of the stream, and should not extend over more than 50% of the width; (c) mixing zone characteristics shall not be lethal to aquatic organisms; (d) for contaminants other than heat, the 96 hour median tolerance limit for indigenous fish and fish food organisms should not be exceeded at any point in the mixing zone; (e) mixing zones should be as small as possible, and not intersect spawning or nursery areas, migratory routes, water intakes, nor mouths of rivers; and (f) overlapping of mixing zones should be minimized and measures taken to prevent adverse synergistic effects. This provision shall also apply in cases where a Class 7 water is tributary to a Class 2 water.

6. It is herein established that the Agency shall require secondary treatment as a minimum for all municipal sewage and biodegradable industrial or other wastes to meet the adopted water quality standards. A comparable high degree of treatment or its equivalent also shall be required of all nonbiodegradable industrial or other wastes unless the discharger can demonstrate to the Agency that a lesser degree of treatment or control will provide for water quality enhancement commensurate with present and proposed future water uses and a variance is granted under the provisions of the variance clause. Secondary treatment facilities are

defined as works which will provide effective sedimentation, biochemical oxidation, and disinfection, or the equivalent, including effluents conforming to the following:

Substance or Characteristic	Limiting Concentration or Range*
5-Day Biochemical Oxygen Demand*	25 milligrams per liter
Fecal coliform group organisms ***	200 organisms per 100 milliliters
Total suspended solids*	30 milligrams per liter
Oil	Essentially free of visible oil
Phosphorus**	1 milligram per liter
Turbidity	25
pH range	6.5 - 8.5
Unspecified toxic or corrosive substances	None at levels acutely toxic to humans or other animals or plant life, or directly damaging to real property.

The requirements of this rule and specifically the requirement of secondary treatment as stated above shall be in addition to any requirement imposed on a discharge by the Clean Water Act, 33 U.S.C. 1251 et seq., and its implementing regulations. In the case of a conflict between the requirements of this rule and the requirements of the Clean Water Act or its implementing regulations, the more stringent requirement shall be controlling.

* The arithmetic mean for concentrations of 5-day biochemical oxygen demand and total suspended solids shall not exceed the stated values in a period of 30 consecutive days and 45 milligrams per liter in a period of 7 consecutive days.

** Where the discharge of effluent is directly to or affects a lake or reservoir. Removal of nutrients from all wastes shall be provided to the fullest practicable extent wherever sources of nutrients are considered to be actually or potentially detrimental to preservation or enhancement of the designated water uses.

*** Disinfection of wastewater effluents to reduce the levels of fecal coliform organisms to the stated value is required from March 1 through October 31 (Class 2 waters) and May 1 through October 31 (Class 7 waters) except that where the effluent is discharged 25 miles or less upstream of a water intake supplying a potable water system, the reduction to the stated value is required year around. The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of five samples, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. The application of the fecal coliform group organism standards shall be limited to sewage or other effluents containing admixtures of sewage and shall not apply to industrial wastes except where the presence of sewage, fecal coliform organisms or viable pathogenic organisms in such wastes is known or reasonably certain. Analysis of samples for fecal coliform group organisms by either the multiple tube fermentation on the membrane filter techniques is acceptable.

7. Dischargers of sewage, industrial waste or other waste effluents shall be controlled so that the water quality standards will be maintained at all stream flows which are equal to or exceeded by 90 percent of the

seven consecutive daily average flows of record (the lowest weekly flow with a once in ten year recurrence interval) for the critical month(s). The period of record for determining the specific flow for the stated recurrence interval, where records are available, shall include at least the most recent ten years of record, including flow records obtained after establishment of flow regulation devices, if any. Such calculations shall not be applied to lakes and their embayments which have no comparable flow recurrence interval. Where stream flow records are not available, the flow may be estimated on the basis of available information on the watershed characteristics, precipitation, run-off and other relevant data.

Allowance shall not be made in the design of treatment works for low stream flow augmentation unless such flow augmentation of minimum flow is dependable and controlled under applicable laws or regulations.

8. In any instance where it is evident that the minimal treatment specified in Section C.6. and dispersion are not effective in preventing pollution, or if at the applicable flows it is evident that the specified stream flow is inadequate to protect the specified water quality standards, the specific standards may be interpreted as effluent standards for control purposes. In addition, the following effluent standards may be applied without any allowance for dilution where stream flow or other factors are such as to prevent adequate dilution, or where it is otherwise necessary to protect the interstate waters for the stated uses:

Item*	Limits**
5-day biochemical oxygen demand	5 milligrams per liter

This section shall not apply to discharges to surface waters classified as limited resource value waters pursuant to section B.7. of this rule and 6 MCAR § 4.8025.

* The concentrations specified in section C.6 of this rule may be used in lieu thereof if the discharge of effluent is restricted to the spring flush or other high runoff periods when the stream flow rate above the discharge point is sufficiently greater than the effluent flow rate to insure that the applicable water quality standards are met during such discharge period. If treatment works are designed and constructed to meet the specified limits given above for a continuous discharge, at the discretion of the Agency the operation of such works may allow for the effluent quality to vary between the limits specified above and in section C.6. provided the water quality standards and all other requirements of the Agency and the U. S. Environmental Protection Agency are being met. Such variability of operation must be based on adequate monitoring of the treatment works and the effluent and receiving waters as specified by the Agency.

** if a discharger is required by the Director to implement a pretreatment program for the control of toxic pollutants from industrial contributors and the program has not yet been implemented, the discharger's effluent limitation for total suspended solids shall be 5 mg/1 until such time as the program has been implemented.

9. Notwithstanding the provisions of section C.8. and C.16. of this rule, the Agency may require a specific discharger to meet effluent limitations which are necessary to maintain the water quality of the receiving water at the standards of quality and purity established by this rule. Any effluent limitation determined to be necessary under this section shall only be required of a discharger after the discharger has been given notice of the specific effluent limitations and an opportunity for public hearing provided that compliance with the requirements of 6 MCAR § 4.8036H. regarding notice of National Pollutant Discharge Elimination System and State Disposal System permits shall satisfy the notice and opportunity for hearing requirements of this section.

10. After providing an opportunity for public hearing the Agency shall accept effective loss prevention and/or water conservation measures or process changes or other waste control measures or arrangements if it finds that such measures, changes or arrangements are equivalent to the waste treatment measures required for compliance with applicable effluent and/or water quality standards or load allocations.

11. All sources of sewage, industrial waste, or other waste which do not at present have a valid operation and discharge permit, or an application for the same pending before the Agency, shall apply for the same within 30 days of the adoption of this regulation, or the Agency may abate the source forthwith. The provisions of section C.6. relating to effluent quality standards, and the other provisions of this regulation, are applicable to existing sewage, industrial waste or other waste disposal facilities and the effluent discharged therefrom. Nothing herein shall be construed to prevent the Agency subsequently from modifying any existing permits so as to conform with federal requirements and the requirements of this regulation.

12. Liquid substances which are not commonly considered to be sewage or industrial wastes but which could constitute a pollution hazard shall be stored in accordance with 6 MCAR§4.8004, and any revisions or amendments thereto. Other wastes as defined by law or other substances which could constitute a pollution hazard shall not be deposited in any manner such that the same may be likely to gain entry into any interstate waters of the state in excess of or contrary to any of the standards herein adopted, or cause pollution as defined by law.

13. No sewage, industrial waste or other wastes shall be discharged into the interstate waters of the state in such quantity or in such manner alone or in combination with other substances as to cause pollution thereof as defined by law. In any case where the interstate waters of the state into which sewage, industrial wastes or other waste effluents discharge are assigned different standards than the interstate waters into which such receiving interstate waters flow, the standards applicable to the interstate waters into which such sewage, industrial waste or other wastes discharged shall be supplemented by the following:

The quality of any waters of the state receiving sewage, industrial waste or other waste effluents shall be such that no violation of the standards of any interstate waters of the state in any other class shall occur by reason of the discharge of such sewage, industrial waste or other waste effluents.

14. Questions concerning the permissible levels, or changes in the same, of a substance, or combination of substances, of undefined toxicity to fish or other biota shall be resolved in accordance with the latest methods recommended by the U. S. Environmental Protection Agency. The Agency shall consider the recommendations of the Quality Criteria for Water, USEPA 1976, in making determinations under this section. Toxic substances shall not

exceed 1/10 of the 96 hour median tolerance limit (TLM) as a water quality standard except that other application factors shall be used when justified on the basis of available scientific evidence.

15. All persons operating or responsible for sewage, industrial waste or other waste disposal systems which are adjacent to or which discharge effluents to these waters or to tributaries which affect the same, shall submit regularly every month a report to the Agency on the operation of the disposal system, the effluent flow, and the characteristics of the effluents and receiving waters. Sufficient data on measurements, observations, sampling and analyses, and other pertinent information shall be furnished as may be required by the Agency to adequately evaluate the condition of the disposal system, the effluent, and the waters receiving or affected by the effluent.

16. Limited resource value waters.

a. For point source discharges to surface waters classified as limited resource value waters pursuant to section B.7. of this rule and 6 MCAR § 4.8025 the Agency shall require treatment facilities which will provide effluents conforming to the following limitations:*

Substance or Characteristic	Limiting Concentration
5-Day Biochemical Oxygen Demand	15 milligrams per liter**

b. The Agency shall allow treatment works to be constructed and/or operated to produce effluents to limited resource value waters at levels up to those stated in section C.6. of this rule provided that it is demonstrated that the water quality standards for limited resource value waters will be maintained during all periods of discharge from the treatment facilities.

c. Notwithstanding the effluent limitations established by this section the quality of limited resource value waters shall not be such as to allow a violation of applicable water quality standards in waters of the state which are connected to or affected by water classified as limited resource value waters.

d. The classification of surface waters as limited resource value waters pursuant to section B.7. of this rule and 6 MCAR § 4.8025 shall not supercede, alter or replace the classification and designation of such waters as public waters pursuant to applicable provisions and requirements of Minn. Stat. ch. 105.

* All effluent limitations specified in section C.6. shall also be applicable to dischargers to Class 7 waters, provided that unspecified toxic or corrosive substances shall be limited to the extent necessary to protect the designated uses of the receiving water or affected downstream waters.

** As measured by the arithmetic mean of all samples taken during any calendar month.

17. No person who is in compliance with the terms and conditions of its permit issued pursuant to 6 MCAR § 4.8036 shall be deemed in violation of any water quality standard in this rule for which a corresponding effluent limitation is established in the permit. However, exceedances of the water quality standards in a receiving water shall constitute grounds for modification of a permit(s) for any discharger(s) to the receiving water who is (are) causing or contributing to the exceedances. 6 MCAR § 4.8036 shall govern the modification of any such permit.

18. For the purpose of establishing limitations to meet the ammonia water quality standard, a statistic which estimates the central value (such as the mean or median) for ambient pH and temperature of the receiving water for the critical months shall be used.

D. Specific Standards of Quality and Purity for Designated Classes of Interstate Waters of the State. The following standards shall prescribe the qualities or properties of the interstate waters of the state which are necessary for the designated public use or benefit and which, if the limiting conditions given are exceeded, shall be considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental or injurious with respect to such designated uses or established classes of the interstate waters:

1. Domestic Consumption

Class A The quality of this class of the interstate waters of the state shall be such that without treatment of any kind the raw waters will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U. S. Department of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to underground waters with a high degree of natural protection. The basic requirements are given below:

Substance or Characteristic	Limit or Range
Total coliform organisms	1 most probable number per 100 milliliters

Turbidity value	5
Color value	15
Threshold odor number	3
Methylene blue active substance (MBAS)	0.5 milligram per liter
Arsenic (As)	0.01 milligram per liter
Chlorides (C1)	250 milligrams per liter
Copper (Cu)	1 milligram per liter
Carbon Chloroform extract	0.2 milligram per liter
Cyanides (CN)	0.01 milligram per liter
Fluorides (F)	1.5 milligrams per liter
Iron (Fe)	0.3 milligram per liter
Manganese (Mn)	0.05 milligram per liter
Nitrates (NO_3)	45 milligrams per liter
Phenol	0.001 milligram per liter
Sulfates (SO_4)	250 milligrams per liter
Total dissolved solids	500 milligrams per liter
Zinc (Zn)	5 milligrams per liter
Barium (Ba)	1 milligram per liter
Cadmium (Cd)	0.01 milligram per liter
Chromium (Hexavalent, Cr)	0.05 milligram per liter
Lead (Pb)	0.05 milligram per liter
Selenium (Se)	0.01 milligram per liter
Silver (Ag)	0.05 milligram per liter
Radioactive material	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled

environment as prescribed by the appropriate authority having control over their use.

Class B The quality of this class of the interstate waters of the state shall be such that with approved disinfection, such as simple chlorination or its equivalent, the treated water will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U. S. Department of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to surface and underground waters with a moderately high degree of natural protection. The physical and chemical standards quoted above for Class A interstate waters shall also supply to these interstate waters in the untreated state.

Class C The quality of this class of the interstate waters of the state shall be such that with treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment processes, the treated water will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U. S. Department of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to surface waters, and ground waters in aquifers not considered to afford adequate protection against contamination from surface or other sources of pollution. Such aquifers normally would include fractured and channeled limestone, unprotected impervious hard rock where

interstate water is obtained from mechanical fractures, joints, etc., with surface connections, and coarse gravels subjected to surface water infiltration. The physical and chemical standards quoted above for Class A interstate waters shall also apply to these interstate waters in the untreated state, except as listed below:

Substance of Characteristic	Limit or Range
Turbidity value	25

Class D The quality of this class of the interstate waters of the state shall be such that after treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, plus additional pre, post, or intermediate stages of treatment, or other equivalent treatment processes, the treated water will meet in all respects the recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U. S. Department of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to surface waters, and ground waters in aquifers not considered to afford adequate protection against contamination from surface or other sources of pollution. Such aquifers normally would include fractured and channeled limestone, unprotected impervious hard rock where water is obtained from mechanical fractures, joints, etc., with surface connections, and coarse gravels subjected to

surface water infiltration. The concentrations or ranges given below shall not be exceeded in the raw waters before treatment:

Substance or Characteristic	Limit or Range
Arsenic (As)	0.05 milligram per liter
Barium (Ba)	1 milligram per liter
Cadmium (Cd)	0.01 milligram per liter
Chromium (Cr + 6)	0.05 milligram per liter
Cyanide (CN)	0.2 milligram per liter
Fluoride (F)	1.5 milligrams per liter
Lead (Pb)	0.05 milligram per liter
Selenium (Se)	0.01 milligram per liter
Silver (Ag)	0.05 milligram per liter
Radioactive Material	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.

In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged into or permitted by any person to gain access to any interstate waters classified for domestic consumption so as to cause any material undesirable increase in the taste, hardness, temperature, toxicity, corrosiveness or nutrient content, or in any other manner to impair the natural quality or value of the interstate waters for use as a source of drinking water.

2. Fisheries and Recreation

Class A The quality of this class of the interstate waters of the state shall be such as to permit the propagation and maintenance of warm or cold water sport or commercial fishes and be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable. Limiting concentrations or ranges of substances or characteristics which should not be exceeded in the interstate waters are given below:

Substance or Characteristic	Limit or Range
Dissolved oxygen	Not less than 7 milligrams per liter at all times (instantaneous minimum concentration)***
Temperature	No material increase
Ammonia (N)*	0.016 milligram per liter (un-ionized as N)
Chlorides (C1)	50 milligrams per liter
Chromium (Cr)	0.02 milligram per liter
Copper (Cu)	0.01 milligram per liter or not greater than 1/10 the 96 hour TLM value.
Cyanides (CN)	0.02 milligrams per liter
Oil	0.5 milligram per liter
pH value	6.5 - 8.5
Phenols	0.01 milligram per liter and none that could impart odor or taste to fish flesh or other fresh-water edible products

	such as crayfish, clams, prawns and like creatures. Where it seems probable that a discharge may result in tainting of edible aquatic products, bioassays and taste panels will be required to determine whether tainting is likely or present.
Turbidity value	10
Color value	30
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between March 1 and October 31)
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.

Total Residual Chlorine** 0.005 milligrams per liter

* The percent un-ionized ammonia can be calculated for any temperature and pH by using the following formula taken from Thurston, R. V., R. C. Russo, and K. Emerson, 1974. Aqueous ammonia equilibrium calculations. Technical Report Number 74-1, Fisheries Bioassay Laboratory, Montana State University, Bozeman, MT. 18 p.

$$f = \frac{1}{10^{(pk_a - pH)} + 1} \times 100$$

where:

f = the percent of total ammonia in the un-ionized state

$pk_a = 0.0901821 + \frac{2729.92}{T}$, dissociation constant for ammonia

T = temperature in degrees Kelvin (273.16° Kelvin = 0° Celsius)

** Applies to conditions of continuous exposure, where continuous exposure refers to chlorinated effluents which are discharged for more than a total of two hours in any 24 hour period.

*** This dissolved oxygen standard shall be construed to require compliance with the standard 50 percent of the days at which the flow of the receiving water is equal to the lowest weekly flow with a once in ten year recurrence interval (7Q10).

Class B The quality of this class of the interstate waters of the state shall be such as to permit the propagation and maintenance of cool or warm water sport or commercial fishes and be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable.

Limiting concentrations or ranges of substances or characteristics which should not be exceeded in the interstate waters are given below:

Substance or Characteristic	Limit or Range
Dissolved oxygen****	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration)*****
Temperature*	5°F above natural in streams and 3°F above natural in lakes, based on monthly average of the maximum daily temperature, except in no case shall it exceed the daily average temperature of 86°F.
Ammonia (N)**	0.04 milligram per liter (un-ionized as N)
Chromium (Cr)	0.05 milligram per liter
Copper (Cu)	0.01 milligram per liter or not greater than 1/10 the 96 hour TLM value.
Cyanides (CN)	0.02 milligram per liter
Oil	0.5 milligram per liter
pH value	6.5 - 9.0

Phenols	0.01 milligram per liter and none that could impart odor or taste to fish flesh or other fresh-water edible products such as crayfish, clams, prawns and like creatures. Where it seems probable that a discharge may result in tainting of edible aquatic products, bioassays and taste panels will be required to determine whether tainting is likely or present.
Turbidity value	25
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 2000 organisms per 100 milliliters. (Applies only

	between March 1 and October 31).
Radioactive materials	Not to exceed the lowest concentration permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Total Residual Chlorine***	0.005 milligrams per liter

* The following temperature criteria will be applicable for the Mississippi River from Lake Itasca to the outlet of the Metro Wastewater Treatment Works in St. Paul in addition to or superseding the above. The weekly average temperature shall not exceed the following temperatures during the specified months:

January	40°F	July	83°F
February	40°F	August	83°F
March	48°F	September	78°F
April	60°F	October	68°F
May	72°F	November	50°F
June	78°F	December	40°F

For the Mississippi River from Lock and Dam No. 2 at Hastings to the Iowa Border, the weekly average temperature shall not exceed the following temperatures during the specified months:

January	40°F	July	84°F
February	40°F	August	84°F
March	54°F	September	82°F
April	65°F	October	73°F
May	75°F	November	58°F
June	84°F	December	48°F

** See ammonia footnote for Class 2A waters.

*** See chlorine footnote for Class 2A waters.

**** This standard shall apply to all interstate waters of the state except for the reach of the Mississippi River from the outlet of the Metro wastewater treatment works in St. Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River the standard shall be not less than 5 milligrams per liter from April 1 through November 30, and not less than 4 milligrams per liter at other times.

***** See dissolved oxygen footnote for Class 2A waters.

Class C The quality of this class of the interstate waters of the state shall be such as to permit the propagation and maintenance of rough fish or species commonly inhabiting waters of the vicinity under natural conditions, and be suitable for boating and other forms of aquatic recreation for which the

interstate waters may be usable. Limiting concentrations or ranges of substances or characteristics which should not be exceeded in the interstate waters are given below:

Substance or Characteristic	Limit or Range
Dissolved oxygen****	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration)*****
Temperature*	5°F above natural in streams and 3°F above natural in lakes, based on monthly average of the maximum daily temperature except in no case shall it exceed the daily average temperature of 90°F.
Ammonia (N)**	0.04 milligram per liter (un-ionized as N)
Chromium (Cr)	0.05 milligram per liter
Copper (Cu)	0.01 milligram per liter or not greater than 1/10 the 96 hour TLM value.
Cyanides (CN)	0.02 milligram per liter
Oil	10 milligrams per liter, and none in such quantities as to (1) produce a visible color film on the surface, (2) impart an oil odor to water or an oil

	taste to fish and edible invertebrates, (3) coat the banks and bottom of the watercourse or taint any of the associated biota, or (4) become effective toxicants according to the criteria recommended.
pH value	6.5 - 9.0
Phenols	0.1 milligram per liter and none that could impart odor or taste to fish flesh or other fresh-water edible products such as crayfish, clams, prawns and like creatures. Where it seems probable that a discharge may result in tainting of edible aquatic products, bioassays and taste panels will be required to determine whether tainting is likely or present.
Turbidity value	25
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than

	10% of all samples taken during any calendar month individually exceed 2000 organisms per 100 milliliters. (Applies only between March 1 and October 31).
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Total Residual Chlorine***	0.005 milligrams per liter

* The following temperature criteria will be applicable for the Mississippi River from the outlet of the Metro Wastewater Treatment Works in St. Paul to Lock and Dam No. 2 at Hastings in addition to or superseding the above. The weekly average temperature shall not exceed the following temperatures during the specified months.

January	40°F	July	83°F
February	40°F	August	83°F
March	48°F	September	78°F
April	60°F	October	68°F
May	72°F	November	50°F
June	78°F	December	40°F

** See Ammonia footnote for Class 2A waters.

*** See chlorine footnote for Class 2A waters.

**** This standard shall apply to all interstate waters of the state except for the reach of the Mississippi River from outlet of the Metro wastewater treatment works in St. Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River the standard shall be not less than 5 milligrams per liter from April 1 through November 30, and not less than 4 milligrams per liter at other times.

***** See dissolved oxygen footnote for Class 2A waters.

For all classes of fisheries and recreation waters, the aquatic habitat, which includes the interstate waters and stream bed, shall not be degraded in any material manner, there shall be no material increase in undesirable slime growths or aquatic plants, including algae, nor shall there be any significant increase in harmful pesticide or other residues in the waters, sediments and aquatic flora and fauna; the normal fishery and lower aquatic biota upon which it is dependent and the use thereof shall not be seriously impaired or endangered, the species composition shall not be altered materially, and the propagation or migration of the fish and other biota normally present shall not be prevented or hindered by the discharge of any sewage, industrial waste or other waste effluents to the interstate waters.

No sewage, industrial waste or other wastes shall be discharged into any of the interstate waters of this category so as to cause any material change in any other substances or characteristics which may impair the quality of the interstate waters or the aquatic biota of any of the above listed classes or in any manner render them unsuitable or objectionable

for fishing, fish culture or recreational uses. Additional selective limits or changes in the discharge bases may be imposed on the basis of local needs.

3. Industrial Consumption

Class A The quality of this class of the interstate waters of the state shall be such as to permit their use without chemical treatment, except softening for ground water, for most industrial purposes, except food processing and related uses, for which a high quality of water is required. The quality shall be generally comparable to Class B waters for domestic consumption, except for the following:

Substance or Characteristic	Limit or Range
Chlorides (C1)	50 milligrams per liter
Hardness	50 milligrams per liter
pH value	6.5 - 8.5

Class B The quality of this class of the interstate waters of the state shall be such as to permit their use for general industrial purposes, except for food processing, with only a moderate degree of treatment. The quality shall be generally comparable to Class D interstate waters used for domestic consumption, except the following:

Substance or Characteristic	Limit or Range
Chlorides (C1)	100 milligrams per liter
Hardness	250 milligrams per liter
pH value	6.0 - 9.0

Class C The quality of this class of the interstate waters of the state shall be such as to permit their use for industrial cooling and materials transport without a high degree of treatment being necessary to avoid severe fouling, corrosion, scaling, or other unsatisfactory conditions. The following shall not be exceeded in the interstate waters:

Substance or Characteristic	Limit or Range
Chlorides (C1)	250 milligrams per liter
Hardness	500 milligrams per liter
pH value	6.0 - 9.0

Additional selective limits may be imposed for any specific interstate waters as needed.

In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged into or permitted by any person to gain access to any interstate waters classified for industrial purposes so as to cause any material impairment of their use as a source of industrial water supply.

4. Agriculture and Wildlife

Class A The quality of this class of the interstate waters of the state shall be such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the waters or area, including truck garden crops. The following concentrations or limits shall be used as a guide in determining the suitability of the waters for such

uses, together with the recommendations contained in Handbook 60 published by the Salinity Laboratory of the U. S. Department of Agriculture, and any revisions, amendments or supplements thereto:

Substance or Characteristic	Limit or Range
Bicarbonates (HCO_3)	5 milliequivalents per liter
Boron (B)	0.5 milligram per liter
pH value	6.0 - 8.5
Specific conductance	1,000 micromhos per centimeter
Total dissolved salts	700 milligrams per liter
Sodium (Na)	60% of total cations as milliequivalents per liter
Sulfates (SO_4)	10 milligrams per liter, applicable to water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels.
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.

Class B The quality of this class of the interstate waters of the state shall be such as to permit their use by livestock and wildlife without

inhibition or injurious effects. The limits or concentrations of substances or characteristics given below shall not be exceeded in the interstate waters:

Substance or Characteristic	Limit or Range
pH value	6.0 - 9.0
Total salinity	1,000 milligrams per liter
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Unspecified toxic substances	None at levels harmful either directly or indirectly.

Additional selective limits may be imposed for any specific interstate waters as needed.

5. Navigation and Waste Disposal. The quality of this class of the interstate waters of the state shall be such as to be suitable for esthetic enjoyment of scenery and to avoid any interference with navigation or damaging effects on property. The following limits or concentrations shall not be exceeded in the interstate waters:

Substance or Characteristic	Limit or Range
pH value	6.0 - 9.0
Hydrogen sulfide	0.02 milligrams per liter

Additional selective limits may be imposed for any specific interstate waters as needed.

6. Other Uses. The uses to be protected in this class may be under other jurisdictions and in other areas to which the interstate waters of the state are tributary, and may include any or all of the uses listed in the foregoing categories, plus any other possible beneficial uses. The Agency therefore reserves the right to impose any standards necessary for the protection of this class, consistent with legal limitations.

7. Limited Resource Value Waters

The quality of this class of interstate waters shall be such as to protect aesthetic qualities, secondary body contact use, and ground water for use as a potable water supply. The limits or concentrations of substances or characteristics given below shall not be exceeded in the interstate waters:

Substance or Characteristic	Limit or Range
Fecal Coliform Organisms	1,000 organisms per 100 milliliters* (Applies only between May 1 and October 31)
pH	6.0 - 9.0
Dissolved Oxygen	At concentrations which will avoid odors, or putrid conditions in the receiving water or at concentrations at not less than 1 mg/l (daily average) provided that measurable concentrations are present at all times.

Unspecified Substances	Unspecified substances shall not be allowed in such quantities or concentrations that will impair the specified uses.

* The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of 5 samples, nor shall more than 10% of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters.

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6 MCAR § 4.8024 Classifications of Intrastate Waters of Minnesota.

The following rule establishing classifications pertains to all intrastate surface waters of the state.

A. All intrastate waters are included, although some minor watercourses such as unnamed streams or interconnecting waters and/or intermittently flowing creeks, ditches, or draws, etc., are not listed individually herein. All intrastate waters are classified herein and this classification shall supersede the classification of the intrastate waters given in WPC 1.

B. All known present uses and/or uses which may be made of the waters in the future are included. In addition to the classification given below, all of the waters named herein are also included in Classes 3C, 4A, and B, 5 and 6, where such uses are possible, provided that waters specifically classified as limited resource value shall only be included in the following additional classes: 3C, 4A, 4B, 5 and 6. All other waters not specifically named herein shall be classified as 2B, 2C, 3B, 3C, 4A and B, 5 and 6. Where specific criteria are common to two or more listed classes the more restrictive value shall apply. For additional information refer to 6 MCAR § 4.8014, Criteria for the Classification of the Intrastate Waters of the State and the Establishment of Standards of Quality and Purity.

C. Interstate waters are defined in the Federal Water Pollution Control Act, as amended (33 U.S.C. 466 et seq.), Section 13(e) thereof as including all rivers, lakes and other waters that flow across or form a part of state boundaries. All of the remaining designated waters of the state which do not meet the definition of interstate waters given above are to be construed herein as constituting intrastate waters.

D. The provisions of this rule shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not make void any other lettered paragraph, subparagraph, subdivision or any other part thereof.

E. Supplement 1 to this rule lists intrastate waters that are classified as limited resource value waters, Class 7. For those intrastate waters identified with an asterisk (*), the revised classification in Supplement 1 shall supersede any previous classification; provided, however that the limited resource value classification shall apply only to that portion of the water specifically described in Supplement 1.

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WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
LAKE SUPERIOR BASIN		
St. Louis River Watershed (No. 1)		
Streams		
Anderson Creek	(S. 14, 15, 22, 26, 27, T. 46, R. 17)	1D, 2A, 3B
Artichoke Creek	(S. 7, 8, 18, T. 52, R. 17)	1B, 2A, 3B
Athlenius Creek	(S. 9, 10, T. 53, R. 14)	1B, 2A, 3B
First (Mud) Creek	(S. 9, 10, 11, T. 58, R. 15; S. 24, 31, T. 59, R. 15)	2A, 3D
Banner Brook	(S. 16, 21, T. 58, R. 13)	1B, 2A, 3B
Beartrap Creek	(S. 15, 16, 21, 22, 25, 26, 27, 28, T. 51, R. 17)	1D, 2A, 3B
Beaver River	(T. 52, R. 16, 17)	2B
Berry Creek	(S. 8, 10, 11, 12, 15, 21, 28, 29, 31, T. 56, R. 12; S. 6, 7, 18, 19, T. 55, R. 12; S. 12, 13, T. 55, R. 13)	1B, 2A, 3B
Blackhoof River	(S. 6, 7, 8, 10, 14, 15, 18, 19, 20, 22, 16, 17, 25, 26, 27, T. 47, R. 17; S. 30, 31, T. 48, R. 17; S. 26, 30, T. 47, R. 16)	1B, 2A, 3B
Boulder Creek	(T. 53, 54, R. 14)	2C
Bug Creek	(T. 54, R. 15, 16)	2B
Canutrup Creek	(S. 19, T. 46, R. 17)	2B
Carey Creek	(S. 28, 33, T. 53, R. 14)	1B, 2A, 3B
Chalberg Creek	(S. 1, 2, 3, 10, T. 51, R. 17)	1B, 2A, 3B
Clear Creek	(S. 6, T. 46, R. 16; S. 1, 10, 11, 12, 15, 16, 21, T. 46, R. 17)	1B, 2A, 3B

WATERS	LEGAL DESCRIPTION OF AREA INVOLVED OR LOCATION	CLASSIFICATION
Cloquet River	(T. 51, 52, 53, 54, 55, R. 12, 13, 14, 15, 16, 17, 18)	2B
Little Cloquet River	(T. 53, 54, R. 12, 13)	2B
Cloquet River, West Branch	(T. 55, 56, R. 12, 13)	2B
Coolidge Creek	(S. 19, 20, 30, T. 55, R. 14; S. 25, 35, 36, T. 55, R. 15)	1B, 2A, 3B
Cranberry Creek	(T. 58, R. 13)	2C
Crystal Creek	(S. 6, T. 48, R. 16; S. 1, T. 48, R. 17; S. 36, T. 49, R. 17)	1B, 2A, 3D
Deer Creek	(S. 19, 20, 29, T. 47, R. 16; S. 12, 13, 24, T. 47, R. 17)	1B, 2A, 3B
Dutchess Slough Creek	(S. 9, 10, 15, 14, 15, 24, T. 50, R. 17)	1B, 2A, 3B
Elbow Creek	(T. 56, 57, R. 18)	2B
Embarrass River	(T. 59, 60, R. 13, 14, 15)	2B
Elm Creek	(S. 1, 2, T. 49, R. 16; S. 35, T. 50, R. 16)	1B, 2A, 3B
Floodwood River	(T. 52, 53, 54, R. 20, 21)	2B
Hay Creek	(S. 27, 28, 29, 32, 33, T. 50, R. 16; S. 3, 4, 9, 10, 15, T. 49, R. 16)	1B, 2A, 3B
Hellwig Creek	(S. 13, 14, 24, 25, 35, T. 52, R. 17; S. 3, 10, 14, 15, 23, 26, T. 52, R. 17)	1B, 2A, 3B
Hornby Junction Creek (called Whiteface River)	(S. 5, 6, 7, T. 55, R. 13; S. 28, 32, 33, T. 56, R. 13)	1B, 2A, 3B
Humphrey Creek	(S. 23, 26, 27, 33, 34, T. 54, R. 14)	1B, 2A, 3D
Indian Creek	(S. 23, 26, 27, 34, T. 56, R. 12; S. 3, T. 55, R. 12)	1B, 2A, 3B
Jenkins Creek	(T. 54, R. 17, 18)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Joe Martins Creek	(S. 4, 7, 8, T. 50, R. 16; S. 12, T. 50, R. 17)	1B, 2A, 3B
Johnson Creek	(S. 13, 14, T. 50, R. 17)	1B, 2A, 3B
Keene Creek	(S. 1, 12, 14, T. 49, R. 15; S. 25, 26, T. 50, R. 15)	1B, 2A, 3B
Kehtel Creek	(S. 8, 17, 18, 19, T. 51, R. 15)	1B, 2A, 3B
Kenross Creek	(S. 7, 18, 19, 30, 31, T. 50, R. 16)	1B, 2A, 3B
Kingsbury Creek	(S. 4, 10, 13, 14, T. 49, R. 15)	1B, 2A, 3B
Langley River	(T. 56, R. 10, 11)	2B
Little Langley River	(T. 55, 56, R. 10, 11)	2B
McCarthy Creek	(S. 1, 12, 13, T. 53, R. 12)	1B, 2A, 3B
Midway River (except trout waters)	(T. 48, 49, 50, R. 15, 16)	2B
Midway River	(S. 1, 12, 13, 14, 15, 22, T. 49, R. 16; S. 21, 22, 28, 32, 33, T. 50, R. 15, S. 5, 8, T. 49, R. 15)	1B, 2A, 3B
Mirbat Creek	(T. 50, R. 20)	2B
Mission Creek	(T. 48, 49, R. 15)	1B, 2A, 3B
Mud Creek	(S. 20, 21, 22, 29, 30, T. 54, R. 12)	1B, 2A, 3B
Mud Creek, Little	(S. 12, 14, 22, 23, 27, T. 57, R. 11)	1B, 2A, 3B
Mud Hen Creek	(T. 56, R. 17)	2B
Murphy Creek	(S. 23, 24, 27, 33, T. 57, R. 11; S. 4, 8, 18, 19, T. 56, R. 11)	1B, 2A, 3B
Nemadji Creek (North Fork Creek)	(S. 9, 8, 7, 18, T. 46, R. 17; S. 12, 13, 14, 15, 16, 21, T. 46, R. 18)	1B, 2A, 3B
Net River, Big	(S. 17, 20, 21, 29, T. 46, R. 16)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Net River, Little	(S. 9, 10, 15, 22, 26, 27, 34, 35, T. 46, R. 16)	1B, 2A, 3B
O'Rourke Creek	(S. 17, 19, 20, 30, T. 56, R. 19; S. 25, 26, 35, T. 56, R. 20)	1B, 2A, 3B
Otter Creek, Big (except trout waters)	(T. 48, 49, R. 16, 17, 18)	2B
Otter Creek, Big	(S. 7, 8, T. 48, R. 16; S. 19, 20, 26, 27, 28, 29, 30, 32, 33, 34, 35; T. 49, R. 16; S. 25, 26, 27; T. 49, R. 15; S. 7, 10, 11, 12, T. 48, R. 17)	1B, 2A, 3B
Little Otter Creek	(S. 5, 6, 7, 15, 16, 17, 18, T. 48, R. 17; S. 11, 12, 13, 14, T. 48, R. 18)	1B, 2A, 3B
Paleface River	(T. 54, 55, R. 16, 17)	2B
Pancake Creek	(S. 28, 29, 32, 33, T. 54, R. 22)	1D, 2A, 3B
Partridge River	(T. 58, R. 13, 14, 15)	2B
Pine River	(S. 4, 8, 9, 17, 20, T. 50, R. 16; S. 23, 24, 26, T. 50, R. 17)	1B, 2A, 3B
Railroad Creek	(S. 1, 11, 12, 14, T. 50, R. 17)	1B, 2A, 3B
Rocky Run	(S. 12, 13, 24, 25, T. 50, R. 16; S. 30, 31, T. 50, R. 15)	1B, 2A, 3B
Ryan Creek	(S. 14, 15, 22, T. 55, R. 14)	1B, 2A, 3B
Sand Creek	(T. 54, R. 19, 20)	2B
Sargent Creek	(S. 4, 5, 9, 10, T. 48, R. 15; S. 28, 29, 32, T. 49, R. 15)	1B, 2A, 3B
Silver Creek, Big	(S. 11, 12, 14, 23, 24, 25, T. 46, R. 17)	1B, 2A, 3B
Silver Creek, Little	(S. 15, 16, 21, T. 48, R. 16)	1D, 2A, 3B
Simian Creek	(T. 50, R. 17, 18)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Skunk Creek	(S. 34, T. 47, R. 17)	2B
Spider Creek	(S. 19, 20, 21, 27, 28, 29, 30, T. 52, R. 16; S. 9, 10, 14, 15, 24, T. 52, R. 17)	1B, 2A, 3B
Spring Creek	(S. 1, 2, T. 54, R. 12)	1B, 2A, 3B
Squaw Creek	(S. 9, 16, 17, 18, 19, 20, 21, T. 49, R. 17)	1B, 2A, 3B
Stephens (Stevens)(Second) Creek	(S. 2, T. 58, R. 15; S. 19, 23, 24, 26, 35, T. 59, R. 15)	2A, 3B
Stewart Creek	(S. 21, 26, 27, T. 49, R. 15)	1B, 2A, 3B
Stewart River Tributary	(T. 55, R. 11, 12)	1B, 2A, 3B
Stone River	(T. 55, R. 19, 20)	2B
Stony Brook	(S. 10, 11, T. 46, R. 17)	2B
Sullivans Creek	(S. 1, 2, 10, 11, 15, T. 56, R. 11; S. 19, T. 57, R. 10; S. 24, 25, 36, T. 57, R. 11)	1B, 2A, 3B
Swan Creek, Little	(S. 17, 19, 20, 30, T. 56, R. 19; S. 25, 26, 35, T. 56, R. 20)	1B, 2A, 3B
East Swan River	(T. 55, 56, 57, 58, R. 19, 20)	2B
Swan River (East Swan River)	(S. 18, 19, 30, 31, T. 55, R. 19; S. 1, 2, 12, 13, 14, T. 55, R. 20; S. 11, 14, 23, 26, 27, T. 56, R. 20)	1B, 2A, 3B
West Swan River	(T. 55, R. 20, 21)	2C
Tower Creek	(S. 8, 9, 17, 18, 19, T. 55, R. 14; S. 13, 24, 25, 26, T. 55, R. 15)	1B, 2A, 3B
Trappers Creek	(T. 56, R. 11)	2C
East Two Rivers	(T. 57, 58, R. 18)	2B
West Two Rivers	(T. 57, 58, R. 18, 19)	2B
Ugstad Creek	(S. 21, 22, 27, 28, T. 51, R. 15)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Ushkabwaldka River	(T. 53, R. 15, 16)	2B
Water Hen Creek	(T. 56, R. 15, 16)	2B
South Branch Water Hen Creek	(T. 56, 57, R. 14, 15)	2B
Whiteface River	(T. 52, 53, 54, R. 17, 18, 19)	2B
Little Whiteface River	(T. 53, R. 18, 19)	2B
Wolf Creek	(T. 56, R. 12, 13)	2B
Wyman Creek	(S. 3, 4, T. 56, R. 14; S. 13, 14, 23, 24, 26, 27, 34, T. 59, R. 14)	1B, 2A, 3B
Lakes		
Cedar Lake	(S. 20, T. 53, R. 15)	1B, 2A, 3B
Clear Lake	(S. 29, T. 52, R. 15)	1B, 2A, 3B
Colby Lake	(T. 56, R. 14)	1B, 2B, 3B
Corona Lake	(S. 11, 12, T. 48, R. 19)	1B, 2A, 3B
Cub Lake	(S. 2, T. 61, R. 14)	1B, 2A, 3B
Little Elbow Lake	(S. 9, T. 57, R. 18)	1B, 2A, 3B
Loaine (Sand) Lake	(S. 16, 17, T. 54, R. 12)	1B, 2A, 3B
Mirror (Myers) Lake	(S. 19, 30, T. 52, R. 14)	1B, 2A, 3B
Norberg Lake	(S. 1, T. 61, R. 14)	1B, 2A, 3B
Olson Lake	(S. 23, T. 52, R. 15)	1B, 2A, 3B
St. Mary's Lake	(S. 9, 16, 17, T. 57, R. 17)	1C, 2B, 3B
Silver Lake	(S. 1, T. 57, R. 16; S. 36, T. 58, R. 16)	1B, 2A, 3B
Sullivan Lake	(S. 1, T. 56, R. 11; S. 36, T. 57, R. 11)	2B

WATERS	AREA OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Lake Superior Watershed (No. 2)		
Ada Creek	(T. 63, R. 4W)	1B, 2C
Amenda Creek	(T. 59, R. 5W)	2C
Amity Creek	(S. 5, 6, T. 50, R. 13W; S. 31, 32, T. 51, R. 13W; S. 1, T. 50, R. 14W; S. 14, 24, 25, 27, 28, 35, 36, T. 51, R. 14W)	1B, 2A, 3B
Assinika Creek	(T. 62, R. 2E)	1B, 2A, 3B
Ball Club Creek	(T. 63, R. 2W)	2B
Bally Creek	(S. 7, 8, 9, 10, T. 61, R. 1W; S. 12, T. 61, R. 2W)	1B, 2A, 3B
Baptism River (West Baptism River) (except trout waters)	(T. 56, 57, 58, 59, R. 7, 8)	2C
Baptism River (West Baptism River)	(S. 3, 4, 10, 15, T. 56, R. 7W; S. 1, 7, 9, 10, 11, 12, 16, 17, 18, 20, 27, 28, 29, 33, 34, T. 57, R. 7W; S. 1, 2, 12, 13, T. 57, R. 8W; S. 31, T. 58, R. 6W; S. 21, 22, 23, 25, 26, 29, 30, 36, T. 58, R. 7W; S. 21, 28, 33, 34, 35, T. 58, R. 8W)	1B, 2A, 3B
Barker Creek	(T. 60, R. 3W, 4W)	1B, 2A, 3B
Beaver Dam Creek	(T. 63, R. 3E)	1B, 2A, 3B
Beaver River	(S. 11, 12, T. 55, R. 8W)	1B, 2A, 3B
Beaver River (North Branch) (East Branch Beaver River)	(S. 2, T. 55, R. 8W; S. 5, 6, 8, 9, 16, 21, 22, 26, 27, 35, T. 56, R. 8W; S. 7, 18, 19, 31, T. 57, R. 8W; S. 11, 12, 13, 25, 36, T. 57, R. 9W)	1B, 2A, 3B
Beaver River (West Branch)	(S. 2, 3, 7, 8, 9, 10, 17, 18, T. 55, R. 8W; S. 1, 13, 14, T. 55, R. 9W; S. 9, 16, 22, 25, 26, 27, 36, T. 56, R. 9W)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Beaver River	(T. 57, R. 6E, 9E)	2B
Blesner Creek	(S. 29, 31, 19, 20, T. 58, R. 6E)	1B, 2A, 3B
Brule River (except trout waters)	(T. 62, 63, 64, R. 1E, 1E, 2E, 3E)	1B, 2B
Brule River (Arrowhead)	(S. 4, 5, 6, 9, 10, 15, 22, 27, T. 62, R. 3E; S. 21, 22, 23, 25, 26, 36, T. 63, R. 2E; S. 30, 31, T. 63, R. 3E)	1B, 2A, 3B
South Branch Brule River	(T. 63, R. 1E, 1E)	2B
Bud Creek	(S. 17, 20, 21, T. 55, R. 9E)	1B, 2A, 3B
Burnt Creek	(T. 62, R. 4E)	1B, 2A, 3B
Captain Jacobson Creek	(S. 1, T. 52, R. 12E)	1B, 2A, 3B
Caribou River (except trout waters)	(T. 56, 59, R. 6)	2C
Caribou River	(S. 1, 2, 11, 14, 23, 24, 25, 26, 36, T. 58, R. 6E; S. 23, 26, 35, 26, T. 59, R. 6E)	1B, 2A, 3B
Carlson Creek	(T. 62, 63, R. 4E)	1B, 2A, 3B
Cascade River	(S. 1, T. 60, R. 2E; S. 1, 12, 13, 24, 25, 26, 35, T. 61, R. 2E; S. 3, 10, 11, 14, 15, 23, 24, 25, 36, T. 62, R. 2E)	1B, 2A, 3B
Cedar Creek	(S. 13, 14, 23, 26, T. 56, R. 8E)	1B, 2A, 3B
Chester Creek	(S. 4, 9, 15, 16, 23, T. 50, R. 14W)	1B, 2A, 3B
Cliff (East) Creek	(S. 32, T. 62, R. 2E; S. 4, 5, 9, 10, T. 61, R. 2E)	1B, 2A, 3B
Colville Creek, East	(S. 32, T. 62, R. 3E; S. 25, T. 62, R. 2E)	1B, 2A, 3B
Crocidile River	(T. 64, R. 1E)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Cross River (except trout waters)	(T. 59, 60, R. 5W, 6W)	2B
Cross River	(S. 24, 25, T. 60, R. 6W; S. 4, 5, 9, 16, 17, 22, 23, 25, 27, 35, 36, T. 59, R. 5W; S. 30, 32, T. 60, R. 5W)	1B, 2A, 3B
Crow Creek	(S. 1, T. 53, R. 10W)	1B, 2A, 3B
Crown Creek	(S. 2, 3, 4, T. 57, R. 8W; S. 5, 6, 7, 19, 20, 29, 32, T. 58, R. 8W; S. 12, 13, 24, T. 58, R. 9W)	1B, 2A, 3B
Cutface Creek	(S. 34, T. 61, R. 1W)	1B, 2A, 3B
Little Devils Track River	(S. 6, 7, 8, 9, 10, T. 61, R. 1E)	1B, 2A, 3B
Devils Track River	(S. 3, 10, 11, 12, 13, T. 61, R. 1E; S. 30, 31, 32, 33, 34, T. 62, R. 1E)	1B, 2A, 3B
Dislocation Creek (Fiddle Creek)	(S. 10, 15, T. 63, R. 1W)	1B, 2A, 3B
Dragon Creek	(S. 16, 21, T. 57, R. 6W)	1B, 2A, 3B
Durfee Creek	(S. 5, 6, 8, T. 61, R. 2E; S. 25, 36, T. 62, R. 1E; S. 31, T. 62, R. 2E)	1B, 2A, 3B
Eggo Creek	(S. 2, 3, 4, 11, T. 57, R. 7W)	1B, 2A, 3B
Elbow Creek	(T. 62, 63, R. 1E)	1B, 2A, 3B
Elbow Creek, Little	(S. 2, 3, 4, 10, 11, T. 62, R. 1E)	1B, 2A, 3B
Encampment River	(S. 3, 10, 11, T. 53, R. 10W; S. 16, 20, 21, 27, 28, 34, T. 54, R. 10W)	1B, 2A, 3B
Farquhar (East Carlson Creek)	(S. 2, 11, T. 62, R. 4E; S. 27, 34, 35, T. 63, R. 4E)	1B, 2A, 3B
Fiddle Creek	(T. 63, 64, R. 1W)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Flute Reed River	(S. 1, 2, 3, 10, 13, 14, T. 62, R. 2E; S. 17, 18, 19, 20, T. 62, R. 4E; S. 36, T. 63, R. 3E)	1B, 2A, 3B
Four Mile Creek (Stumble Creek)	(S. 17, 18, 19, T. 60, R. 5W; S. 24, T. 60, R. 6W)	1B, 2A, 3B
Fox Farm Creek	(S. 19, 30, T. 62, R. 1E; S. 24, T. 62, R. 1W)	1B, 2A, 3B
Fredenberg Creek	(S. 2, 3, T. 58, R. 5W; S. 27, 34, T. 59, R. 5W)	1B, 2A, 3B
French River	(S. 7, 17, 18, T. 51, R. 12W; S. 1, 2, 12, T. 51, R. 13W; S. 8, 9, 16, 21, 27, 28, 34, 35, T. 52, R. 13W)	1B, 2A, 3B
Gauthier Creek	(S. 27, T. 62, R. 3E)	1B, 2A, 3B
Gooseberry River	(S. 4, 9, 16, 18, 19, 20, 21, 22, 27, T. 54, R. 9W; S. 4, 5, 9, 10, 11, 12, 13, T. 54, R. 10W; S. 19, 29, 30, 32, 33, T. 55, R. 9W; S. 4, 9, 16, 17, 20, 29, 30, 31, 32, T. 55, R. 10W; S. 27, 28, 33, 34, T. 56, R. 10W)	1B, 2A, 3B
Little Gooseberry River	(S. 6, T. 54, R. 10W; S. 1, T. 54, R. 11W; S. 34, 35, 36, T. 55, R. 11W)	1B, 2A, 3B
Grand Portage Creek	(S. 1, 2, T. 63, R. 5E; S. 4, 6, T. 63, R. 6E; S. 31, 32, T. 64, R. 6E)	1B, 2A, 3B
Greenwood River	(S. 2, 3, 11, 12, 13, 24, T. 63, R. 2E; S. 34, T. 64, R. 2E)	1B, 2A, 3B
Hand Creek	(T. 63, R. 2W)	2B
Hanson's Creek	(S. 3, 10, T. 62, R. 3E)	1B, 2A, 3B
Hartley Creek	(S. 10, 11, 14, 23, 26, T. 50, R. 14W)	1B, 2A, 3B
Heffelfinger (Hockamin Creek)	(S. 17, 18, 19, T. 57, R. 7W; S. 21, 22, 24, 25, 26, 27, 29, 32, T. 57, R. 8W)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Hollow Rock Creek	(S. 9, 10, 14, 15, 23, 24, 25, T. 63, R. 5E)	1B, 2A, 3B
Horn Creek	(T. 62, R. 4W)	1B, 2B
Houghtaling Creek	(S. 2, 3, 4, T. 59, R. 6W; S. 32, 33, 34, T. 60, R. 6W)	1B, 2A, 3B
Indian Camp Creek	(S. 3, 10, 11, T. 60, R. 2W)	1B, 2A, 3B
Irish Creek	(S. 9, 10, 13, 14, 15, 16, T. 63, R. 3E; S. 17, 18, T. 63, R. 4E)	1B, 2A, 3B
Java Creek	(T. 63, R. 4W)	1B, 2B
Jonvick Creek	(S. 19, T. 60, R. 2W; S. 12, 13, 24, T. 60, R. 3W)	1B, 2A, 3B
Kanducee Creek	(S. 2, T. 61, R. 3E; S. 9, 10, 13, 14, 15, 16, 23, 24, 26, 35, T. 62, R. 2E)	1B, 2A, 3B
Kelso River	(T. 63, R. 4W, 5W)	1B, 2B
Kimball Creek	(S. 3, 4, 10, T. 61, R. 2E; S. 16, 17, 18, 20, 21, 28, 29, 33, T. 62, R. 2E)	1B, 2A, 3B
Knife River (except trout waters)	(T. 52, 53, 54, R. 11W, 12W)	2B
Knife River	(S. 4, 5, 6, 8, 17, 18, 19, 31, T. 52, R. 11W; S. 3, 8, 17, 18, 20, 29, 32, 33, T. 53, R. 11W; S. 28, 32, 33, T. 54, R. 11W; S. 1, 24, 25, 36, T. 52, R. 12W; S. 2, 3, 10, 15, 16, 22, 23, 27, 28, 34, 35, 36, T. 53, R. 12W; S. 35, T. 54, R. 12W)	1B, 2A, 3B
Last Creek	(S. 16, T. 58, R. 5W)	1B, 2A, 3B
Leppanen (Leskinen) Creek	(S. 15, 21, 22, 28, T. 57, R. 7W)	1B, 2A, 3B
Lester River	(S. 4, T. 50, R. 13W; S. 7, 8, 16, 17, 21, 27, 28, 33, T. 51, R. 13W; S. 1, 2, 12, T. 51, R. 14W; S. 21, 27, 28, 34, 35, T. 52, R. 14W)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Loveaux Creek	(T. 59, R. 4W)	1B, 2A, 3B
Lindstrom Creek	(S. 30, 31, 32, 33, T. 57, R. 7W)	1B, 2A, 3B
Little Brule River	(T. 62, R. 3E)	2C
Lutsen Creek	(S. 14, 22, 23, 24, 25, 26, T. 60, R. 5W)	1B, 2A, 3B
McCarthy Creek	(S. 13, T. 53, R. 11W)	1B, 2A, 3B
Manitou River	(S. 3, 10, T. 57, R. 6W; S. 6, 7, 8, 17, 20, 21, 28, 33, 34, T. 58, R. 6W; S. 1, 7, 8, 9, 11, 12, 16, 17, T. 58, R. 7W; S. 18, 19, 21, 26, 27, 28, 35, 36, 22, T. 59, R. 7W)	1B, 2A, 3B
Little Manitou River	(S. 2, T. 57, R. 6W)	1B, 2A, 3B
Little Marais Creek	(S. 5, 8, 16, 17, 21, T. 57, R. 6W)	1B, 2A, 3B
Mark Creek	(S. 1, 2, 3, 9, 10, T. 61, R. 2W)	1B, 2A, 3B
Martin Creek	(S. 2, 3, 11, T. 58, R. 6W)	1B, 2A, 3B
Mile Post 43 Creek	(S. 2, 3, 10, 11, 14, 15, T. 54, R. 6W)	1B, 2A, 3B
Millers Creek	(S. 12, 13, T. 50, R. 15W; S. 18, 19, 20, 30, 32, T. 50, R. 14W)	1B, 2A, 3B
Mississippi Creek	(S. 1, T. 61, R. 2W; S. 32, 33, 34, 35, T. 62, R. 2W)	1B, 2A, 3B
Mons Creek	(T. 62, 63, R. 3E)	1B, 2A, 3B
Moose Creek	(S. 31, 32, 33, 34, T. 59, R. 6W)	1B, 2A, 3B
Mud Creek	(S. 16, 21, 22, T. 62, R. 1E)	1B, 2A, 3B
Murmur Creek	(T. 61, R. 2W)	1B, 2A, 3B
Myhre's Creek	(S. 23, 26, T. 62, R. 3E)	1B, 2A, 3B
Nester Creek	(S. 4, 5, 6, T. 61, R. 1W; S. 1, T. 61, R. 2W)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED, OR LOCATION	CLASSIFICATION
Nicadoo Creek	(S. 1, 12, T. 56, R. 6W; S. 6, T. 56, R. 7W; S. 36, T. 57, R. 6W)	1B, 2A, 3B
Nine Mile Creek	(S. 3, 4, 7, 9, 16, T. 58, R. 6W; S. 27, 33, 34, T. 59, R. 6W)	1B, 2A, 3B
Oliver Creek	(S. 1, T. 57, R. 6W; S. 23, 26, 35, 36, T. 58, R. 6W)	1B, 2A, 3B
Onion Creek	(S. 1, 2, 3, 4, 12, T. 59, R. 4W; S. 24, 25, 26, 35, T. 60, R. 4W)	1B, 2A, 3B
Palasade Creek	(S. 8, 16, 17, 18, 19, 20, 21, 22, T. 56, R. 7W)	1B, 2A, 3B
Pancake Creek	(T. 60, R. 4W, 5W)	1B, 2A, 3B
Pecore Creek	(T. 61, R. 4W)	1B, 2A, 3B
Pike Lake Creek	(S. 15, T. 61, R. 2W)	1B, 2A, 3B
Pine Mountain Creek	(S. 26, 27, T. 69, R. 1E)	1B, 2A, 3B
Pine River	(T. 64, R. 3E)	2B
Plouffs Creek	(S. 17, 18, T. 61, R. 4W; S. 2, 11, 13, 14, 15, T. 61, R. 5W; S. 26, 35, T. 62, R. 5W)	1B, 2A, 3B
Poplar River (except trout waters)	(T. 60, 61, R. 3W, 4W)	2B
Poplar River	(S. 3, 4, 5, 6, 9, 10, 15, 16, 20, 21, 28, 33, T. 60, R. 3W; S. 31, T. 61, R. 3W; S. 10, 14, 15, 22, 23, 25, 26, 36, T. 61, R. 4W)	1B, 2A, 3B
Portage Brook	(S. 24, 25, 26, 27, 28, 33, T. 64, R. 3E; S. 19, 20, T. 64, R. 4E)	1B, 2A, 3B
Red Rock Creek	(S. 26, T. 63, R. 5E)	1B, 2A, 3B
Reservation River	(S. 6, T. 62, R. 5E; S. 18, 19, 30, 31, T. 63, R. 5E)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Rock Creek (Stoney Creek)	(S. 15, 22, 23, 24, 25, T. 55, R. 10W)	1B, 2A, 3B
Rock Cut Creek	(S. 18, 19, 20, 21, T. 58, R. 6W; S. 13, 24, T. 58, R. 7W)	1B, 2A, 3B
Rollins Creek	(S. 5, 6, T. 59, R. 3W; S. 36, T. 60, R. 4W)	1B, 2A, 3B
Rosebush (Fall) Creek	(S. 12, 13, 24, 25, T. 61, R. 1W)	1B, 2A, 3B
Scrbill Creek	(S. 7, 18, 19, 20, 29, T. 62, R. 4W)	1B, 2A, 3B
Sawmill Creek	(S. 1, 12, 13, 23, 24, 26, 27, 34, T. 57, R. 7W)	1B, 2A, 3B
Schmidt Creek	(S. 17, T. 51, R. 12W)	1B, 2A, 3B
Schoolhouse Creek	(S. 35, 36, T. 58, R. 7W)	1B, 2A, 3B
Section 6 Creek	(S. 6, T. 54, R. 8W)	1B, 2A, 3B
Section 15 Creek	(S. 15, T. 58, R. 5W)	1B, 2A, 3B
Section 16 Creek	(S. 16, T. 58, R. 5W)	1B, 2A, 3B
Section 29 Creek	(S. 29, T. 58, R. 5W)	1B, 2A, 3B
Silver (South) Creek	(S. 6, 7, 16, 17, 18, 21, T. 53, R. 10W; S. 25, 36, T. 54, R. 11W)	1B, 2A, 3B
Silver (North) Creek	(S. 1, 12, T. 57, R. 8W; S. 6, T. 57, R. 7W; S. 31, 32, T. 58, R. 7W)	1B, 2A, 3B
Six Mile Creek	(S. 13, 14, 15, 22, 27, 28, 33, T. 60, R. 4W)	1B, 2A, 3B
Skunk Creek	(S. 13, 14, 24, T. 55, R. 10W)	1B, 2A, 3B
Split Rock River	(S. 26, 35, 36, T. 55, R. 9W; S. 1, 12, T. 54, R. 9W)	1B, 2A, 3B
East Branch Split Rock River	(S. 4, 5, 9, 10, 15, 23, 26, T. 55, R. 9W; S. 31, T. 56, R. 9W; S. 12, 13, 14, 24, 25, T. 56, R. 10W)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
West Branch Split Rock River	(S. 6, 7, 8, 16, 17, 21, 22, 26, 27, T. 55, R. 9W; S. 1, T. 55, R. 10W; S. 13, 16, 22, 26, 27, 35, 36, T. 56, R. 10W)	1B, 2A, 3B
Split Rock Branch Tributary	(S. 1, T. 54, R. 8W)	1B, 2A, 3B
Spring Creek (Honeymoon)	(S. 31, 32, 33, T. 61, R. 4W)	1B, 2A, 3B
Spruce (Deer Yard) Creek	(S. 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, T. 60, R. 2W; S. 32, T. 61, R. 2W)	1B, 2A, 3B
Little Stoney Creek	(S. 4, 9, 16, 21, T. 63, R. 2E)	1B, 2A, 3B
Stoney Creek	(S. 10, T. 63, R. 4E)	1B, 2A, 3B
Stewart River	(S. 18, 19, 20, 29, T. 53, R. 10W; S. 2, 3, 10, 11, 13, 14, 15, T. 53, R. 11W; S. 9, 10, 15, 22, 26, 27, 34, T. 54, R. 11W)	1B, 2A, 3B
Little Stewart River	(S. 19, T. 53, R. 10W)	1B, 2A, 3B
Stone Creek	(S. 2, T. 61, R. 2E)	1B, 2A, 3B
Stream No. 30	(S. 5, 6, T. 54, R. 8W)	1B, 2A, 3B
Stump River	(T. 64, R. 3E)	1B, 2A, 3B
Sucker River	(S. 3, 4, 10, T. 51, R. 12W; S. 18, 19, 29, 30, 31, 32, 33, T. 52, R. 12W; S. 1, 12, 13, 24, 25, T. 52, R. 13W; S. 19, 20, 30, 31, T. 53, R. 12W; S. 24, 36, T. 53, R. 13W)	1B, 2A, 3B
Sugar Loaf Creek	(S. 19, 20, 29, T. 53, R. 5W)	1B, 2A, 3B
Sundling Creek (Cherry Creek)	(S. 17, 18, T. 61, R. 1W; S. 13, 15, 16, T. 61, R. 2W)	1B, 2A, 3B
Swamp River (Junco Creek)	(S. 1, 2, 11, 12, 13, 14, 15, 16, 21, T. 62, R. 1W)	1B, 2A, 3B
Swamp River (except trout waters)	(T. 63, 64, R. 3E, 4E)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Swamp River	(S. 25, 26, T. 63, R. 3E; S. 29, 30, T. 63, R. 4E)	1B, 2A, 3B
Swamper Creek	(T. 64, R. 1E)	2B
Swanson Creek	(T. 61, R. 4W)	1B, 2A, 3B
Tait River	(T. 61, 62, R. 3W)	1B, 2A, 3B
Talmadge Creek	(S. 9, 10, 13, 14, 15, 24, T. 51, R. 13W)	1B, 2A, 3B
Blind Temperance Creek	(T. 60, R. 4W)	1B, 2A, 3B
Little Temperance Creek	(T. 59, 60, R. 4W, 5W)	1B, 2A, 3B
Temperance River (excluding trout waters)	(T. 59, 60, 61, 62, R. 4W)	1B, 2B
Temperance River	(S. 5, 8, 18, 19, 30, 31, T. 59, R. 4W; S. 6, 7, 8, 17, 20, 28, 29, 32, 33, T. 60, R. 4W; S. 4, 8, 9, 17, 19, 20, 30, 31, T. 61, R. 4W)	1B, 2A, 3B
Big Thirty Nine Creek	(S. 4, 5, 6, T. 55, R. 8W; S. 29, 30, 32, 33, T. 56, R. 8W; S. 1, 2, 12, 13, 24, 25, T. 56, R. 9W)	1B, 2A, 3B
Thompson Creek	(S. 19, T. 62, R. 1W; S. 24, T. 62, R. 2W)	1B, 2A, 3B
Tikkanen Creek	(S. 8, 16, 17, T. 57, R. 7W)	1B, 2A, 3B
Timber Creek	(T. 62, 63, R. 1E, 2E)	1B, 2A, 3B
Tischers Creek	(S. 2, 3, 4, 11, 13, 14, T. 50, R. 14W)	1B, 2A, 3B
Torguson Creek	(S. 30, T. 61, R. 4W; S. 24, 25, T. 61, R. 5W)	1B, 2A, 3B
Tower Creek	(S. 4, 9, T. 57, R. 7W)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Twin Rivers (Mistletoe Creek)	(S. 3, T. 60, R. 3W; S. 2, 10, 11, 14, 15, 23, 24, 25, 26, 34, 35, T. 61, R. 3W)	1B, 2A, 3B
Twin Points Creek	(S. 13, T. 54, R. 9W)	1B, 2A, 3B
Two Island River	(S. 12, T. 59, R. 6W; S. 2, 3, 4, 11, T. 58, R. 5W; S. 7, 17, 18, 20, 21, 28, 32, 33, T. 59, R. 5W)	1B, 2A, 3B
Vern River	(T. 63, R. 3W)	1B, 2B
Wanless Creek	(S. 25, 33, 34, 35, 36, T. 60, R. 6W)	1B, 2A, 3B
Willow Creek	(T. 62, R. 3W)	2B
Woodpile Creek	(T. 64, R. 1E)	2B
Woods Creek	(S. 13, T. 61, R. 1E)	1B, 2A, 3B
All other streams in Boundary Waters Canoe Area		1B, 2B
Lakes		
Alder Lake	(S. 1, 2, 3, 4, 9, 10, 11, 12, T. 64, R. 1E)	1B, 2A, 3B
Alton Lake	(S. 6, T. 32, R. 4W; S. 1, 11, 12, 13, 14, T. 62, R. 5W; S. 31, T. 63, R. 4W; S. 36, T. 63, R. 5W)	1B, 2A, 3B
Bath Lake	(S. 31, 32, T. 63, R. 1W; S. 5, 6, T. 62, R. 1W)	1B, 2A, 3B
Bearskin East Lake	(S. 4, 5, 7, 8, 9, T. 64, R. 1E; S. 11, 12, 13, 14, T. 64, R. 1W)	1B, 2A, 3B
Bearskin West Lake	(S. 4, T. 64, R. 1W; S. 33, 34, 35, 36, T. 65, R. 1W)	1B, 2A, 3B
Benson Lake	(S. 29, T. 58, R. 6W)	1B, 2A, 3B
Birch Lake	(S. 31, T. 65, R. 1W; S. 34, 35, 36, T. 65, R. 2W)	1B, 2A, 3B
Bogus Lake	(S. 12, T. 62, R. 2E)	1B, 2A, 3B
Bone Lake	(S. 13, 14, T. 61, R. 6W)	1B, 2A, 3B
Boys (Rat, Third Kimball Lake) Lake	(S. 5, 8, T. 62, R. 2E)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Briar Lake (Twin Lake)	(S. 14, 15, 23, T. 53, R. 13W)	1B, 2A, 3B
Brule Lake	(S. various, T. 63, R. 2W, 3W)	1B, 2A, 3B
Cam Lake	(S. 5–8, T. 63, R. 3W)	1B, 2A, 3B
Caribou Lake	(S. 32–36, T. 65, R. 1E)	1B, 2A, 3B
Carrot Lake	(S. 17, T. 64, R. 2E)	1B, 2A, 3B
Chester Lake	(S. 32, 33, T. 64, R. 3E)	1B, 2A, 3B
Clearwater (Embry) Lake	(S. 23, 25, 26, 27, 28, 29, 30, 31, 32, T. 65, R. 1E)	1B, 2A, 3B
Cone, North Lake	(S. 3, T. 63, R. 3W; S. 34, 35, T. 64, R. 3W)	1B, 2A, 3B
Crystal Lake	(S. 1, T. 64, R. 1E)	1B, 2A, 3B
Daniels Lake	(S. 19, 30, T. 65, R. 1E; S. 25, 26, 27, 34, 35, 36, T. 65, R. 1W)	1B, 2A, 3B
Davis Lake	(S. 27, 28, 32, 33, 34, T. 64, R. 3W)	1B, 2A, 3B
Devilfish Lake	(S. 19, 29, 30, T. 64, R. 3E)	1B, 2A, 3B
Dislocation Lake	(S. 3, T. 63, R. 1W)	1B, 2A, 3B
Divide (Towhey) Lake	(S. 7, 8, T. 59, R. 7W)	1B, 2A, 3B
Duck (Goldeneye) Lake	(S. 15, T. 59, R. 6W)	1B, 2A, 3B
Duke Lake	(S. 30, T. 63, R. 1E)	1B, 2A, 3B
Duncan Lake	(S. 27, 28, 29, 32, 33, 34, T. 65, R. 1W)	1B, 2A, 3B
Dunn Lake	(S. 30, T. 65, R. 1W; S. 25, T. 65, R. 2W)	1B, 2A, 3B
Dyers Lake	(S. 4, 5, 8, 9, T. 58, R. 5W)	1B, 2A, 3B
Echo Lake	(S. 14, 15, 22, 23, T. 59, R. 6W)	1B, 2A, 3B
Eggers Lake	(S. 24, T. 63, R. 1W; S. 19, T. 63, R. 1E)	1B, 2A, 3B
Esther Lake	(S. 6, T. 63, R. 3E; S. 31, T. 64, R. 3E)	1B, 2A, 3B
Flour Lake	(S. 5, 6, T. 64, R. 1E; S. 1, 2, 11, 12, T. 64, R. 1W)	1B, 2A, 3B
Gadwell Lake	(S. 3, T. 64, R. 2E)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Gaskin Lake	(S. 21-27, T. 64, R. 2W)	1B, 2A, 3B
Gogebic Lake	(S. 30, 31, T. 65, R. 2E)	1B, 2A, 3B
Greenwood Lake	(S. 21-28, 34, T. 64, R. 2E)	1B, 2A, 3B
Hare Lake	(S. 11, T. 59, R. 6W)	1B, 2A, 3B
Hungry Jack Lake	(S. 2, 3, 4, T. 64, R. 1W; S. 35, T. 65, R. 1W)	1B, 2A, 3B
Jap Lake	(S. 19, 24, T. 65, R. 5W)	1B, 2A, 3B
Jap (Jerry) (Jim) Lake	(S. 26, 27, T. 64, R. 1E)	1B, 2A, 3B
Junco (Swamp) Lake	(S. 11, 12, 13, T. 62, R. 1W)	1B, 2A, 3B
Kemo Lake	(S. 27, 34, 35, T. 63, R. 1W)	1B, 2A, 3B
Kimball Lake	(S. 7, 8, 17, T. 62, R. 2E)	1B, 2A, 3B
Leo Lake	(S. 4, 5, T. 64, R. 1W)	1B, 2A, 3B
Lappanen Lake (Leskinen)	(S. 21, 22, T. 57, R. 7W)	2B
Lily Lake	(S. 12, T. 63, R. 3W)	1B, 2A, 3B
Lost Lake	(S. 29, 32, T. 63, R. 3E)	1B, 2A, 3B
Lost (Pancore) Lake	(S. 22, 27, T. 61, R. 4W)	1B, 2A, 3B
Margaret Lake	(S. 28, T. 64, R. 3E)	1B, 2A, 3B
McFarland Lake	(S. 3, 4, 5, 6, 9, 10, T. 64, R. 3E)	1B, 2A, 3B
Mink Lake	(S. 8, T. 62, R. 2E)	1B, 2A, 3B
Misurah Lake	(S. 32, T. 64, R. 1W)	1B, 2A, 3B
Monkers Lake	(S. 6, T. 61, R. 1E)	1B, 2A, 3B
Moosehorn (Moosehead) Lake	(S. 36, T. 63, R. 3E; S. 31, T. 63, R. 4E)	1B, 2A, 3B
Morgan Lake	(S. 27, 28, T. 64, R. 1W)	1B, 2A, 3B
Moss Lake	(S. 31, 32, 33, T. 65, R. 1W)	1B, 2A, 3B
Muckwa Lake	(S. 21, 28, T. 63, R. 1E)	1B, 2A, 3B
Mulligan Lake	(S. 1, 12, T. 63, R. 3W)	1B, 2A, 3B
Musquash Lake	(S. 20, 28, 29, T. 63, R. 1E)	1B, 2A, 3B

WATERS	PLACE OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Normanna Lake	(S. 7, 8, T. 52, R. 13W)	1B, 2A, 3B
Olson Lake	(S. 9, 16, T. 62, R. 1W)	1B, 2A, 3B
Otto, South, Lake	(S. 29, T. 64, R. 2W)	1B, 2A, 3B
Partridge Lake	(S. 29, 30, 31, T. 65, R. 1W)	1B, 2A, 3B
Pemmican Lake	(S. 22, T. 65, R. 2E)	1B, 2A, 3B
Pierz (Beaver) Lake	(S. 12, T. 64, R. 1E; S. 7, T. 64, R. 2E)	1B, 2A, 3B
Pike, East Lake	(S. 25, 26, 35, 36, T. 65, R. 2E, S. 28-32, T. 65, R. 3E)	1B, 2A, 3B
Pike, West Lake	(S. 26-30, T. 65, R. 2E)	1B, 2A, 3B
Pine Lake	(S. various, T. 64, 65, R. 3E, 2E, 1E)	1B, 2A, 3B
Pine Lake	(S. 35, 36, T. 63, R. 1W)	1B, 2A, 3B
Pine Mountain Lake	(S. 26, 27, 34, 35, T. 63, R. 1E)	1B, 2A, 3B
Pits Lake	(S. 3, T. 62, R. 1W)	1B, 2A, 3B
Poplar Lake	(S. 6, 7, 8, T. 64, R. 1W; S. 1, 2, 11, 12, T. 64, R. 2W)	1B, 2A, 3B
Ram Lake	(S. 9, 10, T. 63, R. 1W)	1B, 2A, 3B
Section 8 Lake	(S. 8, T. 59, R. 7W)	1B, 2A, 3B
Shady, North, Lake	(S. 21, 22, T. 64, R. 2E)	1B, 2A, 3B
Sock Lake	(S. 26, T. 65, R. 2W)	1B, 2A, 3B
Speckled Trout Lake (Reservation Trout Lake)	(S. 7, 8, T. 63, R. 5E)	1B, 2A, 3B
Squaw Lake	(S. 6, T. 63, R. 3E; S. 31, T. 64, R. 3E)	1B, 2A, 3B
State Lake	(S. 1, T. 63, R. 2W; S. 35, 36, T. 64, R. 2W)	1B, 2A, 3B
Steer Lake	(S. 32, T. 60, R. 6W)	1B, 2A, 3B
Strobus Lake	(S. 20, T. 61, R. 3W)	1B, 2A, 3B
Sunfish Lake	(S. 26, 35, T. 64, R. 2E)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Swan Lake	(S. 11, 12, T. 63, R. 2W)	1B, 2A, 3B
Talus Lake	(S. 26, 27, T. 63, R. 1W)	1B, 2A, 3B
Taylor Lake	(S. 16, 17, T. 63, R. 5E)	1B, 2A, 3B
Thompson Lake	(S. 19, 20, 29, 30, T. 62, R. 1W)	1B, 2A, 3B
Thrasher Lake	(S. 31, T. 63, R. 1W)	1B, 2A, 3B
Thrush Lake	(S. 31, T. 63, R. 1W)	1B, 2A, 3B
Topper Lake	(S. 27, T. 65, R. 2W)	1B, 2A, 3B
Trout Lake	(S. 10, 11, T. 62, R. 2E)	1B, 2A, 3B
Trout, Little, Lake	(S. 6, T. 63, R. 1W)	1B, 2A, 3B
Twin Lakes	(S. 33, T. 50, R. 14W)	1B, 2A, 3B
Twin, Upper (Bear) Lake	(S. 25, T. 56, R. 8W)	1B, 2A, 3B
Vale Lake	(S. 3, T. 64, R. 2E)	1B, 2A, 3B
Vernon Lake	(S. 10, 15, 16, T. 63, R. 2W)	1B, 2A, 3B
Vista (South) Lake	(S. 19, T. 65, R. 1W; S. 21, 22, 23, 24, 27, 28, T. 65, R. 2W)	1B, 2A, 3B
Warihigan (Trap) Lake	(S. 1, T. 63, R. 3W; S. 31, T. 64, R. 2W; S. 36, T. 64, R. 3W)	1B, 2A, 3B
Wench Lake	(S. 7, 18, T. 63, R. 3W)	1B, 2A, 3B
Winchell Lake	(S. 26-33, T. 64, R. 2W; S. 25, 36, T. 64, R. 3W)	1B, 2A, 3B
All other lakes in Boundary Waters Canoe Area		1B, 2B
	LAKE OF THE WOODS BASIN	
	Rainy Lake Watershed (No. 3)	
Arrowhead Creek	(S. 14, 15, 21, 22, 27, 28, 34 T. 61, R. 8; S. 3, 10, 11, 13, 14, 23, T. 60, R. 8)	1B, 2A, 3B
Ash River (excluding trout waters)	(T. 66, 67, 68, R. 19, 20)	2B
Ash River	(S. 4, 5, 9, T. 66, R. 20; S. 5, 8, 17, 19, 20, 29, 30, 32, T. 67, R. 20; S. 13, 14, 20, 21, 22, 23, 24, 28, 29, 32, 33, T. 68, R. 20)	1B, 2A, 3B
August Creek	(T. 61, 62, R. 10)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Barto Creek	(T. 63, R. 5, 6)	2B
Bear Creek	(T. 60, R. 15)	2B
Beauty Creek	(S. 36, T. 68, R. 21; S. 31, T. 68, R. 20; S. 5, 6, T. 67, R. 20)	1B, 2A, 3B
Beaver Creek	(S. 15, 21, 22, 28, T. 67, R. 20)	1B, 2A, 3B
Blackduck Creek	(S. 6, 7, 8, 17, T. 66, R. 19; S. 1, T. 66, R. 20; S. 3, 4, 10, 14, 15, 23, 25, 26, 36, T. 67, R. 20; S. 33, T. 68, R. 20)	1B, 2A, 3B
Camp Creek	(S. 3, 4, 9, 10, 15, T. 60, R. 8; S. 33, T. 61, R. 8)	1B, 2A, 3B
Camp E. Creek	(S. 7, 18, T. 60, R. 9; S. 12, T. 60, R. 10)	1B, 2A, 3B
Cross River (Inlet Gunflint Lake)	(S. 24, 25, 26, T. 65, R. 4W)	1B, 2A, 3B
Daley Brook	(T. 68, R. 20, 21)	2B
Dumbell River	(T. 60, 61, R. 7)	2B
Dunka River	(T. 59, 60, R. 12)	2B
East Creek	(T. 64, R. 16)	2B
Echo River	(T. 66, 67, R. 16)	2B
Elbow River	(T. 64, R. 18, 19)	2B
Farm Creek	(S. 15, 21, 22, 23, 26, 35, T. 67, R. 20; S. 1, 2, T. 66, R. 20)	1B, 2A, 3B
Grassy Creek	(S. 6, T. 61, R. 13; S. 1, T. 61, R. 14)	1B, 2A, 3B
Greenwood River	(T. 59, R. 10)	2B
Gustafson (Armstrong) Creek	(T. 62, 63; R. 12, 13)	2B
Harris Lake Creek	(S. 19, 30, 31, T. 61, R. 10)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED ON LOCATION	CLASSIFICATION
Hill Creek	(S. 19, 30, T. 60, R. 8; S. 24, 25, T. 60, R. 9)	1B, 2A, 3B
Hog Creek	(T. 61, 62, R. 5)	2B
Horse River	(T. 65, R. 11)	2B
Hunting Shack River	(T. 65, 66, R. 16)	2B
Little Isabella River (excluding trout waters)	(T. 59, 60, 61, 62, R. 8, 9)	2B
Little Isabella River	(S. 3, 4, 5, 9, 10, 15, 16, T. 59, R. 8; S. 31, 32, T. 60, R. 8; S. 25, 26, 27, 36, T. 60, R. 9)	1B, 2A, 3B
Island River	(T. 61, R. 7, 8)	1B, 2B
Kinmount Creek	(S. 19, T. 67, R. 20; S. 13, 14, 15, 21, 22, 23, 24, T. 67, R. 21)	1B, 2A, 3B
Laurentian Creek	(S. 7, 18, T. 59, R. 17; S. 1, 12, 13, 24, T. 59, R. 18)	1B, 2A, 3B
Legat Creek	(T. 61, R. 5)	2B
Lehtinens Creek	(S. 13, 14, T. 61, R. 17)	1B, 2A, 3B
Little Indian Sioux River	(T. 64, 65, R. 15)	1B, 2B
Little Pony River	(T. 65, R. 15)	2B
Lone Creek	(T. 66, R. 5)	1B, 2C
Longstorff Creek	(S. 6, 7, T. 62, R. 12; S. 30, 31, T. 63, R. 12)	1B, 2A, 3B
Mike Kelly Creek	(S. 14, 15, 23, T. 60, R. 11)	1B, 2A, 3B
Mitawan Creek	(S. 1, 12, T. 60, R. 9; S. 24, 25, 36, T. 61, R. 9; S. 19, T. 61, R. 8)	1B, 2A, 3B
Moose River (Northwest St. Louis County)	(T. 68, R. 18, 19)	1B, 2B
Moose River (Northeast St. Louis County)	(T. 64, 65, 66, R. 14)	1B, 2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Mule Creek	(T. 65, 66, R. 13)	1B, 2B
Nine Mile Creek	(S. 13, 14, 23, T. 67, R. 20; S. 18, 19, 20, 28, 33, T. 67, R. 19)	1B, 2A, 3B
Nina Moose River	(T. 66, R. 14)	1B, 2B
Norway Creek	(T. 64, R. 15)	2B
Pelican River	(T. 64, 65, 66, R. 19, 20)	2B
Picket River	(T. 65, R. 16)	2B
Pike River	(T. 59, 60, 61, R. 15, 16)	2B
Pine Creek	(T. 63, R. 15)	1B, 2B
Portage River	(T. 65, 66, R. 14)	1B, 2B
Purvis Creek	(S. 28, 29, 33, T. 62, R. 13)	1B, 2A, 3B
East Branch Rat Root River	(T. 68, 69, R. 21, 22, 23)	2B, 3C
Rat Root River	(T. 67, 68, 69, R. 22, 23, 24)	2B, 3C
Sandy River	(T. 59, R. 17, 18)	2B
Scott Creek	(S. 9, 10, 15, 16, 21, 22, 27, 32, 34, T. 60, R. 7)	1B, 2A, 3B
Sea Gull Creek	(T. 65, R. 4)	2B
Section Thirty Creek	(S. 19, 30, T. 63, R. 11; S. 24, 25, T. 63, R. 12)	1B, 2A, 3B
Sioux River	(T. 65, 66, R. 19)	2B
Snake River	(T. 61, R. 9)	1B, 2B
Spahagnum Creek	(S. 4, T. 60, R. 9; S. 28, 29, 33, T. 61, R. 9)	1B, 2A, 3B
Stony River	(T. 58, 59, 60, R. 9, 10, 11)	2B
Stuart River	(T. 65, 66, R. 13)	1B, 2C
Tomlinson Creek	(S. 18, 19, 31, T. 60, R. 7; S. 24, 25, 36, T. 60, R. 8)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
East Two Rivers	(S. 1, 2, 3, 4, T. 61, R. 15; S. 31, 32, T. 62, R. 14; S. 33, 34, 35, 36, T. 62, R. 15)	1B, 2A, 3B
West Two Rivers	(S. 6, 7, 8, 9, 15, 16, T. 61, R. 15)	1B, 2A, 3B
West Two Rivers Tributary	(S. 10, 14, 15, T. 61, R. 15)	1B, 2A, 3B
Unnamed Creek	(S. 4, 5, 7, 8, 16, 17, 20, 21, 29, T. 60, R. 8; S. 33, T. 61, R. 8)	1B, 2A, 3B
Vermilion River	(T. 63-67, R. 17, 18)	2B
Victor Creek	(S. 12, 13, T. 60, R. 9)	1B, 2A, 3B
Weiss Creek	(S. 1, 2, 3, 11, T. 59, R. 9; S. 27, 34, T. 60, R. 9)	1B, 2A, 3B
All other streams in the Boundary Waters Canoe Area		1B, 2B
Lakes		
Adams Lake	(S. 29, 30, 31, 32, 33, T. 64, R. 6W)	1B, 2A, 3B
Agamok Lake	(S. 31, T. 65, R. 5; S. 36, T. 65, R. 6)	1B, 2A, 3B
Ahmakose Lake	(S. 14, T. 64, R. 7)	1B, 2A, 3B
Ahsub Lake	(S. 27, 28, T. 64, R. 8)	1B, 2A, 3B
Alpine Lake	(S. 4, 5, 7, 8, 9, 16, 17, T. 65, R. 5W)	1B, 2A, 3B
Alruss Lake	(S. 12, T. 64, R. 12)	1B, 2A, 3B
Amoeber Lake	(S. 7, 8, 17, 18, T. 65, R. 6; S. 12, T. 65, R. 7)	1B, 2A, 3B
Arkose (Skoota) Lake	(S. 5, T. 64, R. 7; S. 32, 33, T. 65, R. 7)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Ashdick (Caribou) Lake	(S. 23, 24, 25, 26, T. 66, R. 6)	1B, 2A, 3B
Bat Lake	(S. 1, 2, T. 64, R. 5; S. 35, 36, T. 65, R. 5)	1B, 2A, 3B
Beartrack Lake	(S. 12, 13, T. 67, R. 15)	1B, 2A, 3B
Beast (Wilson) Lake	(S. 28, 33, 34, T. 70, R. 19)	1B, 2A, 3B
Beaver (Elbow) Lake	(S. 31, T. 64, R. 6; S. 36, T. 64, R. 7; S. 1, 2, T. 63, R. 7)	1B, 2A, 3B
Beetle Lake	(S. 7, T. 60, R. 9)	1B, 2A, 3B
Beta Lake	(S. 18, T. 64, R. 2)	1B, 2A, 3B
Bingshick Lake	(S. 30, T. 65, R. 4; S. 25, T. 65, R. 5)	1B, 2A, 3B
Brant (Everett) Lake	(S. 29, 31, 32, T. 65, R. 4)	1B, 2A, 3B
Burntside Lake	(S. various, T. 63, R. 12, 13)	1B, 2A, 3B
Cash Lake	(S. 29, 30, 31, 32, T. 64, R. 3)	1B, 2A, 3B
Chant Lake	(S. 10, T. 63, R. 15)	1B, 2A, 3B
Cherokee Lake	(S. 1, 2, 3, 10, 11, T. 63, R. 4; S. 35, 36, T. 64, R. 4)	1B, 2A, 3B
Cherry Lake	(S. 3, 4, 9, T. 65, R. 6)	1B, 2A, 3B
Clark Lake	(S. 23, T. 63, R. 14)	1B, 2B
Clearwater Lake	(S. 5, 6, 7, 8, T. 62, R. 9; S. 1, 12, T. 62, R. 10)	1B, 2B
Copper Lake	(S. 9, 10, T. 64, R. 4)	1B, 2A, 3B
Crab Lake	(S. 29, 30, T. 65, R. 2; S. 25, T. 65, R. 3)	1B, 2A, 3B
Crab Lake	(S. 7, 18, T. 63, R. 13; S. 12, 13, T. 63, R. 14)	1B, 2A, 3B
Crooked Lake	(S. 10, 11, 12, T. 64, R. 5)	1B, 2A, 3B
Cruiser (Trout) Lake	(S. 5, 6, T. 69, R. 19; S. 31, 32, T. 70, R. 19)	1B, 2A, 3B
Dry Lake	(S. 4, 9, T. 63, R. 12)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Eddy Lake	(S. 20, 21, 28, 29, T. 65, R. 6)	1B, 2A, 3B
Elixir (Spring) Lake	(S. 31, 30, T. 60, R. 6W; S. 36, T. 60, R. 7W)	2B
Eugene Lake	(S. 2, 11, 14, T. 67, R. 15)	1B, 2A, 3B
Explorer (South Three) Lake	(S. 6, 7, T. 64, R. 7; S. 1, 12, T. 64, R. 8)	1B, 2A, 3B
Fat Lake	(S. 14, T. 67, R. 15)	1B, 2A, 3B
Fay Lake	(S. 25, 26, T. 65, R. 5)	1B, 2A, 3B
Fern Lake	(S. 3, T. 64, R. 5)	1B, 2A, 3B
Fern, West Lake	(S. 4, 5, T. 64, R. 5)	1B, 2A, 3B
Finger Lake	(S. 7, 8, 17, 18, T. 67, R. 14)	1B, 2A, 3B
Finn Lake	(S. 13, 14, 15, T. 64, R. 3; S. 18, T. 64, R. 2)	1B, 2A, 3B
Fishdance Lake	(S. 22, 27, 28, T. 63, R. 7)	1B, 2A, 3B
Found Lake	(S. 10, 15, T. 64, R. 9)	1B, 2A, 3B
Fraser Lake	(S. 22, 23, 24, 26, 27, T. 64, R. 7)	1B, 2A, 3B
French Lake	(S. 3, T. 64, R. 5; S. 34, 35, T. 65, R. 5)	1B, 2A, 3B
Frost Lake	(S. 26, 27, 34, 35, T. 64, R. 4)	1B, 2A, 3B
Gabimichigami Lake	(S. 6, T. 64, R. 5; S. 1, 12, T. 64, R. 6; S. 29, 30, 31, 32, T. 65, R. 5; S. 6, T. 65, R. 6)	1B, 2A, 3B
Gabrielson Lake	(S. 20, T. 64, R. 20)	1B, 2A, 3B
Ge-be-one-e-guet Lake	(S. 14, 15, 16, 21, 22, 23, T. 67, R. 14)	1B, 2A, 3B
Gijikiki (Cedar) Lake	(S. 4, 5, T. 65, R. 6; S. 32, 33, T. 66, R. 6)	1B, 2A, 3B
Gillis Lake	(S. 1, 2, 3, 10, 11, T. 64, R. 5; S. 35, T. 65, R. 5)	1B, 2A, 3B
Glacier Pond No. 2	(S. 11, T. 63, R. 10)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Glacier Pond No. 3 (Jewell Lake)	(S. 14, T. 63, R. 10)	1B, 2A, 3B
Gordon Lake	(S. 25, 26, 35, 36, T. 64, R. 4)	1B, 2A, 3B
Green Lake	(S. 36, T. 65, R. 5; S. 31, T. 65, R. 4)	1B, 2A, 3B
Gun Lake	(S. 1, T. 67, R. 15; S. 36, T. 68, R. 15)	1B, 2A, 3B
Hanson Lake	(S. 2, 3, 10, T. 65, R. 6; S. 34, 35, T. 66, R. 6)	1B, 2A, 3B
Hanson Lake	(S. 36, T. 64, R. 13)	1B, 2A, 3B
High Lake	(S. 3, 4, 5, T. 63, R. 12; S. 33, 34, T. 64, R. 12)	1B, 2A, 3B
Hogback (Twin) Lakes	(S. 31, T. 60, R. 6)	1B, 2A, 3B
Holt Lake	(S. 11, 13, 14, T. 65, R. 6)	1B, 2A, 3B
Howard Lake	(S. 28, 29, 32, 33, T. 65, R. 5)	1B, 2A, 3B
Hustler Lake	(S. 4, 5, 6, 8, T. 66, R. 14; S. 31, 32, T. 67, R. 14)	1B, 2A, 3B
Ima (Slate) Lake	(S. 17, 18, 19, 20, T. 64, R. 7; S. 13, 24, 25, T. 64, R. 8)	1B, 2A, 3B
Jap (Ray) Lake	(S. 19, 24, T. 65, R. 4, 5)	1B, 2A, 3B
Jasper Lake	(S. 17, 18, 19, T. 65, R. 5)	1B, 2A, 3B
Johnson Lake	(S. various, T. 67, 68, R. 17, 18)	1B, 2A, 3B
Karl Lake	(S. 18, 19, T. 64, R. 3; S. 13, T. 64, R. 4)	1B, 2A, 3B
Kekekabic Lake	(S. 2, 3, 4, 11, T. 64, R. 7; S. 29, 30, 31, 32, T. 65, R. 6; S. 34, 35, 36, T. 65, R. 7)	1B, 2A, 3B
Kek, Little, Lake	(S. 31, T. 65, R. 6; S. 36, T. 65, R. 7)	1B, 2A, 3B
Lake of the Clouds	(S. 4, T. 56, R. 6)	1B, 2A, 3B
Little Dry Lake	(S. 9, T. 63, R. 12)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Long Island Lake	(S. 17, 19, 20, 29, 30, T. 64, R. 3; S. 13, T. 64, R. 4)	1B, 2A, 3B
Loon Lake	(S. 25, 26, 27, 28, 32, 33, 34, 35, 36, T. 65, R. 3)	1B, 2A, 3B
Louis (Jacob) Lake	(S. 11, 12, T. 64, R. 12)	1B, 2A, 3B
Lunar (Moon) Lake	(S. 4, T. 65, R. 6)	1B, 2A, 3B
Lynx Lake	(S. 6, 7, T. 66, R. 14; S. 1, 12, T. 66, R. 15)	1B, 2A, 3B
Macaba Lake	(S. 2, 3, 4, T. 63, R. 5)	1B, 2A, 3B
Makwa (Bear) Lake	(S. 23, 26, 27, T. 64, R. 6)	1B, 2A, 3B
Marble Lake	(S. 2, 3, 10, T. 64, R. 6)	1B, 2A, 3B
Mavis Lake	(S. 4, T. 64, R. 4)	1B, 2A, 3B
Mayhew Lake	(S. 27, 28, 29, 32, 33, 34, T. 65, R. 2W)	1B, 2A, 3B
Mayhew, Little, Lake	(S. 29, 30, T. 65, R. 2)	1B, 2A, 3B
Meditation Lake	(S. 7, 8, T. 65, R. 4)	1B, 2A, 3B
Missing Link Lake	(S. 4, T. 64, R. 4)	1B, 2A, 3B
Missionary (East Three) Lake	(S. 6, T. 64, R. 7; S. 1, T. 64, R. 8)	1B, 2A, 3B
Moose Lake	(S. 20, 21, 22, 28, 29, 30, 31, 32, T. 64, R. 9; S. 25, 30, T. 64, R. 10)	1B, 2A, 3B
Mora Lake	(S. 14, 15, 22, 23, T. 64, R. 5)	1B, 2A, 3B
Mukooda Lake	(S. 26, 27, 34, 35, T. 68, R. 17)	1B, 2A, 3B
Ogishkemuncie Lake	(S. 13, 22, 23, 24, 26, 27, T. 65, R. 6)	1B, 2A, 3B
Ojibway (Upper Twin) Lake	(S. 7, 18, T. 63, R. 9; S. 11, 12, 13, 14, T. 63, R. 10)	1B, 2A, 3B
O'Leary Lake	(S. 4, T. 68, R. 17; S. 32, 33, T. 69, R. 17)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Omega Lake	(S. 19, 30, T. 64, R. 2; S. 23, 24, 25, T. 64, R. 3)	1B, 2A, 3B
Oyster Lake	(S. 2, 3, 10, 11, T. 66, R. 14)	1B, 2A, 3B
Owl Lake	(S. 12, T. 64, R. 5)	1B, 2A, 3B
Peter Lake	(S. 5, T. 64, R. 5; S. 32, 33, 34, T. 65, R. 5)	1B, 2A, 3B
Portage Lake	(S. 3, 4, 5, T. 64, R. 2; S. 33, T. 65, R. 2)	1B, 2A, 3B
Portage Lake	(S. 35, 36, T. 65, R. 8)	1B, 2A, 3B
Powell Lake	(S. 3, 4, T. 64, R. 5; S. 34, T. 65, R. 5)	1B, 2A, 3B
Rabbit Lake	(S. 27, 34, T. 66, R. 6)	1B, 2A, 3B
Raven (Lynx) Lake	(S. 7, 18, T. 64, R. 6)	1B, 2A, 3B
Red Rock Lake	(S. 4, 5, T. 65, R. 5; S. 28, 29 32, 33, 34, T. 66, R. 5)	1B, 2A, 3B
Regenbogan Lake	(S. 18, T. 64, R. 12)	1B, 2A, 3B
Rog Lake	(S. 16, 17, T. 65, R. 5)	1B, 2A, 3B
Ruby Lake	(S. 6, 7, 8, T. 66, R. 14)	1B, 2A, 3B
Rush Lake	(S. 5, 7, 8, 9, T. 64, R. 2)	1B, 2A, 3B
Saganaga, Little, Lake	(S. 5, 6, 7, 8, 9, 15, 16, 17, 18, 19, T. 64, R. 5; S. 12, 13, 24, T. 64, R. 6)	1B, 2A, 3B
Saucer Lake	(S. 20, T. 65, R. 2)	2B
Scarp (Cliff) Lake	(S. 31, 32, T. 60, R. 6)	1B, 2A, 3B
Seagull Lake	(S. 5, 6, 7, T. 65, R. 4; S.31 32, T. 66, R. 4; S. 1, 2, 3, 9, 10, 11, 12, 13, 14, 15, 16, T. 65, R. 5)	1B, 2A, 3B
Seahorse Lake	(S. 34, T. 65, R. 5)	1B, 2A, 3B
Sema (Coon) Lake	(S. 25, T. 65, R. 7)	1B, 2A, 3B
Skull Lake	(S. 14, T. 64, R. 9)	1B, 2A, 3B
Snipe Lake	(S. 3, 4, 9, 10, T. 64, R. 4)	1B, 2A, 3B
Snowbank Lake	(S. 1, 2, 3, 11, 12, T. 63, R. 9; S. 23-27, 34-36, T. 64, R. 9; S. 19, 20, 29-31, T. 64, R. 8)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Spoon (Fames) Lake	(S. 25, 26, 27, 34, T. 65, R. 7)	1B, 2A, 3B
Spring Lake	(S. 14, 15, 23, T. 68, R. 18)	1B, 2A, 3B
Strup Lake	(S. 11, T. 64, R. 7)	1B, 2A, 3B
Surber (Lake X) Lake	(S. 24, T. 65, R. 2)	1B, 2A, 3B
Takuemich Lake	(S. 5, 6, T. 67, R. 14; S. 31, 32, T. 68, R. 14)	1B, 2A, 3B
Tarry Lake	(S. 14, T. 64, R. 5)	1B, 2A, 3B
Thumb Lake	(S. 18, T. 67, R. 14)	1B, 2A, 3B
Thomas Lake	(S. 5, 6, T. 63, R. 7; S. 27, 28, 29, 31, 32, 33, 34, T. 64, R. 7)	1B, 2A, 3B
Tofte Lake	(S. 2, 3, 10, 11, T. 63, R. 10; S. 35, T. 64, R. 10)	1B, 2A, 3B
Topaz (Star) Lake	(S. 8, 9, T. 65, R. 6)	1B, 2A, 3B
Town Lake	(S. 6, T. 63, R. 3; S. 1, T. 63, R. 4; S. 31, T. 64, R. 3W; S. 36, T. 64, R. 4)	1B, 2A, 3B
Trappers Lake	(S. 27, 34, T. 60, R. 8W)	1B, 2A, 3B
Trout, Big, Lake	(S. various, T. 63, 64, R. 15, 16)	1B, 2A, 3B
Trout, Little, Lake	(S. 3, 4, 9, 10, T. 68, R. 17)	1B, 2A, 3B
Trygg Lake	(S. 31, T. 68, R. 14; S. 36, T. 68, R. 15)	1B, 2A, 3B
Tuscarora Lake	(S. 1, 12, T. 64, R. 4; S. 6, 7, 8, 17, 18, T. 64, R. 5)	1B, 2A, 3B
Vera Lake	(S. 1, 2, 3, T. 64, R. 8)	1B, 2A, 3B
Virgin Lake	(S. 5, T. 64, R. 5)	1B, 2A, 3B
Wine Lake	(S. 10, 11, 14, 15, T. 63, R. 5)	1B, 2A, 3B
Wisini Lake	(S. 11, 12, 13, 14, T. 64, R. 7)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
All other lakes in the Boundary Waters Canoe Area		1B, 2B

Little Fork River (No. 4)

Streams

Angora Creek	(S. 9, 10, 15, 16, 21, 22, 27, T. 61, R. 18)	1B, 2A, 3B
Balkan Creek (Borium)	(S. 9, 10, 16, 21, 22, T. 59, R. 20)	1B, 2A, 3B
Bear River	(T. 60, 61, 62, R. 21, 22, 23)	2B
Bearskin River	(T. 62, R. 21)	2D
Beaver Brook	(T. 67, 68, R. 23, 24, 25)	2B
Beaver Creek	(T. 62, 63, R. 20)	2C
Cross River	(T. 67, R. 25)	2D
Dark River (excluding trout waters)	(T. 59, 60, R. 19, 20)	2B
Dark River	(S. 19, 20, 29, 30, 32, T. 60, R. 19; S. 11, 12, 13, 24, T. 60, R. 20)	1B, 2A, 3B
Dean Creek	(S. 26, 27, 32, 33, T. 61, R. 21)	1B, 2A, 3B
Feeder Creek	(S. 3, 9, 10, T. 60, R. 18)	1D, 2A, 3B
Flint Creek	(T. 62, R. 18, 19)	2B
Forsman Creek	(S. 5, 6, T. 60, R. 17; S. 1, T. 60, R. 18; S. 32, 33, T. 61, R. 17)	1B, 2A, 3B
Little Fork River	(T. 62-69, R. 17-25)	2B, 3B
Gardner Brook	(T. 63, 64, R. 23)	2C
Harrigan Creek	(S. 3, 10, T. 62, R. 23)	1D, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Johnson Creek	(S. 6, 7, 8, 16, 17, 20, T. 60, R. 18)	1B, 2A, 3B
Lost River	(S. 5, 6, T. 65, R. 20; S. 1, 2, 3, 10, T. 65, R. 21; S. 25, 31, 32, 33, 34, 35, 36, T. 66, R. 20)	1B, 2A, 3B
McNiven Creek	(S. 9, 10, 15, 16, 21, 28, 32, 33, T. 59, R. 19)	1B, 2A, 3B
Portage Creek	(T. 65, R. 21)	2C
Prairie Creek	(T. 64, R. 21, 22, 23)	2B
Puutio Creek	(S. 1, 2, T. 60, R. 18; S. 28, 29, 30, 31, T. 61, R. 17; S. 25, 36, T. 61, R. 18)	1B, 2A, 3B
Rice River	(T. 60, 61, 62, R. 16, 17)	2B
Sand Creek (excluding trout waters)	(T. 60, 61, 62, R. 21)	2B
Sand Creek	(S. 2, 3, 11, T. 60, R. 21; S. 27, 34, 35, T. 61, R. 21)	1B, 2A, 3B
Spring Creek	(S. 8, 9, T. 60, R. 18)	1B, 2A, 3B
Stoney Brook	(S. 2, 3, 4, T. 60, R. 22; S. 13, 24, 25, 35, 36, T. 61, R. 22; S. 7, 18, T. 61, R. 21)	1B, 2A, 3B
Sturgeon River	(T. 60, 61, 62, R. 20, 21)	2B
Valley River (except trout waters)	(T. 62, 63, R. 22, 23)	2B
Valley River	(S. 25, 36, T. 63, R. 24; S. 25, 26, 31, 32, 33, 35, T. 63, R. 23; S. 1, 2, 3, 4, 10, 11, 12, 13, T. 62, R. 23)	1B, 2A, 3B
Venning Creek	(S. 1, 2, 11, 12, T. 60, R. 23; S. 35, T. 61, R. 23)	1B, 2A, 3B
Watercress Creek	(S. 23, 26, 27, T. 60, R. 19)	1B, 2A, 3B
Willow River	(T. 63, R. 20, 21, 22)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Lakes		
Camps Four (Wesoman) Lake	(S. 4, T. 59, R. 19)	1B, 2A, 3B
Caribou Lake	(S. 25, T. 60, R. 22)	1B, 2A, 3B
Dollar Lake	(S. 25, T. 59, R. 21)	1B, 2A, 3B
Jammer Lake	(S. 27, T. 60, R. 18)	1B, 2A, 3B
Nett Lake	(T. 65, R. 21, 22)	1B, 2A, 3B
Pickerel Lake	(S. 17, T. 60, R. 21)	1B, 2A, 3B
Rainbow Lake	(S. 22, T. 60, R. 24)	1B, 2A, 3B
Big Fork River Watershed (No. 5)		
Streams		
Big Fork River	(T. 149, 59-69, R. 25-27)	2B, 3B
Bear River	(T. 67, 68, 69, R. 26)	2B
Beemans Creek	(S. 23, 25, 26, T. 148, R. 26)	1B, 2A, 3B
Bowerman Brook	(T. 62, 63, R. 26, 27)	2B
Bowstring River	(T. 58, R. 27; T. 149, R. 27)	2B
Caldwell Brook	(T. 151, 152, R. 25, 26, 27)	2B
Coon Creek	(T. 61, R. 24, 25)	2B
Deer Creek	(T. 62, R. 24, 25)	2B
Dinner Creek	(T. 153, 154, 155, R. 26, 27)	2B
Fletcher Creek	(S. 7, 17, 18, 19, 30, T. 149, R. 25)	1B, 2A, 3B
Gale Brook	(T. 60, R. 25, 26)	2B
Moose Brook	(T. 150, R. 27)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Popple River	(T. 148, 149, 150, R. 23)	2B
Reilly Brook	(T. 63, 64, R. 24, 25, 26)	2B
Shine Brook	(S. 11, 14, 15, 16, T. 62, R. 25)	1B, 2A, 3B
South Fork Coon Creek	(T. 60, 61, R. 25)	2B
Sturgeon River	(T. 155, R. 25, 26, 27, 28)	2B
Trout Creek	(S. 19, 30, T. 66, R. 26; S. 24, 25, T. 66, R. 27)	1B, 2A, 3B
Turtle River	(T. 59, R. 27)	2B
Lakes		
Lake Erskine	(S. 2, 3, T. 61, R. 24)	1B, 2A, 3B
Larson Lake	(S. 16, 21, T. 61, R. 24)	1B, 2A, 3B
Lake of the Woods Watershed (No. 6)		
Streams		
Bartons Brook	(T. 158, 159, R. 30, 31)	2B
Baudette River	(T. 159, 160, R. 31)	2B
Baudette River, South Fork	(T. 159, R. 31)	2B
Black River, West Branch	(T. 158, 159, R. 25, 26)	2B
Bostick Creek	(T. 162, R. 32)	2B
Bulldog Run River	(T. 162, R. 36)	2B
Canfield Creek	(T. 161, R. 33)	2B
Chase Brook	(T. 157, 158, R. 31, 32)	2B
Miller Creek	(T. 157, 158, R. 31, 32)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Peppermint Creek	(T. 159, 160, R. 32, 33)	2B
Rapid River	(T. 158, 159, 160, R. 29, 30, 31)	2B
North Branch Rapid River (except trout waters)	(T. 158, R. 31, 32, 33, 34)	2B
Rapid River, North Branch	(S. 1, T. 157, R. 34; S. 26, 27, 28, 34, 35, 36, T. 158, R. 34; S. 31, T. 158, R. 33)	1B, 2A, 3B
South Branch Rapid River	(T. 157, R. 35)	2B
East Fork Rapid River	(T. 158, 159, 160, R. 29)	2B
Silver Creek	(T. 160, R. 30)	2B
Thompson Creek	(T. 157, R. 31, 32)	2B
Tomato Creek	(S. 2, 3, 9, 10, T. 161, R. 34; S. 35, T. 162, R. 34)	1B, 2A, 3B
Troy Creek	(T. 156, 157, 158, R. 31)	2B
Warroad River	(T. 163, R. 36)	2B, 3B
West Branch Warroad River	(T. 160-163, R. 36, 37)	2B
East Branch Warroad River	(T. 161, 162, R. 35, 36)	2B
Williams Creek	(T. 161, R. 33, 34)	2B
Willow Creek	(T. 161, 162, R. 34, 35)	2B
Winter Road River	(T. 160, 161, 162, R. 31, 32, 33, 34)	2B
South Branch Zippel Creek	(T. 162, R. 33)	2B
West Branch Zippel Creek	(T. 162, R. 33, 34)	2C

RED RIVER OF THE NORTH BASIN

Mustinka-Bois de Sioux Rivers Watershed (No. 7)

Streams

Mustinka River	(T. 127, 128, R. 45, 46, 47)	2C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
West Branch Mustinka River	(T. 125, 126, 127, 128, R. 45, 46, 47)	2C
Doran Slough	(T. 131, 132, R. 46, 47)	2C
Eighteen Mile Creek	(T. 127, R. 46, 47)	2C
Five Mile Creek	(T. 127, 128, R. 45)	2C
Rabbit River	(T. 130, 131, R. 45, 46, 47)	2C
South Fork Rabbit River	(T. 130, R. 45, 46)	2C
Twelve Mile Creek	(T. 126, 127, R. 45, 44, 43)	2C
West and East Fork Twelve Mile Creek	(T. 125, 126, R. 45, 44)	2C

Otter Tail River Watershed (No. 3)

Streams

Otter Tail River (Height of Land Lake through Fergus Falls)	(T. 133, 134, 135, 136, 137, 138, 139, R. 39, 40, 41, 42, 43)	1C, 2B, 3B
Otter Tail River (Fergus Falls to mouth)	(T. 132, 133, R. 43-47)	1C, 2B, 3B
Brandberg Creek	(S. 20, 21, 28, 29, 30, T. 133, R. 38)	1B, 2A, 3B
Dead Horse Creek	(S. 3, 4, 7, 8, 9, T. 138, R. 38)	1B, 2A, 3B
Dead River	(T. 134, R. 40)	2B
Elbow Lake Creek	(S. 31, 32, T. 143, R. 38; S. 6, T. 142, R. 38)	1B, 2A, 3B
Holmstad Creek	(S. 7, T. 136, R. 37; S. 12, 13, 14, T. 136, R. 38)	1B, 2A, 3B
Long Lake Creek	(S. 7, T. 134, R. 42)	1B, 2A, 3B
Pelican River	(T. 133, 134, 135, 136, 137, R. 43, 44)	2B, 3C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Rush Lake Creek	(S. 23, 26, 27, 28, T. 135, R. 38)	1B, 2A, 3B
Sucker Creek	(S. 7, 18, T. 138, R. 40; S. 13, T. 138, R. 41)	1B, 2A, 3B
Toad River (except trout waters)	(T. 137, 138, 139, R. 38, 39)	2B
Toad River	(S. 6, 7, 18, 19, T. 138, R. 38; S. 28, 29, 30, 31, T. 139, R. 38)	1B, 2A, 3B
Lakes		
Bass Lake	(S. 10, 11, T. 135, R. 42)	1B, 2A, 3B
Cow Lake	(S. 15, T. 135, R. 42)	1B, 2A, 3B
Deadwood Lake	(S. 35, T. 136, R. 42)	1B, 2A, 3B
Fladmark Lake	(S. 13, 14, 24, T. 135, R. 42)	1B, 2A, 3B
Fogard Lake	(S. 13, T. 134, R. 42; S. 18, T. 134, R. 41)	1B, 2A, 3B
Hanson Lake	(S. 6, T. 139, R. 39W)	1B, 2A, 3B
Hoot Lake	(S. 30, T. 133, R. 42; S. 25, T. 133, R. 43)	1B, 2A, 3B
Kerbs Lake	(S. 4, 9, T. 136, R. 40)	1B, 2A, 3B
Otter Lake	(S. 31, T. 137, R. 41; S. 1, T. 136, R. 42; S. 6, T. 136, R. 41)	1B, 2A, 3B
Pickerel Lake	(S. 31, 32, T. 136, R. 40)	1B, 2A, 3B
Pine Lake	(S. 13, 14, 23, T. 135, R. 40)	1B, 2A, 3B
Pine Lake	(S. 1, T. 135, R. 41; S. 6, T. 135, R. 40, S. 31, T. 136, R. 40; S. 36, T. 136, R. 41)	1B, 2A, 3B
Buffalo River Watershed (No. 9)		
Buffalo River	(T. 139, 140, 141, 142, R. 45, 46, 47, 48)	2B
South Branch Buffalo River	(T. 135, 136, 137, 138, 139, R. 45, 46, 47)	2B
Deerhorn Creek	(T. 136, R. 44, 45, 46)	2C
Felton Creek	(S. 13, 14, 15, T. 141, R. 46)	1B, 2A, 3B
Hay Creek	(T. 137, 138, R. 44, 45, 46)	3C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Lawndale Creek	(S. 5, 6, T. 135, R. 45; S. 1, 2, T. 135, R. 46; S. 22, 27, 34, 35, T. 136, R. 46)	1B, 2A, 3B
Stony Creek	(T. 137, R. 45, 46)	2C
Whiskey Creek (Clay County)	(T. 137, R. 44, 45, 46)	2C
Whiskey Creek (Wilkin County)	(T. 133, 134, R. 47, 48)	2C
Wolverton Creek	(T. 135, 136, 137, R. 48)	2C
	Wild Rice River Watershed (No. 10)	
Streams		
Wild Rice River	(T. 144, 145, R. 37, 38, 39, 40 41, 42, 43, 44, 45, 46, 47, 48, 49)	2B
South Branch Wild Rice River	(T. 141, 142, 143, R. 42, 43, 44, 45, 46, 47)	2B
Agonash Creek	(S. 27, 28, 31, 32, 33, T. 145, R. 38)	1B, 2A, 3B
Bad Boy Creek	(S. 13, 14, 22, 23, 27, 28, 34, 35, 36, T. 144, R. 39)	1B, 2A, 3B
Buckboard Creek	(S. 12, 13, 24, T. 144, R. 38; S. 19, 20, 30, 31, 32, T. 144, R. 37)	1B, 2A, 3B
Maple Creek	(T. 147, 148, R. 44, 45, 46)	2C
Marsh Creek	(T. 144, 145, 146, R. 41, 42, 43)	2C
Marsh River	(T. 144, 145, 146, R. 46, 47, 48, 49)	2B
Mud Creek	(S. 13, 14, 23, 24, T. 144, R. 37)	1B, 2A, 3B
Roy (Roy Lake) Creek	(T. 144, 145, R. 39)	2C
Schermerhorn Creek	(S. 25, 26, 36, T. 145, R. 40)	1B, 2A, 3B
Sand Hill River	(T. 147, 148, R. 41, 42, 43, 44, 45, 46, 47, 48)	2B
Spring Creek (Mahnomen-Norman County)	(T. 145, 146, R. 45, 46, 47)	2C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Spring Creek (South Branch Wild Rice River) (except trout waters)	(T. 142, R. 41, 42)	2C
Spring Creek (South Branch Wild Rice River)	(S. 30, T. 142, R. 41; S. 25, 26, 27, T. 142, R. 42)	1B, 2A, 3B
Twin Lake Creek	(T. 144, 145, R. 40)	2C
White Earth River	(T. 143, 144, R. 40, 41, 42)	2C

Red Lake River Watershed (No. 11)

Red Lake River (outlet of Lower Red Lake through Crookston)	(T. 150, 151, 152, 153, 154, R. 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46)	1C, 2B, 3B
Red Lake River (Crookston to mouth)	(T. 150, 151, R. 46, 47, 48, 49)	1C, 2B, 3B
Badger Creek	(T. 149, 150, 151, R. 42, 43, 44)	2C
Barnums Creek (Burnham Creek)	(T. 148, 149, 150, R. 44, 45, 46, 47, 48)	2C
Battle River	(T. 152, R. 32)	2B
North Branch Battle River	(T. 152, R. 31, 32)	2B
South Branch Battle River (excluding trout waters)	(T. 151, 152, R. 29, 30, 31, 32)	2B
South Branch Battle River	(S. 2, 3, 4, 5, T. 151, R. 30; S. 32, T. 152, R. 30)	1B, 2A, 3B
Beaver Dam Creek	(S. 11, 12, 13, 24, 25, 36, T. 152, R. 29)	1B, 2A, 3B
Big Rock Creek	(T. 150, 151, R. 35)	2B
Blackduck River	(T. 149, 150, 151, R. 31, 32)	2B
Little Black River	(S. 2, 11, 14, 23, 26, 35, T. 152, R. 28)	1B, 2A, 3B
Black River	(T. 151, 152, 153, 154, R. 45)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Clearwater River (excluding trout waters)	(T. 147-152, R. 35-44)	2B
Clearwater River	(S. 5, 6, 8, 17, 20, 29, 31, 32, T. 148, R. 35; S. 20, 29, 31, 32, T. 149, R. 35)	1B, 2A, 3B
North Cormorant River	(T. 151, 152, R. 29, 30, 31, 32)	2B
South Cormorant River	(T. 150, 151, R. 30, 31, 32)	2B
Deer River	(T. 155, R. 32)	2B
Dumas Creek	(T. 154, R. 30)	2B
Elm Creek	(S. 4, 9, 10, 14, 15, T. 152, R. 28)	1B, 2A, 3B
Gentilly River	(T. 149, 150, R. 45)	2C
Grand Marais River	(T. 150, 151, 152, 153, R. 48, 49, 50)	2B
Hay Creek	(T. 149, 150, 151, R. 32, 33)	2B
Hill River	(T. 148, 149, 150, R. 39, 40, 41, 42)	2C
Hoover Creek (excluding trout waters)	(T. 152, 153, 154, R. 29, 30)	2C
Hoover Creek	(S. 19, 26, 27, 28, 29, 30, 35, T. 152, R. 29; S. 13, 24, T. 152, R. 30)	1B, 2A, 3B
Knife Creek	(T. 150, R. 36)	2B
Longby Creek	(S. 33, 34, T. 147, R. 39)	1B, 2A, 3B
Lost River (excluding trout waters)	(T. 149, 150, 151, R. 38-42)	2B
Lost River	(S. 20, 21, 27, 28, 33, 34, T. 148, R. 38)	1B, 2A, 3B
Manomin Creek	(T. 154, R. 34, 35)	2B
Meadow Creek (excluding trout waters)	(T. 151, R. 30, 31)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Meadow Creek	(S. 6, T. 151, R. 30; S. 1, 2, T. 151, R. 31)	1B, 2A, 3B
Moose Creek	(T. 155, R. 31)	2B
Moose River	(T. 157, 158, R. 39, 40)	2B
Mud River (excluding trout waters)	(T. 149, 150, 151, R. 33, 34)	2B
Mud River	(S. 21, 28, 29, 31, 32, T. 150, R. 33)	1B, 2A, 3B
Nassett Creek	(S. 20, 28, 29, T. 148, R. 38)	1B, 2A, 3B
O'Brien (Dorringans) Creek	(S. 2, T. 149, R. 32; S. 23, 24, 26, 35, T. 150, R. 32)	1B, 2A, 3B
Pike Creek	(T. 150, 151, R. 34)	2B
Poplar River	(T. 147, 148, 149, 150, R. 39, 40, 41, 42)	2B
Ruffy Brook	(T. 148, 149, 150, R. 37)	2B
Sandy River	(T. 149, 150, 151, R. 35, 36)	2B
Shotly Brook	(T. 153, R. 30, 31)	2B
Spring Creek	(S. 4, 5, 9, 10, T. 149, R. 30; S. 32, T. 150, R. 30)	1B, 2A, 3B
Sucker Creek	(T. 150, R. 30, 31)	2B
Tamarac River	(T. 153, 154, R. 29, 30)	2B
Thief River	(T. 154, 155, 156, 157, 158, R. 41, 42, 43)	2B
Lakes		
Upper and Lower Red Lake		2B, 3B
Long Lake	(S. 26, 27, T. 150, R. 36)	2B

WATERS	REACH OR AREA INVOLVED ON LOCATION	CLASSIFICATION
Middle River Watershed (No. 12)		
Middle River	(T. 156, 157, R. 43, 44, 45, 46, 47, 48, 49, 50)	2B
Snake River	(T. 154, 155, 156, R. 45, 46, 47, 48, 49, 50)	2B
Tamarack River (Stephen to mouth)	(T. 156, R. 48, 49, 50)	2B, 3B
Tamarack River (Source to Stephen)	(T. 157, 158, R. 45, 46, 47, 48)	1C, 2B, 3B
Two Rivers Watershed (No. 13)		
Streams		
North Branch Two Rivers	(T. 161, 162, R. 46, 47, 48, 49, 50)	2B
South Branch Two Rivers	(T. 161, R. 41-49)	1C, 2B, 3B
Middle Branch Two Rivers (Source to Hallock)	(T. 161, R. 45, 46)	1C, 2B, 3B
Middle Branch Two Rivers (Hallock to mouth)	(T. 161, R. 49)	2B
Little Joe River	(T. 163, R. 47, 48)	2C
Lakes		
Lake Bronson	(S. 32, 33, 34, T. 161, R. 46)	1C, 2B, 3B
Roseau River Watershed (No. 14)		
Streams		
South Fork Roseau River	(T. 158, 159, 160, 161, R. 38, 39, 40)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Bemis Hill Creek	(S. 19, 20, 21, 28, 29, 30, 31, 32, T. 161, R. 37)	1B, 2A, 3B
Hay Creek	(T. 161, 162, 163, R. 37, 38, 39)	2C
Sucker Creek	(T. 160, 161, R. 39)	2C
Lakes		
Lost Lake	(S. 5, T. 158, R. 35)	2B
Marvin Lake	(S. 28, 33, T. 164, R. 37)	2B

UPPER MISSISSIPPI RIVER BASIN
Mississippi River Headwaters Watershed (No. 15)

Streams		
Ada Brook	(T. 138, 139, R. 29)	2B
Alcohol Creek	(T. 143, 144, R. 34)	2C
Bear Brook	(T. 144, R. 27)	2C
Bear Creek	(T. 145, R. 36)	2C
Bear River	(T. 143, 144, R. 26)	2B
Birch Brook	(T. 141, R. 25)	2C
Bishop Creek	(S. 1, 2, 11, T. 141, R. 29)	1B, 2A, 3B
Blackberry Creek	(T. 54, R. 24)	2B
Blackwater Creek	(T. 55, R. 26)	2C
Boy River	(T. 140, 141, 142, 143, R. 27, 28, 29, 30)	2C
Bray Creek	(S. 3, 4, T. 57, R. 23; S. 33, 34, T. 58, R. 23)	1B, 2A, 3B
Buebber Creek (Beuber)	(S. 6, 7, T. 139, R. 30)	1B, 2A, 3B
Bruce Creek	(S. 6, 7, T. 53, R. 22; S. 12, 13, 14, 23, T. 53, R. 23; S. 31, T. 54, R. 22; S. 36, 25, T. 54, R. 23)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Buffalo Creek	(T. 44, R. 30, 31)	2B
Bunge Brook (Bungo Creek)	(S. 6, T. 137, R. 30; S. 31, 32, T. 138, R. 30; S. 1, 11, 12, 14, 22, 23, 26, 27, T. 137, R. 31)	1B, 2A, 3B
Bungashing Creek	(S. 28, 29, 30, T. 145, R. 32; S. 25, 26, 34, 35, T. 145, R. 33)	1B, 2A, 3B
Cedar Creek	(T. 47, R. 27)	2B
Clearwater Creek	(T. 56, 57, R. 24, 25)	2C
Cold Creek	(S. 19, T. 145, R. 33)	1B, 2A, 3B
Cullen Brook	(S. 18, 19, T. 136, R. 28)	1B, 2A, 3B
Daggett Brook	(T. 138, 139, 140, R. 26, 27)	2B
Dam Brook (except troutwaters)	(T. 45, 46, 47, R. 24, 25)	2B
Dam Brook	(S. 6, 5, 8, 9, 10, T. 45, R. 24, S. 1, T. 45, R. 25, S. 26, 35, 36, 22, 23, 15, 10, T. 46, R. 25)	1B, 2A, 3B
Day Brook	(T. 59, R. 21, 22, 23)	2B
Deer River	(T. 57, R. 27; T. 145, R. 27)	2B
Everton Creek	(T. 149, R. 30)	2C
Farley Creek	(T. 147, R. 28)	2C
Foley Brook	(T. 141, R. 25)	2C
Frontenac Creek	(T. 145, R. 34)	2C
Grant Creek	(T. 146, 147, R. 34, 35)	2B
Grassy (Gultch) Creek	(S. 23, 24, 25, 26, T. 143, R. 33)	1B, 2A, 3B
Hay Creek	(T. 137, R. 29)	2B
Hennepin Creek (except trout waters)	(T. 144, 145, 146, R. 34, 35)	2C
Hennepin Creek	(S. 3, 10, 15, 16, 21, T. 144, R. 35; S. 34, T. 145, R. 35)	1B, 2A, 3B
Little Hill River	(T. 52, 53, R. 25, 26, 27)	2B
Johnson Creek	(T. 137, R. 28)	2C

WATERS	REACH OR AREA INVOLVED ON LOCATION	CLASSIFICATION
Kabekona River	(S. 6, 7, 18, 19, T. 143, R. 32; S. 2, 3, 4, 9, 11, 12, 24, T. 143, R. 33; S. 29, 30, 32, 33, T. 144, R. 33; S. 24, 25, 36, T. 144, R. 34)	1B, 2A, 3B
Kawishiwash Creek	(S. 11, 12, 13, T. 142, R. 32)	1B, 2A, 3B
Kitchi Creek	(T. 146, 147, R. 29, 30)	2C
La Salle Creek (except trout waters)	(T. 143, 144, R. 35)	2C
La Salle Creek	(S. 6, T. 143, R. 35; S. 19, 30, 31, T. 144, R. 35)	1B, 2A, 3B
La Salle River	(T. 144, 145, R. 35)	2C
Laura Brook	(T. 141, R. 26)	2C
Libby Brook	(S. 1, 2, T. 50, R. 24; S. 5, 6, T. 50, R. 23)	1B, 2A, 3B
Long Lake Creek	(S. 10, 14, 15, T. 46, R. 25)	1B, 2A, 3B
Matushka's (Smith) Creek	(S. 35, 36, T. 54, R. 26)	1B, 2A, 3B
Merritt Creek	(S. 7, 18, T. 141, R. 29)	1B, 2A, 3B
Moose Creek	(S. 21, 22, 27, 34, T. 149, R. 29; S. 3, T. 148, R. 29)	1B, 2A, 3B
Moose River	(T. 139, 140, 141, 50, R. 25, 26, 27, 28)	2B
Morrison Brook	(S. 5, 7, 8, 18, 19, 20, 29, 30, 31, 32, 33, T. 53, R. 26; S. 4, 9, 10, 15, T. 52, R. 26)	1B, 2A, 3B
Nolan Creek	(S. 3, 4, 9, 10, 16, T. 141, R. 30)	1B, 2A, 3B
Northby Creek	(T. 140, R. 27)	2C
Norway Brook	(T. 139, R. 30)	2C
Nosti Brook	(T. 49, R. 20)	2B
O'Brien Creek	(T. 56, 57, R. 22)	2C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Pelican Brook	(T. 136, R. 27)	2B
Pickerel Creek	(S. 7, 18, T. 56, R. 22; S. 13, T. 56, R. 23)	1B, 2A, 3B
Pigeon River	(T. 147, R. 27)	2C
Pine River Headwater	(S. 30, 31, 32, T. 138, R. 30; S. 10, 14, 15, 16, 21, 22, 23, 25, 26, T. 138, R. 31)	1B, 2A, 3B
Little Pine River	(T. 136, 137, 138, R. 25, 26)	2B
South Fork Pine River	(T. 137, 138, R. 29, 30, 31)	2B
Pockedee Creek	(S. 29, 30, T. 144, R. 32; S. 24, 25, T. 144, R. 33)	1B, 2A, 3B
Pohl Creek	(T. 56, R. 26)	2B
Pokegama Creek	(T. 51, 52, R. 24)	2B
Pokegama Creek	(S. 22, 23, 26, T. 54, R. 24)	1B, 2A, 3B
Pokegama Creek (Little)	(S. 26, 27, T. 54, R. 24)	1B, 2A, 3B
Portage Brook	(T. 47, R. 25)	2B
Prairie River	(T. 50, 51, 52, 53, 54, 55, 56, 57, R. 22, 23, 24, 25)	2B
Rabbit Creek	(T. 46, R. 25)	2B
Rat Creek	(T. 144, 145, R. 34)	2C
Rice River	(T. 45, 46, 47, 48, R. 23, 24, 25, 26)	2B
Ripple River	(T. 45, 46, R. 26, 27)	2B
Rosholt Creek	(S. 22, 23, T. 55, R. 23)	1B, 2A, 3B
Sand Creek	(S. 15, 22, 27, 28, 29, 32, 33, T. 55, R. 23)	1B, 2A, 3B
Sandy River	(T. 48, R. 24)	2B
Savanna River	(T. 50, R. 23)	2B

WATERS	REACH OR AREA INVOLVED ON LOCATION	CLASSIFICATION
Schoolcraft Creek	(S. 5, 7, 8, 17, T. 142, R. 34)	1B, 2[illegible], 3B
Schoolcraft Creek (excluding trout waters)	(T. 143, 144, 145, R. 34)	2B
Schoolcraft River	(S. 20, 29, 32, T. 143, R. 34)	1B, 2[illegible], 3B
Shingobec Creek	(S. 26, 35, T. 141, R. 32)	1B, 2[illegible], 3B
Shingobee River	(S. 24, T. 141, R. 32; S. 11, 15, 16, 17, 18, 19, T. 141, R. 31)	1B, 2[illegible], 3B
Sisabagamah Creek	(T. 47, R. 26)	2B
Six Mile Brook	(T. 143, 144, R. 26, 27)	2C
Skimmerhorn Creek	(T. 149, R. 30)	2C
Skunk Creek	(T. 144, R. 34)	2C
Smith Creek	(S. 1, 9, 10, 11, 12, 13, 14, 15, T. 53, R. 26)	1B, 2[illegible], 3B
Snowball Creek	(T. 56, R. 23)	2C
Split Hand Creek	(T. 53, R. 24)	2C
Spring Brook	(T. 138, R. 28)	2B
Spring Creek	(S. 26, 27, T. 55, R. 23)	1B, 2[illegible], 3B
Spring Lake Creek	(S. 34, 35, T. 148, R. 35)	1B, 2[illegible], 3B
Stall Creek	(S. 12, 13, 14, T. 143, R. 33)	1B, 2[illegible], 3B
Stony Creek	(T. 140, R. 28)	2C
Stony Point Brook	(T. 147, R. 28)	2C
Sucker Creek (Clearwater County) (Gould Creek) (excluding trout waters)	(T. 143, 144, R. 36)	2C
Sucker Creek	(S. 5, T. 143, R. 36, S. 27, 28, 32, 33, T. 144, R. 36)	1B, 2[illegible], 3B
Sugar Creek	(T. 54, R. 26)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Swan River	(T. 52, 53, 54, 55, 56, R. 22, 23, 24)	2B
Swift River	(T. 142, R. 27)	2C
Tamarack River	(T. 48, 49, R. 20, 21, 22)	2B
Little Tamarack River	(T. 49, R. 21, 22)	2B
Third River	(T. 147, 148, R. 29)	2B
Thompson Creek	(T. 136, R. 28)	2B
Three Spring Creek (Spring Creek)	(S. 9, 10, 11, T. 139, R. 28; S. 34, T. 140, R. 28)	1B, 2A, 3B
Tibbetts Creek	(S. 15, 16, T. 147, R. 27)	1B, 2A, 3D
Turtle River	(T. 147, 148, R. 31, 32, 33, 34)	2B
North Turtle River	(T. 147, 148, R. 31)	2B
Two Rivers	(S. 24, 25, 26, T. 51, R. 24; S. 19, T. 51, R. 23)	1B, 2A, 3B
Van Sickle Brook	(T. 138, R. 26)	2B
Vermilion River	(T. 142, 143, R. 25)	2B
Wakefield Brook	(T. 47, R. 22, 23)	2B
Warba Creek	(S. 15, 21, 22, T. 54, R. 23)	1B, 2A, 3B
Welcome Creek	(T. 56, 57, R. 22)	2C
White Elk Brook	(T. 49, 50, R. 21)	2B
Whitleys Creek	(S. 15, 16, 17, T. 45, R. 30)	1B, 2A, 3B
Willow Creek	(T. 137, 138, R. 28, 29)	2B
Little Willow River	(T. 47, 48, 49, R. 26, 27)	2B
Willow River	(T. 49-51, R. 24-27, T. 141, 142, R. 25)	2B
North Fork Willow River	(T. 142, R. 25)	2C
South Fork Willow River	(T. 142, R. 25)	2C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Wilson Creek	(T. 137, R. 30)	2C
Lakes		
Allen Lake	(S. 5, T. 138, R. 26)	1B, 2A, 3B
Benjamin Lake	(S. 7, 18, T. 148, R. 30; S. 13, T. 148, R. 31)	1B, 2A, 3B
Bear Lake (Little Bear)	(S. 11, T. 57, R. 26)	1B, 2A, 3B
Benedict Lake	(S. 1, 2, 3, 11, 12, T. 142, R. 32)	1B, 2A, 3B
Blue Lake	(S. 3, 4, T. 46, R. 27; S. 33, 34, T. 47, R. 27)	1B, 2A, 3B
Bluewater Lake	(S. 8, 17, 18, 19, 20, T. 57, R. 25)	1B, 2A, 3B
Carter Lake	(S. 8, 17; T. 148, R. 31)	1B, 2A, 3B
Diamond Lake	(S. 26, 27, 34, T. 141, R. 30)	1B, 2A, 3B
Greeley Lake	(S. 9, T. 147, R. 27)	1B, 2A, 3B
Hazel Lake	(S. 25, T. 141, R. 29)	1B, 2A, 3B
Holywater Lake	(S. 3, T. 52, R. 27)	1B, 2A, 3B
Kabekona Lake	(S. various, T. 142, R. 32, T. 143, R. 33)	1B, 2A, 3B
Kremer Lake	(S. 33, 34, T. 58, R. 26)	1B, 2A, 3B
Kennedy Lake	(S. 21, T. 58, R. 23)	1B, 2A, 3B
La Salle, Lower Lake	(S. 30, 31, 32, T. 145, R. 35)	1B, 2A, 3B
Little Horn Lake	(S. 3, 10, T. 57, R. 26)	1B, 2A, 3B
Long Lake	(S. 19, T. 144, R. 36; S. 13, 24, T. 144, R. 37)	1B, 2A, 3B
Lower Hay Lake	(S. 18, 19, 30, T. 137, R. 28; S. 13, 24, 25, T. 137, R. 29)	1B, 2A, 3B
Lucky Lake	(S. 14, T. 57, R. 26)	1B, 2A, 3B
Margaret Lake	(S. 16, T. 139, R. 26)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Marion Lake	(S. 16, 17, T. 139, R. 26)	1B, 2A, 3B
Little Moonshine Lake (Moonshine)	(S. 28, 33, T. 58, R. 25)	1D, 2A, 3B
Newman (Putman) Lake	(S. 10, 11, T. 145, R. 34)	1B, 2A, 3B
Nickel Lake	(S. 12, T. 59, R. 25)	1B, 2A, 3B
Perch Lake	(S. 33, T. 139, R. 31)	1D, 2A, 3B
Pleasant Lake	(S. 19, T. 137, R. 27)	1B, 2A, 3B
[redacted]	[redacted]	[redacted]
Robertson (Coon) Lake	(S. 32, T. 143, R. 33)	1B, 2A, 3B
Roosevelt Lake	(S. 3, 4, 5, 8, 9, T. 138, R. 26; S. 14, 23, 26, 27, 33, 34, T. 139, R. 26)	1D, 2A, 3B
Snowshoe (Little Andrus) Lake	(S. 29, 30, T. 139, R. 26)	1B, 2A, 3B
Spring Lake	(S. 35, 36, T. 148, R. 35)	1D, 2A, 3B
Strawberry Lake	(S. 27, 34, T. 137, R. 28)	1B, 2A, 3B
Surprise Lake	(S. 34, T. 58, R. 26)	1B, 2A, 3B
Taylor Lake	(S. 16, T. 52, R. 25)	1D, 2A, 3B
Tepee Lake	(S. 30, T. 141, R. 29; S. 25, T. 141, R. 30)	1B, 2A, 3B
Little Turtle Lake	(S. 19, T. 46, R. 26; S. 24, T. 46, R. 27)	1D, 2A, 3B
Trout Lake	(S. various, T. 55, R. 24; T. 56, R. 24)	1B, 2A, 3B
Big Trout Lake	(T. 137, R. 27, 28, various sections)	1B, 2A, 3B
Dig Trout Lake	(S. various, T. 57, R. 25, T. 58, R. 25)	1D, 2A, 3B
Little Trout Lake	(S. 8, T. 57, R. 25)	1D, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Townline Lake	(S. 7, T. 50, R. 22; S. 12, 13, T. 50, R. 23)	1B, 2A, 3B
Wabana Lake	(S. various, T. 57, R. 25)	1B, 2A, 3B
Willard Lake	(S. 15, T. 139, R. 30)	1B, 2A, 3B
	Crow Wing River Watershed (No. 16)	
Streams		
Crow Wing River	(T. 133-139, R. 29-34)	2B
Basswood Creek	(T. 141, 142, R. 36)	2C
Beaver Creek	(T. 136, 137, R. 32, 33)	2C
Blueberry River	(T. 138, 139, R. 35, 36)	2C
Bluff Creek	(T. 135, 136, R. 36, 37)	2C
Bly Creek	(T. 127, 128, R. 38, 39)	2B
Big Swamp Creek	(T. 137, 138, 139, R. 32, 33)	2C
Calamas Creek	(T. 129, R. 36)	2B
Cat River (Cat Creek)	(S. 4, 9, 10, 11, 12, 13, T. 137, R. 35)	1B, 2A, 3B
Cat River (except trout waters)	(T. 136, 137, R. 33, 34, 35)	2C
Corey Brook (Covy)	(S. 9, 16, 21, 22, 27, T. 135 R. 30)	1B, 2A, 3B
Corey Brook (Covy) (except trout waters)	(T. 135, 136, R. 30, 31)	2B
Dismal Creek	(T. 129, 130, R. 35)	2B
Dittbrenner Creek	(T. 130, R. 38)	2B
Duel Creek	(S. 20, T. 129, R. 32)	1B, 2A, 3B
Eagle Creek	(T. 130, 131, R. 33, 34, 35)	2B
Egly Creek	(T. 133, R. 34)	2B
Farnham Creek (except trout waters)	(T. 135, 136, R. 32, 33)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Farnham Creek (Farnum Brook)	(S. 5, 6, 7, T. 135, R. 32; S. 20, 21, 29, 31, 32, 16, T. 136, R. 32)	1B, 2A, 3B
Fawn Creek	(S. 22, 27, 33, T. 134, R. 33)	1B, 2A, 3B
Finn Creek	(S. 2, 3, 11, T. 134, R. 37; S. 27, 34, T. 135, R. 37)	1B, 2A, 3B
Fishhook River	(T. 140, R. 35)	2B
Freeman's Creek	(T. 129, 130, R. 34)	2B
Gull River	(T. 133, 134, R. 29)	2B
Harris Creek	(T. 130, R. 33, 34)	2B
Hay Creek (Cass County)	(S. 7, 18, T. 135, R. 31)	1B, 2A, 3B
Hay Creek (Wadena County)	(S. 7, 8, 9, 10, 11, 17, 18, T. 134, R. 33)	1B, 2A, 3B
Hayden Brook	(T. 133, 134, R. 32)	2B
Home Brook	(T. 134, R. 30)	2B
Indian Creek	(T. 141, 142, R. 36, 37)	2C
Irene-Miltona Creek	(T. 130, R. 37)	2B
Iron Creek	(T. 135, R. 32)	2C
Kettle Creek	(T. 138, R. 37, 36, 35)	2C
Kitten Creek	(T. 137, R. 34, 35)	2C
Leaf River	(T. 134, 135, R. 33, 34, 35, 36, 37)	2B
Little Partridge River	(T. 132, 133, R. 34)	2B
Little Swamp Creek	(T. 136, 137, R. 33)	2C
Little Swan Creek	(T. 135, R. 32)	2C
Long Prairie River	(T. 129-133, R. 32, 33, 34, 35, 36, 37)	2B, 3B
Mayo Brook	(T. 136, R. 29, 30, 31)	2B
Miltona-Ida Creek	(T. 129, 130, R. 37, 38)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Moran Brook	(T. 132, 133, R. 33, 34)	2B
Mosquito Creek	(T. 133, 134, 135, R. 31)	2B
Muckey Creek	(S. 1, 2, 10, 11, 12, T. 139, R. 35)	1B, 2A, 3B
Oak Ridge Creek (Oak)	(T. 133, 134, R. 36)	2C
Olson Brook	(S. 12, 13, 14, T. 136, R. 30)	1B, 2A, 3B
Partridge Creek (Bear Creek)	(T. 131, 132, 133, R. 34, 35)	2B
Peterson Creek	(S. 30, 31, 32, T. 134, R. 30)	1B, 2A, 3B
Pillager Creek	(T. 133, R. 30)	2C
Poplar Brook	(S. 5, 6, T. 135, R. 32; S. 28, 27, 28, 32, 33, T. 136, R. 32)	1B, 2A, 3B
Redeye River	(T. 136-135, R. 37-34)	2C, 3B
Rogers Creek	(S. 29, 32, T. 134, R. 30)	1B, 2A, 3B
Seven Mile Creek	(T. 133, 134, R. 30, 31)	2C
Shell River	(T. 140, 139, 138, R. 37-33)	2B
Spruce Creek (except trout waters)	(T. 129, 130, 131, R. 36, 37)	2B
Spruce Creek	(S. 28, 29, 30, 31, 32, 33, 34, T. 131, R. 36; S. 3, 4, 9, 10, T. 130, R. 36)	1B, 2A, 3B
Straight River (except trout waters)	(T. 139, 140, 141, R. 35, 36, 37)	2B
Straight River	(S. 28, 29, 33, 34, 35, 36, T. 140, R. 36; S. 1, T. 139, R. 36)	1B, 2A, 3B
Straight Creek, Upper (Straight River)	(S. 6, 7, T. 140, R. 36; S. 30, 31, T. 141, R. 35; S. 24, 25, T. 141, R. 37; S. 4, 5, 6, 9, 10, 11, 12, T. 139, R. 35)	1B, 2A, 3B
Straight Lake Creek	(S. 1, 2, T. 140, R. 37)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Stocking Creek	(T. 136, R. 35)	2C
Stony Brook (except trout waters)	(T. 135, 136, R. 29, 30, 31)	2B
Stony Brook	(S. 5, 6, T. 135, R. 29; S. 31, 32, T. 136, R. 29; S. 20, 21, 22, 25, 26, 27, 29, T. 136, R. 30; S. 24, 25, 26, 30, 35, T. 136, R. 31)	1B, 2A, 3B
Swan Creek	(T. 134, 135, R. 32)	2C
Trap Brook	(T. 132, R. 32)	2B
Turtle Creek	(T. 129, 130, 131, R. 32, 33)	2B
Tower Creek	(T. 135, R. 32, 33)	2C
Union Creek	(S. 18, 19, 30, 31, T. 134, R. 35)	1B, 2A, 3B
Wallingford Brook	(S. 1, 2, 11, T. 139, R. 33; S. 25, 36, T. 140, R. 33)	1B, 2A, 3B
Willow Creek	(S. 2, 11, 13, 14, 23, 24, T. 133, R. 38; S. 35, T. 134, R. 38)	1B, 2A, 3B

Lakes

Beauty Lake	(S. 21, T. 134, R. 30)	1B, 2A, 3B
Blue Lake	(S. 17, 20, 21, T. 141, R. 34)	1B, 2A, 3B
Long, Little, (Long) Lake	(S. 25, 26, T. 139, R. 36)	1B, 2A, 3B

Crow River Watershed (No. 17)

Streams

Crow River	(T. 118, 119, 120, R. 22, 23, 24)	2B
Middle Fork Crow River	(T. 120, 121, 122, R. 31, 32, 33, 34)	2B
North Fork Crow River	(T. 119, 120, 121, 122, 123, 124, 125, R. 24-36)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
South Fork Crow River	(T. 116, 117, 118; R. 25, 26, 27, 28, 29, 30, 31, 32, 33)	2B
Battle Creek	(T. 120, R. 30, 31)	2C
Bear Creek	(T. 116, 117, R. 28, 29)	2B
Belle Creek	(T. 117, 118, R. 32)	2C
Buffalo Creek	(T. 115, 116, R. 26-32)	2B
Crane Creek	(T. 116, 117, R. 26, 27)	2C
Deer Creek	(T. 117, R. 24)	2B
Eagle Creek	(T. 120, R. 29)	2C
Frederick Creek	(T. 119, R. 25)	2C
Jewett Creek	(T. 119, 120, R. 30, 31)	2C
McCuen Creek	(T. 116, R. 29)	2B
Mill Creek	(T. 120, R. 26)	2B
Pioneer Creek	(T. 118, R. 24)	2C
Sarah Creek	(T. 119, R. 24)	2B
Sedan Brook	(T. 124, R. 35, 36)	2B
Silver Creek	(T. 118, R. 29)	2B
Skunk River	(T. 123, R. 34, 35)	2B
Stag Brook	(T. 121, 122, R. 30, 31)	2C
Sucker Creek	(S. 4, 5, 6, T. 118, R. 30)	1B, 2A, 3B
Twelve Mile Creek	(T. 118, 119, R. 26, 27)	2B

Rum River Watershed (No. 18)

Streams

Rum River	(T. 31-42, R. 23-27)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Beckins Creek	(T. 36, R. 23)	2B
Black Brook	(T. 41, 42, R. 26)	2C
Bogus Brook	(T. 37, 38, R. 26)	2C
Borden Creek	(S. 5, 6, 8, 9, 16, 17, T. 44, R. 20)	1D, 2A, 3B
Cedar Creek	(T. 32, 33, 34, R. 23, 24)	2B
Chase Brook	(T. 38, 39, R. 27)	2C
Crooked Brook	(T. 33, R. 23)	2B
Estes Brook	(T. 36, 37, 38, R. 27, 28)	2C
Ford Brook	(T. 32, 33, 34, R. 25)	2B
Green Lake Brook	(T. 36, R. 25)	2B
Hanson Brook	(T. 40, R. 27)	2C
Mike Drew Brook	(T. 38, 39, R. 26, 27)	2C
O'Neill Brook	(T. 38, R. 26)	2C
Prairie Brook	(T. 36, R. 27)	2C
Seelye Brook	(T. 33, 34, R. 24, 25)	2B
Spencer Brook	(T. 35, R. 25)	2B
Stanchfield Brook	(T. 37, 38, R. 23, 24)	2B
Tibbetts (Brook) Creek (except trout waters)	(T. 39, 40, R. 27, 28)	2C
Tibbetts Creek	(S. 2, 11, 12, 13, 24, T. 39, R. 28; S. 19, 24, 25, 26, 27, 36, T. 40, R. 28)	1B, 2A, 3B
Trott Brook	(T. 32, R. 25)	2B
Whitney Brook	(T. 39, R. 26, 27)	2C
Wyanett Creek	(T. 35, 36, R. 25)	2B
Vandell Brook	(T. 37, 38, R. 26)	2C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Mississippi-Sauk Rivers Watershed (No. 19)		
Streams		
Sauk River	(T. 123, 124, 125, R. 28, 29, 30 31, 32, 33)	2B, 3B
Adley Creek	(T. 126, R. 33)	2B
Ashley Creek	(T. 126, 127, R. 34, 35, 36)	2B
Arramba Creek	(T. 40, R. 30)	2C
Battle Brook	(T. 35, R. 26, 27)	2C
Beautiful Creek	(T. 127, R. 31)	2C
Black Brook	(T. 42, 43, R. 30)	2C
Boss Creek	(T. 128, 129, R. 34, 35)	2B
Briggs Creek	(S. 2, 11, 12, 14, 15, 22 T. 35, R. 29)	1B, 2A, 3B
Buckman Creek	(T. 39, 40, R. 30, 31)	2C
Bunker Hill Creek	(T. 38, R. 31)	2B
Clearwater River	(T. 121, 122, 123, R. 27, 28, 29, 30)	2B, 3B
Cold Spring Creek	(S. 14, 15, T. 123, R. 30)	1B, 2A, 3B
Coon Creek	(T. 43, R. 29, 30)	2C
Crooked Lake Ditch	(T. 128, R. 35, 36)	2B
Dagget Brook	(T. 43, R. 29, 30)	2C
Elk River	(T. 38-32, R. 30-26)	2B, 3B
Fairhaven Creek	(S. 5, T. 121, R. 28; S. 32, T. 122, R. 28)	1B, 2A, 3B
Fish Creek	(T. 127, R. 32)	2B
Fletcher Creek	(T. 42, R. 31)	2C
Getchell Creek	(T. 125, 126, R. 31, 32)	2B
Hanson (3-Mile) Brook	(S. 21, 22, 25, 26, 27, 36, T. 122, R. 28)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Hay Creek	(T. 43, 44, R. 30, 31)	2C
Hazel Creek	(T. 127, R. 29, 30)	2C
Hillman Creek	(T. 40, 41, R. 28, 29, 30)	2B
Irish Creek	(T. 129, R. 31)	2C
Karlen Creek	(S. 4, 20, 29, 32, 33, T. 127, 128, R. 33)	1B, 2A, 3B
Kinzer Creek	(S. 27, 34, T. 123, R. 30)	1B, 2A, 3B
Krain Creek	(T. 126, R. 31)	2B
Kuntz Creek	(T. 39, R. 30)	2B
Larson Creek	(S. 1, 6, 7, T. 128, 129, R. 32, 33)	1B, 2A, 3B
Little Elk River	(T. 130, 131, R. 30, 31)	2C
So. Branch Little Elk River	(T. 130, R. 30, 31, 32)	2C
Little Rock Creek (excluding trout waters)	(T. 38, 39, R. 30, 31)	2B
Little Rock Creek	(S. 3, 4, 10, 15, 21, 22, T. 38, R. 31)	1B, 2A, 3B
Luxemburg Creek	(S. 15, 16, 17, 19, 20, 21, 22 30, T. 123, R. 28)	1B, 2A, 3B
Meadow Creek	(T. 128, R. 30)	2C
Meyers (Johnson) Creek	(S. 22, 27, 33, 34, T. 123, R. 28)	1B, 2A, 3B
Big Mink Creek	(T. 41, 42, R. 30, 31)	2C
Little Mink Creek	(T. 41, 42, R. 29, 30, 31)	2C
Little Osakis Creek	(T. 129, R. 34, 35)	2B
Meyers Creek	(S. 25, 24, 13, T. 123, R. 28)	1B, 2A, 3B
Molly Creek	(S. 12, 13, 24, 25, 36, T. 128, R. 32)	1B, 2A, 3B
Moose Lake Creek	(T. 128, R. 32)	2B
Nelson-Hay Creek	(S. 1, 2, T. 130, R. 31)	1B, 2A, 3B
Nokasippi River	(T. 45-43, R. 29, 30, 31, 32)	2B, 3B
Pike Creek	(T. 129, R. 30)	2C
Platte River	(T. 38, 39, 40, R. 31, 32)	2B, 3C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Prairie Brook	(T. 127, R. 33)	2B
Rice Creek	(T. 35, R. 29)	2C
Robinson Hill Creek	(S. 4, 9, 10, 15, T. 123, R. 28; S. 32, 33, T. 124, R. 28)	1B, 2A, 3B
Round Prairie Creek	(S. 4, T. 127, R. 33; S. 20, 29, 33, T. 128, R. 33)	1B, 2A, 3B
Round Lake Creek	(S. 14, 15, T. 43, R. 31)	1B, 2A, 3B
St. Augusta Creek	(T. 123, R. 27, 28)	2B
Sauk Creek, Little	(S. 1, 2, T. 127, R. 34; S. 36, T. 128, R. 34)	1B, 2A, 3B
Skunk River	(T. 42-40, R. 28, 29, 30, 31)	2B
Spunk Creek	(T. 125, 126, 127, R. 29, 30)	2B
Smarts Creek	(S. 17, 20, T. 126, R. 28)	1B, 2A, 3B
Snake River	(T. 33, 34, 35, R. 27, 28)	1B, 2A, 3B
Spring Brook	(S. 7, T. 121, R. 28; S. 12, T. 121, R. 29)	1B, 2A, 3B
Stony Brook	(T. 35, 36, 37, R. 29)	2B
Stony Creek (excluding trout waters)	(T. 124, R. 33, 34)	2B
Stony Creek	(S. 15, 16, 17, 21, 22, 23, T. 124, R. 33)	1B, 2A, 3B
Sucker Creek	(T. 37, R. 30, 31)	2B
Swan River	(T. 128, R. 29, 30, 31, 32, 33)	2B
Taylor Creek	(T. 128, R. 31)	2C
Ted Brook Creek	(T. 130, R. 31)	2C
Thiel Creek (Teal)	(S. 6, 7, T. 121, R. 28)	1B, 2A, 3B
Tibbits Brook	(T. 33, 34, R. 26, 27)	2C
Two Rivers	(T. 127, 128, R. 29, 30, 31)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
North Branch Two Rivers	(T. 127, 128, R. 29, 30)	2B
South Branch Two Rivers	(T. 125, 126, 127, R. 30, 31)	2B
Watab River	(T. 124, 125, R. 29, 30)	2B
Willow Creek	(S. 3, 10, 11, 14, T. 121, R. 29)	1B, 2B, 3B
Wolf Creek	(T. 42, R. 30)	2C
Zuleger Creek	(T. 38, R. 31)	2B
Lakes		
Dodd's Quarry, No. 20	(S. 6, T. 35, R. 30)	1B, 2B, 3B
Big Watab Lake	(S. 9, 16, 21, T. 124, R. 30)	1B, 2B, 3B

MINNESOTA RIVER BASIN
Big Stone Lake Watershed (No. 20)

Streams		
Emily Creek	(T. 118, 119, R. 43)	2C
Fish Creek	(T. 123, 124, R. 47, 48)	2C
Five Mile Creek	(T. 120, R. 44)	2C
Stony Run	(T. 121, 122, R. 45, 46)	2C

Pomme de Terre River Watershed (No. 21)

Streams		
Pomme de Terre River	(T. 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, R. 43, 42, 41)	2B
Dry Wood Creek	(T. 122, R. 42, 43)	2C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Mud Creek	(T. 124, 125, 126, R. 42, 43)	2D
Pelican Creek	(T. 130, R. 41, 42)	2C

Lac Qui Parle River Watershed (No. 22)

Streams

Ten (Three) Mile Creek	(S. 1, 2, 11, T. 117, R. 42; S. 26, 35, 36, T. 118, R. 42)	1D, 2A, 3B

Chippewa River Watershed (No. 23)

Streams

Chippewa River	(T. 117-129, R. 41-22)	2B, 3B
East Branch Chippewa River	(T. 122-126, R. 37-39)	2B
Little Chippewa River	(T. 125, 126, R. 39)	2B
Cottonwood Creek	(T. 119, 120, 121, R. 41, 42)	2C
Dry Weather Creek	(T. 117, 118, R. 39, 40, 41)	2C
Hassel Creek	(T. 122, 123, R. 38, 39)	2C
Mud Creek	(T. 122, 123, R. 36, 37, 38)	1B, 2A, 3B
Outlet Creek	(T. 124, 125, R. 39)	
Perkins Creek	(S. 7, T. 125, R. 37; S. 12, T. 125, R. 38)	1B, 2A, 3B
Shakopee Creek	(T. 119, 120, R. 36, 37, 38, 39, 40)	2C
Signalness Creek	(T. 124, R. 39)	2B
Spring Creek	(T. 117, R. 40)	2C
Trapper Run	(T. 125, 126, R. 38, 39)	2B

ITEMS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION

Yellow Medicine River Watershed (No. 24)

Streams

Yellow Medicine River (source to the mouth of the North Fork Yellow Medicine River)	(T. 112, 113, 114, 115, R. 38, 39, 40, 41, 42, 43, 44)	2B
South Fork Yellow Medicine River	(T. 111, 112, 113, R. 42, 43, 44, 45)	2B
Boiling Spring Creek	(T. 113, 114, R. 37, 38)	2C
Echo Creek	(T. 114, R. 37)	2C
Hazel Run	(T. 115, R. 39, 40, 41, 42)	2C
Mud Creek	(T. 114, R. 44, 43, 45)	2C
Spring Creek	(T. 114, 115, R. 40, 41)	2B
Stony Run Creek	(T. 116, R. 40)	2C
Wood Lake Creek	(T. 113, 114, R. 38, 39)	2C

Redwood River Watershed (No. 25)

Streams

Redwood River (except trout waters)	(T. 108-113, R. 35-44)	2B
Redwood River	(S. 5, 8, T. 110, R. 42; S. 32, T. 111, R. 42)	1B, 2A, 3B
Clear Creek	(T. 111, 112, R. 37, 38, 39, 40)	2B
Coon Creek	(T. 110, 111, R. 43, 44, 45)	2B
Ramsey Creek	(T. 112, 113, R. 36, 37, 38)	1B, 2A, 3B
Three Mile Creek	(T. 111, 112, R. 40, 41, 42, 43)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Cottonwood River Watershed (No. 26)		
Streams		
Cottonwood River	(T. 108-110, R. 30-40)	2B
Little Cottonwood River	(T. 107, 108, 109, R. 29, 30, 31, 32, 33, 34, 35, 36)	2B
Crow Creek	(T. 112, R. 35)	2C
Dry Creek	(T. 108, 109, R. 36)	2C
Dutch Charley's Creek	(T. 107, 108, 109, R. 37, 38)	2B
Highwater Creek	(T. 107, 108, 109, R. 37)	2B
Hindeman Creek	(S. 19, 20, 21, 28, T. 111, R. 32)	1B, 2A, 3B
John's Creek	(S. 31, T. 111, R. 31)	1B, 2A, 3B
Meadow Creek	(T. 110, 111, R. 40, 41)	2B
Mine Creek (Coal Mine)	(T. 109, R. 35, 36, 37)	2B
Minneopa Creek	(T. 107, 108, R. 28, 29)	2B
Morgan Creek	(T. 109, R. 29, 30)	2C
Mound Creek	(T. 108, R. 35, 36)	2B
Pell Creek	(T. 108, 109, R. 37, 38, 39)	2B
Plum Creek	(T. 108, 109, R. 39, 38, 40)	2B
Ramsey Creek	(S. 36, T. 112, R. 36)	1B, 2A, 3B
Sleepy Eye Creek	(T. 109, 110, 111, R. 33, 34, 35, 36, 37, 38)	2B
Spring Creek	(T. 110, 111, R. 32, 33, 34)	2C
Wabasha Creek	(T. 112, R. 34)	2C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION

Blue Earth River Watershed (No. 27)

Streams

East Fork Blue Earth River (Source to Brush Creek)	(T. 102, R. 24, 25)	2B
Badger Creek	(T. 101, 102, R. 28)	2C
Boot Creek	(T. 105, 106, R. 22, 23)	2C
Butterfield Creek	(T. 106, 107, R. 31, 32, 33)	2C
Cedar Run Creek	(T. 102, 104, R. 32, 33)	2C
Center Creek	(T. 103, R. 28, 29, 30)	2B
Big Cobb River	(T. 104, 105, 106, 107, R. 23, 24, 25, 26)	2C
Little Cobb River	(T. 105, 106, R. 23, 24, 25, 26)	2C
Elm Creek	(T. 103, 104, R. 28, 29, 30, 31, 32, 33, 34)	2B
North Fork Elm Creek	(T. 104, R. 34)	2C
South Fork Elm Creek	(T. 103, R. 34)	2C
Foster Creek	(T. 102, 103, R. 24)	2C
Iosco Creek	(T. 106, R. 21)	2C
Le Sueur River	(T. 105, 106, 107, 108, R. 22, 23, 24, 25, 26, 27)	2B
Little Le Sueur River	(T. 106, R. 22)	2C
Lily Creek	(T. 102, 103, R. 31, 32)	2B
Little Bull Run Creek	(T. 106, R. 24, 25)	2C
Maple River	(T. 104, 105, 106, 107, R. 24, 25, 26, 27)	2B
Mink Creek	(T. 104, R. 30, 31)	2C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Perch Creek	(T. 104, 105, 106, R. 29, 30)	2C
St. James Creek	(T. 105, 106, 107, R. 31, 32, 33)	2C
Silver Creek	(T. 106, R. 23, 24)	2C
Spring Branch Creek	(T. 106, R. 29, 30)	2C
Watonwan River	(T. 106, 107, R. 27, 28, 29, 30, 31, 32, 33, 34, 35)	2B
North Fork Watonwan River	(T. 107, R. 31, 32, 33, 34, 35)	2B
South Fork Watonwan River	(T. 104, 105, 106, 107, R. 30, 31, 32, 33, 34, 35)	2B
Willow Creek	(T. 104, 105, R. 31, 32)	2C
Lakes		
Amber Lake	(T. 102, R. 30)	1C, 2B, 3B
Bardwell Lake	(T. 102, R. 30)	1C, 2B, 3B
Budd Lake	(T. 102, R. 30)	1C, 2B, 3B
George Lake	(T. 102, R. 30)	1C, 2B, 3B
Hall Lake	(T. 102, R. 30)	1C, 2B, 3B
Mud Lake	(T. 102, R. 30)	1C, 2B, 3B
North Silver Lake	(T. 101, R. 30)	1C, 2B, 3B
Sisseton Lake	(T. 102, R. 30)	1C, 2B, 3B
Wilmert Lake	(T. 101, R. 30)	1C, 2B, 3B
Minnesota River-Hawk Creek (No. 28)		
Streams		
Beaver Creek	(T. 113, 114, R. 34, 35)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
East Fork Beaver Creek	(T. 114, 115, R. 34, 35)	2B
West Fork Beaver Creek	(T. 114, 115, 116, R. 35, 36)	2B
Birch Coulee Creek	(T. 112, 113, 114, R. 34)	2B
Brafees Creek	(T. 116, 117, R. 40)	2C
Chetomba Creek	(T. 116, 117, R. 36, 37, 38)	2C
Eight Mile Creek	(T. 111, 112, 113, R. 31)	2C
Fort Ridgely Creek	(T. 111, 112, 113, R. 33)	2B
Hawk Creek	(T. 115, 116, 117, 118, R. 37, 38, 39)	2B
Little Rock Creek	(T. 111, 112, 113, 114, R. 32)	2B
Middle Creek	(T. 113, 114, R. 36)	2C
Nicollet Creek	(T. 109, R. 28)	2B
Palmer Creek	(T. 116, 117, 118, R. 39)	2C
Sacred Heart Creek	(T. 114, 115, 116, R. 37)	2B
Smith Creek	(T. 113, R. 35, 36)	2C
Three Mile Creek	(T. 112, R. 33)	2C
Timms Creek	(T. 114, 115, R. 36)	2C

Lower Minnesota River Watershed (No. 29)

Streams

Barney Fry Creek	(T. 111, R. 26, 27)	2B
Bevens Creek	(T. 115, 114, R. 24, 25, 26)	2B
Bluff Creek	(T. 110, R. 23)	2B
Buffalo Creek	(T. 113, R. 26, 27)	2B
Carver Creek	(T. 115, 116, R. 23, 24, 25)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Chaska Creek	(T. 115, 116, R. 23)	2B
Credit River	(T. 114, 115, R. 23, 24)	2B
Cherry Creek	(T. 110, R. 25, 26)	2D
Eagle Creek	(S. 7, 18, T. 115, R. 21; S. 12, T. 115, R. 22)	1B, 2A, 3B
Eagle Creek, East Branch	(S. 18, T. 115, R. 21)	1B, 2A, 3B
Forest Prairie Creek	(T. 112, R. 24, 25)	2D
High Island Creek	(T. 113, 114, R. 26, 27, 28)	2D
Le Sueur Creek	(T. 111, 112, R. 24, 25)	2D
Nine Mile Creek	(T. 115, 116, 117, R. 24, 22, 21)	2D
Paul's Creek	(S. 14, T. 110, R. 24)	1B, 2A, 3B
Porter Creek	(T. 113, 114, R. 21, 22, 23)	2B
Purgatory Creek	(S. 29, 31, 32, T. 117, R. 22)	1B, 2A, 3B
Purgatory Creek (except trout waters)	(T. 116, 117, R. 22)	2B
Raven Stream	(T. 112, 113, 114, R. 23, 24)	2D
Riley Creek	(T. 116, R. 22, 23)	2B
Rush Creek (Rush River)	(T. 112, 113, R. 26, 27, 28)	2B
North Fork Rush River	(T. 112, R. 27, 28)	2D
Middle Fork Rush River	(T. 112, 113, R. 27, 28, 29, 30, 31)	2B
South Fork Rush River	(T. 112, 113, R. 26, 27, 28, 29)	2D
Sand Creek	(T. 115, 114, 113, 112, 111, R. 23, 22)	2B
Shakopee Mill Pond Creek	(S. 5, 6, T. 115, R. 22; S. 32, T. 116, R. 22)	1B, 2A, 3B
Shanaska Creek	(T. 109, 110, R. 26)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Silver Creek	(T. 114, R. 24, 25)	2B
Lakes		
Courthouse Lake	(S. 9, T. 115, R. 23)	1B, 2A, 3B
ST. CROIX RIVER BASIN		
Kettle River Watershed (No. 30)		
Kettle River	(T. 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, R. 19, 20)	2B
Bang's Brook	(S. 15, 20, 21, 22, 29, T. 41, R. 17)	1B, 2A, 3B
Barnes Spring	(S. 1, 12, T. 41, R. 18)	1B, 2A, 3B
Bear Creek	(T. 40, 41, 42, 43, R. 18, 19, 20)	2B
Birch Creek	(T. 45, R. 20, 21, 22)	2B
Bjork Creek	(S. 2, 9, 10, 11, T. 42, R. 16)	1B, 2A, 3B
Bremen Creek	(T. 44, R. 21, 22)	2B
Little Bremen Creek	(T. 44, 45, R. 21)	2B
Cedar Creek	(T. 40, R. 20)	2B
Cons Creek	(S. 15, 22, T. 41, R. 17)	1B, 2A, 3B
East Fork Crooked Creek	(T. 41, 42, 43, 44, R. 17, 18)	2B
Crooked Creek, West Fork	(S. 11, 12, T. 41, R. 18; S. 3, 4, 9, 10, 16, T. 42, R. 18; S. 27, 34, T. 43, R. 18)	1B, 2A, 3B
Crooked Creek	(S. 18, 19, 20, 29, 30, T. 41, R. 17; S. 12, 13, T. 41, R. 18)	1B, 2A, 3B
Crystal Creek	(S. 9, 10, 15, T. 41, R. 18)	1B, 2A, 3B
Dead Moose River	(T. 46, 47, R. 20, 21, 22)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Deer Creek	(T. 41, R. 20)	2B
Fox Brook	(T. 41, R. 20)	2B
North Fork Grindstone River	(T. 41, 42, R. 21)	2B
Grindstone River	(S. 20, 21, 29, T. 42, R. 21)	1B, 2A, 3B
South Fork Grindstone River	(T. 41, 42, R. 21, 22)	2B
Hay Creek (Clover Creek)	(S. 6, 7, 8, 18, 19, T. 40, R. 18; S. 10, 15, 20, 21, 22, 29, 33, T. 41, R. 18)	1B, 2A, 3B
Hanson Creek	(T. 42, R. 16)	2B
Johnson Creek	(T. 43, R. 17)	2B
Keene Creek	(T. 42, 43, 44, R. 17)	2B
Kenny's Creek	(T. 41, R. 17)	2B
Kennedy Brook	(T. 40, R. 19)	2B
King Creek	(T. 47, R. 19)	2C
Langstrom Creek	(T. 42, R. 16)	2B
Larson Creek	(S. 4, 5, T. 44, R. 17; S. 29, 32, T. 45, R. 17)	1B, 2A, 3B
Little Hay Creek	(S. 8, 9, T. 40, R. 18)	1B, 2A, 3B
Lost Creek	(S. 9, 10, 15, T. 40, R. 19)	1B, 2A, 3B
Mark Andrews (Trout) Brook	(T. 41, 42, R. 16)	1B, 2A, 3B
McCullen (Albrects) Creek	(S. 28, 33, T. 42, R. 16)	1B, 2A, 3B
McDermott Creek	(T. 42, 43, 44, R. 16, 17)	2B
Moose Horn River (except trout waters)	(T. 46, 47, 48, R. 18, 19)	2B
Moose Horn River	(S. 3, 9, 10, 14, 15, 16, 23, 26, T. 48, R. 18)	1B, 2A, 3B
West Fork Moose Horn River	(T. 47, R. 19)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
O'Mix Creek	(T. 43, 44, R. 20)	2B
Ox Creek	(T. 43, R. 17)	2B
Pine River	(T. 43, 44, R. 20, 21)	2B
Little Pine River	(T. 43, R. 21)	2B
Sand River (except trout waters)	(T. 40-44, R. 18, 19)	2B
Sand River	(S. 4, 5, 7, 8, 18, 19, T. 43, R. 18; S. 33, T. 44, R. 18)	1B, 2A, 3B
Little Sand Creek	(T. 40, 41, 42, R. 18, 19)	2B
Son-Ke-Ta (Sonqueta) Creek	(T. 41, R. 16)	2B
Split Rock River	(T. 45, 46, R. 20, 21, 22)	2B
Spring Brook (Creek)	(S. 16, 17, 18, 21, T. 41, R. 20)	1B, 2A, 3B
Squib Creek	(T. 42, 43, R. 16, 17)	2B
Lower Tamarack River	(T. 41, 42, 43, 44, R. 16, 17)	2B
Thunder Creek	(T. 41, 42, R. 18)	2B
Wilbur Brook	(S. 29, 30, T. 41, R. 17; S. 25, 26, T. 41, R. 18)	1B, 2A, 3B
Willow River (except trout waters)	(T. 44, 45, R. 17-20)	2B
Willow River	(S. 19, 22, 27, 28, 29, 30, T. 45, R. 17; S. 13, 14, 15, 24, T. 45, R. 18)	1B, 2A, 3B
Little Willow River	(T. 44, 45, R. 18, 19)	2B
Wolf Creek	(S. 4, 9, 16, T. 42, R. 18; S. 32, 33, T. 43, R. 18)	1B, 2A, 3B
Lakes		
Greigs Lake	(S. 10, T. 41, R. 17)	1B, 2A, 3B
Grindstone Lake	(S. 5, 8, 16, 17, 21, T. 42, R. 21)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Snake River Watershed (No. 21)		
Streams		
Snake River	(T. 38-44, R. 19-23)	2B
Ann River	(T. 39, 40, R. 24)	2B
Little Ann River	(T. 40, 41, R. 24, 25)	2B
Bear Creek	(T. 43, R. 23, 24)	2C
Bergman Brook	(T. 42, 43, R. 23, 24)	2C
Chelsey Brook	(T. 42, 43, 44, R. 22, 23)	2B
Cowan Brook	(T. 42, 43, 44, R. 23)	2B
Groundhouse River	(T. 38, 39, 40, 41, R. 24, 25, 26)	2B
South Fork Groundhouse River	(T. 38, 39, R. 25, 26)	2B
West Fork Groundhouse River	(T. 39, 40, R. 26)	2C
Hay Creek (1)	(T. 42, R. 23, 24)	2B
Hay Creek (2)	(T. 38, R. 22)	2B
Knife River	(T. 40, 41, 42, R. 23, 24, 25)	2B
Mission Creek (except trout waters)	(T. 39-41, R. 20, 21)	1B, 2B
Mission Creek	(S. 1, 2, T. 40, R. 21; S. 31, T. 41, R. 20; S. 36, T. 41, R. 21)	1B, 2A, 3D
Mud Creek	(T. 38, 39, 40, R. 22, 23)	2B
Pokegama Creek	(T. 40, 41, R. 22)	2B
Red Horse Creek	(T. 39, R. 19)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Snowshoe Brook	(T. 41, 42, R. 23)	2B
Spring Creek	(T. 39, R. 23, 24)	2B

Lower St. Croix River Watershed (No. 32)

Streams

Beaver Creek	(S. 7, 8, 17, T. 35, R. 20; S. 3, 4, 10, 12, 13, 14, 15, T. 35, R. 21; S. 33, 34, T. 36, R. 21)	1B, 2A, 3B
Beaver Creek, South Tributary	(S. 15, T. 35, R. 21)	1B, 2A, 3B
Brown's Creek	(S. 20, 21, T. 30, R. 20)	1B, 2A, 3B
Dry Creek	(T. 34, R. 19)	2B
Goose Creek	(T. 36, R. 20, 21, 22)	2B
Hay Creek (except trout waters)	(T. 35, R. 20, 21)	2B
Hay Creek	(S. 7, 8, T. 35, R. 20)	1B, 2A, 3B
Lawrence Creek	(S. 2, 3, 10, T. 33, R. 19)	1B, 2A, 3B
Old Mill Stream	(S. 6, T. 31, R. 19; S. 1, T. 31, R. 20; S. 36, T. 32, R. 20)	1B, 2A, 3B
Rock Creek	(T. 37, 38, R. 20, 21)	1B, 2B
Rush Creek	(T. 37, R. 20, 21)	1B, 2B
Sunrise River	(T. 33, 34, 35, R. 20, 21)	2B
Silver Creek	(T. 30, R. 20)	2B
North Branch Sunrise River	(T. 35, R. 20, 21, 22, 23)	2B
West Branch Sunrise River	(T. 34, R. 21, 22)	1B, 2B
South Branch Sunrise River	(T. 33, 34, R. 21, 22)	2B
Trout Brook	(T. 27, R. 20)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Valley Branch	(T. 29, R. 20)	1B, 2A, 3B

LOWER MISSISSIPPI RIVER BASIN
Metropolitan Area Watershed (No. 33)

Streams

Vermilion River	(T. 113, 114, R. 15-21)	2B
South Branch Vermilion River	(T. 113, 114, R. 18, 19, 20)	2B
Bass Creek	(T. 118, 119, R. 21, 22)	2B
Basset Creek	(T. 118, R. 22, 21, 24)	2B
Battle Creek	(T. 29, R. 21, 22)	2B
Clearwater Creek (Hardwood Creek)	(T. 31, 32, R. 22, 21)	2B
Coon Creek	(T. 31, 32, R. 24, 23)	2B
Diamond Creek	(T. 120, R. 22)	2B
Elm Creek	(T. 120, 119, 118, R. 21, 22, 23)	2B
Fish Creek	(T. 28, R. 22)	2C
Minnehaha Creek	(T. 117, R. 24, 21, 22)	2B
Rice Creek	(T. 30, 31, 32, R. 24, 23, 22)	1C, 2B, 3B
Rush Creek	(T. 119, 120, R. 22, 23)	2B
Shingle Creek	(T. 118, 119, R. 24, 21)	2B

Cannon River Watershed (No. 34)

Streams

Cannon River	(T. 109, 110, 111, 112, 113, R. 15, 16, 17, 18, 19, 20, 21, 22, 23)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Big Cannon River	(T. 109, 110, R. 22, 23, 24)	2B
Little Cannon River	(T. 110, 111, 112, R. 16, 17)	2B, 3B
Belle Creek (except trout waters)	(T. 111, 112, 113, R. 16, 17)	2B
Belle Creek	(S. 25, 35, 36, T. 111, R. 17; S. 19, 20, 30, T. 111, R. 16)	1B, 2A, 3B
Chub Creek	(T. 112, R. 19, 20)	2B
North Branch Chub Creek	(T. 113, 113, R. 19)	2C
Crookers Creek	(T. 107, 110, R. 21)	2B
Crane Creek	(T. 107, 108, R. 20, 21, 22)	2C
Devil Creek	(T. 109, 110, R. 22)	2B
Dutch Creek	(T. 112, R. 20, 21)	2C
Falls Creek	(T. 110, R. 19, 20)	2B
Heath Creek	(T. 111, R. 20, 21)	2B
MacKenzie Creek	(T. 108, 109, R. 21)	2C
Maple Creek	(T. 107, R. 19, 20)	2B
Mud Creek	(T. 108, 107, R. 20, 21)	2C
Pine Creek	(T. 112, 113, R. 17, 18)	2C
Prairie Creek	(T. 112, 111, 110, R. 18, 19, 20)	2C
Rush Creek	(T. 105, 106, 107, 108, 109, R. 19, 20)	2B
Straight River	(T. 105, 106, 107, 108, 109, 110, R. 20, 21)	2B
Turtle Creek	(T. 106, 107, R. 20)	2B
Wolf Creek	(T. 111, R. 20, 21)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION

Zumbro River Watershed (No. 35)

Streams

Zumbro River	(T. 108, 109, 110, R. 9, 10, 11, 12, 13, 14)	2B
North Fork Zumbro River	(T. 109, 110, R. 14-20)	2B
North Branch Middle Fork Zumbro River	(T. 108, 109, R. 14-17)	2B
South Fork Zumbro River	(T. 105-108, R. 14, 15, 16, 17)	2B
South Branch Middle Fork Zumbro River	(T. 107, 108, R. 14-16)	2B
Middle Fork Zumbro River	(T. 107, 108, 109, R. 14-16)	2B
Badger Run	(T. 106, R. 13)	2B
Bear Creek (excluding trout waters)	(T. 106, R. 12, 13)	2B
Bear Creek	(S. 15, 16, 17, 18, 21, T. 106, R. 12)	1B, 2A, 3B
Bullard Creek	(T. 112, R. 14)	2B
Cascade Creek	(T. 106, 107, R. 14, 15)	2B
Cold Creek	(T. 110, 111, R. 14)	2C
Cold Spring Brook	(S. 25, 36, T. 110, R. 14; S. 30, 31, T. 110, R. 13)	1B, 2A, 3B
Devlin Creek	(S. 26, 27, 34, 35, T. 109, R. 17)	1B, 2A, 3B
Dodge Center Creek	(T. 106, 107, R. 17, 18)	2B
Gilbert Creek (excluding trout waters)	(T. 111, R. 12, 13)	2B
Gilbert Creek	(S. 1, 11, 12, T. 111, R. 13)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Harkcom Creek	(T. 108, R. 16)	2C
Hay Creek (excluding trout waters)	(T. 111, 112, R. 14, 15)	2B
Hay Creek	(S. 29, 24, 26, 27, 33, 34, T. 112, R. 15)	1B, 2A, 3B
King Creek	(T. 111, R. 11, 12)	2C
Long Creek	(T. 108, 109, R. 12)	2C
Masten Creek	(S. 22, 27, T. 107, R. 16)	1B, 2A, 3B
Mazeppa Creek	(S. 24, 25, T. 110, R. 15; S. 4, 5, 9, T. 109, R. 14; S. 19, 29, 30, 32, T. 110, R. 14)	1B, 2A, 3B
Miller Creek	(T. 111, R. 12)	2B
Pine Island Creek	(T. 109, R. 14, 15, 16)	2B
Pleasant Valley Creek	(S. 9, 10, 14, T. 112, R. 13)	1B, 2A, 3B
Plum Creek	(T. 108, R. 15)	2C
Milliken Creek	(T. 108, R. 16, 17, 18)	2B
Salem Creek	(T. 106, R. 15, 16)	2C
Shingle Creek	(T. 109, 110, R. 17)	2C
Silver Creek	(T. 107, R. 12, 13)	2B
Silver Spring Creek	(T. 108, 109, R. 13)	2C
Spring Creek	(T. 110, R. 12, 13)	2B
Spring Creek	(S. 6, 7, 18, T. 112, R. 15)	1B, 2A, 3B
Sugar Creek (Sugarloaf Creek)	(T. 111, 112, R. 12, 13)	2C
Trout Brook	(T. 110, 111, R. 14, 15)	2B
Wells Creek (excluding trout waters)	(T. 111, 112, R. 13, 14)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Wells Creek	(S. 3, 4, 5, 6, 7, 8, T. 111, R. 14; S. 33, 34, T. 112, R. 14)	1B, 2A, 3B
West Albany Creek	(T. 110, 111, R. 12, 13)	2B
West Indian Creek (excluding trout waters)	(T. 106, 107, 110, R. 11)	2B
West Indian Creek	(S. 16, 21, 28, T. 109, R. 11)	1B, 2A, 3B
Willow Creek	(T. 105, 106, R. 14)	2B

Root River Watershed (No. 36)

Streams

Badger Creek (excluding trout waters)	(T. 103, R. 6)	2B
Badger Creek	(S. 16, 21, 27, 28, T. 103, R. 6)	1B, 2A, 3B
Bear Creek (excluding trout waters)	(T. 107, R. 9)	2B
Bear Creek	(S. 13, 14, 15, T. 107, R. 9)	1B, 2A, 3B
Beaver Creek (excluding trout waters)	(T. 106, R. 10, 11)	2B
Beaver Creek (Wabasha County)	(S. 24, T. 108, R. 11; S. 13, 18, 19, 20, 21, T. 108, R. 10)	1B, 2A, 3B
Beaver Creek (excluding trout waters) (Houston County)	(T. 102, 103, R. 6)	2B
Beaver Creek (Houston County)	(S. 5, T. 102, R. 6; S. 31, 32, T. 103, R. 6)	1B, 2A, 3B
East Beaver Creek	(S. 5, 8, 17, T. 102, R. 6)	1B, 2A, 3B
West Beaver Creek	(S. 13, 24, 25, 26, T. 102, R. 7; S. 5, 6, 7, 18, 19, 30, T. 102, R. 6)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED ON LOCATION	CLASSIFICATION
Dee Creek	(S. 27, 32, 33, T. 101, R. 6)	1B, 2A, 3B
Big Trout Creek (Pickwick)	(T. 106, R. 6)	2B
Big Springs Creek (excluding trout waters)	(T. 104, R. 9)	2B
Big Springs Creek	(S. 21, 22, 26, 27, T. 104, R. 9)	1B, 2A, 3B
Brush Valley Creek	(T. 104, R. 5)	2C
Butterfield Creek (excluding trout waters)	(T. 103, R. 4)	2B
Butterfield Creek	(S. 17, 18, 20, T. 103, R. 4)	1B, 2A, 3B
Camp Creek (excluding trout waters)	(T. 102, R. 10)	2B
Camp Creek	(S. 5, 7, 17, 20, T. 102, R. 10)	1B, 2A, 3B
Carters Creek	(T. 103, R. 12)	2C
Carey Creek (excluding trout waters)	(T. 104, R. 14)	2B
Carey Creek	(S. 19, 20, T. 104, R. 14)	1B, 2A, 3B
Cedar Valley Creek	(S. 21, 22, 28, 29, 31, 32, T. 106, R. 6)	1B, 2A, 3B
Clear Creek	(T. 102, R. 4)	2C
Crystal Creek	(T. 103, 104, R. 5, 6)	2B
Dakota Creek	(T. 105, R. 5)	2C
Dry Creek	(T. 103, R. 12, 13)	2B
Daley Creek	(S. 4, 5, T. 103, R. 7; S. 33, T. 104, R. 7)	1B, 2A, 3B
Deer Creek	(T. 102, 103, R. 12, 13, 14, 15)	2B
Dexter Creek	(S. 12, 13, 14, 15, 16, T. 103, R. 5)	1B, 2A, 3B
Diamond Creek	(S. 18, 19, T. 103, R. 8; S. 2, 3, 11, 10, 13, 14, 24, T. 103, R. 9)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Duschee Creek (excluding trout waters)	(T. 102, 103, R. 10)	2D
Duschee Creek	(S. 1, T. 102, R. 10; S. 24, 25, 26, 36, T. 103, R. 10)	1B, 2A, 3B
East Burns Valley Creek (excluding trout waters)	(T. 106, 107, R. 7)	2D
East Burns Valley Creek	(S. 3, 10, 15, T. 106, R. 7)	1B, 2A, 3B
Etna Creek	(S. 25, 35, 36, T. 102, R. 13)	1B, 2A, 3B
Ferndale Creek	(T. 104, R. 7)	2D
Ferguson Creek	(S. 18, T. 105, R. 8; S. 12, 13, T. 105, R. 9)	1B, 2A, 3B
Frego Creek	(S. 11, 14, 15, 22, 23, 27, T. 101, R. 9)	1B, 2A, 3B
North Branch Forestville Creek	(S. 13, 14, 15, T. 102, R. 12)	1B, 2A, 3B
South Branch Forestville Creek	(S. 24, 25, T. 102, R. 12)	1B, 2A, 3B
Garvin Brook (excluding trout waters)	(T. 106, 107, R. 8)	3B
Garvin Brook	(S. 4, 5, 8, 17, T. 106, R. 8; S. 33, 34, T. 107, R. 8)	1B, 2A, 3B
Gilmore Creek (excluding trout waters)	(T. 107, R. 7)	2C
Gilmore Creek	(S. 31, T. 107, R. 7)	1B, 2A, 3B
Gibben (Gibb) Creek	(S. 9, 16, 21, 27, 28, T. 103, R. 9)	1B, 2A, 3B
Gorman Creek	(T. 110, R. 10)	2B
Hamilton Creek	(S. 6, T. 103, R. 12; S. 1, T. 103, R. 14; S. 36, T. 104, R. 14)	1B, 2A, 3B
Hemingway Creek	(S. 26, 34, 35, T. 105, R. 9)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Homer Creek	(T. 106, R. 6)	2C
Indian Spring Creek	(T. 103, R. 5)	2C
East Indian Creek (excluding trout waters)	(T. 109, R. 9, 10, 11)	2B
East Indian Creek	(S. 22, 26, 29, 31, T. 109, R. 10; S. 36, T. 109, R. 11)	1B, 2A, 3B
Jordan Creek (excluding trout waters)	(T. 104, R. 12)	2B
Little Jordan Creek (Jordan Creek)	(S. 21, 22, 26, 27, T. 104, R. 12)	1B, 2A, 3B
Kedron Creek (excluding trout waters)	(T. 104, R. 13)	2B
Kedron Creek	(S. 26, 35, 36, T. 104, R. 13)	1B, 2A, 3B
Little Kingsley Creek	(T. 103, R. 12, 13)	2B
Kinney Creek	(S. 1, 12, 13, T. 105, R. 13; S. 36, T. 106, R. 13)	1B, 2A, 3B
Lanesboro Park Pond	(S. 13, T. 103, R. 10)	1B, 2A, 3B
Little Trout Creek	(T. 106, R. 5, 6)	2C
Lost Creek (excluding trout waters)	(T. 104, R. 11, 12)	2B
Lost (Upper Bear) Creek	(S. 18, T. 104, R. 11; S. 8, 9, 10, 11, 13, 14, 15, 16, T. 104, R. 12)	1B, 2A, 3B
Lynch Creek	(S. 2, 11, 14, T. 104, R. 11)	1B, 2A, 3B
Mahoney Creek	(T. 103, R. 10)	2C
Mill Creek	(S. 14, 23, 25, 26, 36, T. 105, R. 12)	1B, 2A, 3B
Money Creek (excluding trout waters)	(T. 104, 105, R. 6, 7)	2B
Money Creek	(S. 3, 4, 7, 8, 9, 16, T. 105, R. 7)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Mound Prairie Creek	(T. 104, R. 5)	2C
Nepstad Creek	(S. 4, 5, 7, 8, 9, T. 102, R. 8)	1B, 2A, 3B
Old Channel Zumbro River	(T. 109, 110, R. 9, 10)	2B
Partridge Creek (excluding trout waters)	(T. 101, 102, R. 10)	2B
Partridge Creek (Dexbury)	(S. 20, 21, 28, 33, T. 102, R. 10)	1B, 2A, 3B
Peterson Creek	(S. 7, 8, T. 104, R. 8)	1B, 2A, 3B
Pine Creek (excluding trout waters)	(T. 104, 105, R. 9)	2B
Pine Creek (Southern Winona County)	(S. 25, 26, 27, 34, 35, T. 105, R. 9)	1B, 2A, 3B
Pine Creek (South Fork)	(S. 18, 19, T. 105, R. 5; S. 13, 24, T. 105, R. 6)	1B, 2A, 3B
Pleasant Valley Creek	(T. 106, 107, R. 6, 7)	2C
Rice Creek (excluding trout waters)	(T. 103, 104, R. 11)	2B
Rice Creek	(S. 3, 4, T. 103, R. 11; S. 14, 22, 23, T. 104, R. 11)	1B, 2A, 3B
Riceford Creek	(S. 6, 7, 18, 19, T. 101, R. 7; S. 1, 12, 13, T. 101, R. 8)	1B, 2A, 3B
Robinson Creek	(T. 104, 105, R. 14, 15)	2B
Rollingstone Creek (Rupprecht Creek) (excluding trout waters)	(T. 107, R. 8, 9)	2B
Rollingstone (Rupprecht) Creek	(S. 13, 24, 25, 26, 35, T. 107, R. 9)	1B, 2A, 3B
Root River	(T. 103, 104, R. 4, 5, 6, 7, 8, 9, 10, 11, 12)	2B
North Branch Root River	(T. 104, 105, R. 11, 12, 13, 14, 15, 16)	2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
South Branch Root River (excluding trout waters)	(T. 102, 103, R. 9-14)	2B
Root River, South Branch	(S. 5, 6, T. 102, R. 10; S. 1, 2, 3, 4, 5, 7, 8, 9, 10, T. 102, R. 11; S. 19, 21, 22, 23, 24, 26, 27, T. 102, R. 12)	1B, 2A, 3B
Root River, South Fork	(S. 17, 18, 19, T. 102, R. 8; S. 24, 25, 26, T. 102, R. 9)	1B, 2A, 3B
Rush Creek (excluding trout waters)	(T. 104, 105, 106, R. 8, 9)	2B
Rush Creek	(S. 7, 18, 19, 20, 29, T. 105, R. 8)	1B, 2A, 3B
Silver Creek (excluding trout waters)	(T. 104, 105, R. 6)	2C
Silver Creek	(S. 35, T. 105, R. 6; S. 1, 2, 11, 12, T. 104, R. 6)	1B, 2A, 3B
Snake Creek	(T. 109, R. 10)	2C
Spoltz Creek	(T. 103, R. 7)	2B
Spring Valley Creek	(S. 8, 17, 18, 19, 20, 30, T. 103, R. 12; S. 23, 24, 25, 26, 27, 32, 33, T. 103, R. 13)	1B, 2A, 3B
Stockton Valley Creek (South Branch)	(S. 2, 3, 10, 11, 14, 23, T. 106, R. 8)	1B, 2A, 3B
Storer Creek	(S. 29, 30, T. 104, R. 5)	1B, 2A, 3B
Sullivan Creek	(T. 103, R. 5)	2C
Swede Bottom Creek (Stockholm)	(S. 10, 11, 14, 15, T. 103, R. 6)	1B, 2A, 3B
Thompson Creek (excluding trout waters)	(T. 103, R. 4, 5)	2B
Thompson Creek	(S. 12, 13, 14, 23, 24, 25, 26, T. 103, R. 5)	1B, 2A, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Torkelson Creek (excluding trout waters)	(T. 104, R. 10)	2B
Torkelson Creek	(S. 25, 36, T. 104, R. 10)	1B, 2A, 3B
Trout Creek	(T. 108, 109, R. 9)	2B
Trout Run Creek (Trout) (excluding trout waters)	(T. 104, 105, R. 10)	2C
Trout Run Creek	(S. 4, 5, 8, 9, 16, 17, 20, 21, T. 104, R. 10; S. 18, 19, 30, 31, 32, T. 105, R. 10)	1B, 2A, 3B
Watson Creek (excluding trout waters)	(T. 103, R. 10, 11, 12)	2B
Watson Creek	(S. 30, T. 103, R. 11)	1B, 2A, 3B
West Burns Creek	(T. 106, 107, R. 7)	2B
North Branch Whitewater River (excluding trout waters)	(T. 107, 108, R. 10, 11, 12)	2B
North Branch Whitewater River	(S. 32, 34, T. 108, R. 11; S. 5, 6, 7, 8, 9, T. 107, R. 10; S. 1, 2, 3, T. 107, R. 11)	1B, 2A, 3B
Middle Branch Whitewater River (excluding trout waters)	(T. 106, 107, R. 10, 11, 12)	2B
Middle Branch Whitewater River	(S. 24, 25, 26, 32, 33, 34, 35, T. 107, R. 11; S. 16, 17, 19, 20, 9, 10, T. 107, R. 10)	1B, 2A, 3B
South Branch Whitewater River (excluding trout waters)	(T. 106, 107, R. 9, 10, 11, 12)	2B
South Branch Whitewater River	(S. 1, T. 106, R. 10; S. 2, 10, 11, 14, 24, 25, 36, T. 107, R. 10; S. 6, T. 106, R. 9; S. 31, T. 107, R. 9)	1B, 2A, 3B
Wildcat Creek	(T. 105, R. 4)	2C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Willow Creek (excluding trout waters)	(T. 101, 102, R. 11)	2B
Willow Creek	(S. 1, 12, 13, T. 102, R. 11)	1B, 2A, 3B
Winnebago Creek	(S. 7, 8, 15, 16, 17, 22, 23, 24, T. 101, R. 5)	1B, 2A, 3B
Wisel Creek (Wesel)	(S. 19, 20, 29, 30, 31, 32, T. 102, R. 8; S. 1, 10, 11, 15, 16, 21, T. 101, R. 9; S. 5, 6, T. 101, R. 8)	1B, 2A, 3B

MISSOURI-CEDAR-DES MOINES RIVERS BASIN
Cedar River Watershed (No. 37)

Streams

Bancroft Creek	(T. 103, 104, R. 21)	2C
West Fork Cedar River	(T. 105, R. 18, 19)	2B
East Fork Cedar River	(T. 105, R. 17, 18)	2B
Dobbins Creek	(T. 103, R. 16, 17)	2C
Goose Creek	(T. 101, R. 21, 22)	2C
Little Iowa River	(T. 101, 102, R. 14)	2C
Murphy Creek	(T. 103, R. 18)	2C
Orchard Creek	(T. 102, R. 18, 19)	2C
Roberts Creek	(T. 103, 104, R. 16, 17, 18)	2C
Rose Creek	(T. 102, 103, R. 18, 17, 16)	2C
Turtle Creek	(T. 103, R. 20, 19, 18)	2C
Wolf Creek	(T. 103, R. 16, 17, 18)	2C
Woodbury Creek	(T. 101, 102, R. 18, 19)	2C

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Des Moines River Watershed (No. 38)		
Streams		
Beaver Creek	(T. 106, 107, R. 40, 41, 42)	2B
Elk Creek	(T. 102, 103, R. 40, 39)	2B
Heron Lake Outlet	(T. 104, 105, R. 37)	2C
Jack Creek	(T. 104, R. 38, 39, 40, 41)	2B
Lime Creek	(T. 105, 106, R. 39, 40)	2B
Okabena Creek	(T. 102, 103, R. 40, 39, 38, 37)	2C
Scheldorf Creek	(S. 19, 30, 31, T. 106, R. 36; S. 13, 24, 25, T. 106, R. 37)	1B, 2A, 3B
Rock River Watershed (No. 39)		
Streams		
Ash Creek	(T. 101, R. 45)	2C
Champapadan Creek	(T. 103, 104, 105, R. 44, 43, 42)	2B
Chanarambie Creek	(T. 105, R. 42, 43, 44)	2B
Elk Creek	(T. 102, 103, R. 44, 45)	2B
Mound Creek	(T. 103, 104, R. 45)	2C
Poplar Creek	(T. 104, 105, R. 44, 45)	2B
Skunk Creek	(T. 101, 102, R. 37, 38, 39)	2C
Willow Creek	(T. 108, 109, R. 46)	2B

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CLASS 7 LIMITED RESOURCE VALUE WATERS

LAKE SUPERIOR BASIN
ST. LOUIS RIVER WATERSHED (NO. 1)

	STREAMS		
*	BARBER CREEK	T 58 R20	S21,22,26,27,34,35
	(EAST SWAN RIVER)		
	(CHISHOLM CREEK)		
	CHISHOLM		
*	ELBOW CREEK	T 57 R17	S6
	EVELETH	T 57 R18	S1
	UNNAMED CREEK	T 53 R19	S22,23
	MEADOWLANDS		
	UNNAMED DITCH	T 57 R17	S6
	EVELETH		
	UNNAMED DITCH	T 58 R17	S23,24,25,36
	GILBERT		

LAKE SUPERIOR WATERSHED (NO. 2)

LAKE OF THE WOODS BASIN
RAINY LAKE WATERSHED (NO. 3)

UNNAMED SWAMP	T 63 R11	S19
WINTON	T 63 R12	S24

LITTLE FORK RIVER WATERSHED (NO. 4)
BIG FORK RIVER WATERSHED (NO. 5)
LAKE OF THE WOODS WATERSHED (NO. 6)

RED RIVER OF THE NORTH BASIN
MUSTINKA-BOISE DE SIOUX RIVERS WATERSHED (NO. 7)

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	STREAMS		
*	TWELVE MILE CREEK	T126 R43	S16,17,18,19,21,22,25,26,27
	(COUNTY DITCH NO. 1)		
	DONNELLY	T126 R44	S23,24,25,26,27,28,29,30,31,32,33
		T126 R45	S25,26,27,28,36

OTTER TAIL RIVER WATERSHED (NO. 8)

	STREAMS		
	COUNTY DITCH NO. 65	T135 R37	S18
	NEW YORK MILLS	T135 R38	S13
	WILLOW CREEK	T135 R38	S13,14,15,16,17,18
	NEW YORK MILLS		
	LAKES		
	UNNAMED SLOUGH	T137 R40	S18
	VERGAS	T137 R41	S13,24

CLASS 7 LIMITED RESOURCE VALUE WATERS

BUFFALO RIVER WATERSHED (NO. 9)

STREAMS		
COUNTY DITCH NO. 6A-2 ROTHSAY	T135 R45	S21,28,33
COUNTY DITCH NO. 32 SABIN	T138 R48	S13,14,15,16,17,18
UNNAMED CREEK ROTHSAY	T135 R45	S21,22,23,25,26
UNNAMED DITCH AUDUBON	T139 R42	S4,9
UNNAMED DITCH LAKE PARK	T139 R43	S4
	T140 R43	S33
UNNAMED DITCH GLYNDON	T139 R47	S1,2,12
	T140 R47	S35
UNNAMED DITCH CALLAWAY	T140 R41	S6
	T140 R42	S1,2,10,11

WILD RICE RIVER WATERSHED (NO. 10)

UNNAMED DITCH GARY	T145 R44	S22,27,34

RED LAKE RIVER WATERSHED (NO. 11)

STREAMS		
JUDICIAL DITCH NO. 13 GOODRIDGE	T154 R40	S16,17,18
JUDICIAL DITCH NO. 18 GOODRIDGE	T154 R40	S18,19,27,28,29,30
	T154 R41	S13,14,15,16,17,18
	T154 R42	S7,8,13,14,15,16
	T154 R43	S9,10,11,12,16
UNNAMED CREEK SHEVLIN	T147 R36	S17,18
	T147 R37	S11,12,13,14
UNNAMED DITCH ERSKINE	T149 R42	S34,35
UNNAMED DITCH THIEF RIVER FALLS	T154 R43	S31,32,33

MIDDLE RIVER WATERSHED (NO. 12)

TWO RIVERS WATERSHED (NO. 13)

ROSEAU RIVER WATERSHED (NO. 14)

CLASS 7 LIMITED RESOURCE VALUE WATERS

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER HEADWATERS WATERSHED (NO. 15)

STREAMS		
COUNTY DITCH NO. 42	T 48 R23	S29,32
MCGREGOR		
* SANDY RIVER	T 48 R23	S19,29,30
MCGREGOR	T 48 R24	S13,24
UNNAMED CREEK	T 56 R23	S21
CALUMET		
UNNAMED DITCH	T 48 R23	S31,32
MCGREGOR		
UNNAMED DITCH	T 56 R22	S4,5
NASHWAUK	T 57 R22	S32
UNNAMED DITCH	T 56 R24	S22
TACONITE		
LAKES		
UNNAMED SWAMP	T 56 R24	S22
TACONITE		

CROW WING RIVER WATERSHED (NO.16)

STREAMS		
COUNTY DITCH NO. 15	T132 R35	S2
(BEAR CREEK)	T133 R34	S7
BERTHA	T133 R35	S12,13,24,25,26,35
COUNTY DITCH NO. 23	T129 R36	S26,27
GARFIELD		
UNNAMED CREEK	T129 R36	S6
MILTONA	T130 R36	S30,31
UNNAMED DITCH	T130 R36	S30
MILTONA	T130 R37	S25,36
LAKES		
UNNAMED SLOUGH	T130 R37	S26,35,36
MILTONA		
UNNAMED SWAMP	T133 R33	S1
STAPLES		

CLASS 7 LIMITED RESOURCE VALUE WATERS

CROW RIVER WATERSHED (NO. 17)

	STREAMS		
	COUNTY DITCH NO. 23A	T119 R34	S29,30
	WILLMAR	T119 R35	S23,25,26
	COUNTY DITCH NO. 132	T116 R31	S16,21
	LAKESIDE		
	LAKESIDE COOP CRY.		
*	CRANE CREEK	T117 R27	S14,20,21,22,23,24,25
	WINSTED		
	JUDICIAL DITCH NO. 1	T116 R31	S28,33
	LAKESIDE		
	LAKESIDE COOP CRY.		
	JUDICIAL DITCH NO. 15	T115 R31	S15,16,20,21,29,30
	BUFFALO LAKE	T115 R32	S22,25,26,27,28,32,33
	IOWA PORK INDUSTRIES		
	HECTOR		
*	SKUNK RIVER(CO. DT. NO. 37)	T123 R35	S4,5,9
	(CO. DT. NO. 29)	T123 R35	S9,10,11,12
	BROOTEN	T123 R34	S3,4,5,6,7,8
	UNNAMED CREEK	T119 R26	S22,26,27,35
	HILLER MOBILE HOME COURT		
	UNNAMED DITCH	T115 R28	S14,23
	GLENCOE		
	GREEN GIANT		
	UNNAMED DITCH	T115 R28	S21,22,27,28
	GLENCOE		
	GREEN GIANT		
	COUNTY DITCH NO. 63	T116 R30	S19,20,21,28,33
	NEAR HUTCHINSON		
	WEST LYNN COOP CREAMERY		
	UNNAMED DITCH	T117 R27	S10,11
	WINSTED		
	GREEN GIANT		
	UNNAMED DITCH	T119 R26	S34,35
	HILLER MOBILE HOME COURT		
	UNNAMED DITCH	T119 R34	S10,15,21,22,28,29,32
	KANDIYOHI		
	UNNAMED DITCH	T123 R34	S19,30
	BELGRADE		
	UNNAMED STREAM	T117 R27	S11,12
	WINSTED		

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RUM RIVER WATERSHED (NO. 18)

	STREAMS		
	LOWER STANCHFIELD BROOK	T 37 R23	S3,10,15,22
	BRAHAM		
	UNNAMED DITCH	T 37 R23	S2,3
	BRAHAM		
	UNNAMED DITCH	T 38 R26	S4,5
	RAMEY	T 39 R28	S29,30,32
	RAMEY FARMERS COOP CRY.	T 39 R29	S25,26,27,28

CLASS 7 LIMITED RESOURCE VALUE WATERS

MISSISSIPPI-SAUK RIVERS WATERSHED (NO. 19)

STREAMS		
* BUCKMAN CREEK	T 39 R30	S4,5,6,9
BUCKMAN	T 39 R31	S1,2,10,11
BUCKMAN COOP CRY.	T 40 R30	S31
	T 40 R31	S36
* BUNKER HILL CREEK	T 38 R30	S6
LITTLE ROCK	T 38 R31	S1
LITTLE ROCK COOP CRY.	T 39 R30	S31,32,33
* PIKE CREEK	T129 R30	S17,18,19,20
FLENSBURG		
* STONY BROOK	T 36 R29	S2,9,10,11,16
(STONEY BROOK)	T 37 R29	S35,36
FOLEY		
* TWO RIVERS, SOUTH BRANCH	T125 R31	S 21,22,23
ALBANY		
UNNAMED CREEK	T121 R23	S30
ALBERTVILLE	T121 R24	S25,36
UNNAMED CREEK	T121 R31	S2
EDEN VALLEY	T122 R31	S35
RUHLAND FEEDS		
UNNAMED CREEK	T123 R33	S11,14
LAKE HENRY		
UNNAMED DITCH	T129 R30	S30
FLENSBURG	T129 R31	S25
UNNAMED STREAM	T129 R30	S19,30
FLENSBURG		
LAKES		
UNNAMED SWAMP	T129 R31	S25
FLENSBURG		

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MINNESOTA RIVER BASIN
BIG STONE LAKE WATERSHED (NO. 20)

LAKES		
UNNAMED MARSH	T124 R47	S8
BARRY		

POMME DE TERRE RIVER WATERSHED (NO. 21)

STREAMS		
* MUDDY CREEK	T124 R42	S6,7,15,16,17,18,21,22,23
(MUD CREEK)	T124 R43	S1,4,5,6,7,8
(COUNTY DITCH NO. 2)	T124 R44	S1,2,3,12
(COUNTY DITCH NO. 4)	T125 R43	S34,35,36
CHOKIO		
UNNAMED DITCH	T124 R43	S3,4
ALBERTA		

CLASS 7 LIMITED RESOURCE VALUE WATERS

LAC QUI PARLE RIVER WATERSHED (NO. 22)

STREAMS		
COUNTY DITCH NO. 5	T117 R45	S6,7,18
MARIETTA	T117 R46	S1
	T118 R46	S23,25,26,36
COUNTY DITCH NO. 27	T117 R43	S3,4,5,6
MADISON	T117 R44	S1
	T118 R43	S34
	T118 R44	S35,36
COUNTY DITCH NO. 28	T118 R46	S22,23,26
MARIETTA		
UNNAMED DITCH	T118 R44	S27,28,34,35
MADISON		
UNNAMED STREAM	T117 R43	S22
DAWSON		
DAWSON MILLS SOY ISOLATE		

CHIPPEWA RIVER WATERSHED (NO. 23)

STREAMS		
COUNTY DITCH NO. 7	T126 R39	S25,26
LOWRY		
* COUNTY DITCH NO. 60	T130 R39	S14,22,23,27,28,32,33
(CHIPPEWA RIVER)		
MILLERVILLE		
MILLERVILLE COOP CRY.		
COUNTY DITCH NO. 61	T120 R37	S21,22
KERKHOVEN		
UNNAMED DITCH	T122 R40	S6
HANCOCK	T122 R41	S1,12
	T123 R40	S18,19,30,31
	T123 R41	S11,12
UNNAMED DITCH	T126 R39	S6
FARWELL		
FARWELL COOP CRY. ASSN.		
UNNAMED DITCH	T126 R39	S26,35
LOWRY		
UNNAMED DITCH	T129 R39	S21,22
BRANDON		
UNNAMED DITCH	T129 R40	S10,11
EVANSVILLE		
LAKES		
UNNAMED SLOUGH	T127 R40	S34
KENSINGTON		
UNNAMED SLOUGH	T129 R39	S21,22
BRANDON		
UNNAMED SWAMP	T122 R36	S30
SUNBURG		
SUNBURG COOP CREAMERY		
UNNAMED SWAMP	T126 R39	S35,36
LOWRY		

CLASS 7 LIMITED RESOURCE VALUE WATERS

YELLOW MEDICINE RIVER WATERSHED (NO. 24)

STREAMS		
* BOILING SPRINGS CREEK	T113 R38	S5,8
(COUNTY DITCH NO. 1B)	T114 R37	S19,30
ECHO	T114 R38	S25,26,27,32,33,34
COUNTY DITCH NO. 1	T113 R38	S8,9
ECHO		
COUNTY DITCH NO. 12	T113 R36	S7,8,18,19
(RICE CREEK)	T113 R37	S15,21,22,23,24
BELVIEW		
RICE CREEK	SEE COUNTY DITCH NO. 12	
UNNAMED DITCH	T114 R44	S21,28
PORTER		
UNNAMED DITCH	T115 R41	S16
CLARKFIELD		
UNNAMED DITCH	T115 R41	S16,21
CLARKFIELD		

REDWOOD RIVER WATERSHED (NO. 25)

STREAMS		
COUNTY DITCH NO. 14	T109 R43	S18
TYLER	T109 R44	S2,3,11,13,14
	T110 R44	S33,34
JUDICIAL DITCH NO. 12	T109 R43	S9,15,16,17,18
TYLER		

CLASS 7 LIMITED RESOURCE VALUE WATERS

COTTONWOOD RIVER WATERSHED (NO. 26)

STREAMS		
COUNTY DITCH NO. 38	T107 R37	S28,29
STORDEN		
COUNTY DITCH NO. 63	T108 R30	S11,12,14,17,18,19,20,21,
HANSKA		22,23,27,28
COUNTY DITCH NO. 109	T111 R34	S4,5,8,17
MORGAN	T112 R34	S22,23,27,28,33
JUDICIAL DITCH NO. 6	T107 R30	S4
HANSKA	T108 R30	S28,33
JUDICIAL DITCH NO. 10	T108 R30	S1
HANSKA	T109 R30	S35,36
JUDICIAL DITCH NO. 30	T109 R32	S4,5,6
SLEEPY EYE	T110 R32	S31
DEL MONTE CORP.		
LONE TREE CREEK	T109 R39	S2,3,4,7,8,9
TRACY	T110 R38	S19,20,30
	T110 R39	S25,34,35,36
* PELL CREEK	T109 R38	S25,26,27,28
WALNUT GROVE		
UNNAMED DITCH	T107 R36	S21
JEFFERS		
UNNAMED DITCH	T107 R37	S19,30
STORDEN		
UNNAMED DRY RUN	T108 R27	S16
NEAR MINNEOPA		
BLUE EARTH-NICOLLET ELEC.		
UNNAMED DITCH	T109 R38	S28
WALNUT GROVE		
UNNAMED DITCH	T109 R39	S18
TRACY	T109 R40	S13
UNNAMED DITCH	T110 R36	S3
WABASSO	T111 R36	S18,19,20,28,29,33,34
	T111 R37	S13
UNNAMED DITCH	T111 R37	S13,24
WABASSO		
LAKES		
UNNAMED SWAMP	T107 R37	S30
STORDEN		

CLASS 7 LIMITED RESOURCE VALUE WATERS

BLUE EARTH RIVER WATERSHED (NO. 27)

	STREAMS		
*	BOOT CREEK	T105 R22	S6,7
	NEW RICHLAND	T105 R23	S12,13,24
	COBB CREEK	T104 R23	S7,8,17
	FREEBORN	T104 R24	S11,12
	COBB CREEK DITCH	T103 R23	S2
	FREEBORN	T104 R23	S14,15,16,23,26,35
	COUNTY DITCH NO. 6	T107 R24	S4,8,9,17,18
	JANESVILLE	T107 R25	S13
	COUNTY DITCH NO. 87	T103 R24	S6
	WELLS	T104 R24	S31
		T104 R25	S36
*	FOSTER CREEK	T103 R23	S31
	ALDEN	T103 R24	S25,36
	JUDICIAL DITCH NO. 1	T104 R27	S23,25,26,36
	DELAVAN		
	JUDICIAL DITCH NO. 49	T105 R27	S18,19
	(PROVIDENCE CREEK)	T105 R28	S13
	AMBOY		
*	ST. JAMES CREEK	T106 R31	S5,7,8,18
	ST. JAMES	T107 R31	S21,22,28,32,33
	UNNAMED DITCH	T102 R23	S4,5
	ALDEN	T103 R23	S31,32
	UNNAMED DITCH	T104 R30	S2,11
	TRUMAN	T105 R30	S25,26,35
	UNNAMED DITCH	T105 R22	S17,18,19
	NEW RICHLAND	T105 R23	S24
	UNNAMED DITCH	T105 R30	S3
	LEWISVILLE	T106 R30	S14,23,26,34,35
	UNNAMED DITCH	T106 R24	S34
	WALDORF		
	UNNAMED DITCH	T108 R25	S18,19
	EAGLE LAKE	T108 R26	S13
	LAKES		
	ONE HUNDRED ACRE SLOUGH	T106 R31	S7
	ST. JAMES		
	UNNAMED SWAMP	T104 R25	S3,4
	MINNESOTA LAKE		

CLASS 7 LIMITED RESOURCE VALUE WATERS

MINNESOTA RIVER-HAWK CREEK WATERSHED (NO. 28)

STREAMS	
* BEAVER CREEK, EAST FORK (COUNTY DITCH NO. 63) OLIVIA	T115 R35 S13,14,23,24,25,26
COUNTY DITCH NO. 45 RENVILLE	T114 R36 S5,6,7,18 T114 R37 S13 T115 R36 S7,18,19,29,30,32 T119 R35 S19,20,29
COUNTY DITCH NO. 46 WILLMAR	T115 R34 S15,16,17,18,22,23
COUNTY DITCH NO. 66 BIRD ISLAND	T114 R38 S1,2 T115 R37 S7,18 T115 R38 S13,24,25,35,36
COUNTY DITCH NO. 104 SACRED HEART	SEE BEAVER CREEK, EAST FORK
EAST FORK BEAVER CREEK	T118 R36 S2,3,8,10,15,16,17,18,19
* HAWK CREEK (COUNTY DITCH NO. 10) WILLMAR/PENNOCK	T118 R37 S5,6,7,8,9,14,15,16,18, 19,23,24,30,31 T119 R35 S19 T119 R36 S24,25,26,35 T118 R37 S2,3,4,5 T119 R36 S4,5,6,7,18,19 T119 R37 S24,25,26,35 T119 R36 S2,3,4,9,10
UNNAMED CREEK PENNOCK	
UNNAMED DITCH PENNOCK	

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CLASS 7 LIMITED RESOURCE VALUE WATERS

LOWER MINNESOTA RIVER WATERSHED (NO. 29)

	STREAMS			
*	CHERRY CREEK	T110	R25	S7,8,16,17
	CLEVELAND	T110	R26	S12
	COUNTY DITCH NO. 4	T115	R25	S30
	NORWOOD	T115	R26	S13,14,24,25
	COUNTY DITCH NO. 40A	T111	R29	S8,14,15,16,17,23,24
	LAFAYETTE			
	COUNTY DITCH NO. 42	T112	R29	S6,7
	WINTHROP			
	COUNTY DITCH NO. 51	T110	R24	S5,6
	LE CENTER	T111	R24	S31,32
		T111	R25	S26,35,36
	COUNTY DITCH NO. 54	T112	R23	S26,33,34,35
	MONTGOMERY			
	JUDICIAL DITCH NO. 1A	T111	R27	S5,6,7
	LAFAYETTE	T111	R28	S10,11,12,15,16,17,18,19
		T111	R29	S24
*	RUSH RIVER, MIDDLE BRANCH	T112	R27	S16,19,20,21,30
	WINTHROP	T112	R28	S18,19,20,21,22,25,26,27
		T112	R29	S7,8,9,13,14,15,16,17,18
	UNNAMED DRY RUN	T108	R26	S19,30
	MANKATO	T108	R27	S24
	SOUTHVIEW HTS COOP ASSN			
	UNNAMED DITCH	T111	R29	S6,7,8
	LAFAYETTE	T111	R30	S12
	UNNAMED DITCH	T112	R23	S33
	MONTGOMERY			
	UNNAMED DITCH	T113	R30	S5
	NEAR FERNANDO	T114	R29	S19,20,30
	ROUND GROVE COOP CREAMERY	T114	R30	S25,26,27,28,29,32
	UNNAMED DITCH	T115	R25	S9,16
	BONGARDS			
	BONGARDS CREAMERIES			
	UNNAMED STREAM	T109	R26	S20,21,28
	MANKATO			
	MIDWEST ELECTRIC PRODUCTS			

ST. CROIX RIVER BASIN
KETTLE RIVER WATERSHED (NO. 30)

STREAMS			
UNNAMED DITCH	T 46	R19	S30
MOOSE LAKE			

SNAKE RIVER WATERSHED (NO. 31)

UNNAMED DRY RUN	T 41	R25	S3
WAHKON	T 42	R25	S29,32,33,34

CLASS 7 LIMITED RESOURCE VALUE WATERS

LOWER ST. CROIX RIVER WATERSHED (ND. 32)

STREAMS		
UNNAMED DITCH	T 34 R20	S19,29,30,31,32
CHISAGO CITY		
UNNAMED DITCH	T 35 R20	S25
ALMELUND		
ALMELUND COOP CRY.		
UNNAMED STREAM	T 34 R19	S32,33,34
SHAFER		
LAKES		
UNNAMED SWAMP	T 34 R19	S31,32
SHAFER		

LOWER MISSISSIPPI RIVER BASIN METROPOLITAN AREA WATERSHED (ND. 33)

STREAMS		
UNNAMED DITCH	T113 R18	S5,6
HAMPTON	T114 R18	S31
LAKES		
UNNAMED SWAMP	T113 R18	S8
HAMPTON		

CANNON RIVER WATERSHED (ND. 34)

STREAMS		
COUNTY DITCH ND. 15	T110 R23	S22,23
KILKENNY		
UNNAMED DITCH	T112 R22	S25,35,36
LONSDALE		
LAKES		
UNNAMED MARSH	T110 R23	S22,23
KILKENNY		

ZUMBRO RIVER WATERSHED (ND. 35)

STREAMS		
* TROUT BROOK	T110 R15	S3,4
(MAZEPPA CREEK)	T111 R15	S28,33,34
GOODHUE		
UNNAMED CREEK	T108 R17	S17,20,21
WEST CONCORD		
UNNAMED DITCH	T107 R18	S27,34
CLAREMONT		

CLASS 7 LIMITED RESOURCE VALUE WATERS

ROOT RIVER WATERSHED (NO. 36)

STREAMS		
* CARTERS CREEK	T103 R12	S4,9,15,16,22
WYKOFF		
NORTH FORK WHITEWATER RIVER	SEE WHITEWATER RIVER, NORTH FORK	
UNNAMED CREEK	T101 R 7	S14,22,23,27
SPRING GROVE		
UNNAMED DRY RUN	T107 R 9	S7,18
ALTURA		
* WHITEWATER RIVER, NORTH FORK	T108 R12	S25,26,27
ELGIN		

MISSOURI-CEDAR-DES MOINES RIVERS BASIN
CEDAR RIVER WATERSHED (NO. 37)

STREAMS		
COUNTY DITCH NO. 48	T102 R22	S19,20
CONGER	T102 R23	S24,25,26,35
* GOOSE CREEK	T101 R20	S31
TWIN LAKES	T101 R21	S16,17,18,21,22,26,27,35, 36
	T101 R22	S12,13
UNNAMED CREEK	T103 R17	S4,9
BROWNSDALE		
UNNAMED CREEK	T104 R16	S5,8,9,16
BLOOMING PRAIRIE	T105 R18	S31

DES MOINES RIVER WATERSHED (NO. 38)

STREAMS		
COUNTY DITCH NO. 11	T101 R32	S4,9,10
SHERBURN	T102 R32	S7,8,16,17,21,27,28,33,34
* JACK CREEK	T104 R41	S25,26,30,31,32,33,34,35, 36
WILMONT		
* OKABENA CREEK	T102 R38	S6,7
WORTHINGTON	T102 R39	S7,8,9,10,11,12,14,15,16,18
WORTHINGTON LAGOONS AND ALLIED MILLS	T102 R40	S13
UNNAMED CREEK	T105 R41	S3,4,9
IONA	T106 R40	S19,29,30,32
	T106 R41	S24,25,26,34,35

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ROCK RIVER WATERSHED (NO. 39)

STREAMS		
UNNAMED CREEK	T104 R46	S6
JASPER		
UNNAMED CREEK	T105 R44	S6,7,8
HATFIELD	T105 R45	S1
	T106 R45	S36
UNNAMED CREEK	T106 R45	S34,35,36
HATFIELD		
UNNAMED DITCH	T109 R45	S17,19,20
LAKE BENTON		

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6 MCAR § 4.8025 Classifications of Interstate Waters of Minnesota.

The following rule establishing classifications applies to all interstate surface waters of the state.

A. All interstate waters are included, although some minor watercourses such as unnamed streams or interconnecting waters and/or intermittently flowing creeks, ditches, or draws, etc., are not listed individually herein. All interstate waters are classified herein and this classification shall supersede the classification of the interstate waters listed in previously adopted WPC 1.

B. The rule includes known present uses and/or uses which may be made of the waters in the future. In addition to the classification(s) given below, all of the interstate waters whether or not specifically named herein are also included in Classes 2C, 3C, 4A and B, 5 and 6 for all reaches or areas where such uses are possible, provided that waters specifically classified as limited resource value shall only be included in the following additional classes: 3C, 4A, 4B, 5 and 6. Where specific criteria are common to two or more listed classes the more restrictive value shall apply. For additional information refer to 6 MCAR § 4.8015, Criteria for the Classification of the Interstate Waters of the State and the Establishment of Standards of Quality and Purity.

C. The provisions of this rule shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not make void any other lettered paragraph, subparagraph, subdivision or any other party thereof.

D. Supplement 1 to this rule lists interstate waters that are classified as limited resource value waters, Class 7. For those interstate waters identified with an asterisk (*), the revised classification in Supplement 1 shall supersede any previous classification; provided, however, that the limited resource value classification shall apply only to that portion of the water specifically described in Supplement 1.

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
	Red Cedar River Basin	
Streams		
Little Cedar River	Source to Iowa border	2C, 3B
Red Cedar River	Source to Austin	2B, 3B
Red Cedar River	Austin to Iowa border	2C, 3B
Deer Creek	Source to Iowa border	2C, 3B
Lime Creek	Source to Iowa border	2C, 3B
Otter Creek	Source to Iowa border	2B, 3B
Shell Rock River	Source to Iowa border	2B, 3B
Lakes		
Albert Lea Lake	(T. 102; R. 20, 21)	2B, 3B
Bear Lake	(T. 101; R. 22)	2B, 3B
Fountain Lake	(T. 102; R. 20, 21)	2B
State Line Lake	(T. 101; R. 22)	2B, 3B
	Des Moines River Basin	
Streams		
East Fork of the Des Moines River	Source to Iowa border	2B, 3B
West Fork of the Des Moines River	Lake Yankton outlet to Iowa border	2C, 3B
Soldier Creek	Source to Iowa border	2C, 3B
Lakes		
Long Lake	(T. 108, 109; R. 41)	2B, 3B
Okamanpeedan Lake	(T. 101; R. 31)	2B, 3B
Lake Shetek	(T. 107, 108; R. 40, 41)	2B, 3B
Talcot Lake	(T. 105; R. 38, 39)	2B, 3B
Tuttle Lake	(T. 101; R. 31)	2B, 3B
Lake Yankton	(T. 109; R. 42)	2B, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Streams	**Minnesota River Basin**	
Brush Creek	Iowa border to mouth	2C, 3B
Canby Creek	South Dakota border to mouth, except trout waters	2C, 3B
Canby Creek	(S. 8, 9, 17, 18, T. 114, R. 45; S. 13, 14, 22, 23, T. 114, R. 46)	2A, 3B
Blue Earth River	Iowa border to mouth	2B, 3B
East Fork of the Blue Earth River	Brush Creek to mouth	2C, 3B
West Fork of the Blue Earth River	Iowa border to mouth	2C, 3B
Florida Creek	South Dakota border to mouth	2C, 3B
West Fork of the Lac Qui Parle River	South Dakota border to mouth	2C, 3D
Lazarus Creek	South Dakota border to Canby Creek	2C, 3B
Minnesota River	Big Stone Lake outlet to Granite Falls	1C, 2B, 3B
Minnesota River	Granite Falls to Mankato	2B, 3B
Minnesota River	Mankato to River mile 22 (Head of 9 feet navigation channel)	2B, 3B
Minnesota River	River Mile 22 to mouth	2C, 3B
Little Minnesota River	South Dakota border crossing to Big Stone Lake	2C, 3B
North Fork of the Yellow Bank River	South Dakota border to mouth	2C, 3B
South Fork of the Yellow Bank River	South Dakota border to mouth	2C, 3B
Yellow Medicine River	North Fork mouth to Minnesota River	2C, 3B
North Fork of the Yellow Medicine River	South Dakota border to mouth	2C, 3B
Lac Qui Parle River	Lake Hendricks outlet to Minnesota River	2C, 3B
South Creek	Rose Lake to mouth	2C, 3B
Whetstone River	South Dakota border to mouth	2C, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Lakes		
East Chain Lake	(T. 101; R. 29, 30)	2B, 3B
Lake Hendricks	(T. 112; R. 46)	2B, 3B
Iowa Lake	(T. 101; R. 30)	2B, 3B
Rose Lake	(T. 102; R. 30)	2B, 3B
Sager Lake	(T. 102; R. 30)	2B, 3B
Salt Lake	(T. 117; R. 46)	2B, 3B
South Silver Lake	(T. 101; R. 30)	2B, 3B
Big Stone Lake	(T. 121, 122, 123, 124; R. 46, 47, 48, 49)	2B, 3B
Swan Lake	(T. 101; R. 30)	2B, 3B
Lower Mississippi River Basin		
Streams		
Bear Creek	Source to Iowa border	2C, 3B
Beaver Creek	Source to Iowa border	2C, 3B
Crooked Creek	Source to mouth	1B, 2A, 3B
Upper Iowa River	Source to Iowa border and Iowa border to Iowa border	2B, 3B
Mississippi River	Outlet of Metro Wastewater Treatment Works in St. Paul to river mile 830 (Rock Island RR Bridge)	2C, 3B
Mississippi River	River mile 830 to Iowa border	2B, 3B
Pine Creek	Source to Iowa border	2C, 3B
Riceford Creek	Source to mouth	2B, 3B
Root River	South Fork mouth to mouth	2B, 3B
South Fork of the Root River	Riceford Creek mouth to mouth	2B, 3B
Wapsipinicon River	Source to Iowa border	2C, 3B
Waterloo Creek	Source to Iowa border	1B, 2B, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Lakes		
Lake Pepin	(T. 111, 112, 113; R. 11, 12, 13 & 14)	2B, 3B
Minnesota Slough	(T. 101; R. 3, 4)	2B, 3B
	Upper Mississippi River Basin	
Streams		
Mississippi River	Lake Itasca to Fort Ripley	2B, 3B
Mississippi River	Fort Ripley to the Upper Lock and Dam at St. Anthony Falls in Minneapolis	1C, 2B, 3B
Mississippi River	Upper Lock and Dam at St. Anthony Falls in Minneapolis to outfall of the Metro wastewater treatment plant in St. Paul	2B, 3B
Lakes		
Lake Andrusia	(T. 146; R. 31)	2B, 3B
Lake Bemidji	(T. 146, 147; R. 33)	2B, 3B
Cass Lake	(T. 145, 146; R. 30, 31)	2B, 3B
Lake Itasca	(T. 143; R. 36)	2B, 3B
Pokegama Lake	(T. 54, 55; R. 25, 26)	2A, 3B
Winnibigoshish Lake	(T. 145, 146, 147; R. 27, 28, 29)	2B, 3B
	Missouri River Basin	
Streams		
Beaver Creek	Source to South Dakota border	2C, 3B
Flandreau Creek	Source to South Dakota border	2C, 3B
Kanaranzi Creek	Source to Iowa border	2C, 3B
Medary Creek	Source to South Dakota border	2C, 3B
Mud Creek	Source to Iowa border	2C, 3B
Ocheyedan River	Ocheda Lake outlet to Iowa border	2B, 3B
Pipestone Creek	Source to South Dakota border	2C, 3B
Rock River	Source to Iowa border	2C, 3B
Little Rock River	Source to Iowa border	2C, 3B

WATERS	REACH OF AREA INVOLVED OR LOCATION	CLASSIFICATION
Little Sioux River	Source to Iowa border	2C, 3B
West Fork of the Little Sioux River	Source to Iowa border	2C, 3B
Split Rock Creek	Source to Split Rock Lake	2B, 3B
Split Rock Creek	Split Rock Lake outlet to South Dakota border	2C, 3B
Lakes		
Illinois Lake	(T. 101; R. 38)	2B, 3B
Iowa Lake	(T. 101; R. 38, 39)	2B, 3B
Loon Lake	(T. 101; R. 35, 36)	2B, 3B
Ocheda Lake	(T. 101, 102; R. 39, 40)	2B, 3B
Pearl Lake	(T. 101; R. 36)	2B, 3B
Round Lake	(T. 101; R. 38)	2B, 3B
Rush Lake	(T. 101; R. 37)	2B, 3B
Spirit Lake	(T. 101; R. 35, 36)	2B, 3B
Split Rock Lake	(T. 105; R. 46)	2B, 3B
Little Spirit Lake	(T. 101; R. 36)	2B, 3B
Red River of the North Basin		
Streams		
Joe River	Source to Canadian border	2C
Pine Creek	Canadian border to Roseau River	2B, 3B
Pine Creek Diversion	Canadian border to and including Pine Creek diversion pools	2B, 3B
Red River of the North	Breckenridge to Canadian border	1C, 2C, 3B
Roseau River	Source to Canadian border	2B, 3B
Bois de Sioux River	Mud Lake outlet to Breckenridge	2C
Sprague Creek	Canadian border to Roseau River	2B
Lakes		
Mud Lake	(T. 127; R. 47)	2B
Lake Traverse	(T. 125, 126; R. 47, 48, 49)	2B

St. Croix River Basin

Streams

Hay Creek	Wisconsin border to mouth	1B, 2B, 3B
St. Croix River	Wisconsin border crossing to Taylors Falls	1B, 2B
St. Croix River	Taylors Falls to mouth	1C, 2B, 3B
Lower Tamarack River	Hay Creek to mouth	1B, 2B, 3B
Upper Tamarack River (Spruce River)	Wisconsin border to mouth	1B, 2B, 3B

Lake Superior Basin

Streams

Clear Creek	Source to Wisconsin border	1B, 2A
Mud Creek	Source to Wisconsin border	1B, 2B
Nemadji River	Source to Wisconsin border	1B, 2A
Pigeon River	South Fowl Lake to Pigeon Bay of Lake Superior	1B, 2B, 3A
Little Pokegama River	Source to Wisconsin border	2B, 3B
Red River	Source to Wisconsin border	1B, 2A, 3B
St. Louis River	Seven Beaver Lake outlet to Cloquet	2B, 3B
St. Louis River	Cloquet to Clough Island	2C, 3B
South Fork of Nemadji River	Source to Wisconsin border	1B, 2A
State Line Creek	Source to Wisconsin border	1B, 2A, 3B

Lakes

Black Lake	(T. 45; R. 15)	1B, 2B, 3B
Fan Lake	(T. 65; R. 2E)	1B, 2B, 3A
North Fowl Lake	(T. 64, 65; R. 3E)	1B, 2B, 3A
South Fowl Lake	(T. 64, 65; R. 3E)	1B, 2B, 3A
Lily Lakes	(T. 65; R. 2E)	1B, 2B, 3A
Moose Lake	(T. 65; R. 2, 3E)	1B, 2A, 3A
Mountain Lake	(T. 65; R. 1, 2E)	1B, 2A
Rat Lake	(T. 65; R. 1W)	1B, 2B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Rose Lake	(T. 65; R. 1W)	1B, 2A
Rove Lake	(T. 65; R. 1E)	1B, 2B
St. Louis Bay	(T. 49, 50; R. 14, 15)	2B, 3B
Seven Beaver Lake	(T. 58; R. 11, 12)	2B, 3A
South Lake	(T. 65; R. 1, 2W)	1B, 2A
Superior Bay	(T. 49, 50; R. 13, 14)	2B, 3B
Lake Superior	(T. 49, 50, 51, 52, 53, 54, 55, 56, 57 58, 59, 60, 61, 62, 63, 64; R. 14W-7E)	1B, 2A, 3A
Watab Lake	(T. 65; R. 1E)	1B, 2B
	Lake of the Woods Basin	
Streams		
Basswood River	Basswood Lake to Crooked Lake	1B, 2B
Bear Creek	Canadian border to Lake of the Woods	2B, 3B
Bottle River	Bottle Lake to Lac La Croix	1B, 2B
Granite River	Clove Lake to Gneiss Lake	1B, 2B
Harrison Creek	Canadian border to Lake of the Woods	2B, 3B
Kawishiwi River	Source to Fall Lake	1B, 2B, 3B
Knife River	Seed Lake to Carp Lake	1B, 2B
Loon River	Loon Lake to Little Vermillion Lake	1B, 2B
Pine River	Magnetic Lake to Clove Lake	1B, 2B
Poplar Creek	Canadian border to Lake of the Woods	2B, 3B
Rainy River	Outlet of Rainy Lake to Dam in International Falls	1B, 2B, 3A
Rainy River	Dam in International Falls to Railroad Bridge in Baudette	1C, 2B, 3A
Rainy River	Railroad Bridge in Baudette to Lake of the Woods	2B, 3A
Stony Creek	Canadian border to Lake of the Woods	2B, 3B

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Lakes		
Basswood Lake	(T. 64, 65; R. 9, 10, 11)	1B, 2A
Birch Lake	(T. 64, 65; R. 8, 9)	1B, 2B
Bottle Lake	(T. 67; R. 13)	1B, 2B
Carp Lake	(T. 65; R. 8)	1B, 2B
Clove (Pine) Lake	(T. 65; R. 4)	1B, 2B
Crane Lake	(T. 67, 68; R. 16, 17)	1B, 2A, 3A
Crooked Lake	(T. 65, 66; R. 12, 13)	1B, 2A
Cypress Lake	(T. 66; R. 6)	1B, 2B
Fall Lake	(T. 63, 64; R. 11, 12)	1B, 2B
Gneiss Lake	(T. 66; R. 4)	1B, 2B
Gunflint Lake	(T. 65; R. 2, 3, 4)	1B, 2A
Little Gunflint Lake	(T. 65; R. 2)	1B, 2B
Iron Lake	(T. 66, 67; R. 12, 13)	1B, 2B
Kabetogama Lake	(T. 69, 70; R. 20, 21, 22)	1B, 2B, 3A
Knife Lake	(T. 64, 65; R. 7, 8)	1B, 2A
Little Knife Lake	(T. 65, 66; R. 6, 7)	1B, 2B
Lac La Croix	(T. 67, 68; R. 13, 14, 15)	1B, 2B
Loon Lake	(T. 66, 67; R. 15)	1B, 2A
Magnetic Lake	(T. 65; R. 3, 4)	1B, 2A
Maraboeuf Lake	(T. 66; R. 4)	1B, 2B
Melon Lake	(T. 65; R. 8)	1B, 2B
Namakan Lake	(T. 69; R. 17, 18, 19)	1B, 2B, 3A
Newton Lake	(T. 63, 64; R. 11)	1B, 2B
North Lake	(T. 65; R. 2)	1B, 2A
Little North Lake	(T. 65; R. 2)	1B, 2B
Pipestone Bay	(T. 64, 65; R. 10, 11)	1B, 2B
Rainy Lake	(T. 70, 71; R. 18, 19, 20, 21, 22, 23)	1B, 2B, 3A

WATERS	REACH OR AREA INVOLVED OR LOCATION	CLASSIFICATION
Saganaga Lake	(T. 66; R. 4, 5)	1B, 2A
Sand Point Lake	(T. 68, 69; R. 17)	1B, 2A, 3A
Seed Lake	(T. 65; R. 8)	1B, 2B
Sucker Lake	(T. 64; R. 8, 9)	1B, 2B
Swamp Lake	(T. 66; R. 5, 6)	1B, 2B
Little Vermillion Lake	(T. 67; R. 16)	1B, 2B
Lake of the Woods	(T. 161, 162, 163, 164, 165, 166, 167, 168; R. 30, 31, 32 33, 34, 35)	1B, 2B, 3A

CLASS 7 LIMITED RESOURCE VALUE WATERS

RED CEDAR RIVER BASIN

	STREAMS		
	UNNAMED CREEK	T101 R22	S31
	EMMONS		

LOWER MISSISSIPPI RIVER BASIN

	STREAMS		
*	BEAR CREEK, NORTH	T101 R 7	S26,27,35
	SPRING GROVE		
*	PINE CREEK	T101 R 9	S31
	HARMONY	T101 R10	S24,25,36
*	RICEFORD CREEK	T101 R 8	S24,25 26
	MABEL		

MISSOURI RIVER BASIN

	STREAMS		
*	FLANDREAU CREEK	T108 R46	S1,2,11
	LAKE BENTON	T109 R45	S30,31
		T109 R46	S36
*	ROCK RIVER	T107 R44	S18,19,20,29
	HOLLAND	T107 R45	S12,13
	UNNAMED DITCH	T101 R46	S28,33
	HILLS		

APPROVED AS TO FORM AND LEGALITY

12/19 1980

WARREN SPANNAUS, ATTORNEY GENERAL

BY _____

SPECIAL ASSISTANT ATTORNEY GENERAL

STATE OF MINNESOTA
DEPARTMENT OF STATE
FILED
DEC 22 1980
Secretary of State
3:45 PM

MPCA Exhibit 3.a.

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32.

PCA-004-80-AK

SUPPLEMENTAL NOTICE OF HEARING

Notice is hereby given that the hearing in the above-entitled matter will commence on March 31, 1980, and continue on subsequent days as scheduled in the attached notice and, in addition, will continue on Monday, April 28, 1980, at 9:30 a.m., in the MPCA Board Room, 1935 West County Road B2, Roseville, Minnesota, 55113, and at other times and places to be determined by the Hearing Examiner. Please be advised that the Agency will consider additional non-metropolitan locations if there is a substantial interest in continuing the hearing at such locations.

Copies of the following documents are now available and may be obtained by contacting Mr. John McGuire, Division of Water Quality, Minnesota Pollution Control Agency, 1935 West County Road B2, Roseville, Minnesota, 55113, ([612] 296-7242):

1. Statement of Need and Reasonableness
2. Proposed Amendments
3. Testimony of Agency Witnesses

Additional copies of these documents will be available at the hearing at each location.

Dated: MAR 18 1980

MINNESOTA POLLUTION CONTROL AGENCY

By Terry Hoffman
Terry Hoffman
Executive Director

STATE OF MINNESOTA
COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25, and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

NOTICE OF HEARING

Notice is hereby given that a hearing in the above-entitled matter will be held at the following times and locations:

1. Monday, March 31, 1980, 9:30 a.m. and the rest of the week
   MPCA Board Room, 1935 W. County Road B2,
   Roseville, Minnesota
   (Please note that the hearing on April 1, 1980, will not be held in the Board Room but will be held in a place announced by the Hearing Examiner on March 31.)

2. Monday, April 7, 1980, 7:00 p.m. and
   Tuesday, April 8, 1980, 9:00 a.m.
   Building IL, Room 219,
   Southwest State College
   Marshall, Minnesota

3. Tuesday, April 8, 1980, 7:00 p.m. and
   Wednesday, April 9, 1980, 9:00 a.m.
   City Administration Building
   1025 Roosevelt Avenue
   Detroit Lakes, Minnesota

4. Wednesday, April 9, 1980, 7:00 p.m. and
   Thursday, April 10, 1980, 9:00 a.m.
   County Services Building, Laurel Street
   Brainerd, Minnesota

5. Thursday, April 10, 1980, 7:00 p.m. and
   Friday, April 11, 1980, 9:00 a.m.
   St. Louis County Courthouse
   Duluth, Minnesota

6. Monday, April 14, 1:00 p.m. and 7:00 p.m.
   Friedel Building, 1200 South Broadway
   Rochester, Minnesota

The hearing will be continued if necessary, at a time and place to be determined by the Hearing Examiner during the hearing.

At the hearing the Agency will, through written or oral testimony, or both, and the introduction of exhibits, explain the proposed amendments (when used in this Notice the term "proposed amendments refers to both the above-captioned proposed amendments and proposed repeal) and the Agency's reasons for proposing the amendments. After the Agency has introduced its exhibits in support of the proposed amendments and all the witnesses for the

Agency have presented their oral or written comments, interested persons will be given an opportunity to ask questions of the Agency. Questioners will be asked to identify the issues and the facts that are of concern. All interested or affected persons will be given an opportunity to participate and to make oral presentations or submit written comments. In addition, written materials may be submitted by mail to Mr. Allan Klein, Hearing Examiner, Office of Hearing Examiners, 1745 University Avenue, St. Paul, Minnesota 55104, (612) 296-8104, at any time before the record closes. The record will remain open for five working days after the actual hearing ends, or for a longer period not to exceed twenty calendar days if ordered by the Hearing Examiner.

In the interests of economy and efficiency and helpfulness, the Agency hereby requests that any person who has any objection to any part of the proposed amendments submit a statement of such objection to the Agency (Attention: Mr. John McGuire) and to the Hearing Examiner as soon as possible and prior to March 31, 1980. Such statement should:

(1) state concisely and with particularity each portion of the proposed amendments to which objection is taken;

(2) state the basis for such objection; and

(3) state the objector's proposed modification, the reason such modification is sought, and the scientific or other basis for the proposed modification.

To the extent possible, the Agency will respond at the hearing to each such objection to the proposed amendments. Failure to submit such objections will not prohibit any person from submitting written or oral statements or comments.

PLEASE BE ADVISED THAT THE PROPOSED AMENDMENTS ARE SUBJECT TO CHANGE AS A RESULT OF THE RULE HEARING PROCESS.

For example, changes may be made in specific proposed water quality standards or in methods of sampling and determining compliance. Any changes made could make the rules more stringent or less stringent. The Agency urges those who are interested to any extent in the substance of the proposed amendments, including those who support the amendments as proposed, to participate in the rule hearing process.

Notice is hereby given that 25 days prior to the hearing, a Statement of Need and Reasonableness will be available for review at the Agency and at the Office of Hearing Examiners. This Statement of Need and Reasonableness will include a summary of all of the evidence which will be presented by the Agency at the hearing justifying both the need for and the reasonableness of the proposed amendments. Copies of the Statement of Need and Reasonableness may be obtained from the Office of Hearing Examiners at a minimal charge.

The Statement of Need and Reasonableness will summarize the Agency's reasons for the proposed amendments, identify manuals and reports and other documents relied upon by the Agency, and list

those persons, including experts, who will present written or oral comments and information at the hearing on behalf of the Agency. In addition to the Office of Hearing Examiners, copies of the Statement of Need and Reasonableness are available from Mr. McGuire.

Copies of the proposed amendments are now available and one free copy may be obtained by contacting Mr. John McGuire, Division of Water Quality, 1935 West County Road B-2, Roseville, Minnesota, 55113 (Phone (612) 296-7242). Additional copies will be available at the hearing at each location.

The Agency has proposed amendments to the following water quality rules:

a. WPC 14 Criteria for the Classification of the Intrastate Waters of the State and the Establishment of Standards of Quality and Purity

b. WPC 15 Criteria for the Classification of the Interstate Waters of the State and the Establishment of Standards of Quality and Purity

c. WPC 24 Classifications of Intrastate Waters of Minnesota

d. WPC 25 Classifications of Interstate Waters of Minnesota

The proposed amendments to Minn Rules WPC 14 and 15, if adopted, would:

(1) modify the water quality standards for fecal coliform organisms and ammonia;

(2) modify and clarify the water quality standards for dissolved oxygen;

(3) add water quality standards for chlorine;

(4) modify the effluent limitation for fecal coliform organisms and total suspended solids;

(5) establish a new class of waters to be known as limited resource value waters and establish water quality standards and effluent limitations for such waters;

(6) eliminate the common level of treatment requirement of (c) (10) in WPC 14 and 15 which applied to all dischargers in the same reach; and

(7) amend other provisions of the rules for purposes of clarification, consistency and administration, and to conform the rules to the most recent available scientific information.

The proposed amendments to Minn. Rules WPC 24 and 25 would add a class of limited resource value waters and provide a list of waters so classified. In addition, proposed amendments to Minn. Rule WPC 25 would change the designated classification of certain portions of the Minnesota River and the Mississippi River.

Finally, the Agency is proposing to repeal the following rules:

a. WPC 2 Classification and Standards for the Mississippi River and Tributaries from the Upper Lock and Dam at St. Anthony Falls to the Outfall of the Minneapolis-St. Paul Sanitary District Sewage Treatment Plant.

b. WPC 3 Classification and Standards for the Mississippi River and Tributaries from the Outfall of the Minneapolis-St. Paul Sanitary District Sewage Treatment Plant to Lock and Dam No. 2 near Hastings.

c. WPC 5 Classification and Standards for the Minnesota River and Tributary Waters from Carver Rapids to the Outlet of Reilly Creek and Grass Lake Below Shakopee, Zone 36-22.4.

d. WPC 6 Classification and Standards for the Minnesota River and Tributary Waters from the Outlet of Reilly (Terrell) Creek and Grass Lake Below Shakopee to the Junction with the Mississippi River at Fort Snelling, Zone 22.4-0.

e. WPC 7 Classification and Standards for Reilly (Terrell) Creek, Bluff Creek, the Chaska Creeks, Spring Creek, Carver Creek and Sand Creek and Tributary Waters.

f. WPC 8 Classification and Standards for Eagle Creek and Purgatory Creek and Tributary Waters.

g. WPC 9 Classification and Standards for Nine Mile Creek and the Credit River and Tributary Waters.

h. WPC 10 Classification and Establishment of Standards of Water Quality and Purity for the Red River of the North, the Otter Tail River from Fergus Falls to the Mouth, and the Red Lake River from Crookston to the Mouth.

i. WPC 11 Classification and Standards of Water Quality and Purity for the Rainy River from the Outlet of Rainy Lake at Ranier to the Minnesota and Ontario Paper Company Dam in International Falls.

j. WPC 12 Classification and Standards of Water Quality and Purity for the Rainy River from the Minnesota and Ontario Paper Company Dam in International Falls to the Canadian National Railway Bridge in Baudette.

k. WPC 13 Classification and Standards of Water Quality and Purity for the Rainy River from the Canadian National Railway Bridge in Baudette to Lake of the Woods.

l. WPC 16 Classification and Establishment of Standards of Water Quality and Purity for Anderson Creek, Big Silver Creek, the Blackhoof River, Canutrup Creek (and Mary Brook), Clear Creek, Deer Creek, the Little Net River, the Net River, North Ford Creek, Skunk Creek, Stateline Creek and Stony Brook, Carlton and Pine Counties.

m. WPC 17 Classification and Establishment of Standards of Water Quality and Purity for the Nemadji River System, Carlton and Pine Counties (Except Waters Included in WPC 16.)

n. WPC 18 Effluent Standards for Disposal Systems Discharging to the Mississippi River from the Outfall of the Minneapolis-St. Paul Sanitary District Sewage Treatment Plant to Lock and Dam No. 2 Near Hastings.

o. WPC 19 Effluent Standards for Disposal Systems Discharging to the Minnesota River from above Chaska to the Junction with the Mississippi River at Fort Snelling.

p. WPC 20 Effluent Standards for Disposal Systems Discharging to the Minnesota River from Mankato to Chaska.

q. WPC 21 Effluent Standards for Disposal Systems Discharging to the Mississippi River from the Junction of the Rum River to the Outfall of the Minneapolis-St. Paul Sanitary District Sewage Treatment Plant, and from Lock and Dam No. 2 Near Hastings, to the Junction with the Chippewa River, and to the St. Croix River from Taylors Falls to the Junction with the Mississippi River.

r. WPC 23 Standards of Waulity and Purity for Effluents Discharged to Intrastate Waters.

s. WPC 26 Effluent Standards for Disposal Systems Discharging to Lake Superior, Lake of the Woods and Fall Lake.

t. WPC 29 Effluent Standards for Disposal Systems Discharging to that Portion of the Mississippi River from the Blandin Dam in the City of Grand Rapids to the Mouth of the Rum River and from the Mouth of the Chippewa River to the Iowa Border, the Red Cedar River from Austin to the Minnesota-Iowa Border, the Minnesota River from the Mouth of the Pomme De Terre River and Including Marsh Lake to Mankato, and the Blue Earth River from the Mouth of Elm Creek to the Junction with the Minnesota River in Mankato.

u. WPC 31 Effluent Standards for Disposal Systems Discharging to the Roseau River from Its Source to the Canadian Border, the North Fork of the Yellow Medicine River, the West Fork of the Lac Qui Parle River, the Blue Earth River from the Iowa Border to the Mouth of Elm Creek, the Little Rock River, the

Executive Director

West Fork of the Little Sioux River, the Rock River, the West Fork of the Des Monies River from Its Source to the Minnesota-Iowa Border, the Red Cedar River from Its Source to Austin, Bear Creek, the Upper Iowa River, Pine Creek, and the Root River.

v. WPC 32 Effluent Standards for Disposal Systems Discharging to Crooked Creek from Its Source to Its Mouth.

These proposed amendments would require the Metropolitan Waste Control Commission, which services over 80 metro area communities, and most of the over 200 outstate communities to incur additional capital expenditures and operating and maintenance expenses to meet the new standards in the operation of their sewage treatment plants. The impact on each community will have to be determined individually, and some communities will actually realize a savings, but the Agency estimates that the total cost to all local public bodies in the state to implement the proposed amendments will be approximately 150 million dollars. These expenses will be incurred in a period extending as long as ten years after the amendments are adopted and no major expenses are likely within the first couple of years after adoption. Under present law 90% or more of the capital expenditures will be eligible for state and federal funding.

The Agency's authority to promulgate the proposed amendments is contained in Minn. Stat. §115.03 and §115.44 (1978).

Notice: Any person may request notification of the date on which the Hearing Examiner's Report will be available, after which date the Agency may not take any final action on the rules for a period of five working days. Any person may request notification of the date on which the hearing record has been submitted (or resubmitted) to the Attorney General by the Agency. If you desire to be so notified, you may so indicate at the hearing. After the hearing, you may request notification by sending a written request to the Hearing Examiner (in the case of the Hearing Examiner's Report), or to the Agency (in the case of the Agency's submission or resubmission to the Attorney General).

PLEASE BE ADVISED that Minn. Stat. ch. 10A (1978) requires each lobbyist to register with the Ethical Practices Board within five days after he/she commences lobbying. Lobbying includes attempting to influence rulemaking by communicating or urging others to communicate with public officials. A lobbyist is generally any individual who spends more than $250.00 per year for lobbying or any individual who is engaged for pay or authorized to spend money by another individual or association and who spends more than $250.00 per year or five hours per month lobbying. The statute in question provides certain exceptions. Questions should be directed to the Minnesota Ethical Practices Board, 41 State Office Building, St. Paul, Minnesota 55155, telephone (612) 296-5615.

Dated: February 6, 1980

By _____
Art Engelbrecht
Chairman

By _____
Terry Hoffman
Executive Director

CERTIFICATE OF BOARD'S AUTHORIZING RESOLUTION

(A)

I, Terry Hoffman, do certify that I am the Executive Director of the Minnesota Pollution Control Agency, an Agency duly authorized under the laws of the State of Minnesota, and that the following resolution was adopted at a meeting of the Agency properly called on the 27th day of November, 1979, that a quorum was present at said meeting; that the following resolution is set forth in the minutes of said meeting and has not been rescinded or modified:

> BE IT RESOLVED, that the Minnesota Pollution Control Agency authorizes a Public Hearing to be held concerning the proposed amendments to MPCA Rules WPC 14, 15, 24 and 25 and revocation in their entirety of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31, and 32.
>
> BE IT FURTHER RESOLVED, that the Executive Director is authorized to execute all documents necessary for this Public Hearing, including, but not limited to, the Order for the Hearing.

IT WITNESS WHEREOF, I have hereunto subscribed my name this 6th day of February, 1980.

Terry Hoffman
Executive Director

Subscribed and sworn to before me this 6th day of February, 1980:

MARYANNE GIBBONS
NOTARY PUBLIC - MINNESOTA
RAMSEY COUNTY
My Commission Expires Sept. 26, 1985

Notary Public

CERTIFICATE OF BOARD'S AUTHORIZING RESOLUTION (B)

I, Terry Hoffman, do certify that I am the Executive Director of the Minnesota Pollution Control Agency, an Agency duly authorized under the laws of the State of Minnesota, and that the following resolution was adopted at a meeting of the Agency properly called on the 18th day of December, 1979, that a quorum was present at said meeting; that the following resolution is set forth in the minutes of said meeting and has not been rescinded or modified:

> WHEREAS, on November 27, 1979, the Minnesota Pollution Control Agency (MPCA) authorized a rule hearing on proposed amendments to MPCA Rules WPC 14, 15, 24 and 25;
>
> WHEREAS, the MPCA finds it desirable to consider for adoption additional amendments to WPC 14, 15 and 24;
>
> THEREFORE, BE IT RESOLVED that the MPCA authorizes for public hearing the attached additional proposed amendments to MPCA Rules WPC 14, 15 and 24.
>
> BE IT FURTHER RESOLVED, that the MPCA approves the proposed Notice for Hearing and authorizes the Chairman and Executive Director to execute the notice.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 6th day of February, 1980.

Terry Hoffman
Executive Director

Subscribed and sworn to before me this 6th day of February, 1980:

MARYANNE GIBBONS
NOTARY PUBLIC - MINNESOTA
RAMSEY COUNTY
My Commission Expires Sept. 25, 1985

Notary Public

STATE OF MINNESOTA
OFFICE OF HEARING EXAMINERS

FOR THE POLLUTION CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32.

REPORT OF THE HEARING EXAMINER

The above-entitled matter came on for hearing on March 31, 1980, in the Board Room of the Minnesota Pollution Control Agency, Roseville, Minnesota, before Allan W. Klein, Hearing Examiner. The hearing continued at the following times and places:

April 1-4, 1980, commencing at 9:00 a.m., Minnesota Pollution Control Agency, Roseville;

April 7, 1980, commencing at 7:00 p.m., and April 8, 1980, commencing at 9:00 a.m., Southwest State College, Marshall;

April 8, 1980, commencing at 7:00 p.m., and April 9, 1980, commencing at 9:00 a.m., City Administration Building, Detroit Lakes;

April 9, 1980, commencing at 7:00 p.m., and April 10, 1980, commencing at 9:00 a.m., County Services Building, Brainerd;

April 10, 1980, commencing at 7:00 p.m., and April 11, 1980, commencing at 9:00 a.m., St. Louis County Courthouse, Duluth;

April 14, 1980, commencing at 1:00 p.m. and 7:00 p.m., Friedel Building, Rochester;

April 28, 1980, commencing at 9:30 a.m., Minnesota Pollution Control Agency, Roseville;

April 29, 1980, commencing at 9:00 a.m., Holiday Inn, Roseville; and

April 30, May 1, 2 and 7, 1980, commencing at 9:00 a.m., Minnesota Pollution Control Agency, Roseville.

This is a rules hearing held puruant to Minn. Stat. Ch. 15 to determine whether certain of the State's existing water quality rules should be amended and whether certain other existing rules should be repealed.

Alan Mitchell and Marlene E. Senechal, Special Assistant Attorneys General, appeared for and on behalf of the Minnesota Pollution Control Agency Staf ("MPCA Staff", "PCA" or "Agency").

In aodition to other members of the public, appearances were duly noted for the record by the following individuals who participated in all or the majority of the hearings held in Roseville: John Hoeft and Jack Frost, representing the Metropolitan Council ("MC"); G. Robert Johnson and Robert S. Burk of the firm of Popham, Haik, Schnobrich, Kaufman and Doty, representing N-REN Corporation, Koch Refining, Ashland Oil Company, Minnesota Mining and Manufacturing Company and the Minnesota-Wisconsin Power Suppliers ("N-REN et al" or "Industry); and Robert A. Hillstrom of the firm of Hillstrom and Martinson, representing the Metropolitan Waste Control Commission ("MWCC").

In addition to the above specifically named participants, all interested persons, representatives of individuals or associations and other interested groups, had an opportunity to present evidence and question witnesses.

I.

General Overview

Federal Law requires the State to adopt water quality standards and review those standards at public hearings every three years. This proceeding is a part of Minnesota's response to that federal requirement, and the rules proposed for adoption are the result of an obviously lengthy and detailed series of agency proposals, public responses and agency revisions (see, Findings No. 4(h) through (j) below).

The existing rules and the proposed rules follow the same general format, with one major exception. The existing rules contained numerous short rules dealing separately with individual waters or segments or waters. The rules proposed for adoption in this proceeding repealed many of those individualized rules in favor of state-wide standards which apply to virtually all waters of the state. With that exception, the rules can be described generally as (1) creating various classes of waters; (2) setting in-stream standards (water quality standards) for certain substances and chemicals for each class; (3) setting effluent limits for certain substances and chemicals which dischargers which must meet for each class; and (4) containing various miscellaneous matters.

Disagreement at the hearing centered around the following issues:

(a) Are some standards based on erroneously-computed criteria?
(b) Is compliance with some standards possible at any price in some locations?. Should rules be more site-specific?
(c) Is the cost of compliance too high in relationship to the benefits? Did the Agency adequately consider costs in some cases?
(d) Are some standards deficient in that they are "single number" standards which leave no room for variability induced by either natural or man-made causes?
(e) Are some rules deficient in that they fail to specify sampling protocols and other compliance or enforcement standards?

While most criticism of the Agency's proposals came from those who felt that they were too strict, there was also criticism from those who felt that the proposals were not strict enough.

Explanatory Note on Citation System

Much of the testimony presented by the Agency was prepared in written form and made available in advance of the hearing. Some of that testimony is bound into the transcripts of the hearing, but some was not. In addition, some of the testimony of the witnesses for MC and MWCC was also prepared in written form. All of this written testimony will be cited by witness name and testimony page, such as "Jones, p. 5". Oral testimony, such as that elicited through questioning of witnesses, will be referred to by witness name, transcript volume, and transcript page, such as "Smith, Tr. X-5).

The transcripts were not all numbered consecutively when prepared by the court reporters because they were prepared by a variety of different court reporting firms around the state. The Examiner has assigned volume numbers to the transcripts as follows:

Date	Place	Volume Number
3/31	Roseville	I
4/1	Roseville	II
4/2	Roseville	III
4/3	Roseville	IV
4/4	Roseville	V
4/7 (p.m.)	Marshall	VI
4/8 (a.m.)	Marshall	VII
4/8 (p.m.)	Detroit Lakes	VIII
4/9 (a.m.)	Detroit Lakes	IX
4/9 (p.m.) & 4/10 (a.m.)	Brainerd	XA
4/10 (p.m.)	Duluth	XB
4/11 (a.m.)	Duluth	XC
4/14	Rochester	XD
4/28	Roseville	XI
4/29	Roseville	XII
4/30	Roseville	XIII
5/1	Roseville	XIV
5/2	Roseville	XV
5/7	Roseville	XVI

The Agency filed two responses to testimony presented by others. The first is labeled "MPCA Staff Response to Testimony", and will be referred to as "Staff Response". The second was labeled "Supplemental MPCA Staff Response to Testimony" and will be labeled "Supp. Staff Response".

Based upon all the records and proceedings herein, the Hearing Examiner makes the following:

FINDINGS OF FACT

Procedural Requirements

1. On February 6, 1980, the Agency filed the following documents with the Hearing Examiner:

(a) A copy of the proposed amendments;
(b) The Order for Hearing proposed to be issued;
(c) The Notice for Hearing proposed to be issued; and
(d) A Statement of the number of persons expected to attend the hearings and the estimated length of time of the hearings.

2. On February 25, 1980, a Notice of Hearing and the proposed amendments were published at 4 State Register 1330, et seq.

3. On February 26, 1980, the Agency mailed the Notice of Hearing to all persons and associations who had registered their names with the Secretary of State for the purpose of receiving such notice and to other interested and affected persons.

4. On March 5, 1980, the Agency filed the following documents with the Hearing Examiner:

(a) The Order for Hearing and the Authorizing Resolution (MPCA Ex. 1 and 2);
(b) The Notice of Hearing as mailed (MPCA Ex. 3);
(c) February 25, 1980, State Register containing the Notice of Hearing and Proposed Amendments (MPCA Ex. 4);
(d) Certificate of Delivery of the Secretary of State's List (MPCA Ex. 5);
(e) The Affidavit of Receipt of the Secretary of State's List (MPCA Ex. 6);
(f) The Affidavit of Mailing and mailing list (MPCA Ex. 7);
(g) The Statement of Need and Reasonableness (MPCA Ex. 8);
(h) Copy of Notice of Intent to Solicit Outside Opinion Regarding Proposed Rules published in 2 State Register 684-685 (September 26, 1977) together with all written material received in response thereto (MPCA Ex. 9 and 10a.-j.);

(i) Copy of Notice of Intent to Solicit Outside Opinion Regarding Proposed Rules published in 4 State Register 469-470 (September 7, 1979) together with all written material received in response thereto (MPCA Ex. 11 and 12a.-g.);

(j) Public comments on the proposed rules received but not within the time period of the Notices of Intent (MPCA Ex. 13a.-p. and 14a.-z.);

(k) Written testimony of William Anderl, Gerald Blaha, Dr. William Brungs, Randy Burnyeat, John Hensel, Marvin Hora, Dr. Paul Marsh, Dr. David Maschwitz, John McGuire, Lanny Peissig, Deborah Pile, Steve Reed, Larry Sisk, Dr. Robert Thurston, Gordon Wegwart, Jerry Winslow, and Minnesota Department of Natural Resources (John Emblom and John Skrypek);

(l) The names of Agency personnel who would represent the Agency at the hearing; and

(m) MPCA Ex. 23, 24, 37, 50 and 70.

These documents were available for inspection at the Office of Hearing Examiners from the date of filing to the date of the hearing.

5. On March 21, 1980, the Agency mailed a Supplemental Notice of Hearing to interested or affected persons (MPCA Ex. 3a. and 7d.).

6. On April 7, 1980, a Supplemental Notice of Hearing was published at 4 State Register 1606 (MPCA Ex. 4a.).

7. The Notice of Hearing was published in various newspapers of general circulation in every county of the state (MPCA Ex. 7a. and 7c.).

8. In addition, the Agency issued a press release dated March 13, 1980, regarding the hearings (MPCA Ex. 3b.). News articles regarding the hearing appeared in various newspapers of general circulation throughout the state (MPCA Ex. 7d.).

9. The record remained open until 4:30 p.m., May 27, 1980.

10. An extension of time to complete this Report was granted by the Chief Hearing Examiner on June 30, 1980, in response to requests from the Hearing Examiner and the Agency, pursuant to Minn. Stat. § 15.0412, subd. 4 (1978).

Statutory and Regulatory Basis

11. The Agency's water quality rules which are the subject of this proceeding were adopted, in part, in response to federal law. The rulemaking process, however, is governed primarily by state law. Therefore, a summary of the relevant sections of both legal systems are set forth below.

Federal Law

12. Section 303(c)(1) of the Clean Water Act, as amended, 33 U.S.C. § 1251, et seq. ("Clean Water Act") or ("CWA"), requires a state to hold a public hearing, at least once every three-year period, for the purpose of reviewing and, as appropriate, modifying and adopting water quality standards. The last revision to the state's water quality standards was in 1973.

13. Section 304(a) of the Clean Water Act requires the administrator of the United States Environmental Protection Agency (hereinafter "EPA") to publish criteria for water quality accurately reflecting the latest scientific knowledge on the kind and extent of identifiable effects of pollutants on public health and welfare, aquatic life and recreation. In response to this mandate, the EPA has published a number of sets of criteria, the most recent version of which was published in 1976. It is entitled, "Quality Criteria for Water" and is commonly known as the "Red Book". It is in the record of this proceeding as PCA Ex. 37 and Attachment 1 to Public Ex. 11.

14. The thrust of the criteria recommended in the Red Book is water quality which will meet the goal of having all national waters be "swimmable/fishable" by 1983, as set forth more fully in Section 101(a)(2) of the Clean Water Act (MPCA Ex. 37, pp. v and ix).

15. It is important to understand the difference between criteria (such as those set forth in the Red Book) and standards (such as those proposed for adoption in this proceeding). Criteria are scientifically-derived levels of concentrations of elements and chemicals in water which represent "safe" concentrations for a given use. Standards, on the other hand, are legally binding limits on the concentrations of elements and chemicals in water which represent political judgments involving a variety of factors, such as the most appropriate use for a given body of water, cost/benefit decisions about attainment of specific uses, et cetera. The Red Book states that the criteria contained therein are not to be automatically translated into standards. The authors of the Red Book admit that it would be impossible to develop national criteria because of the natural variability and individual needs of each of the nation's waterways (p. iii). Standards, although always based on criteria, may deviate from the criteria because of prevailing local natural conditions, economic considerations, the importance of a particular waterway, or the degree of safety desired for a particular ecosystem.

The standards proposed by the PCA in this proceeding have been criticized on at least two separate grounds:

a. That the original criteria were erroneous; and

b. That the translation from criteria to standards was erroneous.

16. Federal statutes and rules have prescribed certain parameters within which the PCA must function in selecting criteria and translating them into standards. Among the most important are the following, published at 44 Fed. Reg. 303040 (May 23, 1979), to be codified at 40 CFR § 35.1550:

> (b) The water quality standards of the state shall:
>
> (1) Protect the public health or welfare, enhance the quality of water and serve the purposes of the Act;
>
> (2) Specify appropriate water uses to be achieved and protected, taking into consideration the use and value of water for public water supplies, propagation of fish, shellfish, and wildlife, recreation purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation; and
>
> (3) Specify appropriate water quality criteria necessary to support those water quality uses designated pursuant to [subparagraph (b)(2) above].
>
> (c) In reviewing and revising its water quality standards pursuant to § 35.1550(a), the State shall adhere to the following principles:
>
> (1) The State shall establish water quality standards which will result in the achievement of the national water goal specified in section 101(a)(2) of the Act ["fishable/swimmable"], wherever attainable. In determining whether such standards are attainable for any particular segment, the State should take into consideration environmental, technological, social, economic, and institutional factors.
>
> (2) The State shall maintain those water uses which are currently being attained. Where existing water quality standards specify designated water uses less than those which

[redacted] presently being achieved, the State [redacted]ll upgrade its stan-[redacted]rds to reflect the uses actually being [redacted]ained.

(3) At a minimum, the State shall maintain those water quality uses which are currently designated in water quality standards, effective as of the date of these regulations or as subsequently modified in accordance with § 35.1550(c)(1) and (2). The State may establish less restrictive uses than those contained in existing water quality standards, however, only where the State can demonstrate that:

(i) The existing designated use is not attainable because of natural background;

(ii) The existing designated use is not attainable because of irretrievable man-induced conditions; or

(iii) Application of effluent limitations for existing sources more stringent than those required pursuant to section 301(b)(2)(A) and (B) of the Act in order to attain the existing designated use would result in substantial and widespread adverse economic and social impact.

(4) The State shall take into consideration the water quality standards of downstream waters and shall assure that its water quality standards provide for the attainment of the water quality standards of downstream waters.

17. Section 303(c) of the Clean Water Act provides that after a state has adopted or amended its standards, the standards shall be submitted to the EPA for review. If the EPA determines that the standards meet the "requirements" of the Act, then there is no further federal action (other than ministerial). However, should the EPA determine that any or all of the standards are not consistent with requirements of the Act, then the state is given 90 days to make changes required by the EPA. If the state fails to make the changes, then the EPA is empowered to hold hearings and adopt standards for the state.

This "forced adoption" procedure has been followed at least once (dissolved oxygen standard for the State of Mississippi) and following a court challenge, the procedure was upheld. Mississippi Air and Water Pollution Control Commission v. Costle, ___ F.Supp. ___, 13 ERC 1880 (S.D. Miss. 1979). The EPA has also disapproved dissolved oxygen standards adopted by Ohio and Indiana and has given notice of its intent to promulgate standards for those two states. (See, MacMullen, Tr. XIII-12 and MPCA Ex. 67)

EPA has never yet disapproved any of Minnesota's standards. However, both in written and oral submissions during this proceeding, EPA made it clear that it would not hesitate to do so if it determined that the state's standards were inadequate. (See, MacMullen, Tr. VIII-12-15 and Public Ex. 70) Specifically, the EPA stated that while certain natural ecosystems are "not suitable" for application of the Red Book criteria as standards, such is not the case for "the major river and lake systems in the State of Minnesota". (Public Ex. 70, p. 5) An EPA spokesman stated that if the state were to adopt a dissolved oxygen standard, for example, less restrictive than that suggested by the Red Book, his judgment was that EPA would be forced to disapprove the standard and proceed to promulgation of its own standard for the state. (See, MacMullen, Tr. XIII-13)

State Law

18. There is ample statutory authority empowering the Agency to adopt the rules.

a. Minn. Stat. § 115.03, subd. 1 (1978) provides in part:

The agency is hereby given and charged with the following powers and duties:

* * *

(b) To investigate the extent, character, and effect of the pollution of the waters of this state and to gather data and information necessary or desirable in the administration or enforcement of pollution laws, and to make such classification of the waters of the state as it may deem advisable;

* * *

(c) To establish and alter such reasonable pollution standards for any waters of the state in relation to the public use or which they are or may be put as it shall deem necessary for the purposes of this chapter and, with respect to pollution of waters of the state, chapter 116.

* * *

(e) To adopt, issue, reissue, modify . . . reasonable orders . . . standards, regulations . . . in order to control or abate water pollution . . . .

b. Minn. Stat. § 115.44, subd. 2 (1978) provides:

In order to attain the objectives of Laws 1963, Chapter 874, the agency after proper study, and after conducting public hearing upon due notice, shall, as soon as practicable, group the designated waters of the state into classes, and adopt classifications and standards of purity and quality thereof. Such classification shall be made in accordance with considerations of best usage in the interest of the public and with regard to the considerations mentioned in subdivision 3 hereof.

c. Minn. Stat. § 115.44, subd. 4 (1978) provides:

The agency, after proper study, and after conducting public hearings upon due notice, shall adopt and design standards of quality and purity for each such classification necessary for the public use or benefit contemplated by such classification. Such standards shall prescribe what qualities and properties of water shall indicate a polluted condition of the waters of the state which is actually or potentially deleterious, harmful, detrimental or injurious to the public health, safety or welfare, to terrestrial or aquatic life or to the growth and propagation thereof, or to the use of such waters for domestic, commercial and industrial, agricultural, recreational or other reasonable purposes, with respect to the various classes established to subdivision 2 hereof, and they contain such other provisions as the agency deems proper. Wherever practicable and advisable the agency shall establish standards for effluent of disposal systems entering classified waters.

19. Beyond the issue of statutory authority, however, are a number of other state statutes and rules which bear upon this proceeding. Two are of primary importance: The Administrative Procedure Act and 116.07, subd. 6 (1978).

a. Minn. Stat. § 15.0412, subd. 4 (1978) provides, in part:

At the public hearing, the agency shall make an affirmative presentation of facts establishing the need for and reasonableness of the rule proposed for adoption and fulfilling any relevant substantive and procedural requirements imposed on the agency by law or rule.

b. Minn. Stat. § 116.07, subd. 6 (1978) provides as follows:

In exercising all its powers the pollution control agency shall give due consideration to the establishment, maintenance, operation and expansion of business, commerce, trade, industry, traf-

fic and other economic factors and other material matters effecting the feasibility and practicability of any proposed action, including, but not limited to, the burden on a municipality of any tax which may result therefrom and shall take or provide for such action as may be reasonable, feasible and practical under the circumstances.

In addition to these, both the Agency and dischargers are also governed by the state's general environmental laws. Of particular importance to this proceeding are two sections of those statutes:

a. Minn. Stat. § 116D.04, subd. 6 (1978) provides, in part, as follows:

> No state action significantly affecting the quality of the environment shall be allowed, nor shall any . . . [water pollution permit required by 115.03 or 115.43] be granted where such action or permit has caused or is likely to cause pollution, impairment or destruction [defined in 116B.02 to include conduct which violates or is likely to violate any environmental standard, rule or permit or any conduct which materially adversely affects or is likely to materially adversely affect the environment] of the . . . water . . . located within the state, so long as there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety and welfare and the state's paramount concern for the protection of its . . . water . . . from pollution, impairment or destruction. Economic considerations alone shall not justify such conduct. (Emphasis added)

b. Minn. Stat. § 116B.03, subd. 1 (1978) provides, in part, as follows:

> Any person residing within the state . . . or any . . . association . . . having members . . . residing within the state may maintain a civil action in the district court . . . against any person, for the protection of the . . . water . . . within the state . . . from pollution, impairment or destruction [defined in 116B.02, subd. 5 to include any conduct which violates or is likely to violate any environmental quality standard, rule, or permit, or any conduct which materially adversely affects or is likely to materially adversely affect the environment]; . . . provided [however] that no action shall be allowable under this section for conduct taken by a person pursuant to any environmental quality standard . . . rule . . . or permit issued by the pollution control agency . . . . (Emphasis added)

Overall MPCA Regulatory Scheme

20. It is also important to understand the overall regulatory scheme used by the Agency in connection with water quality. There are five separate items which enter into the picture. They are:

a. Water quality standards setting - such as is involved in this proceeding.

b. Effluent limit setting - this proceeding involves general limits, but discharger-specific limits are set in NPDES and SDS permits (see below).

c. NPDES/SDS permitting - issuance, modification or renewal of permits for dischargers. See generally, 6 MCAR § 4.8036. It is during this process that the two final items listed below may come into play.

d. Variances - 6 MCAR §§ 4.8014 A.9. and 4.8015 A.8. set forth variance provisions. While a variance applied for at any time, it often arises in connection with permitting.

e. Waste load allocation studies - performed when more than one discharger impacts a waterway. Often done in connection with permitting, but may be done at any time to the extent that staff time and budget allows.

The importance of these various procedures arises because of a basis dispute between the Agency on the one hand, and MWCC and N-REN, et al. on the other. The Agency believes that the NPDES/SDS permitting process is the appropriate point to resolve such issues as monitoring protocols, compliance timetables, discharger-specific effluent limitations, and technical feasibility of compliance. However, MWCC and N-REN, disagree, arguing that such matters ought to be taken into account at the standard-setting stage to the extent that such issues are indispensable in determining the reasonableness or unreasonableness of a standard proposed for adoption. For example, MWCC claims that certain of the proposed standards are simply impossible for it to comply with in certain locations -- that even if it completely ceased discharging from its treatment plants, the standard, as proposed, would not be met. Thus, it is argued, the standard is per se unreasonable. Another example arises from the claim by N-REN, et al. that it is impossible to accurately measure levels of chlorine in the field at the levels proposed by the MPCA in its standard, and that therefore, the standard ought to be held to be unreasonable. Another example arises from the fact that the proposed dissolved oxygen standard is "not less than five milligrams per liter at all times (instaneous minimum concentration)" for Class 2B and 2C waters. Does that mean that if a single measurement of 4.9 or 4.8 is taken, then the rule has been violated? The Agency characterizes such an interpretation as ridiculous -- that dischargers know that a great deal of information is acquired before any discharger is charged with violating a standard. But MWCC asks: "How much information? What kind of sampling?" Without answers to these questions, it argues, the rule is impermissibly vague because MWCC cannot know when it will be in compliance, and what is necessary to achieve compliance.

Apart from the issue of reasonableness, leaving such issues to subsequent permitting proceedings (as suggested by the Agency) results in the burdens of proof and persuasion shifting from the Agency to a discharger. In a rules hearing, the burdens are upon the Agency, but in either a permit or a variance hearing, the burdens are upon a discharger.

The Examiner believes it would be impossible to decide all of the site-specific issues for each and every discharger in one proceeding. There must be some rational division of functions between the standards setting hearing and the individualized permitting/variance proceedings. Guidance comes from applicable statutes. Of primary importance to these issues are Minn. Stat. §§ 15.0412 and 116.07, subd. 6. If the proposed rules can be found to be either reasonable or unreasonable without reference to the issues raised above, then they will be judged on their merits in this proceeding. However, if the proposed rules cannot be found to be either reasonable or unreasonable without reference to the issues raised above, then they must be rejected until those issues are clarified.

In an EPA publication entitled, "Guidelines for State and Areawide Water Quality Management Development" (MPCA Ex. 82 and MWCC Ex. L), the EPA has stated:

> A centralized state water quality standards document must contain at a minimum, the following components:
>
> * * *

8. Specifications of statistical requirements and reference to analytical testing and sampling procedures to determine if standards are being met.

It should be noted that these "guidelines" have apparently never been adopted as regulations.

6 MCAR §§ 4.8014 and 4.8015 both contain a paragraph labeled A.5. which gives the Agency discretion in determining sampling protocols. It is not proposed for amendment in this proceeding. It provides as follows:

> Determination of compliance. In making tests or analyses of the . . . waters of this state, sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered necessary by the agency from the viewpoint of adequately reflecting the condition of the . . . waters, the composition of the effluents, and the effects of the pollutants upon the specified uses. Reasonable allowance will be made for dilution of the effluents, which are in compliance with C.6. following discharge into waters of the state. The agency by allowing dilution may consider the effect on all uses of the . . . waters into which the effluents are discharged. The extent of dilution allowed regarding any specific discharge shall not violate the applicable water quality standards. The sameples shall be preserved and analyzed in accordance with procedures given in the 1971 edition of Standard Methods for the Examination of Water and Waste-Water, by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, and any revisions or amendments thereto. The agency may accept or may develop other methods, procedures, guidelines or criteria for measuring, analyzing and collecting samples.

Traditionally, the Agency has included sampling protocols, frequency of compliance, and other requirements related to these issues in its NPDES/SDS permits (see, for example, Attachments 22 and 23 to Staff Response).

Classifications of Various Waters: General

21. The Agency has previously developed, and continues in this set of rules, a system for classifying various waters of the state depending upon their use. It is important that this classification system be understood before proceeding to discuss standards for specific toxicants because in some cases those standards will vary depending upon the water classification. Therefore, a brief description of the classification scheme will be set forth at this point, although a more detailed analysis of that scheme will be set forth in the later section discussing proposed reclassifications of specific waters.

22. Many waters serve more than one use. The same segment of the same river, for example, might be used for fisheries and recreation, (Class 2) industrial consumption (Class 3), agriculture and wildlife (Class 4) and navigation and waste disposal (Class 5). The Agency has, in some cases, derived different standards for the same pollutant, depending upon the use classification assigned to the water. In the case of multiple use waters, the most restrictive standard applies (6 MCAR §§ 4.8024 B. and 4.8025 B.).

The use classifications are as follows:

Domestic consumption (Class 1);
Fisheries and recreation (Class 2);
Industrial consumption (Class 3);
Agriculture and wildlife (Class 4);
Navigation and Waste Disposal (Class 5);
Other uses (Class 6); and
Limited resource value waters (Class 7).

There are subclasses under many of these major classes. For example, Class 2 (fisheries and recreation) has three subclasses: A, B and C. Class 2A is for warm or coldwater sport and commercial fishes, and direct body contact recreation such as swimming. Class 2B is for warm or cool water sport or commercial fishes, and direct body contact recreation such as swimming. Class 2C is for rough fish or naturally occurring species, and boating and other non-direct body contact aquatic recreation (6 MCAR §§ 4.8014 D. and 8015 D.).

23. Superimposed upon the Agency's classifaication scheme is a factor which is not explicitly stated in the rules but which has a serious impact upon the apparent differences between classes. That is the federal goal of making virtually all waters "fishable and swimmable by 1983" and requiring states to adopt standards consistent with that goal. In reality, this results in only two major classes of waters: (1) those where the national goal is attainable and (2) those where the national goal is not attainable.

II.

General Description of the Method Used to Arrive at Specific Standards

24. The standards proposed by the Agency are predicated upon a number of general theories or assumptions.

The first is that standards should be established to protect specific uses of waters, but in general, protection of the aquatic community will protect waters for "lower" uses because protection of aquatic life requires the strictest standards (MPCA Ex. 23, p. 1).

Secondly, when looking at the aquatic community, one should look at the "food web" that supports it. This includes both vertebrates and invertebrates. Integrity of the aquatic environment will be maintained if the most sensitive resident species of the food web is protected. (Id.)

Thirdly, in seeking to protect the most sensitive resident species, it is crucial to take into account the fact that most species have different tolerances for a specific pollutant depending on the life stage of the species. For example, the "larval" stage may be more sensitive to a given pollutant than the "adult" stage. Therefore, the level of protection must be determined according to the most sensitive stage. (Id., pp. 4-5)

Combining these last two concepts leads to the assumption that in order to protect the integrity of the aquatic environment, standards should be set at levels which will protect the most sensitive life stages of the most sensitive resident species.

25. In computing "safe" concentrations of pollutants, it is desirable to have both data derived from laboratory tests and data derived from field tests (Marsh, Tr. I-159; Maschwitz, Tr. II-127). However, data from field tests must be examined carefully because it is hard to control all variables in the field. The best field data comes from tests with a broad sampling base (Marsh, Tr. II-18).

Laboratory tests (known as bioassays) can be good approximations of natural conditions (Marsh, Tr. II-20). Laboratory bioassays are classified by a number of factors, including length of time of the test, goal of the test, and method of conducting the test (MPCA Ex. 23, p. 9).

The length of time of a laboratory bioassay test can vary tremendously from a few hours to many days, weeks, or even months.

There are generally two methods of conducting laboratory bioassay tests. The first is known as "continuous flow" or "flow-through", in which pure water is mixed with a specified amount of pollutant and the mixture is put into the tank (and removed from the tank) on a continuous basis. The other method is known as a "static" test, where pure water and a specified amount of a pollutant are mixed together and the mixture is put into the tank and not changed throughout the test. (MPCA Ex. 23, p. 10)

There are generally two different goals of lab bioassay tests. Some tests are used to determine the "acute" (lethal) toxicity of a pollutant; others are used to deterine the long-term, no-effect ("chronic") level of a pollutant. Some tests achieve both goals.

Acute bioassays are generally of short duration, lasting from one to four days. Attempts have been made to standardize the length at 96 hours (at least for reporting certain data). The results of acute bioassays are usually expressed as an "LC_{50}", which is defined as that concentration of the pollutant which killed 50% of the test organisms in a specified period of time (such as 96 hours). For example, if a study of rainbow trout reports a 96-nour LC_{50} for copper as .01 milligrams per liter (mg/l), that means that at a concentration of .01 mg/l of copper, 50% of the trout were dead at the end of 96 hours.

Chronic bioassays generally last longer than acute bioassays, ideally including several full life cycles of the organism under test. They are designed to measure sub-lethal effects such as growth, reproductive success, tissue or organ damage, et cetera. The results of a chronic test are usually expressed as the Maximum Acceptable Toxicant Concentration (MATC), which is considered to be a "safe" level of that toxicant for the species tested under the stated experimental conditions. By definition, the MATC is computed by finding the geometric mean of the highest toxicant concentration that has no adverse affect and the lowest concentration at which adverse effects are observed (MPCA Ex. 23, p. 10). For example, if a chronic bioassay had five separate tanks, each with a different concentration of copper, such as .01 mg/l, .03 mg/l, .05 mg/l, .07 mg/l, and .09 mg/l, and there were no effects noted in the .01, .03, or .05 mg/l organisms, but effects were noted in the .07 and .09 mg/l organisms, the MATC would be reported as .059, or .06 mg/l.

LC_{50} values from acute studies and MATC values from chronic studies are not the only numbers used in deriving criteria. A third number is often used, and it is known as the Application Factor (AF). AFs are not derived experimentally, but are derived mathematically using LC_{50s} and MATCs. There are two types of AFs. One is a "standardized" AF, which is a fixed value which may be used for an entire group of related substances (see, Table 1, MPCA Ex. 23 for examples recommended by three federal publications). The second is an "experimentally derived" AF. Tests which yield both LC_{50} and MATC data can be used to compute experimentally derived AFs (see, Table 2, MPCA Ex. 23 for examples from various authors).

An AF is used to compute a "safe concentration" for chronic exposure to a pollutant. That is the same function as an MATC, but because chronic tests used to develop MATCs are difficult, expensive, and time-consuming, there is much more LC_{50} data available than there is MATC data. Therefore, the use of an AF permits the computation of a "safe" level even if the only data that is available is LC_{50} data.

An AF is computed by dividing the MATC by the 96-hour LC_{50} for the same species of fish in the same water. The quotient so computed can then be used to estimate an MATC for other organisms in other waters where no MATC data is available.

An example might be helpful. Assume that both LC_{50} and MATC data is available for the effects of copper on rainbow trout, but only LC_{50} data is available for the effects of copper on brown trout because no long-term chronic studies have been done on brown trout. To estimate the MATC for copper for brown trout, one would first compute the rainbow trout AF by dividing the MATC by the LC_{50}. Then that AF would be multiplied by the brown trout LC_{50} to estimate the MATC for brown trout.

The validity of using the AF approach to estimating MATCs obviously depends upon the "closeness" of the two organisms under consideration. If brown trout and rainbow trout are close to each other in terms of their response to a given pollutant, then the AF method has far greater validity than if they are not similarly responsive to copper. As the degree of closeness becomes more and more remote, care should be exercised in applying AFs. For example, the MPCA's Guidelines for Derivation of Aquatic Life Standards (appended to MPCA Ex. 23) prohibits the use of AFs derived from vertebrates in computing standards for invertebrates, and vice versa.

As the amount of MATC data grows, the need for using AFs will decrease. However, at the present time, AFs are still widely used to determine MATCs.

All of the data mentioned above, LC_{50} data, MATC data, and AFs, are only as reliable as the experiments that they are derived from. Similarly, reports of those experiments and the computations behind the reported data must be scrutinized closely to assure accuracy. One of the most common shortfalls of early bioassay data was the failure of the authors to report complete information to enable a reviewer to judge the validity of the data and to determine its applicability to the reviewer's specific problem. For example, the impacts of various toxicants can vary, depending upon such factors as water temperature, pH, dissolved oxygen, et cetera. Unless the report of an experiment contains information about such parameters (and any others that particularly affect the toxicity of the pollutant under test) they must be viewed with suspicion.

Based upon the foregoing considerations, both the MPCA and the EPA have developed protocols to translate the reported data in the scientific literature into criteria. The MPCA's protocol is set forth as an appendix to MPCA Ex. 23. The EPA's protocol is currently under revision. Changes have been suggested in Federal Registers of 5/18/78, 3/15/79, 12/20/79, and 1/21/80. (See, Industry Ex. A, p. 2-1) However, these revisions are still in the formative stage and have not yet become final (MacMullen, Tr. XIII-48). The MPCA's protocol closely resembles the existing federal protocol.

With this general understanding, the Report will proceed to examine specific standards, taking the most disputed ones first.

Ammonia: Proposed Rule 14 D.2. and 15 D.2. (Class 2A, 2B and 2C Waters)

26. The existing standard and the proposed standard for ammonia are set forth below. It should be noted that not only are the absolute numbers being changed, but perhaps more importantly, the method of measuring ammonia is being changed. This change in the method of measuring ammonia will result in

stricter standards for some and looser standards for others if the proposed rules are adopted.

Class	Existing Standard	Proposed Standard
2A	0.2 mg/l total ammonia (as N)	0.016 mg/l (un-ionized as N)
2B	1.0 mg/l total ammonia (as N)	0.04 mg/l (un-ionized as N)
2C	1.5 mg/l total ammonia (as N)	0.04 mg/l (un-ionized as N)

27. Ammonia is present in many wastewater treatment plant effluents and is highly toxic to aquatic life. The concentration of ammonia in waters must be controlled to protect fish and other forms of aquatic life. An ammonia standard is needed in order to protect organisms both from lethal impacts and from long-term or chronic impacts [see generally, testimony of Maschwitz (ammonia); testimony of Thurston; MPCA Ex. 17, 20, 24, 28 and 37].

28. Ammonia is a pungent, colorless gas containing nitrogen and hydrogen and is highly soluble in water. When ammonia is in solution with water, it exists in two different chemical forms: the un-ionized or gaseous form (NH_3), and the ionized form (NH_4+). Total ammonia (the substance measured under the existing rule) consists of the sum of the un-ionized and the ionized forms of ammonia. The portion of total ammonia which is in the un-ionized form at any time can vary tremendously, and is controlled primarily by the pH and secondly, by the temperature of the water. An increase in the pH results in an increase in the un-ionized form of ammonia. Likewise, an increase in temperature increases the un-ionized form of ammonia. For example, if the pH in water rises from 6.5 to 9.0, the relative concentration of un-ionized will rise by more than 100 times (Thurston, p. 3). Un-ionized ammonia is the form of ammonia which is the most toxic to aquatic life. Ionized ammonia is considered much less toxic than un-ionized ammonia (Maschwitz (Ammonia) at p. 5; Thurston, pp. 2-3; Pavlou, pp. 22-23; Putnam, p. 27).

29. The impacts of ammonia on fish can include damage to gills, internal organs, and red blood cells (Pavlou, p. 23 and Putnam, Tr. XIV-5). An ammonia spill from a barge terminal at Spring Lake (near Inver Grove Heights) on the Mississippi River in 1979 killed a minimum of 25,659 fish (Appendix Table 4 to Skrypek and Enblom). No person contested the fact that ammonia ought to be regulated. The issue was one of what level provided adequate safety to fish.

30. A total ammonia standard is often too lenient or too stringent and is only correct when rather specific water conditions are met (a certain pH and a certain temperature) because of the ratio between un-ionized (lethal) and ionized (non-lethal) varying with a change in those factors. The proposed standards are measured in terms of un-ionized ammonia. They focus on the primary toxic form of ammonia, and will establish a standard which will be appropriate year-round since it takes into account natural fluctuations in ambient pH and temperature (Maschwitz on Ammonia, p. 5).

31. Persons objecting to the Agency's proposed standards for ammonia essentially based their arguments on two grounds: First, that the warmwater criterion was erroneously computed because the data supports a theory (described below as the "gill surface theory") which was not taken into account in setting the criterion; and secondly, that the warmwater criterion is based upon experimental data which is subject to question.

32. The toxicity of ammonia is affected by several other factors besides pH and temperature, but the impacts of those other factors are nowhere near as

important as the two principal variables. The other factors are carbon dioxide, dissolved solids, and dissolved oxygen; water hardness and alkalinity; and the presence of other toxicants (MPCA Exs. 17, 24 and 39; Szumski, Tr. XIII-133).

33. The gill surface theory essentially holds that reported data on the impact of ammonia must be adjusted prior to its being used as the basis for a water quality standard because of certain chemical transformations which take place at the gill surface of a fish which is encountering ammonia. The theory proposes that (1) there is layer of carbon dioxide present at the gill surface of fish; (2) that the effect of this carbon dioxide is to lower the pH of the water at the gill surface; (3) that the reduced pH at the gill surface results in (4) reducing the amount of un-ionized ammonia which impacts the fish as compared to that amount of un-ionized ammonia which is present in the water of the river, stream, or bioassay tank. This reduction in pH varies with alkalinity, and is important because when one is attempting to determine the concentration of un-ionized ammonia, one first measures the amount of total ammonia, and then uses a set of equations (in this case, the Agency has proposed the use of what is known as "Thurston's Equation") to compute the concentration of un-ionized ammonia in the water. In order to use this equation, one must know not only the amount of total ammonia, but also the temperature and pH of the water. The gill surface theory, if correct, means that if one measures the water in a river, and based upon the total ammonia, temperature, and pH of that water, one then computes the concentration of un-ionized ammonia, that concentration is <u>not</u> the same as the concentration which is actually impacting the fish. The theory states that the fish is being impacted by a different concentration, depending upon alkalinity.

This theory suggests that the proper way to set an ammonia standard is to take into account not only pH and temperature, but also alkalinity. This is reflected in Szumski Ex. A-14 and MWCC Ex. X, Fig. 11. [Persons wishing to consult those exhibits should realize that they are designed to maintain a concentration of un-ionized ammonia at .08 mg/l, an alternative standard proposed by MWCC].

Although the gill surface theory was first proposed in 1960, it has not gained wide support in the scientific community. In 1962, an alternative hypothesis was proposed. Seventeen years later, two investigators comparing the two theories stated that the gill surface theory "is not an appropriate explanation" (Staff response at pp. 28-31). Indeed, although the gill surface theory was put forward by a "team" of witnesses sponsored by MWCC, one member of that team stated in a subsequent submission that although he believed that any standard should ultimately be expressed as one corrected to gill surface conditions, development of a gill surface standard "requires further work, and peer review of the underlying concepts." (Pavlou, MWCC Ex. S, p. 1). Further evidence of the fact that the theory has not been widely accepted in the scientific community comes from the testimony of Robert V. Thurston, whom the Examiner finds to be an extremely well-qualified expert on the impacts of ammonia. He stated, in part:

> "It is a reasonable assumption that there is some layer of water, however thin, at the fish gill surface in which the [carbon dioxide] concentration, under some conditions, may be higher than that in the water column surrounding the fish. It follows

that the pH of the water in this layer may be lower than that of the water column, resulting in a lower percentage of the total ammonia being un-ionized. What is in question among fisheries biologists, however, is the thickness of that theoretical layer, the [carbon dioxide] gradient across that layer, and the residence time of that layer at the gill surface. The published data discussing this possible phenomenon are limited and not in agreement. Some believe the [carbon dioxide] effect is significant; some believe the [carbon dioxide] effect is negligible. Certainly, the subject should be further pursued, and additional arguments subjected to peer review through publication in the scientific literature.

"If it develops that the case can be made that the un-ionized ammonia concentration at the fish gill tissues is measurably less than that in the water column, then it would follow that ammonia may be more toxic than heretofore recognized. It has been the water column ammonia values which have been measured during toxicity tests, not those at the fish gill surface. If the [carbon dioxide] argument holds, the fish may be dying at concentrations of un-ionized ammonia at the gill surface which are actually less than those measured in the water column.

[Supp. Staff Response, attachment 32, pp. 1-2]

The Examiner finds that the gill surface theory has not been adequately accepted within the scientific community and that at this point, it must be treated solely as a hypothesis. The Examiner has no opinion as to whether, years from now, the theory will be recognized as having a scientific basis in fact and will be widely accepted. At this point, however, the Examiner finds that it is not an adequate basis upon which to base a standard.

34. The second major line of objection to the Agency's proposed warm water (Class 2B and 2C) standard comes from the manner in which that standard was computed. The Agency set forth, in MPCA Ex. 24, its basis for the proposed standard. The Agency has adopted a different standard for coldwater fish than for warmwater fish, but it is the warmwater standard that has been most vigorously attacked.

The procedure used for deriving the warmwater standard, stated generally, was to first look for MATC data; then look for LC_{50} data, compute an experimentally derived application factor, and multiply the LC_{50} data by the application factor. The lower of (1) the MATC data or (2) the estimated "safe" level based on the computation was then selected. In this case, the estimated "safe" level computed using the application factor was the lower of the two, and thus it was used. Both the LC_{50} and the application factor used to compute the selected level was subject to attack, and each will be examined more fully below.

The proposed warmwater standard of .04 mg/l un-ionized was based on LC_{50} data computed by Roseboom and Richey ("R&R") in 1977. In their study, which is reported in MPCA Ex. 31, large-mouth bass, channel catfish, and bluegills of various sizes were subjected to varying concentrations of ammonia. 850 bluegills, 335 bass, and 310 channel catfish were used in the bioassay. The bioassay was a continuous-flow test. The bluegills yielded LC_{50} data ranging from 0.4 to 1.3 mg/l un-ionized, depending upon temperature and fish weight. The bass yielded LC_{50}s of 0.72 mg/l to 1.2 mg/l, depending upon temperature. The channel catfish yielded LC_{50}s of 1.5 mg/l to 3.0 mg/l, depending upon temperature. Size was a factor only in the bluegill group.

R&R included three different sizes of bluegills at a temperature of 22 degrees centigrade, and two different sizes at a temperature of 28 degrees

centigrade. For the 22-degree group, 96-hour LC_{50}s were 0.40 mg/l for fish with an average weight of 0.072 grams; 0.49 mg/l for fish with an average weight of 0.217 grams; and 0.80 mg/l for fish with an average weight of 0.646 grams. The 28-degree centigrade groups yielded a 96-hour LC_{50} of 0.49 mg/l for fish with an average weight of 0.217 grams and 1.3 mg/l for fish with an average weight of 0.342 grams.

The LC_{50} data which the Agency used in computing its proposed standard was the lowest found by R&R: 0.40 mg/l, which was produced by the smallest-sized group of bluegills. The Agency's selection of the lowest figure was attacked as being improper and leading to an overly-strict standard. Critics argue that the Agency ought to have taken the mean of the bluegill data, rather than just the lowest figure obtained. The Agency responds that if the data does show that size is a factor in resistance to ammonia toxicity, then there is nothing improper about selecting data on the smallest-sized fisn, because these standards are designed to protect the most sensitive life stage of the most sensitive species.

Roseboom, one of the authors of the study, was drawn into a dispute between the parties as to the propriety of taking the lowest data point rather than the mean. He wrote, in a letter to Maschwitz, that "In my judgment the susceptibility of the smaller fry to lesser concentrations . . . cannot be ignored." (Attachment 30 to Supp. Staff Response).

One final note should be mentioned in connection with R&R's study. R&R computed un-ionized ammonia using the same factors recommended by the Agency and Thurston: Total ammonia, pH, and temperature. However, R&R did not use Thurston's equation to compute the un-ionized concentration. Rather, they used tables prepared by Skarheim. Skarheim's tables do not yield the same concentrations of un-ionized ammonia that Thurston's equations do. As R&R stated in their study, at p. 12:

> "From the determinations for total ammonia, the conversion to [un-ionized] values was made by the use of Skarheim's tables. [Citation omitted]. . . Recent work by Thurston et al. [citation omitted] suggests that Skarheim's computations may be in error. The values developed in this work, if multiplied by 1.142, will approximate the values computed by Thurston et al."

If this adjustment is made, the .40 LC_{50} from the smallest sized bluegill becomes .457.

The other portion of the Agency's computation which was attacked by opponents was the application factor. The Agency computed its application factor (.096) by taking the geometric mean of five different studies. Those studies are set forth in Table 4 of MPCA Ex. 24. The studies are for juvenile channel catfish, green sunfish, and three studies of rainbow trout. However, there are numerous problems with the use of an application factor derived from those studies. The problems break down into two general categories: The fact that salmonoid fish (rainbow trout, in this instance) should not be used to set a warmwater standard because salmonoids are inherently different from non-salmonoids; and the fact that neither the juvenile channel catfish study nor the green sunfish study is appropriate for use in computing an application factor because they are not whole-life cycle chronic studies.

With regard to the application of salmonoid data to non-salmonoid fish, there is a dichotomy existing throughout these rules (and throughout the existing rules) between standards for coldwater fish and standards for warmwater

fish. This dichotomy is based upon the concept that coldwater fish (salmonoids) generally are less tolerant of toxicants than are warmwater fish. The proposed standard for ammonia differentiates between coldwater fish and warmwater fish, and the Agency's justification for this difference includes the following statement:

> "As indicated by the above-recommended criteria, it has been a common practice to apply a single ammonia standard to all types of waters and fisheries. The fact remains, however, tnat the above criteria are based primarily on salmonoid, rather than non-salmonoid, fish requirements. An examination of the toxicity data for fish indicates that salmonoids (primarly cold water fish) are somewhat more sensitive than non-salmonoids. Recently, some state regulatory agencies have recognized these difference and proposed separate standards for warm and cold water-fish (e.g., Ohio EPA). It is important to tailor the proposed ammonia standard to various types of waters and fisheries as closely as the available data permit while still protecting aquatic communities."
>
> [MPCA EX. 24, p. 3]

Indeed, when looking at the MATCs to determine whether to use MATC data or LC_{50} data multiplied by an application factor, the Agency only looked at the two warmwater MATCs, excluding the three coldwater ones, presumarly for that reason (Id., p. 15). However, if one were to accept the criticism and only compute the geometric mean of the two warmwater studies cited by the Agency in its Table 4, one would arrive at an application factor of .082, which would result in a stricter standard than if the Agency's composite of all five were used.

The Examiner has examined other approaches to deriving an application factor, specifically those recommended by Szumski (MWCC Ex. X, pp. 21-25 and Baummer, Tr. XVI-19-26 and Industry Ex. A, pp. 2-9 to 2-14), and finds that there are problems with any approach. Even Baummer admits this in proposing his own recommended standard for warmwater fish (.073 as opposed to the Agency's .04) when he states:

> "Finally, the State's generic application factor for ammonia, notwithstanding its limitations, can be used to derive an interim warm water standard. . . ." (Industry Ex. A, p. 2-13)

The Examiner finds that the application factor problem with regard to ammonia is essentially one of inadequate data. All parties admit this, but would use different means of solving the problem. The Examiner believes tnat the problem cannot be satisfactorily solved until more data is available, but he also believes that some standard is needed in the interim period.

35. Support for the Agency's .04 standard comes from a variety of sources. Some states have similar standards (see, table attached to testimony of Maschwitz on ammonia.) Dr. Thurston stated that .04 is "reasonable" for warmwater fish (Thurston, p. 9) and in oral testimony, stated that he was, if anything, "shaky" about whether the standard was strict enough. He stated tnat he would be "quite shaky" about the standard proposed by MWCC, which was .086 (Tr. XV-51). His last statement on the matter, contained in Attachment 32 to the Agency's Supplemental Staff Response, reiterated his belief that .04 was reasonable. Thomas Willingham, who has published reviews of ammonia data, wrote that he "strongly endorsed" .04 for non-salmonoids (Staff Response, Attachment 24). Willingham's publication, which was co-authored with Thurston and others, was a critique of the Red Book's proposed criterion of .016 (a

single standard applicable to all fresh waters both cold and warm) was in the record as MPCA Ex. 39. It concludes that the bases for establishing .016, although not extensive, appear to be appropriate for salmonoids, but that the appropriateness of that criterion for non-salmonoids "has not been demonstrated." It recommends that the "apparently similar responses" among fresh-water fishes to ammonia should be examined in greater detail to determine whether or not multiple criteria are warranted (MPCA Ex. 39, p. 13). The EPA, speaking through MacMullen, believes that current information permits a "less restrictive limit" for warmwater fish than for coldwater, and that as a preliminary matter, .04 appears to be "adequately protective" (Pub. Ex. 11. p. 5).

36. The standard proposed for Class 2B waters (cool and warmwater sport and commercial fishery) is the same as that proposed for Class 2C waters (rough and other naturally occurring fishery). Some questioned the appropriateness of this similarity, particularly two engineers writing in Pub. Ex. 28 (a collection of comments from consulting engineers). Robert Roskopf wrote as follows:

> While studies do show that certain species of warm water sport fish and rough fish exhibit toxicity effects at the some un-ionized ammonia concentrations, it does not necessarily follow that Class B and Class C waters should have the same standard. By definition, the rough fish classification indicates a lower value placed on stream segments so designated. It follows that allowable fish stress should be higher for Class C waters."

Duane Prew pointed out the different definitions of the two classes and wrote "Therefore, the latter class [2C], in our opinion, deserves reconsideration in light of the proposed standard."

This argument is taken up in the Metro Council brief, wherein it is pointed out that the only data in the Agency's Standard Justification (MPCA Ex. 24) for rough fish resident in any Minnesota Class 2C waters is data prepared by Flis dealing with carp (p. 5). Channel catfish are considered by tne PCA, but whether they could be classified as "rough" or "game" fish appears to be a matter of personal preference. There is no statutory definition of the two in the PCA's statutes, although DNR does administer some laws which require a distinction. Minn. Stat. § 97.40 (1978), defines rough fish to include carp, bullheads, perch and other fish but the definition does not include channel catfish. See Supplemental Staff Response, p. 7, fn. 2.

The Agency argues that federal law and rules essentially force upon it a system whereby the Agency must adopt standards to achieve tne national goal of "fishable/swimmable by '83" wherever that goal can be attained. The Agency has established a separate class of waters (Class 7) where that goal cannot be attained, and the ammonia standard, among others, will not be applicable to it. But in waters where that goal can be attained, the Agency must adopt standards consistent with the goal. Secondly, the Agency argues, the data does not show any indication that the sensitive life stages of rough fish permit any lower levels of ammonia than do the sensitive life stages of more traditional warmwater game fish. The Examiner finds that this is, in fact, tne case for ammonia. The suggestion that, as a general matter of principle, Class 2C waters ought to allow more stress than do 2B waters is inconsistent with the Federal goal and the regulations governing this proceeding.

37. The ammonia standard, as set forth in the proposed rule, drew criticism on the basis that certain discnargers would not be able to comply with it

at certain times (regardless of the degree of treatment which was used) because of extreme conditions of flow, pH, temperature, and upstream ammonia levels. The Agency responded to this criticism by stating that it was the enforcement policy of the PCA that so long as effluent standards (to be set in subsequent permit hearings) were being complied with, "no enforcement posture is maintained even if the standards are violated". For example, in the Staff Response, the following two statements are made:

> a. It is recognized by the MPCA that there will be exceedences of water quality standards at extreme conditions of flow, pH, temperature, and perhaps others. These exceedences will not be considered violations if a discharger's effluent limits, which are contained in the permit, are met. (Staff Response, p. 6)
>
> b. Once an MPDES permit is issued, the permit conditions become the prime enforcement tool. The MPCA conducts water quality monitoring to determine whether the standards are being achieved at the stated effluent limitations. If the water quality standards are exceeded, but the permittee is meeting the effluent limitations in the permit, no enforcement posture is maintained. In that kind of situation, the MPCA would have to evaluate the necessity of modifying the permit to require more stringent effluent limitations. (Staff Response, p. 19)

This policy, however, is not contained in the rule, itself. For example, § C.7. of 6 MCAR §§ 4.8014 and 8015 provides in part, as follows:

> Dischargers of sewage, industrial waste or other waste effluents shall be controlled so that the water quality standards will be maintained at all stream flows which are equal to or exceeded by . . . [the 7Q10].

The MWCC is concerned not only with the effluent limits which are placed upon it as a result of a future permit hearing, but also with the possibility that even if it were complying with its present or future effluent limitations, it still might be found to be in violation of the standard (See, generally, Brief for MWCC, p. 5-8). MC made the point even more strongly by arguing that even if the PCA adheres to the position quoted above, that is no bar to citizens groups or individuals initiating actions pursuant to the Minnesota Environmental Rights Act, Minn. Stat. Ch. 116B. The vital portion of the statute was cited earlier, and it provides that any person may bring an action in the name of the state against any other person for the protection of the State's natural resources from pollution and impairment or destruction.

A close reading of the statute (Minn. Stat. § 116B.03, subd. 1) indicates that compliance with a permit issued by the PCA is a defense to such an action. The statute provides that no action shall be allowable for conduct taken by a person "pursuant to any environmental quality standard . . . or permit issued by the pollution control agency" (Minn. Stat. § 116B.03, subd. 1). At least one commentator has characterized this as a "complete defense", although it still places a discharger in the position of having to defend the law suit [see Note, The Minnesota Environmental Rights Act, 56 Minn. L.Rev. 575, 602-618 (1972)]. However, another section of the Act permits any person or organization to maintain a civil action against an agency of the State to challenge either a standard or a permit issued by that agency (§ 116B.10, subd. 1). Despite this latter provision, it would appear that a permit, such as an NPDES or SDS permit, is the key to the problem raised by MWCC and MC.

A more subtle instantaneous problem arises because of the lengtny lead times and delays encountered in the planning, funding, and actual construction of a major treatment plant. Even the Agency Staff has conceded that "Compliance with any adopted water quality standard will take a matter of years to achieve" (Staff Response, p. 21). Similarly, the Agency Staff has stated: "Once these new water quality standards are adopted, it will take several years before effluents are brought under control such that the standards can be met" (Staff Response, p. 17). The importance of this lengthy delay is that it is very possible, indeed it is likely, that there will be a conflict between the existing standard and permitted effluent limitations. For example, if the Agency were to adopt these rules as proposed, then the standards for ammonia, DO, etc. would be in effect. However, in the case of the MWCC and others, there is no question but that they will continue to be violated for some years until plant modifications are made. At some point (unspecified) after the standard is in effect, a new permit proceeding will be held to establish new effluent limits and a compliance time table for each discharger. During the period of planning, funding and construction, the discharger will be violating the standard but not necessarily violating its permit. It is this period of time that concerns the MWCC, MC, and others, because the statute authorizing civil actions speaks to situations where a discharger is violating any "standard . . . or permit". The same language is used when describing the defense available -- that the defendant is conducting its operations pursuant to any "standard . . . or permit". In the period of construction delay, the discharger will be violating the standard but (presumably) will not be violating the permit.

The Examiner finds the stated position of the Agency regarding "no enforcement posture" so long as permit effluent limits are being met, to be consistent with both reality and a logical interpretation of the law. However, he believes that dischargers are entitled to have this position explicitly stated in the rules. Such a statement obviates the need for a lengthy discussion of a number of the compliance and enforcement issues raised by MWCC and MC, and also lends credibility to the Agency's stated position that the appropriate place to determine these issues is in the permitting process (Staff Response, p. 17-19). The Examiner finds, specifically, that the ammonia rule as proposed, without such an inclusion, has not been shown to be reasonable. In light of subsequent findings relating to other standards, the Agency should include in the rules an explicit statement providing that no persons shall be deemed in violation of the standards contained in the rules if they are complying with terms of a permit issued by the Agency. This will not only formalize the Agency's stated policy, but it will also give guidance to those who might otherwise believe that Rights Act civil actions should be successful if the standard is being violated.

see additions p.20

38. The cost of compliance with the proposed standard for ammonia is substantial by any measure.

The approach used by the Agency to estimate cost (and the approach which will be adopted by the Examiner as well) was to group every discharger into one of the following three categories: (1) outstate municipalities; (2) MWCC (both metro plant and other plants); and (3) industries.

With regard to outstate municipalities, it should first be noted that a number of municipalities discharge into Class 7 waters. There is no ammonia standard for such waters, and the Agency has explicitly recognized that no ammonia removal will be required of dischargers to Class 7 waters unless it is necessary to protect downstream waters (MPCA Ex. 8, p. 13, and Hensel, p. 15). For those municipalities which discharge to other than Class 7 waters, there is only one where it can be determined with any certainty that the proposed change will result in cost impacts. The reason for this is that the PCA takes the position (which the Examiner adopts) that giving due consideration to economic impacts of the proposed amendments means that consideration should be given to those impacts which are a result of these rules. Costs which are not attributable to these rules (but rather are attributable to the fact that present facilities are not meeting existing rules) need not be considered. There are many municipalities which are not meeting current standards. Had this rule amendment proceeding never been held, they would have still been forced to incur costs to meet existing standards. Therefore, it is not appropriate to classify those costs as being costs of compliance with the proposed amendments. The Agency has attempted, whenever possible, to separate out the costs attributable to meeting existing standards from the costs attributable to going from existing standards to the proposed standards. The one municipality which meets this test of having cost impacts is New Ulm, and it is estimated to have increased treatment costs attributable to the change in the ammonia standard of $2,100,000 in capital costs and $76,000 annual operation and maintenance costs (hereinafter "O&M/yr"). In addition, it is uncertain whether five other dischargers would ever have been assigned an ammonia effluent limitation based on the present standard, but the increased cost attributable to these dischargers to meet the proposed standard would be $8,300,000 for capital costs, and $297,000 O&M/yr. Combining those two figures, it can be said that the capital costs of outstate municipalities to comply with the change in the ammonia standard will be $10,400,000 in capital, and $373,000 O&M/yr.

The Agency estimates that there are 80 other municipalities which have yet to construct any ammonia removal facilities. The costs for those 80 are estimated at $53,300,000 capital, and $2,570,000 O&M/yr. However, there is no data separating costs to meet existing rules from costs to meet proposed rules. (All the above come from MPCA Ex. 8, pp. 47-49, and Hensel, pp. 10-15.)

39. Costs of compliance with the proposed standard for MWCC has been broken down into costs attributable to the metro plant and costs attributable to other plants.

For the metro plant, assuming a 3 mg/l total ammonia effluent on a peak month basis, the parties agree that the costs will be $80,800,000 in capital, and $3,000,000 O&M/yr. (See, MWCC Ex. T, pp. 3-4, and Supp. Staff Response, p. 48)

MWCC will incur additional costs because of its Blue Lake and Seneca plants. These plants are good examples of a problem which occurs throughout all of the economic discussion herein: that it is difficult to separate costs by pollutant. For example, reducing ammonia also reduces BOD_5 loads, and vice versa. An additional problem is that it is sometimes difficult to estimate the costs of going from present treatment to that required in order to meet the existing rules (where present treatment is not meeting the existing

rules), and the costs of going from compliance with existing rules to compliance with the proposed rules (which is the figure of real interest for purposes of this inquiry). With these limitations, however, it can be said that the approximate cost of the proposed ammonia standard for Blue Lake is between $6,000,000 and $7,100,000 in capital costs. See, Molzahn, Tr. XIII-77, 87; Wegwart, p. 6; and Supp. Staff Response, pp. 28-30). For purposes of giving rough costs, the highest figure, $7,100,000 will be used in subsequent tables. The O&M/yr cost is estimated to be $50,000 (Wegwart, p. 6). At Seneca, the capital cost estimates range from $6,000,000 to $9,000,000 (compare Wegwart, p. 6 to Molzahn, Tr. XIII-78, 87; see, also, Supp. Staff Response, pp. 29-30) Again, for tabular use, the $9,000,000 figure will be used. In addition, $30,000 is estimated for O&M/yr. at Seneca (Wegwart, p. 6).

40. The cost to industries to comply with the proposed ammonia standard again is clouded by the fact that the same processes are used for both ammonia removal and BOD_5 removal. For example, dairies have such high organic content in their waste-water that the Agency has determined that the treatment required to reduce these organics to adequate levels will also remove enough ammonia so that no additional costs specifically attributable to ammonia are anticipated (Reed, p. 6). The Agency estimates that there will be only one industry which will be impacted by the change in the ammonia standard. That is Armour & Co., located in Cold Spring, Minnesota. The capital costs for that facility are $610,000, while the O&M/yr. is $30,000 (Reed, p. 3, and Ex. 123 appended to his testimony). There was no dispute with this figure. N-REN, et al. offered a witness (Baumner) and an exhibit (Industry Ex. A) dealing with ammonia, both of which can be characterized as being opposed to the Agency's proposed rule. However, N-REN, et al. gave no indication that they disagreed with the Agency's conclusion that there would be no impact on industry (other than that noted above) if the proposed rule were to be adopted. In their Brief, it is stated, "Although the MPCA has indicated that there is no economic impact on the Industries here involved, and we are relying on the Agency's representation of this very material fact . . ." (p. 13). Thus, the only evidence with regard to impact on industry is that of the Agency, which the Examiner adopts as his own.

41. In summary, it is found that the economic impact of the Agency's ammonia amendment is in the neighborhood of $107,910,000 in capital costs, and $3,483,000 per year in operation and maintenance costs. The Examiner would stress that these numbers are only estimates; the difficulty of separating ammonia costs from dissolved oxygen costs, the difficulty of ascertaining what costs are needed to reach existing standards and separating them out from the costs needed to meet the proposed standards, and all of the vagaries implicit in the estimating process are but three reasons why these figures must be viewed as extremely tentative.

42. Another issue which the Agency attempted to put to rest also deals with designing of plants for extreme conditions. It will be recalled that the percentage of total ammonia which is in the un-ionized form varies with pH and temperature. Another factor which impacts upon ammonia concentration is dilution - if there is a high flow in the water, there is more water available to dilute any ammonia discharged. How does the Agency propose to deal with extremes of flow, temperature and pH?

The rules themselves specify that discharges shall be controlled so that standards will be maintained at stream flows which are equal to or exceeded by the 7Q10. The Agency emphasized, in its Staff Response, that when flow conditions fall below the 7Q10 level, it does not expect nor require compliance with water quality standards (p. 5). That takes care of the variation in flow because it is reflected in the rule. But what of the variations in temperature and pH? Again, the Staff Response indicates the following:

> In addition to the 7Q10 flow, other parameters must also be determined for design purposes. These other parameters include such things as pH and water temperature. For these parameters, mean (average) conditions are used for design purposes. The MPCA does not require that plants be designed at extreme conditions for all these parameters. (Staff Response, p. 5)

In discussing modeling done by MWCC Witness Pavlou, the Staff stated as follows:

> Pavlou shows the pH data for the summertime measurements in 1976 and 1977. He indicated in oral testimony that the pH was based on historical data, which it is, but the history is the lowest and sixth lowest summertime flow condition since 1936. Data over a longer period of time showing more normal conditions should give a lower pH, but again, let's use his numbers. However, it is the 50 percentile pH, not the 90 percentile, that reflects mean conditions, and this is the pH the MPCA would use. (Emphasis added; Staff Response, p. 7)

Such assertions tend to blunt the impact of modeling (and other evidence) demonstrating the impossibility of compliance under certain extreme conditions for certain dischargers at certain locations. However, while the Examiner has no reason to doubt the sincerity of such Agency Staff representations, he agrees with MWCC that PCA staff members, executive directors, board members, and governors "come and go" (MWCC Brief, p. 8), and rules such as this should have permanency in order to give dischargers "accurate targets" which they may use in designing, funding, constructing and operating facilities. If the Agency wants the reasonableness of its standards judged on assumptions such as mean temperature and mean pH, it is appropriate that those assumptions be explicitly recognized in the rules. In the case of ammonia, the Examiner believes that the assumption ought to be explicitly stated if the rule is to be found to be reasonable. Therefore, the Examiner finds that with such an explicit recognition of stated Agency policy included in the rule, the rule has been demonstrated to be both needed and reasonable.

see .8014 .8015 C.18 P.20

43. There was little controversy about the proposed coldwater standard (for Class 2A waters) of .016 mg/l un-ionized. The standard is based upon studies of rainbow trout which have shown acute toxicity levels ranging between .068 mg/l and 1.7 mg/l un-ionized. Studies have also estimated a MATC of 0.145 mg/l. The EPA, the International Joint Commission, and a group of reviewers of the Red Book have all found .016 mg/l un-ionized to be reasonable. The Examiner finds the Agency's proposed coldwater standard to be both needed and reasonable.

44. In summary, the Examiner finds the following:

a. The change in measurement from total ammonia to un-ionized ammonia has been shown to be both needed and reasonable.

b. The coldwater (Class 2A) standard of .016 mg/l (un-ionized as N) has been shown to be both needed and reasonable.

c. The warmwater (Class 2B and 2C) standard of .04 mg/l un-ionized as N has been shown to be both needed and reasonable, provided that the Agency rules are amended to reflect the stated Staff positions regarding enforcement (effluent limits in permit supercede standards) and design (mean temperature and pH will be used). see addition p. 20

d. The costs of compliance are very substantial.

In addition to reasonableness, Minn. Stat. § 15.0411, subd. 3, defines "rule" to include "every agency statement of general applicability and future effect, . . . made to implement or make specific the law enforced or administered by [the agency]. . . ." This is a substantive requirement of law which requires that every agency policy must be specific and be adopted under the Administrative Procedure Act in order to be of any force and effect. Therefore, in order to fulfill this substantive requirement of law, the rule must be amended as discussed in Findings 37 and 42 above.

Dissolved Oxygen: Sections 14 D.2. and 15 D.2. - (Class 2A, 2B and 2C)

Class	Existing Standard	Proposed Standard
2A	Not less than 7 mg/l October 1 - May 31; not less than 6 mg/l at other times	Not less than 7 mg/l at all times (instantaneous minimum concentration)
2B	Not less than 6 mg/l from April 1 through May 31; not less than 5 mg/l at other times	Not less than 5 mg/l at all times (instantaneous minimum concentration
2C	Not less than 5 mg/l from April 1 through November 30; not less than 4 mg/l at other times	Not less than 5 mg/l at all times (instantaneous minimum concentration

45. Oxygen is unlike ammonia (and most other substances included in the standards) because the rule is designed to set a floor or minimum below which dissolved oxygen may not fall. Ammonia (and other standards) are expressed in terms of a maximum acceptable concentration (Maschwitz on dissolved oxygen, p. 2; MPCA Ex. 70, p. 2).

46. The basic source of oxygen to a body of water is from the atmosphere. However, the concentration of oxygen present at any given moment is often the net result of the oxygen producing process (photosynthesis) minus the oxygen consumptive process (respiration) within that body of water. Thus, during the daylight hours photosynthetic activity of algae and other aquatic plants usually raises the oxygen concentration of the water while, at night, with the cessation of photosynthesis, continuing respiration causes the oxygen concentration to decline. This phenomenon is referred to as "diurnal" variation (MPCA Ex. 70, pp. 7-8; Putnam at 15).

47. The discharge of oxygen demanding wastes into waterways can cause a depletion of oxygen as the organic material is broken down through biological processes which consume oxygen. For example, the principal factor causing dissolved oxygen depressions in the region below the MWCC metro plant is the discharge from the plant and the existing bottom demand (Winslow, pp. 1-2; Szumski, Tr. XII-58). A graph which plots dissolved oxygen (DO) concentrations against river miles often demonstrates a "sag" in DO immediately below a discharger of oxygen-demanding wastes, with a recovery back to "normal" conditions some miles down the river from the plant. Data from the Mississippi River below the metro treatment plant demonstrates this "DO sag" and recovery (Szumski Figures II-1, III-1, III-2, et cetera). Oxygen-demanding wastes from

wastewater treatment plants, industries, and other dischargers are measured in terms of "BOD_5". That stands for five-day biochemical oxygen demand, and is measured by the oxygen demand exerted by the waste in the first five days of a test (Winslow, p. 2).

48. Another general factor to be kept in mind is that in all three instances where the EPA has refused to accept state standards pursuant to its "veto power" noted earlier, the standard which was at issue was that for dissolved oxygen. The EPA spokeman, MacMullen, made the following statement:

> We believe that there is no technical reason to support a water quality criteria less restrictive than five parts per million as an instantaneous minimum. If the Minnesota Pollution Control Agency were to submit a water quality criteria less restrictive than five milligrams per liter, our best information, our best judgment is that we would be forced to disapprove those standards and proceed to promulgation action. (Tr. XIII-13).

49. Dissolved oxygen is a necessity if aquatic life (at least any aquatic life of concern to these proceedings) is to exist at all (Maschwitz, p. 2). Except in unusual circumstances, the maximum level which dissolved oxygen can reach is known as the "saturation level". The saturation level varies with temperature and atmospheric pressure. It is undisputed that <u>some</u> effects of reduced DO can be observed at <u>any</u> concentration below saturation. The question is how much effect on what kind of fish is acceptable. The primary dispute at the hearing revolved around two factors: What the DO standard should be, and in particular, how that standard should be expressed in terms of its measurement (whether it should be expressed as a "instantaneous minimum" or a statistically based standard, such as that used for fecal coliforms). An argument raised by the MWCC and MC was that because of ambient conditions it is simply impossible for a "instantaneous minimum" standard to be met at any cost in the metropolitan reaches of the Mississippi and Minnesota Rivers.

The position of the MWCC is that when establishing a standard, such as the standard for dissolved oxygen, ambient conditions must be taken into account even though that is obviously a "site-specific" factor. It is the position of the Agency, on the other hand, that the appropriate time to deal with such situations is the permitting hearing, where a variance can be considered if required by ambient conditions. The Examiner agrees with the Agency. It is inappropriate to set a statewide standard using the "lowest common denominator" procedure; rather, the appropriate way to set a statewide standard is based upon scientific criteria, designated uses, and economics. American Crystal Sugar also expressed concern about dissolved oxygen based upon characteristics of the Red River of the North (see generally, Tr. VIII-19-43). The appropriate way to deal with the specific situations is through the permitting process. That decision, however, does not dispose of all of MWCC's arguments made in connection with the rule. Others, which are not site-specific, will be still be considered.

50. Perhaps the foremost argument deals with the fact that the standards are expressed as a single number (in the case of warmwaters, 5.0) which is an "instantaneous minimum". Opponents of this approach argue that natural variability in the waterway, variations in plant effluent (both flow and biological characteristics) and artificial variations in the receiving water all mandate a "statistical approach" to a DO standard. Such a statistical approach was proposed by the MWCC, and is set forth below as an example of what is meant by the "statistical":

- Daily Average Concentration	5.1 mg/l
- Average Daily Minimum Concentration	4.0 mg/l
- Instantaneous Minimum on 10% of the Days	3.0 mg/l
- Instantaneous Minimum on 5% of the Days	2.8 mg/l
- Instantaneous Minimum on 1% of the Days	2.3 mg/l

(Szumski, p. 60)

In this particular case, the above standard would be for the summer months; a similar standard is proposed for winter months as well. In addition, the terms such as "daily average concentration" would be defined under such an approach.

The rationale for such a "statistical" standard is that it makes allowances for day-to-day and within-day variations in DO concentration (Szumski, p. 52). This requires some explanation of variability

Total variability for any water quality parameter can be described as the sum of sampling variability, analytical variability, and natural variability. The first of these, sampling variability, is that variability which results from factors such as location and time the samples are taken. In any river or lake, one would not expect any two samples to yield identical results. If the samples are taken at the same place, but at different times, it is likely that the samples will be different (this is particularly true of a parameter such as DO, where diurnal variations are known to exist). If the samples are taken at different places, but at the same time, again there will be differences in the samples because of the impacts of oxygen demand and oxygen supply based upon location vis-à-vis a discharger. The second kind of variability, analytical variability, results from the fact that there is instrument uncertainty and the human factor. Instrument uncertainty may theoretically be reduced to zero only by using perfectly accurate equipment, which does not exist in practice. The human factor depends on the skill of the analyzing technician in reading his instruments, following appropriate test protocols, et cetera. The third factor, natural variability, results from the fact that a waterway's physical, chemical, and biological processes mentioned in connection with sampling variability do yield different results. In the sense that the only way to reduce sampling variability is to "sample the whole river at the same time", the only way to reduce natural variability would be to sample "the whole river at the same time and continuously".

In light of the variability that exists, particularly with a parameter such as dissolved oxygen, what is meant by a standard that states that a water shall have "not less than five milligrams per liter at all times (instantaneous minimum concentration)"? Does it mean that if one sample is taken which is below 5.0, the standard has been violated? The Agency would have us believe that it would never adopt such a "ridiculous" position but are not dischargers and designers entitled to know exactly what position the Agency would adopt? The only guidance which the Agency has given us is a statement in its Standard Justification for Oxygen (MMPCA Ex. 70) which states that the current standard requires revision for a number of reasons, one of which is:

> The current oxygen standard requires clarification as an instantaneous minimum concentration so that oxygen in surface waters will not be allowed to drop below the standard at the time of

the diurnal minimum unless such a drop is due to natural conditions. (p. 5; emphasis added)

Later in the document, it is stated:

> Monitoring to ascertain compliance with the proposed oxygen standard should be carried out at those locations, times, and situations which will provide the required data. Measurements should be taken as close to the time of the diurnal minimum as practically possible. Monitoring should avoid those situations where natural conditions overly depress or elevate oxygen levels. If there is doubt as to whether an oxygen concentration below a discharge is due to natural (ambient) conditions or the discharge, measurement should be taken upstream from the discharge in comparable locations where the oxygen concentration will not be influenced by the discharge. (P. 9; emphasis added)

The two concepts expressed therein, diurnal minimums and ambient conditions, are both expanded upon in Maschwitz's prepared testimony on dissolved oxygen. With regard to diurnal minimums, he points out that studies have demonstrated that the average rise in oxygen levels above the minimum is only about 0.5 mg/l two hours after sunrise, and that measurements can be taken, therefore, up to two hours after sunrise with reasonable assurance that they will be quite close to the minimum (p. 14).

With regard to the second concept, that regarding ambient conditions, Maschwitz' prepared testimony states as follows:

> It is important to clearly state that the proposed standard is intended to apply only to those situations where oxygen is reduced below 5 mg/l . . . due to anthropogenic loadings or causes. Section A.7. of WPC 14 [A.6. of WPC 15] states that if natural characteristics or properties exceed the water quality standards the natural levels may be used as the standard. Thus, if oxygen concentrations fall below 5 mg/l due to natural conditions, this will not be construed as a violation of the water quality rules. (P. 2)

When questioned about this provision, Maschwitz stated that some non-man associated influence which might depress DO levels below 5 mg/l could be stratification of a eutrophic lake, the influx of leaves in the fall, or other additions of organic material which would result in a reduced oxygen concentration. He also cited ice cover as an example of a "natural" condition which results in lower DO concentrations (Tr. II-101-103).

Maschwitz was then asked whether a discharger would be deemed to be in violation of the rules if the DO concentration in the water above the point of the discharge were lower than 5.0. He stated that if the DO concentrations above the discharge point are depressed due to natural causes, then there would be no violation. He went on to say that it would be reasonable to look at the ambient water quality above the point source, and then only view reductions in oxygen caused by the point source below the ambient level (Tr. II-104).

In summary, Maschwitz has stated that monitoring should occur as close to the diurnal minimum as practically possible. In addition, he has stated that the rules provide that if DO levels above a discharge point exceed the standard due to natural causes, then that "natural condition" becomes the standard. But those statements really do not satisfy the concerns of the objectors who want precision in sampling protocols so that they and their designers can know what it will take to comply with the rule.

The approach used by the Agency in the past is that when a NPDES or SDS permit is issued, it contains discharge limitations which are statistically based. For example, Attachment 22 to Staff Response is the permit for the Western Lake Superior Sanitary District. It provides that the plant's discharge shall be limited to 45 mg/l BOD_5 on a seven-consecutive day average, and 25 mg/l on a 30-consecutive day average. It provides that the averages shall be arithmetic means, and that for the 30-consecutive day average, the effluent concentration shall not exceed the stated values or 15% of the arithmetic mean of the values for influence samples collected at approximately the same time during the same period. It also provides for monitoring by representative sampling, quality assurance of laboratory analyses, test procedures, et cetera. It provides that the permittee must submit a monitoring plan to the director for approval including the items described in Agency Regulation WPC 36(N)(2). It further provides that effluent dissolved oxygen concentrations shall be measured daily by grab samples. The cited Rule [6 MCAR § 4.8036(n)(2)] provides that permittees must submit a monitoring plan to the Agency for approval and lists a number of items which must be included within the plan, including "location and interval of sampling".

The Examiner finds that so long as the rules are amended as proposed in connection with ammonia to reflect the Agency's stated position that no enforcement actions will result in the event that a discharger complies with its permit limitations even if the receiving water standard is being violated, there is no need to further specify compliance and monitoring protocols in these rules. However, if the Agency declines to adopt that recommendation, then the Examiner finds that the "instantaneous minimum" standard is unreasonable because it fails to specify adequate standards for compliance. While the rule is statewide, much of the data in opposition to it came from the MWCC and pertained to the Mississippi and Minnesota Rivers. The Agency Staff Response admitted that "a few DO concentrations below five could be expected to occur at river flow rates greater than 7Q10" (p. 49). At another point in the Staff Response, it was admitted that "it may not be possible [to attain 5.0 mg/l instantaneous minimum in the metro area] 100% of time" (p. 77). As discussed in the last paragraph of Finding 44, substantive law would require the Agency policy to be included in the rule. In addition, in order to make the rule reasonable, it must be amended as found above.

see additions p.20

51. The next issue to be dealt with is the need for and reasonableness of the specific DO concentrations proposed by the Agency. It can be seen from the Table at the start of this series of Findings on dissolved oxygen that the Agency is proposing to delete its existing seasonal standard in favor of a year-round standard, and that it is changing some of the numbers from those set forth in the existing standard.

There was no opposition to the deletion of a seasonal standard. Clear Air-Clear Water Unlimited which opposed most of the Agency's proposals as not being strict enough even supported the change. The Agency justified this change essentially on the ground that its proposed year-round standard had been shown to be the best for protection of fish because of experiments which demonstrated that growth and reproductive success of sensitive stages and sensitive species were impaired below 5 mg/l; that good quality mixed warmwater fish populations are most often associated with water containing 5 mg/l or

more; and stress from other sources (such as toxicants, high temperature and disease) is aggravated by lower DO concentrations (MPCA Ex. 8, pp. 22-23).

52. The Agency has proposed 7.0 mg/l instantaneous minimum for coldwater fisheries (Class 2A). This is more stringent than the current rule. It is based primarily upon the work of Davis [John C. Davis, Waterborne Dissolved Oxygen Requirements and Criteria With Particular Emphasis on the Canadian Environment (West Vancouver: 1975)]. In that work, Davis reviewed literature from around the world on various freshwater and marine fish populations, and then divided the findings into six categories based on the type of fish involved. For each of those six categories, he computed dissolved oxygen levels consistent with three different levels of harm. Those three levels of harm were as follows:

> Level A - This level represents more or less ideal conditions (i.e., little or no foreseeable harm) and permits little depression of oxygen from full saturation. It represents a level that assures a high degree of safeguard for very important stocks in prime areas.
>
> Level B - At this level some degree of risk (i.e., possibility of moderate harm) to a portion of a fish population exists if the oxygen minimum period is prolonged beyond a few hours.
>
> Level C - At this level a large portion of a given fish population or fish community may be affected by low oxygen. This deleterious effect may be severe (i.e., possibility of severe harm), especially if the oxygen minimum is prolonged beyond a very few hours.

A review of the DO concentrations recommended by Davis indicates that the highest degree of protection is afforded to salmonoid larvae and mature eggs, while the lowest level is afforded to freshwater fish population with no salmonoids. This holds true regardless of whether one accepts level A, level B, or level C as the desired level of protection.

When using Davis' work, it is necessary to first select which fish group one believes is most applicable to Minnesota, and secondly, to select which level of protection is most suitable. The Agency chose a fish group labeled "freshwater mixed fish population, including some salmonoids", and also elected level A. Those choices resulted in the 7.0 mg/l standard.

Clear Air-Clear Water pointed out that the Agency characterized its 7 mg/l standard as resulting in "little or no foreseeable harm" to aquatic life, and asked how "little" harm could be anticipated. The comment pointed to a 1925 study by Thomson, which concluded that the greatest variety of species occurs when the DO concentration is at least 9 mg/l. Although the Thomson study is not in the record, the following comment is made with regard to it:

> A dissolved oxygen concentration of 4 mg/l seems to be about the lowest that will support a varied fish population (Ellis, 1937), even in the winter (Thomson, 1925), and for a well-rounded population including game fish it should be above that. Both Ellis (1937) and Brinley (1944) set the minimum for a well-rounded population at 5 mg/l. It should be pointed out, however, that Thomson found the greatest variety of species at 9 mg/l, Ellis found good populations more frequently at 6 than at 5 mg/l, and Brinley reported the best concentrations for game fish populations to be above 5 mg/l. The belief that 5 mg/l is adequate is supported by the fact that the introduced rainbow trout thrives in Lake Titicaca (Everett, 1973) where, because of the altitude, the oxygen concentration in fully saturated water is not over 5 mg/l. [Red Book, MPCA Ex. 37, p. 125].

The Examiner finds that, based on the evidence in the record, the Agency's coldwater standard of 7.0 mg/l has been shown to be both needed and reasonable. The Agency has obviously examined a large body of data in arriving at its proposal (see, MPCA Ex. 70), and the objections raised by Clear Air-Clear Water cannot be given much weight without additional documentation.

53. The Agency's 5.0 mg/l warmwater standard received far more criticism. One commentator (Clear Air-Clear Water) felt it was too permissive, and should be raised to 6 mg/l (Public Ex. 60, p. 14). Others attacked it as being too strict (MWCC, MC, and John Erdmann, one of the consulting engineers writing in Pub. Ex. 28).

The Agency's basis for selecting 5.0, rather than some other number, is essentially based on the proposition that the standard should protect aquatic life from sublethal (chronic) effects during prolonged exposure, so as to ensure productivity and growth and avoid undesirable shifts in fish communities. Acknowledging that any reduction of oxygen below 100% saturation can have negative impacts on some sensitive organisms, the number selected should protect sensitive aquatic life or life stages from significant impacts. The Agency relied on data showing the impact of reduced DO levels on fish growth, reproductive success, and correlations between balanced populations and DO levels. In addition, the Agency looked at impacts on aquatic invertebrates (which provide food for fish). Finally, the Agency examined standards adopted by other states, the EPA, the International Joint Commission, and similar regulatory bodies.

Most of the opposition to the DO standard came from the MWCC and MC, and their arguments were, to a large extent, based on site-specific problems. The Examiner has already stated that he believes the basic philosophical question of site-specificity must be answered in favor of a statewide standard, with site-specific exceptions being raised at the permitting stage. Nonetheless, there is a fundamental disagreement within the scientific community regarding the appropriate way to set a DO criterion, with one group arguing for site-specificity based on natural conditions, and another group arguing for scientifically-based criteria which are not site-specific. This fundamental difference can be seen in a "flip-flop" done by the EPA. In "Water Quality Criteria: 1972", commonly known as the Blue Book, the recommended criteria are set forth in terms of specific variations from the "natural" DO concentrations. This is the same approach recommended by Doudoroff and Schumway (with certain important changes which are not relevant to the basic philosophical point to be made here). However, the successor to the Blue Book, which is the July, 1976 Red Book, takes a completely different approach which is essentially 5.0 minimum concentration. When a panel of scientists was convened by the American Fisheries Society to review the Red Book, the panel split; the majority strongly favored a return to the Blue Book and Doudoroff-Schumway methodology, but a minority criticized both the Red Book and the Blue Book. Apparently none favored the Red Book.

The Agency defended its selection of a single number, minimum concentration rather than the Blue Book and Doudoroff-Schumway approach on three grounds. They are as follows:

a. Oxygen is a direct measurement of the amount which is available to aquatic life (simpler and easier to administer);

b. Both field and laboratory data indicate that 5 mg/l will protect warmwater fish with minimal impacts under nearly all circumstances; and

c. The "precedent" of the EPA, other states, and the International Joint Commission.

Unstated, but specifically found to be one of the underlying reasons for the third justification, is the threat of an EPA veto.

The Examiner finds that the combination of the sublethal impacts on warmwater fish reported by the Agency and the administrative problems inherent in the Blue Book, Doudoroff-Schumway approach, are both compelling reasons to support the Agency's proposal as being both needed and reasonable. The record of this hearing does not provide any substantial undermining of the sublethal data presented by the Agency. In addition, the record does support the proposition that the Blue Book, Doudoroff-Schumway approach is unworkable. An attempt to define a "natural" DO regime for the Mississippi River by computer modeling resulted in substantial dispute between the Agency and the MWCC. There is more data, and higher quality data, available for the Mississippi River than any other water in the state (at least as disclosed in this record), yet no agreement could be reached as to what the "natural" regime would be. Attempting to compute that regime for other bodies of water, where there is much less data available, would be extremely time-consuming. If one accepts the philosophy of a statewide standard, then there is little alternative but to accept the number proposed by the Agency.

54. The proposed standard for Class 2B waters is the same as that for Class 2C waters. This represents a change from the existing rule, which provided a lower degree of protection for Class 2C waters than for Class 2B. The reason given for equal protection was that there was no difference between rough fish and warmwater fish in terms of their DO tolerance (Maschwitz, Tr. III-68). The data to support this conclusion is extremely limited. For example, the only rough fish data contained in MPCA Ex. 70 is that with regard to white suckers, which concludes that they were not harmed at DO levels of 4.9 mg/l, but did show impacts at 2.5 mg/l (MPCA Ex. 74). The literature review conducted by Davis (MPCA Ex. 61) refers to one carp study which indicated that blood ceased to be fully saturated with dissolved oxygen below levels between 5.4 and 4.3 mg/l (p. 2).

√ The Examiner finds that although the data is extremely limited, there is no reason to have a lower DO standard for Class 2C waters, and thus, the Agency's standard has been demonstrated to be both needed and reasonable for Class 2C waters.

55. The Agency's approach to estimating the economic impacts of the proposed DO standard was similar to the approach used for ammonia. It divided dischargers into three categories: Outstate municipalities, MWCC, and industries. There was no substantive disagreement with the figures proposed by the Agency, except that the difficulty of separating out costs between ammonia and DO is as much of a problem here as it was in connection with the ammonia economics discussion (MWCC Ex. T, pp. 4-5 and MWCC Ex. V, pp. 2-3).

The cost to outstate municipalities is attributable to four communities: Austin, Faribault, Mankato and Moorhead. Together they are anticipated to have costs attributable to going from existing standards to proposed standards of $7,400,000 for capital expenditures and $486,000 O&M/yr (Hensel, p. 17).

The cost to the MWCC is all attributable to the metro plant, as the proposed change will have no impact on other facilities (Wegwart, p. 5). The cost of compliance at the metro plant depends on which of two treatment methods is ultimately selected. The first would reduce BOD_5 effluent by the use of final effluent filters. This is anticipated to cost $73,000,000 in capital expenditures and $1,400,000 O&M/yr. Another possible method is the use of microscreens, which would cost $29,000,000 in capital expenditures and $703,000/yr. O&M. There is no firm indication in the record as to which of these would be used, so the Examiner will assume the highest cost for purposes of tabulation.

There are no economic impacts expected for industrial dischargers attributable to the change in the DO standard (Reed, p. 1), and the Examiner adopts this assertion as his own Finding.

56. In summary, it can be seen that the proposed change in the DO standard will result in economic costs of $80,400,000 in capital expenditures and annual O&M costs of $1,886,000.

There was substantial discussion regarding the propriety of assuming federal funding when considering the question of whether the Agency has given "due consideration" to economic considerations. The Agency argued consistently that it was appropriate to consider federal funding because it has normally been available in the past (with the exception of the most recent period) and because the Agency has a policy of not requiring municipalities to comply with water quality standards when federal grant funds are not available. This "policy" is not set forth anywhere in the rules, and the Agency Staff has carefully avoided making any representations that it will continue in force if federal funds do not become available in the future (Staff Response, p. 13; Staff Proposed Findings, p. 61).

This whole question of federal funding arises for two reasons. The first is that fiscal year 1980 funds have been "frozen" by President Carter (Wegwart, Tr. XIV-97). The second is that the EPA has issued a Memorandum known as "EPA Program Requirements Memorandum #79-7" (Attachment 26 to Staff Response) which essentially provides that grant proposals for greater-than-secondary treatment will receive extremely strict review and may not be funded unless certain stringent requirements are met. For purposes of the Memorandum, secondary treatment is defined as treatment for an effluent limitation of 30 mg/l BOD_5. The Agency has based its cost estimates for the metro plant on BOD_5 removal down to 10 mg/l. According to the distinctions made in the Memorandum between "advanced secondary treatment" and "advanced waste treatment", the metro plant at a 10 mg/l BOD_5 effluent limitation would qualify as an advanced secondary treatment facility. If the incremental cost of going from 30 mg/l BOD_5 to 10 mg/l BOD_5 is greater than $1 million (which it is for the metro plant), approval by the EPA Administrator in Washington must be obtained. It is also possible that the project to upgrade the metro plant could be classified as advanced waste treatment because of ammonia removal. Such a classification subjects a project to even more rigorous scrutiny. The Examiner has no knowledge of whether this project would be classified as AST or AWT. There has been a court challenge to this EPA policy (see, Attachment 27 to Staff Response), but the outcome is not known at this time.

State and federal funding generally covers 90% of the cost of capital expenditures for municipalities. Therefore, the existence, or nonexistence, of federal funding (which makes up between 75 and 85% of the total cost) is a factor when looking at the cost per household of the burdens imposed upon the MWCC by the changes in the proposed rules. However, any computation of cost per household must also include the proportional contribution of each household to the federal and state funding - those funds do come from taxpayers, including those in the metro area.

In summary, the Examiner finds that:

a. The rule as proposed does not satisfy substantive law but that if amended as recommended above, it can do so.

b. The rule as proposed has not been demonstrated to be reasonable (Class 2B standard), but that if amended as recommended above, it was reasonable.

c. The costs of compliance are substantial.

Total Residual Chlorine: New Proposal for Sections D.2. of 6 MCAR §§ 4.8014 and 4.1085 (Class 2A, 2B and 2C Waters)

57.

Existing Standard	Proposed Standard
None	.003 mg/l (continuous exposure only; effluents discharged for more than 2 hours in any 24-hour period)

The proposed total residual chlorine standard is applicable only to conditions of continuous exposure. Continuous exposure is defined as any effluent which is discharged for a total of more than two hours in any 24-hour period. This is consistent with federal guidelines for the steam electric power industry (Attachment 1 to MPCA Ex. 50). The rationale for such a standard is not given in those guidelines, however, but it is given in a number of other exhibits (MPCA Ex. 45, pp. 2186-2188; MPCA Ex. 44, pp. 28-30; and Brungs, p. 5, and particularly MPCA Ex. 49, p. 2296) Some sort of differentiation between continuous and intermittent discharges is needed because of the fact that much of the chlorine which is introduced into the nation's waters ("perhaps as much as half" - MPCA Ex. 46, p. 71) comes from intermittent discharges connected with power plant and industrial cooling processes.

58. Chlorine is not a natural constituent of surface water. It is introduced as a result of three processes: (1) Disinfection of municipal wastewater; (2) de-fouling of cooling equipment; and (3) disinfection of cooling water for food containers (cans). The use of chlorine to disinfect wastewater began in the 1850s, and its use as an anti-fouling agent by power plants began in the 1920s (MPCA Ex. 50, pp. 1-2). Although there has been some concern over its use for many years, only recently has critical attention been focused upon it (MPCA Ex. 44, pp. 2, 4). In the past, it was widely believed that residual chlorine in discharges was rapidly eliminated by transformation to a non-toxic form. However, more recent studies have shown that total residual chlorine ("TRC") may persist for periods of hours to days, and that the most important factor determining the dissipation of TRC was not any transformation, but rather dilution (MPCA Ex. 50, p. 3).

Acute studies have yielded 96-hour LC_{50} values for sensitive fish species (trout, salmon, and minnows) ranging between .04 to .08 mg/l TRC. Freshwater invertebrates are generally more resistant to acute toxicity (LC_{50}s

from .215 to greater than .810 mg/l), but sensitive invertebrates, such as daphnia, show a 48-hour LC_{50} of .017 mg/l (MPCA Ex. 50, p. 4). Chronic toxicity data, on the other hand, for freshwater fish range from .015 mg/l for salmon to .026 mg/l for fathead minnows. Invertebrates appear to be more sensitive than fish to chronic exposure. Amphipods (loosely translated as water bugs) have shown reduced reproduction at .0034 mg/l, and daphnia showed a no-effect level of between .002-.004 and .010 mg/l TRC.

Brungs (MPCA Ex. 44) reviewed a number of papers on chlorine toxicity and concluded that the criterion for continuous exposure of freshwater organisms should be .003 mg/l. The American Fisheries Society review of the Red Book generally agreed with Brungs, but argued that a criterion of .003-.005 would be more appropriate "because of the analytical difficulties involved in low-level chlorine detection and measurement" (MPCA Ex. 46, p. 67). [This measurement problem will be discussed in greater detail below.] In his testimony prepared for the hearing, Brungs expanded upon how the level of .003 mg/l was reached. He pointed out that three different studies have computed both 96-hour LC_{50s} and safe concentrations (MATCs) for freshwater fish. The first dealing with fathead minnows, produced an LC_{50} of .12 mg/l, and a MATC of .0165 mg/l. The application factor would then be .14. A second study also dealt with fathead minnows, and produced an LC_{50} of .108 and a MATC of .014. The application factor in that case would be .13. A third study also dealt with the fathead minnow, and produced an LC_{50} of .089 mg/l and an MATC of .01. The application factor would be .11 in that case. The mean of the three application factors is .13, or approximately one-eighth. Since the purpose of an application factor is to estimate safe concentrations for fish when only LC_{50} data is available, applying the .13 mean application factor to LC_{50} values for sensitive fish species (.04 to .08) yields an estimated "safe" concentration between .005 and .10 mg/l. Brungs felt that such a computation, however, provided an inadequate "margin of safety" because it results in a criterion (.005) that is very close to a lethal concentration (.01). Therefore, although the data yields a figure of .005, Brungs recommended .003 to provide an "added margin of safety".

At the hearing, Brungs explained this as follows:

> Now, the difficulty that one has right here with this chemical [TRC] and a few others, the difference between an estimated safe concentration and a known lethal one that causes 50% mortality in one to four days is fairly small, in this case approximately one-eighth. So if there is any error in trying to support the criterion or if we have species out there that are more sensitive than those for which we have data, there is, as I state, no margin of safety at all. So we tend to be a little conservative by slightly lowering the number from one that is just barely safe for the species that are tested with no attempt to include those species that are not tested that might be slightly more sensitive. (Tr. II-85).

A review of the literature was undertaken by Baummer (Industry Ex. A). He did not dispute the data used by Brungs, but rather did dispute the "additional margin of safety". He recommended a value of .005 to .006 mg/l.

A witness for the MWCC, on the other hand, recommended .003 for Class 2B and Class 2C waters because of the need to protect invertebrate organisms in the food-web (Pavlou, p. 3).

The Examiner finds that the approach taken by the Agency and Brungs cannot be found to be reasonable. The data supports .005 mg/l, and nothing lower. While the Examiner understands the desire for an additional margin of safety, he believes that other factors already provide such a margin. Perhaps the most evident of these is dilution (the standard is applicable at the low flow of the 7Q10). Less evident is the fact that dechlorination (at least when sulfur dioxide is used) tends to be difficult to precisely control, i.e., it would be hard for a plant operator to control to .005 mg/l and not be controlling for .003 as well (Staff Response, p. 35). Therefore, the Examiner believes that 005 mg/l, the figure justified by the data, is not only the appropriate figure to use, but also that it will not result in harmful consequences. The establishment of the .003 mg/l standard is based not on documented evidence (which supports only the .005 mg/l standard), but apparently on the assumption that if .005 mg/l is safe, anything less is better or will lower the risk by providing this "added margin of safety." There is no evidence, let alone substantial evidence, in this record to support the .003 mg/l standard.

59. A great deal of evidence was submitted with regard to the problem of measurement of TRC at levels approaching .003 mg/l. There appeared to be two acceptable methods; the amperometric titration technique and mass-balance equations. Both have significant problems associated with them.

Amperometric titration requires sophisticated equipment coupled with a high degree of skill and care to produce accurate results, and at the present time the routine sensitivity of the technique is only about .02 mg/l TRC. Only recently have modifications to the technique enabled detection limits to come near the proposed standard of .003 mg/l (MPCA Ex. 50). However, use of those modifications still requires sophisticated personnel and equipment. A witness for the Agency admitted that he did not know if it was possible to measure .003 in the field on a regular basis (Marsh, Tr. I-122).

The problem with mass-balance equations is that TRCs must be measured both in the stream above the effluent, and in the effluent itself. In addition, flows for both must be known. However, in the case of discharges to low-flow streams where dilution factors are small, compliance monitoring may not be feasible until improved techniques are routinely available (MPCA Ex. 50, pp. 3-4).

The Agency's response to this criticism was that "fish and other aquatic biota cannot adjust their sensitivity to a potentially harmful water quality characteristic to accommodate shortcomings in our analytical capabilities" (Marsh, p. 5), and that if there is a need and a motive to measure chlorine at .003 mg/l, it will in fact be done in the future (Marsh, Tr. I-122). Indeed, methods are being developed. In 1974, Andrew and Glass published a paper (MPCA Ex. 40) which is qualified by the words "Tentative Methods - Not For Publication", which uses a polarograph. This method has a detection limit of .001 mg/l, and depending upon the size of the sample, the standard error is either plus or minus 100% or plus or minus 200%. In 1979, two other methods were published. The first was by Payne (MPCA Ex. 51) and uses simple equipment but sophisticated reagents. It is able to detect a minimum concentration of .005 to .010 mg/l. One month later, Brooks and Seegert published a paper (MPCA Ex. 43). It also uses a polarograph and was able to measure at a con-

centration of .002 8, but with a relative error of 39.3% and a relative standard deviation of between 14.8 and 17.3%. The lower limit of detection was calculated to be .001 8 mg/l. The authors note:

> Although the results presented above were derived under controlled laboratory conditions, this system also has been used for chlorine measurements in secondary wastewater effluents and on shipboard in relatively clean Lake Michigan water. The instrumentation is readily adapted for field use and there have been no interference problems. (MPCA Ex. 43, p. 2638)

All three techniques described above are obviously on the "cutting edge" of technology. The last two have been proposed so recently that there has been no opportunity for confirmation of the indicated precision . Moreover, one cannot lose sight of the fact that measurements will have to be made by personnel all over the state, employees of wastewater plants, canneries, and utility companies. As the American Fisheries Society review pointed out, "If this criterion is to be realistic, there is a need for the development of sensitive analytical equipment which is readily available and easily operated" (MPCA Ex. 46, p. 68).

The Examiner finds that the only feasible way to measure compliance with a TRC standard in the range of .005 to .003 mg/l is with mass-balance equations. The fact that these equations require knowledge of flows as well as knowledge of ambient conditions is a strong argument for a procedure which has been suggested in the case of ammonia and dissolved oxygen. That is, that the permitting process be used to set effluent limits, which can then be measured with less sophisticated equipment. The rules should provide that a person will be deemed to be in compliance with the standard if effluent limits are being met. Since there will be a substantial amount of lead time prior to the permitting process, it should be possible for the Agency to gather the ambient data which will be needed to set effluent limits to comply with the standard. That is the only way in which the Examiner can find the proposed rule to be "practical" as that word is used in Minn. Stat. § 116.07, subd. 6 (1978).

see additions p. 20

60. A problem related to the whole dechlorination (removal of TRC) question is the method to be used to accomplish it. There are a number of different ways to dechlorinate, the most common being the use of sulfur dioxide, activated carbon, or post-aeration (Grieling, p. 3). Of these, sulfur dioxide appears to be the most cost-effective alternative for dechlorination (Grieling, Tr. XIV-73). However, there is a major drawback to the use of sulfur dioxide to remove chlorine--that problem is the fact that the dissolved oxygen concentration of the effluent treated with sulfur dioxide is dramatically lowered. As one comentator put it:

> There appears to be a major potential problem with the dechlorination requirements contained in the proposed rules, which is briefly mentioned on page 17 of the Statement of Need and Reasonableness. Dechlorination by the addition of sulfur dioxide may deplete the oxygen in the water being discharged to the point where the oxygen levels in the stream will drop below required stream standards and cause fish kills.
>
> * * *
>
> It appears that no consideration has been given to this potential problem in the development of these proposed rules. It appears that without reaeration, the impact of dechlorination may be negative, thereby creating a problem which is much more severe than [that] which existed prior to dechlorination.
>
> (Read, Tr. XD-59-60)

This reaeration problem will be discussed in connection with economic considerations. Aside from the propensity to reduce DO, there are no other apparent side effects from the use of sulfur dioxide to dechlorinate (Pavlou, pp.21-22).

61. Another issue raised was the fact that a number of canneries around the state are required to chlorinate their cooling water. In some cases, they use municipal drinking water supplies for this purpose, which has a higher chlorine content than the standard would appear to allow. In other words, not only are they required to add chlorine in some cases, but in other cases even without any addition of chlorine, the municipal water supplies would result in violations of the rule. Each of these will be discussed in turn below.

With regard to the requirement for chlorination, this can be found in 21 C.F.R. Part 113, subpart D, ¶ b. That states, in part, "Container cooling water shall be chlorinated or otherwise sanitized as necessary for cooling canals for recirculating water supplies. There should be a measurable residual of the sanitizer employed at the water discharge point of the container cooler." (Public Ex. 62; Public Ex. 51; Graceyk, Tr. XD-43) This requirement is imposed by the U.S. Food and Drug Administration. Levels actually used to comply with this requirement vary, ranging from .05 to 1.0 mg/l (Northland Canning Company, Cokato; Public Ex. 62) to .2 to .3 mg/l (Owatonna Canning at Owatonna; Tr. XD-97). The proposed standard is proposed .003 mg/l; however, that is measured in the receiving water, and dilution of effluent may be enough, in some cases, to avoid the need for any dechlorination equipment (Reed, Table 2).

The second problem raised is the fact that some industries or commercial establishments use chlorinated municipal water supplies for cooling water, thereby resulting in a chlorinated discharge which may violate the proposed standard. Indeed, backwash water from drinking water treatment plants may contain TRC in excess of the standard (Reed, p. 7). As one representative of the canning industry stated:

> I find it hard to believe that we would be required to dechlorinate city water. If that would be the case, I think the city would find it very hard to dechlorinate water because they are flushing out the hydrants and running that water down the city storm sewers.
>
> (Oliphant, Tr. XD-97)

In the particular case of that cannery (at Owatonna), the city water coming into the plant contains approximately .5 mg/l TRC (Id.)

The Agency's response to these two problems was essentially that while it understood the need to protect human health underlying the FDA requirements, it also understood the need to protect aquatic life which underlies the proposed water quality standard (Tr. XD-44-45). The Agency did not have any real response to the municipal water supply problem other than to note that an alternative to using municipal waters is the use of well water, which might be a cost-effective alternative (Reed, p. 8).

62. The standard proposed by the Agency, .003 mg/l TRC, would be applicable to all Class 2 waters. There is no different standard for Class 2A, 2B, or 2C waters. The Agency argued, and the Examiner agrees, that there is no basis for different standards because the data does not demonstrate an adequate separation in tolerance levels between coldwater and warmwater species (Marsh, Tr. XD-77).

63. The economic cost of the new standard for TRC was broken down into separate categories for outstate municipalities, MWCC (metro and other) and industries (numerous different ones).

With respect to outstate municipalities, the Agency estimates that there are 145 municipalities that will have to dechlorinate because of the standard. The capital cost is expected to be $3,990,000 and the O&M/yr is anticipated at $574,000 (Hensel, p. 21). This assumes the use of sulfur dioxide, but does not include any costs of reaeration or other measures needed to increase DO levels as a result of the impact of sulfur dioxide noted above. However, it was evident from comments made at the hearing and subsequent to it that if reaeration or other methods of artificial DO increases are found to be necessary, those costs could far exceed the costs of reaeration. Although the only evidence with regard to this came in connection with the industries and the MWCC (Haderer, Tr. XD-40; Hensel, Tr. XD-70; Grieling, p. 3 and 7), it is extremely difficult to quantify this problem because it cannot be stated at this time which facilities would need reaeration and which would not (this was the reason the Agency did not include it). An example comes from the post-hearing comments of Nestlé Enterprises, Inc. (Public Ex. 45), wherein it was anticipated that the cost to install dechlorination equipment using sulphur dioxide would be approximately $27,800, but the cost to reaerate would be $168,600. For those facilities which find reaeration to be required, other forms of dechlorination may become more cost-effective; in fact, the cost of reaeration may call into question the use of chlorine as a disinfectant, because with reaeration required after dechlorination with sulfur dioxide, other forms of disinfection may become more efficient from a cost standpoint (Hensel, Appendix 2). In summary, the Agency's figures provide only a ballpark estimate which may be radically altered upward if reaeration becomes a necessity.

Cost estimates for dechlorination for the MWCC were divided into metro plant and other plants. With regard to the metro plant, there was some confusion regarding the method which would be used for disinfection; if chlorine were not the method of choice, then there would be no requirement to dechlorinate. However, it appears from the record that chlorine will continue to be the method of disinfection used at the metro plant, thus necessitating dechlorination (Hillstrom, Tr. IV-54; Wegwert, p. 5 and Tr. IV-45; Grieling, Tr. XIV-73, 78, 82 and 84; Martenson, p. 34 and Supp. Staff Response, p. 49). However, even if one assumes chlorination followed by dechlorination with sulfur dioxide, it is still difficult to arrive at a firm number for the metro plant because of the fact that existing metro disinfection facilities may have to be relocated for operational and safety reasons (Grieling, p. 4). In addition, data provided by Grieling in his oral presentation (Tr. XIV-84-86) provide a number of different alternatives, costs of which cannot be clearly allocated to one standard or another (channel aeration or aeration basins would impact a number of the standards; see, MWCC Ex. V). The best that can be said is that the maximum cost (without any deduction for relocation apparently already required) would be between $5,262,000 and $6,829,000 in capital costs and $713,000 and $1,152,000 O&M/yr (based on Grieling, Table 10 and Grieling Oral Testimony, Ex. #1). The Examiner will use the lower figures because of the relocation requirement.

There was also disagreement about the cost of dechlorination for other MWCC plants. There was a tremendous disparity in the figures. The Agency (Wegwert, p. 6) estimated a capital cost of $975,000 and O&M/yr of $115,750. These have to be increased by a factor of 1.1 to translate from January, 1979 dollars to April, 1980 figures (Supp. Staff Response, p. 50). Making this adjustment, the figures become $1,072,550 in capital costs and $127,325 O&M/yr. Even with that adjustment, the figures are far short of those suggested by MWCC (Martenson, p. 36) of $4,014,000 in capital costs and $194,500 O&M/yr. The differences between the two estimates appear to be based on two separate items. The first is that for the Blue Lake and Seneca plants, MWCC has assumed that reaeration will be required (Molzahn, Tr. XIII-79). The Agency did not make that assumption. The second is much more nebulous, but appears to be the fact that MWCC believes that the Agency ought to have included the costs of combined sewer overflow control (MWCC Ex. T, p. 6). CSO control really impacts more upon the fecal coliform cost estimates, rather than the TRC standard. Therefore, the Examiner will use the Agency estimate for the plants, which is $1,072,550 in capital costs and $127,325 O&M/yr.

64. The Agency's cost estimate for industry was shown to be least reliable of all.

The Agency broke down the projected costs by type of user, ending up with a total of seven different categories. It pointed out that because the standard requires dechlorination only when effluents are discharged more than two hours out of 24, there are a number of dischargers which will not have to dechlorinate. The Agency assumed that dischargers who had the option of using intermittent chlorination would do so in order to avoid economic impacts of dechlorination, and thus did not include them. For the same reason, the Agency did not include any costs for approximately 14 industrial entities which use municipal water for industrial cooling (Reed, pp. 7-8). Whether these assumptions are valid is questionable, but since no person challenged them, the Examiner will adopt them.

Cooling water discharges resulting from air conditioning were expected to have no economic impacts except for those located in the metro area which use chlorinated municipal water supplies. For the approximately 31 discharges in this category, the total capital costs are anticipated to be $465,000 with $99,200 O&M/yr (Id.).

Power plants use chlorine as an anti-fouling agent, but normally in an intermittent fashion (thus, Reed did not estimate any costs for them). Food processors (excluding canneries and dairies) did not have any costs attributed to them, although the Agency admitted that a number may use chlorinated municipal water.

The last group of industrial cooling water dischargers are the canneries, and it was this group which raised the questions regarding the Agency's costs. The Agency found that there were 10 canneries in Minnesota which would require dechlorination, and estimated the total cost for all ten at $210,000 in capital expenditures and $11,600 O&M/yr. However, there were three basic criticisms raised with regard to the Agency's estimate. The first was that the Agency assumed that each cannery had only one discharge pipe (Hensel, Tr. XD-75). However, a number of plants have discharges leaving their facilities in more than one location, in some cases as many as six different discharge

pipes. These may require multiple installations (Read, Tr. XD-74; Oliphant, Tr. XD-97; Sevcik, Tr. XD-103). Oliphant, who represented Owatonna Canning Company at Owatonna, estimated the cost to that facility alone at over $100,000 (Tr. XD-97), and when asked to supply more specific information, later submitted a detailed estimate of $202,000 for construction, $22,200 for site acquisition, and an annual lease cost of $4,000 (Pub. Ex. 43). Nestlé Enterprises, Inc., which is the parent firm of Libbey, McNeill & Libbey at Rochester, estimated its actual costs at $27,800 (Public Ex. 45). A second area of disagreement dealt with reaeration, with Nestlé estimating an additional cost of $168,600 for reaeration, and Read pointing out that the costs of reaeration for other canneries would probably exceed the costs for dechlorination (Tr. XD-61-62). In a discussion with Read, Hensel stated that whether or not reaeration would be required can only be determined on a project-by-project basis, but if it was required, Hensel admitted that in some cases it could exceed five times the capital cost of dechlorination (Tr. XD-68-70). Finally, Read pointed out that the Agency failed to include monitoring costs, particularly the cost of skilled personnel to handle the appropriate equipment (Tr. XD-58, 72).

In addition, it appears that the Agency erred in its judgment as to whether the Libbey plant at Rochester would require dechlorination. In Table 2 of Reed's testimony, Libbey is shown as not requiring dechlorination because adequate dilution was present in the South Branch of the Zumbro River, its receiving water. At the hearing, however, after Agency personnel learned that the chlorine residual in the effluent waters might approach .02 mg/l, they reversed their position because of another rule which impacts upon chlorine discharges. This other rule, which is set forth in Paragraph A.6. of 6 MCAR §§ 4.8014 and 4.8105, is applicable to dischargers such as Libbey's by virtue of § C.6. of the same rules. Essentially, those provisions require that no effluent shall contain levels of toxic substances which are acutely toxic to humans or other animals or plant life. At the hearing, the Agency was asked what concentration of TRC would be considered acutely toxic in an effluent, and the Agency replied that while they did not have a hard figure for such a level, they estimated approximately .01 mg/l (Peissig and Marsh, Tr. XD-48-49). In light of the testimony cited above regarding the TRC levels commonly used in canneries, the Examiner has serious questions about how many other canneries might be impacted by the same logic which applied to Libbey's. This concern is mitigated, however, by the fact that there are only five canneries listed in Table 2 of Reed's prefiled testimony which have not been assigned costs because of dilution. In addition, one of these (Green Giant at LeSueur) has been moved from this category to a category which requires no dechlorination because the receiving water has been designated a Class 7 water. That leaves four, including Libbey's, which might be impacted by the same rationale.

The Examiner finds that the Agency has underestimated the costs of the proposed TRC standard as they apply to canneries. However, the seriousness of this underestimation cannot be evaluated without more information as to how many canneries will require reaeration, how many have multiple outlets, and how many will be impacted in the manner that Libbey's will be. The Agency's estimate of $210,000 in capital expenditures and $11,600 O&M/yr is found to be low, but it is impossible to know with any certainty at this point how low it

is. The Examiner will use it for tabular purposes, adding to it the $224,200 and 4,000/yr. for Libbey's.

65. The final industrial category which will be impacted by the Agency's proposed standard is industries required to chlorinate process water discharges. Armour & Company in Cold Spring will be required to either dechlorinate its wastewater or switch to some alternate disinfection method. The Agency estimated the costs to be $28,000 in capital and $3,800 O&M/yr (Reed, p. 13).

66. Therefore, the total estimated cost for industrial dischargers to comply with the proposed TRC standard is $11,251,750 in capital costs and $1,532,025 O&M/yr. These figures are a minimum, because of the cannery problem noted above.

67. In summary, the Agency's proposed .003 mg/l TRC standard has not been demonstrated to be needed or reasonable because of the "additional margin of safety" problem. However, .005 mg/l has been shown to be both needed and reasonable. In addition, only if the Agency amends the rule, as required with ammonia and DO, to specify that a discharger will not be deemed to have violated the standard so long as its permit effluent limitations are being met, can the Examiner find that the rule is "practical".

changed to .005 p. 31

Fecal Coliform Organisms: Sections C.6. and D.1.-7. of 6 MCAR § 4.8014 and 4.8015 (all classes).

Present Standard	Proposed Standard
Class 1A 1 most probable number per 100 milliliters	No Change
Class 1B 10 most probable number per 100 milliliters	Repeal
Class 1C, 1D 200 most probable number per 100 milliliters	Repeal
Class 2A 200 most probable number per 100 milliliters as a monthly geometric mean based on not less than 5 samples per month, nor exceed 400 most probable number per 100 milliliters in more than 10% of all samples during any month.	200 organisms per 100 milliliters as a logarithmic mean measured in not less than 5 samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organismis per 100 milliliters. (Applies only between May 1 and October 31).
Class 2B 200 most probable number per 100 milliliters as a monthly geometric mean based on not less than 5 samples per month, nor equal or exceed 2000 most probable number per 100 milliliters in more than 10% of all samples during any month.	200 organisms per 100 milliliters as a logarithmic mean measured in not less than 5 samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between May 1 and October 31).
Class 2C 200 most probable number per 100 milliliters as a geometric mean nor equal or exceed 2000 most probable number per 100 milliliters	200 organisms per 100 milliliters as a logarithmic mean measured in not less than 5 samples in any calendar month,

in more than 10% of the samples.	individually exceed 400 organisms per 100 milliliters. (Applies only between May 1 and October 31).
Class 3A, 3B 3C, 4A, 4B, 5 200 most probable number per 100 milliliters	Repeal
Class 6 None Specified	None
Class 7 None Specified	1,000 organisms per 100 milliliters. The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of 5 samples, nor shall more than 10% of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters. (Applies only between May 1 and October 31). (Emphasis added)

The proposed changes in the fecal coliform standards are as follows:

(1) Seasonal disinfection, rather than year-round disinfection, would be permitted except for dischargers 25 miles or less upstream up a potable water supply;

(2) The maximum number of allowable organisms has been decreased for less Class 2B and 2C waters;

(3) A fecal coliform standard has been established for Class 7 waters;

(4) The testing requirement for fecal coliforms has been simplified; and

(5) The fecal coliform standard has been repealed for certain classes of water.

68. The reason for any fecal coliform standard at all is to protect humans and livestock from disease resulting from bacteria, viruses and parasites. Such organisms are present in sewage, storm water and other discharges containing animal wastes. There is no single test yet developed which detects all of these pathogens. However, the presence of fecal coliform, a group of bacteria found in the feces of warm-blooded animals, has been shown to be an indicator of the potential presence of such pathogens. Using fecal coliforms as an indicator species is widely accepted (Geldreich, MPCA Ex. 14dd, pp. 3-12: Anderl, pp. 4-5). Nobody disputed the need for some limitation on fecal coliforms. There was dispute, however, as to what the appropriate numbers ought to be, what the extent of the seasonal limitation ought to be, and certain site-specific matters. Each of these will be discussed below.

69. The major change between the existing rules and the proposed rules is that the existing rules applied year-round, while the proposed rules apply only between May 1 and October 31, except where an effluent is discharged 25 miles or less upstream of a water intake supplying a potable water system. In such a case, the standard remains year-round.

The Agency justified the change from a year-round standard to a seasonal one based on the fact that the purpose of the standard is to protect humans and animals from disease which might be caused by consumption of infected wat-

ers. The Agency reasoned that since the most likely cause of infection would be recreational use, and since recreational use is non-existent during the winter-time, there is no reason to enforce the standard in the winter (Anderl, pp. 5-6). Edwin Geldreich, an employee of the EPA's Municipal Environmental Research Laboratory in Cincinnati, stated that:

> Where seasonal disinfection is chosen as an alternative to year-around disinfection of sewage effluents, the dates for initiating this additional treatment must begin eight weeks before the officially recognized bathing season starts and discontiued four weeks after the seasonal bathing period ends. The purpose of the early spring start for disinfection is to permit plant operations to phase-in this treatment operation gradually without wasteful applications of chlorine into receiving waters. Extending the closing dates for disinfection in late summer would protect weekend recreation of uses [sic] of the bathing areas during periods when the water temperature may still be warm. (p. 17).

Additional reasons cited by the Agency in favor of the proposed seasonal nature of the rule were that (1) the amount of money spent for chlorine or other disinfectants will be less; and (2) if chlorine is used as a disinfectant, only seasonal dechlorination will be required.

There was no criticism of the concept of seasonal dechlorination; however, there was criticism of the dates selected. That criticism came from Amos Roos, who is a whitewater canoeist. Essentially, his argument breaks down into two parts: (1) the Agency failed to justify the dates proposed for seasonal treatment and (2) the proposed change is unreasonable because it fails to account for public health risks incurred by whitewater canoeists and kayakers who use waters in the early spring.. Roos appeared at the hearing on two different occasions. On the first occasion, he asked the PCA's witness on fecals, Mr. Anderl, why the starting date was as late as it was considering that some rivers, which are good for canoeing only for a short period of time, are impacted by municipal effluent dischargers (Tr. I-87-88). The response was as follows:

> Mr. Roos, it was our understanding that recreational use of the waters in Minnesota would be confined to periods when the temperatures were conducive of [sic] actual contact with the water. At this time of year, it's generally thought that the waters are much too cold, much too high in flow to - the greatest amount of recreational usage to occur in this period. I guess if there is evidence that there is a lot of body contact at this time of year, you know, it may be a consideration that we haven't included but we just felt like the usage was much lower at this time of year for any type of water recreational sport. We felt that May 1 was the date when most people would consider perhaps taking out their boats and getting in contact with the water. So not specifically in answer to why its not, you know, April 1st instead of May 1st, it's just felt by the common understanding of water temperature that that's when most of our recration starts is about the first of May. (Anderl, Tr. I-88).

Roos then proceeded to research the subject of recreational use before May 1, and appeared again at one of the final sessions of the hearing. He argued that the rule was unreasonable because it failed to take into account the problems which could be encountered by whitewater canoeists and kayakers who would be using the State's waters during the period when no disinfection was required. He stated:

> Many Minnesotans find recreation in whitewater canoeing and kayaking. This sport is best enjoyed when river levels are high, providing a measure of excitement and challenge in finding a

fast, safe, and dry route through the turbulent waters. Inherent in this sport are several hazards related to water quality. The skin may be broken by scraping against a rock or scratching against brambles on shore. The craft may then capsize with the result that the open wound or paddling sore becomes immersed in water. The paddler may inadvertently swallow water in the strain and tension of trying to right a heavy, water-laden canoe or kayak in turbulent frigid water. (Tr. XI-11)

Roos solicited information through the newsletter of the Minnesota Canoe Association and the DNR. The information from the Canoe Association indicated that most kayaking is done during the months of March, April or May, with some training beginning in late February if rivers are open (Pub. Ex. 67, p. 2). Roos asked the DNR to keep a record of the inquiries which it received between March 27 and April 24 of 1980. Apparently, various units of DNR provide the public with current information on the canoeability and water levels of various Minnesota streams. This information is forwarded from field offices around the state to the central office in St. Paul on a weekly basis. During the March 27-April 24 period, 600 telephone calls were received, within inquiries ranging between highs of 110 calls about the St. Croix River, 105 calls about the Kettle River, 104 calls about the Snake River, to lows of 28 calls about the Zumbro, 5 calls about Sunrise Creek, and 3 calls about the Pine River. In addition to this DNR data, Roos pointed out that 40 members of the "Cascaders" canoed the Kettle River on April 13; 14 other persons canoed the Kettle River on April 19, and 100 members of the 3M Canoe Club canoed the Cannon on April 20. During the month of March, the long-distance racing chapter of the Minnesota Canoe Association canoed on the Mississippi, the Straight, the Cannon, the north fork of the Crow, and Shingle Creek. Based on the assumption that each call to the DNR yielded two canoers, and adding the data from the Canoe Association, Roos estimated that at least 1344 people canoed Minnesota Rivers from March 29 through April, 1980. This total does not include the additional information which he presented regarding early March.

Roos recommended that an interim date of March 1st be selected as the start-up date for disinfection, and that a study be undertaken to determine a sound basis for establishing a scheme based on ice-out dates in various regions of the state. Roos presented the basis for deriving such a detailed scheme in Pub. Ex. 67. The Examiner finds that there is insufficient data at this point to recommend such a scheme. However, the question of whether Roos has demonstrated the May 1 date to be unreasonable is a close one. MWCC did not concede that it was worth spending hundreds of thousands of dollars annually to protect the occasional person who falls out of the boat or gets thrown in the river (MWCC brief, p. 21). It argued that there is no evidence in the record of water-contact (as opposed to water-enhanced) use of the Twin Cities' rivers before April 30, nor is there evidence of any recreational use of the waters before April 1 (Id.). Obviously, MWCC was unaware of Roos' research data which was submitted to the Examiner on the same date that the MWCC brief was received.

The Examiner has looked at the Agency's Statement of Need and Reasonableness (MPCA Ex. 8), and examined the testimony of its witnesses on seasonal disinfection (Anderl, p. pp. 5-6, and Tr. I-84-85; Geldreich, MPCA Ex. 14dd, pp. 13-18) in light of Roos' testimony. The Examiner finds that the Agency has failed to justify the reasonableness of its May 1 date. The evidence does sup-

complied p. 13 et seq.

point the need for and reasonableness of seasonal disinfection as a concept, but the Examiner finds that both Roos and Geldreich support March 1 as the appropriate date to start that disinfection. Therefore, the Examiner recommends that the date be changed from May 1 to March 1.

70. The next issue to be discussed is the need for and reasonableness of the actual fecal coliform limits proposed by the Agency. It will be seen from the table above that for Class 2A, 2B and 2C waters, the Agency proposed a limitation of 200 organisms per 100 ml. as a logarithmic mean measured in not less than five samples in any calendar month, with a maximum of 400 organisms per 100 ml. in not more than 10% of all samples taken during any calendar month (these figures would apply to all classes between Class 3A and Class 5 as well). For Class 7 waters, the standard would be 1,000 organisms per 100 ml., with no more than 10% of the samples exceeding 2,000 organisms per 100 ml.

With regard to Class 2 waters (and all waters except Class 6 and 7 waters), the Agency based its standard upon the Green, Blue and Red Books and MPCA Ex. 80, and Exs. 118-120.

The Examiner finds that a review of these documents, plus exhibits submitted by others (Venosa in MWCC Ex. A, and MWCC Ex. W) demonstrates that this standard appears to be the most poorly documented of all. Tradition, rather than research, appears to be the practice, not only in Minnesota but around the country as well. Anderl stated that in addition to the exhibits submitted, there were numerous other documents which could have been introduced into the record, but were not (Tr. I-81). Obviously, such documents were not considered by the Examiner. The appropriate question is based upon what is in the record, is there any demonstration that there is a need for this change and that the change proposed is reasonable?

The Green Book, published in 1968, recommends the 200/100 ml (with 10% at 400/100 ml) but admits that "there is an urgent need for research to refine the correlations of various indicator organisms, including fecal coliforms, to water-borne disease" (MPCA Ex. 66, p. 12). The Green Book states that three epidemiological studies conducted by the Public Health Service on bathing water quality and health are the only base available for setting criteria. The Examiner finds, based upon the reasoning set forth in MWCC Ex. W, that those studies cannot be relied upon as justification for a standard. The Blue Book, published in 1972, reviews the literature and concludes "No specific recommendation is made concerning the presence or concentrations of microorganisms in bathing water because of the paucity of valid epidemiological data" (MPCA Ex. 28, p. 32). It states that there is no agreed-upon value that divides "acceptability" from "unacceptability" to enable a fecal coliform standard to be used as the sole measure of "sanitary cleanliness" of the water. It does state that if an arbitrary value for the index is desired, a maximum value of 1,000 per 100 ml. could be considered. The Red Book, published in 1976, recommends the 200/100 ml. (with not more than 10% exceeding 400/100 ml.), apparently based upon the relationship between fecal coliforms and Salmonella bacteria. The Red Book states:

> Use of fecal coliform bacteria as a single parameter for monitoring recreational water quality must ultimately relate the probable occurrence of water-borne pathogens. Currently, the only relationship which has been developed between the fecal coliform indicator and water-borne pathogens is that of Salmonella to fecal coliform density. Data which have been developed

indicate a sharp increase in the frequency of Salmonella detection when fecal coliform densities are above 200 organisms per 100 ml. of fresh water. When there are over 200 fecal coliforms per 100 ml., Salmonella isolation should approach 100% frequency. . . . The recovery rate of Salmonella in estuarine waters is lower than that in fresh waters. In fresh water, Salmonella were recovered 85 to 98% of the time in the range from 201 to 2,000 fecal coliforms. . . . It must be noted that any projection of the qualitative recoveries of Salmonella into a comparison with fecal coliform quantification has recognized limitations. Such projections do nevertheless suggest that the 200 fecal coliforms per 100 ml. limit for recreational waters is a useful water quality value. (MPCA Ex. 37, p. 46)

The incidence of Salmonella, however, is of marginal probative value; while the diseases spread by such bacteria are serious (cholera, typhoid, etc.), they are very infrequent. For example, a committee of the National Academy of Sciences reported:

> There is little documented evidence of salmonellae infections that have been transmitted by swimming water. In recent years, the only reported cases of cholera in the United States appear to have been transmitted by seafood (Center for Disease Control, 1978b). Although there have been no reported cases of cholera resulting from contact with recreational water, there have been reports of Vibrio cholerae in unpolluted, brackish waters of U.S. estuaries. . . .
>
> * * *
>
> Basing a public health criterion on risk of Salmonella occurrence has serious drawbacks. Very few proven cases of salmonellosis (except in typhoid) have been traced to swimming waters, possibly because Salmonella infections appear to require relatively large dosages of organisms, which exceed the usual intake of a swimmer.
>
> Despite the potential error of the fecal coliform criterion having been based upon the presumed coincidence of Salmonella, the criterion remains a reasonable predictor for gastroenteric illness and, possibly, infections from non-coliform agents. Evidence cited earlier, albeit limited, indicates an increased risk of gastro-intestinal illness when the fecal coliform criterion is exceeded." [MPCA Ex. 80, p. 9 and 109]

This committee, after pointing numerous problems with the fecal coliform test, nonetheless concluded that the test is acceptable for protecting the public health until additional epidemiological data, improved laboratory procedures, and a better understanding of aquatic microbial ecology are attained. "It provides a useful interim criterion which is superior to the other suggested microbiological indicators, and its use certainly is better than abandoning microbiological criteria altogether." (Id. p. 15)

The best evidence in the record is a 1977 paper by V. J. Cabelli (MPCA Ex. 119). That paper shows that in two large scale tests (a 1973 pretest of 1300 individuals, and 1974 trial tests of 8,000 individuals), significant differences in gastrointestinal symptoms, such as vomiting, nausea, diarrhea, or stomachache, were found between one group of swimmers when compared with non-swimmers, but not with another group of swimmers and non-swimmers. The first group swam at Coney Island, the second group swam at Rockaway's Beach. Both were compared with a "control group" of non-swimmers. The fecal coliform count at Coney Island in 1973 was 165/100 ml. In 1974, it was 565/100 ml. At the other beach, Rockaway's, the count was only 21.5/100 ml. in 1973, and 28.4/100 ml. in

1974. These differences between the two beaches were computed to be significantly different at the 95% confidence level. In both 1973 and 1974, the swimmers at Coney Island had a significantly higher rate of gastro- intestinal symptoms than did non-swimmers. However, at Rockaway's Beach (the relatively unpolluted beach), for both years, the difference between swimmers and non-swimmers was not significantly higher at the 95% confidence level. While the real purpose of the Cabelli paper was to evaluate which of numerous indicator organisms ought to be selected as the organism of choice for water quality standards (fecal coliforms were not indicated as the best), nonetheless the data does confirm the generally accepted concept that health risks are increased when swimming in waters impacted by bacteria. However, the issue here is a more narrow one: Does the paper confirm that the Agency's numbers are reasonable? The answer is "no", because there was no significant correlation between density of fecal coliforms and illness. There was a significant correlation between density of certain other bacteria and illness, but they were not the ones selected the agency for use in its standard. Therefore, it cannot be said that the Cabelli article supports the Agency's proposal to lower the standards for certain Class 2 waters.

In summary, the Examiner can find no support for the Agency's proposed numbers aside from the fact that other states and regulatory bodies have used them. Quite frankly, the Examiner believes that this tradition grows out of the early Public Health Service studies which simply do not support the proposition for which they are cited. The Examiner must base his findings upon facts in the record; facts which the Agency failed to supply, or studies now in progress which have not yet been completed, cannot be considered. The Examiner finds that the Agency has failed to sustain its burden of demonstrating the need for and reasonableness of its proposed change for Class 2B and 2C from no more than 2,000/100 ml. to 400/100 ml. as the limit which not more than 10% of all samples may exceed.

71. Another change proposed by the Agency would provide that the seasonal disinfection discussed earlier would be required except where effluent is discharged 25 miles or less upstream of a water intake supplying a potable water system, in which case, disinfection shall be required year-round.

The Agency justified its exception with the argument that even though water will generally be treated before it is used for domestic consumption, it is desirable that the effluent discharged to waters which will be used as a potable water supply nonetheless be disinfected (Anderl, p. 6). This was buttressed by Geldreich who wrote that "The first line of defense in the protective barrier to pathogens entering . . . source waters for public water supplies lies in sewage treatment and effective control of effluent quality..." (p. 13) The question remains, however, as to why 25 miles was picked as the limit.

The Agency's Statement of Need and Reasonableness states that the 25-mile limit "is based upon a survey of the location of major dischargers upstream from municipal water intake sources in Minnesota and a survey of similar requirements in other states" (MPCA Ex. 8, p. 28). The testimony of Anderl makes the same two points, but elaborates on them by stating that the Minnesota Health Department provided the Agency staff with a list of all municipalities which used surface waters for their potable water supply, and the Agency

staff then determined the dischargers which could potentially impact such water supplies. From this data, it was determined that adequate protection would be afforded all such water supplies if dischargers located 25 miles or less upstream of the water supply intakes were required to disinfect their effluent year-round. The Health Department also provided a survey of other states and their requirements. This survey shows that Illinois requires year-round disinfection for dischargers within 20 stream miles. Indiana requires it for discharges within 40 miles of a water intake. Michigan is contemplating to moving from a year-round standard to a seasonal one, probably requiring year-round disinfection to continue within 20 miles from a water supply intake. Those are the only states mentioned with mileage limitations. The apparent genesis of the 25-mile limitation is the Minnesota Department of Health. They were described as "one of the driving forces" in establishing it (Peissig, Tr. XC-16). Exhibits in the record show that in December of 1979, Anderl sent a memo to an employee of the Health Department requesting that the Department prepare a statement on the need for a year-round disinfection requirement with the 25-mile limit (MPCA Ex. 117). Approximately a month later, the Director of the Environmental Health Division of the Department of Health submitted comments on the proposed rule (MPCA Ex. 14x), which stated that the 25-mile limit "is important", and is consistent with many other states which place similar requirements on discharges. However, in a ten-page report attached to the memo, the Department strongly criticized conventional chloride disinfection, and offered no support for the 25-mile limit other than the fact that other states require it.

Geldreich discussed the fact that there are a number of variables impacting the ability of receiving waters to purify waste effluents. He stated:

> Stream self-purification is a complex and ill-defined process that involves bacterial adsorption with sedimentation, predation, dilution, hydrologic tributary effects, water temperature and solar radiation [citations omitted]. The rate at which this natural process progresses to achieve water quality improvement is dependent upon time, generally referred to as flow time downstream, to achieve 99% reduction in the microbial population. Mitigating circumstances that may counterbalance the beneficial effects of this natural process include discharges of industrial wastes . . . food processing and papermill wastes. . . stormwater runoff characteristic . . . magnitude of pollutional loading from all discharges and their degree of treatment. While natural self-purification may be effective in a given watercourse during periods of warm temperatures and limited conditions of precipitation, results will be less impressive following wet seasonal periods and be particularly poor during the cooler seasons. For example, Salmonella were found 22 miles downstream from a municipal waste discharge on the Red River of the North in September, 62 miles downstream in November, and 73 miles downstream in January [citation omitted]. . . . Stream self-purification in this particular example would probably require a river segment of 100 to 125 miles in length during the wintertime, and 25 to 30 miles in the summer to achieve the desired 99% reduction in the microbial hazard. Recognizing the impact that lower water temperature and dischargers of organic wastes from food processing plants, distilleries, paper mills, and poor quality municipal waste effluents may have on microbial reduction, it would be desirable to make the decision regarding sewage efflunt disinfection on a case-by-case basis with reference to downstream users rather than enforcing an arbitrary, uniform zone for all water courses (MPCA Ex. 14dd, pp. 15-16).

In summary, the record indicates that there were discussions between the Agency and the Department of Health regarding the 25-mile limit. However,

neither the Department nor the Agency gave any reason for selecting such a limit other than the fact that some other states had limits (one had 40 miles and two had 20 miles). Is that adequate justification?

Whether or not an agency has demonstrated the need for and reasonableness of a rule must be viewed in light of the change from the status quo. If the status quo were that there was no limitation on fecal coliforms and the Agency was proposing a rule which provided for only seasonal chlorination with a 25-mile limit exception, the Examiner would find the justification for the 25-mile limit to be inadequate. However, this is not the case at issue. Under the existing rule, all dischargers are required to disinfect year-round. The Agency is proposing to lessen its rule so that only seasonal disinfection is required, with the exception of dischargers within 25 miles. For dischargers within the 25-mile limit, there will be no seasonal exception - they will have to disinfect year-round, just as they are doing today. Should the Agency be required to meet the same burden in this case as it would be required to meet if it were proposing disinfection for the first time? The Examiner does not believe so, because presumably, the reasons for disinfection (including protection of public drinking water) were found to be sufficient when the rule was first adopted. To require the Agency to rejustify disinfection (and all of the other rules which are not being proposed for revision, which is a very substantial number) is inefficient and inconsistent with the underlying philosophy of the Administrative Procedures Act. Therefore, the Examiner finds that the 25-mile limit has been shown to be both needed and reasonable.

72. The only objection to the 25-mile limit came from the Western Lake Superior Sanitary District, which raised a site-specific argument because of the particular currents and water flow characteristics in the St. Louis River and Lake Superior (Tr. XC-14-18). The District was not one of those identified in MPCA Ex. 117 as requiring year-round disinfection. The Agency stated that the District had been left off the list in the Exhibit by mistake, and that the Department of Health had concluded that the District's plant did have the potential to impact water intakes at Cloquet and Superior. The Agency subsequently requested the Department of Health to submit a letter to this effect (Staff Response, p. 37). No such letter was received. However, on the last day of the comment period, a telegram was received from the District indicating that the Agency and/or the Department of Health had contacted the Cloquet and the Wisconsin DNR for their comments, but that the City of Cloquet was not concerned about potential health effects on their water intake, and thus had determined not to submit any comments. As far as Wisconsin was concerned, the telegram stated, "The Wisconsin DNR's comments indicated more concern for political impacts than for possible health impacts." The District repeated its belief that disinfection would not present a threat to municipal water supplies because of dilution, distance from intakes and the fact that the municipalities involved did chlorinate their water prior to distribution to the public. The District urged that it be granted a variance from the Rule because of its special circumstances (Pub. Ex. 66). Although the Examiner did receive a letter from the Wisconsin DNR (Pub. Ex. 61), that letter referred only to the Mississippi and St. Croix Rivers and made no mention of Superior.

The Examiner believes that the response to the District's request for special treatment due to site-specific circumstances should be treated in the

same manner as similar requests discussed earlier - that is, that it should be brought up in the permitting process. It may well be that the current flows are such as to prevent any bacteria from reaching municipal water supplies (as the District suggests), or, on the other hand, it may be that the Department of Health's concern for Cloquet and Superior is warranted. The Examiner cannot find, on the basis of the evidence available to him, that any individual variance ought to be included within the Rule. The permitting and variance procedures allow adequate opportunity for due consideration of such questions.

73. The next issue to be considered in connection with the Agency's proposal is the fecal coliform standard established for Class 7 waters. That standard is 1,000/100 ml. with not more than 10% exceeding 2,000/100 ml. It is also seasonal.

[It should be noted that any change in the dates for seasonal disinfection pursuant to earlier findings would not apply to Class 7 waters because they are unlikely candidates for white water canoeing or other recreational use.]

The Agency justified this standard as follows:

> Class 7 waters would not be used for recreation or domestic consumption. Thus, a stringent fecal coliform standard is not required. However, the proposed standard of 1,000 organisms/100 milliliters is reasonable as it will protect for secondary body contact use and use of groundwater as a potable water supply. This will also protect wildlife and livestock which use such waters and will allow the water to be used for irrigation without causing a hazard to humans or animals. This standard is the same as that recommended by the National Academy of Sciences to protect for such uses. (MPCA Ex. 8, pp. 28-29)

Anderl stated that the effluent limit (not the standard) applicable to dischargers to Class 7 waters will be 200/100 ml. because of the rapid regrowth of fecal coliform organisms in low-flow or intermittent waters (Anderl, p. 10). This limitation is set forth in paragrah C.6. of 6 MCAR §§ 4.8014 and 8015 and is made applicable by virtue of § C.16 of those same rules (Peissig, p. 2, and MPCA Ex. 8, pp. 30-36).

The 1,000/100 and 2,000/100 levels for Class 7 waters were opposed by Clear Air-Clear Water, Unlimited, which argued that:

> While Class 7 waters are clearly not classified by regulations as recreational waters, this does not mean that they will not be used for recreation or not flow into or contaminate Class 2B and 2C waters. Children often play around these ditches and creeks that make up the Class 7 waters. The potential for human exposure to virulent pathogens through this type of "recreation" is present. In addition, it is possible that these waters could flush downstream faster than anticipated under adverse conditions and pose a threat to fishermen and swimmers downstream.
>
> . . . CACWU recommends that Class 7 waters have an upper limit, at all times, of 400 organisms/100 ml. [Pub. Ex. 60, pp. 17-18]

It is the understanding of the Examiner of the procedure used by the Agency to classify such waters that if there were any significant amount of "recreation" on a given waterway, the Agency did not recommend the water for Class 7 status. In addition, § C.16.c. of the same rules provides that if a Class 7 water flows into a higher class water, it shall not be allowed to violate the applicable water quality standards in that higher class water. In such cases, it would appear that § C.9. could be used to set a lower effluent limitation, if needed, to prevent such a situation.

The CACWU comment was the only one received with regard to the fecal coliform standard proposed for Class 7 waters. Based on the record as a whole (including material which will be discussed in connection with Class 7 waters below), the Examiner finds that the Agency's proposal has been demonstrated to be both needed and reasonable.

74. The final matters to be discussed were a number of minor changes proposed by the Agency with regard to sampling and testing for fecal coliforms. First of all, the "most probable number" measurement was changed to "organisms" to explicitly allow a simpler test for the fecal coliform parameter. The "most probable number" test required a fairly sophisticated multiple-tube fermentation technique. Not only is this a burden to many small municipalities, but it takes much longer to yield results. The proposed change will permit the use of the membrane filter technique, which is becoming the technique of choice (Anderl, p. 11; MPCA Ex. 120, pp. 251-252; Anderl, Tr. I-56, 90 and 94). There was no objection to this change, but the Examiner would point out that at some point, either in the Rule or in permits, it should be specified that the older system is still acceptable. Anderl testified that it was the intent of the Agency to allow both to be used (Tr. I-90), and that NPDES permits issued since 1974 have so stated (Tr. I-94). The Examiner does not believe that the Rule needs to explicitly state that both are acceptable so long as permits do.

The next change proposed by the Agency relates to changing "30 consecutive days" to "calendar month". The Agency stated that this was done to simplify and make consistent reporting by dischargers (Anderl, p. 11). It drew no criticism.

The final change is the method of calculating the number of organisms based on the number of samples, and it provides that the logarithmic mean, rather than the arithmetic mean, shall be used to calculate compliance with the standard (Anderl, p. 11). It drew no criticism.

The Examiner finds that in all of the situations discussed in this Finding, the proposed change by the Agency has been established to be both needed and reasonable.

75. The last matter to be discussed in connection with the proposed changes in the fecal standard is that of economics. Unlike other standards, where participants were in generally close agreement regarding the costs, there is substantial disagreement regarding the cost of the fecal standard. The reason for this disagreement is the question of whether to include combined sewer overflow (CSO) costs, and if so, what those costs would be.

Combined sewers are sewers which carry both sanitary and storm water through the same pipe to a treatment facility. They are usually found in older communities. Overlows occur during periods of heavy rains when the flows are too large for treatment plants to process. In such cases, the combined sewage is diverted directly into rivers, bypassing the treatment plants entirely. In addition, sewage may back up into basements, streets, and low-lying land. Treatment plant capacity, rather than sewer capacity, is generally the limiting factor (MWCC Ex. K, pp. 1-3). 21 Minnesota communities have combined, or partially combined, sewer systems. In the metro area, every year there is an average of between 10 and 30 overflows. These have caused problems for certain areas of the city of St. Paul, as well as impacting the Mississippi River

(Id. at 15 and 53). In Minneapolis, about 85% of sewers are now separated or at least partially separated, but no figure is given for St. Paul. The MWCC is presently engaged in studying the CSO problem and solutions to it. (Id., pp. 19-20).

When CSOs occur, a mixture of human wastes, disease-causing organisms, toxics, heavy metals, oil, grease, and other undesirable contaminants are introduced into receiving waters. (Id., p. 5) The initial "flush" from CSOs contains a huge number of fecal coliforms from surface materials, such as dog droppings (Anderl, Tr. I-91). Geldreich recommends that unless these overflows are controlled, bathing should be restricted following an intense rainfall (MPCA Ex. 14dd., p. 18).

The cost of implementing CSO controls were given for the MWCC only. The Examiner does not know what CSO costs are attributable to the other communities in Minnesota. However, even with the MWCC costs, there is disagreement. The Agency did not include any costs of CSO in its cost summaries (Wegwart, Tr. IV-98) because it did not believe that the change from the existing rule to the proposed rule would have any impact on the amount of CSO control which the MWCC must attain (Supp. Staff response, p. 36). MWCC, on the other hand, believes that in order to comply with the rule as originally proposed, the costs would be "astronomical" because it would require complete (100%) control of CSOs (Badalich, Tr. XV-12). Two different MWCC witnesses presented cost figures. The first estimated that in order to come close to meeting the rule (meet the 200/100 ml. but not meet the 400/100 ml. 90% of the time), costs would be $276,000,000. In order to comply with the existing standards, costs would be $258,700,000. The difference between those two figures is the cost attributable to the change in the proposed rule, which is $17,340,000 (Badalich, Tr. XV-10-12). Martenson, another witness for the MWCC, estimated the two figures to be $303,636,000 to meet the proposed rule, and $284,564,000 to meet the existing rule, the difference between the two being $19,072,000 (Martenson, p. 37). The difference between Badalich and Martenson is apparently the fact that Martenson updated the Badalich figures to April 1, 1980 dollars (Martenson, Tr. XV-71).

The Examiner finds that if the proposed standards are to be enforced strictly as written, even Martenson's updated costs are low. In order to meet the standards as originally proposed by the Agency, it would be necessary to totally eliminate the CSO discharges near the metro plant. Under such conditions, the 200/100 standard can be met, but even with total elimination, the 90% better than 400/100 rule cannot be met. The existing standard would be met with 95% CSO interception. Therefore, the Examiner believes that the difference between meeting the existing standard and the proposed standard is the difference between 95% CSO interception and greater than 100%. There is a cost connected with this, which is the difference between $303,636,000 (Martenson, p. 37), and somewhere in the neighborhood of $500,000,000 and $600,000,000 (Badalich, p. 12). The latter were the "astronomical" costs referenced above. However, the Examiner may be overstating this for reasons which he does not understand, and so therefore, it would appear appropriate to use the $19,000,000 figure proposed by Martenson and used in the MWCC brief (p. 30).

There are economic impacts other than CSO-related costs in connection with the Agency's proposed fecal standard. There are savings resulting from the

change from year-round to seasonal disinfection. Again, the Agency divided its discussion into three parts: (1) outstate municipalities; (2) MWCC; and (3) industries. In all three cases, the Agency did not anticipate that there would be any additional capital costs attributable to the proposed change. The Examiner had anticipated that the proposed reduction in the 90% level would have required some capital costs, but there is no evidence in the record to suggest that is, in fact, the case. Therefore, the Examiner will accept the Agency's conclusion that there are no capital costs.

For outstate municipalities, there will be an annual savings of $1,438,900 attributable to the fact that 200 outstate municipalities will only have to disinfect waste waters on a seasonal basis, rather than year-round (Hensel, p. 21, as modified by pp. 42-43). Originally, Hensel had estimated an annual savings of $1,460,000 spread among 203 outstate dischargers, but it later developed that three of these dischargers would be impacted by the proposed 25-mile limitation and would be required to continue year-round disinfection. Thus, $21,100 must be subtracted from the earlier figure to arrive at the current estimate of $1,438,900 (Hensel, p. 42).

The Agency originally estimated a savings for the metro plant of MWCC of $338,000 per year (Wegwart, p. 5). However, Martenson estimated the savings to be only $214,000 (p. 31). The Agency accepted Martenson's reduced estimate (Supp. Staff Response, p. 30), and thus, the estimated savings for the metro plant attributable to the seasonal disinfection is $214,000. The same situation occurred with regard to other MWCC plants, with the Agency originally estimating $207,000 (Wegwart, p. 6), but Martenson suggesting that $48,000 was more appropriate (p. 31). The Agency accepted Martenson's figure, and so the savings for other MWCC plants is found to be $48,000. Combining those two revised estimates, one arrives at an annual savings to the MWCC attributable to the seasonal disinfection requirement of $262,000.

With regard to industries, the cost savings were not quantified because they were estimated to be minimal. Reed stated, "A slight savings will also result from the proposed six-month disinfection requirement (as opposed to year-round) for a couple of dischargers." (p. 13), but no dollar figure was given. No person challenged this assertion and thus, the Examiner adopts it.

76. In summary, the change in the fecal coliform standard, as originally proposed by the Agency, can be said to result in capital costs of <u>at least</u> $19,072,000 (all attributable to the MWCC CSO problem), plus additional CSOI costs attributable to other Minnesota municipalities which were not estimated in the record. But there is a net annual cost savings of $1,381,900. This last figure is computed by taking the total savings estimated above of $1,700,900 and subtracting from that figure $319,000 which is the annual estimated O&M cost attributable to CSO control.

It should be noted that the Examiner's finding increasing the length of time for seasonal disinfection from six months to eight months will reduce the cost savings from $1,381,900 to $1,146,000. Also, if the Examinr's findings on the 90% limitation are adopted, that will reduce the costs of CSO control to the MWCC.

77. In summary, the Examiner finds:

a. That the Agency failed to demonstrate the reasonableness of its May 1 date. The record does support a starting date for seasonal disinfection of March 1, and if the date is

changed, the seasonal disinfection portion of the rule has been shown to be both needed and reasonable.

b. That the Agency failed to demonstrate either the need for or reasonableness of its proposal to reduce the 90% figure from 2,000 organisms per 100 ml. to 400 organisms per 100 ml. for Class 2B and 2C waters. Therefore, the 90% limit for those two classes should remain at 2,000 organisms per 100 ml.

c. That the Agency's proposed 25-mile limit may remain in the rule as proposed.

d. That the Agency's proposed standard for Class 7 waters has been demonstrated to be both needed and reasonable.

e. The costs of compliance with the rule as originally proposed by the Agency are significant but nowhere nearly as substantial as ammonia and DO. In addition, there are net cost savings resulting from the seasonal disinfection requirement.

IV.

Limited Resource Value Waters: Classification

78. The Agency has proposed a completely new class of waters (Class 7) to be known as limited resource value waters (LRVWs). They are waters which the Agency has determined are likely to never to be able to meet the Federal goal of fishable and swimmable, either because of natural conditions or irreversible man-induced conditions. There was little controversy over whether there should be such a classification, but there was controversy (and in a few cases, substantial controversy) over whether or not a specific waterway ought to be included within this class or not.

The requirements for inclusion of waterways in this classification are set forth in 6 MCAR §§ 4.8014 B.7. and 4.8015 B.7. They are as follows:

(a) The flow is intermittent or less than one cubic foot per second (cfs) at the once in ten-year, seven-day low flow (7Q10); and

(b) There are limited recreational opportunities (such as swimming, fishing, wading or boating) in and on the water; and

(c) Either of the following is true:

(i) The existing fishery and potential fishery are severely limited by natural conditions as exhibited by poor water quality characteristics, lack of habitat or lack of water; or

(ii) The quality of the resource has been significantly altered by human activity and the effect is essentially irreversible.

79. The restricted quantity of water is an obvious criterion. Certain bodies of water that have little or no flow at certain times of the year are the ones which could be of limited value for fishing and swimming. Intermittent flow and flows of less than one cfs at the 7Q10 are the criteria used to define the quantity of water. The use of these criteria allows for a case-by-case analysis while the one cfs cut-off limit at the 7Q10 provides a definitive standard which allows for an automatic fisheries and recreation use classification (Class 2) for those waters which equal or exceed the limit. One cfs was chosen because those waters with a higher 7Q10 flow do have a potential for fisheries or recreational uses (Blaha, p. 5; MPCA Ex. 14o).

However, while the quantity of water may often be decisive, in that small quantities of water may preclude swimming and fishing, it is also important to make a determination whether the uses of the water actually are limited. Therefore, the second part of the test is whether the water does indeed have a limited value. In this regard, § B.7.c. of the rules cited above provides that, in order to be classified as a LRVW, the water must have limited recreational opportunities. The factors which go into this decision - like flow and habitat and human activity - are objective considerations which can be evaluated and measured. These criteria are not really a separate test for limited recreational opportunities but instead are the factors which lead to the conclusion that these opportunities are limited (Id.).

These criteria are consistent with U.S. EPA regulations in regard to downgrading existing water use classifications, which are set forth in 44 Fed. Reg. 30040 (1979) (to be codified at 40 C.F.R. § 35.1550(c)).

80. The Agency initially made on-site investigations of 364 waters and of those 364, it found 187 which it recommended for Class 7 status consistent with the requirements quoted above. As a result of the hearing process, 11 additional assessments were conducted, resulting in six other waters being designated (Blaha, pp. 9-18, and Staff Response, pp. 37-40).

81. The whole concept of LRVWs was attacked in a letter from CACWU labelled Public Ex. 60. The letter makes the following points:

(a) Fishing and swimming are not the only uses by which waters should be judged. Waters offer habitat to a wide variety of aquatic life, including amphibians and insects, which ought to be protected;

(b) Waters enhance wildlife variability by supplying drinking water and food to many animals;

(c) Domestic animals, such as livestock and farm pets, utilize waters for drinking and cleaning;

(d) Flow rates can vary over time, and thus, the one cfs limit may be exceeded depending upon the time of year and the dynamics of succession of intermittent ponds;

(e) Use of these waters should be evaluated in view of normal flow and high flow, not just low flow conditions;

(f) Toxic substances such as ammonia and chlorine might threaten the habitat of those species which do survive in these waters.

The Minnesota division of the Izaac Walton League submitted a letter (Pub. Ex. 38) and provided oral testimony (Tr. XB-15) suggesting that the Agency carefully monitor this classification so that it is not used as a method to circumvent appropriate standards. They recommended that before any water is added to this classification, there should be an on-site inspection as well as contact with local sports clubs and other interested groups. They also recommended a "sunset provision" whereby the Agency would have to justify that the classification has been effectively used before it could be continued.

82. As noted earlier, the Agency's requirements for classification are based upon EPA rules, and the concept of LRVWs has been supported by the EPA (MacMullen, Pub. Ex. 11, p. 8). The Agency estimates that downgrading LRVWs will save municipalities more than $18,560,000 in capital costs, and $1,306,000 per year O&M (PCA Ex. 8, pp. 46-47). These figures do not reflect the additional waters proposed for classification as Class 7 as a result of public input at the hearing.

83. Several commentators expressed concern about how additional waters could be added to the list of LRVWs (Pub. Ex. 55, 68, MacMullen, Pub. Ex. 11, p. 8). Since the list is part of a rule, a rulemaking proceeding will be required to amend the list. The Examiner suggests that such a proceeding might be appropriate for the "notice and comment" procedures outlined in Laws of Minnesota, 1980, Chapter 615, § 7 (to be codified as Minn. Stat. § 15.0412, subd. 4g), which is a much simpler procedure than the normal public hearing process.

Finally, the Department of Natural Resources (hereinafter "DNR") requested that it be given input into determining whether waters would be classified as LRVWs in the future. In addition, DNR requested that the rules be amended to alert readers that designation as an LRVW does not relieve persons from compliance with Minn. Stat. Ch. 105 (1978) regarding permits for dredging or filling. These proposals are dicussed at the end of this Report.

84. The Examiner finds that the proposed classification of waters as LRVWs is needed to reflect the fact that there are numerous waterways in the state which cannot meet the "fishable and swimmable" goal. Continuing to designate those waters as being capable of meeting such a goal is not only unrealistic, but it is wasteful of monies which could be better spent where attainment is possible.

The Examiner also finds that the requirements proposed by the Agency for selection of such waters have been demonstrated to be both needed and reasonable.

Both of the amendments proposed by DNR dealing with LRVWs have been adopted by the Agency in its final submission (Supp. Staff Response, p. 53), although the wording of one was slightly modified, neither of which constitutes a substantial change. The Examiner believes that the rules are improved by the amendments, but that the Agency's original proposals were reasonable without them.

Limited Resource Value Waters: Standards

85. In recognition of the limited value of Class 7 waters, the Agency has proposed to relax or delete many of the standards applicable to "higher class" waters. However, a number of standards and limits do apply to Class 7 waters.

The Agency's goals in establishing quality rules for LRVWs were stated to be the following:

(a) Protect the waters for secondary body contact use;
(b) Protect the waters so as to preserve groundwater for drinking;
(c) Maintain aesthetic qualities of these waters;
(d) Protect downstream waters from degradation by LRVWs. (PCA Ex. 8, p. 33)

86. A fecal coliform standard has been proposed at 1,000 organisms per 100 ml., with not more than 10% of samples in any calendar month exceeding 2,000 per 100 ml. Disinfection would be required only on a seasonal basis, between May 1 and October 31. The Agency argues that this standard is needed to (a) protect persons who encounter secondary body contact; (b) protect groundwater; and (c) allow for irrigation use without endangering crops, and without endangering persons and animals who consume the crops.

The Agency stated that the 1,000/100 ml. standard was reasonable to meet those goals because it is the standard recommended by the National Academy of

Sci[illegible]es for such uses in the Blue Book (MPCA Ex. 28). The Blue Book does, at pp. 351 and 353, recommend a 1,000/100 ml. standard for irrigation, but no similar standard could be found for the other uses noted. The Red Book (MPCA Ex. 37) focusses only on bathing waters and waters used for shellfish.

The other document cited by the Agency in support of this standard is MPCA Ex. 120. However, that document does not contain any recommended standard.

CACWU argued that the proposed standard was too lenient, and it ought to be made stricter, recommending 400 organisms per 100/ml. (Pub. Ex. 60, pp. 17-18). CACWU argued that the Agency's standard could contribute to epidemics in domestic livestock (p. 20). However, CACWU failed to cite any authority for this proposition. The Blue Book confirms that many animal diseases can be transmitted by bacteria-laden waters but declines to recommend a standard to prevent such problems (MPCA Ex. 28, pp. 321-322).

There is no question but that some standard for fecal coliforms is needed for LRVWs. There is a question, however, as to whether the Agency has documented the reasonableness of its proposed standard. The Examiner finds that the only support offered, that of the Blue Book's recommendation for irrigation, is only barely adequate. Perhaps the fact that no person or group came forward to argue that it was too strict should be accorded some weight, but the Examiner does not do so. Rather, he relies upon the much more thorough presentation regarding fecal coliforms contained in the Agency's justification for Class 2B and 2C waters which has been discussed earlier. Based upon that data, the Examiner finds that the Agency's proposed standard for fecal coliforms in Class 7 waters has been demonstrated to be both needed and reasonable.

87. A pH standard of 6.0 to 9.0 has been proposed for LRVWs by the Agency. The Agency states that this range is "believed to be protective of the intended uses . . ." (MPCA Ex. 8, p. 34). The need and reasonableness for such a rule is set forth in the testimony of Gerald Blaha, at pp. 6-7. There was no testimony or other evidence in opposition to the Agency's proposal. It is found to be both needed and reasonable.

88. The dissolved oxygen standard for LRVWs is proposed to be 1 milligram per liter (1 mg/l) at all times (instantaneous minimum) unless lower concentrations can be shown to avoid odors or putrid conditions on a site-specific basis.

The Agency urged that the rule was needed to avoid anaerobic decomposition of organic compounds which occurs when there is no DO in waters. A common example is the "rotten egg smell" which is produced by hydrogen sulphide resulting from anaerobic decomposition (Blaha, p. 8). It was established through questioning that the sole purpose of this limitation was to prevent noxious odors (Peissig, Tr. II-58, 59). The Statement of Need and Reasonableness states that 1 mg/l will avoid noxious odors during the decomposition process (MPCA Ex. 8, p. 34).

The "instantaneous minimum" requirement is based on the assertion that even brief excursions below 1 mg/l will result in anaerobic conditions (MPCA Staff Proposed Findings, p. 41, citing Blaha, pp. 7-8, and PCA Ex. 37). This was disputed, however, by Robert Roskopf who wrote, in Pub. Ex. 28:

> ". . . The standard should be a daily average, rather than an instantaneous minimum concentration, since the onset of anaerobic conditions is measured in hours rather than 'instants'. . ."

Roskopf also suggested that the Agency had not demonstrated the basis for its selection of 1 mg/l as the standard. At the hearing, Lanny Peissig of the Agency was questioned as to the reasoning behind the selection of 1 mg/l, and he stated, "We do have field sampling people that can testify on that, that when they have located very low levels of DO, that there is a distinct odor" (Tr. II-58).

The Examiner finds that the Agency has demonstrated the need for and reasonableness of a dissolved oxygen standard to prevent odors. The Examiner also finds that the Agency has demonstrated the reasonableness of 1 mg/l as a threshhold limit. However, the Examiner cannot find any justification for the limit to be measured as an instantaneous minimum. The references given by the Agency in its proposed findings do not support any such conclusion. While the Examiner is not aware of any support for Roskopf's assertion, the burden is upon the Agency rather than upon Roskopf. Therefore, in order to permit a finding of both need and reasonableness, the reference to "instantaneous minimum" must be struck and replaced by a reference to a daily average standard. complied p.39

89. The other standards set for LRVWs is one dealing with "unspecified substances". It provides that:

> Unspecified substances shall not be allowed in such quantities or concentrations that will impair the specified uses.

The Agency states that this is aimed primarily at toxic and corrosive substances, and the theory that pollutants cannot be discharged to a LRVW which would jeopardize one of the possible uses of the water, including protection of groundwater (MPCA Ex. 8, p. 34). Blaha related it to another provision (contained in Paragraph C.6. of 6 MCAR §§ 4.8014 and 4.8015) which has been in force for at least seven years, which provides that the Agency shall require effluent limitations for all municipal sewage and biodegradable industrial or other wastes which do not include any unspecified toxic or corrosive substances at levels which are "acutely toxic to humans or other animals or plant life, or directly damaging to real property."

No person raised any challenge to this LRVW standard. However, a question arises as to whether it is so vague as to render it impossible for prudent persons to reasonably discern how to comply with it.

Guidance comes from a recent Minnesota Supreme Court case involving a totally different set of rules proposed by this same Agency. In that case, Can Manufacturers Institute, Inc. v. State, 289 N.W.2d 416 (Minn. 1979), the Agency adopted a set of rules relating to packaging and containers entering the Minnesota market. The rules were attacked on a number of grounds, one of which was that they were so vague and imprecise that it would be impossible for prudent persons to reasonably discern how to comply with the regulatory scheme. The Court, after reviewing the rules, concluded that they were not impermissibly vague because of the need for flexibility. The Court stated:

> In the future, knowledge and evaluation tools are likely to change. Different packages might present different kinds of problems, and it would be unwise to require that the same weight be attached to each factor [the rules specified a number of factors to be considered by the Agency in reviewing packages, but did not specify what weight must be given to each] each time a different type of package is reviewed. The criteria established and the decision-making provided in the package review process are broad, but the complexity and sophistication of the solid waste generation problem, coupled with the other environmental

objectives provided in Minn. Stat. c. 116F. mandate the flexibility contained in the statute and the regulations. It is unlikely that the regulations could be significantly more precise in this kind of regulatory scheme.

The Examiner believes that the same considerations apply in this case. There are thousands of substances which could be toxic, even to human, if the concentration were great enough. It would be impossible for the Agency to specify each and every such substance, setting a different standard for each use. In addition, the same kind of breadth is already contained in our statutes; Minn. Stat. § 101.42, subd. 17 (1978), provides as follows:

> Except as otherwise specifically permitted, it shall be unlawful to . . . discharge or allow to run or fall into any of the waters of the state any refuse, . . . poison, chemical, or any other substance in such quantities causing injury to or detrimental to the propagation of any wild animal found in or upon such waters, or causing the flesh of any such wild animal to become tainted or unpalatable. . . . This section shall not apply to chemicals used for pest control in the interest of the general welfare of the public.

The phrase "wild animal" used in that statute is defined (extremely broadly) in § 97.40, subd. 5, to mean "all living creatures, not human, wild by nature, endowed with sensation and power of voluntary motion, and includes quadripeds, mammals, birds, fish, amphibians, reptiles, crustaceans and mollusks".

The Examiner finds that the proposed standard is not unreasonably vague, and that it has been demonstrated to be both needed and reasonable.

Class 7 Waters: Effluent Limitations

90. Section C.16.a. of 6 MCAR §§ 4.8014 and 4.8015 provides that the Agency shall require treatment facilities discharging into LRVWs to conform to an effluent limitation of 15 mg/l BOD_5 (5-day biochemical oxygen demand) measured by an arithmetic mean of all samples taken during a calendar month. But that 15-mg/l limitation is subject to a number of caveats. Section C.16.b. provides that the Agency may allow treatment works to be constructed or operated so as to produce effluents containing up to 25 mg/l BOD_5 if it is demonstrated that the 1 mg/l DO standard will be maintained during all periods of discharge. On the other hand, § C.16.c. provides that notwithstanding the 15 mg/l effluent limit, the quality of a Class 7 water shall not be such as to permit a violation of the water quality standard for downstream waters. Thus, while C.16.a. provides a "presumptive" limitation of 15 mg/l BOD_5 for dischargers into LRVWs, that limitation may either be raised (up to 25 mg/l) or lowered (presumably there is no lower limit, although the lowest suggested in the record is 5 mg/l), depending upon the circumstances of a specific discharger and the waters affected by the discharge. Such a change (in either direction) would occur only after notice and an opportunity for a public hearing pursuant to the NPDES or SDS permitting procedures (Peissig, p. 7).

The Agency arrived at its 15 mg/l limit by doing computer models of three low-flow, intermittent streams: The south fork of the Crow River near Hutchinson, the Sauk River at Melrose, and Okabena Creek near Worthington. These three waters varied substantially in terms of their ability to assimilate BOD_5 loads while maintaining an acceptable DO concentration. They were thus felt to be typical of the many intermittent waterways which were proposed for classification as LRVWs. When the effluent was at 15 mg/l BOD_5, the model predicted the following minimum dissolved oxygen concentrations (two temperatures were used for testing):

Waterway	Temperature	Predicted DO
Crow River	75 F.deg.	.45 mg/l
" "	65 " "	1.85 "
Sauk River	75 " "	.64 "
" "	65 " "	1.78 "
Okabena Creek	75 " "	.72 "
" "	65 " "	2.28 "

Based upon this data, and given the fact that the Agency was desirous of achieving 1 mg/l dissolved oxygen concentrations, the Agency believed that 15 mg/l BOD_5 was an appropriate effluent limitation for dischargers to LRVWs, unless site-specific circumstances justified either a higher or lower limitation (Peissig, pp. 1-7).

This proposed effluent limitation drew a large number of comments from affected municipalities, most of which were exactly the same, word for word. These comments all argued in favor of the concept of LRVWs, but in opposition to the 15 mg/l limitation unless it were to apply only to continuous dischargers. For non-continuous dischargers ("controlled dischargers"), the municipalities believed a 25 mg/l BOD_5 limitation was more appropriate. In its Staff Response, at p. 40, the Agency indicated that under the existing regulatory scheme, many municipalities were permitted to discharge effluents of up to 25 mg/l BOD_5 if they used stabilization ponds to hold their effluent and only discharged it during the spring flush or other high flow periods which offered adequate dilution to ensure that applicable in-stream standards were not violated. This scheme is described in §§ C.6. and C.8., particularly the footnote to C.8. The Staff Response indicated that the new rules (§ C.16.b.) provided for the same kind of flexibility for such dischargers (Peissig, Tr. II-59).

EPA indicated that while it had some reservations about the 15 mg/l BOD_5 limit for Class 7 waterways, it generally supported the concept of setting an effluent limitation which would achieve a 1 mg/l DO concentration in LRVWs. However, its comment (Pub. Ex. 68) raised an issue which will be discussed more fully below - that of federal funding for greater than secondary treatment facilities. The comment stated that the 15 mg/l BOD_5 limit was supported with the understanding that either a controlled discharge lagoon or a well-operated secondary treatment facility is the appropriate technology required to meet this effluent limit. The comment stated that the EPA would not support a state-wide effluent limitation which would require more advanced treatment without additional justification.

The Examiner finds that the proposed effluent limitation of 15 mg/l BOD_5, when coupled with the flexibility offered by §§ C.16.b. and C.16.c., is both needed and reasonable.

91. Other effluent limitations to LRVWs will be based on § C.6., which is the basic "secondary treatment" provision.

Two issues of concern were raised at the hearings regarding the application of this section to LRVWs. The first came from the City of Minnesota Lake. The city did support the classification of its receiving water as an LRVW if such classification would relieve the city from compliance with the 1 mg/l phosphorus effluent limitation contained in § C.6. (Pub. Ex. 46). As the Examiner understands the scheme proposed by the Agency, the fact that the receiv-

ing water is designated as a Class 7 water will have no impact upon the phosphorus standard already in force; that standard applied before the reclassification, and it will apply afterwards as well (Peissig, p. 2). While the position of the city can be understood by the fact that § C.16.a. suggests that the only effluent limitation applicable to dischargers to LRVWs is the 15 mg/l BOD_5 limit, it is clear from the testimony of Peissig and the Agency's Statement of Need (MPCA Ex. 8, pp. 35-36), that it is the Agency's intent that all other limits of § C.6. would continue to apply to LRVW dischargers. While the Examiner does not require that such a statement be inserted in the rules, he suggests that it might improve the overall understanding of rule users if there were an explicit statement clearly pointing out that the limitations of § C.6. would continue to apply to Class 7 waters.

The other comment raised in connection with this general area was that certain of the water quality standards applicable to "higher class" waters (such as Class 1 and Class 2 waters) will not apply to Class 7 waters. For example, Blaha states that ammonia and chlorine limitations will not be imposed on LRVW dischargers (Blaha, p. 8). A similar statement is made at pp. 35-36 of MPCA Ex. 8. Again, the Examiner believes that the rules would be improved if this were made explicitly clear. However, the Examiner cannot find the rule to be unreasonable without the change. Thus, while he suggests that the Agency make it more explicit, he is not requiring it.

92. Another suggested improvement relates to the fact that § C.16.c. provides that the quality of Class 7 waters should not be such as to allow a violation of standards applicable to downstream receiving waters. Freeway Sanitary Landfill discharges into a ditch proposed to be classified as a Class 7 water (see Staff Response, p. 40). The ditch flows into the Minnesota River. Freeway submitted a comment (Pub. Ex. 69) indicating a concern that an overly strict reading of § C.16.c. might result in its having to meet the same standards as would have to be met by a discharger who discharged directly into the river. To avoid such a consequence, Freeway suggested that the proposed rule be amended to add a sentence, at the end of § C.16.c., to read as follows:

> A reasonable mixing zone shall be allowed in determining compliance with this requirement.

The Examiner believes that § C.5. adequately responds to this concern. That section, which is not proposed for revision or repeal in this proceeding, provides that the Agency shall establish mixing zones based on certain criteria contained in the Rule. The Examiner believes this section will apply to LRVWs as well as it applies to any other class of waters. Therefore, he finds no need to recommend the adoption of Freeway's proposed language.

93. In summary, the Examiner finds that the Agency has demonstrated the need for and reasonableness of the concept of Class 7 waters. He further finds that the Agency has demonstrated the need for and reasonableness of its proposed standards for such waters, with the exception of the DO standard, wherein the Agency failed to demonstrate either the need for or reasonableness of the "instantaneous minimum" measurement. If that were to be deleted in favor of a "daily average" measurement, the Examiner finds it to be both needed and reasonable. In addition, the Examiner would find the effluent standards proposed for Class 7 waters to have been shown to be both needed and reasonable. While there are two minor additions suggested to improve the ability of

readers to comprehend the rules, they are not required in order to find the rules to be both needed and reasonable.

Specific Stream Segments Proposed for Class 7 Designation

94. The Agency originally listed 187 waters for designation as Class 7 waters. A number of stream segments not originally included in the list were suggested for inclusion by others during the public hearing process. For those which the Agency decided to include, and no opposition to their inclusion was expressed, the Examiner adopts the reasoning put forth by the Agency for each such segment in its Staff Response and Supplemental Staff Response, and those segments will not be discussed further. However, where a segment was proposed for designation during the hearings but the Agency declined to include it in the list, or where there was opposition to its inclusion, they will be discussed below. In addition, discussion will be presented on opposition to segments or waters originally proposed by the Agency, except where the Agency has modified the designation in response to the comment.

95. Okabena Creek, near Worthington, generated a great deal of controversy because of its alleged impacts upon Heron Lake and the West Fork of the Des Moines River.

Okabena Creek Watershed is about 140 square miles. The creek begins at Okabena Lake in the City of Worthington, and runs in a northeasterly direction for approximately 30 miles, ending in South Heron Lake. The city of Worthington is in Nobles County, while South Heron Lake is in Jackson County. The major point sources of BOD_5 loadings to the creek are (1) the Worthington waste water treatment plant, and (2) Armour & Company meat packing plant lagoons. With regard to the first component, the Worthington plant, a waste load allocation study was done in 1973 (MPCA Ex. 97), and it disclosed that Campbell Soup Company, which operates a poultry canning operation in Worthington, contributed about 50% of the average daily flow to the plant, and about 64% of the BOD_5 loading to the plant (MPCA Ex. 97, p. 54).

Okabena Creek was first modelled by the Agency using a "simplified" dissolved oxygen water quality model (Winslow, Tr. II-42-43, and PCA Ex. 97). In preparation for this hearing, another modelling was done, based on the same field data used in the first one, but the second model was a "more sophisticated" model known as RMA-12.

The design-condition low flow (7Q10) of Okabena Creek is .02 cfs. but is projected to be 3.3 cfs by the year 2000. The data used in both models was collected in the summer of 1973, when the flow rate directly downstream of the plant was between 2.2 and 5.7 cfs, and the flow rate above the plant ranged from .03 to 2.7 cfs. The Agency estimates that the modelling is verified down to a flow of 2 cfs below the plant (Winslow, p. 7, and Tr. II-42-46; Peissig, p. 3-5).

Based on the data computed by the second model, the Agency concluded that in order to maintain a DO concentration of 5 mg/l below the Worthington plant (5 mg/l being the proposed standard for Class 2B and 2C waters), the effluent from the plant would have to be limited to 5 mg/l BOD_5 (Winslow, p. 8). If the effluent were allowed to rise to 15 BOD_5, the dissolved oxygen concentration below the plant would range from between .72 mg/l (75 F.), and 2.28 (65 F.).

The Agency recommended that Okabena Creek be classified as a LRVW for a portion of its distance (see 4 State Register 1358). In addition to this classification, it would also be classified as Class 3C, 4A, 4B, 5 and 6. But the vital distinction for the purposes of determining what standards the City of Worthington would have to meet is between Class 2 and Class 7, and thus, the Agency's "downgrading" of a portion of the waterway from Class 2 to Class 7 is the important action and the one which provoked the controversy.

Objection to Class 7 status for Okabena Creek came from the Jackson County Conservation League, the Jackson County Park Board and Planning Commission, the Jackson County Board of Commissioners, certain residents of Alba Township along the creek, a resident of the city of Okabena who was also a Soil Conservation District Supervisor, the Board of Supervisors of West Heron Lake Township, Okabena City Councilmen, the Okabena Development Club, the area fisheries manager from the Windom area DNR fisheries headquarters, a DNR conservation officer, the Board of Supervisors for Heron Lake Township, the Des Moines River Association of Southwest Minnesota, the DNR park manager at Kilen Woods State Park, the Jackson County Environmental Officer, the Heron Lake Improvement Group, the Southwest Regional Development Commission, and the Jackson Soil and Water Conservation District (Pub. Ex. 12-25; plus Pub. Ex. 1, 44 and 59; Tr. VI-17, XIV-56, and XIV-66).

Essentially, their arguments can be boiled down to the following:

(a) Okabena Creek is the largest polluter of Heron Lake, which, in turn, is the main contributor to the West Fork of the Des Moines River.

(b) The State has appropriated $75,000 and a local watershed board $25,000 for a comprehensive study of the restoration potential of South Heron Lake. If the study demonstrates that restoration is possible, several million dollars could be spent on the restoration work itself. Already, $180,000 of LCMR funds are planned for engineering studies preliminary to construction.

(c) Heron Lake is the largest lake in Jackson County and historically has been one of the best duck and goose lakes in southwestern Minnesota. In addition, there are two county parks on Heron Lake. The lake also provides a prime spawning ground for northern pike, which are trapped by the DNR and taken to other lakes.

(d) Okabena Creek is used for agricultural purposes. 11 farms in the stretch proposed for Class 7 designation use the creek for agricultural watering, and eight more farms in the stretch designated as Class 2C use it for agricultural watering as well.

(e) "Each spring" northern pike swim up Okabena Creek from Heron Lake to spawn. Fish have been taken, or seen, from a point about three miles north of the Jackson-Nobles County Line to about one-half the way to South Heron Lake (see Pub. Ex. 15). Based upon the fact that they come from Heron Lake, that would indicate that they are present all of the way from Heron Lake to three miles north of the county line. Whether fish go beyond that point, and cross the county line, is unknown.

96. The City of Worthington and the Worthington Chamber of Commerce testified in support of the Agency's proposed reclassification (Tr. VI-41 et seq. and Pub. Ex. 64). Essentially, they argued that:

(a) The most important point to understand is the low flow in the creek. Without the water from the city treatment plant and lagoons, there would be no creek to talk of, and the reports of fish either taken or seen must have been based on periods of unusually high flow.

(b) There is a fishery in Okabena Creek to the east of Brewster, but to the west of Brewster going toward Worthington "one would have to use imagination during most of the year to think that fish could be in the creek".

(c) Worthington plant employees have monitored the creek, generally on a weekly basis, since the spring of 1973. This monitoring has been restricted to the areas above and below the treatment plant and above and below the lagoons, plus points between the two. The monitoring did not encompass any part of Jackson County, nor did it include the creek to the east of the lagoon discharge point. This monitoring showed that the plant itself was generally contributing very minimal fecal coliforms to the creek, but that the fecal coliform count in the stream was usually very high (in the thousands, tens of thousands, and ocasionally in the hundreds of thousands of organisms). The dissolved oxygen in the plant's effluent was not routinely measured, but generally, the dissolved oxygen in the creek was at reasonable levels at all observation points.

The Agency's reasoning for classifying the western portion of Okabena Creek as a Class 7 waterway is based upon its modelling, which demonstrates that the creek meets the test of a Class 7 waterway and that, due to the assimilative capacity of the creek, South Heron Lake will be protected even if the distant portions of the creek are designated as Class 7 (Peissig, Tr. VI-26-27). However, the Agency in its final submission, did make a change in its recommendation which had the effect of reducing the length of the portion of the stream which would be classified as a Class 7 water. Based upon reports of residents in Alba Township, and follow-up telephone conversations with them, the Agency now proposes to reduce the downgraded portions of the creek so that from a point south of Brewster (near the junction with Elk Creek), eastward to South Heron Lake, Okabena Creek will be a Class 2 waterway.

The City of Worthington not only supported the original designation of a portion of the creek as a Class 7 waterway, but it also indicated a desire to avail itself of the § C.16.d. procedure which would enable its treatment plant to discharge up to 25 mg/l BOD_5, rather than the 15 mg/l limitation which would otherwise apply to it (Tr. VI-48). It based its argument upon the waste load allocation study which, it alleged, demonstrated the fact that even when the plant was discharging a monthly average effluent of 32 mg/l, the dissolved oxygen in the creek did not go below 1.1 mg/l (just above the 1 mg/l standards set for Class 7 waters). Thus, if 32 mg/l was not a problem, 25 mg/l should not be a problem for the creek (Tr. VI-48). However, in light of the DO estimates for Okabena Creek presented in the earlier table (.72 to 2.28 mg/l at 15 mg/l BOD_5, the Examiner questions these assertions.

An Agency representative pointed out that § C.16.c. requires that Class 7 waters not be allowed to cause violations of standards applicable to downstream waters, and thus, the ultimate effluent limitations to be imposed upon the city will have to be set at a level which does not result in violations of the Class 2 waters of South Heron Lake or those portions of the creek west of the lake which are also Class 2 (Tr. VI-26-27).

Economics is one of the reasons for the City's desire to have the creek designated as a Class 7 as well as its desire to have a 25 mg/l effluent limitation. The City Engineer stated that if the City were forced to maintain a 5 mg/l effluent limit, it would cost the City $13,100,000. If that limit were raised to 15 mg/l, the cost would be $11,500,000. If it were raised even further, to 25 mg/l, the cost would be $10,500,000 (Tr. VI-41).

As with other site-specific matters, the Examiner believes that the appropriate place to set the effluent limitation for the City's treatment plant is in the permit hearing process. This might even involve another waste-load allocation study or a variance request from the City (Peissig, Tr. VI-59). What must be decided at this point is the appropriate classification for Okabena Creek.

The Examiner finds that it has been demonstrated to be both needed and reasonable and consistent with the evidence herein to classify those portions of Okabena Creek below (south and west of) Section 31, Alba Township, as Class 7 waters. The remainder of the creek in Jackson County (Section 31 and points north and east) should be classified as Class 2. Persons should be warned, however, that such a classification does not automatically mean that the Worthington plant will be able to raise its discharges - it is certain, in fact, that the discharges will have to be lowered from their current levels. The only question is how much lower, and that question must be determined through the permitting process.

97. Judicial Ditch #6, south of Worthington, was also initially proposed by the Agency for Class 7 status. However, both the City of Worthington and the Southwest Regional Development Council opposed the redesignation because of the potential impact it might have upon the City's water supply.

The City Engineer explained that this ditch discharges waters into Lake Ocheda, which eventually runs into Lake Bella, which the City uses to recharge its well fields (see map attached to Pub. Ex. 2). The City's wells are only about 40 feet deep, and thus the City is concerned about possible contamination (Tr. VI-42). In addition, the ditch is used for fishing, both for bullheads and pike. There are seldom times that fish cannot be found in the ditch.

The Southwest Regional Development Commission stated that the proposed classification conflicted with its policy of protecting community water supplies, and agreed with the City's opposition to Class 7 designation for the ditch (Pub. Ex. 44).

Campbell's Soup has, in the past, discharged its cooling water into this ditch, but it is installing a recycling system and will soon be rerouting any such discharges into the City's system rather than into the ditch (Tr. VI-54). Although Campbell's feels that the Ditch may technically meet the qualifications for a Class 7 water, their Vice President for Engineering stated that in light of the City's concern, and in light of the fact that Campbell's did not anticipate much impact upon them one way or the other, Campbell's had no objection to maintaining the existing classification (Tr. VI-55-56).

Based upon the foregoing evidence, the Agency withdrew its proposed classification and now proposes that the Ditch remain a Class 2 water (Supp. Staff Response, p. 56).

The Examiner finds that the revised Agency position, leaving the Ditch as a Class 2 waterway, has been demonstrated to be both needed and reasonable.

98. Aldermatt's Creek, east of Comfrey, drew comments after the Agency initially decided that it ought to remain as a Class 2 waterway. A number of long-time residents of the area submitted comments to the effect that the creek almost always dries up in the summer, they have never seen fish or fishing there, and the only use for the creek is to drain fields in the spring and after a severe rain. They all advocated that it be designated as a Class 7

waterway (Pub. Ex. 48, 52 and 50, the latter having 11 statements attached to it). At the request of the City of Comfrey, the DNR regional fisheries supervisor for the New Ulm region submitted Pub. Ex. 53. It states that the creek has little, if any, fisheries resource, but that the DNR was concerned that the water quality in Aldermatt's Creek not be allowed to pollute the Little Cottonwood River, a downstream water.

Based upon these comments, the Agency resurveyed the creek in late April of 1980, and encountered the low flows mentioned by the public statements. The Agency has now revised its recommendation, concurring with the residents, and recommends that Class 7 would be the proper designation (Staff Response, p. 38-39, and Attachment #3).

Based upon the foregoing, the Examiner finds that the revised designation of Aldermatt's Creek has been shown to be both needed and reasonable.

That determination, however, raises a further issue. Can the Creek be added to the list of Class 7 waters without that addition constituting a "substantial change", which would be impermissible under the Administrative Procedures Act, Minn. Stat. § 15.052, subd. 4 (1978), and 9 MCAR § 2.211. The rule sets four criteria to be used in determining whether or not a rule includes a "substantial change". They are whether the proposed final rule, compared with the rule as originally proposed:

a. Affects classes of persons not represented at the previous hearing; or

b. Goes to a new subject matter of significant substantive effect; or

c. Make a major substantive change which was not raised by the original Notice of Hearing in such a way as to invite reaction at the hearing; or

d. Results in a rule fundamentally different from that contained in the Notice of Hearing.

The Examiner believes that the first criterion is the most important one for purposes of this (and other stream classifications) because it is important that those stream users who might want to object to the proposed downgrading not be denied the opportunity to present facts in opposition to the proposed downgrading.

In the particular case of Aldermatt's Creek, the Examiner finds that the record contains numerous statements from those who would be most severely impacted by the proposal. Therefore, he does not find this revised designation to be a substantial change.

99. Jewitt's Creek (a portion of which is also known as County Ditch No. 19), near Litchfield was originally proposed by the Agency to retain its Class 2 status.

At the hearing, representatives of the City of Litchfield challenged this classification, favoring a Class 7 designation because the creek is not used for fishing or wading and because the U.S. Fish and Wildlife Service had stated (Pub. Ex. 10) that it was not acquiring any lands for wildlife habitat along Jewitt's Creek. The Fish and Wildlife comment actually indicates that in light of its small acquisition program, the service was giving priority to acquisition of wetland basins (prairie potholes) rather than river or stream habitat.

The City asked that it be allowed to submit a survey which was being taken by DNR. That survey was later received, and marked as Attachment No. 33 to the Supplemental Staff Response. It was taken in mid-May of 1980, and indicates that there were both game and rough fish in the creek, both above and below Litchfield's plant (although none were found immediately below the plant's discharge). Based upon this survey, and the Agency's own inspection, the Agency has not revised its position. It continues to advocate Class 2 status for the creek (Supp. Staff Response, p. 57).

Based upon the foregoing, the Examiner finds that the Agency has demonstrated the need for and reasonableness of its classification of Jewitt's Creek as a Class 2 water.

100. Unnamed creek near Hayfield (sometimes known as Hayfield Creek) and the east fork of the Cedar River were originally classified as Class 2 waterways based upon an inspection conducted in July of 1979 by the Agency.

At the hearing, Larry Read of Zenk Engineering testified that he believed the unnamed creek and the "upper reaches" of the Cedar River should be classified as Class 7 waters because:

(a) Upstream of the City's treatment plant, the creek is often dry; many homeowners mow the "creekbed" with conventional lawnmowers. In other parts of the city, the bed has been improved and channelized.

(b) Both the City's storm sewer system and its treatment plant presently discharge into the creek. The City must improve its plant and is looking at one alternative involving stabilization ponds with only controlled discharges. If the City elected to use this alternative, the creek would be dry for extended periods during the summer.

(c) The upper reaches of the Cedar River have extremely low gradients, and correspondingly slow-moving waters. Such conditions usually suggest a poor-quality fishery.

(d) The low flows in both the creek and the river prevent fishing and recreation. [Pub. Ex. 6 and Read, Tr. XD-143-148]

The Agency responded by referring to its 1979 stream assessment (Attachment No. 5 to Staff Response) wherein Class 2 status for the creek was recommended because (1) there appear to be adequate flows downstream of the plant to support a limited fishery, and (2) children use the creek for wading. The assessment also recommended that the east fork of the Crow River continue as a Class 2 water because of fishing potential and continuous flows.

The assessment details that local children told Agency personnel that they used the creek for wading, as well as catching turtles, leeches and crayfish. With regard to the river, they indicated no knowledge of any swimming or recreational use, but believed that it contains fish (bullheads, panfish and pike). Workers at the golf course stated that there were rough fish (catfish) in the river, but no fishing or recreational use of the river.

Approximately 330 individuals signed a petition indicating that they were opposed to the imposition of ammonia and dechlorination standards on the creek. The petition also states that the creek "is not and will not be of any recreational or fishing value above its confluence with the Cedar River" (Pub. Ex. 7). When questioned about the fact that the petition included the creek, but not the river, the mayor of Hayfield stated that it was the feeling of city residents that the river is not used for recreational purposes, but he (and

another reprsentative of the city) did state that children do catch bullheads in the river (Tr. XD-155-156).

After the hearing, in April of 1980, the Agency staff reinspected the creek and the river. They observed two young children playing along the creek, and a local resident told them that children "may" fish at a wash-out pool and that they do play along the creek near a bridge. The reinspection of the river indicated that "it would appear to afford a fishing potential" and some limited body contact uses. The Agency Staff states that a DNR representative told them that the river does have a sucker fishery and probably some game fish in pools. Based upon this reinspection, the Agency continues to recommend Class 2 designation for both the creek and the river (Attachment #5 to Staff Response).

The City's primary concern appears to be one of cost. As the consulting engineer put it, "I guess . . . I question what expense you go to to provide wading facilities for children" (Tr. XD-152). However, no specific cost figures were given.

The ultimate issue to be determined is whether the evidence supports a finding that the Agency has demonstrated the need for and reasonableness of its continuing to classify both the creek and the river as Class 2 waterways. The Examiner finds that the Agency has made such a showing. There does appear to be a potential fishery, and while this is a close case, the clear wording of the standard set forth in § D.7. of the Rule does provide that in order to find the water to be a Class 7 water, it must be shown that the natural conditions are such as to severely limit the potential for a fishery. Such a showing has not been made in this case, and in fact, there has been a showing of a potential fishery. Therefore, the Examiner finds that continuation of the Class 2 status for both the creek and the river has been shown to be both needed and reasonable.

101. County Ditch #14 and Judicial Ditch #12, near Tyler, were originally proposed for Class 7 designation by the Agency.

The Southwest Regional Development Commission solicited comments from all townships along the proposed Class 7 waterways in its region, and reviewed all Class 7 designations for consistency with its Comprehensive Development Guide. In connection with this review, it recommended that the Agency reconsider its designation of Judicial Ditch No. 12, particularly that portion below station 4, because of the possibility of a continuous water flow below that station. Additionally, the Commission recommended consideration of any impacts which downgrading the ditch might have upon the Redwood River because the river has been designated as a trout stream in certain locations (Pub. Ex. 44, p. 4).

In response to these comments, the Agency reinvestigated the Ditch in mid-May of 1980. The reassessment disclosed that the stretch below station 4 was not suitable for fishing or swimming because of limited flow and lack of pools. The Agency personnel also spoke with the Mayor of Florence, who stated that he was unaware of any fishing or swimming in the stretch in question. Based upon this reinvestigation, the Agency continues to propose the entire stretch for Class 7 designation (Supp. Staff Response, p. 57).

The Examiner finds that the Agency has demonstrated the need for and reasonableness of its proposed classification. While it did not address the trout problem directly, on many occasions its representatives have noted that they will not permit Class 7 waters to violate standards in "higher class" down-

stream waters; indeed, one of the arguments often given for not classifying certain waters as Class 7 waters is the fact that such designation might impact downstream waters (for example, see Hayfield Creek discussion, Tr. XD-152).

102. Unnamed creek near Iona. The Agency originally classified this as a Class 7 waterway from the town of Iowa to its terminus in Lime Lake.

The Southwest Regional Development Commission stated that the creek is used by DNR to trap fish (northern pike) which are then transported to other lakes and streams for restocking purposes. The Commission recommended reevaluation of the entire creek, particularly the area downstream of this fish trap.

The Agency did reinspect the creek in mid-May of 1980. The reinspection revealed that a man-made dam, approximately 3.5 miles downstream of Iona, acts as a barrier to migrating fish. Between the dam and Lime Lake, the creek has been extensively channelized, and is so shallow that it could not support a full season fishery. Because of the low flows, and because of this channelization, the Agency concluded that the creek's fishery and recreational uses were severely limited, and therefore declined to accept the Commission's recommendation that it be upgraded from its proposed status (Supp. Staff Response, p. 56). No mention was made, however, of any additional contact with DNR to verify the statements about trapping of northern pike or to locate the site of such trapping.

A review of the original assessment for the creek indicates that there were two assessments made prior to the hearing. The first was in October of 1977, the second in October of 1978 (PCA Ex. 85). Neither mentions the DNR trapping, although DNR regional workers were contacted.

The Examiner finds, based upon both the original assessments and the later reassessment, that it has demonstrated both the need for and reasonableness of its Class 7 designation. Should DNR have objections to this classification, it may petition the Agency for reclassification to a higher class.

103. The Agency's attention is directed to the Commission's comment No. 15 relating to a possible typographical error (Bell Creek v. Pell Creek). The Examiner has no knowledge of the proper name for this waterway.

104. Unnamed ditch and Flandreau Creek near Lake Benton were originally proposed for Class 7 status. The Commission suggested that DNR was planning to build a dam to create an 80-acre lake. In addition, pike and bullheads have been known to be in the stream south of the Pipestone County line.

The Agency reinvestigated the waters in mid-May of 1980, and found that the portion of the creek proposed for designation as Class 7 (portions upstream from the junction of the main stem of Flandreau Creek and the east branch of Flandreau Creek) did not have sufficient flow or depth to support a fishery or recreational use. The Agency recommends that the Class 7 designation remain unchanged (Supp. Staff Response, p. 57). However, no mention was made of any contact with DNR to verify the status of the dam and lake suggested by the Commission.

The proposed "lake" would be in sections 1 and 2 of Altona Township in Pipestone County. That is one of the portions proposed for Class 7 designation by the Agency. However, the purpose of the proposed lake is unknown - is it for swimming, other recreation, or wildlife production? The original assessment indicates that DNR was contacted in October of 1979, but there is no mention of any potential lake.

The Examiner finds that the Agency has demonstrated that, under present conditions, there is a need for Class 7 designation and that such designation is reasonable. However, he strongly urges the Agency to reexamine this decision in light of the proposed DNR action, for it seems foolish to designate the waterway as a Class 7 water today, if the DNR plan would result in an amendment to a Class 2 designation soon in the future.

105. High Island Creek at Arlington was not proposed for Class 7 designation by the Agency, but a comment was received from the City of Arlington's consulting engineers (Pub. Ex. 31) arguing in favor of Class 7 designation for the creek. Subsequently, a second comment was received from a consulting engineer for a vegetable processor at Arlington (Pub. Ex. 57). This also urged Class 7 designation for the creek. These two comments, taken together, suggest the following:

(a) The creek experiences extreme low flows upstream of the city treatment plant's outfall

(b) The creek supports only a limited fishery.

(c) The creek provides minimal recreational opportunities; canoeing is rare, and limited to high-water periods. Duck hunting is infrequent, and also restricted to high-water periods. Snowmobilers use the creek in the wintertime.

(d) Many man-made ditches enter the creek both above and below the city; many people see the creek as not much more than a watershed runoff path.

(e) A proposal by farmers to excavate, widen, and realign a great length of the creek is presently "making its way through the approval process".

The Agency originally assessed the creek in August of 1977, concluding it ought to remain a Class 2 water, apparently because DNR personnel had indicated a limited fishery did exist. During warmer months, if water level is high, the lower reaches of the creek provide a feeding ground for migratory fish from the Minnesota River.

In late April of 1980, the Agency did a supplemental assessment of the creek (Attachment #2 to Staff Response). This investigation noted a dam near station No. 3 on the creek which restricts fish movement. This confirms the statement made by the canning company's engineer to the effect that the purpose of the dam was to prevent fish from moving upstream during the spawning season (Pub. Ex. 57, p. 1). The supplemental assessment also noted that information from a local resident indicated some fishing and swimming near the dam, and the probability of carp and bullhead fishing above it. The residents stated that the creek usually does flow, and that the only time he knew of "real low" flow was during drought years. There was no mention in the supplemental assessment of the alleged dredging and realignment project.

The Agency continues to recommend Class 2 status for the creek. The Examiner believes that, based upon the present information available, the Agency has demonstrated the need for and reasonableness of the Class 2 designation below the dam. However, the same cannot be found for the stretch above the dam. The Examiner believes that Class 7 is the appropriate designation for the stretch above the dam. The dam is the key to both fishery and recreational.

However, adoption of the Examiner's recommendation would appear to be an impermissible "substantial change" because of the paucity of input from affected persons (see discussion of Aldermatt's Creek for reasoning). The Examiner finds that any downgrading of High Island Creek is a substantial change.

106. The old Whetstone River channel at Ortonville was the subject of a comment (Pub. Ex. 57) which was received relatively late in the comment period. The Examiner does not have the benefit of the Agency's reaction to it, nor does he have the original assessment for the channel.

The comment states that many years ago, Whetstone River was diverted from its original course (where it discharged into the Minnesota River) so that it discharges into Big Stone Lake. After the diversion project, the old channel was abandoned and is used only for natural drainage. Portions of the channel have become overgrown with trees and brush. The channel is often dry for extended periods of time and provides no fishery or recreation potential.

Big Stone, Inc., processes corn, potatoes and fruit drinks, discharging its cooling water into the old channel at a rate of 380,000 gallons per day. The cooling water comes from ground wells; but the background levels of ammonia, BOD_5, and TSS (total suspended solids) in the water as it comes from the wells is alleged to be greater than the standards which would be applicable to the old Whetstone Channel were it to be classified as a Class 2 waterway. Apparently, these natural background levels have been taken into account in setting effluent limits for Big Stone, Inc., in the past. Nonetheless, Big Stone, Inc. requests that the channel be reclassified as a Class 7 waterway.

The Examiner finds that in light of the pattern which has developed in the foregoing Findings, a pattern demonstrating very substantial agreement with the Agency's decisions whether or not to leave a waterway at its present Class 2 level, that the Agency's determination is both needed and reasonable. This decision will thus preserve the status quo. Big Stone, Inc., however, should be aware of the petition procedure contained in Minn. Stat. § 15.0415, and of the recently-enacted provisions for non-controversial amendments to rules contained in Laws of Minnesota, 1980, Chapter 615, § 7. Such procedures may be appropriate for a case such as this. But for the moment, the Examiner will not reject the Agency's proposed classification.

107. Unnamed stream, tributary to another unnamed stream, which is tributary to the Little Cedar River near the city of Adams.

The Agency inspected this area in September of 1978 (Staff Response, Attachment #1). At that time, the Agency determined that the "unnamed stream" (the Examiner is unsure whether this refers to the first unnamed stream or the second one) "seems to have fairly high flow and fair amount of recreational value." Some summer fishing was reported in the stream, as well as wildlife use of the stream.

The City of Adams claimed (in Pub. Ex. 33) that all three tests of § B.7. were met by the unnamed stream, and thus, the stream ought to be classified as a Class 7 water. However, the City's submission did not contain many facts (except for flow) which would enable the Examiner to evaluate this claim.

Based upon what evidence is in the record, the Examiner finds that the Class 2 designation has been shown to be both needed and reasonable. Again, the City may want to pursue this matter at a later time.

108. Carter's Creek (or Curtis Creek) at Wykoff was the subject of a letter from the Mayor of Wykoff (Pub. Ex. 54). The letter was received relatively late in the comment period, and the Agency did not respond to it.

The creek was originally classified as a Class 7 waterway pursuant to an assessment in May of 1978 (PCA Ex. 85). The Mayor's letter requests "downgrading of the creek from a Class 7" water in order to allow 15 mg/l BOD_5 effluent limits for the City's plant. The Examiner believes there is some misunderstanding on the part of the City regarding the classification system. There is no classification lower than Class 7. The Examiner finds that the proposed classification is both needed and reasonble. It does appear, however, that the City may want to pursue the procedures set forth in § C.16.d. allowing for more relaxed effluent limits, but the appropriate manner to do this is through the permitting process.

All of the remaining comments about specific Class 7 waterways and the Agency's proposed were agreed to by the Agency. In those instances where the Agency agreed with a suggestion that a given stream be downgraded, the Examiner has reviewed the reassessments and finds the Agency's proposal to downgrade to have been demonstrated to be both needed and reasonable. However, again the "substantial change" issue arises. In the following cases, the Examiner finds the proposed downgrading to be a substantial change (see Aldermatt's Creek for reasoning):

a. County Ditch #22 (Green Giant at Montgomery)

b. County Ditch #63 (Olivia Canning at Olivia)

c. Unnamed Stream (Owatonna Canning at Dodge Center

d. Unnamed Stream (Freeway Sanitary Landfill).

Reclassification of Portions of the Minnesota and Mississippi Rivers

109. The Agency has proposed to upgrade certain segments of both the Mississippi and Minnesota Rivers from Class 2C to Class 2B. The discussion of these proposed upgradings will deal with considerations which are common to both first of all, and then deal with considerations which are specific to each.

110. The differences in uses between the two classes are in the areas of recreation and fisheries. Recreational use of a 2B water includes full body contact, such as swimming. Recreational use of a 2C water includes non-body contact, such as boating. A 2B fishery includes cool and warm water sport or commercial fish, while a 2C fishery includes rough fish and any other naturally-occurring species.

111. The differences in standards between the two classifications are minimal. There are only three differences between the standards applicable to Class 2B and 2C waters. They are:

(a) Temperature: The average daily temperature allowed in a 2B water is 86° F., whereas it is 90° F. in a 2C water.

(b) Phenols: The maximum concentration of phenols allowed in a Class 2B water is .01 mg/l, whereas they are limited to .1 mg/l in a 2C water.

(c) Oil: The maximum amount of oil permitted in a Class 2B water is .5 mg/l, whereas the maximum amount permitted in a Class 2C water is 10 mg/l (so long as certain other enumerated problems do not occur).

112. The proposal to reclassify segments of the Minnesota and Mississippi Rivers came from a committee known as the Metropolitan Area Advisory Committee (hereinafter "MAAC"). This Committee was established by the PCA in May of 1979 at the request of the Metropolitan Council and the Metropolitan Waste Control Commission (Metro Council Ex. C, and Pyle, p. 3). Its membership was made up of representatives from the followng Agencies (MPCA Ex. 87):

Metropolitan Council
Clear Air-Clear Water, Unlimited
MWCC
U.S.E.P.A.
MPCA
Minn. Assoc. Commerce & Industry
U. S. Army Corps of Engineers
U.S. Fish & Wildlife Service
Department of Health
DNR-Fisheries
Assoc. of Metro. Municipalities
Upper Mississippi River Basin Commission

The work plan of the Committee is set forth in detail in MPCA Ex. 88. Essentially, the Committee's mission was to develop recommendations for presentation to the MPCA regarding the classifications of the metropolitan portions of the Minnesota and Mississippi Rivers. The method which the Committee used to accomplish this mission was to (1) analyze existing conditions and uses for the two rivers, (2) analyze future conditions and uses for the two rivers and classifications necessary to meet those future conditions, and (3) draft final recommendations concerning the proposed classifications. The Committee dealt with use classifications (such as swimming, different types of fishing, navigation, etc.) and did not deal with water quality criteria or water quality standards (Pyle, Tr. V-11-12). The Committee's reports followed its mission closely. MPCA Ex. 89 is the report on existing conditions and uses. MPCA Ex. 90 is the report on future conditions and uses, as well as classifications necessary to meet those future conditions. MPCA Ex. 92 is the report of the Committee's final recommendations concerning use classifications.

That concludes the general comments with regard to the two classifications. The specific recommendations will be dealt with at this point.

113. The Minnesota River is presently classified as Class 2B from Mankato to Carver Rapids, and Class 2C from Carver Rapids to its mouth. The Agency proposes to designate the segment from Mankato to River Mile 22 as Class 2B and the segment from River Mile 22 to the mouth as Class 2C. In effect, the proposal simply moves the dividing line between Class 2B and Class 2C from Carver Rapids to River Mile 22, resulting in an "upgrading" of that stretch from Class 2C to Class 2B.

114. The recommendations of the MAAC Committee with regard to this upgrading give little hint of the rationale behind the change. They merely state that this segment "should be upgraded to include full body contact" (PCA Ex. 92, p. 2). However, the testimony of Maurice Dorton indicates the contrary; that this change was aimed primarily at the fishery:

> This changes the classification from 2C, a rough fishery, to 2B, a warm water fishery. Due to the velocities and reaeration in this segment, it appears that even with high natural and man-induced non-point loadings, the proposed standards are appropriate. [Dorton, p. 2]

Dorton also indicated that the Metro Council supports the change. Dorton expressed concern, however, that the standards proposed by the Agency do not reflect any real differences between Class 2B and 2C, and that there is no reason to have different classifications if the criteria are to be the same

(pp. 2-3). This concern reflects an explicit recommendation of MAAC which urged the Agency to have different numerical criteria for the two classes in order to reflect the actual use of the waters (Dorton, p. 9).

Aside from this concern, and a concern about economics which will also be discussed below, there was no opposition to the MAAC proposal expressed at the hearing. The Examiner finds it to be both needed and reasonable.

115. Far more attention was focussed upon the Mississippi River than upon the Minnesota River. Currently, the stretch from the outlet of the metro plant to Lock & Dam No. 2 (hereinafter "L&D #2") at Hastings is classified as 2C, while the stretch from L&D #2 to the Iowa border is classified as 2B. Under the proposed reclassification, the stretch from the metro plant outlet to river mile 830 (the Rock Island railroad bridge in Inver Grove Heights) would be classified as 2C, while the stretch from the bridge to the Iowa border would be 2B. Therefore, the proposal can be described as an upgrading of the segment between L&D #2 to River Mile 830 from Class 2C to Class 2B. About 15 miles of river are in this stretch, and the stretch was referred to as segment 8 (river mile 830 to Spring Lake), and segment 9 (Spring Lake to L&D #2). In order to fully understand the dispute between the participants in this hearing, it should also be noted that the portion from St. Anthony Falls to the metro plant was referred to as segment 7.

The MAAC recommendations for these stretches of the Mississippi River were as follows:

> (a) St. Anthony Falls to metro plant: full body contact and warm water cosmopolitan fishery.
>
> (b) Metro plant to L&D #2: Water supply use should not be designated for this area; these segments should be upgraded to include warm water cosmopolitan fisheries; the lower one-half of segment 7 [metro plant to river mile 830] should not be designated for full body contact; full body contact should be designated for segments 8 [beginning at river mile 830] and below.

Thus, the area proposed for reclassification by the Agency (segments 8 and 9, river mile 830 to L&D #2) was recommended for warm water cosmopolitan fisheries and for full body contact by MAAC.

There was, however, a minority position which believed that neither the upper one-half of segment 7 nor any part of segment 8 should be designated for full body contact. The difference between the majority position and the minority position for the upper part of the area proposed for reclassification (segment 8) was over whether or not it should be designated for full body contact.

The classification scheme used by MAAC does not fit neatly into the Agency's proposed classification system because the MAAC scheme had separate classes dealing with body contact and fisheries, while the Agency system lumps the two together in one class. While this difference did pose a problem for the Agency in the lower one-half of segment 7 (metro plant to river mile 830), it did not pose a problem in the areas recommended by the Agency for reclassification, segments 8 and 9. In segments 8 and 9, the Agency's 2B Class covers the majority position of MAAC; full body contact and warm water fisheries.

The rationale behind the MAAC recommendation for upgrading segments 8 and 9 is not given in the recommendation itself. Pyle, however, testified that the segment demarcations utilized by MAAC were based upon changes in the character of the river (such as changes from narrow channel to wide channel) and

utilized readily-identifiable landmarks, such as the bridge (Tr. V-58). Other factors used to define segments were land use and recreational use (Tr. V-60), particularly future uses (Tr. V-64). Pyle pointed to page 18 of MPCA Ex. 90, which was the Committee's Report on future conditions. In that Report, various segments are ranked according to their priority for various uses. Segment 8 is given a "middle" ranking for water-based recreation (swimming, fishing, boating), while segment 9 is given a "high" ranking. Segment 7 (High Bridge to river mile 830), in comparison, is given a "low" ranking. In earlier text (MPCA Ex. 90, pp. 6-7), the report states that the largest future use for segment 8 will be recreational land (52%), followed by residential (29%). In segment 9, the largest use will be vacant/agricultural lands (38%), followed by residential (24%), and recreational (22%). In contrast to those two, the largest future use of segment 7 will be industrial (49%), followed by recreational (34%).

A later textual summary (p. 36) compares the three segments as follows:

> Segment 7 is a "traffic" segment due to industrial development and commercial uses of the river. It will continue to be this way. . . . Segment 8 receives some boating, fishing and boater-swimming use currently. This can be expected to increase slightly when the regional park is developed at Grey Cloud. . . Segment 9 is used lightly for boating and fishing. Boating use is limited by the depth and condition of Spring Lake.

Witnesses from the DNR (Skrypek and Enbloom) testified that while the dividing line could have been placed at river mile 827 rather than river mile 830 (and that it could have been placed anywhere between the two), there is a difference in fish spawning habitat due to the difference in channelization which occurs around river mile 830 (Tr. III-122-123).

Direct body contact (swimming) is presently occurring in segment 8 (MPCA Ex. 90, p. 75), and is expected to increase. While there was great debate over the status of the fishery, there is no question but that some warm water sport and commercial fishing does exist (PCA Ex. 89, pp. 34-35), and can be improved (PCA Ex. 90 pp. 59-63) with continued upgrading of point and non-point source pollution prevention control. These are the standards set forth in the federal regulations [to be codified as 40 C.F.R. § 35.1550 (c)(2)] which mandate upgrading when existing standards specify uses which are less than those presently being achieved. Such is the case in these segments.

The Agency believes that attainment of the national goal of fishable/swimmable is possible in this segment, although it concedes that not all standards will be met by 1983 (Staff Response, p. 2; Supp. Staff Response, p. 8). The USEPA witness, MacMullen, specifically stated that the EPA knew of no reason why anything but the highest possible uses would be appropriate for the river (Tr. XIII-12-13). However, MacMullen admitted that he had not reviewed any data on ambient river conditions, and that EPA policy requires that economic costs, existing aquatic life and "a whole host of issues" should be taken into consideration (Tr. XIII-18). The State of Wisconsin commented that the river must meet the "fishable/swimmable" standards, and the classifications proposed by the Agency are "essential" to attainment of the standard. Wisconsin pointed out:

> Water quality standards for a boundary water must be consistent from one state to the next, and the rule changes will bring Minnesota standards into close conformance with the Wisconsin standards for the Mississippi River. [Pub. Ex. 61]

116. The proposed reclassification was attacked based upon reasoning that the intended uses (direct body contact and warm water fishery) are not attainable in this stretch of the river, no matter how much money is spent trying to do so. This is because of (a) non-point source and CSO pollution; (b) competing uses (such as barges and periodic dredging) which are incompatible with swimming and fishing; (c) irreversible man-made changes which impact on water quality (such as the existence of L&D #2), and (d) contamination by toxics (such as PCBs) which render fish inedible.

Opponents argued that the federal regulations applicable to the designation of segments (40 C.F.R. § 35.1550(c)(1)) require that in determining whether the fishable/swimmable goal can be attained, the state must consider environmental, technological, social, economic and institutional factors, and that the state statute (Minn. Stat. § 116.07, subd. 6) requires the Agency to give "due consideration to . . . economic factors" affecting the feasibility and practicality of any proposed action, and take such action as may be reasonable, feasible and practical under the circumstances. The opponents argued that economics, feasibility and practicality were ignored by the Agency.

The Agency's witness in support of the reclassification was Deborah Pyle. In her prefiled testimony, the following statement is made:

> "We do not anticipate any increased costs attributable to the proposed reclassifications." (Pyle, p. 7)

When questioned about the basis for that statement, Pyle stated that she did not write it, and that she did not know who did write it (Tr. V-41-43). Pyle was the only witness presented by the Agency with respect to the economics of these two reclassifications (Tr. V-48-49), and the sentence in her prefiled testimony is the only testimony offered by the Agency concerning the cost of the proposed reclassification (Tr. V-54).

The Agency's failure to provide any credible evidence on the economics of reclassification appears, on first blush, to fly directly in the face of the state statute, and, to a lesser degree, the federal regulations. However, such a judgment must be reserved until one looks at the realities of the differences in standards between the two classes. As noted above, the only three differences between the two classes are temperature, phenols, and oil. Although the record in this hearing is voluminous, there is no evidence whatsoever to suggest that those three standards are matters of economic concern to any person. While the MAAC committee did discuss economics as a barrier to achieving certain uses (Pyle, Tr. V-22-23), there was no discussion of the economics of oil or phenols in the committee (Pyle, Tr. V-67). Counsel for the Agency stated that the Agency did not specifically address the economics of the proposed classification (other than in the anonymous sentence) because the consensus of Agency personnel was that there are no costs attributable to the differences (Tr. V-43-44), and that Agency personnel did address economics only where the proposed rules would result in increased costs. While the lack of any significant difference in the standards between the two classes raises other questions (which will be discussed below), in the category of economic consideration, the Examiner finds that the Agency has demonstrated that it gave "due consideration to economics" in considering the proposed reclassification. The fact of the matter is that there is no economic impact.

117. In all of the categories of concern, such as ammonia, DO, TRC and fecals, the standards for Class 2B and 2C waters are the same. One of the recommendations from MAAC was that the Agency "should consider use classifications when assigning water quality criteria so that the criteria are related and appropriate for the use" (PCA Ex. 92, p. 6). When Pyle was asked why there was essentially no difference between the standards for the classes in the proposed rule, she stated that she did not know (Tr. V-18). However, as the Examiner has gone through the arguments over the proposed standards, he has not found any reason to have a different standard for Class 2B waters and Class 2C waters because one cannot define adequate differences in fish tolerances for the various standards. While this does call into question the reasoning for having two different classes at all, with respect to the standards which have been examined in this proceeding, there is none. It is conceivable (and a matter of concern expressed by counsel for MWCC) that in the future, additional standards could be adopted which would differentiate between the two classes. However, it is impossible to speculate on such future changes.

118. In summary, the Examiner finds that the Agency has justified its proposed reclassifications of both the Mississippi and Minnesota Rivers as being both needed and reasonable. While the Agency failed to present any evidence with regard to the economic impact of the proposed reclassifications, under the standards as they are proposed by the Agency (and as they are modified by this Report), there is no economic impact.

V.

The Agency proposed a number of minor changes to the rules. These changes will be discussed below, with greatest attention being directed to those which drew any comment; however, most of the proposed changes drew absolutely no comment whatsoever.

119. Under the existing rules, there are two standards for Total Suspended Solids. The first is an effluent limitation of 30 mg/l as an arithmetic mean during the period of 30 consecutive days, with 45 mg/l allowed for 7 consecutive days. That limitation is the minimum effluent limit applicable to all municipal sewage and biodegradable industrial or other wastes, and is part of the general "secondary treatment" effluent limitations set forth in paragraph C.6. of 6 MCAR §§ 4.8014 and 4.8015. The second effluent limitation is a stricter one of 5 mg/l TSS, which applies to low flow streams where dilution is inadequate to protect water quality standards. This limitation is contained in paragraph C.8. of the same rules.

What the Agency is proposing to do is to repeal the stricter 5 mg/l TSS limitation contained in paragraph C.8. The practical result of this repeal would be that <u>all</u> dischargers would be governed by paragraph C.6., where the 30 mg/l limitation would remain as is.

The Agency's arguments in favor of this repeal are as follows:

(a) There is no evidence that suspended solids concentrations as high as 25 mg/l harm aquatic life. A discharger meeting a 30 mg/l limitation should not cause the concentration in the receiving water to exceed 30 mg/l;

(b) A wastewater treatment facility designed to meet 5 mg/l BOD_5 will not necessarily meet 5 mg/l TSS;

(c) The 5 mg/l TSS limit is not a cost effective means of removing toxic materials from effluent. Pre-treatment (removing toxic subtances at their source) is generally more cost-effective. [MPCA Ex. 8, pp. 37-38]

It appears that the logic behind having any TSS limitation whatsoever is two-fold. First of all, there is evidence of harm to fish if water contains an excessive amount of suspended solids. Secondly, suspended solids are used as an indicator of toxic pollution from industrial dischargers. In other words, there was an assumption made that if TSS was high, the waters probably contained heavy metals, toxics, organic compounds, and micro-organisms.

With regard to the first rationale for TSS limitation (that being harm to fish), the Agency cited the Blue Book (MPCA Ex. 28) for the proposition that there was no evidence that concentrations of suspended solids less than 25 mg/l have any harmful effects on fisheries; that it should usually be possible to maintain good or moderate fisheries in waters containing 25 to 80 mg/l TSS, although with some reduced yield as compared with waters having TSS below 25 mg/l; that waters containing between 80 and 400 mg/l TSS are unlikely to support good freshwater fisheries; and that above 400 mg/l, only poor fisheries are likely to be found (Peissig, pp. 7-8).

The second reason (TSS as an indicator of other contaminants) appeared to be the focus of the Agency's reason for changing the rule. Most of the detailed testimony by Agency personnel in support of the repeal dealt with this. Randy Burnyeat of the Agency stated that federal law has integrated an industrial pretreatment program into the NPDES permit program. The Agency submitted a pretreatment program to the EPA, and in July of 1979, it was accepted. Essentially, the Agency requires all publicly owned treatment works which have a need for industrial pretreatment to develop and implement a local pretreatment program. The Agency estimates that this will involve approximately 150 localities (Burnyeat, pp. 1-2). Marvin Hora stated that the Agency had concluded that the best means to control toxic substances was through pretreatment at the source, rather than effluent treatment at a plant. He then went on to give a detailed description of the Agency's toxic substance monitoring and control program (Hora, pp. 2-4).

The EPA comment on the Agency's proposed repeal sheds further light on this matter. That comment reads as follows:

> Traditionally, the pollutant loadings in wastewater treatment plant effluents have been measured in terms of biochemical oxygen demand (BOD) and total suspended solids (TSS). While the proper control of BOD is very important, the control of TSS is also important, if not more important in some cases (municipal systems which treat heavy industrial discharge), due to the make-up and characteristics of the suspended solids. Suspended solids from municipal treatment plants in many cases contain numerous pollutants; such as heavy metals, toxics, organic compounds and microorganisms. A high degree of suspended solids removal will reduce the adverse effects these pollutants have on water quality. However, we also agree that a stringent suspended solids effluent limitation in the State Water Quality Standards is not the most appropriate way to control heavy metals, toxics, and organic compounds. Implementation of an effective statewide pretreatment program is the preferred method to accomplish needed toxicant removal. [Pub. Ex. 68]

Opposition to the removal of the 5 mg/l TSS limit for low-flow waters came from the Minnesota Division of the Izaak Walton League and the Sierra Club. The Izaak Walton League noted that the Agency offered little or no technical

substantiation and justification for the proposed repeal. They stated (in Pub. Ex. 38, at p. 5):

> Information available to the Izaak Walton League would indicate that the proposed change to the weaker standard will not be adequate to remove residual amounts of toxics and heavy metal, therefore, the Izaak Walton League opposes weakening the standard [as] we do not feel that such alternatives such as pre-treatment are adequate alternatives. Pre-treatment is one of the tools necessary for advances in pollution abatement programs but it should not be substituted as it is in this case for standards that may not be an adequate protection of the aquatic environment.

The Sierra Club pointed out that in the case of low-flow streams, paragraph C.8. permits the Agency to limit BOD_5 to 5 mg/l but that if the proposed repeal is adopted, TSS would remain the same for both low-flow stream and normal-flow streams. The Sierra Club stated that this was fundamentally inconsistent, because both parameters are typically removed to a similar degree in a wastewater treatment plant. They went on to point out that it is common knowledge that the BOD test is susceptible to a variety of inferences that limit its reliability, and that it takes five days to complete. Testing for TSS, on the other hand, requires less than an hour to perform and is relatively straightforward. The Club felt that while in certain cases BOD_5 and TSS levels may vary in magnitude, the use of TSS as an indiator of organic loading would provide a quick indication to treatment plant operators of the performance of their plants. Finally, the Sierra Club noted that the deletion of the strict TSS standard would appear to allow the discharge of effluents with high TSS into trout streams. They stated that stream trout are a very sensitive species to excess solids in the water, especially during the reproductive and growth cycle (Tr. XV-38-39). However, they failed to offer any evidence to support this assertion.

The Examiner finds that the Agency has justified its proposal to delete the 5 mg/l TSS requirement for low-flow streams on the basis that the industrial pretreatment program will adequately deal with the problem of toxics. However, the Examiner is concerned about a statement by Burnyeat (p. 2) to the effect that the pretreatment program will be:

> . . . effectuated by incorporating a schedule of compliance into the POTW's NPDES permit allowing them approximately 2 1/2 years to develop a program. Beginning the latter part of 1981, POTW's will begin receiving authority from the MPCA to administer their pretreatment programs. Following local program approval, the POTW will be responsible for administration and enforcement, and the Agency will oversee their program . . .

The question in the mind of the Examiner is what will happen in the interim? Will existing permits, limiting TSS to levels below 30 mg/l continue in force and effect until those permits are modified? The EPA apparently had the same concern, for it stated, in Pub. Ex. 68:

> Until, however, the MPCA pretreatment program has been implemented to the point of insuring effective removal of heavy metals, toxics, and organic compounds from industrial discharge into the municipal treatment systems, the MPCA may wish to retain the suspended solids effluent requirement in § C.8. and apply it on a case-by-case basis as permits are reissued.

The Examiner finds that so long as steps are taken to protect the State's waters during the interim period of transition from TSS effluent limitations to industrial pretreatment programs, the Agency has justified the need for and

reasonableness of its proposed repeal. However, if that is not the case, the Examiner finds that the Agency has failed to justify the need for and reasonableness of the proposed repeal at this time. Because the record is unclear as to the Agency's intended actions in this regard, the Examiner recommends that the existing 5 mg/l limitation in paragraph C.8. be retained, but that either a footnote or a separate sentence be added to the effect that the limitation is repealed for those treatment plants which have implemented industrial pretreatment programs.

The Agency did not estimate any cost reduction as a result of the repeal of this limitation because plants which must meet a 5 BOD_5 standard will have few, if any, cost savings attributable to removal of the 5 TSS limitation (MPCA Ex. 8, p. 47). This logic is supported by a statement from one of the consulting engineers writing in Pub. Ex. 28, D. R. Krebs, who wrote that a plant designed for 5 mg/l BOD_5 and 30 mg/l TSS would be no different than a plant designed for 5 BOD_5 and 5 mg/l TSS because the controlling design condition is the BOD_5 limitation. Krebs stated that while some relief may be realized when considering "non-organic" waste treatment facilities, such as discharges from iron removal facilities, that still would not change the required design of plants.

120. Paragraph C.9. is being proposed for revision by the Agency. Both the old rule and the new rule provide that after a public hearing, the Agency may require a specific discharger to meet effluent limitations stricter than those provided for in the rules. The difference between the old rule and the new rule is that under the old rule, the Agency could require stricter limits if it found such limits were necessary under a number of conditions: (1) In order to comply with federal requirements, or (2) in order to conserve the waters of the state, or (3) in order to protect public health, or (4) in furtherance of the development of the economic welfare of the state. The new rule deletes those standards, and substitutes a single standard: When necessary to maintain the water quality of the receiving water of the standards of quality and purity established by the rule. In other words, the only time when the Agency may exercise its authority under § C.9. is when stricter effluent limits are needed to assure that the in-stream standards of the receiving water are being met. All of the other possible grounds for exercising the authority which existed in the old rule (federal requirements, etc.) would no longer permit the Agency to act. Peissig stated that the hearing required by this section would be tied in with the permitting process so that effluent limitations established pursuant to this provision would become part of the discharger's permit (Peissig, p. 9).

The Minnesota Association of Commerce and Industry submitted a comment in October of 1979 suggesting that this provision was, in effect, a duplication of § 302 of the Federal Clean Water Act. However, unlike § 302, this provision ignores the necessity of considering the economic and social impacts of prescribing more stringent effluent limitations. The Association urged that language should be added to the provision setting forth the Agency's obligation to consider economic and social factors in establishing the effluent limitations established by the section. The Agency responded to this comment through the written testimony of Peissig who stated that the agency elected to "duck" this issue because it did not want to decide whether the obligation

imposed upon the Agency by the Legislature is the same as that imposed upon EPA by the Congress (Peissig, p. 9). The Examiner believes that the mandates of Minn. Stat. § 116.07, subd. 6, apply to any agency action, including an action to "tighten up" effluent limitations beyond those otherwise required in the rule. Therefore, the Examiner does not see the benefit of having such a statement repeated in this particular rule - the same argument for putting it in this rule would apply to putting it in any other rule. Therefore, the Examiner declines to recommend the language proposed by the Association.

American Crystal Sugar Company proposed two changes to this section. The first one would have specified that in the event that it is determined that more stringent effluent limitations are required, the Agency could only require that the specific effluent limitation which it had demonstdrated was needed. Apparently, American Crystal is concerned that if it is found to require a more stringent BOD_5 limitation, for example, it does not also want to be saddled with a more stringent limitation for some other substance, such as TSS, ammonia, etc., unless the Agency has also demonstrated that a more stringent limitation is required for that second substance as well. The Examiner has reviewed the written and oral testimony of American Crystal Sugar Company (MPCA Ex. 14t and Tr. VIII-12-43), and has concluded that the present wording of the rule is adequate to cover American Crystal's apparent concern. If, at a hearing, the Agency were able to justify more stringent limitations for two or more substances, then those would be imposed. If, on the other hand, the Agency were only able to justify one substance requiring a more stringent effluent limitation, then that would be the one that would be imposed. The Examiner believes that, in the context of a contested case, there would be little chance for American Crystal's concerns to materialize. Therefore, he does not find any need for the proposed language. Of course, there would be no objection if the proposed language were inserted because it merely clarifies what the Examiner believes to be the case. Therefore, it is left to the Agency to determine whether or not to make the change.

The second change proposed by American Crystal is far more substantive. American Crystal proposes to add a footnote to paragraph C.9. which would read as follows:

> When mass loading limitations are established by the U.S. Environmental Protection Agency, or MPCA, for an industry, the Agency shall use the mass loading limitation for discharges in lieu of the effluent concentration limitations of C.6. when the discharge of effluent is restricted to the spring flush or other high run-off periods when the stream flow rate above the discharge point is sufficiently greater than the effluent flow rate to ensure that the applicable water quality standards are met during such discharge.

A similar footnote was also proposed by American Crystal for addition to § C.6. Both are based upon the same logic. The logic revolves around the fact that the Environmental Protection Agency has established guidelines for specified industrial categories. The guidelines establish a degree of equity between companies in the same industry which may be operating in different states or different EPA regions. American Crystal is in the sugar beet industry, and that industry has been the subject of specific EPA guidelines set forth in 40 C.F.R. part 409.12. The guidelines establish a mass loading limitation of BOD_5 and suspended solids which are expressed in terms of pounds of BOD_5

or suspended solids per pound of product produced. For example, originally, the EPA had a standard permitting one-half pound per ton of beets produced. That has since been changed to 2.2 pounds per 1,000 pounds of sugar produced. That is uniform for all sugar companies. American Crystal can comply with that limitation, but it cannot comply with the Agency's effluent limitation. American Crystal does not discharge on a continuous basis; rather, it uses storage ponds. However, because of limited storage capacity in those ponds, it recycles its water. As the water is recycled, pollutants build up in the storage ponds. American flushes the storage ponds during the spring runoff, and violates PCA effluent standards during this discharge. American Crystal believes that the dilution during the spring runoff is so great that even if it discharged 1,000 pounds of BOD_5, at a concentration of 250 mg/l rather than 25 mg/l, there would be no impact on the receiving waters. It therefore seeks the footnotes to the two paragraphs to permit a waiver of effluent limitations when discharge is restricted to the spring flush or other high runoff periods.

The Examiner believes that there is substantial merit to American Crystal's proposal. However, there is very limited information in the record to enable a complete evaluation of the proposal. There is a dispute between the Agency and American Crystal Sugar as to whether water quality standards would be violated during the spring runoff (Tr. VIII-42). The Examiner does not know what other industries or receiving waters would be impacted by the proposed changes. He is unwilling to make such changes without a more thorough record. Therefore, he does not find the Agency's original proposal to be unreasonable without the changes recommended by American Crystal, but suggests that American Crystal (and other interested industries) petition the Agency for a separate rulemaking proceeding to consider such a proposal.

121. All of the other changes proposed by the Agency were non-controversial and drew no comment. The Examiner finds them to be both needed and reasonable for the reasons set forth in MPCA Ex. 8 and the testimony and exhibits referenced therein.

122. The Department of Natural Resources submitted a comment (Pub. Ex. 29) recommending three amendments to the rules. The Agency agreed that one should be adopted exactly as proposed by the Department, that a second should be adopted with a minor change in wording, but that the third could not be adopted because it constituted an improper delegation of authority. The Examiner agrees with the Agency in all three cases. He would merely point out that the DNR's concern regarding updating of the rules each time a new set of criteria is issued by the EPA may be an appropriate case to use the non-controversial rulemaking process provided for in § 7 of Laws of Minnesota 1980, Ch. 615.

123. A number of persons pointed out typographical errors in the rules, or matters which needed clarification, and the Agency has responded to those by a set of corrections contained at pp. 54 and 55 of its Supplemental Staff Response. The Examiner has reviewed those, and finds that they are both needed and reasonable.

124. Finally, the Agency has corrected its list of Class 7 waters to conform with its new recommendations resulting from reassessments in response to

public comments. That new list is set forth at pages 59 and 60 of the Supplemental Staff Response; however, the Examiner would caution the Agency that its list does not reflect the "substantial change" problem discussed above; in addition, to the extent the Agency adopts any changes recommended by the Examiner in that section dealing with specific Class 7 waters, the list must be further updated.

125. Paragraphs C.14. of 6 MCAR §§ 4.8014 and 4.8015 include a reference to the Red Book which constitutes an incorporation by reference. Pursuant to the provisions of Minn. Stat. § 15.0412, subd. 4 (1978), the Agency requested that it be allowed to incorporate the Red Book by reference. The Chief Hearing Examiner did issue an Order approving the Agency's request.

VII.

126. The costs associated with these rules are substantial by any measure. While it is impossible to be precise about the exact costs for many of the parameters (for the reasons noted in connection with specific parameters), it can be said that if these rules are adopted, it will cost in the neighborhood of $200,074,000 in capital costs, and $4,450,000 in annual operating and maintenance expenditures. There are a number of ways of looking at such costs. In the past, 75% of construction costs have been met by federal funds, and 15% by state funds. The remaining 10% is borne by the discharger. If the discharger is a municipality, that money comes from sewer hookup fees and user charges. If the discharger is an industry, it is borne by the discharger which may pass it along to customers in the form of increased prices.

In order to get some perspective upon these costs, the Agency computed cost-per-household costs for persons in the metro area. No such computation was made for outstate areas. While these costs have not been recomputed by the Examiner to conform with the changes which would have to be made to them as a result of the changes recommended in this Report, it is clear that the adoption of these rules will result in a significant increase in costs when allocated among the 675,000 or so households in the metro area. The cost per household, assuming 90% grant money (and making no addition for the fact that a portion of that money comes from each household in the form of taxes to the federal and state governments), computed by the Agency is $6.75 per year per household. Industries would pay $5,300,000 per year. However, if one makes the assumption that there were no grant money, either federal or state, then the costs rise to $22.20 per household per year in the metro area only. The industrial cost of $5.3 million per year remains the same.

What are the benefits to be derived from these expenditures? The Examiner finds, based on the record as a whole, that there will be increased recreational opportunities. It is possible that there will be increased property values for that small portion of land which is located along improved waters. More speculative, but still possible, is increased tourist trade.

However, it must be admitted that all of these benefits are extremely difficult, if not impossible, to quantify. Engineers can design treatment plants to meet certain specifications, and they can compute (with a reasonable degree of certainty) the cost of those plants. The record does not contain similar estimates from social engineers attempting to place a value on the benefits.

What the record does contain are two documents of pertinence to this question. The first is a number of reports describing changes in the fishery in the St. Louis River attributable to the Western Lake Superior Sanitary District's opening of a new treatment plant in 1978. Essentially, they use words like "miracle," "astonishing," "tremendous" and similar language of sports writers which the Examiner will not repeat. Suffice it to say, the articles extol the virtues of fishing in the river and link the improvement to the opening of the new sewage plant. (See Attachments 17, 18 and 19 to Staff Response).

The other set of data is slightly different. It is a reprint of the "Minnesota Poll" from the Minneapolis Tribune of April 13, 1980. Two questions are of particular interest. The first is "How important do you think it is to clean up the air and water in Minnesota - very important, somewhat important or not very important?" The response of all adults was as follows:

Very Important	69%
Somewhat Important	27%
Not Very Important	3%
Don't Know	1%

The second question asked: "Where you live, which problem do you think is the most severe: Air pollution, water pollution or noise pollution?" A processing error prevented the separate tabulation of noise pollution responses, so they were included in the "other category", but what is of interest is that the highest percentage of persons named water pollution as the most severe. The responses were:

Water	34%
None	31%
Other	21%
Air	14%

This poll is included as Appendix 1 to Pub. Ex. 60.

127. In addition, the record does contain evidence which would support a Finding that as one improves water quality by improving ammonia, DO, and chlorine levels, each of those improvements does lead to a general improvement in fish habitat. However, there is simply no quantifiable evidence to permit a finding regarding how much habitat improvement would result from any specific degree of improved water quality.

128. In summary, there is no way to quantify the improvement in fishing or the improvement for recreational use which would come from the adoption of these standards. That is not to say that there will not be benefits, for there will be, but this record does not enable those benefits to be quantified. The Examiner does not intend this Finding to be taken as a criticism of the Agency; he doubts whether any person or regulatory body could perform a valid quantifiable analysis of benefits. When professional consultants were asked to do a benefit analysis for CSO control by the MWCC, they had an extremely difficult time in attempting to do such an analysis (See Badalich, Ex. 1, pp. 48-58) Again, that is not intended as a criticism of the consultants: it is merely a reflection of the same problem.

Based upon the foregoing Findings, the Examiner makes the following:

CONCLUSIONS OF LAW

1. That any of the foregoing Findings which contain Conclusions of Law are hereby adopted and incorporated herein.

2. That the Agency published and served due, timely and adequate notice of this hearing.

3. The Agency has documented its statutory authority to promulgate the proposed rules.

4. The Agency has satisfied all substantive and procedural requirements of law or rule, except as specifically noted above.

5. That certain of the waters now proposed for inclusion as Class 7 waters would, if so classified, result in a rule which was substantially different from the rule as originally proposed..

6. That due to Conclusions Nos. 4 and 5 above, this Report has been submitted to the Chief Hearing Examiner for his approval pursuant to Laws of Minnesota 1980, Chapter 615, section 6, subdivision 4d (to be codified as Minn. Stat. § 15.0412, subd. 4d).

Based upon the foregoing Conclusions, the Hearing Examiner makes the following

R E C O M M E N D A T I O N

That the proposed rules be adopted consistent with the Findings and conclusions made above.

Dated this 21st day of August, 1980.

Allan W. Klein

ALLAN W. KLEIN
Hearing Examiner

N O T I C E

The Agency must wait at least five working days before taking any final action on the rule; during that period, this Report must be made available to all interested persons upon request. This Report has been submitted to the Chief Hearing Examiner for his approval. If the Chief Hearing Examiner approves the findings of this Report, he will advise the Agency of actions which will correct the defects and the Agency may not adopt the rule until the Chief Hearing Examiner determines that the defects have been corrected. However, in the cases where the Chief Hearing Examiner identifies defects which relate to the issues of need or reasonableness, the Agency may either adopt the Hearing Examiner's recommendations to cure the defects or, in the alternative, if the Agency does not elect to adopt the recommendations, it may submit the proposed rule to the Legislative Commission to Review Administrative Rules for the Commission's advise and comment. Provisions relating to this submission to the Commission may be found in Laws of Minnesota 1980, Chapter 615, § 6, subdivision 4d.

If the Agency elects to adopt the recommendations of the Hearing Examiner and makes no other changes, then it shall submit the rule to the Attorney General for his review of form and legality. However, if the Agency makes changes in the rule other than those recommended by the Hearing Examiner, then it

shall submit the rule, with the complete record, to the Chief Hearing Examiner for a review of the changes before adopting it and submitting it to the Attorney General. Procedures relating to this subsequent review by the Chief Hearing Examiner are set forth in subdivision 4e of the same statute.

Finally, whenever the Agency finally submits the rule to the Attorney General, it shall give notice, on the day of submission, to all persons who requested that they be informed of the submission to the Attorney General.

MEMORANDUM

For the vast majority of the issues which were raised during this very lengthy and complex proceeding, the Agency Staff did an extremely thorough job of preparing evidence to support its proposals. It is obvious that a tremendous amount of time and effort was devoted to these rules over the past few years. There is one situation, however, where this was not the case, and the handling of that situation raises questions which cannot be disregarded.

The Examiner is concerned about the "anonymous" statement which was inserted into the written testimony of Deborah Pyle (see Findings 113-117). The Agency is cautioned that submitting written testimony of a witness which is clearly not the testimony of that witness is a tactic which is not to be presumed to be condoned by this Report. It, and the subsequent refusal of the Agency to disclose the name of the person who actually prepared that sentence, represents conduct which is simply unacceptable. Had there been even a mere scintilla of evidence indicating the possibility or probability of an increase in costs as a result of the proposed reclassification at issue, it would have resulted in a finding that the Agency had failed to give "due consideration" to economic factors, a substantive requirement imposed on the Agency by law. The fact that there was no such evidence does not lessen the seriousness of this incident.

Minn. Rule 6 MCAR § 4.3006 [commonly known as MPCA 1] provides as follows:

> In all formal or informal negotiations, communications, proceedings, and other dealings between any person and any member, employee or agent of the Agency, it shall be the duty of each person and each member, employee or agent of the Agency to act in good faith and with complete truthfulness, accuracy, disclosure, and candor. Any violation of the aforesaid duty shall be cause for imposition of sanctions as provided in MPCA 11. (Emphasis added)

MPCA 11 (6 MCAR § 4.3011) places the responsibility for enforcement of the above-quoted rule upon the Agency. Both rules have the force and effect of law. The Examiner respectfully recommends that this incident would be an appropriate situation for the Agency to examine whether or not its rule has been violated.

A.W.K.

ADMIN 1000 (Rev. 1/78)
SF-00006-01

STATE OF MINNESOTA

Office Memorandum

DEPARTMENT: ATTORNEY GENERAL

TO : ART ENGEBRECHT, Chairman
TERRY HOFFMAN, Executive Director
Minnesota Pollution Control Agency

DATE: 12/23/80

ATTN: ALAN MITCHELL, S.A.A.G.

FROM : JERRY S. ANDERSON
Special Assistant
Attorney General

PHONE: 296-1288

SUBJECT: Rules as Approved In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32.

Enclosed herewith are the rules you have submitted for approval. These rules have been approved by this office and filed with the Secretary of State. Note that they have NOT been filed with the State Register; this must be done promptly by your agency.

Upon receipt and before transmittal to your agency, however, it is important that you recheck these rules as to:

1. Affixation of the stamps of the Attorney General and Secretary of State to the last page of the rules;

2. Coverage by these stamps of all rules submitted; and

3. Inclusion of all pages of the rules in the approved set.

Directly following the approved rules is a complete set of required documents and transcript which must be retained with the rules by you or your agency.

If you have any questions in this regard, please contact me.

JSA/bw
Encl.
cc: Duane Harves
Susan Robertson

ADMIN 1000 (Rev. 1 78)
SF-00006-01

Our File #655

STATE OF MINNESOTA

DEPARTMENT ATTORNEY GENERAL

Office Memorandum

TO : ART ENGEBRECHT, Chairman
TERRY HOFFMAN, Executive Director
Minnesota Pollution Control Agency

DATE: Dec. 4, 1980

ATTN: ALAN MITCHELL, S.A.A.G.

FROM : JERRY S. ANDERSON
Special Assistant
Attorney General

PHONE: 296-1288

SUBJECT: In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32.

The rules in the above-entitled matter have not been approved and are being returned for the following reasons:

1. 6 MCAR §§ 4.8014 C.16.b. and 4.8015 C.16.b. contain an improper delegation of authority to the agency. The use of the word "may" in these sections permits the agency to disapprove the production of effluent levels up to those stated in sections C.6. even though the stated demonstration has been made; the present wording suggests that other, unstated criteria might be considered in making the decision. If the intention is that the allowance will be made once the required demonstration is provided, the "may" must be changed to "shall."

2. In sections 4.8014 D.2. Class A and 4.8015 D.2 Class A, the dissolved oxygen level is stated to be "Not less than 7 milligrams per liter . . . ." This amount is inconsistent with the amount stated in the Order Adopting Rules at 7 and 16. The inconsistency must be resolved.

In addition to the above problems, a number of typographical errors were discovered. These have been discussed over the telephone and apparently will be corrected when the rule is resubmitted.

After consideration of the above comments and agency action, if any, these rules may be resubmitted for our review. I am retaining for our file a copy of all pertinent documents and am returning the remainder of the record to you. At the time of resubmission, please submit only the original and two copies of the Rule as Adopted and the Supplementary Order Adopting. Also, please include a transmittal memorandum specifying that the rules are being resubmitted so that we may obtain our original file in this matter.

Please be advised that the Chief Hearing Examiner requests that all changes in rules, other than those that go only to form, be brought to his attention. Therefore, this office recommends that you contact the Chief Hearing Examiner regarding any changes in the rules that the agency makes pursuant to these comments.

Enc.
cc: Duane Harves
Susan Robertson

nR File # 655

Permanent Rule X

Temporary Rule _____

RULES REVIEW CHECKLIST

DATE RULES RECEIVED 11/18 DUE DATE 12/8

Resubmitted and Received 12/18 due 12/28

a. ~~Returned to Agency w/o~~ Filing w/Secretary of State 12/22

b. Approved 12/19 Date Sent Back to Agency _____

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1. Rules as Adopted ✓

2. Rules as Proposed ✓ See S.R.

3. Certificate of Board's Authorizing Resolution, where applicable A) ✓ 11.27.79 B) ✓ 12.18.79

4. Order for Hearing ✓

5. Notice of Hearing ✓ 3.31.80 et seq. Supplementary Notice ✓
Sufficiency ✓

6. Secretary of State's List ✓ (one copy only)

7. Certificate of Acquisition of Secretary of State's List ✓

8. Secretary of State's Certification of Delivery of Secretary of State's List to Agency ✓

9. Affidavit of Mailing ✓
At least 30 days prior to hearing ✓ 2.26.80

10. Publication in State Register ✓ Supp. Notice ✓
At least 30 days prior to hearing ✓ 2.25.80 ✓ 4.7.80

11. Statement of Need and Evidence ✓

12. Hearing Examiner's Report ✓

13. Agency's Findings of Fact ✓

14. Certificate of Board's Resolution Adopting Rules, where applicable ✓

15. Order Adopting ✓

16. Report of Chief Hearing Examiner A) ✓ 8.22.80
B) ✓ 11.7.80

17. Order Approving Incorporation by Reference, where applicable See HE 125 - in the record.

18. Certificate of Compliance with Rulemaking Procedures ✓

19. Copy of Notice of Intent to Solicit Outside Opinion, where applicable A) 9.26.77 B) 9.17.79

20. Petition by Public, where applicable N/A

21. Affidavit of Mailing + Notice of Submission to AG. ✓

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION

CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

PCA-80-004-AK

AFFIDAVIT OF MAILING LETTER

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

SANDRA J. GRONEWOLD, being first duly sworn, deposes and says:

That on the 17th day of December, 1980, in the City of Roseville, County of Ramsey, State of Minnesota, she served the attached letter by depositing in the State of Minnesota Central Mail System for first class mailing (or) in the United States mail at said City of Roseville, a copy thereof, properly enveloped, with postage prepaid, to all persons and associations at the addresses listed on the attached list.

Sandra J. Gronewold
SANDRA J. GRONEWOLD

Subscribed and sworn to before me this 17th day of December, 1980.

Patricia Schwarz
Notary Public

PATRICIA SCHWARZ
NOTARY PUBLIC—MINNESOTA
ANOKA COUNTY
My Commission Expires Aug. 6, 1987

Minnesota Pollution Control Agency

December 17, 1980

Mr. Jerry Anderson
Special Assistant Attorney General
G-25 Administration Building
Saint Paul, Minnesota 55155

Re: In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

Dear Mr. Anderson:

On December 4, 1980, you returned the above-entitled rules to the Minnesota Pollution Control Agency because of two minor problems you found with the rules. On December 16, 1980, the Minnesota Pollution Control Agency unanimously voted to correct the problems you found and to correct one other minor problem pointed out by the Staff.

I am now returning these rules to you for your final action. Enclosed are the Supplemental Order Adopting Rules, Certificate of Agency's Authorizing Resolution, and an Affidavit of Mailing this letter to those who have requested to be advised of when the rules are submitted to the Attorney General.

I have also enclosed three copies of the rules as finally adopted. These copies reflect the changes made by the Agency on December 16 and the correction of several typographical errors that you pointed out.

Please notify us when you have completed your review.

Thank you very much.

Very truly yours,

Louis Breimhurst

for TERRY HOFFMAN
Executive Director

TH:sjg
Enclosures

1935 West County Road B2, Roseville, Minnesota 55113
Regional Offices • Duluth / Brainerd / Detroit Lakes / Marshall / Rochester / Roseville
Equal Opportunity Employer

John Keenan
Economics Laboratories
Osborn Bldg.
St. Paul, MN 55102

Sandy L. DiBrito
City of Perham
138 West Main
Perham, MN 56573

Dale R. Rossow
Dexter, MN 55926

Gyles Randall
University of Minnesota
Southern Expt. Station
Waseca, MN 56093

Art Vermedahl
Town of Munda
Route 1
Emmons, MN 56029

Marie Casey
208 First Street S.E.
Austin, MN 55912

John Pegors
Pollution Control Agency
Regional Director, Region I
Rm. 1015, Torrey Bldg.
Duluth, MN 55802

Delores Bowman
Box 268
Detroit Lakes, MN 56501

Roger E. Plumb
City of Rochester
1602 4th Street S.E.
Rochester, MN 55901

Willis Mattison
Pollution Control Agency
Regional Director, Region III
116 E. Front St.
Detroit Lakes, MN 56501

Frank Peloubet
City of Moorhead
Box 779
Moorhead, MN 56560

LaVern W. Boyd
City of Plainview
415 First Avenue S.E.
Plainview, MN 55021

Larry Johnson
Pollution Control Agency
Regional Director, Region IV
Box 286, 1104 E. College Dr.
Marshall, MN 56258

Wayne Carlson
126 N. Marshall
Litchfield, MN 56355

H. Helgeson
City of Faribault
P. O. Box 84
Faribault, MN 55021

Larry Lardherr
Pollution Control Agency
Regional Director, Region V
1200 S. Broadway
Rochester, MN 55901

F. W. Bertels
Heron Lake Improvement
Lakefield, MN 56150

V. J. Lammere
Libby, McNeill & Libby, In
1217 Third Avenue S.E.
Rochester, MN 55901

William Arderl
Minnesota Health Department
717 Delaware St. S.E.
Minneapolis, MN 55440

Chuck DeWolf
126 N. Marshall
Litchfield, MN 56355

C. P. Schmit
City of Faribault
208 N.W. First Avenue
Faribault, MN 55021

Ken Chevahier
520 First Avenue N.W.
Plainview, MN 55964

Larry Windom
Detroit Lakes Newspaper
Box 826
Detroit Lakes, MN 56501

M. T. Skodje
City of Rochester
3900 Third Avenue N.W.
Rochester, MN 55901

Dennis C. Hamich
Jackson Company
Box 64
Jackson, MN 56143

W. H. Marshall
MEPA
R.R. 10
Midland, Michigan 48640

Harold C. Ulrich
City of Owatonna
Circle Drive
Owatonna, MN 55060

Bob Harig
Mansfield Township
Route 1
Emmons, MN 56029

Glenn Oliphant
Owatonna Canning Company
100 West Winona
Owatonna, MN 55060

Ken Swaik
Faribault Canning Company
Faribault, MN 55021

Steve Perzyk
Perham Township
Route 2
Perham, MN 56573

Donald Haimes
310 Second Street S.W.
Plainview, MN 55021

Ethel Wolf
Izaak Walton League
213 12th Ave. S.W.
Austin, MN 55912

U.S. EPA
230 S. Dearborn
Chicago, IL 60604

G. Robert Johnson
Attorneys at Law
2344 IDS Center
Minneapolis, MN 55402

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1708 University Avenue
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Robert A. Hillstrom
1330 Soo Line Building
Minneapolis, MN 55402

Daniel S. Szumski
P. O. Box 3237
Walnut Creek, CA 94598

Leland Pohlman
Lakefield, Mn 56150

Dennis C. Hanselman
Box 64
Jackson, Mn 56143

Dennis Martenson
TKDA
2500 Amer
St. Paul, MN 55101

Hugh Putnam, Ph.D.
P. O. Box 1121
Gainesville, FL 32602

Larry W. Sisk
U.S. Fish & Wildlife
U.S. Fed. Ofc. Bldg.
Fort Snelling
St. Paul, MN 55111

J. Settles
Henn. Soil & Water Cons.
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Wayzata, MN 55391

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MN Pollution Control Agcy.
2120 Carter Ave.
St. Paul, MN 55108

William Brungs
U.S. EPA
6201 Congdon Blvd.
Duluth, MN 55804

R. H. Susag
Minnesota Mining & Mfg. Co.
P. O. Box 33331
St. Paul, MN 55133

John Klaers
Western Lake Superior
Sanitary District
27th Ave. W. & Courtland
Duluth, MN 55802

Joe Stepun
Western Lake Superior
Sanitary District
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Ms. Becky Comstock
Broeker, Hartfeldt, Hedges
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2850 Metro Drive
Minneapolis, MN 55420

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MN Pollution Control Agcy.
1015 Torrey Bldg.
Duluth, MN 55802

Willard Brosz
Green Giant Company
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LeSueur, MN 56058

Stan P. Kalinoski
Larry Shaw
MN Pollution Control Agcy.
Brainerd Region
304 East River Road
Brainerd, MN 56401

Dennis W. Anderson
MN DNR
Fisheries
R. R. 3, Box 365
Brainerd, MN 56401

H. D. Lindeman
Worthington Chamber
of Commerce
2725 Rose Ave. No.
Worthington, MN 56187

Osman M. Aly
Campbell Soup Company
Campbell Place
Camden, NJ 08101

Tom Augustin
Larson-Peterson
522 West Main
Detroit Lakes, MN 56501

Robert Merritt
MN DNR
1223 Minnesota Ave.
Detroit Lakes, MN
56501

Paul K. Olson
Lincoln County Joint
Cities Committee
Box 26
Ivanhoe, MN 56142

I. A. Rouslar
Bolton & Menk, Inc.
515 No. Front St.
Mankato, MN 56001

Philip Haderer
Nestle Enterprises
100 Bloomingdale Ave.
White Plains, NY

Mr. Milford G. Gentz
Chairman
Jackson Co. Board of
Commissioners
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John L. Skrypek
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MN DNR
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Little Pine Route
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News Director
KTTC-TV
601 First Avenue S.W.
Rochester, MN 55901

Clarence Mohrman
Slayton, MN 56172

Richard Turner
City of Northfield
801 Washington
Northfield, MN 55057

Gary A. Hedge
General Foods Corporation
4th & 5th Aves.
Waseca, MN 56093

David Frea
City of Marshall
344 W. Main
Marshall, MN 56258

Pete Stalley
City of Northfield
801 Washington
Northfield, MN 55057

Jake Wolf
213 12th Ave. S.W.
Austin, MN 55912

Gaylord Olson
Glenville, MN 56036

Joseph S. Hensel
Rochester Public Utilitie
P. O. Box 6057
Rochester, MN 55901

tephen E. Guczyk
ibby, McNeill & Libby, Inc.
217 Third Avenue S.E.
ochester, MN 55901

J. A. Sturgess
Amax ESI
Box C
Babbitt, MN 55706

Kristine Legler
841 4th Ave. S.E.
Rochester, MN 55901

Walfred Burk
Spring Creek Township
Beck County
Ogema, MN 56569

Ralph Bonnell
Jackson County
Heron Lake, MN 56137

Bruce Storey
City of Blooming Prairie
Box 131
Blooming Prairie, MN 5591

Clifford McLain
City of Moorhead
1217 First Street South
Moorhead, MN 56560

Alfred Wisor
Jackson County
Jackson, MN 56143

Doug Kruckeberg
City of Blooming Prairie
Box 234
Blooming Prairie, MN 5591

C. V. Jirava
Spring Creek Township
Ogema, MN 56569

Gary E. Braun
City of Worthington
P.O. Box 111
Worthington, MN 56187

Ronald L. Anderson
City of Blooming Prairie
Blooming Prairie, MN 5591

Bud Jirava
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R.R. 3
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City of Hayfield
Box 222
Hayfield, MN 55940

Gordon Olson
Jackson County Zoning Comm.
Box 64
Jackson, MN 56143

Virgil C. Haugen
206 First S.E.
Hayfield, MN 55940

Bruce F. Trobnick
Blandin Wood Products Co
P. O. Box N
Grand Rapids, MN 55744

Duane Aden
City of Marshall
344 W. Main Street
Marshall, MN 56256

Larry Turner
City of Northfield
801 Washington
Northfield, MN 55057

Milford Gentz
R. R. 1
Lakefield, Mn 56150

N. I. French
Sierra Club
111 E. Franklin Avenue
Suite 200
Minneapolis, MN 55404

John Lundblad
Jackson County Attorney
Jackson, Mn 56143

J. B. Brick
Pickands Mather & Co.
Room 811
200 W. Superior St.
Duluth, MN 55802

oseph H. Shepherd
eech Lake Indian Reservation
. O. Box 308
ass Lake, MN 56633

Charles S. Jankowski
City of Winton
Box 37
Winton, MN 55796

Bernadine Wehner
RREM, Inc.
401 Board of Trade Bldg.
Duluth, MN 55802

Art Fenstad
Reserve Mining Company
Silver Bay, MN 55614

Jon L. Christofferson
U.S. Steel Corp.
Box 417
Mt. Iron, MN 55768

Mattie Peterson
Minnesota Division
Izaak Walton League
4370 Wooddale Ave.
Minneapolis, MN 55424

Barney Burgstale
Dean Lake Township
Little Pine Route
Aitkin, MN 56431

Henry Berg
City of Duluth
Sewer Division
211 City Hall
Duluth, MN 55802

Clarence G. Sprague
Green Giant Company
1100 N. 4th Street
LeSueur, MN 56058

Amos Roos
1427 N. Albert St.
St. Paul, MN 55108

Dennis E. Vansteenkiste
Superwood Corp.
14th Ave. W. & Waterfront
Duluth, MN 55802

Thomas W. Segar
N-Ren Corporation
P. O. Box 418
So. St. Paul, MN 55075

Dwight Brass
Minnesota Power & Light
30 W. Superior St.
Duluth, MN 55802

John Harrington
Metro Council
350 Metro Square Building
St. Paul, MN 55101

James Frost
Metro Council
300 Metro Sq. Bldg.
St. Paul, MN 55101

Dale A. Pearson
Twin Lakes Township
50 Hay Lake Road
Carlton, MN 55718

Charles Brasher
U.S. EPA
230 S. Dearborn St.
Chicago, Illinois 60604

Horace V. Noland
Lake Owasso Assn.
3211 Woodbridge
St. Paul, MN 55112

David Helberg
City of Hayfield
Box 281
Hayfield, MN 55940

Larry Shaw
Pollution Control Agency
Regional Director, Region II
304 E. River Road
Brainerd, MN 56401

Geo. Worrall
Ashland Oil, Inc.
100 W. 3rd Ave.
St. Paul Park, MN 55110

Winslow Casey
R.R. 2
Hayfield, MN 55940

Paul Gableman
D.M. & I.R. Ry. Co.
210 Missabe Bldg.
Duluth, MN 55802

D. L. Hildre
FMC-NOD
4800 E. River Road
Minneapolis, MN 55421

Larry A. Read
Zenk Engineering, Inc.
Box 689
Albert Lea, MN 56007

V. Bitgim
SGTAC
662 Cromwell
St. Paul, MN 55114

Delbert D. Schmidt
Federal Cartridge Corp
9th & Tyler
Anoka, MN 55303

Herbert Schuve
Town of Munda
R.R. 1, Box 171
Albert Lea, MN 56007

S. Stephen Chapman
Clear Air Clear Water
12833 Gordview North
White Bear, MN 55110

W. D. DeBelly
Southern Minnesota Sugar
Renville, MN 56284

Gary E. Brown
1014 Johnson Ave.
Worthington, MN 56187

Ted Shields
[illegible]00 Hanover Bldg.
[illegible]80 Cedar St.
St. Paul, MN 55110

Stephen Chapman
12833 Goodview North
White Bear Lake, MN
55110

G. Robert Johnson
4344 IDS Center
Minneapolis, MN 55402

Dr. F. W. Butels, DVM
Lakefield, MN 56150

Rose, VonHoltum, et al.
Worthington City Attorneys
907 10th St.
Worthington, MN 56187

CERTIFICATE OF BOARD'S AUTHORIZING RESOLUTION

I, Louis J. Breimhurst, do certify that I am the Deputy Executive Director of the Minnesota Pollution Control Agency, an agency duly authorized under the laws of the State of Minnesota, and that the following resolution was adopted at a meeting of the Agency properly called on the 16th day of December, 1980, that a quorum was present at said meeting; that the following resolution will be in the minutes of said meeting and has not been rescinded or modified:

> BE IT RESOLVED, that the Agency adopts the attached Supplemental Order Adopting Rules, which makes minor corrections in WPC 14, 15, 24, and 25 as adopted by the Agency on October 28, 1980, and that the Chairman and Executive Director are authorized to execute the Supplemental Order.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 17th day of December, 1980.

Louis J. Breimhurst
Deputy Executive Director

Subscribed and sworn to before me
this 17th day of December, 1980:

Patricia Schwarz
Notary Public

PATRICIA SCHWARZ
NOTARY PUBLIC—MINNESOTA
ANOKA COUNTY
My Commission Expires Aug. 6, 1987

Minnesota Pollution Control Agency

December 17, 1980

Mr. Duane Harves
Chief Hearing Examiner
Hearing Examiners Office
Room 300
1745 University Avenue
Saint Paul, Minnesota 55104

Re: In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

Dear Mr. Harves:

On December 4, 1980, the Attorney General's Office returned the above-entitled rules because of two minor problems found with the rules. One correction was the changing of the word "may" to "shall" in one section of WPC 14 and WPC 15. The second was the correction of a typographical error in the dissolved oxygen standard for coldwaters in WPC 14 and WPC 15.

On December 16, 1980, the Minnesota Pollution Control Agency unanimously voted to make these two corrections. At the same time the Agency made a minor correction in WPC 24.B. These changes are all specified in the enclosed Supplemental Order Adopting Rules.

The rules have now been resubmitted to the Attorney General's Office but I bring these minor corrections to your attention so your office is advised of the final version of the rules.

Very truly yours,

for Louis Breimhurst
TERRY HOFFMAN
Executive Director

TH:sjg

cc: Jerry Anderson ✓
Special Assistant
Attorney General

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION

CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32.

PCA-004-80-AK

AFFIDAVIT OF MAILING NOTICE OF SUBMISSION TO THE ATTORNEY GENERAL

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

SANDRA J. GRONEWOLD, being first duly sworn, deposes and says:

That on the 18th day of November, 1980, in the City of Roseville, County of Ramsey, State of Minnesota, she served the attached Notice of Submission to the Attorney General by depositing in the State of Minnesota Central Mail System for first class mailing (or) in the United States mail at said City of Roseville, a copy thereof, properly enveloped, with postage prepaid, to all persons and associations at the addresses listed on the attached list of persons who requested notice that the hearing record has been submitted to the Attorney General.

Sandra J. Gronewold
SANDRA J GRONEWOLD

Subscribed and sworn to before me

this 18th day of November, 1980.

Patricia Schwartz
Notary Public

PATRICIA SCHWARZ
NOTARY PUBLIC—MINNESOTA
ANOKA COUNTY
My Commission Expires Aug. 6, 1987

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION

CONTROL AGENCY

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PCA-004-80-AK

NOTICE OF SUBMISSION TO THE ATTORNEY GENERAL

Pursuant to your request and in accordance with Minnesota Statutes, section 15.0412:

PLEASE TAKE NOTICE that the above-captioned rules have been submitted to the Office of the Attorney General on this date, November 18, 1980, for review as to form and legality. Pursuant to 1 MCAR § 1.305, the Attorney General will retain the rules for at least ten (10) days after receipt to allow any person or association to comment on the legality of the rules, after which the Office will conduct its review. If you desire to comment on the legality of the above-captioned rules, you should direct your comments to the Office of the Attorney General, G-25 State Administration Building, 50 Sherburne Avenue, Saint Paul, Minnesota 55155, telephone (612) 296-7030. Please send the Agency a copy of any written comments submitted to the Attorney General.

If you are interested in determining what changes, if any, were made in the proposed rules after the hearing and before submission to the Attorney General you may contact Alan R. Mitchell, Special Assistant Attorney General, Attorney General's Office, Minnesota Pollution Control Agency, 1935 West County Road B-2, Roseville, Minnesota 55113, telephone (612)-296-7344. These changes are reflected in the Agency's Order Adopting Rules, a copy of which will be mailed to you upon request.

TERRY HOFFMAN
Executive Director

Dated: November 18, 1980

U.S. EPA
230 S. Dearborn
Chicago, IL 60604

G. Robert Johnson
Attorneys at Law
2344 IDS Center
Minneapolis, MN 55402

Clear Air Clear Water
Unlimited
1708 University Avenue
St. Paul, MN 55114

Robert A. Hillstrom
1330 Soo Line Building
Minneapolis, MN 55402

Daniel S. Szumski
P. O. Box 3237
Walnut Creek, CA 94598

Dennis Martenson
TKDA
2500 Amer
St. Paul, MN 55101

Hugh Putnam, Ph.D.
P. O. Box 1121
Gainesville, FL 32602

Larry W. Sisk
U.S. Fish & Wildlife
U.S. Fed. Ofc. Bldg.
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J. Settles
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Ms. Becky Comstock
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Lyle R. Hobbs/John Pegors
MN Pollution Control Agcy
1015 Torrey Bldg.
Duluth, MN 55802

Willard Brosz
Green Giant Company
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Brainerd Region
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eech Lake Indian Reserva-
. O. Box 308 tion
ass Lake, MN 56633

Charles S. Jankowski
City of Winton
Box 37
Winton, MN 55796

Bernadine Wehner
RREM, Inc.
401 Board of Trade Bldg.
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Art Fenstad
Reserve Mining Company
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Jon L. Christofferson
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St. Paul, MN 55108

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Thomas W. Segar
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P. O. Box 418
So. St. Paul, MN 55075

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St. Paul, MN 55101

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Twin Lakes Township
50 Hay Lake Road
Carlton, MN 55718

Charles Brasher
U.S. EPA
230 S. Dearborn St.
Chicago, Illinois 60604

Horace V. Noland
Lake Owasso Assn.
3211 Woodbridge
St. Paul, MN 55112

David Helberg
City of Hayfield
Box 281
Hayfield, MN 55940

Larry Shaw
Pollution Control Agency
Regional Director, Region II
304 E. River Road
Brainerd, MN 56401

Geo. Worrall
Ashland Oil, Inc.
100 W. 3rd Ave.
St. Paul Park, MN 55110

Winslow Casey
R.R. 2
Hayfield, MN 55940

Paul Gableman
D.M. & I.R. Ry. Co.
210 Missabe Bldg.
Duluth, MN 55802

D. L. Hildre
FMC-NOD
4800 E. River Road
Minneapolis, MN 55421

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Larry Turner
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801 Washington
Northfield, MN 55057

John Keenan
Economics Laboratories
Osborn Bldg.
St. Paul, MN 55102

Sandy L. DiBrito
City of Perham
138 West Main
Perham, MN 56573

Dale R. Rossow
Dexter, MN 55926

Gyles Randall
University of Minnesota
Southern Expt. Station
Waseca, MN 56093

Art Vermedahl
Town of Munda
Route 1
Emmons, MN 56029

Marie Casey
208 First Street S.E.
Austin, MN 55912

ohn Pegors
ollution Control Agency
egional Director, Region I
m. 1015, Torrey Bldg.
uluth, MN 55802

Delores Bowman
Box 268
Detroit Lakes, MN 56501

Roger E. Plumb
City of Rochester
1602 4th Street S.E.
Rochester, MN 55901

illis Mattison
ollution Control Agency
egional Director, Region III
16 E. Front St.
etroit Lakes, MN 56501

Frank Peloubet
City of Moorhead
Box 779
Moorhead, MN 56560

LaVern W. Boyd
City of Plainview
415 First Avenue S.E.
Plainview, MN 55021

arry Johnson
ollution Control Agency
egional Director, Region IV
ox 286, 1104 E. College Dr.
arshall, MN 56258

Wayne Carlson
126 N. Marshall
Litchfield, MN 56355

H. Helgeson
City of Faribault
P. O. Box 84
Faribault, MN 55021

arry Lardherr
ollution Control Agency
egional Director, Region V
200 S. Broadway
ochester, MN 55901

F. W. Bertels
Heron Lake Improvement
Lakefield, MN 56150

V. J. Lammere
Libby, McNeill & Libby, Inc
1217 Third Avenue S.E.
Rochester, MN 55901

illiam Arderl
innesota Health Department
17 Delaware St. S.E.
inneapolis, MN 55440

Chuck DeWolf
126 N. Marshall
Litchfield, MN 56355

C. P. Schmit
City of Faribault
208 N.W. First Avenue
Faribault, MN 55021

Ken Chevahier
520 First Avenue N.W.
Plainview, MN 55964

Larry Windom
Detroit Lakes Newspaper
Box 826
Detroit Lakes, MN 56501

M. T. Skodje
City of Rochester
3900 Third Avenue N.W.
Rochester, MN 55901

Dennis C. Hamich
Jackson Company
Box 64
Jackson, MN 56143

W. H. Marshall
MEPA
R.R. 10
Midland, Michigan 48640

Harold C. Ulrich
City of Owatonna
Circle Drive
Owatonna, MN 55060

Bob Harig
Mansfield Township
Route 1
Emmons, MN 56029

Glenn Oliphant
Owatonna Canning Company
100 West Winona
Owatonna, MN 55060

Ken Swaik
Faribault Canning Company
Faribault, MN 55021

Steve Perzyk
Perham Township
Route 2
Perham, MN 56573

Donald Haimes
310 Second Street S.W.
Plainview, MN 55021

Ethel Wolf
Izaak Walton League
213 12th Ave. S.W.
Austin, MN 55912

- MPCA Exhibit 7.b.

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION

CONTROL AGENCY

In the Matter of Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25, and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

AFFIDAVIT OF MAILING

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

Margaret Frank, being duly sworn on oath, deposes and says:

That in the City of Roseville, Ramsey County, Minnesota, on the 21st day of March, 1980, she served the attached Notice of Hearing on those named on the attached mailing lists by depositing in the United States mail at said City of Roseville, true and correct copies thereof, with postage prepaid, and addressed to those named on the attached mailing lists.

Margaret Frank
MARGARET FRANK

Subscribed and sworn to before me this 28th day of March, 1980.

Maryanne Gibbons
Notary Public

MARYANNE GIBBONS
NOTARY PUBLIC - MINNESOTA
RAMSEY COUNTY
My Commission Expires Sept 28, 1985

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

PCA-80-004-AK

AFFIDAVIT OF MAILING

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

Margaret Frank, being duly sworn on oath, deposes and says:

That in the City of Roseville, Ramsey County, Minnesota, on the 26th day of February, 1980, she served the attached Notice of Hearing on those named on the attached mailing lists by depositing in the United States mail at said City of Roseville, true and correct copies of the Notice of Hearing, with postage prepaid, and addressed to those named on the attached mailing lists.

Margaret Frank

Subscribed and sworn to before me this 5th day of ~~February~~ March 1980.

Maryanne Gibbons

MARYANNE GIBBONS
NOTARY PUBLIC - MINNESOTA
RAMSEY COUNTY
My Commission Expires Sept 28, 1985

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

CERTIFICATE OF DELIVERY OF SECRETARY OF STATE'S LIST

I hereby certify that the attached 938 labels and 12 sheets constitute the complete list of persons, associations, and other interested groups who as of 11:15 o'clock a.m., this 19th day of February, 1980, have requested pursuant to Minn. Stat. §15.0412 subd. 4 (1978) that their names be placed on file with the Secretary of State for the purpose of receiving notice of public hearing on proposed rules.

SECRETARY OF STATE

JOAN ANDERSON GROWE

By _____

RECEIVED
MAR 5 1980
OFFICE OF HEARING EXAMINERS

MPCA 4.6

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

AFFIDAVIT OF RECEIPT OF SECRETARY OF STATE'S LIST

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

Kim Mattson, being duly sworn on oath deposes and says:

1. That he is an employee of the Water Quality Division, Minnesota Pollution Control Agency, State of Minnesota.

2. That on the 19th day of February, 1980, he went to the Secretary of State's office for the State of Minnesota and requested a current list of all representatives of associations or other interested groups or persons who had registered their names with the Secretary of State for the purpose of obtaining notices of public hearings relating to the promulgation of rules pursuant to Minn. Stat. §15.0412.

3. That on the 19th day of February, 1980, in response to the above request, the Secretary of State provided him with such a list, a copy of which is attached hereto and incorporated by reference.

FURTHER AFFIANT SAYETH NOT.

Kim Mattson

Subscribed and sworn to before me this 19th day of February, 1980:

Maryanne Gibbons
Notary Public

MARYANNE GIBBONS
NOTARY PUBLIC - MINNESOTA
RAMSEY COUNTY
My Commission Expires Sept 26, 1985

containing the foam specimen shall not be greater than 10% of that in the control test frame, and there shall be no growth on the foam itself.

d. Cured foam properties.

(1) Density. When tested as specified in ASTM D 1622-63, the density of the dry foam shall be within the range of 0.7-0.9 lbs/ft^3 (10.4-15 kg/m^3).

(2) Corrosiveness. The material shall be tested as specified in HUD "Use of Materials Bulletin No. 74," section 6.2.8 (all). For aluminum, copper, and steel there shall not be any perforations when the metal specimens are observed over a chrome reflected 40 W appliance light bulb. For galvanized steel there shall be no pitting of the metal specimen and the loss in mass shall not exceed 0.2g (0.01 oz.)

(3) Water absorption. Water absorption will be determined by means of the floating test. When tested as specified in section 6.2.9.1, HUD "Use of Materials Bulletin No 74" the water absorption shall not exceed 15% by volume.

(4) Combustion resistance. When tested as specified in ASTM E 84-77a, the flame spread classification shall not exceed 25. Smoke generation shall not exceed 450.

e. Thermal performance. Thermal performance shall be determined in accordance with 6 MCAR § 2.2204 B.7.

Pollution Control Agency

Proposed Amendments to Rules WPC 14, 15, 24 and 25 and Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

Supplemental Notice of Hearing

Notice is hereby given that the hearing in the above-entitled matter will commence on March 31, 1980, and continue on subsequent days as scheduled in the original notice published in the *State Register* on February 25, 1980, (4 S.R. 1330) and, in addition, will continue on Monday, April 28, 1980, at 9:30 a.m., in the MPCA Board Room, 1935 West County Road B2, Roseville, Minnesota, 55113, and at other times and places to be determined by the Hearing Examiner. Please be advised that the Agency will consider additional non-metropolitan locations if there is a substantial interest in continuing the hearing at such locations.

Copies of the following documents are now available and may be obtained by contacting Mr. John McGuire, Division of Water Quality, Minnesota Pollution Control Agency, 1935 West County Road B2, Roseville, Minnesota, 55113, ([612] 296-7242):

1. Statement of Need and Reasonableness
2. Proposed Amendments
3. Testimony of Agency Witnesses

Additional copies of these documents will be available at the hearing at each location.

March 18, 1980

Terry Hoffman
Executive Director

Department of Public Welfare
Income Maintenance Bureau

Notice of Withdrawal of Proposed Amendment to 12 MCAR § 2.047 Governing Payment for Abortion Services under the Medical Assistance Program

On November 5, 1979, the Department of Public Welfare published a Notice of Hearing at *State Register*, Volume 4, Number 18, p. 737, (4 S.R. 737) announcing a public hearing to be held on December 11, 1979 concerning a proposed amendment to 12 MCAR § 2.047 (Rule 47) governing payment for abortion services under the Medical Assistance program. The hearing was held, the comments were accepted for twenty days, and the Hearing Examiner issued a report on January 31, 1980.

In light of two recent federal court decisions, *McRae v. Secretary of H.E.W.*, No. 76-C-1804, (E.D.N.Y., January 15, 1980), stay denied, prob. juris. noted, No. 79-1268, 48 L.W. 3535, February 19, 1980, and *Hodgson v. Board of County Commissioners*, No. 4-78 Civ. 525 and 3-79 Civ. 56 (D. Mn., March 12, 1980), the department at this time withdraws its proposed amendments. Also, 12 MCAR § 2.047, originally published at *State Register*, Vol. 4, Number 17, p. 701 (4 S.R. 701), was to become effective only upon further order of the court. Therefore, the entire rule is withdrawn.

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION

CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32.

PCA-004-80-AK

STATEMENT OF COMPLIANCE WITH RULEMAKING PROCEDURES

We, Special Assistant Attorneys General, do hereby declare that we have examined the proposed rules and all related documents and based on our examination and our personal familiarity with the applicable procedures, that the Administrative Procedure Act, the rules of the Office of Administrative Hearings, and the rules of the Attorney General have been followed.

Marlene Senechal

MARLENE E. SENECHAL
Special Assistant
Attorney General

Alan R. Mitchell

ALAN R. MITCHELL
Special Assistant
Attorney General

Dated: November 18, 1980

S-00006-01

STATE OF MINNESOTA

DEPARTMENT ATTORNEY GENERAL-MPCA

Office Memorandum

TO : JERRY ANDERSON
Special Assistant Attorney General

DATE: 11/18/80

FROM : MARLENE E. SENECHAL
Special Assistant Attorney General

PHONE: 6-7346

SUBJECT: In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32. PCA-004-80-AK

Enclosed for your review in the above matter are the following documents. One copy of all documents are enclosed, except as otherwise noted.

A. Rules as adopted (original and two copies); attached

B. Order Adopting Rules (original and two copies); attached

C. Certificate of Board's Resolution Adopting the Rules; attached

D. Notices of Intent to Solicit Outside Opinion and other relevant materials as required by Minn. Stat. § 15.0412, subd. 6; attached

E. Order for Hearing; attached

F. Certificates of Board's Resolution Authorizing Hearing; attache

G. Notices of Hearing; 1) original notice - attached 2) supp. notice - Ex 3.a. & 4.a.

H. Affidavits of Mailing Notices of Hearing; 1) original notice - attached 2) supp. notice - Ex. 7.b.

I. Mailing List Certificate; - attached

J. Rule as proposed; attached

K. Hearing Examiner's Report; attached

L. Chief Hearing Examiner's Reports;

M. Agency's findings of Fact and Conclusions; attached

RECEIVED
NOV 18 1980
ATTORNEY GENERAL
ADMINISTRATIVE AGENCIES

Xerox N. Order of Chief Hearing Examiner permitting incorporation by reference; in record

O. Statement of Need and Reasonableness; attached

X P. Record; pick up

Q. Certificate of Compliance with Rulemaking Procedures; attached and

R. Affidavit of Mailing Notice of Submission to the attached Attorney General.

You will also note that MPCA Exhibit 7.c. consists of affidavits of publication of the notice of hearing and that MPCA Exhibits 10, 12, 13 and 14 are the comments received on the proposed rules prior to and during the hearing.

Please contact me if you need any additional documents.

MES:sjg
Enclosures

BROEKER, HARTFELDT, HEDGES & GRANT
ATTORNEYS AT LAW
2850 METRO DRIVE-SUITE 800
MINNEAPOLIS (BLOOMINGTON) MINNESOTA 55420
TEL.(612) 854-5263

JOHN M. BROEKER
WILL HARTFELDT
STEVEN R. HEDGES
DAVID A. GRANT
GERALD H. BRANDENHOFF
STEVE M. MIHALCHICK
BARBARA J. BLUMER
WILLIAM J. WERNZ
BECKY A. COMSTOCK
EILEEN M. ROBERTS

December 1, 1980

RECEIVED
DEC 2 1980
ATTORNEY GENERAL
ADMINISTRATIVE AGENCIES

Office of the Attorney General
G-25 State Administration Building
50 Sherburne Avenue
St. Paul, MN 55155

Re: In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

Dear Sir or Madam:

Our office represents Jackson County and its citizens in bringing to your attention a matter of grave concern in promulgation of the above referenced rules of the Minnesota Pollution Control Agency (MPCA). Specifically, the citizens of Jackson County and its Board of Commissioners, following active participation in hearings conducted on the above referenced rules, have retained our office* because of their continued concern with the validity and legality of the proposed portion of Supplement 1 to WPC 24 which downgrades a portion of Okabena Creek from a Class 2 water for fisheries and recreation, to a Class 7 limited resource value waters with the consequent reduction in water quality standards and effulent limitations to such waters.

FACTS AFFECTING THE DOWNGRADING OF OKABENA CREEK

Okabena Creek flows through Nobles and Jackson Counties in southwestern Minnesota. The Creek flows from Okabena Lake at Worthington in Nobles County, northeast to Heron Lake in Jackson County, a total of approximately 30 creek miles. Heron Lake outlets to the Des Moines River. Okabena Creek and Heron Lake are part of the Middle Des Moines Watershed, comprising an area of approximately 475 square miles.

*with the concurrence of the Jackson County Attorney

The Middle Des Moines Watershed District, established in February 1970, prepared "An Ecological Study of the Middle Des Moines Watershed" in 1973, funded by the Minnesota State Planning Agency, to determine the impact of district waters on Heron Lake. After two years of sampling at 63 total sites, the study conclusions were summarized by areas that contribute to the eutrophication (aging) of Heron Lake through the continued influx of organic matter, phosphate, nitrogen, bacterial activity and depletion of oxygen. The study concluded in part:

> The southwest section contributes effulents into Okabena Creek, which flows into Heron Lake, from sewage settling ponds and industrial enterprises. An undetermined factor is the effect of septic systems that flow into county and judicial ditches which eventually flow into either Okabena or Elk Creek. Siltation from farming practices and run-off of nitrogen and phosphates from farms undoubtedly contribute heavily to the aging process of Heron Lake. (Public Exhibit 26, p. 122).

The Middle Des Moines Watershed Ecological Study concluded in 1973 that Okabena Creek was a major contributor to the aging of Heron Lake.

Following enactment of the 1972 amendments to the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq., Okabena creek was classified by the MPCA, in WPC 24, as an intrastate Class 2 water (fisheries and recreation). Water quality standards and effulent limitations for Okabena Creek as a Class 2 water are governed by WPC 14. In November 1974, the MPCA published a "Load Allocation Study for Okabena Creek Below Worthington, Minnesota" to determine the allowable waste loads for point source discharges to Okabena Creek. (MPCA Exhibit 97).

Following field surveys and sampling of point sources and receiving water of the Worthington wastewater treatment plant and the Armour and Company wastewater lagoon system, operated by the City of Worthington as an industrial waste treatment facility, the MPCA Load Allocation Study concludes:

> The stream standard <u>can</u> be maintained if the effulent from the Worthington treatment plant and Armour treatment lagoon is 5 mg/l BOD_5, 5 mg/l SS [suspended solids] and 5 mg/l dissolved oxygen. (MPCA Exhibit 97, p. 2). [Emphasis supplied].

In individual review of point source discharges, the study recommends:

1) The Worthington wastewater treatment plant should be assigned an effulent BOD_5 standard of 5 mg/l, a suspended solids standard of 5 mg/l and an effulent dissolved oxygen concentration of 5 mg/l due to intermittent stream conditions. (MPCA Exhibit 97, p. 2) . . .

   The plant's NPDES permit should require the plant to meet the conditions of State Regulation WPC 14. In addition, provisions should be included in the permit for the major industrial user to insure that it is in compliance with all applicable regulations of the Act pertaining to industrial users of a municipal treatment system.

   Compliance with WPC 14 may require the plant to be modified or expanded in which case an implementation schedule will have to be included in the permit. (MPCA Exhibit 97, pp. 52-53)

2) The Armour and Company wastewater lagoon system, which is operated by the City of Worthington as an industrial waste treatment facility, should be assigned an effulent standard of 5 mg/l BOD_5, 5 mg/l suspended solids and a minimum effulent dissolved oxygen concentration of 5 mg/l. (MPCA Exhibit 97, p. 2) . . .

> This discharger's NPDES permit should require that it meet the conditions of State Regulation WPC 14. Compliance with WPC 14 would probably require that the plant be expanded and/or modified in which case the permit should contain an implementation schedule. (MPCA 97, p. 81)

Presumably, NPDES permits for these point source dischargers were prepared based upon recommendation of effulent standards contained in the Load Allocation Study for Okabena Creek.

Although the MPCA's Load Allocation Study indicated only two point source dischargers to Okabena Creek, there are in fact three NPDES permits issued for discharge into the Creek: Permit No. 0031186 for the Worthington wastewater treatment facility; Permit No. 0031178 for the Worthington Industrial Lagoons and Permit No. 0033375 for Allied Mills.

On September 27, 1978, public notice was given of Allied Mills' request for reissuance of its permit requiring it to comply with effulent limitations for temperature, total suspended solids, BOD5, oil and grease and pH. On April 27, 1979, public notice was given of Worthington Industrial Lagoon's request for reissuance of its permit, noting that the applicant was not in compliance with effulent limitations and the MPCA proposing to enter into a Stipulation Agreement requiring necessary construction for compliance by April 15, 1982. A notice of violation of effulent limitations was issued to Worthington Lagoons on August 8, 1978. (MPCA Exhibit 85). On May 19, 1980, during the course of hearings on the above referenced rules, the MPCA requested modificaiton of the Worthington wastewater treatment facility discharge permit to add a compliance schedule to the permit requiring submission of a municipal pretreatment program for control of industrially contributed wastewater.

In order to come into compliance with the Class 2 designation for Okabena Creek, in 1979, the City of Okabena installed a new sewage treatment facility at a cost of $700,000.00. (Public Exhibit No. 18).

During 1978, however, the MPCA conducted stream assessments on Okabena Creek, one sampling assessment at

Worthington, Minnesota and a second sampling assessment at Brewster, Minnesota. (MPCA Exhibit 85, attached). Based on the assessments, the MPCA recommended that Okabena Creek be classified a limited resource value water in T 102, R 38, S 6, 7, T 102, R 39, S 7, 8, 9, 10, 11, 12, 14, 15, 16, 18, T 103, R 38, S 21, 22, 28, 29, 30, 31; and T 102, R 40, S 13.

On February 6, 1980, the MPCA issued a Notice of Hearing on proposed amendments to and repeal of its water quality rules and published notice in the State Register on February 25, 1980, proposing to change the water classification of Okabena Creek from a Class 2 to a Class 7 water for a distance of 18 creek miles. This proposed downgrading of Okabena Creek would have changed the classification of the Creek from the Worthington treatment plant to Section 15 of Alba Township, Brewster Minnesota, Nobles County.

In March 1980, prior to hearing on the MPCA proposed rule amendments, the Minnesota Legislature appropriated $75,000.00 in state funds, contingent on a local match of $50,000.00 for a study to identify alternative methods of restoring Heron Lake and reducing nutrient and sediment loading. Of $200,000.00 previously allocated by the Legislative Commission on Minnesota Resources for construction on Heron Lake, $180,000.00 remains to be used as matching funds for the Heron Lake restoration study. (See attached letters of Senator Olson and Representative Mann.)

Hearings on the MPCA water quality rule amendments commenced on March 31, 1980. After several days of hearings and following public testimony and exhibits, part of which are attached hereto. The MPCA staff re-evaluated the downgrading of that portion of Okabena Creek near Brewster, Minnesota, based upon Public Exhibit No. 15, indicting that homeowners in Alba Township had observed and caught fish in the Creek. Further evaluation by the MPCA staff resulted in a recommendation that the length of the Creek to be downgraded from Class 2 to Class 7, be reduced by 8 miles, ending the Class 7 designation two miles south of Brewster, for a total of 10 creek miles of Class 7 waters, beginning at Worthington. (See attached letter of Larry Peissig dated June 6, 1980.)

On April 7, 1980, during public hearing on the above referenced rules, Mr. Gary Brown, City Engineer for the City of

Worthington, stated that the City had begun planning a treatment facility in order to comply with applicable effulent limitations for Class 2 waters, but that such plans had been returned to Worthington by the MPCA because of the likelihood of the downgrading of Okabena Creek. According to Mr. Brown, if Okabena Creek is downgraded, completing the treatment plan would be a wasted effort. (Tr. VI-pp. 49-50.)

The Hearing Examiner found the proposed downgrading of Okabena Creek from Worthington to two miles south of Brewster to be needed and reasonable. Such recommendation was adopted by the MPCA on October 23, 1980. Citizens of Jackson County objected at the hearing and continue to object to the downgrading of any portion of Okabena Creek from Class 2 (fisheries and recreation) to Class 7 limited resource value waters. For the reasons set forth below, the citizens of Jackson county contend that Supplement 1 to WPC 24 as it results in the downgrading of the water classification of Okabena Creek is illegal and invalid as adopted by the MPCA.

ANALYSIS

MPCA'S DOWNGRADING OF THE WATER CLASSIFICATION OF OKABENA CREEK IS ILLEGAL AND INVALID

Under the Minnesota Administrative Procedures Act (APA), Minn. Stat. Chap. 15 (1980), each state agency must adopt, amend, suspend or repeal its rules in accordance with the procedures specified in the APA, and only pursuant to authority delegated by law and in full compliance with its duties and obligations. (Minn. Stat. §15.0412, subd. 1 (1980)). No rule may be adopted by any agency unless the agency first holds a public hearing thereon, at which:

> [The agency shall make an affirmative presentation of facts establishing the need for and reasonableness of the rule proposed for adoption and fulfilling any relevant substantive or procedural requirements imposed on the agency by law or rule. (Minn. Stat. §15.0412, subd. 4 c. (1980)).]

Under Section 15.0416, the validity of a rule may be challenged when it appears that the rule, or its threatened application, interferes with or impairs, or threatens to interfere with or impair the legal rights or privileges of the petitioner. A challenged rule shall be declared invalid if there is a finding that it violates constitutional provisions or exceeds the statutory authority of the agency or was adopted without compliance with statutory rule-making procedures. (Minn. Stat. §15.0417 (1980)).

In the instant case, the citizens of Jackson County assert that the MPCA, in the proposed adoption of Supplement 1 to WPC 24, downgrading the water classification of Okabena Creek, has exceeded its statutory authority under the state and federal Water Pollution Control Acts, did not make an affirmative presentation of facts establishing the need for and reasonableness of the downgrading of Okabena Creek from a Class 2 to a Class 7 water, and that such downgrading of the waters of Okabena Creek will interfere with and impair the legal rights of the citizens of Jackson County to the protection, preservation and enhancement of the water and other natural resources of Okabena Creek.

A. THE MPCA HAS EXCEEDED STATUTORY AUTHORITY.

The MPCA has cited as authority for its downgrading of the water classification of Okabena Creek Minn. Stat. §§115.03 and 115.44 (1978). (State Register, Vol. 4, No. 34, February 25, 1980). Under Minn. Stat. §115.03, subd. 1 (1978), the MPCA is given and charged with the following powers and duties:

a) To administer and enforce all laws relating to the pollution of any of the waters of the state;

b) To investigate the extent, character, and effect of the pollution of the waters of this state and to gather data and information necessary or desirable in the administration or enforcement of pollution laws and to make such classification of the waters of the state as it may deem advisable;

c) To establish and alter such reasonable pollution standards for any waters of the state in relation to the public use to

which they are or may be put as it shall deem necessary for the purposes of this chapter and with respect to the pollution of waters of the state, Chapter 116;

d) To encourage waste treatment, including advanced waste treatment systems, instead of stream low-flow augmentation for dillution purposes to control and prevent pollution;

e) To adopt, issue, reissue, modify, deny or revoke, enter into or enforce reasonable . . . standards, regulations . . . under such conditions as it may prescribe in order to prevent,control or abate water pollution, or for the installation or operation of disposal systems or parts thereof, or for other equipment and facilities. [Emphasis supplied.]

Under Minn. Stat. §115.44, subd. 2 and subd. 14 (1978), the MPCA, in order to attain the objectives of the Water Pollution Control Act, is to adopt classifications and standards of purity and quality therefor, necessary for the public use or benefit contemplated by such classification.

While the MPCA derives its authority from Minn. Stat. Chap. 115, the agency must administer and enforce the Minnesota Water Pollution Control Act in accordance with the federal Water Pollution Control Act, 33 U.S.C. §1251 et seq. (Minn. Stat. §115.44, subd. 8). Under 33 U.S.C. §1313(c), the MPCA is directed to hold public hearings, at least once each three years from the date of enactment of the federal law, for the purpose of reviewing applicable water quality standards and for modifying and adopting standards as appropriate. If the MPCA reviews or adopts a new standard, which is to consist of the designated uses of the navigable waters and the water quality criteria for such waters based such uses, such new standards must be submitted to the Administrator of the United States Environmental Pollution Agency (EPA) who will determine if the standards meet the requirements of federal law.

Any standards revised and adopted by the MPCA under 33 U.S.C. §1313(c) are to protect the public health or welfare,

enhance the quality of water and serve the purposes of the federal Water Pollution Control Act, including the following goals:

(1) that the discharge of pollutants into the navigable waters be elimiated by 1985;

(2) that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983; (33 U.S.C. §1251(a)).

Rules of the EPA implementing its authority to and standards for review of designated uses of navigable waters and water quality criteria therefor are found in Title 40 Code of Federal Regulations, Part 35, Section 35.1550.

In reviewing and revising its water quality standards, the MPCA, pursuant to 40 CFR §35.1550(c), is to adhere to the following principles:

(1) The State shall establish water quality standards which will result in the achievement of the national goal specified in Section 101(a)(2) [fisheries and recreation] of the Act, wherever attainable. In determining whether such standards are attainable for any particular segment, the State should take into consideration environmental, technological, social, economic, and institutional factors.

(2) The state shall maintain those water uses that are currently being attained. . .

(3) <u>At a minimum</u>, the state shall maintain those water uses which are currently designated in water quality standards, effective as of the date of these regula-

> tions or as subsequently modified in accordance with §35.1550(c)(1) and (2). The state may establish less restrictive uses than those contained in existing water quality standards however, only where the state can demonstrate that:
>
> (i) The existing designated use is not attainable because of natural background;
>
> (ii) The existing designated use is not attainable because of irretrievable man-induced conditions; or
>
> (iii) Application of effulent limitations for existing sources more stringent than those required pursuant to Section 301(b)(2)(A) and (B) of the Act in order to attain the existing designated use would result in substantial and widespread adverse economic and social impact.
>
> (4) The State shall take into consideration the water quality standards of downstream waters and shall assure that its water quality standards provide for the attainment of the water quality standards of downstream waters. [Emphasis supplied.]

In General Counsel Opinion No. 78-6, issued April 11, 1978, the EPA stated, with respect to the downgrading of waters under EPA regulations:

> EPA's regulations published at 40 CFR 130.17 [now 40 CFR 35.1550] . . . set forth the rules for use designatins in WQS's [water quality standards]. The basic thrust of these regulations is clear: the "fishable, swimmable" goal of the Clear Water Act (§101(a)(2)) is to be the designated WQS use wherever attainable. Not only are downgradings discouraged (130.17(c)(3)), but also upgradings are encouraged (130.17(c)(1)-(2)). . .

> Use downgradings are allowed only in the limited circumstances specified in 130.17(c)(3). This subparagraph clearly creates a presumption against downgradings. It provides that "at a minimum, the State shall maintain designated uses. . .It then provides limited exceptions "only where the State can demonstrate "the presence of one of the three downgrading factors. [Original emphasis, footnote omitted .]

As interpreted by the EPA, under 40 CFR §35.1550(c)(3), a presumption against downgrading exists and the MPCA can downgrade water only where it can affirmatively establish that the existing designated use is not attainable.

For the reasons set forth below, the citizens of Jackson County believe that the MPCA has not overcome the presumption against the downgrading of Okabena Creek, has not affirmatively established that the Class 7 water quality standards will provide for the attainment of Class 2 downstream waters, and therefore has exceeded its statutory authority under the Minnesota Water Pollution Control Act, Minn. Stat. §§115.03 and 115.44, the federal Water Pollution Control Act, 33 U.S.C. §1313(c), and EPA implementing regulations, 40 C.F.R. §35.1550(c).

B. MPCA HAS NOT AFFIRMATIVELY REBUTTED THE PRESUMPTION AGAINST DOWNGRADING OKABENA CREEK

Applying the EPA regulations governing the MPCA's downgrading of waters, 40 C.F.R. §35.1550(c), to the Minnesota Administrative Procedures Act, Minn. Stat. §15.0412, subd. 4c (1980), a presumption against downgrading exists which the MPCA must overcome by affirmatively establishing the need for and reasonableness of such downgrading, namely that the Class 2 (fisheries and recreation) designation of Okabena Creek is not attainable. Further, under the EPA regulations, C.F.R. §35.1550(c)(4), the MPCA must affirmatively establish that downstream water quality standards on Okabena Creek for fisheries and recreation will be attained where upstream Class 7 waters are deemed non-attainable. During public hearing on the above referenced rules, the MPCA has failed to make such showing.

By the proposed amendments to WPC 14 B.7, the MPCA has proposed a new seventh class of waters in Minnesota, limited

resource value waters, or waters where the national goal of "fisheries and recreation" is deemed not attainable. Under WPC 14 B.7., the MPCA criteria for Class 7 designation require a finding of intermittent water quantities of less than one (1) cubic foot per second, once in ten year, seven day low flow and limited value in fact, based upon a finding that:

> a. The existing fisheries and potential fisheries are severally limited by natural conditions as exhibited by poor water quality characteristics, lack of habitat, or lack of water; or
>
> b. The quality of the resource has been significantly altered by human activity and the affect is essentially irreversible; and
>
> c. There are limited recreational opportunities (such as fishing, swimming, wading or boating) in and on the water resources.

Conditions a. and c. or b. and c. must be established before a Class 7 designation can be made. Although the proposed rule states that the MPCA intends that very few waters be classified in this proceeding, it has listed 187 waters for Class 7 designations, with more such designations to occur in the future.

Because a downgrading of water from Class 2 to Class 7 results in a determination that such waters cannot attain the fisheries and recreational uses, the water quality standards and effulent limitations for such waters vary drastically.

The water quality standards set for Class 7 waters are 1000 organisms per 100 milliliters fecal coliform, 6.0-9.0 pH, 1 mg/l dissolved oxygen and limitation on other unspecified substances so as not to impair specified uses. (WPC 14 D.7.) Effulent limitations for Class 7 waters, governed by WPC 14 C.6 and C.16, provide a 15 mg/l BOD_5 limitation, which may be increased to 25 mg/l BOD_5, but in either case are not to allow a violation of applicable water quality standards in waters connected to or affected by Class 7 water. Other effulent limitations for Class 7 waters are governed by WPC C.6., which excludes limitation on chlorinr, amonia or metals, since such waters are

determined not to be capable of supporting fisheries or recreation. In contrast, Class 2B waters are governed by the following water quality standards and effulent limitations:

5 mg/l dissolved oxygen, 200 organisms per 100 milleleter fecal coliform, .04 mg/l amonia, .05 mg/l chromium, .01 mg/l copper, .02 mg/l cyanide, .5 mg/l oil, 6.5-9.0 pH, .01 mg/l phenols, and .003 mg/l total residual chlorine, among others, so as to permit the propagation and maintenance of fisheries and recreation. Under WPC 14 C.8, the effulent limitation of 5 mg/l BOD_5, not applicable to Class 7 waters, is applied to Class 2 waters when necessary to protect water quality standards.

At public hearings on the above referenced rule, the MPCA has relied upon its 1974 Load Allocation Study for Okabena Creek, the 1978 stream assessment studies and written testimony of various witnesses for the downgrading of Okabebna Creek. The MPCA has not, however, with such evidence, overcome the presumption against downgrading of Okabena Creek by affirmatively establishing that such water cannot attain the fisheries and recreation classification. In fact, although the burden is on the MPCA to overcome such presumption, evidence presented by the citizens of Okabena Creek supports the continued Class 2 designation of the Creek.

As noted in the fact statement above, in the 1974 Load Allocation Study on Okabena Creek, the MPCA concluded that the Class 2 stream standard could be maintained if the effulent from the Worthington treatment plant and Armour treatment lagoon were 5 mg/l BOD_5, 5 mg/l suspended solids and 5 mg/l dissolved oxygen, and recommended such effulent limitations for both dischargers, suporting the inclusion of an implementation schedule in the permits, requiring the plants to be expanded or modified if necessary. (MPCA Exhibit 97, p. 2, 52-53, 81). On April 27, 1979, the MPCA gave notice of its intent to enter into a Stipulation Agreement with Worthington Industrial Lagoons to require construction and compliance with effulent limitations by April 15, 1982. On May 19, 1980, the MPCA requested modifica-

tion of the Worthington wastewater treatment facility permit to require a compliance schedule and municipal pretreatment program to meet pretreatment standards by March 31, 1982. Contrary to the assertions of the MPCA, its Load Allocation Study and subsequent compliance activity establishes that Class 2 standards and effulent limitations for Okabena Creek can be achieved.

The MPCA has also relied on its 1978 stream assessments (MPCA Exhibit No. 85) to rebut the presumption against the downgrading of Okabena Creek. In review of the stream assessments, it is important to remember that two such worksheets exist. One worksheet evaluated the Creek below the Worthington Lagoons, resulting in recommendation of the following portion of Okabena Creek as a Class 7 water - T 102, R 38, S 6, 7, T 102, R 39, S 7, 8, 9, 10, 11, 12, 14, 15, 18, T 102, R 40, S 13 and T 103, R 38, S 31. The second stream assessment evaluated the Creek at Brewster, Minnesota, resulting in recommendation of the following portion of Okabena Creek as a Class 7 water - T 103, R 38, S 21, 22, 28, 29, 30. Following proposed adoption of these two portions of the Creek as Class 7 waters in rule proceedings, the MPCA, based upon Public Exhibit 15 indicating that fish had been seen and caught in the Creek around Alba Township, withdrew the proposed downgrading of that portion of the Creek recommended in its second stream assessment at Brewster.

The importance of the MPCA's withdrawal of that portion of the Creek recommended by the MPCA's Brewster stream assessment on the remaining portion of the Creek proposed for downgrading can be found in a side by side analysis of both stream assessments. Both portions of the stream separately assessed are stated as having low flow rates, subject to man altered channelization and with no definible fish population. When the summary sheet of each stream assessment is compared, in fact, that portion of the Creek below Worthington is more favorably assessed than the portion around Brewster. Yet, the MPCA has withdrawn from Class 7 recommendation the area around Brewster, allowing it to remain Class 2, while downgrading the Creek below Worthington, an area assessed equally if not more favorably by the MPCA.

While the MPCA withdrew its downgrading of the Creek around Brewster based upon Public Exhibit 15, signed by persons stating they has seen and caught fish in the Creek around Alba Township, at the MPCA Board meeting of September 23, 1980, further statements of area residents were submitted indicating

that fish had been seen and caught in T 102, R 39, S 7, 11, 12, 14, 16 and 17, the portion of the Creek the MPCA continues to propose for downgrading (See attached public statement).

Further, although the MPCA written testimony indicates that the Department of Natural Resources was consulted with respect to downgrading Okabena Creek, it appears that little, if any, evaluation of the impact on fisheries has occurred. At public hearing, Mr. Robert Johnson, DNR Areas Fisheries Manager, submitted a statement that North and South Heron Lake provide excellent spawning areas for a number of fish, including northern pike, which travel up Okabena Creek, for an unknown distance, during the spawning run. (Public Exhibit No. 21, See also Public Exhibit No. 22). An additional letter, dated August 27, 1980, from Mr. Gary Oklokzija, DNR Regional Fisheries Supervisor, indicates his concern from a fisheries management standpoint with the proposed downgrading of Okabena Creek. (See attached). Finally, DNR Park Manager, Lowell Jaeger, expresses his concern, from a recreational point of view, with the proposed downgrading of the Creek. (Public Exhibit No. 25).

In addition to ignoring the urgings of the Department of Natural Resources, the MPCA, in its proposed downgrading of Okabena Creek, has further ignored testimony of the EPA at public hearing of its concern for the Creek's use as a spawning ground for pike and its request for further study prior to a change of its designated use. (See attached letter of Steven Schlatzon, EPA Deputy Assistant Administrator for Water Regulations and Standards, dated September 17, 1980).

Written testimony presented at the public hearing by various MPCA witnesses presents no further evidence overcoming the presumption against the downgrading of Okabena Creek. The most specific information presented on the Creek was the written testimony of Jerry C. Winslow on waste load allocation studies using computerized mathematical water quality models, specifically the RMA-12 model, intended to supplement the MPCA's 1973 Load Allocation Study on Okabena Creek. With regard to the Creek, Mr. Winslow drew the following conclusion, among others, regarding the assimilation capacity of Okabena Creek:

> The RMA-12 model indicates that the present downstream water quality for DO of 5 mg/l can be maintained only if the Worthington discharge is maintained at approximately 5 mg/l BOD_5 (Winslow at p. 8).

While the Report of the Hearing Examiner concludes that Mr. Winslow's reference to "downstream water" relates to water below the Worthington plant (Report of the Hearing Examiner, Paragraph 95), the downstream receiving water designated on the MPCA's 1978 stream assessment at Worthington is South Heron Lake and the Des Moines River (MPCA Exhibit No. 85). If Mr. Winslow's testimony means what it says regarding downstream water quality as that term has been used throughout the public hearing process, then the MPCA has established that protection of waters downstream of the Worthington discharge require complaince with the current water quality standards and not downgrading of the Creek's classification.

Throughout the rule-making process, the MPCA has attempted to assuage concerns of the citizens of Jackson County by pointing to various rules which the agency contends will protect the downstream Class 2 waters of Okabena Creek, particularly WPC C.5 providing for a mixing zone, WPC C. 9 allowing for stricter effulent limitation and WPC 16C. providing that effulents to Class 7 waters shall not be allowed to violate downstream water quality standards. First, application of these rules to the present question misses the point entirely, namely the appropriate water classification for Okabena Creek. Second, while such rules may be intended to waylay fears of concerned citizens, classifying a portion of the creek as non-attainable for fisheries and recreation and the remainder as attainable, with respective water quality standards that differ greatly, raises substantial question of the ability to and assurance that Class 2 water quality standards can be met. Where Mr. Winslow has stated the necessity at Worthington to protect downstream waters, and if effulents from Worthington must be limited so as to protect existing fisheries and recreation established for downstream waters, the Class 7 designation of the Creek from Worthington will, it appears, either result in not protecting Class 2 downstream waters, or by required effulent limitations, become superfluous.

The public hearing record and evidence presented to the MPCA by the citizens of Jackson County do not establish that the MPCA has overcome the presumption against the downgrading of Okabena Creek by affirmative evidence of the need for and reasonableness of such reclassification. There is no evidence supporting the limitation of existing or potential fisheries, of the irreversibility of any alteration of the resource by human acti-

vity nor any evidence that recreational resources are limited. The MPCA has not shown that the designated Class 2 use and standards are not attainable nor that attainment of the designated use would result in substantial and widespread adverse economic and social impact.

C. FISHERIES AND RECREATION USE OF OKABENA CREEK IS ATTAINABLE WITHOUT SUBSTANTIAL ECONOMIC HARDSHIP

Under Minn. Stat. §116.07, subd. 6 (1978) the MPCA must give due consideration, in promulgating water qualtiy rules to the burden on a municipality of any tax which may result from such rules and must promulgate water quality rules that are reasonable, feasible and practical. The public hearing record in the rule making proceeding establishes that Okabena Creek can attain a fisheries and recreation use classification without a substantial economic hardship for the City of Worthington.

As noted above, Mr. Gary Brown, City Engineer for the City of Worthington, stated at the public hearing that the City has begun planning a treatment facility in order to comply with applicable effulent limitations under Okabena Creek's Class 2 use. The MPCA returned such plans to the City of Worthington because of the proposed downgrading of Okabena Creek. (Tr. VI, pp. 49-50). Neither the City of Worthington nor the MPCA has stated, however, that attainment of Class 2 water quality standards for Okabena Creek is not possible nor that present water quality cannot be reversed.

As stated by Mr. Brown at the public hearing, and as found by the Hearing Examiner herein, the City of Worthington could achieve the Class 2 water quality standards at a cost of $13,100,000.00. If the Creek is downgraded to Class 7, and the 15 mg/l BOD_5 effulent limit is applied, the cost to the City would still be $11,500,000.00, a difference of $1,600,000.00. (Report of the Hearing Examiner, Paragraph 96). As this testimony indicates, even if Okabena Creek is downgraded, the City must still improve its treatment system at substantial cost. If the national goal of the fisheries and recreation use is applied to Okabena Creek, the City will incurr as additional negligible cost, keeping in mind that 90 percent or more of such capital expenditure, or $1,600,000.00, is eligible for state and federal funding. With such sources of state and federal funding, the

additional cost to the City of Worthington for attaining the Class 2 water use over the downgraded Class 7 use is $60,000.00, not $1,600,000.00.

Where Class 2 water quality standards can be achieved by the City of Worthington without substantial economic hardship, any downgrading of Okabena Creek is invalid.

D. DOWNGRADING OF OKABENA CREEK IMPAIRS THE LEGAL RIGHTS OF JACKSON COUNTY UNDER MEPA AND MERA

In addition to the MPCA's authority under Minn. Stat. Chap. 115, the Agency's rulemaking is also subject to the Minnesota Environmental Policy Act (MEPA), Minn. Stat. Chap. 116D (1978), and the Minnesota Rights Act (MERA), Minn. Stat. Chap. 116B (1978). Under these statutes, the citizens of Jackson County assert that the proposed downgrading of Okabena Creek threatens to interfere with or impair their legal right to the protection, preservation and enhancement of the water and other natural resources of Okabena Creek.

Under MEPA, the Legislature has provided:

> No state action significantly affecting the quality of the environment shall be allowed nor shall any permit for natural resources management and development be granted, where such action or permit has caused or is likely to cause pollution, impairment or destruction of trhe air, water, land and other natural resources located within the state, so long as there is a feasible and president alternative consistent with the reasonable requirements of the public health, safety and welfare and the state's paramount concern for the protection of its air, water, land and other natural resources from pollution, impairment or destruction. Economic considerations alone shall not justify such conduct. (Minn. Stat. §116D.04, subd. 6 (1978)).

The Legislature further provided in MERA, Minn. Stat. §116B.01 (1978), that each person is entitled by right to the protection, preservation and enhancement of the state's natural resources, and further, that each person, including the MPCA, has the responsiblity to contribute to the protection, preservation and enhancement thereof.

To safeguard the rights set forth in MERA, the Legislature granted a civil cause of action to any person residing within the state against any other person for the protection of the air, water, land and other natural resources from pollution, impairment or destruction, where such person's conduct is or is likely to pollute, impair or destroy the environment. (Minn. Stat. §116B.03 (1978)). Under Minn. Stat. §116B.03, no civil action may be maintained for conduct pursuant to an environmental quality standard, rule or permit issued by the MPCA, but under Minn. Stat. §116B.10, any person may bring a civil action against the state or its agencies, including the MPCA, alleging that an environmental quality standard or rule is inadequate to protect the environment.

The downgrading of Okabena Creek, under MEPA, is a state action significantly affecting the water quality of Okabena Creek and its downstream waters, including Heron Lake. The downgrading of a portion of Okabena Creek from Class 2 to Class 7 waters will cause pollution, impairment and destruction of the Creek's water and those waters downstream. Such downgrading, under MEPA, cannot be allowed where there is a feasible and prudent alterative, namely, allowing Okabena Creek to remain a Class 2 water. As set forth above, the public record in this rule making proceeding does not overcome the presumption against downgrading of Okabena Creek, does not assure the protection of its downstream waters, and does not establish that Class 2 water quality standards cannot be attained in the Creek. In fact, the record establishes that such standards <u>can</u> be attained and without substantial cost to the City of Worthington.

Under MERA, the citizens of Jackson County have a statutory right to the protection of the natural resources of Okabena Creek and the MPCA has a duty to protect, enhance and preserve that resource. Promulgation of Supplement 1 to WPC 24 downgrading Okabena Creek will interfere with and impair the legal rights of the citizens of Jackson County to the protection of the resources of the Creek and its downstream waters. The

proposed downgrading of Okabena Creek by the MPCA is inadequate to protect such resources under Minn. Stat. §116B.10 and exceeds the MPCA's rule-making authority under MEPA, MERA and the Minnesota APA.

CONCLUSION

As set forth above, the citizens of Jackson County assert that the MPCA, by the proposed downgrading of Okabena Creek, has exceeded its statutory authority under the state and federal Water Pollution Control Acts, has not overcome the presumption against the downgrading of Okabena Creek by making an affirmative presentation of facts establishing the need for and reasonableness of such reclassification, and that the downgrading of the Creek will interfere with and impair the legal rights of the citizens of Jackson County to the protection of the Creek's natural resources under MEPA and MERA. For these reasons, the citizens of Jackson County urge the Attorney General to declare this poriton of the MPCA's above referenced rules illegal and invalid.

Very truly yours,

BROEKER, HARTFELDT, HEDGES & GRANT

By /s/ Becky A. Comstock
Becky A. Comstock

And

By /s/ Will Hartfeldt
Will Hartfeldt

BAC:klp
Enc.
cc: Allan R. Mitchell
Milford Gentz
Dennis C. Hanselman
John Lundblad
Representative George Mann
Senator Howard D. Olson
Steven Schatzow

MINNESOTA POLLUTION CONTROL AGENCY

Stream Assessment Worksheet
Class C and D

CITY Worthington Lagoons (W.L.) Allied Mills (A.M.)-Okabena Creek

COUNTY Nobles

FLOW design A.M. 250-500 GPD
actual W.L. 900,000 GPD

TOWNSHIP 102N

TYPE OF TREATMENT A.M. - none
W.L. - 4 cell anaerobic and 3 cell aerobic stab. ponds

RANGE 39W

RECEIVING WATER A.M. - ditch to Okabena Creek
W.L. - Okabena Creek

SECTION 8

BASIN 07-11 Mississippi-Des Moines-Skunk Rivers major

WATERSHED UNIT 07100001 (USGS No.)

DNR Public Waters Class (If Known)

DOWNSTREAM RECEIVING WATER

1. South Heron Lake
2. Des Moines River
3.

1.
2.
3.

STATIONS INVESTIGATED

Field No.	Location
1	Okabena Creek, bridge on SNTH 60 in S8, T102N, R39W
2	Okabena Creek, bridge on County Road 53 between S15,16, T102N, R39W
3	Okabena Creek, bridge on Section Line road between S30,31, T103N, R38W
4	Okabena Creek, bridge on CSAH 9 between S7,8, T103N, R37W

STATIONS SAMPLED (attach lab sheets)

General Chem	Special

DATE OF FIELD OBSERVATIONS: September 19, 1978

MPCA PERSONNEL: Thomas Dellenbach (name) — Pollution Control Technician (classification)

MPCA REGIONAL STAFF: Bruce Davis notified

OTHER PERSONS CONTACTED:

Bill Dennison (name) — Allied Mills plant manager (title)

DNR FISHERIES MANAGER: Ray Julius — Farmer
2 other farmers provided fisheries information but were unwilling to give their names (see comments, page 6).

Robert Johnson

PHONE: (507) 831-3394

Northern pike come up from South Heron Lake in the spring to spawn. Not a resident population.

PHYSICAL FEATURE		Station on Receiving Water 1	2	3	4	NOTES
Watershed Character (maps or observation)	Size (sq. mi.)	7	17	97	138	
	Soil Type	sandy loamy	sandy loamy	sandy loamy	sandy loamy	sandy, clay, etc.
	Vegetation Type	prairie	prairie	prairie	prairie	
	Predominant Land Use	agr. industry	agr.	agr.	agr. municipal	agr., for., urban, other
Hydrologic Features (indicate if estimate or actual measurement)	Width (Ave.)	14'	10'	9'	25'	
	Depth (Ave/Max)	2' / 2.3'	0.6'/0.8'	0.5'/0.6'	2.0'/ 2.5'	
	Current (fps)	0.3	1.5	1.7	0.3	
	Flow Rate (cfs)	8.4	9	7.6	15	Flow at station 1 is mainly effluent from Worthington municipal WWTF
Predominant Bottom Type	Stony		X			
	Sandy		X	X	X	
	Mud	X			X	Bottom at station 1 was very muddy
	Humus					
Control Structures or Obstructions	Dams					
	Other					fences, snags, etc.
Irretriv. Channel Alteration	Natural %	40	20	40	40	
	Channelized % (man altered)	60	80	60	60	
Pools or Refuges For Fish (no. observed/depth)		none	none	none	1 pool ≈3.5'	
Discharge Record	7Q10 Annual	0 cfs				
	7Q10 Seasonal S W					

USGS Record. Location of nearest station: 474920
Okabena Creek at Okabena, Minnesota

Type of record: continuous partial miscellaneous

Period of record: September, 1969 to August, 1976

	CHEMICAL CHARACTERISTICS	Station on Receiving Water 1	2	3	4	NOTES
Field Measurements	Dissolved Oxygen (ppm) / Time	2.6/ 1305	8.8 / 1340	17.8/ 1430	10.6/ 1530	
	Temperature (°C)	14	12	12	11	
	Percent Saturation	26	85	171	100	
	pH / Time	7.8 / 1310	8.1 / 1345	8.7 / 1410	8.7/ 1745	
	Chlorine, Total Residual (ppm)					
Field Estimates	Turbidity (transparency) High : <.5 ft. Moderate: .5 to 1 ft. Low : >1 ft.	High	Mod.	Mod.	Mod.	
Lab Analysis. Check those to be analyzed	Turbidity	N O	S A M P L E S			
	Conductivity					
	Hardness ca					
	mg					
	total					
	Total Organic Carbon					
	Ammonia as N					
	Other (specify)					

BIOLOGICAL CHARACTERISTICS		Station on Receiving Water 1	2	3	4	NOTES
Bank Vegetation	Absent					
	Herbs & grasses	X	X	X	X	
	Brush (including scattered trees, herbs and grasses)					
	Tree lined with herbaceous ground cover					
Aquatic Vegetation	Floating plants duckweed, lily pads					
	Submerged rooted plants indicate percent coverage of substrate					
	Emergent plants - cattails, bullrushes, grasses, etc.	10%				
Phytoplankton (algae)	Excessive - very green	X	X	X	X	
	Moderate - green tinge					
	Low - no green visible					
	Attached filamentous		X			
Fish Observed	None	X	X	X	X	
	Dead only					
	Minnows observed					
	Game fish observed					
	Rough fish observed					
Barriers to fish movement observed		none	none	none	none	
Inverte-brates	None observed	X			X	
	Organisms observed on rocks			X		
	Organisms observed in/on other substrate (specify)		vegetation X			

CULTURAL FEATURE		Station on Receiving Water 1	2	3	4	NOTES
Recreational Uses Observed (present or future)	Bathing			possible wading		
	Fishing					
	Hunting		X	X	possible	
	Picnicking		X	X	X	
	Hiking	X	X	X	X	
	Nature Study	X	X	X	X	
	Camping		possible	possible	possible	
Type of Drainage Sources Observed	Highways	X	X	X	X	
	Feed Lots					
	Farm Tiles		X		X	
	Combined Sewer Overflows	possible			possible	
	Forest					
	Urban Storm-water Runoff	X			X	
Shoreland Ownership % Public						
Property Adjacent to Rec. Water (¼ mi. dist)	No. of farm residences	2	6	7	4	
	No. of Municipal residences				many	
Nuisance Complaints Record	Odor	H_2S when bottom disturbed				
	Spills					
	Fish Kills					
Discharges From (Flows)	Municipal	Worthington	X	X	Okabena	Raw sewage and/or septic tank effluent are known to be discharged to drain tiles (photo of unauthorized discharge, a milky white color)
	Industrial Process	Worthington lagoons	X	X	possible see photo #6,7	
	Industrial Cooling	Allied Mills	X	X		
	Power Plant Cooling Water					
	Other					

MAP WITH RECEIVING WATER STATIONS NUMBERED (Mark Those Attached)

/X/ County Highway Map Nobles, Jackson

/_/ USGS Map

/_/ Other NPDES outfall locations

PHOTOGRAPHS: (Mark Those Attached)

/X/ 35mm Slide of each observation station

/_/ Nuisance conditions

/_/ Fish Barriers

/_/ Discharge Pipes

/X/ Unauthorized Discharge

COMMENTS: (Including comments of local residents)

W.L. - Treats wastes from Armour & Company, and occasionally wastes from Worthington Rendering. Discharge 003 consists of treated process wastes (.9 mgd), and discharge 004 consists of untreated process during power failure. (5/5 limits) Worthington Lagoons has consistantly not met their limits, or even 25/30 limits. Issued a notice of violation on 8/1/78 (from NPDES file)

Three farmers told me there are no fish in Okabena Creek (all three farmers live on Okabena Creek).

I recommend a Limited Resource Value classification on Okabena Creek because it lacks a fishery, it is plowed up to the banks, it has been channelized and tiled into, and has a poor water quality and aesthetic quality. Below station 3 the Brewster Municipal assessment classes Okabena Creek as a Limited Resource Value water to Section Line Road between S15,22, T103N, R38W, and I concur.

CLIMATIC CONDITIONS: (statement concerning preceding weather & rainfall events)

No rain for 4 weeks, 3" fell 1 month ago.

SUMMARY ASSESSMENT SHEET

	Limited Resource Value Water 2 mg/l D.O. maintained (non-fishable-swimmable)	Intermediate Resource Value Water Class C 5 mg/l D.O. maintained (fishable-swimmable)
Background Quality of Receiving Water	Normally marginal quality impacted by drainage sources /X/	Normally acceptable quality for fishery /_/
Flow Characteristic	Normally dry stream bed, would not support fishery, has short term runoff, no dilution flow for effluent	Non-continuous for only short durations, supports fishery, feeder stream to downstream waters, some dilution of effluent available
-Summer base flow period	No Flow /_/	Flow (may be very small) /X/
-Winter base flow	No Flow /_/	Flow (may be very small) /X/
-Velocity	None to very slow (less than .1 fps) /_/	Slow to fast (greater than .1 fps) /X/
Channel Characteristic		
-Alterations	Channelized, or with major alterations /X/	Natural or with minor alterations /_/
-Bank Vegetation	Grass or herbaceous cover only /X/	Scattered to complete brush or tree cover /_/
-Bottom Substrate	Mud, sludge or organic debris /X/	Silt, sand, gravel or rock /X/
Quality Characteristic	Interfere with fishable/swimmable goals	Achieve fishable/swimmable goals
-Dissolved Oxygen	Less than 5 during day /_/	Greater than 5 during day - super saturation /X/
-Turbidity	High /_/	Moderate to low /X/
-Fish	Known to be absent /X/	Known to be present /_/
Cultural Characteristic		
-Unalterable change or pollution	Present /X/	Absent /_/
-Recreational Uses	Not observed /X/	Observed or possible /_/
RECOMMENDED MANAGEMENT CLASSIFICATION	Limited Resource Value /X/	CLASS C /_/

Comments: Recommend Okabena Creek be classed Limited Resource Value in S6,7, T102N, R38W; S8,9,10,11,12,14,15,16, T102N, R39W; S31, T103N, R38W.

Additional Limited Resource Value segments:
Okabena Creek in S7,18,T102N,R39W; S13,T102N,R40W.
(GTB 18JAN80)

Prepared By: Thomas Dellenbach

Date: October 19, 1978

Comments: Okabena Creek was assessed in the vicinity of Brewster, Minnesota on June 13, 1978. Refer to the Brewster assessment for further survey information and recommendations.

Reviewed By: G. Blaha

Date: November 30, 1979

Comments:

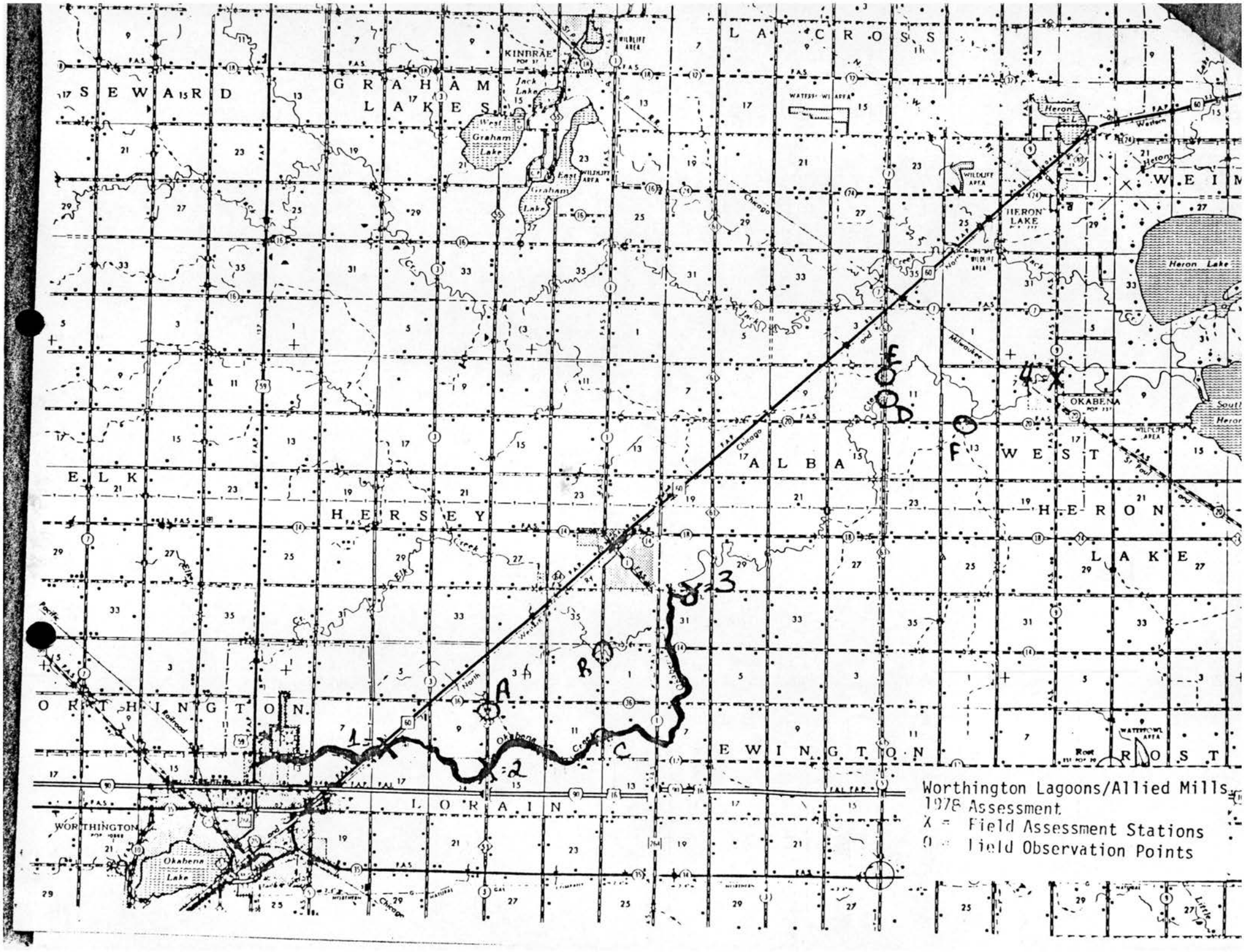
Approved By: William H Ender

Date: 12-31-79

Comments:

Approved By: for John McGuire

Date: 1/17/80


Worthington Lagoons/Allied Mills
1978 Assessment
X = Field Assessment Stations
O = Field Observation Points
1
2
3
4
A
B
C
D
E
F
G
H
SEWARD
GRAHAM
LACROSS
ELK
HERSEY
ALBA
WEST
HERON
LAKE
WEIM
OKABENA
WORTHINGTON
LORAIN
EWINGTON
ROST
KINBRAE
Jack Lake
West Graham Lake
East Graham Lake
Heron Lake
Okabena Lake
Okabena Creek
Chicago
Milwaukee
Pacific
Rock Island
North Fork
Elk Creek
Jack Creek
Heron Lake Outlet
Heron Lake Watershed Wildlife Area
Heron Lake Waterfowl Area
Okabena Wildlife Area
Graham Lakes Wildlife Area
Graham Lakes East Wildlife Area

MINNESOTA POLLUTION CONTROL AGENCY

Stream Assessment Worksheet
Class C and D

CITY Brewster

COUNTY Nobles/Jackson

FLOW design 72,000 GPD / actual

TOWNSHIP 103 N

TYPE OF TREATMENT Stab. ponds

RANGE 38W

RECEIVING WATER Okabena Creek

SECTION N½ of S½ S30

BASIN 07-11 Mississippi-DesMoines-Skunk Rivers
major

WATERSHED UNIT 07100001
(USGS No.)

DNR Public Waters Class
(If Known)

DOWNSTREAM RECEIVING WATER

1. South Heron Lake
2.
3.

1.
2.
3.

STATIONS INVESTIGATED

Field No.	Location
1	Okabena Creek, bridge on section line road, between S30,31, T103N, R38W
2	Okabena Creek, bridge on section line road, between S28,29, T103N, R38W
3	Okabena, bridge on section line road, between S15,22, T103N, R38W

STATIONS SAMPLED
(attach lab sheets)

General Chem	Special

DATE OF FIELD OBSERVATIONS: June 13, 1978

MPCA PERSONNEL: Gordon LaBelle (name) — Pollution Control Technician (classification)

MPCA REGIONAL STAFF: Contacted

OTHER PERSONS CONTACTED:

Mr. Petersen (name) — Postmaster (Brewster) (title)

DNR FISHERIES MANAGER:

Bruce Gilbertson — Possible fish rescue work, no stocking.

PHONE: (507) 362-8558

PHYSICAL FEATURE		Station on Receiving Water 1	2	3	4	NOTES
Watershed Character (maps or observation)	Size (sq. mi.)	97		115		
	Soil Type	clay loam	clay loam	clay		sandy, clay, etc.
	Vegetation Type	grass	grass	grass		
	Predominant Land Use	agr.	agr.	agr.		agr., for., urban, other
Hydrologic Features (indicate if estimate or actual measurement)	Width (Ave.)	15'	20'	15'		
	Depth (Ave/Max)	1' /1.5'	2' /3.5'	1.5'/2'	/	
	Current (fps)	1	0.5	2		
	Flow Rate (cfs)	15	20	45		
Predominant Bottom Type	Stony					
	Sandy		X	X		#2 - some mud
	Mud	X	X			
	Humus					
Control Structures or Obstructions	Dams					
	Other					fences, snags, etc.
Irretriv. Channel Alteration	Natural %	20	20	75		
	Channelized % (man altered)	80	80	25		
Pools or Refuges For Fish (no. observed/depth)			1/3'			#2 - under bridge
Discharge Record	7Q10 Annual	0	0	0		
	7Q10 Seasonal S W					
	USGS Record. Location of nearest station: 474920 Okabena Creek near Okabena					
	Type of record: continuous partial miscellaneous					
	Period of record: flow measurements taken yearly 1969-70, 1972-76					

	CHEMICAL CHARACTERISTICS	Station on Receiving Water 1	2	3	4	NOTES
Field Measurements	Dissolved Oxygen (ppm) / Time	8.4/ 1515	10.0/ 1615	11.0/ 1645	/	
	Temperature (°C)	25	24	23		
	Percent Saturation	104	122	131		
	pH / Time	8.4/ 1530	/	8.5 / 1630	/	
	Chlorine, Total Residual (ppm)					
Field Estimates	Turbidity (transparency) High : <.5 ft. Moderate: .5 to 1 ft. Low : >1 ft.	High	Mod.	Low		
Lab Analysis. Check those to be analyzed	Turbidity	N O	S A M P L	E S		
	Conductivity					
	Hardness ca					
	mg					
	total					
	Total Organic Carbon					
	Ammonia as N					
	Other (specify)					

BIOLOGICAL CHARACTERISTICS		Station on Receiving Water 1	2	3	4	NOTES
Bank Vegetation	Absent					
	Herbs & grasses	X	X	X		
	Brush (including scattered trees, herbs and grasses)			X		
	Tree lined with herbaceous ground cover					
Aquatic Vegetation	Floating plants duckweed, lily pads	X	X	X		#3 - slight
	Submerged rooted plants indicate percent coverage of substrate	30	10	5		
	Emergent plants - cattails, bullrushes, grasses, etc.					
Phytoplankton (algae)	Excessive - very green					
	Moderate - green tinge	X				
	Low - no green visible		X	X		
	Attached filamentous	X	X	X		#3 - slight
Fish Observed	None	X		X		
	Dead only					
	Minnows observed		X			
	Game fish observed					
	Rough fish observed					
Barriers to fish movement observed						
Inverte-brates	None observed	X		X		
	Organisms observed on rocks		X			
	Organisms observed in/on other substrate (specify)					

CULTURAL FEATURE		Station on Receiving Water 1	2	3	4	NOTES
Recreational Uses Observed (present or future)	Bathing					
	Fishing	N	N	N		
	Hunting					
	Picnicking	O	O	O		
	Hiking	N	N	N		
	Nature Study					
	Camping	E	E	E		
Type of Drainage Sources Observed	Highways	X	X	X		
	Feed Lots					
	Farm Tiles	X	X			
	Combined Sewer Overflows					
	Forest					
	Urban Storm-water Runoff					
Shoreland Ownership % Public						
Property Adjacent to Rec. Water (¼ mi. dist)	No. of farm residences	2	1	1		
	No. of Municipal residences	1	0	0		
Nuisance Complaints Record	Odor					
	Spills					
	Fish Kills					
Discharges From (Flows)	Municipal		X	X		
	Industrial Process					
	Industrial Cooling					
	Power Plant Cooling Water					
	Other					

MAP WITH RECEIVING WATER STATIONS NUMBERED (Mark Those Attached)

/XX/ County Highway Map Nobles/Jackson

/_/ USGS Map Brewster

/_/ Other

PHOTOGRAPHS: (Mark Those Attached)

/XX/ 35mm Slide of each observation station

/_/ Nuisance conditions

/_/ Fish Barriers

/_/ Discharge Pipes

/_/ Unauthorized Discharge

COMMENTS: (Including comments of local residents)

Local resident, Mr. Peterson (Postmaster), relates creek has flow year round, no fishing in creek near town, but good fishing in creek north of town. He suspects fish migrate from South Heron Lake. Station #1 (slight sewer odor present) At stations #2, #3 and Observation point A, springs were observed feeding into creek.

Additional comments by Gordon LaBelle: Okabena Creek has an extremely limited fishery probably restricted to fish migrating only a short distance from South Heron Lake. With very high dissolved oxygen percent saturation levels during daylight hours, suspect nocturnal depletion.

Recommend Okabena Creek be classed Limited Resource Value from station #1 to station #3.

CLIMATIC CONDITIONS: (statement concerning preceding weather & rainfall events)

June 13, 1978 - occasional high winds - partly cloudy

≈1.25" rain during the past 2 weeks

SUMMARY ASSESSMENT SHEET

	Limited Resource Value Water 2 mg/l D.O. maintained (non-fishable-swimmable)	Intermediate Resource Value Water Class C 5 mg/l D.O. maintained (fishable-swimmable)
Background Quality of Receiving Water	Normally marginal quality impacted by drainage sources /X/	Normally acceptable quality for fishery /_/
Flow Characteristic	Normally dry stream bed, would not support fishery, has short term runoff, no dilution flow for effluent	Non-continuous for only short durations, supports fishery, feeder stream to downstream waters, some dilution of effluent available
-Summer base flow period	No Flow /_/	Flow (may be very small) /X/
-Winter base flow	No Flow /_/	Flow (may be very small) /X/
-Velocity	None to very slow (less than .1 fps) /_/	Slow to fast (greater than .1 fps) /X/
Channel Characteristic		
-Alterations	Channelized, or with major alterations /XX/	Natural or with minor alterations /_/
-Bank Vegetation	Grass or herbaceous cover only /XX/	Scattered to complete brush or tree cover /_/
-Bottom Substrate	Mud, sludge or organic debris /XX/	Silt, sand, gravel or rock /_/
Quality Characteristic	Interfere with fishable/swimmable goals	Achieve fishable/swimmable goals
-Dissolved Oxygen	Less than 5 during day /_/	Greater than 5 during day - super saturation /XX/
-Turbidity	High /_/	Moderate to low /XX/
-Fish	Known to be absent /XX	Known to be present /_/
Cultural Characteristic		
-Unalterable change or pollution	Present /X/	Absent /_/
-Recreational Uses	Not observed /X/	Observed or possible /_/
RECOMMENDED MANAGEMENT CLASSIFICATION	Limited Resource Value Okabena Creek /X/	CLASS C /_/

Comments: Recommend that Okabena Creek be classed Limited Resource Value in S21,22,28,29,30, T103N, R38W

Prepared By: Gordon LaBelle

Date: June 13, 1978

Comments: Okabena Creek was assessed again on October 19, 1978. See the Worthington Lagoons/Allied Mills assessment for additional survey information and recommendations.

Reviewed By: G. Blaha

Date: April 27, 1979

Comments:

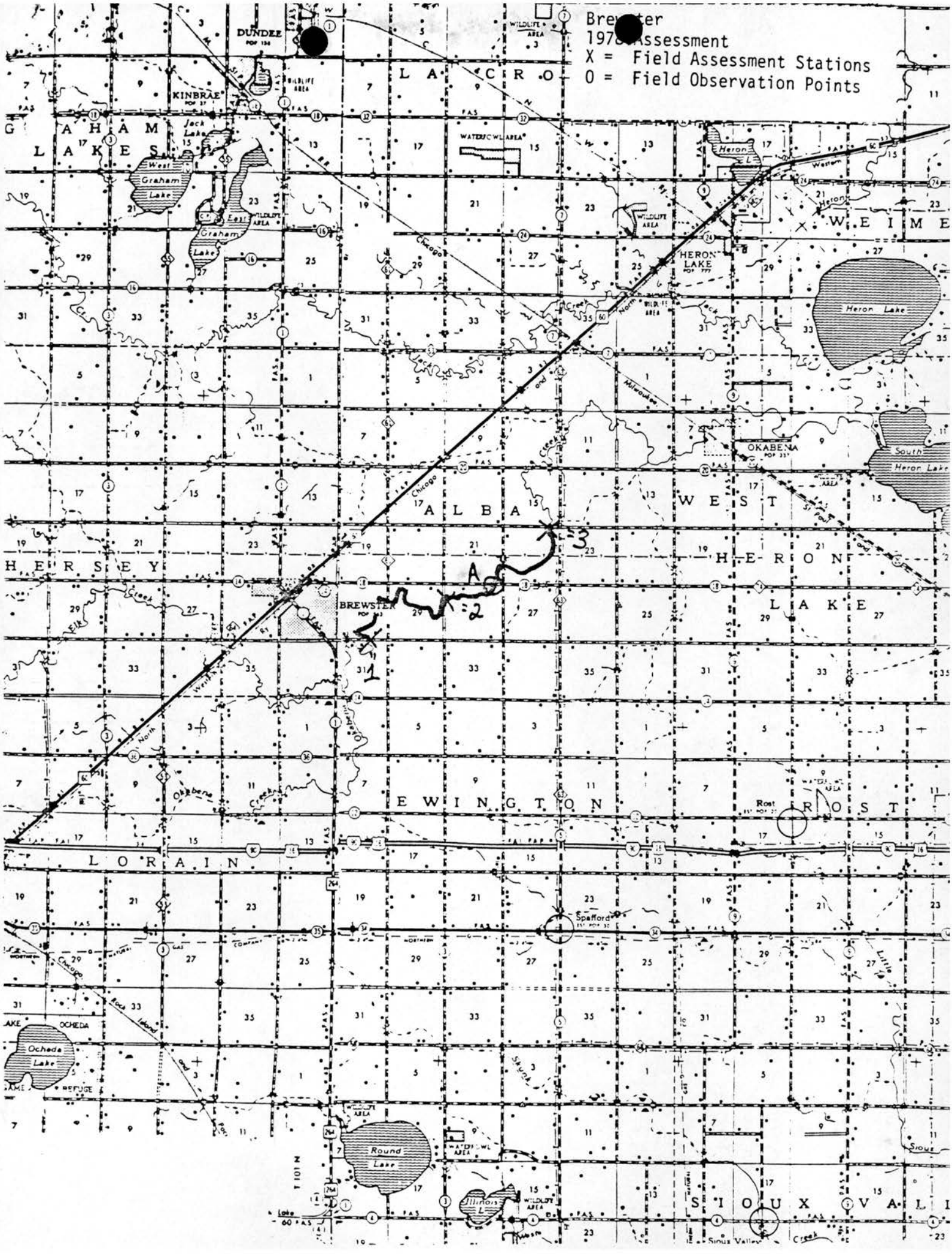
Approved By: William H Ander

Date: 12-31-79

Comments:

Approved By: John W McGuire

Date: 1/17/80


Brewster
1978 Assessment
X = Field Assessment Stations
O = Field Observation Points
DUNDEE
KINBRAE
GRAHAM LAKES
West Graham Lake
East Graham Lake
LA CROSSE
WATERFOWL AREA
HERON LAKE
Heron Lake
WEIMER
OKABENA
South Heron Lake
ALBA
WEST
HERSEY
BREWSTER
HERON LAKE
EWINGTON
ROST
LORAIN
Spafford
OCHEDA
Ocheda Lake
Round Lake
SIOUX VALLEY
A
1
2
3

September 22, 1980

Dear Board Member:

I would like to inform you that Minnesota House of Representatives approved $75,000.00 in State Funds contingent on a local match of $50,000.00 for a study of how to restore Heron Lake, this was done on March of 1980. LCMR had allocated $200,000.00 before, for construction work on Heron Lake. $180,000.00 of this money is left and will be used as a match for this study.

I sponsored this Legislation and feel any downgrading of Okabena Creek would be a hinderance to this bill and future use of Heron Lake, Jackson Counties largest water resources.

Sincerely,

Representative George Mann

HOWARD D. OLSON
Senator 27th District
Office:
325 State Capitol
St. Paul, MN 55155
(612) 296-4187
Home:
Route 3
St. James, MN 56081
(507) 375-5439

Senate
State of Minnesota

October 1, 1980

Ms. Terry M. Hoffman
Executive Director
Minnesota Pollution Control Agency
1935 West County Road B-2
Roseville, Minnesota 55113

Dear Ms. Hoffman:

I am writing with regard to the proposed reclassification of Okabena Creek in Nobles and Jackson counties from Class 2 to Class 7. It is my understanding that this matter will be discussed again by the Board members of the Minnesota Pollution Control Agency on October 14, 1980 and I request that a copy of this letter be distributed to each Board member.

Okabena Creek is one of the largest contributors of water into Heron Lake in Jackson County. Heron Lake is the largest lake in Jackson County and has a long history of recreational use and state interest in improving its water quality. Recent indications of state interest have included a substantial allocation from the Legislative Commission on Minnesota Resources and a 1980 legislative appropriation for a comprehensive study of the restoration potential of the lake. Only 1.9 percent of the land within the nine counties of the Southwest Regional Development Commission area is available for recreational use. It only makes sense to protect what little recreational resources we have from further degradation. Reportedly, Okabena Creek is both a habitat for northern pike which spawn in Heron Lake and the largest contributor of pollution to Heron Lake.

It is my understanding that there are now at least three permitted dischargers of pollution into Okabena Creek at Worthington. These dischargers are the Municipal Industrial Lagoon, the Municipal Wastewater Treatment Facility and Allied Mills, Inc. Additional pollutors may also use Okabena Creek.

Yes, I realize that it would cost more to bring the water quality of Okabena Creek up to Class 2-B rather than Class 7 standards. But, it is also important to remember that good water quality requires cooperation among neighboring communities.

Please consider that the community of Okabena, with approximately 110 residences, is paying out $800,000 to bring their discharges up to Class 2-B standards. Similarly, the small communities of Brewster and Heron Lake have made and are making extraordinary efforts to meet Class 2-B standards. Lakefield, still another small community in Jackson County, is now in stage two of meeting Class 2-B standards.

Why is it that these small communities with very limited or non-existent industrial tax bases should be expected to live with pollution created by the industries upstream?

It just doesn't make sense to me to undermine the efforts of these small communities and I hope that you and the members of the Board will reconsider your earlier position and classify all of Okabena Creek as Class 2.

Thank you very much for your consideration.

Warmest personal regards,

Howard D. Olson

HOWARD D. OLSON
Chairman
General Legislation & Administrative Rules Committee

HDO/st

Minnesota Pollution Control Agency

RECEIVED
JUN 1980
Southwest Regional Development Commission

June 6, 1980

Mr. Jerry Chasteen
Executive Director
Southwest Regional Development Commission
25th Street and Broadway
Box 265
Slayton, Minnesota 56172

Dear Mr. Chasteen:

Thank you for the comments and recommendations on the Agency's proposed Class 7 Limited Resource Value waters. The timeliness of your submittal was appreciated since it provided the Agency staff with enough lead time to reinvestigate many of the waterways which were cited in your comment letter. Attached for your information is a copy of a portion of the Supplemental MPCA Staff Response To Testimony which was submitted into the hearing record on May 27, 1980, and outlines the Agency staff's response to your comments. No action was taken concerning the listing or classifications of Pell Creek near Walnut Grove or Jack Creek near Wilmont.

Your interest in the Agency's proposed water quality standards and proposed Class 7 waters is appreciated. If you have any questions, please let me know.

Yours truly,

Lanny R. Peissig, P.E.
Head, Comprehensive Studies Unit
Surface and Groundwaters Section
Division of Water Quality

LRP:lt

Phone: 612/296-7397
1935 West County Road B2, Roseville, Minnesota 55113
Regional Offices · Duluth/Brainerd/Detroit Lakes/Marshall/Rochester
Equal Opportunity Employer

Written and oral comments have been received through-out the public hearing with regard to the proposed water use classifications of certain waters of the State. Some of these comments have been addressed by the Agency and this information can be found in the Minnesota Pollution Control Agency (MPCA) Staff Response to Testimony on pages 37-40. The following information either address the remaining comments or expand on those formerly addressed. With the exception of the Litchfield stream assessment, which is attachment #6 to the MPCA Staff Response to Testimony, the following referenced stream assessments are contained in Exhibit 85.

Belview-County Ditch #12 (Rice Creek):

County Ditch #12 was previously assessed and proposed as a Class 7 Limited Resource Value water to its confluence with the Minnesota River. In response to comments made in an April 25, 1980 letter from the Southwest Regional Development Commission (SRDC) a reassessment of the watercourse was conducted on May 20, 1980. Comments were received from a local farmer, who lives north of the town of Delhi, indicating that there are continuously flowing springs in S5, T113N, R36W which fed County Ditch #12 and that there are a series of small waterfalls along this waterway in S4, T113N, R36W. Based on this information it is the Agency Staff's recommendation that the portion of this waterway in S4, 5, T113N, R36W be deleted as a Proposed Class 7 Limited Resource Value water. The revised legal description of the Class 7 segment for County Ditch #12 is as follows: T113, R36, S7, 8, 18, 19; T113, R37, S15, 21, 22, 23, 24.

Campbell Soup Company (Worthington) - Judicial Ditch #6:

Based on testimony presented by the City of Worthington at the Marshall public hearing on April 7, 1980 the Agency Staff has retracted the proposed Class 7 designation of Judicial Ditch #6 and is on the record as to recommending that it retain its present fisheries and recreational use designation.

Iona - Unnamed Creek:

The unnamed creek was previously assessed and proposed as a Class 7 Limited Resource Value water from the Town of Iona to Lime Lake. In response to a recommendation made by the SRDC this unnamed creek was reassessed on May 19, 1980. A local farmer interviewed during this assessment indicated that this creek dries up seasonally. A man made dam approximately 3.5 miles downstream from Iona acts as a barrier to fish which may migrate up the creek from Lime Lake. Downstream of the dam, through the Big Slough Wildlife Management Area and in the vicinity of CSAH-34 the creek has been extensively channelized. Also along this stretch of the creek there were no pools observed of adequate depth which could serve as fish refuges to maintain a fishery through-out the season. It is felt that the existing fishing or potential fishery in the unnamed creek is severely limited due to limited flows and that there are limited recreational opportunities in and on this waterway as a result of this lack of water and the channelization of the stream-bed. It is the Agency Staff's recommendation therefore that the Class 7 Limited Resource Value designation as proposed for this unnamed creek remain unchanged.

Lake Benton - Unnamed Ditch And Flandreau Creek:

The unnamed creek and Flandreau Creek are proposed as Class 7 Limited Resource Value waters. Flandreau Creek was reassessed on May 20, 1980. The end point of the Class 7 designated segment of Flandreau Creek is just upstream of the confluence of the East Branch Flandreau Creek with Flandreau Creek. Flandreau Creek upstream of this intersection presently does not have either sufficient water volume or stream bed depth to maintain a fishery or other water related recreational uses. Therefore it is the Agency staff's recommendation that the proposed Class 7 Limited Resource Value designations for the unnamed ditch and Flandreau Creek remain unchanged.

er - County Ditch #14 And Judicial Ditch #12:

County Ditch #1[illegible]nd Judicial Ditch #12 were pr[illegible]ously assessed and proposed as Class 7 Limited Resource Value waters. In response to recommendations made by the SRDC Judicial Ditch #12 was reassessed on May 20, 1980. It was concluded that while there is less channelization of the watercourse below station 4 at the County Road 51 bridge crossing, the stream flow appeared to be very limited and no pools of sufficient size which could act as fish refuges or for body contact use were observed. These observations were confimed in a discussion with the mayor of Florence, Minnesota who stated that he knew of no fishing on the waterway or of any "swimming holes" along it. The Agency staff therefore recommends the Class 7 designation previously proposed for the two waterways remain unchanged.

Wabasso - Unnamed Ditch, Unnamed Ditch, Sleepy Eye Creek:

These three watercourses or portions thereof were previously assessed and proposed as Class 7 Limited Resource Value waters. Comments received in the SRDC letter indicated a potential recreation use of Sleepy Eye Creek. A reassessment of Sleepy Eye Creek was made on May 19, 1980.

For the most part, Sleepy Eye Creek in this area has in the past experienced some extensive channelization. Small riffle, rock dams under several of the bridges serve to pool the water in the channel which may be of sufficient depth to sustain a limited fishery through out the year. These same rock dams, however, would act as fish barriers under low flow conditions. It was also indicated in the comment letter that canoeing was a possible recreational use of Sleepy Eye Creek. Based on this additional information, the Agency staff recommends that the entire segment of Sleepy Eye Creek previously proposed as Class 7 Limited Resource Value retain a fisheries and recreational use classification. Therefore Sleepy Eye Creek, T110, R35, S7, 8, 9, 14, 15, 16; T110, R36, S1, 2, 3, 12 should be deleted from Supplement 1 to WPC 24.

Worthington - Okabena Creek

Okabena Creek was previously assessed and proposed as a Class 7 Limited Resource Value water. Testimony in support of this designation was presented by representatives of the City of Worthington at the April 7, 1980 public hearing in Marshall. Representatives of Jackson County, also in attendance at this hearing, voiced their opposition to the proposed reclassification of Okabena Creek. Subsequent to this hearing, written testimony has been entered into the hearing record by the Jackson County representatives. Public Exhibit 15 was of special importance since it contained statements that fishing is a recreational use of Okabena Creek in the Brewster area. A number of these individuals were contacted by telephone on May 21, 1980 in an attempt to obtain additional fisheries information. It was the general consensus of those interviewed that there are fish in Okabena Creek in the Brewster area and that there are individuals in the area that do fish the creek. It is the Agency staff's recommendation that although the fishery in this creek may be of a limited nature, Okabena Creek is being used for recreational purposes by the local residents and therefore should be classified fisheries and recreational use from the location south of Brewster near the Elk Creek intersect with Okabena Creek downstream to South Heron Lake. The Agency staff continues to recommend that Okabena Creek have a Limited Resource Value designation from Worthington to a point near the Elk Creek intersect with Okabena Creek. The revised legal description for the Class 7 Limited Resource Value segment of Okabena Creek is as follows: T102, R38, S6, 7; T102, R39, S7, 8, 9, 10, 11, 12, 14, 15, 16, 18; T102, R40, S13.

These changes and additions in the proposed use classifications, the typographical errors or omissions in the February 25, 1980 State Register Volume 4, Number 34 along with the previous changes that were noted in the Minnesota Pollution Control Agency Staff Response to Testimony and Changes to Proposed Amendments have been outlined on the attached Amendments to Supplement 1 to WPC 24.

Public Exhibit No. 12

Jackson County Conservation League

"In the Heart of the Pheasant Country"

April 28, 1980

Allen Klein
Hearing Examiner
Office of Hearing Examiners
1745 University Ave.
St. Paul, Minnesota 55104

Dear Mr. Klein:

Regarding the proposed amendments to the Minnesota Pollution Control Agency Water Quality rules and regulations.

The Jackson County Conservation League does object to the downgrading of any portion of Okabena Creek to a "limited resource valve water." It is our understanding that the standards for effluent entering a limited resource valve water would be lowered to allow higher concentrations of effluent and cause waters downstream to be polluted further.

We feel it is our moral obligation and the obligation of the Minnesota Pollution Control Agency that our waste be treated and that we must protect our public waters from any potential pollution hazards.

We hope you consider our comments in making your final determinations.

Sincerely,

David Pribyl-Secretary
Jackson County Conservation League
Jackson, Minnesota 56143

Public Exhibit No 13

JCPS

Jackson County Park System

Jackson, Minnesota 56143

April 30, 1980

Mr. Allen Klien
Hearing Examiner
Office of Hearing Examiners
1745 University Ave.
St. Paul, MN 55104

Dear Mr. Klien:

We, the Jackson County Park Board and Planning Commission are concerned with the proposed reclassification of Okabena Creek to a Class 7 Limited Resource Value Waters.

We presently have two county parks in Sandy Point and Community Point which are located on the shores of South Heron Lake. We strongly feel that additional pollution of the Okabena Creek will not benefit those county parks of which we have spent well over $70,000.00 of federal, state and county monies on. We would hope that M.P.C.A. would work with us to keep our public waters as unpolluted as we can reasonably afford.

As a County Planning Commission we are constantly working to prevent possible pollution problems on private properties. This often requires a private homeowner to spend from $1200-$2000 on his home sewage system to maintain a zero pollution level. It will become extremely difficult for us to explain to those private homeowners why they must maintain this level when a large population of people such as the city of Worthington can have their pollution standards lowered by the reclassification of Okabena Creek.

We strongly urge that Okabena Creek not be reclassified to a Class 7, Limited Resource Value Water.

Jackson County Park Board & Planning Commission

Glenn E. Olson

Public Exhibit No. 14



Jackson County

Board of Commissioners

Jackson, Minnesota 56143

April 30, 1980

Mr. Allen Klien
Hearing Examiner
Office of Hearing Examiners
1745 University Ave.
St. Paul, MN 55104

Dear Mr. Klien:

Let it be recorded that we, the Jackson County Board of Commissioners, oppose the reclassification of Okabena Creek from Worthington to Section 15 of Alba Township of Jackson County to Class 7 Limited Resource Value Waters. We feel the waters should retain its present Class 2B.

Jackson County has worked hard for water quality. We have worked closely with M.P.C.A. in the feedlot permit program. We have adapted the State Shoreland Ordinance. We have also adapted the State WPC-40 Sewage Treatment Standards and the county now does water testing for residents of the county.

We might add that Jackson County was one of the first counties to have their own Environmental Health and Pollution Control office with a full time person since 1974.

We feel it is not right for us to enforce these rules on our citizens, while the City of Worthington is allowed to lower their standard for water quality from their city lagoons, as would happen if Okabena Creek would be reclassified to Class 7 Limited Resource Value Water.

The Jackson Co. Board of Commissioners

Milford Gentz

Milford Gentz, County Board Chairman

Public Exhibit No. 15

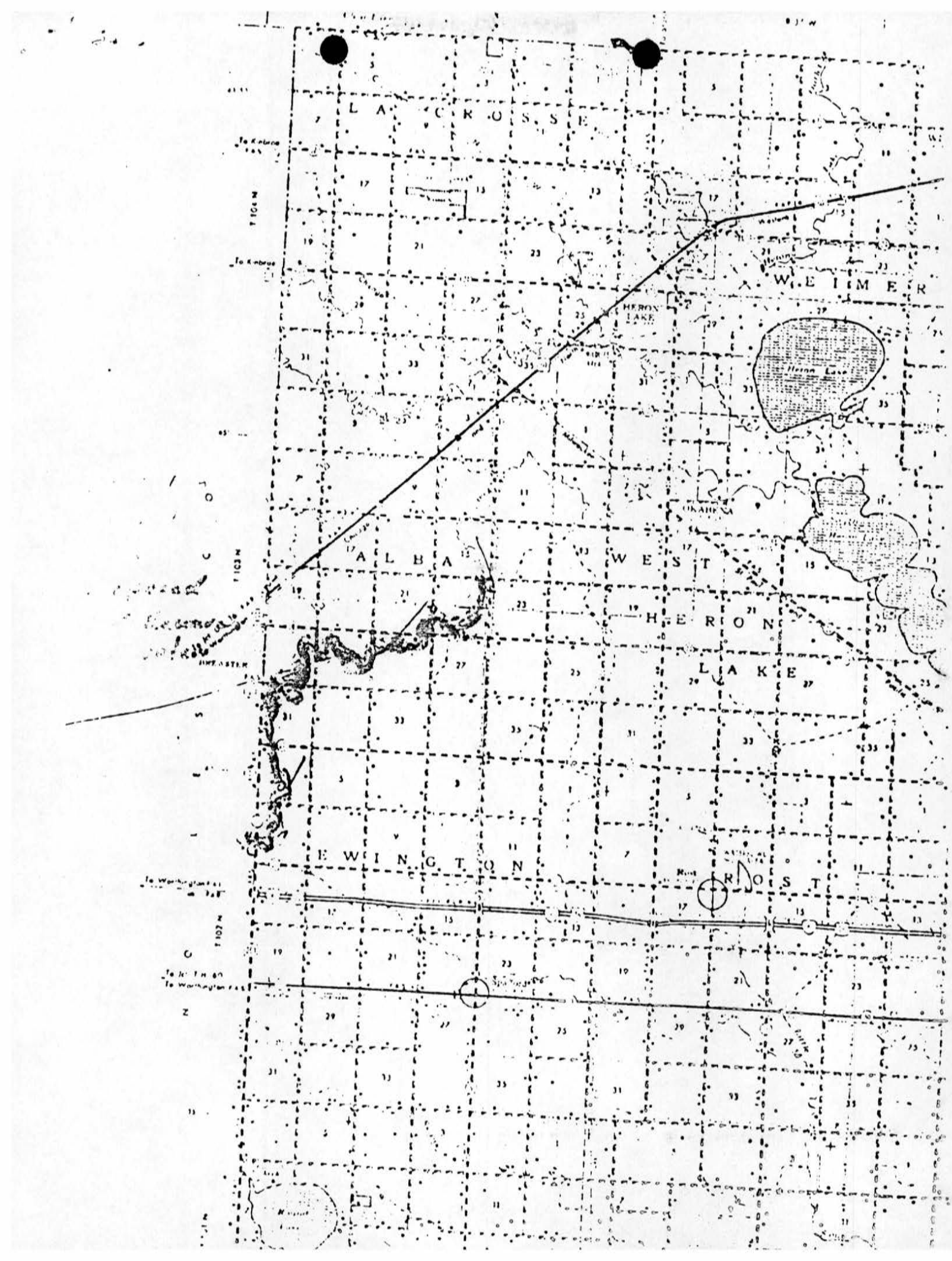
Mr. Allen Klien
Hearing Examiner
Office of Hearing Examiners
1745 University Ave.
St. Paul, MN 55104

Dear Mr. Klien:

The attached is a signed statement from people living in the area of Okabena Creek, which is to be reclassified to class 7 Limited Resource Value Waters, confirming there are fish in Okabena Creek and that people do fish there.

We have seen & caught fish out of Okabena Creek in Sect 31, alba Town!

Patricia J. Eby
Matilda & George Cross — Sect. 28, alba Town.
Duane Zahrndt — Sect. 30, alba Town.
Ray & Jessie Kassow — Sect. 31, alba Town


LA CROSSE
WEIMER
HERON LAKE
ALBA
WEST
HERON
LAKE
EWINGTON
ROST

Public Exhibit No. 16

FIRST STATE BANK
of Okabena

OKABENA, MINNESOTA 56161

Phone 507 / 853-4421

OFFICERS
- Paul J. Hartman, President
- Dennis P. Hartman, Vice President
- William Vangsness, Cashier
- Dorothy Schulz, Ass't. Cashier

April 25, 1980

The Hearing Examiner,
R.E. Water Quality for
Okabena Creek in
Jackson County, Minnesota

Dear Sir:

I object to lowering the standards for the dumping of effluent from the City of Worthington which eventually enters Okabena Creek.

I am a resident of the City of Okabena, which has spent over $700,000 to install a new sewage treatment facility in a City of 125 users. I feel it is very unfair to permit a City of over 10,000 residents to add pollution when small municipalities are cleaning up our streams.

I have been a Soil Conservation District Supervisor for 25 years and worked for 11 years to establish the Middle Des Moines Watershed District. Water quality improvement has been one of our goals and this, in my opinion, would have a negative effect on all our efforts.

I will appreciate your consideration for our people in Jackson County to further improve our environment.

Sincerely yours,

Paul J. Hartman

Paul J. Hartman
President

PJH:sh

Public Exhibit
No. 17

West Huron Lake Township

We are opposed to the use any of the sewage ever into our Chelsea ditch or into Huron Lake because we have some good fishing on some places: Lake Huron Lake is the best opening lake in the state.

Signed: Wayne Clark - Chrm
Leonard Rademacher
Walter Schram

Alex. F. Wiseman Clerk.

Public Exhibit No 18

4-25-80

Hearing Examiner
State of Minnesota
St. Paul, Minnesota

RE: Water Quality for Okabena Creek in Jackson County Minnesota

Dear Sir,

As a representative of the Okabena Minnesota City Council I would like to voice a strong protest to the lowering of the standards for dumping of effluent from the City of Worthington which eventually enters Okabena Creek.

We as a community with a population of under 250 persons are at the present time installing a new sewage treatment facility that will cost in excess of $700,000.00. It does not seem realistic to spend that amount of money to help clean up our environment when a City over 40 times as large as ours can continue to pollute the Creek we have been trying to improve.

Please consider the long term negative effect on our citizens and our environment that the dumping of this effluent will leave. We as a community are enduring hardships that will have been in vain if the lowering of the standards is allowed.

Sincerely,

William Vangsness

William Vangsness
Councilman
CITY OF OKABENA
OKABENA, MINNESOTA 56161

OKABENA DEVELOPMENT ASSOCIATION

Okabena, Minnesota

Public Exhibit No. 19

April 29, 1980

Hearing Examiner
State of Minnesota
St. Paul, Minnesota

RE: Purer Water for Okabena Creek in Jackson County

Dear Examiner,

I am writing in behalf of the Okabena Development Club which has 130 members, in regard to lowering the standards for dumping waste from the City of Worthington which enters Okabena Creek.

Our small community has just spent a large sum of money installing a sewage treatment plant to help improve our environment.

Please consider the negative effect on our environment and future generations of Okabena when making a decision on lowering the standards of dumping waste into the creek. Our community will be spending many tax dollars the next three decades to improve the environment of the Okabena Creek.

Sincerely,

James E. Schneider

James E. Schneider
Secretary
Okabena Development Club
Okabena, Minnesota, 56161

JES:kh

Hearing of Jan 1977
R.E Water Quality for Okabena Creek
TO in Jackson County, Mn

TELETYPE ☐ TELEGRAM ☐ MAIL ☐

AT

Public Exhibit No. 20

SUBJECT

DATE 7/25

Dear Sir,

I object very strongly to letting the city of Wgn dump there effluent liquids into the Okabena creek. My children & grandchildren have been fishing from the Creek for years & this could spell everything.

We have just completed a new sewage system & will be assessed for over 700 $ on my home for the next 20 years. Don't you feel this is very unfair to the residents of Okabena who have met all standards?

We need it clean water also.

Yours truly
Harold Hussey
Okabena, Mn 56161

PLEASE REPLY TO →

SIGNED

Redifforms
45 461

April 25, 1980

Public Exhibit No 2

From past experiences in Fisheries management on North and South Heron Lake, we know that these lakes provide excellent spawning areas and can produce a large number of fish, including northern pike.

During the northern pike spawning run in the spring, these northerns travel up Okabena Creek and Jack Creek, but we have no knowledge of how far up these creeks the northerns travel.

Robert Johnson
Area Fisheries Manager
Windom Area Fisheries Hdq.
Box 221
Windom, Mn. 56101

Public Exhibit
No. 22

Mr. Allan Klein
Hearing Examiner
Office of Hearing Examiner
1745 University Avenue
St. Paul, Minn.

Dear Sir,

It's my understanding that the water quality may be lowered on Okabena Creek due to the request of some special interest groups.

Lowering the water quality will have adverse effects on the rather limited fishery resource in Jackson County. There is not a lot of water here and the removal of Okabena Creek will limit our limited resource even more.

Okabena Creek is used by northern pike in the spring for a spawning run. People have and do trap northerns there. Rough fish also utilize the creek, and there is limited boating.

More pollution will add to the lowering of the water quality of North and South Heron Lake. Fish and ducks will be affected there.

Only a lowering of the quality of life will result from a lower water standard in Jack Creek.

Minnesota Conservation Office

Public Exh. 64
No 23

Our township is on the East side of Huron Lake. We, in our township do not want any more Pollution in the lake

The farmers, for years, in Jackson County have been taking care of their own Pollution problems.

The State has made money available for Pollution control. Smaller towns then Worthington have spent a lot of money to meet Jackson County standards of Pollution control.

We are against Worthington dumping their waste water, or what ever you want to call it, across the county line into the lake of Huron Lake. Let them spend their money to clean it up, and keep it in their own county.

If they feel that way, why not use the lake that joins their town on the West?.

The Huron Lake Township
Board of Supervisors.

Leo Hohnke
Trustee

Public Exhibit No. 24

R. 4, Box 268
Windom, Minnesota 56101
April 28, 1980

Mr. Allen Klein
Hearing Examiner
Office of Hearing Examiners
1745 University Ave.
St. Paul, Minnesota 55104

Dear sir;

The Des Moines River Association of Southwestern Minnesota is very much concerned about the MPCA's proposed reclassification of water quality standards, called "Limited Resource Value" waters.

Our immediate concern is for the reclassification of water in Okabena Creek, Worthington, Minnesota, from 2B to 7. We feel strongly against such a change. The water from Okabena Creek goes into Heron Lake, Heron Lake Outlet and to the Des Moines River. The Des Moines River is used for recreational purposes and the added pollution to this river will have adverse effects on fish and wildlife as well as going against any efforts we have made in this part of the state to improve the recreational value of the Des Moines River.

The change of water quality standards is a poor solution to the waste disposal problem, and once accomplished, could be irrevocable.

With deep concern,

Lynn O. Johnson

Des Moines River Association

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

Public Exhibit No. 25

29 April 1980

Kilen Woods State Park
Lakefield, MN 56150

Mr. Allen Klien
Hearing Examiner
Office of Hearing Examiners
1745 University Ave.
St. Paul, MN 55104

Re: Public Waters Classification of Okabena Creek in Nobles Co.

Dear Sir:

In my position as Park Manager at Kilen Woods State Park in Jackson County I am heavily involved in the developement and management of the Des Moines River as a recreational resource, specifically as a State Canoe route. It is gratifying to me to see the large numbers of people, both local and from out of the local area, coming to use the Des Moines River for canoeing and canoe camping. It is important that we strive to keep the water in the river as clean as possible.

I am also a member of the Des Moines River Association which is working along with the Department for the developement of the Des Moines River Canoe Route. One of our main concerns is the poor water quality of the river and its tributaries. Anything that would improve the water quality would be favored by myself and the group.

I recommend that the entire length of the Okabena Creek in both Jackson and Nobles Counties be classified a number 2. I feel that in the interests of water quality for the Des Moines River, where the Okabena Creek water through Heron Lake eventually goes, this classification will provide a basis for clean water now and in the future.

Sincerely,

Lowell Jaeger

Lowell Jaeger,
Park Manager

cc: Charlie Mitchell

We the undersigned have seen and caught fish in Okabena Creek

Wilbur Nelson	S½ of Sec 7 Graham
J. Earl Smith	
Mrs J. Earl Smith	South Half Sec. 12 Lorain Twp.
H. Engel Reichter	N.E. ¼ Sec 14 Lorain Twp
John C. Ketzer	W½ of S.W ¼ Sec 11 Lorain S.E. ¼ of Sec. 9 Lorain 34-102
Ray Kenyon	N½ of Sec 14 Lorain
Vernon Pelton	N½ of North West ¼ Sec 14 Lorain Twp

DNR-8

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

PHONE: (507) 354-2196

File No.

August 27, 1980

Mr. Dennis Hanselman
Jackson Co. Environmental Officer
Jackson, MN 56143

Dear Mr. Hanselman:

RE: Okabena Creek Nobles and Jackson County

Mr. Milford Gentz has requested that we send you some additional information on Okabena Creek and North and South Heron Lakes.

The Heron Lakes can and has at times produced large numbers of game fish particularly northern pike. These two lakes have good to excellent spawing areas for northern pike. Our fisheries crews have at times removed large numbers of northern pike from Heran Lake for stocking several lakes in that area. Northern pike and other fish migrate up Okabena Creek during the springspawning runs. Some northern pike and other fish can be found in Okabena Creek throughout the summer and fall. Mr. Gentz was concerned that proposed plans for sewage disposal systems would involve Okabena Creek. We too are concerned from the fisheries management standpoint.

We would appreciate any additional information you can provide us on projects that may have an effect on Okabena Creek.

Sincerely,

Guy Oklobzija
Regional Fisheries Supervisor
Department of Natural Resources
P.O. Box 756
New Ulm, MN 56073

GO:kas

cc: Maynard Nelson
Bob Johnson

AN EQUAL OPPORTUNITY EMPLOYER

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER
AND WASTE MANAGEMENT

SEP 17 1980

Mr. Milford C. Gente
Chairman, Jackson County Board
of Commissioners
Jackson, Minnesota 56143

Dear Mr. Gente:

Thank you for your letter of August 5, 1980, concerning Water Quality Standards on Okabena Creek. Your letter was referred to this office for response.

The approval of State Water Quality Standards revisions has been delegated to each Environmental Protection Agency (EPA) Regional Administrator. In reviewing the situtation on Okabena Creek with EPA's Region V office in Chicago, I have been informed of the following:

-EPA commented on Okabena Creek in its presentation at the Minnesota Pollution Control Agency hearing on water quality standards and requested further study on this stream prior to a change of its designated use;

-EPA's concerns about Okabena Creek center on the Creek's use for spawning by an indigenous pike species; and

-although EPA approves of Minnesota's Class 7 Limited Resource Value water use designation in certain circumstances, it has not given any kind of approval to that classification for Okabena Creek.

EPA will review the revisions adopted by Minnesota including both new and revised water quality criteria and beneficial use designations. Changes in beneficial use designations require compliance with EPA's Water Quality Standards regulations in the Code of Federal Regulations (40 CFR 35.1550). EPA carefully reviews all changes in use designations in accordance with these regulations before Federal approval is granted. Any changes adopted by Minnesota for Okabena Creek will be carefully reviewed during this process.

Sincerely yours,

Steven Schatzow
Deputy Assistant Administrator
for Water Regulations and Standards (WH-551)

FILED IN OFFICE
COUNTY AUDITOR
JACKSON COUNTY, MINN.

County Auditor

Middle Des Moines Watershed District

Heron Lake - Minnesota 56137

John B. Miranowski
President
Fulda, Minn. 56131

Raymond W. Crowley
Vice President
Iona, Minn. 56141

Arthur R. Ahrens
Secretary
Heron Lake, Minn. 56137

Raymond R. Goedtke
Treasurer
Fulda, Minn. 56131

Leland Pohlman
Reporter
Lakefield, Minn. 56150

Frank J. Murray
Attorney
807 Degree of Honor Bldg.
St. Paul, Minn. 55101

POLLUTION CONFUSION

For the past ten years or more local, state, and federal agencies have been advocating the clean up of our streams and lakes so that our waters are good enough for recreation and pure enough for use of future generations. This had been done with the use of many hard earned tax dollars.

Today it seems our position has changed. Now, because a city can save a million and a half dollars, it is OK to down-grade the rating on Okabena Creek. It seems a gross injustice when three small towns, namely Brewster, Okabena, and Heron Lake, were required to spend over two million to upgrade their sewage systems to strict pollution requirements. This was completed during the past 2½ years.

In 1971, the Middle Des Moines in cooperation with the State of Minnesota conducted a biological, ecological survey of the watershed area at a cost of $22,000.00 to find the spots that were contributing the most pollution. The City of Worthington which would now like to down-grade Okabena Creek was one of the worst offenders. Copies of this study can be obtained at the Watershed office.

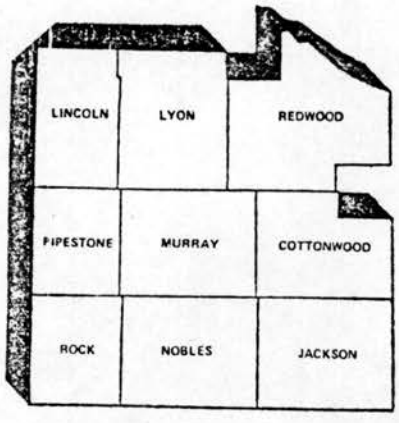
Recently the State of Minnesota awarded the district $75,000.00 to be used with $50,000.00 of District funds for a study of pollution and siltation of Heron Lake.

The confusing thing to the managers of the District is that money spent for cleaning up our lakes and streams is discounted if some waters are allowed to be down-graded to a lower level. Every city, town, and village should be treated on an equal basis.

Arthur R. Ahrens

Secretary

Southwest Regional Development Commission



Jerry Chasteen, *Executive Director*
Telephone 507-836-8549

John Maurer, *Chairman*
Carl Hauschild, *Vice-Chairman*
Robert Hirmer, *Secretary*
Paul Mettling, *Treasurer*

25th & Broadway • Box 265 • Slayton, Minnesota 56172

September 19, 1980

Milford Gentz
Chairman,
Jackson County Commissioners
Jackson County Courthouse
Jackson, MN 56143

Dear Milford:

I certify that the enclosed copies are reproductions of the approved minutes for the SRDC Land Use Committee and the Full Commission meetings held April 22, 1980 and May 20, 1980, respectively.

The Land Use Committee recommended MPCA re-evaluate the downgrading of Okabena Creek. Subsequently, the Full Commission supported this position.

If you have any further questions, please contact me.

Sincerely,

Jerry Chasteen

Jerry Chasteen
Executive Director

JC/rw

Enclosures

MINUTES
SRDC LAND USE COMMITTEE MEETING
TUESDAY, APRIL 22, 1980
SLAYTON CITY COUNCIL CHAMBERS, SLAYTON, MN

Nobles Co Twp Rep

MEMBERS PRESENT: Carl Hauschild, Chairman; Robert Feeken, Norman Larson, Curtis Paulsen, Roland Wray, Dennis Swan, Paul Knoblauch.

GUESTS PRESENT: John Maurer, Mayor of Wabasso; Marv Nelson, City of Slayton; Milford Gentz, Jackson County Commissioner; Ralph Bonnel, Jackson County Commissioner; Dennis Hanselman, Jackson County Environmental Health; Wayne Clark, West Heron Lake Township; Norm Atzs, West Heron Lake Township; Dr. F.W. Bertels, Lakefield; John Mironowski, Mid Des Moines Watershed District; Floyd Reagan, DNR; Bob Johnson, DNR; Earl Johnson, DNR; Gary Brown, City of Worthington; Representative of Campbell Soup Co. of Worthington.

City of Worthington

STAFF PRESENT: Michael Sobota

Meeting called to order at 8:05 p.m.

M/S/P Wray, Feeken to adopt minutes.

WORK PROGRAM FOR FISCAL YEAR 1981

The Committee discussed the draft work program prepared by Staff. The activities proposed were primarily continuations of present work activities. Sobota highlighted new activities including completing a regional lake improvement grant application and revisions of the Comprehensive Development Guide. Larson suggested that under work elements for RDC review activities, an additional work element be added to allow Committee Members to view projects under review.

M/S/P Swan, Paulsen to submit the Work Program as amended.

MPCA RE-CLASSIFICATION OF WATERS

The Committee discussed the proposed re-classification of surface waters. Sobota presented a Staff Review of the proposed action.

The Southwest Regional Development Commission's Comprehensive Development Guide contains several policies that served as the basis for review of the proposed action. The policies that apply are:

Water Resources Section
Goal II "Good Quality Water"
Policy 1 - The SRDC places high priority on: A, the protection from pollution of water supplies serving regional, county, and full convenience centers; and B, the improvement to desireable standards of municipal effluent which is deposited in the surface supplies of recharge areas.
Policy 2 - The SRDC encourages the protection of surficial aquifer recharge areas from point and non point pollutants.

Goal III "Protection and Management of Surface Waters"
Policy 3 - To improve the overall quality of all surface waters the SRDC encourages proper soil and water conservation management practices, waste treatment practices, and the minimization of sediment and nutrient runoff into lakes and streams.

Recreation Section
Goal I "Preservation of Environmental Resource Areas"
Policy 5 - The SRDC recognizes the Minnesota River and Des Moines River corridors as exceptional linear resources.

From the policy statements adopted by the Commission, it is clear that any action that would impact the quality of water or recreational resources of the Region should be scrutinized. Therefore Sobota explained that the intent of the review action was to identify potential conflicts between the MPCA's proposed downgrading of various streams and water bodies and regional goals and policies.

The MPCA proposals for downgrading are based on MPCA staff analysis and site reviews. Criteria used by the MPCA included:

1) Fish life is and will continue to be severely limited
2) The stream has been substantially altered by human activity
3) Recreation opportunities (fishing, swimming, boating) are limited
4) Water flows are intermittent

Specific streams and water bodies proposed for downgrading are:

1) County Ditch #12 (Rice Creek) near Belview

Comment: County Ditch 12 (Rice Creek) flows into the MN River. The segment proposed for downgrading is approximately 9 miles long. The downgrading of the entire segment could have a potential impact on the MN River. Recreation Goal I, Policy 5 recognizes the MN River as an exception recreational resource. Rice Creek, downstream of County Road 6 (betwen Sections 7 & 8) north of Delhi, was stated as having been a minnow harvesting location. Statements made by a former resident of the area identified Rice Creek below County Road 6 as a picturesque area. Committee members felt that MPCA should reassess the section of Rice Creek below MPCA Station 3 on the stream assessment worksheet (County Road 6). Statements were also made at the meeting that raw sewage from Delhi may be adversely impacting the Creek.

2) Judicial Ditch #6 South of Worthington

Comment: Judicial Ditch #6 flows south from Worthington to Lake Ocheda, a distance of approximately 2 miles. Lake Ocheda flows into the Lake Bella well field, the primary water supply for the City of Worthington. The downgrading of Judicial Ditch #6 would be in conflict with Goal II, Policy 1 of the Water Resource Section. The Worthington City Engineer stated that the City was opposed to the downgrading of County Ditch #6. The Committee agreed with the City and further agreed that the downgrading was in conflict with SRDC Policy.

3) Unnamed Creeks near Hatfield

No Comment

4) Unnamed Ditch near Hills

No Comment

5) Rock River near Holland

No Comment

6) Unnamed Creek near Iona

Comment: The unnamed creek flows from Iona to Lime Lake, a distance of approximately 8 miles. The creek flows though two state owned wildlife management areas located in Sections 3 & 5, T105, R41 and Sections 23, 24, 25, and 26, T106, R41. The wildlife areas are within three miles of Slayton and provide open space and hunting recreation. A county park is located on the south side of Lime Lake directly opposite the creeks outlet. The City of Avoca, located on Lime Lake, is presently undergoing Step I Facilities Planning for a Sewer System. The City presently does not have a sewer system with many deficient septic systems discharging directly into the Lake. Department of Natural Resources (DNR) personnel identified that the State presently operates a fish trap located between Sections 26 & 35, T106, R41 to entrap adult northerns ready for spawning. The fish are trapped and transported to area fish rearing ponds and lakes as a part of the fish re-stocking program. Comments were made that northerns have been known to be caught upstream of Iona. The Committee agreed that the MPCA should re-evaluate the downgrading of the unnamed creek in its entirety, especially the section downstream of the State fish trap.

7) Unamed Creek near Jasper

No Comment

8) Unnamed Creek near Jeffers

No Comment

9) Unnamed Ditch and Flandreau Creek near Lake Benton

Comment: The unnamed ditch and Flandreau Creek flow south from Lake Benton into Pipestone County, a distance of approximately six miles. The Creek flows through a state owned wildlife management area in Sections 1 & 2 of Altona Township, Pipestone County. MPCA should consider the wildlife area as a recreational resource. The DNR area wildlife manager stated that the DNR is proposing a dam in the wildlife area to pool about 80 acres of water. It was also noted that northern pike and bullheads have been known to be in the stream south of the Pipestone county line.

10) County Ditch #109 near Morgan

No Comment

11) County Ditch #38, an unnamed swamp and ditch near Storden

No Comment

12) Unnamed Ditch and Lone Tree Creek near Tracy

No Comment

13) County Ditch #14 and Judicial Ditch #12 near Tyler

Comment: County Ditch #14 and Judicial Ditch #12 near Tyler flow approximately 7 miles and drain into the Redwood River. Judicial Ditch #12 flows through a state owned wildlife management area in Section 13, Hope Township. The mouth of Judicial Ditch 12 flows into the Redwood River approximately 7 miles upstream of the Camden State Park. MPCA should consider the wildlife area as a recreational resource. Also, the MPCA should consider any detrimental impacts the downgrading could have on the Redwood River, which is designated a trout stream in certain locations. Committee members noted that there was thought to be a continuous flow below Station 4 on the stream assessment work-sheet. The MPCA should look at possibly shortening the downgraded section to delete a portion of Judicial Ditch 12 below Station 4.

14) Unnamed Ditch, an unnamed ditch and Sleepy Eye Creek near Wabasso

Comment: The Unnamed Ditches flow from near Wabasso to the intersection with Sleepy Eye Creek in Section 3, T110, R36 and Sleepy Eye Creek flows southeast for a total distance of approximately 15 miles of proposed downgrading. Comments were made that near Station 4 and possibly up-stream, fishing has been observed. A comment was also made that a canoe had been taken up Sleepy Eye Creek further upstream than Section 3, T110, R36. The MPCA should reassess downgrading Sleepy Eye Creek below Section 3, T110, R36 because of recreational and possible fishery characteristics.

15) Unnamed Ditch and Pell Creek near Walnut Grove

Comment: One individual was under the impression the Creek was named Bell Creek.

16) Jack Creek near Wilmont

Comment: One individual noted that he had observed northern pike upstream as far as County Road 13 (Section 31).

17) Okabena Creek near Worthington and Brewster

Comment: Okabena Creek flows from near Worthington to Heron Lake. The proposed section for downgrading is from near Worthington to Section 22, Alba Township, Jackson County, a distance of approximately 12 miles. There are no known state owned wildlife management areas along the section of creek proposed for downgrading. The Creek enters Heron Lake approximately nine miles downstream of the proposed terminus of the downgraded section of stream. The Minnesota Legislature appropriated funds during the 1980 Session for a feasibility study on lake restoration for Heron Lake. The funds are to be used for identifying alternative methods of restoring Heron Lake and reducing nutrient and sediment loadings. Local residents around the lake and from nearby communities have been very active in seeking funds to clean up Heron Lake. The Middle Des Moines Watershed District has received State Funds and constructed siltation ponds and dams in the Heron Lake Watershed. The Watershed Board was concerned that the proposed downgrading of Okabena Creek could have a negative impact on Heron Lake. Heron Lake outlets to the Des Moines River. Concern was expressed that the downgrading of Okabena Creek could impact the Des Moines River, which is a priority recreational corridor. Several comments were received that northern pike were caught near Brewster and one comment was received that fish were caught near Worthington in Okabena Creek. The Committee recommended that the MPCA reconsider the downgrading of Okabena Creek because of the possible fishery in the section of stream proposed for downgrading and the possible impact the downgrading could have on restoration efforts for Heron Lake.

M/S/P Knoblauch, Wray to adopt the recommendation of Okabena Creek. All ayes.

M/S/P Swan, Wray to adopt the comments and recommendations on the previously noted waters. All ayes.

Meeting adjourned at 10:45 p.m.

MINUTES
SRDC FULL COMMISSION MEETING
TUESDAY, MAY 20, 1980 at 4:30 P.M.
ROYAL SUPPER CLUB, SLAYTON, MN

MEMBERS PRESENT: John Maurer, Robert Hirmer, Carl Hauschild, Paul Mettling, Joyce Visker, Curtis Paulsen, Roland Wray, Marvin Nelson, Raymond Jensen, Dennis Swan, Norman Larson, Norman Madsen, Joe Stepanek, Elmer Friesen, Loren Carlson, Clayton Ihlen, Dan Jordahl, Roy Syverson, Dave Edwards, Steven Perkins, Vern Ohlenkamp, E.A. "Jim" Miller, Paul Knoblauch, John Flanigan, Vance Ebert, Stan Soutar, Raphael Honermann, Harlin Owens, Milford Gentz.

Mayor of Worthington

Mayor of Tolcon
Co Commissioner
Mayor of Wo

MEMBERS ABSENT: Jim Vickerman, Pat Nelson, Eugene Isfeld, Robert Feeken, Meryl Ostwald.

STAFF PRESENT: Jerry Chasteen, Michael Sobota, Greg Pettiecord, Curtis Oakes, Richard Holte, Fred De Jong, Gloria Vande Brake, Terry Kuhlman.

Chairman Maurer called the meeting to order at 4:30 p.m.

M/S/P Carlson, Soutar to amend the March minutes to indicate the CAP agencies will operate the 1980 Summer Youth Employment Program and the Job Service Office will operate the 1980 Governors Youth Program.

M/S/P Owens, Wray to approve the March minutes, as amended.

NEW MEMBERS

Chairman Maurer introduced Norman Madsen, Arco, as the new Lincoln County Municipalities representative.

M/S/P Hauschild, Friesen to accept the nomination of Mr. Madsen.

AREA AGENCY GRANTS REPORT

Fred De Jong, Director, Southwestern Area Agency on Aging, reported on the Title IIIB Social Services, Title IIIB Multipurpose Senior Center Renovation, and McKnight Foundation Grants. He submitted, to the Commission, a listing of all the grants and the Advisory Councils recommendations.

M/S/P Carlson, Paulsen to accept the recommendations of the Aging Advisory Council regarding the senior citizen grants (attachment).

DeJong continued by reporting the Advisory Council recommended a supplemental award to the Windom Taxi Service Grant in the amount of $1,425.

M/S/P Owens, Wray to approve the supplemental award to the Windom Taxi Service.

KEYNOTE SPEAKER

Maynard Nelson, Regional Administrator of the Department of Natural Resources, was present to speak about the activities of the DNR. He began by outlining

the change to a regional system by the DNR in 1973. The regional office in New Ulm services economic development regions 6E, 6W, 8, and 9. He specifically stated the regional offices implement policies as opposed to formulating them. Agency policies are formulated at the St. Paul Office.

Nelson commented on several issues applicable to southwest Minnesota. Wildlife habitat is dwindling and Nelson stated management areas and roadside ditches are the main wildlife habitat areas. He suggested more emphasis should be put on the management of highway ditches as habitat. Mr. Nelson reported on the management plans being prepared for the state parks in the region. Public waters was discussed in a general sense. The topic of areators drew much attention during the discussion.

F.A. "Jim" Miller encouraged DNR to be more understanding to local concerns. Several Commissioners raised the liability issue regarding both public waters and around open water due to areators.

FISCAL YEAR 1981 WORK PROGRAM

Director Chasteen reported on the Fiscal Year 1981 Work Program and accompanying budget. He stated a draft was submitted to State Planning Agency on April 4th. In the interim, each Committee has had an opportunity to review its functional element and make any changes it felt necessary. Also, SPA commented on a few technical format changes not related to work activities. Chasteen stated final submission is due to State Planning Agency in early June.

M/S/P Owens, Soutar to approve the Fiscal Year 1981 Work Program.

M/S/P Owens, Carlson to hold the Public Hearing on the Fiscal Year 1981 Budget at 3:30 p.m. before the Annual Meeting on July 15th.

DEVELOPMENTAL DISABILITIES REQUEST FOR PROPOSAL

Chasteen updated the Commission on the status of the Developmental Disabilities Council contract, indicating federal regulations have changed encouraging technical assistance and coordination. In addition, the State Developmental Disabilities Council is encouraging blanket coverage of the State through the use of RDCs and has sent a Request for Proposal to each RDC for its consideration.

M/S/P Hirmer, Edwards to submit an application on behalf of the Southwest Regional Development Commission.

M/S/P Edwards, Ebert to approve Vern Ohlenkamp as Jackson County Township Representative to the SRDC.

COMMITTEE REPORTS

Land Use

Committee Chairman Hauschild reported on the activities of the Land Use Committee.

He stated the committee has reviewed the re-classification of certain streams and creeks, by MPCA, to a lower classification. Hauschild stated the committee recommended a re-evaluation be done by MPCA on several creeks (attachment). Several Jackson County residents were present to protest the downgrading of Okabena Creek. The group felt the action by MPCA would be detrimental to Okabena Creek and Heron Lake and set back the efforts of Jackson County to control pollution in its lakes and streams.

M/S/P Hauschild, Gentz to accept the committee's recommendation to request MPCA to reconsider downgrading certain creeks including Okabena. A letter was read on behalf of Heron Lake (attachment). Abstain - Owens. Vote all ayes, except one

Hauschild also reported on the drafting of the Murray County Land Use Contract.

M/S/P Hauschild, Owens to approve the Murray County Land Use Contract.

RETAC

Steven Perkins reported on the activities of the RETAC. He stated the State Committee is being expanded to include other members besides RETAC Chairmen. As such, the committee recommends John Flanigan, Wes Hendrickson, Ruthann Wefald, and Dave Freiborg, as additions to the committee.

M/S/P Perkins, Honermann to approve the additional members to the State Committee.

Perkins announced "Operation: Back Home Again" was funded by the Private Industry Council for $31,351. In addition, the RETAC is recommending new officers as follows: Ed Ericson, Chairman; Ruthann Wefald, Vice Chairman; and Dave Freiborg, Secretary-Treasurer.

M/S/P Owens, Friesen to approve of the RETAC executive members.

Transportation

Transportation Planner Rich Holte reported on his discussions with MN/DOT and the future activities of the committee. F.A. "Jim" Miller read a letter encouraging MN/DOT to be more positive in their efforts to overcome the present financial strain.

Housing and Economic Development

Chairman Hirmer stated the OEDP is being finalized and soon to be sent to Chicago. He reported on a housing seminar conducted by the SRDC, on May 13. He stated the meeting was successful with 40 people attending. Hirmer also stated the committee will be hearing from a representative of the U of M Extension Service regarding tourism in the area.

Economic Planner Greg Pettiecord reminded the Commissioners of the Governor's Community Development Forum to be held June 24th in Montevideo.

Rural Development Specialist Terry Kuhlman informed the Commissioners of the status of the FmHA 111 study he is conducting concerning community facilities needs. He stated a questionnaire has been distributed to the region's communities with about a 40 percent response rate to date.

Parks and Recreation

Chairman Ray Jensen reported nine parks applications had been received for LAWCON/LCMR funds this cycle. A site visit will be conducted for each park in the near future.

NEW BUSINESS

Harlin Owens reported on the negotiations for new office space. He stated, pursuant to the directive of the Board, a contract was drafted between the SRDC and Wallace Johlfs for approximately 3,000 square feet of remodeled office space at $1,150 per month.

M/S/P Owens, Wray to approve the Lease Agreement between Wallace Johlfs and the SRDC contingent upon agreement of dollar figures for wall and floor covering.

Chasteen announced the MARC Annual Meeting is to be held in Minneapolis on June 4-6.

Hauschild requested the next Commission meeting be held at the Edgewood Bluff in Lake Benton.

M/S/P Owens, Hirmer to adjourn at 8:50 p.m.

Sincerely submitted,

John Maurer, Chairman

Robert C. Hirmer

Robert Hirmer, Secretary

Paul Mettling, Treasurer

LAND USE COMMITTEE REPORT TO SRDC FULL COMMISSION
May 20, 1980

The Committee has two items for Commission action for this afternoon:

*** 1. The Committee reviewed the proposed re-classification of surface waters being proposed by the Minnesota Pollution Control Agency (MPCA). The Committee reviewed a proposed action to identify potential conflicts between the MPCA's proposed downgrading of various streams and water bodies and Regional goals and policies. The specific water bodies proposed for downgrading of which there are comments include:

1. County Ditch #12 (Rice Creek) near Belview.

   Comment: The segment proposed for downgrading should be re-assessed. There is apparent conflict between Policy 5, Goal 1, Recreation Section of the Comprehensive Plan and also statements made at the Committee meeting indicated there is a fishery in Rice Creek.

2. Judicial Ditch #6 South of Worthington.

   Comment: Judicial Ditch #6 flows south from Worthington to Lake Ocheda for about two miles. Lake Ocheda flows into the primary water supply for the City of Worthington, Lake Bella. The downgrading of Judicial Ditch #6 would be in conflict of Goal 2, Policy 1, Water Resources Section of the Comprehensive Guide. The Worthington City Engineer indicated that the City was opposed to the downgrading. The Committee agreed with the City.

3. Unnamed Creek near Iona.

   Comment: The unnamed creek flows from Iona to Lime Lake, a distance of approximately eight miles. A County Park is located near the Creeks outlet on Lime Lake and the Department of Natural Resources owns three wildlife management areas through which the stream flows. The DNR also operates a fish trap in order to entrap adult northerns ready for spawning for transportation to area fish rearing ponds and lakes for fishery stocking programs. The Committee recommends that the MPCA should re-evaluate the downgrading of this unnamed creek because of the fishery potential.

4. Unnamed Ditch and Flandreau Creek near Lake Benton.

   Comment: The Flandreau Creek flows through a wildlife management area and it was noted that northern pike and bullheads have been known to be in the stream south of the Pipestone County line.

5. County Ditch #14 and Judicial Ditch #12 near Tyler.

   Comment: The ditches flow approximately seven miles and drain into the Redwood River. The Redwood River is a trout stream as it runs through Camden State Park. The Committee noted that the section should perhaps be shortened in order to ensure no impact on the Redwood River from the proposed downgrading.

6. Sleepy Eye Creek near Wabasso.

   Comment: The total distance of the proposed downgraded section is fifteen miles. The Committee recommendation is that the MPCA should re-assess downgrading Sleepy Eye Creek because of recreational and possible fishery characteristics.

7. Okabena Creek near Worthington and Brewster.

   Comment: Okabena Creek flows from near Worthington to Heron Lake. The proposed downgraded section is approximately 12 miles long. There are no known state wildlife management areas along this section of Okabena Creek proposed for downgrading. The creek enters Heron Lake approximately nine miles downstream of the proposed terminus of the downgraded section of stream. During 1980 Legislative Session the Minnesota Legislature appropriated funds for a feasibility study on lake restoration for Heron Lake. Local residents around the lake and from nearby communities have been active in seeking funds to clean up Heron Lake. Concern was expressed that the downgrading of Okabena Creek could impact on Heron Lake. The Committee recommends that the MPCA reconsider the downgrading of Okabena Creek because of the possible fishery in the section of stream proposed for downgrading and the possible impact the downgrading could have on restoration efforts for Heron Lake.

Ten other sections of stream were reviewed by the Committee without substative comment.

*** 2. The second item for recommendation to the Commission is the formal adoption of the Agreement for Services under our Land Use Planning Program between the Southwest Regional Development Commission and Murray County.

Murray County Signed the Agreement for Services yesterday. This will be handled under the policy of charges relevant for a grant recipient. Murray County received a Land Use Planning Grant in the last program cycle. The planning program for Murray County includes: updates to the Comprehensive Plan, updates for the Land Use Plan, including updates for the Zoning Ordinance Revisions and Subdivision Regulations. It should be emphasized that part of the Agreement for Services includes education for Planning Commission and local officials. The Agreement for Services would begin upon adoption by the Commission to expire on April 23, 1981.

*** Another item for information purposes is related to the Pipeline. Several counties are in the process of revising their Zoning Ordinances to include Essential Services which are defined as underground and overhead utilities including pipelines. Murray County held their public hearing on the ordinance change last night, Cottonwood County will be holding their public hearing on the 28th of this month, Lyon County will be meeting with SRDC Staff tomorrow and holding their public hearing in June for revisions. The adoption of the Ordinances is looked at as the final step in making sure the Pipeline Company carries through on the commitments they have made to the Counties and local officials in Southwest Minnesota.

CITY OF HERON LAKE
JACKSON COUNTY
HERON LAKE, MINNESOTA 56137

C. J. Winkler - City Clerk - Treasurer

May 20, 1980

Minnesota Pollution Control Agency
Regional Office
Marshall, Minnesota 56258

Regional Development Commission
25th & Broadway
Box 265
Slayton, Minnesota 56172

Gentlemen:

The City Council of the City of Heron Lake is very much disturbed about the fact that the city was forced to spend 1.2 million dollars for a new sanitary sewer in order to comply with the Minnesota Pollution Control Agency regulations and that the City of Okabena and the City of Brewster also had to comply with the regulations.

Now we understand that the M.P.C.A. is trying to lower their requirements on polluting public waters. It seems unjust to these smaller communities who had to go through so much to meet these requirements to now have these standards lowered. We feel we must go on record as opposed to the lowering of the requirements set forth previously by the M.P.C.A.

The City Council
City of Heron Lake

Al C. Freking

Al C. Freking, Mayor

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

ORDER FOR HEARING

IT IS HEREBY ORDERED that a public hearing on the above-captioned rules be held at the following times and places and continue at other times and places until all persons have had an opportunity to be heard.

1. Monday, March 31, 1980, 9:30 a.m. and the rest of the week at times and places to be set by the Hearing Examiner
   MPCA Board Room
   1935 West County Road B-2
   Roseville, Minnesota

2. Monday, April 7, 1980, 7:00 p.m. and Tuesday, April 8, 1980, 9:00 a.m.
   Building IL
   Room 219
   Southwest State College
   Marshall, Minnesota

3. Tuesday, April 8, 1980, 7:00 p.m. and Wednesday, April 9, 1980, 9:00 a.m.
   City Administration Building
   1025 Roosevelt Avenue
   Detroit Lakes, Minnesota

4. Wednesday, April 9, 1980, 7:00 p.m. and Thursday, April 10, 1980, 9:00 a.m.
   County Services Building
   Laurel Street
   Brainerd, Minnesota

5. Thursday, April 10, 1980, 7:00 p.m. and Friday, April 11, 1980, 9:00 a.m.
   St. Louis County Courthouse
   Duluth, Minnesota

6. Monday, April 14, 1:00 p.m. and 7:00 p.m.
   Friedel Building
   1200 South Broadway
   Rochester, Minnesota

IT IS FURTHER ORDERED that a Notice of Hearing be mailed to all persons or representatives of associations or other interested groups who have registered their names with the Secretary of State for that purpose.

IT IS FURTHER ORDERED that the Notice of Hearing be published in the State Register.

Art Engelbrecht
Chairman

Terry Hoffman
Executive Director

Dated: February 6, 1980

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION

CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32.

PCA-004-80-AK

CERTIFICATE OF BOARD'S RESOLUTION ADOPTING RULES

I, Terry Hoffman, do hereby certify that I am the Executive Director of the Minnesota Pollution Control Agency, an agency duly authorized under the laws of the State of Minnesota, and that the following is a true, complete, and correct copy of a resolution adopted at a meeting of the Minnesota Pollution Control Agency, duly and properly called and held on the 28th day of October, 1980, that a quorum was present at said meeting, that a majority of those present voted for the resolution, and that said resolution is set forth in the minutes of said meeting and has not been rescinded or modified. The minutes of said meeting are subject to approval of the Minnesota Pollution Control Agency at its next meeting.

BE IT RESOLVED, that the Minnesota Pollution Control Agency adopts the Findings of Fact and Conclusions and Order Adopting Rules with respect to Minn. Rules WPC-14, 15, 24, 25, 2, 3, 5-13, 16-21, 23, 26, 29, 31 and 32.

BE IT FURTHER RESOLVED, that this matter be remanded to the Hearing Examiner to reopen the hearing for the receipt of additional evidence relating to a dissolved oxygen standard for the reach of the Mississippi River below the MWCC Metro Plant discharge from River Mile 835 to River Mile 815 and for further consideration of an appropriate dissolved oxygen standard for that reach of the Mississippi River. The Board directs the staff and the Hearing Examiner to schedule this hearing on remand to coincide with any public hearing or other proceedings on a NPDES permit or other proceedings on a NPDES permit or other authorization for a discharge to the waters of the State from the MWCC Metro plant.

BE IT FURTHER RESOLVED, that the Chairman and the Executive Director are authorized to execute the above-described documents.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 18th day of November, 1980.

TERRY HOFFMAN
Executive Director

Subscribed and sworn to before me

this 18th day of November, 1980.

Notary Public

MARYANNE GIBBONS
NOTARY PUBLIC - MINNESOTA
RAMSEY COUNTY
My Commission Expires Sept 26, 1985

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION

CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32.

PCA-004-80-AK

STATEMENT OF NEED AND REASONABLENESS

I. INTRODUCTION

The subjects of this hearing are proposed amendments to existing rules of the Minnesota Pollution Control Agency (hereinafter "Agency"), specifically WPC 14, 15, 24 and 25. (These rules will be renumbered as part of this hearing to correspond with the Minnesota Code of Administrative Rules (MCAR) system, e.g., 6 MCAR §4.8014, but throughout this Statement the rules will be referred to under their old numbers, e.g., WPC 14.) The Agency is also proposing to repeal, in their entirety, a number of existing rules that have become outdated. These rules are proposed for amendment or repeal pursuant to the Agency's authority under Minn. Stat. §§115.03 and 115.44 (1978).

The amendments being proposed would create a new classification of waters of the State called Limited Resource Value Waters, would classify certain waters as Limited Resource Value Waters, and would establish water quality standards for these waters and effluent limitations for dischargers to these waters. In addition, some water quality standards for most classes of water are proposed for revision. The primary focus is on water quality standards for ammonia, chlorine, dissolved oxygen, and fecal coliform organisms.

This Statement discusses these and all other proposed changes to the rules but the discussion represents only a summary of the data and testimony relied on by the Agency to support the amendments. In conjunction with this Statement, the Agency has also prepared written testimony for most of its witnesses. These documents are available now for review at the offices of the Agency in Roseville. The Agency does not intend to read the written testimony at the hearing, although copies will be available for review.

The Agency has attached to this Statement a list of all the Exhibits the Agency intends to place into the record. These Exhibits are referenced throughout this Statement and the written testimony in support of specific amendments. Copies of these exhibits are available for review at the offices of the Agency in Roseville. A complete list of those people who will provide testimony, either written or oral, in support of the amendments is included below. The specific witnesses who will testify in support of a particular provision are listed again in this Statement after the discussion of each particular provision. Finally, a Glossary is included at the end of this Statement to provide definitions of words and phrases and abbreviations used throughout this Statement and the testimony and exhibits.

II. WITNESSES

The following people will provide testimony in support of the proposed amendments; with the general area of testimony indicated in parenthesis:

1. William Anderl, Minnesota Department of Health (Fecal coliform)

2. Gerald Blaha, Section of Surface and Groundwaters, Division of Water Quality, Minnesota Pollution Control Agency (Limited Resource Value Waters - Criteria, Standards and Assessment Procedure)

3. Dr. William Brungs, U.S. Environmental Protection Agency, Environmental Research Laboratory, Duluth, Minnesota (Chlorine and Dissolved Oxygen)

4. Randy Burnyeat, Permits Section, Division of Water Quality, Minnesota Pollution Control Agency (Pretreatment Program as it relates to the proposed repeal of the 5 mg/l total suspended solids limitation)

5. John Hensel, Facilities Section, Division of Water Quality, Minnesota Pollution Control Agency (Effect on Municipal Dischargers)

6. Marvin Hora, Section of Surface and Groundwaters Division of Water Quality, Minnesota Pollution Control Agency (Toxic Substances Program as it relates to the proposed repeal of the 5 mg/l total suspended solids limitation)

7. Paul Marsh, Section of Surface and Groundwaters, Division of Water Quality, Minnesota Pollution Control Agency (Toxic Substances and Chlorine)

8. David Maschwitz, Section of Surface and Groundwaters, Division of Water Quality, Minnesota Pollution Control Agency (Dissolved Oxygen and Ammonia)

9. John McGuire, Section of Surface and Groundwaters, Division of Water Quality, Minnesota Pollution Control Agency (Repeal of Rules)

10. Lanny Peissig, Section of Surface and Groundwaters, Division of Water Quality, Minnesota Pollution Control Agency (Limited Resource Value Waters and Total Suspended Solids)

11. Deborah Pile, Planning Section, Division of Water Quality, Minnesota Pollution Control Agency (Minnesota and Mississippi River Classification)

12. Steve Reed, Facilities Section, Division of Water Quality, Minnesota Pollution Control Agency (Effect on Industrial Dischargers)

13. Larry Sisk, U.S. Fish and Wildlife Service (Dissolved Oxygen, Chlorine, and Ammonia)

14. Dr. Robert Thurston, Fisheries Bioassay Laboratory, Montana State University, Bozeman, Montana (Ammonia)

15. Gordon Wegwart, Facilities Section, Division of Water Quality, Minnesota Pollution Control Agency (Effect on MWCC)

16. Jerry Winslow, Section of Surface and Groundwaters, Division of Water Quality, Minnesota Pollution Control Agency (Water Quality Models)

17. Minnesota Department of Natural Resources (John Enblom or John Skrypek) (Dissolved Oxygen)

In addition to the above witnesses, who have all prepared written testimony that is available now, the Agency anticipataes that the Minnesota Department of Health will provide comments on the rules, as will Region V of the United States Environmental Protection Agency. Also, a witness from the EPA lab in Cincinnati, Ohio, (probably Edwin Geldreich or Lee McCabe) will provide testimony in support of the fecal coliform standards.

III. NEED AND REASONABLENESS REQUIREMENT

Minn. Stat. §15.0412, Subd. 4 (1978) requires an agency to make an affirmative presentation of facts establishing the need for and the reasonableness of the rule or amendments proposed. In general terms what this statutory test requires is that an agency must set forth the reasons for its proposed action and its reasons must not be arbitrary or capricious. However, to the extent that need and reasonableness are separate tests, need has come to mean that there is a problem that exists that requires administrative attention and reasonableness means that the solution proposed by the agency is a proper one.

The Agency here in the discussion below has attempted to separate the need from the reasonableness for each of the specific proposed amendments. Need, however, is a broad test that does not easily lend itself to an evaluation of each provision proposed. In this broad sense the need for amendments to water quality rules arises from the fact that the rules have not been amended in over six years and it is appropriate to reevaluate the classifications and standards and limitations in the light of present knowledge. Technology has changed, new evidence has been gathered, and other factors require new analysis. While the Agency believes that these facts establish the need for amendments to the water quality rules, and the only analysis left to be made is whether the specific proposals are reasonable, the Agency has nevertheless addressed the question of the need of each provision to the extent that can be done.

IV. DISCUSSION

A. Background

It is important at the outset to describe the general format of WPC 14, 15, 24 and 25. WPC 14 and WPC 15 establish criteria for different classifications of water, establish water quality standards applicable to each classification, and establish effluent limits for dischargers. WPC 14 applies to intrastate waters and WPC 15 applies to interstate waters. Essentially, the language in both rules is identical.

Section B of WPC 14 and 15 identifies the different use classifications of waters. The present use classifications are (1) domestic consumption, (2) fisheries and recreation, (3) industrial consumption, (4) agricultural and wildlife, (5) navigation and waste disposal, and (6) other uses. The Agency has also proposed an additional classification, Class 7, which is Limited Resource Value Waters.

Section D of WPC 14 and 15 establishes the water quality standards for each classification of waters. Water quality standards are the minimum or maximum allowable concentrations of various water quality characteristics, such as dissolved oxygen or toxic pollutants.

Section C of WPC 14 and 15 establishes the effluent limitations that a discharger must meet. Effluent limitations are the maximum allowable concentrations of various pollultants which a source may discharge. Effluent limitations are set at levels necessary to achieve and maintain water quality standards.

Using the criteria set forth in WPC 14 and WPC 15, the Agency has placed the waters of the State into one or more of the established classifications. The results of this placement are found in WPC 24 for intrastate waters and in WPC 25 for interstate waters.

The Agency has proposed changes in use classifications, water quality standards, effluent limitations, and classification of certain waters, and the discussion below is generally structured

around these concepts. Part B of this Statement deals with proposed amendments to water quality standards (ammonia, chlorine, dissolved oxygen, fecal coliform); Part D deals with effluent limitations (sections C.1, C.8, C.9, C.10, C.14, and C.6,); and Part E discusses the proposed reclassification of certain portions of the Mississippi and Minnesota Rivers.

The other Parts are as follows: Part C discusses all of the proposed amendments relating to Limited Resource Value Waters, including the use classification criteria, the water quality standards, the effluent limitations, and the classification of such waters. Part F discusses the proposed repeal of certain rules. The final Part, Part G, discusses the economic impacts of all the proposed amendments. (The economic impact of the proposed rules is a factor to be considered in determining the reasonableness of the rules; however, the economic discussion has been set out in a separate part for the sake of convenience.)

B. Water Quality Standards

Water quality standards are established for the protection of specific beneficial uses man makes of surface waters. For many pollutants, protection of the aquatic community is the most sensitive use, and protection of aquatic life will protect the water for other uses. Therefore, it is helpful to understand the rationale behind the derivation of water quality standards for the protection of aquatic life. The Agency has described this rationale in Exhibit 23, which is briefly summarized here.

In establishing a water quality standard for a particular pollutant to protect aquatic life, the idea is to protect the most sensitive resident species during its most sensitive life stage. While the most sensitive member of a resident aquatic community must be protected, not all organisms have been tested and our consideration must be limited to those for which data are available. The most sensitive species may not itself be a desirable fish species, but a valuable member of the ecological system. And the most sensitive life stage is often not the adult but the nymph, fry, embryo or some other stage. The identification of this most sensitive life stage of the most sensitive species must consider differences between acute (short-term) and chronic (long-term) effects, between coldwater and warmwater species, and between fishes and other aquatic biota.

It is also necessary, of course, to establish the concentration at which this most sensitive member of the aquatic community will be harmed by a particular pollutant. Field data is always valuable, but more often this concentration is determined through many laboratory bioassays, which are controlled tests to measure the effect of a particular substance, such as chlorine, on a living organism, such as a bluegill fish.

Bioassays may be classified on the basis of the duration of the test. An acute bioassay is of short duration, usually 1 to 4 days, and the standard measurement of effect is usually death of test organisms. The results of acute bioassay are often expressed as an LC50, the concentration or level of a water quality charac-

teristic which is lethal to 50 percent of the test organisms in a specified period of time. Chronic bioassays are long-term tests, often over several life cycles of the test organism. Chronic bioassays are usually used to evaluate sublethal effects on the organism. The final results of chronic tests are often expressed as a MATC (Maximum Acceptable Toxicant Concentration) which is often considered to be a "safe" level of that toxicant for the species tested and under the described experimental conditions. By definition, the MATC (i.e., the threshold effect level) is the geometric mean of the highest toxicant concentration that has no adverse affect and the lowest concentration at which definite adverse effects on survival, growth, and reproduction are observed. Tests which yield both LC50 and MATC data can be used to determine application factors. An application factor is a number which can be used with acute toxicity data (i.e. LC50's) for a specific substance to estimate a safe concentration for chronic exposure to that substance. This allows utilization of the larger body of acute data compared with chronic data.

This background is helpful and it, and the more detailed discussion in Exhibit 23, should be kept in mind when reviewing the summary below and the testimony on the various water quality standards proposed for adoption.

The following discussion is a summary of the Agency's reasons and the evidence relied on to support the adoption of the proposed water quality standards - ammonia, chlorine, dissolved oxygen, and fecal coliform.

1. Ammonia - Proposed Minn. Rule WPC 14 D.2. and 15 D.2. (Class 2A, 2B and 2C waters)

	a. Proposed Standard	Present Standard
Class 2A	0.016 mg/l un-ionized ammonia (as N)	0.2 mg/l total ammonia (as N)
Class 2B	0.04 mg/l "	1.0 mg/l total ammonia (as N)
Class 2C	0.04 mg/l "	1.5 mg/l total ammonia (as N)

b. Need

Ammonia is present in many wastewater treatment plant effluents and is highly toxic to aquatic life. Therefore, the concentration of ammonia in waters must be controlled to protect the fisheries and recreational uses of waters. An ammonia standard is needed in order to protect aquatic life, including fish and their food organisms, from long-term or chronic effects due to the presence of ammonia in the waters of the state.

c. Reasonableness

Ammonia is a pungent, colorless gas containing nitrogen and hydrogen and is highly soluble in water. When ammonia is in solution with water, it exists in two chemical forms: the gaseous or un-ionized form (NH_3), and, the ionized form (NH_4^+). Total ammonia consists of the sum of the un-ionized and the ionized forms of ammonia. The portion of total ammonia which is in the un-ionized form at any time is controlled primarily by the pH and secondly by the temperature of the water. An increase in the pH results in an increase in the un-ionized form of

ammonia. Likewise, an increase in temperature increases the un-ionized form of ammonia. Un-ionized ammonia is the form of ammonia which is the most toxic to aquatic life. Ionized ammonia is considered much less toxic than un-ionized ammonia.

The present ammonia standards are expressed in terms of total ammonia. Because the portion of toxic un-ionized ammonia within the total is greatly dependent on water quality characteristics, such as pH and temperature, a total ammonia standard is often too lenient or too stringent and is only correct when rather specific water conditions are met (a certain pH and temperature). Stating the proposed standard in terms of un-ionized ammonia, rather than total ammonia, is reasonable because: (1) un-ionized ammonia is the primary toxic form of ammonia; and, (2) stating the standard in terms of un-ionized ammonia will establish a standard which will be appropriate year round since it takes into account the natural fluctuations in ambient pH and temperature.

The proposed standards are based on an assessment of both acute and chronic data for important resident fish in Minnesota. The proposed standard for Class 2A waters is more stringent than the proposed standard for Class 2B & 2C waters because coldwater fish are more sensitive to ammonia toxicity than warmwater fish.

The proposed standard for Class 2A waters is based upon an assessment of the acute and chronic data for rainbow trout. Rainbow trout have been successfully introduced in many coldwater habitats in Minnesota, such as the Straight River (near Park Rapids), and are an important game fish species. The maximum acceptable toxicant concentration (MATC) estimated for this species is 0.0145 mg/l. The current U.S. Environmental Protection Agency recommended criteria is 0.016 mg/l. This value has also been accepted by other regulatory agencies. Therefore, the proposed standard of 0.016 mg/l is reasonable.

The proposed standard for Class 2B & 2C waters is based upon an assessment of the acute and chronic data for warmwater fish, and, in particular, studies in regard to the bluegill. The bluegill is a very common and important warmwater game fish in Minnesota, and, as has been shown for many fish species, the very young life stages (fry) are very sensitive to the toxic effects of ammonia. The maximum acceptable toxicant concentration (MATC) derived for this species (the LC50 times the application factor) is 0.04 mg/l un-ionized ammonia. Therefore, the proposed standard is reasonable.

Ammonia enters surface waters from several sources, including municipal wastewater discharges and industrial discharges. Effluent limits for individual dischargers will be established, as necessary, in order to meet the proposed ammonia water quality standards. (The proposed standard for Class 2A waters is comparable to the present standard during summer months. The proposed standard for Class 2B & 2C waters is generally more stringent than the present standard during summer months.) In many cases, no ammonia removal will be required of dischargers to continuously flowing waters. In other cases, an ammonia effluent limit may be necessary. This will be determined on the basis of Waste Load Allocation Studies. Dischargers to waters classified under Section C.8. (low flow streams not classified as Class 7) will, in general, be required to meet the following effluent limits in order to achieve the proposed standard of 0.04 mg/l:

Summer: 1 mg/l total ammonia

Winter: 4 mg/l total ammonia.

The proposed ammonia standard is not applicable to Class 7 waters; therefore, no ammonia removal will be required of dischargers to such waters unless necessary to protect downstream waters.

If ammonia removal is required, the technology is available to achieve this result. However, secondary wastewater

treatment facilities are not generally capable of achieving adequate ammonia removal. For the purposes of estimating the costs of complying with the proposed ammonia standard, it was assumed that advanced treatment, by means of a two-stage biological treatment process, would be necessary if the effluent limit was less than 10 mg/l.

d. Witnesses

1. John Hensel
2. Steve Reed
3. Gordon Wegwart
4. David E. Maschwitz
5. Dr. Robert V. Thurston
6. Larry Sisk

e. Exhibits

Numbers 15 - 39.

2. Chlorine - Proposed Minn. Rule WPC 14 D.2 and 15 D.2 (Class 2A, 2B & 2C waters)

a. Present Standard	Proposed Standard
None Specified	.003 mg/l (under conditions of conditions of continuous exposure)

b. Need

Chlorine is not a natural constituent of surface water. Rather, it is present mainly because of discharges of municipal wastewater, where chlorine is used as a disinfectant,

or discharges of industrial cooling water, where chlorine is used as an anti-fouling agent.

Chlorine is toxic to aquatic life. A restriction on the amount of chlorine allowed in a waterbody is needed to protect aquatic life, including fish and their food organisms, from chronic poisoning due to total residual chlorine.

c. Reasonableness

When chlorine is used as a disinfectant or as an anti-fouling agent, it is administered as either a gas or as a salt. Chlorine reacts with water to form a weak acid. The free available chlorine (Cl_2, HOCl, and OCl^-) will react with nitrogen compounds in the water to form combined available chlorine. Total residual chlorine is a measure of both free available and combined available chlorine.

Depending upon the chemical composition of the water, some chlorine will react with other substances to form chlorinated compounds. These chlorinated compounds are not part of the total residual chlorine.

Until recently, it was believed that the residual chlorine in discharges was rapidly eliminated by the reduction of chlorine to chloride, which is relatively harmless to aquatic life. However, recent studies have shown that chlorine can

persist for a period of hours to days and that the most important factor determining dissipation of residual chlorine is dilution, rather than reduction to chloride.

The proposed standard of 0.003 mg/l total residual chlorine is based upon an assessment of studies of the acute and chronic toxicity of total residual chlorine to aquatic life. The 96-hour LC50 values for total residual chlorine for the most sensitive freshwater fish species range between 0.040 and 0.080 mg/l. The most sensitive invertebrate species is even more susceptible to the acute toxicity of chlorine than the most sensitive fish species.

The maximum acceptable toxicant concentration (MATC) for freshwater fish varies from 0.015 mg/l total residual chlorine to 0.026 mg/l. Invertebrates appear to be even more sensitive than fish to chronic exposure to chlorine. A geometric mean MATC for invertebrates is 0.005 mg/l; however, sublethal effects on some species occur at lower levels. Thus, a water quality criteria for the protection of aquatic life must be less than 0.005 mg/l to provide adequate protection. The standard of 0.003 mg/l of total residual chlorine is reasonable in order to provide an adequate margin of safety.

Separate standards for warmwater and coldwater fisheries have not been proposed because data indicate that

several warmwater species are as sensitive to chlorine as are the most sensitive coldwater species.

The proposed total residual chlorine standard is applicable only to conditions of continuous exposure. Continuous exposure is defined in reference to any effluent which contains total residual chlorine and is discharged for a total of more than two hours in any 24-hour period. This is consistent with federal guidelines. Thus, intermittent dischargers will not be impacted by the proposed standard. However, these intermittent dischargers will, at a minimum, have to comply with federal effluent guidelines and standards.

In order to meet the proposed chlorine standard, dischargers with continuous chlorination will have to dechlorinate their effluent. Dechlorination is technically feasible at a reasonable cost. Dechlorination can be accomplished by the addition of sulfur dioxide in the final step of the treatment process. The reaction of sulfur dioxide with total residual chlorine is almost instantaneous and produces essentially no residual chlorine. However, because this process depletes the oxygen in the wastewater, reaeration may be necessary in some instances.

Dechlorination can also be accomplished by treating the chlorinated effluent with activated carbon. In addition,

there are other means of disinfecting wastewater, such as ozone, ultraviolet irradiation and bromine chloride. If such means are used, dechlorination would, of course, not be necessary.

Dechlorination of wastewater will only be required from May 1st - October 31st since this is the only time disinfection is required. (See Part B.4. of this Statement.) Dechlorination requirements will likely be applicable to discharges from all municipal mechanical wastewater treatment facilities except those to Class 7 waters. Dechlorination will not be required for ponds or land application wastewater treatment facilities. Some industrial dischargers will be required to dechlorinate as well.

The Agency is cognizant of the difficulties associated with the measurement of total residual chlorine at levels near that of the proposed standard. However, fish and other aquatic biota cannot adjust their sensitivity to chlorine to accommodate shortcomings in our analytical capabilities. There are two ways in which total residual chlorine can be satisfactorily monitored even at this very low level. First, sophisticated amperometric analytical equipment can measure the total residual chlorine in the receiving water at concentrations near the

level of the proposed standard. This equipment is commercially available at a cost of approximately $2000 - $4000 per unit. Second, effluent concentrations of total residual chlorine could be monitored using less expensive amperometric equipment ($700 - $1000 per unit) with detection limits in the area of 0.020 mg/l. These effluent concentrations could then be used to calculate the receiving water concentration by application of an appropriate mass-balance equation.

d. Witnesses

1. Dr. William A. Brungs
2. John Hensel
3. Paul Marsh
4. Steve Reed
5. Gordon Wegwart
6. Larry Sisk

e. Exhibits

Numbers 37, 40 - 53.

3. Dissolved Oxygen: Proposed Minn. Rule WPC 14D.2 and 15D.2 - (Class 2A, 2B and 2C Waters)

a.

	Proposed Standard	Present Standard
Class 2A Waters	not less than 7 mg/l at all times (instantaneous minimum concentration)	not less than 7 mg/l from October 1st and continuing through May 31st and not less than 6 mg/l at other times

Class 2B Waters	Not less than 5 mg/l at all times (instantaneous minimum concentration)	Not less than 6 mg/l from April 1st through May 31st and not less than 5 mg/l at other times
Class 2C Waters	Not less than 5 mg/l at all times (instantaneous minimum concentration)	Not less than 5 mg/l from April 1 through November 30 and not less than 4 mg/l at other times

b. Need

Some level of dissolved oxygen must be present in freshwater to protect aquatic life. Data gathered since the existing standards were adopted in 1973 indicate that a reevaluation of the standard itself and of the method of determining compliance and of the times when the standard is applicable is warranted.

c. Reasonableness

Oxygen is unlike most chemical characteristics of water for which water quality standards are proposed in that oxygen must be present at some minimum concentration to sustain aquatic life. Other chemical characteristics such as ammonia and chlorine, on the other hand, are toxic to aquatic life and should not be present in excess of a maximum acceptable concentration.

The basic source of oxygen to a body of water is the atmosphere. However, the concentration of oxygen present at any given moment is often the net result of the oxygen producing process (photosynthesis) versus the oxygen consumptive process

(respiration) within that body of water. Thus, during the daylight hours photosynthetic activity of algae and other aquatic plants usually raises the oxygen concentration of the water while, at night, with the cessation of photosynthesis, continuing respiration causes the oxygen concentration to decline.

The discharge of oxygen demanding municipal and industrial wastes into waterways can cause a depletion of oxygen as the organic material is broken down through oxygen consuming biological processes. Thus, low levels of dissolved oxygen are often indicative of excess organic loading to waters.

The basic rationale of the proposed dissolved oxygen standards is that, based on data available, the standards represent concentrations which will protect aquatic life from sublethal effects during prolonged exposure, will insure productivity, and will avoid undesirable shifts in fish communities. Oxygen requirements of aquatic organisms have been studied both in the field and in the laboratory and data from both are useful in deriving the proposed standard.

The proposed standard for Class 2A waters is 7 mg/l. Research has shown that a dissolved oxygen standard of 7 mg/l, which assures levels close to full oxygen saturation at the highest summer temperatures, will result in little or no foreseeable harm to aquatic life. This high level of protection is consistent with the importance attached to these valuable fisheries, such as Lake

Superior, the North Shore streams the Straight River (near Park Rapids), and the Whitewater River (east of Rochester).

The proposed standard for Class 2B and 2C waters is 5 mg/l, which is less stringent than the proposed standard for Class 2A waters. This is because coldwater fish such as trout are more sensitive to hypoxia (insufficient oxygen supply) than warmwater fish. The 5 mg/l standard for warmwater fisheries is reasonable for the following reasons:

1. growth and feeding efficiency of some juvenile fish are reduced at oxygen concentrations below 5 mg/l;

2. growth and survival of the larvae of several warmwater fish species are impacted by oxygen concentrations below 5 mg/l;

3. good quality mixed warmwater fish populations, including game fish, are most often associated with water containing 5 mg/l or more oxygen; and,

4. stress from other sources, such as toxicants, high temperature and disease, is aggravated by lower oxygen concentrations.

Therefore, a standard below 5 mg/l would result in some reduced growth and reproduction success and probable population or community shifts, and would provide little protection for aquatic life from unknown sublethal effects of lowered oxygen.

While a 5 mg/l standard may allow some limited impact on aquatic life, such impact will not be significant over the long term. Thus, the Agency deems it reasonable to adopt a 5 mg/l standard for both Class 2B and 2C waters.

The proposed standards are instantaneous minimum concentrations, rather than an average concentration as some have urged, for the following reasons:

1. Tests involving fluctuating levels of oxygen have shown that growth of fish is limited by the minimum dissolved oxygen concentration;

2. Harmfully low levels of dissolved oxygen could occur in waters exhibiting wide diurnal fluctuations; and

3. An average standard presents significant monitoring problems.

For similar reasons, the Agency is not proposing a seasonal variation in the standards, as presently exists.

In order to meet the proposed dissolved oxygen standards, municipal and industrial dischargers will have to limit the amount of organic material in their effluents. BOD (biochemical oxygen demand) is the measure of the organic matter in wastewater. (BOD and dissolved oxygen are interrelated because dissolved oxygen is consumed as organic matter is decomposed.) Dischargers will be assigned BOD_5 effluent limits ranging from 5 mg/l to 25 mg/l, depending upon the receiving water involved. Various treatment processes are available to achieve these BOD_5 effluent limits. To the extent dischargers will have to meet more stringent BOD_5 effluent limitations because of the proposed standards, it will be not so much because of the changes in the numerical standard but because most existing limitations were not calculated on the basis of instantaneous minimum concentrations.

d. Witnesses

1. David Maschwitz,

2. Dr. William A. Brungs

3. John Hensel

4. Gordon Wegwart

5. Steve Reed

6. Larry Sisk

7. John Enblom/John Skrypek

e. Exhibits

Numbers 25 -28, 37, 55 - 79.

4. Fecal Coliform: Proposed Minn. Rule 14 WPC D.1-7. and 15 D.1-7. (Classes 1-7.)

a. Present Standard	Proposed Standard
Class 1A 1 most probable number per 100 milliliters	No change
Class 1B 10 most probable number per 100 milliliters	Repeal
Class 1C 200 most probable number per 100 milliliters	Repeal
Class 1D 200 most probable number per 100 milliters	Repeal
Class 2A 200 most probable number per 100 milliliters as a monthly geometric mean based on not less than 5 samples per month, nor exceed 400 most probable number per 100 milliliters in more than 10% of all samples during any month.	200 organisms per 100 milliliters as a logarithmic mean measured in not less 5 samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliters. (Applies only between May 1 and October 31).

Class 2B 200 most probable number per 100 milliliters as a monthly geometric mean based on not less than 5 samples per month, nor equal or exceed 2000 most probable number per 100 milliliters in more than 10% of all samples during any month.	200 organisms per 100 milliliters as a logarithmic mean measured in not less than 5 samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between May 1 and October 31).
Class 2C 200 most probable number per 100 milliliters as a geometric mean nor equal or exceed 2000 most probable number per 100 milliliters in more than 10% of the samples.	200 organisms per 100 milliliters as a logarithmic mean measured in not less than 5 samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between May 1 and October 31).
Class 3A 200 most probable number per 100 milliliters	Repeal
Class 3B 200 most probable number per 100 milliliters	Repeal
Class 3C 200 most probable number per 100 milliliters	Repeal
Class 4A 200 most probable number per 100 milliliters	Repeal
Class 4B 200 most probable number per 100 milliliters	Repeal
Class 5 200 most probable number per 100 milliliters	Repeal
Class 6 None Specified	None

Class 7 None Specified	1,000 organisms per 100 milliliters. The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of 5 samples, nor shall more than 10% of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters. (Applies only between May 1 and October 31).

b. Need

Sewage, stormwater and other discharges containing animal wastes may contain disease causing bacteria, viruses and parasites. Primary body contact with, or consumption of, water containing such organisms can cause various diseases in human beings and other animals. No single test has yet been developed which can detect all of these pathogens. However, the presence of fecal coliforms, a group of bacteria found in the feces of warm-blooded animals, has been shown to indicate the potential presence of such pathogens. Therefore, a fecal coliform organisms standard is needed as an indicator of pollution from animal wastes.

c. Reasonableness

The proposed changes in the fecal coliform standard are as follows: (1) seasonal disinfection, rather than year-round disinfection, will be permitted except for dischargers upstream of

a potable water supply; (2) year-round disinfection will continue to be required of dischargers 25 miles or less upstream of a potable water supply; (3) the maximum number of allowable organisms has been decreased for Class 2B and 2C waters; (4) a fecal coliform standard has been established for Class 7 waters; (5) the testing requirement for fecal coliform has been simplified; and (6) the fecal coliform standard has been repealed for certain classes of water.

1. Seasonal Disinfection

Class 2 waters are to be protected for recreational uses. The proposed amendments continue the present standard of 200 organisms per 100 milliliters (see discussion below regarding the tests used to determine this number). However, the proposed amendments generally limit the application of this standard to May 1 through October 31, instead of the present year-round application of the standard. This is reasonable from a public health perspective because it is not necessary to protect for recreational uses in Minnesota in the winter. Also, seasonal disinfection will result in a cost savings in two ways: (1) the amount of money spent for chlorine or other disinfectants will be less; and (2) if chlorine is used as a disinfectant, only seasonal dechlorination will be required.

2. Protection of Drinking Water Supply

A second public health concern related to this standard is domestic consumption. Thus, the proposed amendments continue to

apply the fecal coliform standard year round when the waters are located 25 miles or less upstream of a potable water supply. Even though water will generally be treated before it is used for domestic consumption, it is desirable that effluents discharged to water to be used as a potable water supply still be disinfected. This will provide multiple barriers; i.e. disinfection, natural purification and treatment.

The 25 mile limit is based upon a survey of the location of major dischargers upstream from municipal water intake sources in Minnesota and a survey of similar requirements in other states.

3. Change in Standard for Class 2B and 2C Waters

The present fecal coliform standard for Class 2B and 2C waters sets 2000 organisms as the upper limit allowable in 10% of all samples taken during any month. The proposed standard would change this upper limit to 400 organisms. This proposed change is consistent with the U.S. Environmental Protection Agency criteria for recreational waters. The upper limit of 400 organisms has been established because above this limit the potential health-threat to recreational users of the waters is unacceptable.

4. Class 7 Waters

Class 7 waters will not be used for recreation or domestic consumption. Thus, a stringent fecal coliform standard is not required. However, the proposed standard of 1000 organisms/100 milliliters is reasonable as it will protect for secondary body contact use and use of groundwater as a potable

water supply. This will also protect wildlife and livestock which use such waters and will allow the water to be used for irrigation without causing a hazard to human or animals. This standard is the same as that recommended by the National Academy of Sciences to protect for such uses.

5. Test Requirements

The change from "most probable number" of organisms to the number of "organisms" is reasonable because it will explicitly allow a simpler test for the fecal coliform parameter. To determine the "most probable number" of fecal coliform, a fairly sophisticated test procedure is required. Many small municipalities do not have the expertise to perform this test. The number of fecal coliform "organisms", on the other hand, can be determined by a fairly simple test procedure. Results of the simpler test are comparable to those obtained by the more complex test.

Likewise, the change from "per month" to "any calendar month" is intended to simplify reporting requirements. Under the present standard, the average could be determined for any 30-day period. Under the proposed standard, the average would be determined for any calendar month, which will coincide with other reporting requirements and will provide consistency in reporting.

The change from "geometric" mean to "logarithmic" mean is not substantive. The results of both computations are the same. However, the change in language will be consistent with U.S. Environmental Protection Agency criteria.

6. Repeal of Standard for Classes 1B, 1C, 1D, 3, 4 and 5

It is reasonable to delete the fecal coliform standard for Classes 1B, 1C and 1D, 3, 4, and 5, since all surface water is presently proposed to be classified as either Class 2 or Class 7. Thus, one of the proposed standards will be applicable to all surface waters.

d. Witnesses

1. William Anderl

2. John Hensel

3. Gordon Wegwart

e. Exhibits

Numbers 28, 37, 80, 117 - 121.

C. Limited Resource Value Waters:
Proposed Minn. Rule WPC 14 B.7., C.6 and 16., and D.7, WPC 15 B.7, C.6 and 16 and D.7., WPC 24 & 25, Supplement 1.

1. Need

There are a number of surface water bodies in the State of Minnesota that will never meet national water quality goals of being fishable and swimmable. These waters are generally those where, because of natural conditions or irreversible man-induced impacts, achievement of these national goals is perhaps impossible, and at least inordinately expensive. Such waters are those, for example, with naturally occurring low flow conditions or those that have been irretrievably modified by channelization or other man-made hydrological or structural alteration. Such

characteristics, whether described by nature or imposed by man, essentially preclude the use of such waters for the propogation and maintenance of fish and limit the recreational opportunities for man.

It is necessary, therefore, to identify these waters and establish reasonable water quality standards for them. These water quality standards can then be used to determine the restrictions that must be placed on dischargers to these waters.

2. Reasonableness

a. Criteria - WPC 14 B.7 and 15 B.7

Once it is recognized that certain bodies of water have limited value as a water resource for fishing and swimming, it is necessary to develop criteria to identify these waters. The two criteria relied on by the Agency are a limited value in fact and a restricted quantity of water. These are found in Section B.7. The restricted quantity of water is a reasonable and obvious criterion. Certain bodies of water that have little or no flow at certain times of the year are the ones that are of limited value for fishing and swimming. The Agency has selected intermittent flow and flows of less than 1 cubic feet per second (cfs) at the once in ten year, seven-day low flow (7Q10) as criteria in defining the quantity of water. The use of these criteria allows for a case-by-case analysis while the 1 cfs cutoff limit at the 7Q10 provides a definitive standard that allows for an automatic fisheries and recreation use classification for those waters that

equal or exceed the limit. A flow of 1 cfs was chosen because those waters with a higher 7Q10 have a potential for fisheries or recreational uses.

However, while the quantity of water may often be decisive, in that small quantities of water may preclude swimming and fishing, it is also important to make a determination whether the uses of the water actually are limited. Therefore, the second part of the test is whether the water does indeed have a limited value. In this regard Section B.7.c. provides that, in order to be classified a Limited Resource Value Water, the water must have limited recreational opportunities. The test sounds like a subjective one but the factors that go into this decision - like flow and habitat and human activity - are objective considerations that can be evaluated and measured. Indeed, Section B.7. provides that in order to have limited value, the use of a water for fishing and swimming must be limited by naturally occurring phenomena or man-induced alterations. These criteria are not really a separate test for limited recreational opportunities but instead are the factors that lead to the conclusion that these opportunities are limited.

b. Classification - Supplement 1 to WPC 24 and WPC 25

Supplement 1 to WPC 24 lists 180 intrastate bodies of water, or portions of certain intrastate waters, that exhibit limited value and intermittent or low flows. Supplement 1 to WPC 25 lists 7 interstate bodies of waters that exhibit the same characteristics.

Each of these bodies of water was individually assessed from data gathered during an on-site investigation of these waters by Agency staff members. The Agency believes that these assessments support the designation of these waters as Limited Resource Value Waters.

c. Water Quality Standards - WPC 14 D.7. and 15 D.7.

While it is conceded that Limited Resource Value Waters, by definition, will not attain national water quality goals of being fishable and swimmable, these waters must be protected to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to maintain the aesthetic qualities of the water. Each of these is a reasonable goal that is consistent with state and federal policies. Therefore, in order to protect these waters for such uses, it is appropriate to establish water quality standards for these Class 7 Limited Resource Value Waters. Also, the water quality standards must be adequate to protect downstream waters that are fishable and swimmable. These water quality standards are set forth in Section D.7. The justification for the water quality standards can be summarized as follows:

1. Fecal Coliform. The 1000 organisms per 100 milliliters standard is as high a standard as the Agency believes can be

permitted and still protect the groundwater and allow secondary body contact use. Also, this standard will protect wildlife and livestock which use such waters and will allow the water to be used for irrigation purposes without presenting a hazard to man or animals from consumption of the crops. This is based on work by the National Academy of Sciences and others.

2. pH. The standard of 6.0 - 9.0 is believed to be protective of the above-stated uses. Moreover, this standard is readily achievable by dischargers to these waters.

3. Dissolved Oxygen. Dissolved oxygen is the primary factor that determines whether biological changes are brought about by aerobic or by anaerobic organisms. The staff believes that a 1 milligram per liter standard is adequate to provide aerobic conditions to avoid any obnoxious odor problems during biological oxidation of organic and inorganic matter. In the event that 1 milligram per liter of dissolved oxygen will not avoid anaerobic conditions, a higher concentration will have to be maintained to avoid odors or other putrid conditions. The standard is an instantaneous minimum because any fluctuations below the standard could cause anaerobic conditions.

4. Unspecified Substances. This standard is directed mainly at toxic and corrosive substances. It is simply a recognition that pollutants cannot be discharged to a Class 7 Limited Resource Value Water that would jeopardize one of the possible uses of the water, including protection of the groundwater.

d. Effluent Limitations - WPC 14 C.6. and C.16 and WPC 15 C.6. and C.16.

The effluent llimitations for a discharger to Class 7 Limited Resource Value Waters will be determined through the application of Sections C.6 and C.16. Dischargers to Class 7 Limited Resource Value Waters are generally exempted from the more stringent BOD_5 limitation of 5 mg/l set in Section C.8. for dischargers to other low flow streams because this limitation is not required to meet the water quality standards set for Class 7 waters.

The only specific effluent limitation set in Section C.16 is a 15 mg/l BOD_5 limitation. BOD (biochemical oxygen demand) is a measure of the organic matter in wastewater. BOD and DO (dissolved oxygen) are interrelated because DO is consumed as organic matter is decomposed. The 15 mg/l BOD_5 limitation is being proposed because the Agency has determined that this limitation is necessary to ensure that the 1 mg/l dissolved oxygen water quality standard is not violated. This 15 mg/l limitation was derived from the use of three mathematical models that were calibrated and verified by the Agency for three streams in Minnesota at low flow conditions. It is believed that these models predict the reaction of small Minnesota streams to municipal wastewater discharges.

The rest of the effluent limitations for dischargers to Class 7 Limited Resource Value Waters will be derived pursuant to the requirements of Section C.6. However, Section C.6 will not require a discharger to a Class 7 Limited Resource Value Water to

meet an effluent limitation for chlorine or ammonia, for example, to protect aquatic life, because of Section C.6.

Subsections C.16.b. and C.16.c. essentially provide for more or less stringent effluent limitations as are necessary or adequate to protect water quality. It is reasonable to allow less stringent effluent limitations for persons who can restrict their discharge to times when the flow is high enough to maintain water quality standards and to require more stringent limitations when needed to preserve water quality in higher resource waters downstream from the discharge. The only limitation that will be relaxed because of the operation of Subsection C.16.b. is the BOD_5 limitation, and thus allow some dischargers to Class 7 Limited Resource Value Waters to meet the 25 mg/l limitation.

Whenever these subsections are utilized to establish effluent limitations for a discharger to a Limited Resource Value Water, all procedural safeguards will be afforded both the discharger and the public before those decisions are made.

3. Witnesses

   a. Gerald Blaha

   b. Lanny Peissig

   c. Jerry Winslow

   d. Bill Anderl

4. Exhibits

   Numbers 37, 66, 81 - 85, 93 - 99, 119.

D. Effluent Limitations

1. Total Suspended Solids Effluent Limitation: Proposed Minn. Rule WPC 14 C.8 and 15 C.8.

a. Present Standard	Proposed Standard
Total Suspended Solids - 5 mg/l	Total Suspended Solids - 30 mg/l

b. Need & Reasonableness

Section C.8. establishes the effluent standards for low flow streams, which are not classified as Limited Resource Value Waters. Thus, the present standards are 5 mg/l BOD_5 and 5 mg/l total suspended solids. No change is being proposed in the BOD_5 standard; however, as noted above, the Agency has proposed to repeal the 5 mg/l total suspended solids standard which would, in effect, make the standard 30 mg/l, pursuant to Section C.6.

Repeal of the 5 mg/l total suspended solids standard is reasonable for the following reasons:

(1) There is no evidence that suspended solids concentrations as high as 25 mg/l harm aquatic life, and a discharger meeting a 30 mg/l limitation should not cause the concentration in the receiving water to exceed 30 mg/l.

(2) A wastewater treatment facility designed to meet 5 mg/l BOD_5 will not necessarily meet 5 mg/l total suspended solids limit;

(3) The 5 mg/l total suspended solids limit is not a cost effective means of removing toxic materials from the effluent. Pretreatment (removing toxic substances at their source) is generally more cost effective.

The present 5 mg/l total suspended solids requirement is not necessary to protect the water quality of low flow streams. The proposed 30 mg/l standard, applicable to all other bodies of water, will adequately protect water quality at a lesser cost.

c. Witnesses

1. Lanny Peissig
2. John Hensel
3. Randy Burnyeat
4. Marvin Hora

d. Exhibits

Number 105, 25 and 28.

2. Proposed Amendments to WPC 14 C.9. and 15 C.9.

a. Need and Reasonableness

The present provision provides that, after a public hearing, more stringent effluent limitations may be imposed on a discharger as necessary to meet water quality standards. The proposed language for Section C.9. does not change the substantive intent of this provision but only clarifies that a discharger may be required to meet more stringent effluent limitations than those specified in other sections of the rule if more stringent effluent limitations are necessary to meet water quality standards. This section does not establish the conditions under which more stringent limitations will be found to be necessary but provides that an opportunity for a public hearing will be afforded the discharger before any more stringent effluent limitations can be set.

b. Witness

Lanny Peissig

3. Proposed Amendments to WPC 14 C.10. and 15 C.10.

a. Need and Reasonableness

The present provision requires a common level of treatment for all sources discharging to the same receiving water. The Agency has become aware that this section no longer provides an equitable method of allocating waste loads, and thus is proposing to remove the equal treatment language. In lieu of equal treatment, under the new language effluent limitations will be developed for various dischargers after consideration of their relative size, impact on water quality, and economic status.

b. Witness

Lanny Peissig

4. Proposed Amendments to WPC 14 C.14. and 15 C.14

a. Need and Reasonableness

The purpose of section C.14. is to recognize that toxic substances cannot be discharged into the waters of the State such that the resulting concentration in the receiving water is harmful to aquatic life. Section C.14. does not identify toxic substances or establish permissible levels, but merely establishes a procedure to follow to establish specific water quality standards at a later date. This was the purpose in 1973 when the provision was adopted and remains the purpose under the new language. The new language merely updates the rule.

One way in which the proposed amendments update the provision is to replace the reference to the 1968 Federal Water Pollution Control Administration (predecessor of EPA) recommendations for water quality criteria (Green Book) with the more recent 1976 EPA recommendations (Red Book). The new language also clarifies that the EPA recommendations are important but not necessarily decisive in establishing water quality standards for toxic substances. All pertinent information will be considered.

Finally, the proposed changes strike the words "more stringent" in the sentence about using application factors because an application factor may be more stringent or less stringent than the standard factor of 1/10. If the Agency determines that another application factor besides 1/10 is justified by available scientific evidence, there is no reason to compare it with the standard 1/10 before deciding whether to use it.

b. Witness

Paul Marsh

c. Exhibits

Exhibits 23,37,54, and 66.

5. Proposed Amendments to WPC 14 C.1. and C.6. and 15 C.1. and C.6.

a. Need and Reasonableness

The Agency has proposed to repeal the requirement in Section C.6. which prohibits any pathogenic organisms in wastewater. This repeal has been proposed because, since there are so many types of

pathogenic organisms, it is impractical to test for them all. Instead, it is more reasonable to use fecal coliforms as an indicator of the potential presence of pathogenic organisms.

The Agency has proposed to delete the following language from Section C.1:

"No treated sewage, or industrial waste or other wastes containing viable pathogenic organisms, shall be discharged into intrastate [interstate] waters of the state without effective disinfection."

The repeal has been proposed to make Section C.1 consistent with the proposed amendments which would only require seasonal disinfection of most dischargers and, also, for the reason stated above in regard to Section C.6.

b. Witness

William Anderl

c. Exhibit

Number 118.

E. Repeal of WPC 2, 3, 5-13, 16-21, 23, 26, 29, 31, 32

1. Need and Reasonableness

All the rules that are proposed for repeal were adopted prior to the last major revisions to WPC 14, 15, 24, and 25 in 1973. In fact, all but four of these rules were adopted in the 1960's, some by the predecessor to the Minnesota Pollution Control Agency, the Water Pollution Control Commission.

The Agency is proposing to repeal all these rules because WPC 14, 15, 24, and 25 are generally more stringent than the requirements of these older rules. In the few instances where a more stringent provision is contained in one of these older rules, the Agency believes that the more stringent provision is no longer needed and the water involved is adequately protected by the existing rules.

2. Witness

John McGuire

F. Reclassification of Certain Portions of the Minnesota and Mississippi Rivers within the Metropolitan Area-WPC 25

1. Present and Proposed Standards

At the present time the Minnesota River is classified as follows:

Reach	Classification
Big Stone Lake outlet to Granite Falls	1C, 2B, 3B
Granite Falls to Mankato	2B, 3B
Mankato to Carver Rapids	2B, 3B
Carver Rapids to Mouth	2C, 3B

The proposed reclassification is as follows:

Reach	Classification
Mankato to River Mile 22 (head of 9 foot navigation channel)	2B, 3B
River Mile 22 to mouth	2C, 3B

At the present time, the Lower Mississippi River is classified as follows:

Reach	Classification
Outlet of Metro Wastewater Treatment Works in St. Paul to Lock & Dam No. 2 at Hastings	2C, 3B
Lock & Dam No. 2 at Hastings to Iowa Border	2B, 3B

The proposed reclassification is as follows:

Reach	Classification
Outlet of Metro Wastewater Treatment Works in St. Paul to River Mile 830 (Rock Island RR Bridge)	2C, 3B
River Mile 830 to Iowa Border	2B, 3B

2. Need

River segment classifications must accurately reflect the appropriate uses of those segments.

3. Reasonableness

The proposed reclassification of the Minnesota River would upgrade the stretch of the River from Carver Rapids to Shakopee (River Mile 22) from a 2C classification to 2B classification. The proposed reclassification of the Lower Mississippi River would upgrade the stretch of the River from the Rock Island Railroad Bridge (River Mile 830) to Lock & Dam No. 2 at Hastings (River Mile 815) from a 2C classification to 2B classification.

The reclassifications were proposed by the MPCA in response to the recommendations of the Metropolitan Area Advisory Committee ("MAAC") and are based on the reports prepared by MAAC.

4. Witnesses

Deborah R. Pile

5. Exhibits

Numbers 86 - 92.

G. Economics

1. Discussion

The Agency recognizes that the proposed amendments will have an economic impact upon municipalities and industries that discharge wastewater to waters of the State. Some communities and industries will not be affected by the amendments. Some will save money, both capital expenditures and operating and maintenance expenses, and some communities and industries that are affected will incur additional costs to comply with the new standards.

The Agency has estimated these anticipated costs and savings. Basically, the approach used to do this was to first group every discharger into one of the following four categories depending on the body of water discharged to:

(1) Dischargers to low flow or intermittent waterways not classified as Limited Resource Value Waters;

(2) Dischargers to continuous flow waterways for which a Waste Load Allocation Study has not been done;

(3) Dischargers to waterways for which a Waste Load Allocation Study has been done;

(4) Dischargers to waterways which will be classified as Limited Resource Value Waters under the amendments.

The next step was to estimate what change in level of treatment would result from the proposed changes. This required an identification of the amendments that would require changes in treatment, and these are:

(1) Limited Resource Value Water Classification;

(2) the proposed deletion of the 5 mg/l total suspended solids limitation for low flow or intermittent waterways;

(3) the proposed ammonia water quality standard;

(4) the proposed dissolved oxygen standard; and

(5) the proposed seasonal disinfection requirement to meet the fecal coliform standard and the proposed total residual chlorine standard.

With these changes in mind, the Agency determined the present and proposed methods of treatment for each treatment plant in the State. In determining the proposed methods of treatment, the Agency used literature sources and the operational records and reports for each plant. In addition, the Agency discussed this work with a group of Minnesota consulting engineers.

Next, the costs were estimated for unit processes associated with changes in the levels of treatment required to meet the new standards for a wide range of treatment plant sizes. Cities and

industries that will be affected were individually identified, and costs or savings were calculated for each depending on the changes in treatment required.

It should also be noted that industries which discharge to municipal wastewater treatment facilities may also be impacted by industrial cost recovery requirements and user charges.

The costs and savings can be summarized as follows:

a. Limited Resource Value Waters

(1) Outstate Municipalities

There are 99 municipalities that are located on waters that will be reclassified to Limited Resource Value Waters. Of these, 41 will not continuously discharge to receiving waters and will not be affected by the reclassification; no savings or costs will be incurred by these communities because of the amendments. The remaining 58 communities will have less stringent effluent limitations to meet and will realize a cost savings.

The cost savings realized by these 58 communities will be at least $18,560,000 in capital expenditures and $1,306,000 in annual operating and maintenance (O&M) expenses. This savings is realized because these communities will not be required to install second stage biological treatment, although filters will probably be required, in addition to conventional secondary treatment, to meet the 15 mg/l BOD_5 limitation.

(2) Industrial

There are 24 industries that presently discharge to proposed Limited Resource Value Waters. Many of these industries will utilize land appplication or aerated ponds with controlled discharge and will not be affected economically by the proposed change in classification. However, those industries that will be relieved of meeting the more stringent standards of Section C.8 of WPC 14 and 15 will see an economic savings, although no amount has been estimated.

b. Total Suspended Solids Effluent Limitation

The change from a 5 mg/l total suspended solids limitation to a 30 mg/l limitation for dischargers to low flow streams will not result in any direct savings for these dischargers because plants will still have to be designed to meet the 5 mg/l BOD_5 limitation. However, since plants designed to meet the 5/5 limitation are not always able to meet the 5 total suspended solids limitation consistently, the change in the limitation will relieve these dischargers of being in a position of noncompliance.

c. Ammonia

(1) Outstate Municipalities

There are 80 municipalities that are required to provide nitrification facilities to achieve effluent limitations necessary to meet both the existing and the proposed ammonia water

quality standard. These facilities are projected to cost $53,300,000 with annual O&M costs of $2,570,000.

However, only one community - New Ulm - is estimated to have increased treatment costs because of the proposed standards. That increased cost is $2,100,000 capital and $76,000 annual O&M. In addition, it is uncertain whether five dischargers (Faribault, Fergus Falls, Mankato, Moorhead and Northfield) would ever have been assigned an ammonia effluent limitation based on the percent standard. The potential cost increase attributable to these dischargers to meet the proposed ammonia standard would be $8,300,000 for capital costs and $297,000 for annual O&M costs.

(2) MWCC

The Metropolitan Waste Control Commission (MWCC) is presently facing $47,000,000 in costs to meet the existing standards at the Pig's Eye Metro Plant on the Mississippi River. The new ammonia standard is projected to require an additional capital expenditure of $54,800,000 and an additional annual O&M expense of $3,000,000 at the Metro Plant.

MWCC will also incur additional expenses to meet the ammonia standard at its Blue Lake and Seneca Plants on the Minnesota River. Those increased expenses are $7,100,000 capital and $50,000 annual O&M at Blue Lake and $6,000,000 capital and $30,000 annual O&M at Seneca. No additional expenses are expected at other MWCC facilities.

(3) Industrial

There are 18 industrial dischargers in the State who have potential significant ammonia discharges, and these were investigated to determine the economic impact of the proposed ammonia standard. These industries are canneries, food processers, meat packers, tanneries, rendering plants, dairies, oil refineries, and chemical processers. Other industries were not evaluated to any extent because no economic impact is expected.

Because of the use of land disposal techniques, of requirements to meet Best Practicable Treatment, and of the dilution available in receiving waters, no significant impacts on most industrial dischargers are projected from the change in the ammonia standard. Only one industrial discharger - Armour and Company, Cold Spring -is expected to incur additional costs, $610,000 capital for nitrification facilities and $30,000 per year for O&M.

(4) Summary

The following table summarizes the anticipated increased costs because of the change in the ammonia standard.

	Capital	O&M/Year
New Ulm	$2,100,000	$76,000
Other (Potential)	$8,300,000	$297,000
MWCC		

	Capital	O&M/Year
Metro Plant	$54,800,000	$3,000,000
Blue Lake	$ 7,100,000	$50,000
Seneca	$ 6,000,000	$30,000
Armour & Company	$ 610,000	$30,000
TOTAL	$78,910,000	$3,483,000

d. Dissolved Oxygen

(1) Outstate Municipalities

The only outstate municipalities that will be affected by the change in dissolved oxygen (DO) standards are those for which Waste Load Allocation Studies have been done to establish effluent limitations for specific dischargers. There are seven of these communities. Three of these communities have needs of $8,000,000 to comply with either the existing or proposed standard. The remaining four communities, Austin, Fairbault, Mankato and Moorhead, will have increased needs of $7,400,000 for capital expenditures and increased O&M costs of $486,000 per year to comply with the proposed standards.

(2) MWCC

In order to meet the proposed standard, the MWCC has proposed to install final effluent filters at the Pig's Eye Metro plant to remove oxygen demanding organic material at a cost of $73,000,000. The O&M costs of the filters is $1,400,000 per year.

No increased costs are expected at any of the other plants operated by the MWCC because of the change in the dissolved oxygen standard.

(3) Industrial

There are no economic impacts expected for industrial dischargers because of the change in the dissolved oxygen standard.

(4) Summary

The following table summarizes the anticipated increased costs because of the change in the dissolved oxygen standard.

Facility	Capital	O&M/year
Austin, Fairbault Mankato & Moorhead	$7,400,000	$486,000
MWCC		
Metro Plant	$73,000,000	$1,400,000
Industrial	-0-	-0-
Total	$80,400,000	$1,886,000

e. Chlorine and Fecal Coliform

(1) Outstate Municipalities

There are 145 municipalities that will have to install dechlorination facilities in order to meet the chlorine standard. The capital cost will be $3,990,000 and the O&M will be $574,000 per year.

The change to seasonal disinfection will result in cost savings of $1,460,000 per year.

(2) MWCC

The MWCC has proposed to convert the Pig's Eye Metro Plant from chlorine to bromine chloride for disinfection. Thus, the MWCC will not have to dechlorinate its effluent to meet the chlorine standard. The capital costs to do this are estimated by the MWCC to be $265,000 and additional O&M costs are estimated to be $425,000 per year.

The change in the fecal coliform standard to apply only in the summer will save MWCC $338,000 per year.

All other MWCC plants discharge to waters to which the chlorine standard applies and will be required to dechlorinate. The capital cost is anticipated to be $975,000 and the O&M $115,750 per year.

The change in the fecal coliform standard will result in a savings of $207,000 per year.

(3) Industrial

Industrial dischargers who use chlorine for disinfection and for prevention of biofouling in cooling systems will have to dechlorinate if they chlorinate continuously (i.e. more that two hours in any 24 hour period). Power plants usually do not chlorinate more than two hours per day.

The Agency has determined that there are 10 canneries and one other industrial sources that will have to dechlorinate. The capital cost for the 10 canneries is projected

to be $201,000 and the O&M is projected to be $11,600 annually. The other industrial source -Armour and Company at Cold Spring - will incur $20,000 in capital expenditures for dechlorination facilities and $3,800 in annual O&M expenses. In addition, some 31 dischargers of industrial cooling water may be required to dechlorinate. This would result in capital costs of $465,000 and annual O&M of $99,200.

(4) Summary

The following table summarizes the anticipated costs and savings because of the chlorine standard and the change in the fecal coliform standard.

	Dechlorination Costs		Seasonal Disinfection
	Capital	O&M/Yr	(Savings)
Outstate Municipalities	$3,990,000	$574,000	+$1,460,000
MWCC			
Metro Plant	$ 265,000	$425,000	+$ 338,000
Other Plants	$ 975,000	$115,750	+$ 207,000
Industrial			
Canneries	$ 201,000	$ 11,600	-----
Armour & Company	$ 20,000	$ 3,800	-----
Industrial Cooling Water Discharges	$ 465,000	$ 99,200	-----
TOTAL	$5,916,000	$1,229,350	+ $2,005,000

f. Total

The maximum estimated total costs and the minimum estimated total savings in regard to the proposed amendments are as follows (costs = -; savings = +).

	OUTSTATE		MWCC		INDUSTRIAL		TOTAL	
	Capital	O&M $/yr	Capital	O&M $/yr	Capital	O&M $/yr	Capital	O&M $/yr
Limited Resource Value Waters	+18,560,000	+1,306,000	---	---	not est	not est	+18,560,000	+1,306,000
Ammonia	-10,400,000	-373,000	-67,900,000	-3,000,000	-610,000	-30,000	-78,910,000	-3,403,000
Dissolved Oxygen	-7,400,000	-486,000	-73,000,000	-1,400,000	none	none	-80,400,000	-1,886,000
Chlorine	-3,990,000	-574,000	-1,240,000	-540,750	-686,000	-114,600	-5,916,000	-1,229,350
Fecal Coliform	---	+1,460,000	---	+545,000	---	---	---	+2,005,000
TOTAL	-3,230,000	+1,333,000	-142,140,000	-4,395,750	-1,296,000	-144,600	-146,666,000	-3,207,350

g. Grants

It should be pointed out that to the extent a municipality incurs capital expenditures to meet these new standards in the operation of its sewage treatment plant, under present law 90 percent or more of these capital expenditures will be eligible for state and federal funding. Also, these expenses will not be incurred immediately upon adoption of new standards but will be spread out over a period of years and no major expenses are likely within the first couple of years after adoption.

2. Witnesses

John Hensel
Gordon Wegwart
Steve Reed

3. Exhibits

Numbers 100 - 116.

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

EXHIBIT LIST

1. Order for Hearing

2. Certificate of Board's Authorizing Resolutions (November 27, 1979 and December 18, 1979)

3. Notice of Hearing as Mailed

4. February 25, 1980, State Register containing the Notice of Hearing and the Proposed Amendments

5. Certificate of Delivery of Secretary of State's List

6. Affidavit of Receipt of Secretary of State's List

7. Affidavit of Mailing Notice of Hearing

8. Statement of Need and Reasonableness

9. Copy of Notice of Intent to solicit outside opinion regarding proposed rules revising quality and purity standards for state waters published in 2 S.R. 684-685 (September 26, 1977)

10. All written materials received in response to the Notice of Intent published in 2 S.R. 684-685.

    a. Letter from Harry Parrott, Forest Hydrologist, U.S. Department of Agriculture, Forest Service, Chippewa National Forest, Cass Lake, Minnesota, dated September 28, 1977.

    b. Letter from Mark Have, Hydrologist, U.S. Department of the Interior, Geological Survey, St. Paul, Minnesota, dated October 5, 1977.

    c. Letter from William Martin, Assistant Regional Director, U.S. Department of the Interior, Fish and Wildlife Service, Minneapolis, Minnesota, dated October 23, 1977.

d. Letter from Terry Hoffman, Director, Office of Environmental Affairs, Minnesota Department of Transportation, dated October 31, 1977.

e. Letter from Ervin Strandquist, Chairman, and Irving Beyer, Chairman, 208 Water Quality Committee, Northwest Regional Development Commission, Crookston, Minnesota, dated October 25, 1977.

f. Letter from Marvin Skodje, Superintendent, Water Reclamation Plant, Rochester, Minnesota, dated October 17, 1977.

g. Letter from Robert Burk Esq., dated October 13, 1977.

h. Letter from Peter Hutchinson, Manager of Public Affairs, Dayton Hudson Properties, dated September 28, 1977.

i. Letter from Terry Graumann, Environmental Assistant, Otter Tail Power Company, dated October 27, 1977.

j. Letter from Duane Prew, TKDA Engineers and Architects, St. Paul, Minnesota, dated October 19, 1977.

11. Copy of Notice of Intent to solicit outside opinion on proposed rules revising quality and purity standards for state waters published in 4 S.R. 469-470 (September 17, 1979)

12. All written materials received in response to the Notice of Intent published in 4 S.R. 469-470.

a. Letter from Lowell Thompson, Director, Environmental Planning, Metropolitan Council, dated October 12, 1979.

b. Letter from Marvin Skodje, Superintendent, Water Reclamation Plant, Rochester, Minnesota, dated September 28, 1979.

c. Letter from Nick Kleinhuizen, Councilman, City of Renville, dated October 10, 1979.

d. Comments of George A. Hormel & Company and the City of Austin, received October 11, 1979.

e. Letter from Terry Graumann, Supervisor, Environmental Engineering, Otter Tail Power Company, dated October 5, 1979 (with attachment).

f. Letter from C.D. Bostwick, Manager, Division Technical Services, Del Monte Corporation, dated September 27, 1979.

g. Letter from W.J. Maier, Professor, University of Minnesota, dated October 1, 1979.

13. Public Comments on Proposed Rules Received Prior to January 1, 1979, but not within time period of the Notice of Intent

a. Letter from William Brungs, Environmental Research Laboratory, Duluth, Minnesota, dated August 26, 1977.

b. Letter from Robert Rehfeld, Forest Supervisor, U.S. Department of Agriculture, Forest Service, Superior National Forest, Duluth, Minnesota, dated November 21, 1977.

c. Letter from Alan Wald, Environmental Review Section, Minnesota Department of Natural Resources, dated February 3, 1978.

d. Letter from Steve Chesney, Land Use Task Force, Sierra Club, North Star Chapter, dated November 9, 1977.

e. Letter from Steve Reisman and Linda Arnold, Minnesota Public Interest Research Group, dated September 2, 1977.

f. Letter from Richard Eide, Vice President, Clear Air - Clear Water Unlimited, dated December 5, 1977.

g. Letter from Robert Overby, Regional Planner, Upper Minnesota Regional Development Commission, Appleton, Minnesota, dated December 1, 1977.

h. Letter from Lincoln Paulson, Chairman, Southeastern Minnesota Regional Development Commission, Rochester, Minnesota, dated February 3, 1978.

i. Letter from John Boland, Chairman, Metropolitan Council, dated December 23, 1977 (with attachment).

j. Letter from David Sollenberger, City Manager, City of Winona, dated November 9, 1977 (with attachment).

k. Letter from David Sollenberger, City Manager, City of Winona, dated April 13, 1978 (with attachment).

l. Letter from Dale Watson, Rieke Carroll Muller Associates, Inc., Hopkins, Minnesota, dated March 8, 1978 (with attachment).

m. Letter from Dan McConnon, Manager, Environmental Protection and Right-of-Way Division, United Power Association, Elk River, Minnesota, dated November 2, 1977.

n. Letter from Walter Maier, Associate Professor, Environmental-Water, University of Minnesota, dated August 24, 1977.

o. Letter from Reed Sloss, University Student, dated November 8, 1977.

p. Letter from Richard Wade, Director, Division of Environmental Health, Minnesota Department of Health, dated January 25, 1978.

14. Public Comments on Proposed Rules Received After January 1, 1979, but not within time period of the Notice of Intent

a. Letter from Kent Fuller, Chief, Water Quality Management Branch, EPA, Region V, Chicago, dated July 2, 1979.

b. Letter from Robert Berrisford, Forest Hydrologist, U.S. Department of Agriculture, Forest Service, Chippewa National Forest, Cass Lake, Minnesota, dated February 13, 1979.

c. Letter from Robert Rehfeld, Forest Supervisor, U.S. Department of Agriculture, Forest Service, Superior National Forest, Duluth, Minnesota, dated February 15, 1979.

d. Memorandum from Randy Halvorson, Acting Director, Office of Environmental Affairs, Minnesota Department of Transportation, dated April 19, 1979.

e. Memorandum from Randy Halvorson, Acting Director, Office of Environmental Affairs, Minnesota Department of Transportation, dated May 9, 1979.

f. Letter from Charles Weaver, Chairman, Metropolitan Council, dated April 10, 1979.

g. Letter from Lowell Thompson, Acting Director, Environmental Planning, Metropolitan Council, dated April 20, 1979.

h. Letter from Randall Johnson, Northwest Regional Development Commission, Crookston, Minnesota, dated February 9, 1979.

i. Letter from Randall Johnson, Coordinator, Water Quality Management Committee, Northwest Regional Development Commission, Crookston, Minnesota, dated March 2, 1979.

j. Memorandum from Bob Hobart, Region Nine Development Commission, Mankato, Minnesota, dated March 23, 1979.

k. Letter from Bob Hobart, Region Nine Development Commission, Mankato, Minnesota, dated May 25, 1979.

l. Letter from James Johnson, Executive Director, Western Lake Superior Sanitary District, Duluth, Minnesota, dated April 3, 1979.

m. Letter from Terry Graumann, Supervisor, Environmental Engineering, Otter Tail Power Company, Fergus Falls, Minnesota, dated February 13, 1979.

n. Letter from Robert Burk, Esq., dated May 11, 1979.

o. Letter from Kent Fuller, Chief, Water Quality Management Branch, EPA, Region V, Chicago, Illinois, dated October 17, 1979.

p. Letter from Larry Gates, Fisheries Manager, Minnesota Department of Natural Resources, dated October 18, 1979 (with attachment).

q. Letter from Dennis Lindeke, Chairman, Pollution Task Force, and Ford Robbins, Chairman, Wild and Scenic Rivers Task Force, Sierra Club, North Star Chapter, dated October 24, 1979 (with attachment).

r. Letter from Steven Reusser, McGhie & Betts, Inc., Consulting Engineers, Rochester, Minnesota, dated October 19, 1979.

s. Letter from G. Robert Johnson, Esq., dated October 23, 1979.

t. Letter from I.V. Fordyce, Manager, Environmental Control, American Crystal Sugar Company, Moorhead, Minnesota, dated October 18, 1979.

u. Letter from Dean Malotky, Barr Engineering Co., Minneapolis, Minnesota, dated October 16, 1979.

v. Letter from Robert Hillstrom, Esq., dated January 23, 1980.

w. Letter from Robert Hillstrom, Esq., dated January 25, 1980.

x. Memorandum from Roger DeRoos, Director, Division of Environmental Health, Minnesota Health Department, dated January 22, 1980. (With attachment.)

y. Letter from Duane Murphy, Environmental Specialist, Office of Water Quality, South Dakota Department of Water and Natural Resources, Pierre, South Dakota, dated February 6, 1980.

z. Memorandum from Linda Bruemmer, Minnesota Water Planning Board, dated February 22, 1980.

15. Ball, I.R. 1967. The relative susceptibilities of some species of freshwater fish to poisons-I. Ammonia. Water Res. 1:767-775.

16. Burkhalter, D.C. and C.M. Kaya. 1977. Effects of prolonged exposure to ammonia on fertilized eggs and sac fry of rainbow trout (Salmo gairdneri) Trans. Am. Fish Soc. 106:470-475.

17. European Inland Fisheries Advisory Commission. 1970. Water quality criteria for European freshwater fish. Report on ammonia and inland fisheries. EIFAC Tech Paper No. 11: 12 pages.

18. Flis, J. 1968b. Anatomicohistopathological changes induced in carp (Cyprinus carpio L.) by ammonia water. Part II. Effects of subtoxic concentrations. Acta Hydrobiol. 10:225-238.

19. 45 Fed. Reg. 803-806 (Jan. 3, 1980)

20. International Joint Commission. 1978. Group 2. New and revised specific water quality objectives proposed for the 1972 agreement between the United States and Canada on Great Lakes water quality by the Great Lakes Water Quality Board, 195 pages.

21. Jude, D.J. 1973. Sublethal effects of ammonia and cadmium on growth of green sunfish. Ph.D. Thesis, Michigan State Univ. 193 pages.

22. Lloyd, R. and L.D. Orr. 1969. The diuretic response by rainbow trout to sub-lethal concentrations of ammonia. Water Res. 3:335-344.

23. Minnesota Pollution Control Agency. 1980. Rationale and Methodology for Deriving Water Quality Criteria for the Protection of Aquatic Life. MPCA Division of Water Quality, Surface and Groundwaters Section.

24. Minnesota Pollution Control Agency. 1980. Ammonia Standard Justification. MPCA Division of Water Quality, Section of Surface and Groundwaters.

25. Minnesota Pollution Control Agency. 1978. Minnesota Lakes and Streams -- A compilation of data from the routine water quality monitoring program, Volumes 8 and 9. MPCA Division of Water Quality, Surface and Groundwater Section.

26. Metropolitan Waste Control Commission. 1974-1979. Water Quality Reports for 1973 through 1978. Quality Control Department, Metropolitan Waste Control Commission, St. Paul, MN.

27. Metropolitan Waste Control Commission. 1977. Data Report: Low Flow Survey -- Summer, 1976. Metropolitan Waste Control Commission, St. Paul, MN.

28. National Academy of Sciences, National Academy of Engineering. 1973. Water quality criteria 1972. EPA Ecol. Res. Series EPA-R3-73-033, U.S. Environmental Protection Agency, Washington, D.C. 594 pages. (Blue Book).

29. Rice, S.D. and R.M. Stokes. 1975. Acute toxicity of ammonia to several developmental stages of rainbow trout, Salmo gairdneri. Fishery Buttetin 73:207-211.

30. Robinette, H.R. 1976. Effect of selected sublethal levels of ammonia on the growth of channel catfish (Ictalurus punctatus). Prog. Fish-Cult. 38:26-29.

31. Roseboom, D.P., and D.L. Richey. 1977. Acute toxicity of residual chlorine and ammonia to some native Illinois fishes. ISWS/RE-85/77. Dept. of Registration and Education Report of Investigation 85. Illinois State Water Survey, Urbana. 42 pages.

32. Schulze-Wiehenbrauck, H. 1976. Effects of sublethal ammonia concentrations on metabolism in juvenile rainbow trout (Salmo gairdneri Richardson). Ber. dtsch. wiss. Kommn. Meeresforsch 24:234-250.

33. Smith, C.E. 1972. Effects of metabolic products on the quality of rainbow trout. Am. Fish. U.S. Trout News 17:1-3.

34. No Exhibit.

35. Thurston, R.V., R.C. Russo and K. Emerson. 1974. Aqueous ammonia equilibrium calculations. Tech. Rep. No. 74-1, Fisheries Bioassay Laboratory, Montana State Univ., Bozeman, MT 18 pages.

36. Thurston, R.V., R.C. Russo. 1980. Some factors affecting the toxicity of ammonia - implications for water quality standards. American Water Resources Association Symposium Las Vegas, Nevada, 26 Sept. 1979.

37. U.S. Environmental Protection Agency. 1977. Quality criteria for water. Office of Water and Hazardous Materials. U.S Environmental Protection Agency, Washington, D.C. 256 pages. (Red Book.)

38. Willingham, W.T. 1976. Ammonia toxicity. EPA-908/3-76-001, U.S. Environmental Protection Agency, Region VIII, Denver, CO, (pb 256-447/4 way). 103 pages.

39. Willingham, W.T., J.E. Colt, J.A. Fava, B.A. Hillaby, C.L. Ho, M. Katz, R.C. Russo, D.L. Swanson, and R.V. Thurston. 1979. Ammonia. Pages 6-18. In: A Review of the EPA Red Book: Quality criteria for water. R.V. Thurston, R.C. Russo, C.M. Fetterolf, T.A. Edsall, and Y.M. Barber Jr. (Eds.) Water Quality Section, American Fisheries Society, Bethesda, MD.

40. Andrew, R.W. and G.E. Glass. 1974. Amperometric titration methods for total residual chlorine, ozone, and sulfite. U.S. Environmental Protection Agency, Environmental Research Laboratory, Duluth, Minnesota. Unpublished document.

41. Arthur, J.W., R.W. Andrew, V.R. Mattson, D.T. Olson, G.E. Glass, B.J. Halligan, and C.T. Walbridge. 1975. Comparative toxicity of sewage-effluent disinfection to freshwater aquatic life. EPA Ecol. Res. Series EPA-600/3-75-012. U.S. Environmental Protection Agency, Duluth, Minnesota. 62 p.

42. Arthur, J.W. and J.G. Eaton. 1971. Chloramine toxicity to the amphipod (Gammarus pseudolimnaeus) and the fathed minnow (Pimephales promelas). J.Fish Res. Bd. Canada 28:1841-1845.

43. Brooks, A.S. and G.L. Seegert. 1979. Low-level chlorine analysis by amperometric titration. J. Wat. Poll. Cont. Fed. 51(11):2636-2640.

44. Brungs, W.H. 1976. Effects of wastewater and cooling water chlorination on aquatic life. EPA Ecol. Res. Series EPA-600/376-098, U.S. Environmental Protection Agency, Duluth, Minnesota. 46 p.

45. Brungs, W.H. 1973. Effects of residual chlorine on aquatic life. J. Wat. Poll. Cont. Fed. 45 (10):2180-2193.

46. DeGraeve, G.M., W.J. Blogoslawski, W.A. Brungs, J.A. Fava, B.J. Finlayson, T.P. Frost, T.M. Krischan, J.W. Meldrim, D.T. Michaud, R.E. Nakatani, and G.L. Seegert. 1979. Chlorine. Pages 67-75 In: A review of the EPA Red Book: Quality criteria for water. R.V. Thurston, R.C. Russo, C.M. Fetterholf, Jr., T.A. Edsall, and Y.M. Barber, Jr. (Eds.). Water Quality Section, American Fisheries Society, Bethesda, MD.

47. Johnson, J.D. 1976. Measurement and persistence of chlorine residuals in natural water. Pages 43-72. In: Jolley, R.L. (Ed.) Proceedings of the Conference on the Environmental Impact of Water Chlorination, Oak Ridge, TN., Oct. 22-24, 1975.

48. Kopperman, H.L., D.W. Kuehl, and G.E. Glass. 1976. Chlorinated compounds found in waste-treatment effluents and their capacity to bioaccumulate. Pages 327-345 In: Jolley, R.L. (Ed.) Proceedings of the Conference on the Environmental Impact of Water Chlorination, Oak Ridge, TN., Oct. 22-24, 1975.

49. Mattice, J.S. and H.E. Zittel, 1976. Site-specific evaluation of power plant chlorination. J. Wat. Poll. Cont. Fed. 48(10):2284-2308.

50. Minnesota Pollution Control Agency. 1980. Total Residual Chlorine (CTRC) Standard Justification. MPCA Division of Water Quality, Surface and Groundwaters Section.

51. Payne, T.J. 1979. Performance characteristics of an amperometric titrator, J. Wat. Poll. Cont. Fed. 51:1540-2544.

52. Ward, R.W. and G.M. DeGraeve. 1978b. Acute residual toxicity of several wastewater disinfectants to aquatic life. Wat. Resour. Bull. 14(3):696-709.

53. Ward, R.W., R.D. Giffin, G.M. DeGraeve, and R.A. Stone. 1976. Disinfection efficiency and residual toxicity of several wastewater disinfectants. Volume I - Grandville, Michigan. EPA Environ. Prot. Series EPA-600/2-76-156. U.S. Environmental Protection Agency, Cincinnati.

54. 43 Fed. Reg. 29588-29592 (July 10, 1978).

55. Brett, J.R. 1979. Environmental Factors and Growth, Chapter 10. In: Fish Physiology, Vol. VIII, Bioenergetics and Growth. W.S. Hoar, D.J. Randall, and J.R. Brett. (Eds.) Academic Press, N.Y. 786 pages.

56. Brown, V.M. 1968. The calculation of the acute toxicity of mixtures of poisons to rainbow trout. Water Res. 2:723-733.

57. Brungs, W.A. 1971. Chronic effects of low dissolved oxygen concentrations on fathead minnow (Pimephales promelas). J. Fish. Res. Bd. Canada. 28:1119-1123.

58. Brungs, W.A. 1978. Effects of reduced dissolved oxygen concentrations on warmwater fish. USEPA Environmental Research Laboratory-Duluth, Minnesota. Unpublished report. 13 pages.

59. Carlson, A.R. and R.E. Siefert. 1974. Effects of reduced oxygen on the embryos and larvae of lake trout (Salvelinus namaycush) and largemouth bass (Mecropterus salmoides). J. Fish. Res. Bd. Canada. 31:1393-1396.

60. Carlson, A.R., R.E. Siefert, and L.J. Herman. 1974. Effects of lowered dissolved oxygen concentrations on channel catfish (Ictalurus punctatus) embryos and larvae. Trans. Am. Fish. Soc. 103:623-626.

61. Davis, J.C. 1975a. Waterborne dissolved oxygen requirements and criteria with particular emphasis on the Canadian environment. National Research Council of Canada, NRC Associate Committee on Scientific Criteria for Environmental Quality. Report No. 3. 111 pages.

62. Davis, J.C., G.I. Bresnick, P. Doudoroff, T.R. Doyle, A.J. Mearns, J.B. Pearce, J.J. Peterka, J.G. Robinson, and D.L . Swanson. 1979. Dissolved oxygen. pages 169-174. In: A review of the EPA Red Book. Quality Criteria for water. R.V. Thurston, R.C. Russo, C.M. Fetterolf, Jr., T.A. Edsall, and Y.M. Barber, Jr. (Eds.). Water Quality Section, American Fisheries Society. Bethesda, MD.

63. Doudoroff, P. and D.L. Shumway. 1970. Dissolved oxygen requirements of freshwater fishes. Food and Agriculture Organization of the United Nations. FAO Technical Paper No. 86. Rome, Italy. 291 pages.

64. Ellis, M.M. 1937. Detection and measurement of stream pollution. U.S. Dept. of Commerce, Bur. of Fisheries Bull. 22. Vol. 48:363-437.

65. Ellis, M.M. 1944. Water purity standards for freshwater fishes. Special Scientific Report No. 2, U.S. Dept. of Int. Fish and Wildlife Service. 12 pages.

66. Federal Water Pollution Control Administration. 1968. Water quality criteria. National Technical Advisory Committee to the Secretary of the Interior, U.S. Federal Water Pollution Control Administration, Washington, D.C. 234 pages. (Green Book.)

67. 44 Fed. Reg. 39486-39508 (July 6, 1979).

68. Herrmann, R.B., C.E. Warren, and P. Doudoroff. 1962. Influence of oxygen concentration on the growth of juvenile coho salmon. Trans. Am. Fish. Soc. 91:155-167.

69. International Joint Commission. 1977. Dissolved oxygen pp. 11-27. In: Water Quality Objectives Subcommittee Task Force on Scientific Basis for Water Quality Criteria. Great Lakes Water Quality Board, Research Advisory Board, 1976 Appendix A. 83 pages.

70. Minnesota Pollution Control Agency. 1980. Dissolved Oxygen Standard Justification. MPCA Division of Water Quality, Surface and Groundwaters Section.

71. List of Dischargers to Class 2A waters.

72. Nebeker, A.V. 1972. Effect of low oxygen concentration on survival and emergence of aquatic insects. Trans. Am. Fish. Soc. 101:675-679.

73. Siefert, R.E., A.R. Carlson, and L.J. Herman. 1974. Effects of reduced oxygen concentrations on the early life stages of mountain whitefish, smallmouth bass, and white bass. Prog. Fish-Cult. 36(4):186-190.

74. Siefert, R.E. and W.A. Spoor. 1974. Effects of reduced oxygen concentrations on embryos and larvae of white suckers, coho salmon, brook trout, and walleye. pages 487-495. In: Proceedings of an international symposium on the early life history of fish. Oban, Scotland, May 17-23, 1973.

75. Siefert, R.E., W.A. Spoor, and R.F. Syrett. 1973. Effects of reduced oxygen concentration on northern pike (Esox lucius) embryos and larvae. J. Fish. Res. Bd. Canada 30:849-852.

76. Skrypek, J. 1969. Differences in the composition of the fish population in Pool 2 and other areas of the Mississippi River as related to waste from the Twin City Metropolitan area. 1964. Minnesota Department of Conservation, Division of Fish and Game, Section of Technical Services, Investigational Report No. 307.

77. Spoor, W.A. 1977. Oxygen requirements of embryos and larvae of the largemouth bass, Micropterus salmoides (Lacepede). J. Fish. Biol. 11:77-86.

78. Stewart, N.E., D.L. Shumway, and P. Doudoroff. 1967. Influence of oxygen concentration on the growth of juvenile largemouth bass. J. Fish Res. Bd. Canada 24:475-494.

79. Warren, C.E., P. Doudoroff, and D.L.Shumway. 1973. Development of dissolved oxygen requirements for fish. Office of Research and Monitoring, U.S. Environmental Protection Agency, Washington, D.C. Report EPA-R3-73-019. 121 pages.

80. National Academy of Sciences. 1979. Micro-biological measures of recreational water quality. National Academy of Sciences Commission on Microbiological Studies for Recreational Waters. Philadelphia, PA.

81. 40 C.F.R. §130.17 (1978).

82. "Guidelines for State and Areawide Water Quality Management Program Development" November 1976.

83. List of staff personnel who have performed assessments.

84. Guide to Minnesota Water Quality Management Classification Stream Assessment Worksheets dated May 1, 1979, edited Jan. 11, 1980.

85. Class 7 stream assessments, (165 assessments).

86. Map, Twin Cities Metropolitan Area.

87. Metropolitan Area Advisory Committee, List of Members/Responsibilities.

88. Metropolitan Area Advisory Committee work plan.

89. Metropolitan Area Advisory Committee. 1979. Present Conditions Report for the Mississippi and Minnesota Rivers in the Twin Cities Metropolitan Area.

90. Metropolitan Area Advisory Committee. 1979. Future Conditions Report for the Mississippi and Minnesota Rivers in the Twin Cities Metropolitan Area.

91. Metropolitan Area Advisory Committee participants in meetings of September 12 and/or 26, 1979.

92. Metropolitan Area Advisory Committee. 1979. Recommendations of the Metropolitan Area Advisory Committee concerning the designated uses of the Minnesota and Mississippi Rivers in the Twin Cities Metropolitan Area.

93. Computer program documentation for the Stream Quality Model QUAL II, Water Resources Engineers, May 1974.

94. Operating instructions and program documentation for the computer program RMA-12, Resource Management Associates, July 1977.

95. Load Allocation Study for the South Fork of the Crow River below Hutchinson, Minnesota, MPCA, Nov. 1978.

96. Load Allocation Study for the Sauk River below Melrose, Minnesota, MPCA, September, 1979.

97. Load Allocation Study for Okabena Creek below Worthington, Minnesota, MPCA, November, 1974.

98. 6 Computer printouts:

    a. Sauk River below Melrose, Minnesota, July 21, 1976.
    b. Sauk River below Melrose, Minnesota, July 8, 1977.
    c. S.F. Crow River below Hutchinson, Minnesota, August 27, 1975.
    d. S.F. Crow River below Hutchinson, Minnesota, June 24, 1976.
    e. Okabena Creek below Worthington, Minnesota, June 22, 1973.
    f. Okabena Creek below Worthington, Minnesota, September 13, 1973.

99. Computer printouts for mathematical models of the Crow River, Okabena Creek, and Sauk River:

    a. South Fork Crow River below Hutchinson, Minnesota, at 65°.
    b. South Fork Crow River below Hutchinson, Minnesota, at 75°.

    c. Sauk River below Melrose, Minnesota, at 65°.
    d. Sauk River below Melrose, Minnesota, at 75°.

    e. Okabena Creek below Worthington, Minnesota, at 65°.
    f. Okabena Creek below Worthington, Minnesota, at 75°.

100. Dischargers to low or intermittent flow waterways.

101. Dischargers to continuous flow waterways (waste load allocation studies not performed).

102. Dischargers to waterways for which waste load allocation studies have been done.

103. Dischargers to Class 7 - limited resource value waters.

104. BOD and ammonia in selected effluents in Minnesota.

105. Wastewater treatment plants utilizing secondary treatment and effluent filtration.

106. USEPA O & M Index.

107. Letters from consulting engineers who participated in meeting used in testimony development.

108. Excerpts from USEPA Innovative and Alternative Technology Assessment Manual, EPA-430/9-78-009.

109. Table 6, page 14 In: TKDA/M & E. 1979. Metropolitan Wastewater Treatment Plant Study (MWWTP). Technical memorandum on flows and loads. TKDA/M & E Report, May, 1979.

110. Table 6, page 40 In: TKDA/M & E. 1979. Wastewater Treatment Alternative Preliminary Evaluation (MWWTP Study). TKDA/M & E Report, June, 1979.

111. Tables 2, C-5, C-6, and page xi In: TKDA/M & E. 1979. Wastewater Treatment Facility Plan (MWWTP Study). TKDA/M & E Report, October, 1979.

112. Table II-27, page II.76 In: TASK 6. 1980. 201 Facility Plan Systems Overview. TASK 6 Report, January, 1980.

113. Memorandum dated 26 February, 1980, Meeting with Metropolitan Waste Control Commission and consultant TKDA/M & E.

114. Tables A7 and A8 In: TKDA/M & E. 1979. Alternations to Disinfection Facilities at the Metropolitan Wastewater Treatment Plant (MWWTP). TKDA/M & E Report, August, 1979.

115. Evaluation of Impacts on 24 Industries Currently Discharging to Proposed Class 7 Limited Resource Value Water Streams.

116. Industrial Ammonia Dischargers-Evaluation of Needs for Additional Treatment to Meet the Proposed Ammonia Water Quality Standards.

117. Water Supply Intake Impacted by Municipal Wastewater Discharges.

118. Barrows, G.I., "Bacterial Indicators in Standards of Water Quality in Britain," Bacterial Indicators/Health Hazards Associated with Water, ASTM STP 635 (1977), pp. 284-336.

119. Cabelli, V.J., "Indicators of Recreational Water Quality," Bacterial Indicators/Health Hazards in Water, ASTM STP 635 (1977) pp. 222-238.

120. Clausen, E.M., B.L. Green, Warren Litsky, "Fecal Streptococci: Indicators of Pollution," Bacterial Indicators/Health Hazards in Water, ASTS STP 635 (1977) pp. 247-264.

121. Standard Methods for the Examination of Water and Wastewater, 14th Ed.

122. Report, Evaluation of social and economic impacts of achieving applicable water quality standards for the Metropolitan Area of the Mississippi River. (Roy F. Weston, Inc.) (This document is presently being prepared and will be made available as soon as it is completed.)

GLOSSARY

Activated Sludge - A biological treatment process involving an aeration tank in which microorganisms metabolize organic wastes

Acute Toxicity - Acute refers to periods of short duration, usually one to four days; the standard measure of toxicity is usually death

Aerobic - In the presence of free oxygen

Amperometric - An analytical technique for the measurement of certain chemicals in water, e.g. chlorine

Anaerobic - In the absence of free oxygen

Annual Equivalent Costs - An analysis to convert cash flows to equivalent annual expenditures

Application Factor- An application factor (AF) is the ratio between an MATC and LC50 which can be used to predict MATCs for aquatic organisms other than those for which chronic studies have been done

AWT/AST - Advanced Wastewater Treatment/Advanced Secondary Treatment

BOD_5 - Five day Biochemical Oxygen Demand, measure of organic wastes; for purposes here BOD and BOD_5 both refer to BOD_5

Bioaccumulate - The uptake and retention of a substance by an organism either directly from the environment or through the food chain

Blue Book - Exhibit 28. A 1973 publication of water quality criteria by the National Academy of Sciences and National Academy of Engineering

cfs - Cubic feet per second

Capital - Money. In this testimony capital is the total price of purchasing treatment facilities including engineering, contingencies, etc.

Chemical Addition - Addition of chemicals such as alum or lime at a wastewater treatment plant to improve effluent quality

Chronic Toxicity - Chronic refers to long-term exposure, usually at least one life cycle of a test organism; the standard measures of chronic toxicity are sublethal effects on growth, reproduction, behavior, etc.

Coldwater Fisheries - Those waters which support populations of fish with optimum growth temperatures of approximately 15-20° C, and including trout, salmon and other species

Continuous Flow Streams - Water courses which have water flow at all times

Cost Curves - Curves used in cost estimation showing the relationships between cost and facility design flow

Construction Grants - Federal and State funds available to municipalities for the construction of wastewater treatment systems

Cooling Water - Industrial wastewater circulated through a heat transfer mechanism for the removal of excess heat

Dechlorination - The removal of total residual chlorine from a liquid; may be done chemically (e.g. sulfur dioxide) or physically (e.g. activated carbon absorption).

Disinfectant - A chemical that kills vegetative forms of (harmful) microorganisms.

Diurnal Fluctuations - Changes which have a recurring daily cycle

DO - Dissolved oxygen; may be expressed in milligrams per liter (mg/l), or in percent saturation

Discharger - Individual, municipality, industry or agency which discharges wastewater

Effluent Limitation - Standard of purity associated with a wastewater discharge

EPA - The United States Environmental Protection Agency

Facilities Plan - First step of the Construction Grant Program involving a study of the existing facility and various treatment alternatives

Fecal Coliform - A group of microorganisms (bacteria) found in the intestines of warm-blooded animals, including man

Fry - Young fish between the time of hatching and the appearance of adult-like characteristics; roughly comparable to the more technical term, larva

Geometric Mean - The nth root of the product of n numbers; equivalent to the logarithmic mean.

Arithmetic Mean - The sum of n numbers divided by n.

Logarithmic Mean - The antilogarithm of the sum of n logarithms divided by n; equivalent to the geometric mean

Green Book - Exhibit 66. A 1968 publication of water quality criteria by the Federal Water Pollution Control Administration

Hypoxia - The lack of dissolved oxygen

Innovative/ Alternative - As defined by EPA, processes which provide for recycling or reuse of wastewater, energy recovery or demonstrate new unproven technology

Instantaneous Minimum Concentration - The instantaneous minimum concentration is the lowest level to which a water quality characteristic may drop at any time;

Average Concentration - The average concentration is the average level of a water quality characteristic over a specified period of time usually determined by making a number of measurements spaced throughout the time interval of interest, summing the values of these measurements and dividing by the total number of measurements

Larvae - Young fish between the commencement of feeding and the time of appearance of adult-like characteristics; this stage is absent in Salmonids.

LC50 - The concentration of a test substance at which 50 percent of a population of test organisms die in a specified period of time

Land Application - Land disposal of wastewater or sludge

Low Flow/ Intermittent Streams - Rivers which have very little or no flow during certain periods of time

MAAC - Metropolitan Area Advisory Committee

MATC - Maximum Acceptable Toxicant Concentration; by strict definition the MATC for a test substance is the geometric mean of the highest concentration at which no effects are observed and the lowest concentration at which adverse effects are observed in a full life cycle chronic toxicity test; a derived MATC may also be determined by multiplying an application factor, (see above) times an acute toxicity value (i.e. LC50)

Mechanical wwtf - Treatment by mechanical processes such as trickling filters or activated sludge as opposed to treatment in a stabilization pond

mgd - Million gallons per day

mg/l - Milligrams per liter; in freshwater approximately equivalent to parts per million

MWCC - Metropolitan Waste Control Commission

MC - Metropolitan Council

Natural Ambient Conditions - Those (water quality) conditions which would exist without the influence of man

NPDES/SDS Permit - National Pollutant Discharge Elimination System/State Disposal Systems Permit

O&M - Operation and Maintenance

Outstate/Metro - The Metro area encompasses the Twin Cities of St. Paul and Minneapolis including the surrounding seven county areas of Ramsey, Hennepin, Scott, Carver, Anoka, Washington and Dakota Counties; Outstate refers to all other areas of the State

Persistent - Usually, a substance which either by itself or as its transformation product(s) has a half-life for degradation under natural environmental conditions of more than eight weeks or by itself or as its transformation product(s) may bioaccumulate in the biota (of a receiving water)

pH - A measure of the "acidity" or "basicity" of a solution, a pH greater than 7 is basic, less than 7 is acidic, and a pH of 7 is neutral

POTW - Publicly Owned Treatment Works

Present Worth - An analysis to convert cash flows to equivalent sums at specific dates

QUAL II - Water QUALity model utilized to simulate rivers

Reaeration - Transfer of atmospheric oxygen into a surface water

Red Book - Exhibit 37. A 1976 publication of water quality criteria by the U.S. Environmental Protection Agency

Rough Fish - Fish species which are not valued for their sport or recreational value, a geographically variable definition but often including carp, buffalo fish, gar, bowfin and many others

Salmonid - Any member of the fish family Salmonidae, including the trouts, salmon, ciscos, whitefish and others

Saturation - The maximum amount of a substance which can be dissolved in water under any given set of conditions

Secondary Body Contact - Any recreational or other water use in which contact with the water is either incidental or accidental and in which the probability of ingesting appreciable quantities of water is minimal, such as fishing, commercial and recreational boating and any limited contact incident to shoreline activity

Secondary Treatment - Wastewater treatment including both settling and biological removal processes

7Q10 - The 7-consecutive day low flow with a recurrence interval of 10 years

Stabilization Ponds - Wastewater treatment in a lagoon in which time and natural biological processes stabilize the wastewater

Sublethal Effect - An effect of a physical or chemical characteristic on an (aquatic) organism or population which does not cause death; for example, reduced growth rate, change in reproductive success, behavioral changes, physiological changes, et alia.

Tertiary Treatment - Wastewater treatment beyond secondary treatment

Toxic - A substance or characteristic which has a harmful acute or chronic lethal or sublethal effect on exposed organisms

Trickling Filter - A biological treatment process involving the passage of wastewater through a bed of media which supports a biological growth

TSS - Total Suspended Solids

Two Stage Treatment - Two series biological wastewater treatment units, e.g., two activated sludge units. Two stage treatment is effective in achieving nitrification - ammonia removal in the second stage

Un-ionized Ammonia/Total Ammonia - Un-ionized ammonia, the primary toxic form of ammonia, is the NH_3 molecule in an ammonia solution; total ammonia is the concentration of the un-ionized ammona (NH_3) plus the concentration of the ionized form (NH_4+) in a solution

Unit Processes - Wastewater Treatment Units, e.g. activated sludge tank or final clarifier utilized in a wastewater treatment plant

Waste Load Allocation Study - Study to determine effluent limitations

WWTP - Wastewater Treatment Plant

Warmwater Fisheries - Those waters which support populations of fish with optimum growth temperatures of approximately 25-30° C, and including both cool water fish (perch, walleye, northern pike, muskellunge, white sucker, et alia). and the true warm water fish (sunfish, largemouth bass, carp, et alia)

Wastewater/ Industrial Waste - Water carrying waste products from residences, public buildings and industries. Wastewater or industrial waste following treatment may be referred to as treated effluent or effluent

Water Quality Standard - Legally enforceable amounts or quantities of certain substances or characteristics of water which must be maintained or not exceeded in order to protect the designated uses of a given water

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION

CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

PCA-80-004-AK

FINDINGS OF FACT AND CONCLUSIONS

The above-entitled matter came on for decision before the Minnesota Pollution Control Agency (hereinafter "Agency") on the 23rd day of September, 1980. After affording interested persons an opportunity to present written and oral data, statements, and arguments to Hearing Examiner Allan Klein, after considering the Report of the Hearing Examiner, and after considering all of the evidence adduced upon the records, files and proceedings herein, the Agency, being fully advised in the premises, hereby accepts and adopts the following Findings of Fact and Conclusions.

FINDINGS OF FACT

The Agency adopts the Findings of the Hearing Examiner, as contained in his Report attached hereto, and incorporates them herein by reference, with the following amendments:

1. Finding No. 5 on page 4 of the Hearing Examiner's Report is amended by changing the Exhibit citation from "7d" to "7b".

2. Finding No. 16 on page 5 of the Hearing Examiner's Report is amended by changing the Federal Register citation from "303040" to "30040".

3. Finding No. 17 at page 6 of the Hearing Examiner's Report is amended by deleting the words "hold hearing and" at the end of

the first paragraph and by adding a paragraph to read:

> It is EPA's position that a State may adopt a numerical standard less stringent than the EPA criteria for that pollutant only if the State provides adequate technical justification for the deviation. (MPCA Ex. 54)

4. Finding No. 19 on pages 7 and 8 of the Hearing Examiner's Report is amended by rewording the beginning of the second sentence to read, "Two of primary importance are:" and by adding new language after the quote of Minn. Stat. § 116.07 subd. 1 (1978) and before the paragraph beginning "In addition to these" to read:

> In the present case, there is evidence in the record that estimates the cost impacts of the proposed amendments both on industry and on municipalities and that qualifies the benefits to be derived from achieving compliance with the proposed rules. This economic data is adequate to meet the statutory requirement that the Agency make an affirmative presentation regarding the reasonableness of the rule and is also adequate to allow the Agency Board to give due consideration to economic factors. This evidence has been provided by the Agency staff, the MWCC, and other members of the public.

5. Finding No. 20.e. on page 8 of the Hearing Examiner's Report is amended by deleting existing language and adding new language to read:

> e. Waste load allocation studies - conducted to determine appropriate effluent limitations for a discharger(s) to ensure compliance with water quality standards. Often done in connection with permitting, but may be done at any time to the extent staff time and budget allow.

6. Finding No. 20 at page 9 of the Hearing Examiner's Report is further amended by changing the last full paragraph on page 9 (beginning "The Examiner believes") to read:

> The Agency agrees with the Examiner that it would be impossible to decide in one proceeding all the site-specific issues for each and every discharger. There must be some rational division of functions between the standards setting hearing and the individualized permitting/variance proceedings. Nonetheless, the Agency finds that the MWCC has raised a number of site-specific issues regarding the discharge from the Metro Plant and the dissolved oxygen standard, particularly the issue of the ability of the MWCC to meet the proposed water quality standard for dissolved oxygen. The Agency prefers to have these issues resolved

prior to adoption of a dissolved oxygen standard for the Mississippi River below the Metro Plant discharge. Unfortunately, because all interested persons, including the Staff, have not presented evidence on these issues and because new data have been generated since the record closed, the Agency is unable to resolve these issues on the evidence in the existing record. Therefore, the Agency finds that it is necessary to remand the matter to the hearing examiner to take further evidence on site-specific issues relating to the proposed dissolved oxygen standard and the Metro Plant. This evidence should deal with an appropriate dissolved oxygen standard for that stretch of the Mississippi River from the outlet of the Metro Wastewater Treatment Works in St. Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815).

7. A new Finding No. 23.A. is added after Finding No. 23 on page 11 of the Hearing Examiner's Report to read:

23.A. Purpose of Water Quality Standards

A water quality standard is the maximum or minimum allowable concentration of various water quality characteristics. Water quality standards should be established at a level which will attain and maintain the designated use of the water body.

Except for those waters which are proposed to be designated Class 7, the Agency presently finds that the national goal of fishable/swimmable waters is attainable.

The water quality standards for Class 2 waters should be set at a level necessary to protect the fisheries and recreational uses of the waters.

The water quality standards for Class 7 waters should be set at a level to protect the waters for intended uses, which are secondary body contact, preservation of groundwater and aesthetic qualities.

8. Finding No. 25 on page 13 of the Hearing Examiner's Report is amended by deleting the last six words "taking the most disputed ones first."

9. Finding No. 33 on page 16 of the Hearing Examiner's Report is amended by deleting the last two sentences.

10. Finding No. 34 on pages 17 and 18 of the Hearing Examiner's Report is amended from the end of the first paragraph (ending "average weight of 0.342 grams") to the end of the Finding to read as follows:

> The bluegill is a very common and important warmwater game fish in Minnesota and, as has been shown for many fish species, the very young life stages ("fry") are very sensitive to the toxic effects of ammonia. Therefore, data from the sensitive life stages of this species are an appropriate basis for the warmwater ammonia water quality standard. See, e.g., MPCA Exhibit 24 at 7; Maschwitz (Ammonia) at 3.
>
> The LC_{50} data which the Agency used in computing its proposed standard was the lowest found by R&R: 0.40 mg/l, which was produced by the smallest-sized group of bluegills. The Agency's selection of the lowest figure was attacked as being improper and leading to an overly-strict standard. Critics argue that the Agency ought to have taken the mean of the bluegill data, rather than just the lowest figure obtained. The Agency responds that if the data does show that size is a factor in resistance to ammonia toxicity, then there is nothing improper about selecting data on the smallest-sized fish, because these standards are designed to protect the most sensitive life stage of the most sensitive species.
>
> Roseboom, one of the authors of the study, was drawn into a dispute between the parties as to the propriety of taking the lowest data point rather than the mean. He wrote, in a letter to Maschwitz, that "In my judgment the susceptibility of the smaller fry to lesser concentrations . . . cannot be ignored." (Attachment 30 to Supp. Staff Response).
>
> It would be inappropriate to use a geometric mean of the four bluegill LC_{50}s reported by Roseboom and Richey because the test fish were of different sizes and these tests were conducted at different temperatures (22° C and 28° C). (There is a change in sensitivity

with size and the toxicity of ammonia on various life stages at different conditions.) See, e.g., MPCA Exhibit 31; MPCA Staff Response to Testimony at 24-25; MPCA Staff Supplemental Response to Testimony, Attachment 30.

One final note should be mentioned in connection with R&R's study. R&R computed un-ionized ammonia using the same factors recommended by the Agency and Thurston: Total ammonia, pH, and temperature. However, R&R did not use Thurston's equation to compute the un-ionized concentration. Rather, they used tables prepared by Skarheim. Skarheim's tables do not yield the same concentrations of un-ionized ammonia that Thurston's equations do. As R&R stated in their study, at p. 12:

> "From the determinations for total ammonia, the conversion to [un-ionized] values was made by the use of Skarheim's tables. [Citation omitted] . . . Recent work by Thurston et al. [citation omitted] suggests that Skarheim's computations may be in error. The values developed in this work, if multiplied by 1.142, will approximate the values computed by Thurston et al."

If this adjustment is made, the .40 LC_{50} from the smallest sized bluegill becomes .457.

The difference between 0.4 and 0.457 is not significant given the fact that variability between LC_{50} results is usually greater than a factor of 1.142. Further, when either number (0.4 or 0.457) is multiplied by the application factor of .096 (discussed below), the resulting standard would be essentially the same (i.e., 0.04 mg/l). Thus, the use of the correction factor is not required.

The other portion of the Agency's computation which was attacked by opponents was the application factor. The Agency computed its application factor (.096) by taking the geometric mean of five different studies. Those studies are set forth in Table 4 of MPCA Ex. 24. The studies are for juvenile channel catfish, green sunfish, and three studies or rainbow trout.

The application factor of 0.096 is specifically applicable to ammonia. This application factor is the geometric mean of all (coldwater and warmwater) available ammonia application factors from vertebrate data. These are the studies which report both acutely

toxic concentrations (LC_{50}s) and concentrations causing chronic effects (MATCs) on the same test species. It is accepted practice to combine both salmonid and non-salmonid data when deriving application factors because it is assumed that the relationship between acute and chronic toxicity is basically the same even though one group is more sensitive than the other. Indeed, in the case of ammonia, the two warmwater application factors bracket the three coldwater application factors and the geometric mean of the warmwater application factors is .0825. In this case, the experimental (0.096) and the appropriate standardized (0.1) application factors are essentially the same. Id., MPCA Staff Response to Testimony at 25-26.

The Examiner has examined other approaches to deriving an application factor, specifically those recommended by Szumski (MWCC Ex. X, pp. 21-25 and Baummer, Tr. XVI-19-26 and Industry Ex. A, pp. 2-9 to 2-14), and finds that there are problems with any approach. Even Baummer admits this in proposing his own recommended standard for warmwater fish (.073 as opposed to the Agency's .04) when he states:

> "Finally, the State's generic application factor for ammonia, notwithstanding its limitations, can be used to derive an interim warm water standard. . . ." (Industry Ex. A, p. 2-13)

The Agency finds that the use of an application factor of 0.096 is both appropriate and reasonable.

11. Finding No. 37 on pages 20 and 21 of the Hearing Examiner's Report is amended by deleting the last two paragraphs on page 20 (beginning "The MWCC is concerned") and by deleting the first paragraph on page 21 and the last three sentences of the finding on page 21 and adding instead the following language:

> Therefore, it is reasonable to include in the rules an explicit statement regarding the Agency's enforcement policy.

12. Finding No. 38 on page 22 of the Hearing Examiner's Report is amended by adding the underlined words to the sentence repeated below.

> Costs which are not attributable to these rules (but rather are attributable to the fact that present facilities are not meeting existing rules) need not be considered in calculating the economic impacts of the proposed rules.

In addition, Finding No. 38 is also amended by deleting the sentence, "However, there is no data separating costs to meet existing rules from costs to meet proposed rules.", and adding a new sentence that reads:

> These costs are necessary to achieve compliance with the present rules.

13. Finding No. 41 on page 23 of the Hearing Examiner's Report is amended to change the last two words, "extremely tentative", to read "estimates".

14. Finding No. 42 on page 24 of the Hearing Examiner's Report is amended by deleting the last four sentences and adding a sentence so that the last paragraph reads as follows:

> Such assertions tend to blunt the impact of modeling (and other evidence) demonstrating the impossibility of compliance under certain extreme conditions for certain dischargers at certain locations. Therefore, it is reasonable to include in the rules an explicit statement regarding the Agency's procedure with respect to setting effluent limitations.

15. Finding 43 on page 24 of the Hearing Examiner's Report is amended by changing "0.145" to "0.0145" in the fifth line and by adding the following language after the second sentence:

> Rainbow trout has been successfully introduced in many coldwater habitats in Minnesota and is an important game species. For this reason, and because a great deal of toxicity data, both acute and toxic, exists for rainbow trout, data for this species are an appropriate basis for the coldwater standard.

16. A new Finding 43.A. is added to read as follows:

> If a discharger is required to remove ammonia, technology is available to achieve this result. However, secondary wastewater treatment facilities are not generally capable of achieving this result. Advanced waste treatment may be necessary if the effluent limitation is less than 10 mg/l.

17. Finding No. 44 on page 25 of the Hearing Examiner's Report is amended by deleting the language in paragraph c. beginning "provided" and by deleting the paragraph following paragraph d. and adding new language to read:

> e. It is reasonable to include in the rules an explicit statement regarding the Agency's enforcement policy and its procedure with respect to setting effluent limitations.

18. Finding No. 50 on pages 27 and 28 of the Hearing Examiner's Report is amended by deleting the second and third sentences in the double-spaced paragraph on the bottom of page 27 and by adding the following language to the end of the next to last paragraph on page 28:

> The agency finds that it is adviseable to add a footnote to the dissolved oxygen standard to clarify that compliance is not expected nor required when the flow of the receiving water falls below the $7Q_{10}$ level. What is expected and required is that the discharger comply with the standard 50% of the days that the flow is equal to the $7Q_{10}$.

19. Finding No. 50 on pages 28 and 29 of the Hearing Examiner's Report is further amended by deleting the last sentence on the bottom of page 28, by changing "influence" to "influent" on line 9 of page 29, and by deleting the last paragraph in the Finding on page 29 and replacing it with a paragraph to read:

There is no need to further specify compliance and monitoring protocols in these rules; however, it is also reasonable to include in the rules a statement of the Agency's enforcement policy (i.e., no violation of water quality standards if discharger is in compliance with its permit terms).

20. Finding No. 53 on page 31 of the Hearing Examiner's Report is amended by adding a new sentence between the second and third sentences in the paragraph beginning "Most of the opposition" to read:

The Agency finds, however, that in this instance it is appropriate to remand the hearing to the Hearing Examiner to take further evidence on these site-specific issues for the MWCC Metro Plant.

21. Finding No. 53 on pages 31 and 32 of the Hearing Examiner's Report is further amended by deleting the sentence about an EPA veto after subparagraph c., by deleting the last sentence of the Finding, and by adding a new paragraph before the last full paragraph on page 31 to read:

The International Joint Commission also convened a select committee of scientists to review the oxygen criterion for the Great Lakes. This committee concluded that a single number standard was preferable to a variable standard. (Maschwitz, Dissolved Oxygen at 13.)

22. A new Finding 54A. is added to read as follows:

In order to meet the proposed dissolved oxygen standards, dischargers will have to limit the amount of biochemical oxygen demand (BOD) in their effluents. Dischargers will be assigned BOD_5 effluent limitations ranging from 5 mg/l to 25 mg/l depending on the receiving water involved. Various treatment processes are available to achieve these BOD_5 effluent limitations.

23. Finding No. 55 on page 33 of the Hearing Examiner's Report is amended by deleting the first paragraph on the top of the page and adding a new sentence to read:

The cost to the MWCC attributable to the Metro Plant is one of the site-specific issues to be addressed on remand.

24. Finding No. 56 on pages 33 and 34 of the Hearing Examiner's Report is amended by deleting the entire Finding through subparagraph "c." and replacing it with the following language:

> In summary, it can be seen that the proposed change in the dissolved oxygen standard will have some economic impact on several outstate municipalities. This economic impact will approach $10 million in capital expenditures and less than $1 million in O&M per year (Hensel, p. 17). There will be an economic impact on the MWCC if additional facilities are required to be installed at the Metro Plant as a result of a change in the dissolved oxygen standard, but the extent and significance of that impact are to be addressed on remand.

25. A new Finding No. 56A is added to follow the Agency's amended Finding No. 56 to read:

> 56A. In summary, the Agency finds that:
>
> a. The dissolved oxygen standards for Class 2 waters have been shown to be both needed and reasonable, although the Agency makes no finding with respect to a dissolved oxygen standard for the reach of the Mississippi River from the outlet of the Metro Wastewater Treatment Works in St. Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815) and desires to remand this part of the standard to the Hearing Examiner.
>
> b. there is no need to further specify compliance and monitoring protocols in these rules; however, it is reasonable to include a statement of the Agency's enforcement policy in these rules.

26. Finding No. 57 on page 34 of the Hearing Examiner's Report is amended by adding the following language at the end of the last paragraph in the Finding:

> Although the total residual chlorine standard does not apply to intermittent discharges, intermittent dischargers must comply with other applicable requirements in order to protect aquatic life from acute and chronic effects from exposure to chlorine from these discharge sources.

27. Finding No. 58 on page 36 of the Hearing Examiner's Report is amended by deleting the last paragraph in the Finding and adding a new paragraph to read:

> A total residual chlorine standard of 0.005 is needed and reasonable. While this standard will expose aquatic life to a greater risk than a 0.003 standard, the risk is within an acceptable range. In addition, dechlorination is essentially 100% effective in removing total residual chlorine.

28. Finding No. 59 on page 36 of the Hearing Examiner's Report is amended by deleting the third paragraph, (beginning "The problem with"), and replacing it with a new paragraph instead to read:

> The main drawback to the mass-balance approach is that flows must be known for both the discharge and the receiving water. The advantage to this method is that the ambient concentration of chlorine need not be measured; instead, only the higher (and therefore more easily measured) chlorine concentrations in the effluent need be measured. The stream above the discharge is assumed to contain no chlorine. The mass balance equation is, therefore, simply the effluent chlorine concentration divided by the sum of the effluent and stream (7Q10) flows. If the quotient is greater than the chlorine water quality standard, the discharger will be required to dechlorinate its effluent. It will not be possible to use the mass-balance equation if a discharger's effluent chlorine concentration is below the detection limit. In such cases, compliance monitoring may not be feasible until improved techniques are routinely available. (MPCA Exhibit 50, pp. 3-4.)

29. Finding No. 59 on page 37 of the Hearing Examiner's Report is further amended by deleting the "8" following the ".002" and ".001" on lines 1 and 3, respectively, and by deleting the last paragraph and replacing it with a new paragraph to read:

> There is no need to specify further compliance and monitoring protocols in these rules; however, it is also reasonable to include in these rules a statement of the Agency's enforcement policy (i.e., no violation of water quality standard if discharger is in compliance with its permit terms).

30. Finding No. 60 on page 37 of the Hearing Examiner's Report is amended by changing the word "is" to "may be" before the words "dramatically lowered" in the fourth sentence.

31. Finding No. 61 on page 38 of the Hearing Examiner's Report is amended by deleting the word "proposed" appearing between "is" and ".003" near the end of the second paragraph.

32. Finding No. 63 on pages 39 and 40 of the Hearing Examiner's Report is amended by changing the word "reaeration" to "dechlorination" in line 9 of the first full paragraph on page 39, by deleting the word "ballpark" and changing the words "radically altered upward" to "increased" in the last sentence in the second paragraph on page 39, by deleting the second sentence in the first paragraph at the top of page 40, and by changing the words "far short of" in line 7 on page 40 to "less than".

33. Finding No. 64 on page 40 of the Hearing Examiner's Report is amended by amending the first sentence to read:

> The Agency's cost estimate for industry to dechlorinate was shown to be less reliable than the Agency's cost estimate for municipalities to dechlorinate.

34. Finding No. 64 is further amended by changing "4.8105" to "4.8015" in line 9, paragraph 6 (p. 41) and by changing "Libbey's" to "Owatonna Canning Company." in the last line of the last paragraph.

35. Finding No. 66 on page 42 of the Hearing Examiner's Report is amended to change the cost figures from "$11,251,750 in capital costs and $1,532,025 O&M/yr." to "$927,000 in capital costs and $118,600 O&M/yr.".

36. Finding No. 67 on page 42 of the Hearing Examiner's Report is amended by deleting the first paragraph and adding the following:

> In summary, a .005 mg/l TRC standard has been demonstrated to be needed and reasonable. In addition, it is reasonable to include a statement of the Agency's enforcement policy in the rules.

Finding 67 in further amended by deleting the word "less" in subparagraph (2) on page 43.

37. Finding No. 69 on pages 43-46 of the Hearing Examiner's Report is amended by adding the words "body contact with or" between the words "by" and "consumption" in the last line on page 43, by deleting the sentence, "However, the question of whether Roos has demonstrated the May 1 date to be unreasonable is a close one.", in the last full paragraph on page 45 and by deleting the sentence, "The examiner finds that the Agency has failed to justify the reasonableness of its May 1 date.", on the bottom of page 45.

38. Finding No. 70 on pages 46-48 of the Hearing Examiner's Report is amended by deleting the entire finding and replacing it with the following paragraphs:

> The Agency agrees with the Hearing Examiner, who quotes from the Green Book, published in 1968, that "there is an urgent need for research to refine the correlations of various indicator organisms, including fecal coliforms, to water-borne disease" (MPCA Ex. 66, p. 12). The Agency also agrees with the conclusions drawn from the 1977 Cabelli paper (MPCA Exhibit 119) that health risks are increased when swimming in waters impacted by bacteria.
>
> Because of the difficulties in selecting indicator organisms and the levels at which these can cause public health problems, the Agency finds that it is reasonable to continue at the present time the existing standard for the maximum number of allowable organisms in 10% of the samples.

39. Finding No. 71 at pages 49 and 50 of the Hearing Examiner's Report is amended by deleting those paragraphs of the Finding which follow the quotation on page 49 and replacing them with the following language:

> Under the existing rule, all dischargers are required to disinfect year-round. The proposed amendment would change that requirement so that only seasonal disinfection is required, with the exception of dischargers within 25 miles of a potable water intake. For dischargers within the 25 mile limit, there will be no seasonal exception - they will have to disinfect year-round, just as they are doing today.
>
> The Agency agrees with the Hearing Examiner that the Agency does not have to rejustify disinfection (and all of the other rules which are not being proposed for revision) and to do so would be inefficient and inconsistent with the underlying philosophy of the Administrative Procedure Act. However, the Agency finds that in order to protect public drinking water, and based on a survey of major dischargers upstream from municipal water intake sources and a survey of requirements in other states, and after consultation with state health officials, that the 25 mile limit is a reasonable distance for requiring year-round disinfection.

40. Finding No. 74 on page 52 of the Hearing Examiner's Report is amended by addding a paragraph before the one beginning "The Examiner finds" to read:

> In addition, the Agency proposed repeal of the fecal coliform standard for Classes 1B, 1C, 1D, 3, 4 and 5. This is reasonable since all surface water is presently proposed to be classified as either Class 2 or Class 7 and, thus, either the fecal standard for Class 2 or Class 7 will be applicable to all surface waters.

41. Finding No. 75 on page 53 of the Hearing Examiner's Report is amended by deleting the two paragraphs beginning, "The cost of implementing" and "The Examiner finds", and adding a sentence to read:

> Since the Agency is not changing the fecal coliform standard for Class 2B and 2C waters, there will be no costs associated with the proposed rule with respect to CSO control.

42. Finding No. 75 on page 54 of the Hearing Examiner's Report is further amended by changing the dollar figures in the paragraph beginning "For outstate municipalities" as follows:

> Change $1,438,900 to $1,458,000
> Change $1,460,000 to $1,491,000
> Change $21,000 to $33,000
> Change $1,438,900 to $1,458,000

43. Finding No. 76 on page 54 of the Hearing Examiner's Report is amended to delete everything except the following:

> It should be noted that the Examiner's finding increasing the length of time for seasonal disinfection from six months to eight months will reduce the cost savings.

44. Finding No. 77 on pages 54 and 55 of the Hearing Examiner's Report is amended to read as follows:

In summary, the Agency finds that:

a. A starting date for seasonal disinfection of March 1 is needed and reasonable.

b. The 25-mile limit is needed and reasonable and may remain in the rule as proposed.

c. The Agency's proposed standard for Class 7 waters has been demonstrated to be both needed and reasonable.

d. There are no additional costs attributed to compliance with the amended standard and a savings on disinfection costs will be realized by dischargers that will only have to disinfect seasonally.

45. Finding No. 80 on page 56 of the Hearing Examiner's Report is amended by deleting the second sentence.

46. Finding No. 82 on page 56 of the Hearing Examiner's Report is amended by changing the language "more than $18,560,000 in capital costs, and $1,306,000 per year O&M", to read "more than $20,670,000 in capital costs, and $1,450,000 per year O&M".

47. Finding No. 86 on page 58 of the Hearing Examiner's Report is amended by deleting the second and third sentences in the last paragraph.

48. Finding No. 88 on page 59 of the Hearing Examiner's Report is amended by changing the last paragraph to read:

> The Agency finds that a dissolved oxygen standard is required to prevent odors. The Agency finds that a 1 mg/l daily average standard is protective provided some level of oxygen is maintained in the water (i.e., not anaerobic) and that it is reasonable to adopt such a standard.

49. Finding No. 92 on page 62 of the Hearing Examiner's Report is amended by deleting the entire Finding except the first sentence and adding the following language:

A concern was raised that an overly strict reading of § C.16.c. might result in a discharger to a Class 7 stream which is tributary to a Class 2 water having to meet the same standards as a discharger to the Class 2 water. (Pub. Ex. 69) A reasonable "mixing zone" will be allowed in such circumstances to avoid this result.

50. Finding No. 93 on pages 62 and 63 of the Hearing Examiner's Report is amended to read:

In summary, the Agency finds that the need for and reasonableness of the concept of Class 7 waters has been demonstrated. The Agency further finds that the standards proposed for adoption for such waters are needed and reasonable.

51. Finding No. 94 on page 63 of the Hearing Examiner's Report is amended to read:

The Agency originally listed 187 waters for designation as Class 7 waters. A number of stream segments not originally included in the list were suggested for inclusion by others during the public hearing process. The Agency is not adopting Class 7 designations for any stream segments not included in the rules as proposed because the Agency wants further exchange of ideas on the designation of such stream segments.

52. Finding No. 97 on page 66 of the Hearing Examiner's Report is amended by deleting the last paragraph and replacing it with a new paragraph to read:

The Agency finds that although it need not rejustify provisions of the existing rules, it is reasonable to leave the Judicial Ditch #6 a Class 2 water. The Agency makes no finding with respect to whether a Class 7 designation would also be reasonable.

53. Findings No. 98, 99 and 100, on pages 66-69 of the Hearing Examiner's Report are deleted in their entirety.

54. Finding No. 103 on page 70 of the Hearing Examiner's Report is amended to read:

The designation of Pell Creek, which is the correct name of the creek, as a Class 7 water is reasonable.

55. Findings No. 105, 106 and 107, on pages 71 and 72 of the Hearing Examiner's Report are deleted in their entirety.

56. Finding No. 108 on page 73 of the Hearing Examiner's Report is amended to delete the last sentence of the second paragraph and the last two sentences (through subparagraph d.) of the last paragraph.

57. Finding No. 110 on page 73 of the Hearing Examiner's Report is amended by changing "full body contact" to read "primary body contact" and "non-body contact" to read "secondary body contact".

58. Finding No. 115 on page 75 of the Hearing Examiner's Report is amended to change the words "St. Anthony Falls to the metro plant" in the first paragraph to read "the High Bridge in St. Paul to River Mile 830".

59. Finding No. 116 on page 77 of the Hearing Examiner's Report is amended by deleting the third sentence (beginning "When questioned") of the third paragraph, the first two sentences of the fourth paragraph (beginning "The Agency's failure"), the phrase in parenthesis "(other than in the anonymous sentence)" in the fourth paragraph, and the sentence in the fourth paragraph beginning "While the lack".

60. Finding No. 117 on page 78 of the Hearing Examiner's Report is amended by deleting the third sentence beginning "When Pyle was asked".

61. Finding No. 119 on pages 80 and 81 of the Hearing Examiner's Report is amended by deleting the last sentence on the bottom of page 80 (beginning "The Examiner finds") and the remaining two sentences in that paragraph on the top of page 81 and replacing that language with a new paragraph to read:

> Therefore, it is reasonable to continue the 5 mg/l total suspended solids effluent limitation if a discharger is required to implement a pretreatment program for the control of toxic pollutants from industrial contributors and the program has not yet been implemented.

62. Finding No. 120 on pages 81 and 82 of the Hearing Examiner's Report is amended by deleting the words "elected to 'duck' this issue because it" on the bottom of page 81 and by deleting the last sentence in the finding on page 83.

63. Finding No. 126 on page 84 of the Hearing Examiner's Report is amended by deleting the first two paragraphs and adding the following language instead:

> The costs associated with these rules are substantial. While it is impossible to be precise about the exact costs for many of the parameters (for the reasons noted in connection with specific parameters), it can be said that adoption of the rules, with the exception of a dissolved oxygen standard for a certain reach of the Mississippi River below the Metro Plant, will cost in the neighborhood of $100 million in capital costs and $3 million in annual operating and maintenance expenses.
>
> There are a number of ways at looking at such costs. In the past, 75% of construction costs for municipalities have been met by federal funds and 15% by state funds. The remaining 10% is borne by the municipality. This money comes from sewer hookup fees and user charges. Industry, of course, bears its own expenses, although industry may pass its expenses along to its customers in the form of increased prices.

There was substantial discussion regarding the propriety of assuming federal funding. State and federal funding generally covers 90% of the cost of capital expenditures for municipalities. Therefore, the existence, or nonexistence, of federal funding (which makes up between 75 and 85% of the total cost) is a factor when looking at the burdens imposed upon the MWCC and other municipalities by the changes in the proposed rules.

The Agency in the past has not required municipalities to proceed with construction of sewage treatment plants when federal grant funds are not available. The availability or lack of federal funds is a factor that will have to be considered for each municipality at some appropriate time in the future.

In order to get some perspective of the projected costs to the MWCC to meet the new chlorine and ammonia standards, the cost-per-household for persons in the Twin Cities metropolitan area can be calculated. Assuming the $100 million projected capital costs and $3 million projected O&M annual costs are all attributable to the MWCC, these costs work out to an annual equivalent cost of around $15 million per year (Wegwart, p. 8). Assuming further that about 74% of the flow to the MWCC system is from households, and that there are around 675,000 households in the metro area, the cost per year per household would be a little over $20, without federal and state grants. With 90% grant money the cost per household per year is around $5. (See Wegwart, pp. 8-9.)

CONCLUSIONS

A. The Minnesota Pollution Control Agency duly acquired and has jurisdiction over this proceeding.

B. The Agency published and served due, timely and adequate notice of this hearing.

C. The Agency has statutory authority to promulgate and adopt the proposed rules, as finally amended and adopted by the Agency.

D. All relevant legal and procedural requirements of statutes and rules have been properly complied with.

E. The proposed rules, as finally amended and adopted by the Agency, are needed and reasonable.

F. None of the changes made in the rules as proposed constitutes a substantial change.

G. It is preferable to remand the matter to the Hearing Examiner to reopen the hearing for the receipt of additional evidence relating to a dissolved oxygen standard for the reach of the Mississippi River from the outlet of the Metro wastewater treatment works (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815) and for further consideration of an appropriate dissolved oxygen standard for that reach of the Mississippi River.

Dated this 28th day of October, 1980.

MINNESOTA POLLUTION CONTROL AGENCY

ART ENGELBRECHT
Chairman

TERRY HOFFMAN
Executive Director

In addition to the uses prescribed on the product label, this Special Local Need Registration permits the use of this pesticide to control overwintering populations of the native elm bark beetle on elm trees.

The application and other data required under Minn. Stat. §§ 18A.22, subd. 2 (a-d), 18A.23 and 40 CFR 162.150-162.158, subpart B relative to this registration (identified as SLN # MN 79-0014) is on file for inspection at:

Minnesota Department of Agriculture
Pesticide Control Section
656 State Office Building
Saint Paul, Minnesota 55155
(612) 296-8379

A federal or state agency, a local unit of government, or any person or group of persons filing with the Commissioner a petition that contains the signatures and addresses of 500 or more individuals of legal voting age, has thirty (30) days to file written objections with the Commissioner of Agriculture regarding the issuance of this Special Local Need Registration. Upon receipt of such objections and when it is deemed in the best interest of the environment or the health, welfare, and safety of the public, the Commissioner of Agriculture shall order a hearing pursuant to Minn. Stat. ch. 15, for the purpose of revoking, amending, or upholding this registration.

September 12, 1979

Mark W. Seetin
Commissioner

Department of Health Emergency Medical Services Section

Notice of Applications for Licensure of Life Support Transportation Services in Long Lake and Minnetonka: Extension of Public Record

Notice is hereby given that on September 6, 1979, a public hearing was held to receive testimony regarding the application of North Memorial Medical Center for life support transportation bases of operation in the communities of Long Lake and Minnetonka, Minnesota. At the request of all parties to this matter, the public record in this contested case hearing shall remain open for a period of 45 days following the public hearing. Any parties wishing to comment on either or both of these license applications may do so by submitting their written statement to:

Mr. George A. Beck
Hearing Examiner's Office
Room 300
1745 University Avenue
St. Paul, Minnesota 55104

Although the record in this contested case will remain open until October 21, 1979, interested parties are respectfully requested by the Hearing Examiner to submit their written comments before September 28, 1979. This will allow time for all parties to consider new information submitted before the record is closed. Interested parties are also respectfully requested to provide copies of their written statements to or for use by North Memorial Medical Center, the license applicant. Such copies should be forwarded to:

Mr. William Nelson
Emergency Medical Training Coordinator
North Memorial Medical Center
3220 Lowry Avenue North
Minneapolis, Minnesota 55422

No further public hearing will be held in this matter. After the close of the record, the Hearing Examiner will report to the Commissioner of Health on these applications and the information submitted in support for and objection to them, as prescribed in Minn. Stat. § 144.802 (Supp. 1977). The Commissioner may then grant or deny either or both licenses following receipt of the Hearing Examiner's report.

Minnesota State Retirement System

Special Meeting of the Board of Directors

Notice is hereby given that a special meeting of the Board of Directors of the Minnesota State Retirement System will be held on Friday, September 28, 1979, at 9:00 a.m. in the office of the System, 529 Jackson Street, St. Paul, Minnesota 55101.

Pollution Control Agency Water Quality Division

Notice of Intent to Solicit Outside Opinion on Proposed Rules Revising Quality and Purity Standards for State Waters

Notice is hereby given that the Minnesota Pollution Control Agency (MPCA) is considering amendments to existing water quality rules, WPC 14, 15, 24 and 25 and amendments to other water quality rules to the extent they are inconsistent with the proposed amendments to WPC 14 and 15. In addition, the MPCA is considering the revocation of the following rules which are outdated or substantially inconsistent with other rules:

(1) WPC 2 and 3

(2) WPC 5-13, inclusive

(3) WPC 16-21, inclusive

(4) WPC 23

(5) WPC 26, 29, 31, 32

This revision of water quality standards is more limited than those amendments previously under consideration and noticed at 2 S.R. 684. A limited revision is under consideration at this time in response to the comments of individuals, organizations, and State and Federal Agencies on the previously noticed amendments.

The amendments to WPC 14, 15, 24 and 25 under consideration include but are not limited to the following areas:

(1) Modification of the water quality standards for fecal coliform organisms, ammonia, and chlorine;

(2) Modification and clarification of the existing water quality standards for dissolved oxygen;

(3) Modification of the effluent limitation for fecal coliform organisms;

(4) Addition of standards of quality and purity for a class of limited resource value waters which are generally intermittent or extremely low flow surface waters; and

(5) Classification of various surface waters as limited resource value water per the classification described in (4) above.

The amendments do not address the classification of the Metropolitan segments of the Mississippi and Minnesota Rivers. The use classification of these segments of river is under active study by an advisory committee composed of citizens, Federal agencies, State agencies and Local agencies. A determination whether to amend the classification of the Metropolitan segments of the Mississippi and Minnesota Rivers will be made after the advisory committee's report and recommendations are received. The report and recommendation are scheduled to be received in late September, 1979.

A complete copy of all the amendments under consideration is available by writing to the following address:

John F. McGuire
Minnesota Pollution Control Agency
Division of Water Quality
1935 West County Road B2
Roseville, Minnesota 55113

All interested or affected persons or groups are requested to participate. Statements of information and comment may be made orally or in writing. Written statements of information and comment may be addressed to the above address.

Oral statements of information and comment will be received during regular business hours over the telephone at (612) 296-7242, and in person at the above address.

All statements of information and comment must be received by October 15, 1979. Any written material received by the Agency shall become part of the hearing record.

Water Planning Board

Notice of Meeting of the Water Planning Board

Notice is hereby given that the Water Planning Board will hold a meeting on Thursday, September 27, 1979, at 9:30 a.m. in Room 51, State Office Building, 435 Park Street, St. Paul, Minnesota. An agenda for the meeting may be obtained one week prior to the meeting by contacting the undersigned at Room 600 American Center Building, 150 E. Kellogg Boulevard, St. Paul, Minnesota 55101.

Thomas Kalitowski
Chairman

case proceeding. The hearing will be conducted pursuant to the contested case procedures set out in Minn. Stat. § 15.0411 through Minn. Stat. § 15.052 and HE 201 through 222. Questions concerning the issues raised in this Order or concerning informal disposition or discovery may be directed to Special Assistant Attorney General William P. Donohue, Minnesota Pollution Control Agency, 1935 West County Road B2, Roseville, Minnesota telephone (612) 296-7345.

The purpose of the hearing is to receive and review testimony, evidence, and argument relating to the terms and conditions of the above referenced permits. The permits are for the metropolitan wastewater treatment plant which treats a substantial portion of the industrial and domestic sewage from the Minneapolis-St. Paul area and discharges to the Mississippi River. This facility is owned and operated by the Metropolitan Waste Control Commission and the Metropolitan Council. The permits are proposed for issuance pursuant to Minn. Stat. § 115.03 and § 115.07 (1976).

Any person may petition to Intervene as a party to the hearing in accordance with Hearing Examiner Rule 210. All such petitions shall be submitted to the Hearing Examiner no later than October 15, 1977, except upon a showing of good cause for later intervention.

Persons who do not wish to become parties may participate in the hearing, in the discretion of the Hearing Examiner, by giving testimony and offering exhibits. However, persons not admitted as parties will not be allowed to cross examine witnesses, present argument, file written briefs, or exercise those rights normally incident to party status.

All parties are advised that if a party intends to appear at the hearing the Notice of Appearance form enclosed with this order must be completed and returned to the Hearing Examiner at least 10 days before the hearing date. Should a party fail to appear at the hearing, the permits described herein may be issued as proposed.

The above cited procedural rules are available at the Office of Hearing Examiners or may be purchased from the Documents Section of the Department of Administration, 140 Centennial Building, St. Paul, Minnesota 55155 (296-2874). They provide generally for the procedural rights of the parties including: rights to advance notice of witnesses and evidence, right to a prehearing conference, rights to present evidence and cross examine witnesses, and right to purchase a record or transcript. Parties are entitled to issuance of subpoenas to compel witnesses to attend and produce documents and other evidence.

Persons attending the hearing should bring all evidence bearing on the case including any records or other documents.

If persons have good reason for requesting a delay of the hearing, the request must be made in writing to the Hearing Examiner at least 5 days prior to the hearing. A copy of the request must be served on the Agency and any other parties.

Sandra S. Gardebring
Executive Director

Joseph Grinnell
Chairman

Notice of Intent to Solicit Outside Opinion on Proposed Rules Revising Quality and Purity Standards for State Waters

Notice is hereby given that the Minnesota Pollution Control Agency is considering proposed rules establishing revised classifications of all waters of the state and revised standards of quality and purity therefor. The proposed rules, if adopted, would supercede the following existing regulations:

1) Minn. Reg. WPC 2 and 3

2) Minn. Reg. WPC 5-21, inclusive

3) Minn. Reg. WPC 23-26, inclusive

4) Minn. Reg. WPC 29

5) Minn. Reg. WPC 31 and 32

The proposed rules, if adopted, would also amend Minnesota Rules WPC 22 and 34.

In order to adequately determine the nature and utility of such rules, the Minnesota Pollution Control Agency hereby requests information and comments from all interested persons or groups concerning the subject matter of the proposed rules.

Copies of an information package on water quality standards revision are available for review and comment. The material contained in this package is a working proposal, formulated to facilitate the review of possible revisions to water quality standards. One free copy may be obtained by writing to the following address:

Mr. William H. Anderl
Minnesota Pollution Control Agency
Division of Water Quality
1935 West County Road B-2
Roseville, Minnesota 55113

All interested or affected persons or groups are requested

to participate. Statements of information and comment may be made orally or in writing. Written statements of information and comment may be addressed to the above address.

Oral statements of information and comment will be received during regular business hours over the telephone at (612) 296-7250, and in person at the above address.

All statements of information and comment must be received by October 31, 1977. Any written material received by the Agency shall become part of the hearing record.

Public Service Commission

Public Hearing on Minimum Rates Charged by the Minnesota Permit Truckers Association

Notice is hereby given that the Public Service Commission has scheduled a public hearing before Hearing Examiner Leonard Nelson on Tuesday, November 1, and Wednesday, November 2, 1977 at 9:30 a.m. in the Large Hearing Room on the 7th Floor of the American Center Building, 160 East Kellogg Boulevard, St. Paul in the matter of the complaint/petition by the Minnesota Permit Truckers Association for an investigation and order of the Commission requesting increased minimum rates applicable to grain and general commodity products. Further information regarding the complaint/petition, intervention procedure, etc. may be obtained by writing the Public Service Commission at the above address or telephoning (612) 296-2349.

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25, and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32.

REPORT OF THE
CHIEF HEARING EXAMINER

A

The above-entitled matter came on for review by the Chief Hearing Examiner pursuant to the provisions of Minn. Laws 1980, Ch. 615, § 6, subd. 4d (to be codified as Minn. Stat. § 15.0412, subd. 4d) which provides in part:

> If the [hearing examiner's] report contains a finding that the proposed rule is substantially different from that which was proposed at the public hearing, or that the agency has not met the requirements of section 15.0412, subdivisions 4 through 4f, it shall be submitted to the chief hearing examiner for approval. If the chief hearing examiner approves the finding of the hearing examiner, he shall advise the agency of actions which will correct the defects, and the agency shall not adopt the rule until the chief hearing examiner determines that the defects have been corrected. If the chief hearing examiner determines that the need for and reasonableness of the rule has not been established pursuant to subdivision 4, clause (c), and if the agency does not elect to follow the suggested actions of the hearing examiner to correct that defect, then the agency shall submit the proposed rule to the legislative commission to review administrative rules for the commission's advice and comment. The agency shall not proceed to adopt the rule until it has received and considered the advice of the commission; provided, that the agency is not required to delay adoption longer than 30 days after the commission's receipt of the agency's submission.

Based upon a review of the record in this proceeding, the Chief Hearing Examiner hereby approves the Report of the Hearing Examiner in all respects and specifically as to any finding of substantial change or of failure to comply with Minn. Laws 1980, Ch. 615, § 6 (to be codified as Minn. Stat. § 15.0412, subd. 4-4f), or of failure to establish need for and reasonableness of the proposed rule.

In order to correct the defects enumerated by the Hearing Examiner, the Agency shall either take the action recommended by the Hearing Examiner or reconvene the rule-hearing if appropriate. If the agency chooses to reconvene the rule-hearing, it shall do so as if it is initiating a new rule-hearing, complying with all substantive and procedural requirements imposed on the Agency by law or rule.

If the Agency chooses to take the action recommended by the Hearing Examiner, it shall, prior to submitting the rules to the Attorney General for review, submit to the Chief Hearing Examiner a copy of the rules as initially published in the State Register, a copy of the rules as proposed for final adoption in the form required by the State Register for final publication, and a copy of the Agency's Findings of Fact and Order Adopting Rules. The Chief Hearing Examiner will then make a determination as to whether the defect in regard to substantial change and the requirements of Minn. Laws 1980, Ch. 615, § 6 (to be codified as Minn. Stat. § 15.0412, subd. 4-4f) have been corrected.

Should the agency make changes in the rules other than those recommended by the Hearing Examiner, it shall also, prior to submitting the rule to the Attorney General, submit the complete record to the Chief Hearing Examiner for a review in regard to substantial changes.

Dated this 22nd day of August, 1980.

DUANE R. HARVES
Chief Hearing Examiner

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE POLLUTION CONTROL AGENCY

IN THE MATTER OF THE PROPOSED AMENDMENTS TO MPCA RULES WPC 14, 15, 24 AND 25 AND THE PROPOSED REPEAL OF WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 AND 32.	ORDER OF THE CHIEF HEARING EXAMINER

(B)

On Friday, October 31, 1980, pursuant to the provisions of Minn. Stat. § 15.0412, subds. 4d and 4e, the Pollution Control Agency (hereinafter "PCA") submitted the entire record in the above-entitled matter to the Chief Hearing Examiner for his determination as to whether or not the defects found by the Hearing Examiner and the Chief Hearing Examiner in their reports dated August 21, 1980, and August 22, 1980, respectively, had been corrected and for a determination on the question of the withdrawal of the proposed standard for dissolved oxygen constitutes a substantial change in the rule.

Based upon a review of files, records, and proceedings herein by the Hearing Examiner and the Chief Hearing Examiner, the Chief Hearing Examiner finds that the defects enumerated in the rules have been corrected and that the changes in the rules are not substantial changes.

NOW, THEREFORE, the PCA has the responsibility of submitting the complete hearing record and the rules as adopted by the PCA to the Attorney General, notifying all persons who requested to be informed that the hearing record has been submitted to the Attorney General, and publishing in the State Register, all pursuant to Minn. Stat. § 15.0412, subd. 4e.

Dated this 7th day
of November, 1980.

DUANE R. HARVES
Chief Hearing Examiner

AG copy

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

PCA-80-004-AK

ORDER ADOPTING RULES

The above-entitled matter came on for hearing on March 31, 1980, in the Board Room of the Minnesota Pollution Control Agency, Roseville, Minnesota, before Allan W. Klein, Hearing Examiner.

The hearing continued at the following times and places:

April 1-4, 1980, commencing at 9 a.m., Minnesota Pollution Control Agency, Roseville;

April 7, 1980, commencing at 7 p.m., and April 8, 1980, commencing at 9 a.m., Southwest State College, Marshall;

April 8, 1980, commencing at 7 p.m., and April 9, 1980, commencing at 9 a.m., City Admnistration Building, Detroit Lakes;

April 9, 1980, commencing at 7 p.m., and April 10, 1980, commencing at 9 a.m., County Services Building, Brainerd;

April 10, 1980, commencing at 7 p.m., and April 11, 1980, commencing at 9 a.m., St. Louis County Courthouse, Duluth;

April 14, 1980, commencing at 1 p.m. and 7 p.m., Friedel Building, Rochester;

April 28, 1980, commencing at 9:30 a.m., Minnesota Pollution Control Agency, Roseville;

April 29, 1980, commencing at 9 a.m., Holiday Inn, Roseville; and

April 30, May 1, 2 and 7, 1980, commencing at 9 a.m., Minnesota Polution Control Agency, Roseville.

Proper notice, required by Minn. Stat. § 15.0412 (1978), was served upon all persons, associations and interested groups registered with the Secretary of State for that purpose.

After affording interested persons an opportunity to present written and oral data, statements and arguments to Hearing Examiner Allan Klein, after considering the Report of the Hearing Examiner, after considering all of the evidence adduced upon the records, files and proceedings herein, and applicable statutory standards or criteria, and having confirmed the need for the above captioned rules:

NOW, THEREFORE, IT IS ORDERED that the water quality rules, WPC 14, 15, 24 and 25 are hereby adopted as published at 4 State Register 1330, et seq. (1980) with the following changes:

6 MCAR § 4.8014

B. Water use classifications - all intrastate waters of the state. Based on considerations of best usage in the interest of the public and in conformance with the requirements of the applicable statutes, the intrastate waters of the state shall be grouped into one or more of the following classes:

. . .

7. Limited resource value waters. This class includes surface waters of the state which are of limited value as a water resource and where water quantities are intermittent or less than one (1) cubic feet per second at the once in ten year, seven day low flow as defined in section C.7. These waters

shall be protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the water. It is the intent of the agency that very few waters be classified as limited resource value waters. In conjunction with those factors listed in Minn. Stat. § 115.44, subd. 2 and subd. 3 (1978), the agency, in cooperation and agreement with the Department of Natural Resources with respect to determination of fisheries values and potential, shall determine the extent to which the waters of the state demonstrate the conditions set forth below: p.10

. . .

C. General standards applicable to all intrastate waters of the state.

. . .

5. Means for expediting mixing and dispersion of sewage, industrial waste, or other waste effluents in the receiving intrastate waters are to be provided so far as practicable when deemed necessary by the agency to maintain the quality of the receiving intrastate waters in accordance with applicable standards. Mixing zones be established by the agency on an individual basis, with primary consideration being given to the following guidelines: (a) mixing zones in rivers should permit an acceptable passageway for the movement of fish; (b) the total mixing zone or zones at any transect of the stream should contain no more than 25% of the crossectional area and/or volume

of flow of the stream, and should not extend over more than 50% of the width; (c) mixing zone characteristics shall not be lethal to aquatic organisms; (d) for contaminants other than heat, the 96 hour median tolerance limit for indigenous fish and fish food organisms should not be exceeded at any point in the mixing zone; (e) mixing zones should be as small as possible, and not intersect spawning or nursery areas, migratory routes, water intakes, nor mouths of rivers; and (f) overlapping of mixing zones should be minimized and measures taken to prevent adverse synergistic effects. This provision shall also apply in cases where a Class 7 water is tributary to a Class 2 water. p.12.

6. . . .

Substance or Characteristic	Limit Concentration or Range*
5-Day Biochemical Oxygen Demand*	25 milligrams per liter p.12
Fecal coliform group organisms***	200 organisms per 100 milliliters ~~(May 1 through October 31)~~ p.12

. . .

***Disinfection of wastewater effluents to reduce the levels of fecal coliform organisms to the stated value is required from ~~May~~ March 1 through October 31 (Class 2 waters) and May 1 through October 31 (Class 7 waters) except that where the effluent is discharged 25 miles or less upstream of a water intake supplying a potable water system, the reduction to the stated p.13

value is required year around. The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of five samples, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. The application of the fecal coliform group organism standards shall be limited to sewage or other effluents containing admixtures of sewage and shall not apply to industrial wastes except where the presence of sewage, fecal coliform organisms or viable pathogenic organisms in such wastes is known or reasonably certain. Analysis of samples for fecal coliform group organisms by either the multiple tube fermentation or the membrane filter techniques is acceptable. p. 14

. . .

8. . . .

Item*	Limits**

. . .

**If a discharger is required by the Director to implement a pretreatment program for the control of toxic pollutants from industrial contributors and the program has not yet been implemented, the discharger's effluent limitation for total suspended solids shall be 5 mg/l until such time as the program has been implemented. p. 16

. . .

16. Limited resource value waters.

a. For point source discharges to surface waters classified as limited resource value waters pursuant to

section B.7. of this rule and 6 MCAR § 4.8024 the agency shall require treatment facilities which will provide effluents conforming to the following limitations:*

Substance or Characteristic	Limiting Concentration
5-day Biochemical oxygen Demand	15 milligrams per liter**

. . .

d. The classification of surface waters as limited resource value waters pursuant to section B.7. of this rule and 6 MCAR § 4.8024 shall not supercede, alter or replace the classification and designation of such waters as public waters pursuant to applicable provisions and requirements of Minn. Stat. ch. 105.

p. 19

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*All effluent limitations specified in section C.6. shall also be applicable to dischargers to Class 7 waters, provided that unspecified toxic or corrosive substances shall be limited to the extent necessary to protect the designated uses of the receiving water or affected downstream waters.

p. 20

** As measured by the arithmetic mean of all samples taken during any calendar month.

17. No person who is in compliance with the terms and conditions of its permit issued pursuant to 6 MCAR § 4.8036 shall be deemed in violation of any water quality standard in this rule for which a corresponding effluent limitation is established in the permit. However, exceedances of the water

p. 20

quality standards in a receiving water shall constitute grounds for modification of a permit(s) for any discharger(s) to the receiving water who is (are) causing or contributing to the exceedances. 6 MCAR § 4.8036 shall govern the modification of any such permit.

18. For the purpose of establishing effluent limitations to meet the ammonia water quality standard, a statistic which estimates the central value (such as the mean or median) for ambient pH and temperature of the receiving water for the critical months shall be used. p.20

D. . . .

2. Fisheries and recreation.

Class A. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).*** p.25
. . .	
Cyanides (CN)	~~0.2~~ 0.02 milligrams per liter p.26
. . .	
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31). p.27

. . .

Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter

---

* . . .

$$f = \left[\frac{1}{10^{pK_a - pH} + 1} \right] \text{ ~~x 100~~}$$

$$f = \left[\frac{1}{10^{(pK_a - pH)} + 1} \right] \times 100$$

. . .

** Applies to conditions of continuous exposure where continuous exposure refers to chlorinated effluents which are discharged for more than a total of two hours in any 24 hour period.

*** This dissolved oxygen standard shall be construed to require compliance with the standard 50 percent of the days at which the flow of the receiving water is equal to the lowest weekly flow with a once in ten year recurrence interval (7Q10).

Class B. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).*** p.28
. . .	
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed ~~400~~ 2000 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31). p.30
. . .	
Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter p.31

. . .

*** See dissolved oxygen footnote for Class 2A waters. p.31

~~282~~

Class C. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).*** p. 31
. . .	
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed ~~400~~ 2000 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31). p. 33
. . .	
Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter p. 33

. . .

*** See dissolved oxygen footnote for Class 2A waters.

7. Limited resource value waters. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	At concentrations which will avoid odors, or putrid conditions in the receiving water ~~provided that the concentration shall be not less than 1 milligram per liter at all times (instantaneous mini-mum concentration in order to avoid these conditions unless lower concentrations can be shown to avoid these conditions on a site specific basis~~ or at concentrations at not less than 1 mg/l (daily average) provided that measurable concentrations are present at all times.
. . .	

p. 39

6 MCAR §4.8015

B. Water use classifications - all interstate waters of the state. Based on considerations of best usage in the interest of the public and in conformance with the requirements of the applicable statutes, the interstate waters of the state shall be grouped into one or more of the following classes:

. . .

7. Limited resource value waters. This class includes surface waters of the state which are of limited value as a water resource and where water quantities are intermittent or less than one (1) cubic feet per second at the once in ten year, seven day low flow as defined in section C.7. These waters

shall be protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the water. It is the intent of the agency that very few waters be classified as limited resource value waters. In conjunction with those factors listed in Minn. Stat. § 115.44, subd. 2 and subd. 3 (1978), the agency, in cooperation and agreement with the Department of Natural Resources with respect to determination of fisheries values and potential, shall determine the extent to which the waters of the state demonstrate the conditions set forth below: p.9.

. . .

C. General standards applicable to all interstate waters of the state.

. . .

5. Means for expediting mixing and dispersion of sewage, industrial waste, or other waste effluents in the receiving interstate waters are to be provided so far as practicable when deemed necessary by the agency to maintain the quality of the receiving interstate waters in accordance with applicable standards. Mixing zones be established by the agency on an individual basis, with primary consideration being given to the following guidelines: (a) mixing zones in rivers should permit an acceptable passageway for the movement of fish; (b) the total mixing zone or zones at any transect of the stream should contain no more than 25% of the crossectional area and/or volume

of flow of the stream, and should not extend over more than 50% of the width; (c) mixing zone characteristics shall not be lethal to aquatic organisms; (d) for contaminants other than heat, the 96 hour median tolerance limit for indigenous fish and fish food organisms should not be exceeded at any point in the mixing zone; (e) mixing zones should be as small as possible, and not intersect spawning or nursery areas, migratory routes, water intakes, nor mouths of rivers; and (f) overlapping of mixing zones should be minimized and measures taken to prevent adverse synergistic effects. This provision shall also apply in cases where a Class 7 water is tributary to a Class 2 water.

6. . . .

Substance or Characteristic	Limit Concentration or Range*
5-Day Biochemical Oxygen Demand*	25 milligrams per liter
Fecal coliform group organisms***	200 organisms per 100 milliliters ~~(May 1 through October 31)~~

. . .

***Disinfection of wastewater effluents to reduce the levels of fecal coliform organisms to the stated value is required from ~~May~~ March 1 through October 31 (Class 2 waters) and May 1 through October 31 (Class 7 waters) except that where the effluent is discharged 25 miles or less upstream of a water intake supplying a potable water system, the reduction to the stated

value is required year around. The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of five samples, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. The application of the fecal coliform group organism standards shall be limited to sewage or other effluents containing admixtures of sewage and shall not apply to industrial wastes except where the presence of sewage, fecal coliform organisms or viable pathogenic organisms in such wastes is known or reasonably certain. Analysis of samples for fecal coliform group organisms by either the multiple tube fermentation or the membrane filter techniques is acceptable. p. 13

. . .

8. . . .

Item* Limits** p. 14

. . .

**If a discharger is required by the Director to implement a pretreatment program for the control of toxic pollutants from industrial contributors and the program has not yet been implemented, the discharger's effluent limitation for total suspended solids shall be 5 mg/l until such time as the program has been implemented. p. 15

. . .

16. Limited resource value waters.

a. For point source discharges to surface waters classified as limited resource value waters pursuant to

section B.7. of this rule and 6 MCAR § 4.8025 the agency shall require treatment facilities which will provide effluents conforming to the following limitations:*

Substance or Characteristic	Limiting Concentration
5-day Biochemical oxygen Demand	15 milligrams per liter**

p. 18

. . .

d. The classification of surface waters as limited resource value waters pursuant to section B.7. of this rule and 6 MCAR § 4.8025 shall not supercede, alter or replace the classification and designation of such waters as public waters pursuant to applicable provisions and requirements of Minn. Stat. ch. 105.

p. 19

---

*All effluent limitations specified in section C.6. shall also be applicable to dischargers to Class 7 waters, provided that unspecified toxic or corrosive substances shall be limited to the extent necessary to protect the designated uses of the receiving water or affected downstream waters.

p. 19

** As measured by the arithmetic mean of all samples taken during any calendar month.

17. No person who is in compliance with the terms and conditions of its permit issued pursuant to 6 MCAR § 4.8036 shall be deemed in violation of any water quality standard in this rule for which a corresponding effluent limitation is

p. 19

established in the permit. However, exceedances of the water quality standards in a receiving water shall constitute grounds for modification of a permit(s) for any discharger(s) to the receiving water who is (are) causing or contributing to the exceedances. 6 MCAR § 4.8036 shall govern the modification of any such permit.

18. For the purpose of establishing effluent limitations to meet the ammonia water quality standard, a statistic which estimates the central value (such as the mean or median) for ambient pH and temperature of the receiving water for the critical months shall be used.

p. 20

D. . . .

2. Fisheries and recreation.

Class A. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).***
. . .	
Cyanides (CN)	~~0.2~~ 0.02 milligrams per liter
. . .	

p. 25

p. 25

Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31). p.26

. . .

Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter p.27

---

* . . .

$$f = \left[\frac{1}{10^{pK_a - pH} + 1} \right] \times 100$$

$$f = \left[\frac{1}{10^{(pK_a - pH)} + 1} \right] \times 100$$

p.27

where:

. . .

~~$pK_a = \frac{0.0901821 + 2729.92}{T}$, dissociation constant for ammonia~~

$pK_a = 0.0901821 + \frac{2729.92}{T}$, dissociation constant for ammonia

p.27

. . .

**Applies to conditions of continuous exposure where continuous exposure refers to chlorinated effluents which are discharged for more than a total of two hours in any 24 hour period. p.27

*** This dissolved oxygen standard shall be construed to require compliance with the standard 50 percent of the days at which the flow of the receiving water is equal to the lowest weekly flow with a once in ten year recurrence interval (7Q10). p.27

Class B. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen****	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).***** p.28
. . .	
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed ~~400~~ 2000 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31). p.29 p.30
. . .	
Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter p.30

. . .

**** This standard shall apply to all interstate waters of the state except for the reach of the Mississippi River from the outlet of the Metro wastewater treatment works in St. Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River the standard shall be not less than 5 milligrams per liter from April 1 through November 30, and not less than 4 milligrams per liter at other times.

***** See dissolved oxygen footnote for Class 2A waters.

p. 31

p. 31

Class C. . . .

Substance or Characteristic	Limit or Range
Dissolved Oxygen****	Not less than 5 milligrams per liter at all times (instantaneous minimum concentration).*****
. . .	
Fecal coliform organisms	200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed ~~400~~ 2000 organisms per 100 milliliters. (Applies only between ~~May~~ March 1 and October 31).
. . .	
Total Residual Chlorine**	~~0.003~~ 0.005 milligrams per liter

. . .

**** This standard shall apply to all interstate waters of the state except for the reach of the Mississippi River from the outlet of the Metro wastewater treatment works in St. Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River the standard shall be not less than 5 milligrams per liter from April 1 through November 30, and not less than 4 milligrams per liter at other times.

p. 35

***** See dissolved oxygen footnote for Class 2A waters.

p. 35.

7. Limited resource value waters. . . .

Substance or Characteristic	Limit or Range
. . .	
Dissolved Oxygen	At concentrations which will avoid odors, or putrid conditions in the receiving water ~~provided that the concentration shall be not less than 1 milligram per liter at all times (instantaneous minimum concentration in order to avoid these conditions unless lower concentrations can be shown to avoid these conditions on a site specific basis~~ or at concentrations at not less than 1 mg/l (daily average) provided that measurable concentrations are present at all times.
. . .	

p. 40

6 MCAR §4.8024

Supplement 1

Class 7 Limited Resource Value Waters

. . . .

~~Bad~~ Red River of the North Basin

. . . .

~~Unnamed~~ Ditch County Ditch No. 63 T116 R30 S19,20,21,28,33
Near Hutchinson
West Lynn Co-op Creamery

. . . .

Mississippi-Sauk Rivers Watershed (No. 19)

. . . .

*Two Rivers, South Branch T125 R31 ~~S13~~,21,22,23,~~24~~
Albany

. . . .

Unnamed Creek T121 R23 S30
Albertville T121 R24 S25,~~26~~,36

. . . .

Unnamed Creek T121 R31 S2
Eden Valley T122 R31 S35
~~Rumland~~ Ruhland Feeds

. . . .

Yellow Medicine River Watershed (No. 24)

. . . .

*Boiling Springs Creek T113 R38 S5,8
(County Ditch No. 1 ~~&~~ B) T114 R37 S19,30
Echo T114 R38 S25,26,27,32,33,34

. . . .

County Ditch No. 12 (Rice Creek) Belview	T113 R36 S~~4~~,~~5~~,7,8,18,19 T113 R37 S15,21,22,23,24

. . . .

Des Moines River Watershed (No. 38)

*Okabena Creek Worthington	T102 R38 S6,7 T102 R39 S7,8,9,10,11,12, 14,15,16,18
Worthington Lagoons and Allied Mills	T102 R40 S13 ~~T103 R38 S21,22,28,29,30,31~~

. . . .

Rock River Watershed (No. 39)

~~Judicial Ditch No. 6~~ ~~Worthington~~ ~~Campbell Soup Co.~~	~~T101 R40 S2~~ ~~T102 R40 S25,26,35~~

. . . .

Unnamed Ditch Lake Benton	T109 R45 S17,19,20

IT IS FURTHER ORDERED that WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31, and 32 are repealed in their entirety.

IT IS FURTHER ORDERED that this matter is remanded to the Hearing Examiner to reopen the hearing for the receipt of additional evidence relating to a dissolved oxygen standard for the reach of the Mississippi River from the outlet of the Metro wastewater treatment works (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815) and for further consideration of an appropriate dissolved oxygen standard for that reach of the Mississippi River. The Board directs the staff and the Hearing Examiner to schedule this hearing on remand to coincide with any public hearing or other proceedings on a NPDES permit or other authorization for a discharge to the waters of the State from the MWCC Metro Plant.

Dated this 28th day of October, 1980.

MINNESOTA POLLUTION CONTROL AGENCY

ART ENGELBRECHT
Chairman

TERRY HOFFMAN
Executive Director

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION

CONTROL AGENCY

In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

PCA-80-004-AK

AFFIDAVIT OF MAILING LETTER

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

SANDRA J. GRONEWOLD, being first duly sworn, deposes and says:

That on the 17th day of December, 1980, in the City of Roseville, County of Ramsey, State of Minnesota, she served the attached letter by depositing in the State of Minnesota Central Mail System for first class mailing (or) in the United States mail at said City of Roseville, a copy thereof, properly enveloped, with postage prepaid, to all persons and associations at the addresses listed on the attached list.

Sandra J. Gronewold
SANDRA J. GRONEWOLD

Subscribed and sworn to before me this 17th day of December, 1980.

Patricia Schwarz
Notary Public

PATRICIA SCHWARZ
NOTARY PUBLIC—MINNESOTA
ANOKA COUNTY
My Commission Expires Aug. 6, 1987

Minnesota Pollution Control Agency

December 17, 1980

Mr. Jerry Anderson
Special Assistant Attorney General
G-25 Administration Building
Saint Paul, Minnesota 55155

Re. In the Matter of the Proposed Amendments to MPCA Rules WPC 14, 15, 24 and 25 and the Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

Dear Mr. Anderson:

On December 4, 1980, you returned the above-entitled rules to the Minnesota Pollution Control Agency because of two minor problems you found with the rules. On December 16, 1980, the Minnesota Pollution Control Agency unanimously voted to correct the problems you found and to correct one other minor problem pointed out by the Staff.

I am now returning these rules to you for your final action. Enclosed are the Supplemental Order Adopting Rules, Certificate of Agency's Authorizing Resolution, and an Affidavit of Mailing this letter to those who have requested to be advised of when the rules are submitted to the Attorney General.

I have also enclosed three copies of the rules as finally adopted. These copies reflect the changes made by the Agency on December 16 and the correction of several typographical errors that you pointed out.

Please notify us when you have completed your review.

Thank you very much.

Very truly yours,

for Louis Breimhurst

TERRY HOFFMAN
Executive Director

TH:sjg
Enclosures

N. T. French
Sierra Club
111 E. Franklin Avenue
Suite 200
Minneapolis, MN 55404

John Lundblad
Jackson County Attorney
Jackson, Mn 56143

P. D. Brick
Pickands Mather & Co.
Room 811
200 W. Superior St.
Duluth, MN 55802

Joseph H. Shepherd
Leech Lake Indian Reservation
P. O. Box 308
Cass Lake, MN 56633

Charles S. Jankowski
City of Winton
Box 37
Winton, MN 55796

Bernadine Wehner
RREM, Inc.
401 Board of Trade Bldg.
Duluth, MN 55802

Art Fenstad
Reserve Mining Company
Silver Bay, MN 55614

Jon L. Christofferson
U.S. Steel Corp.
Box 417
Mt. Iron, MN 55768

Mattie Peterson
Minnesota Division
Izaak Walton League
4370 Wooddale Ave.
Minneapolis, MN 55424

Barney Burgstale
Dean Lake Township
Little Pine Route
Aitkin, MN 56431

Henry Berg
City of Duluth
Sewer Division
211 City Hall
Duluth, MN 55802

Clarence G. Sprague
Green Giant Company
1100 N. 4th Street
LeSueur, MN 56058

Amos Roos
1427 N. Albert St.
St. Paul, MN 55108

Dennis E. Vansteenkiste
Superwood Corp.
14th Ave. W. & Waterfront
Duluth, MN 55802

Thomas W. Segar
N-Ren Corporation
P. O. Box 418
So. St. Paul, MN 55075

Dwight Brass
Minnesota Power & Light
30 W. Superior St.
Duluth, MN 55802

John Harrington
Metro Council
350 Metro Square Building
St. Paul, MN 55101

James Frost
Metro Council
300 Metro Sq. Bldg.
St. Paul, MN 55101

Dale A. Pearson
Twin Lakes Township
50 Hay Lake Road
Carlton, MN 55718

Charles Brasher
U.S. EPA
230 S. Dearborn St.
Chicago, Illinois 60604

Horace V. Noland
Lake Owasso Assn.
3211 Woodbridge
St. Paul, MN 55112

David Helberg
City of Hayfield
Box 281
Hayfield, MN 55940

Larry Shaw
Pollution Control Agency
Regional Director, Region II
304 E. River Road
Brainerd, MN 56401

Geo. Worrall
Ashland Oil, Inc.
100 W. 3rd Ave.
St. Paul Park, MN 55110

Winslow Casey
R.R. 2
Hayfield, MN 55940

Paul Gableman
D.M. & I.R. Ry. Co.
210 Missabe Bldg.
Duluth, MN 55802

D. L. Hildre
FMC-NOD
4800 E. River Road
Minneapolis, MN 55421

Larry A. Read
Zenk Engineering, Inc.
Box 689
Albert Lea, MN 56007

V. Bitgim
SGTAC
662 Cromwell
St. Paul, MN 55114

Delbert D. Schmidt
Federal Cartridge Corp
9th & Tyler
Anoka, MN 55303

Herbert Schuve
Town of Munda
R.R. 1, Box 171
Albert Lea, MN 56007

S. Stephen Chapman
Clear Air Clear Water
12833 Gordview North
White Bear, MN 55110

W. D. DeBelly
Southern Minnesota Sugar
Renville, MN 56284

Susan Wiese
News Director
KTTC-TV
601 First Avenue S.W.
Rochester, MN 55901

Clarence Mohrman
Slayton, MN 56172

Richard Turner
City of Northfield
801 Washington
Northfield, MN 55057

Gary A. Hedge
General Foods Corporation
4th & 5th Aves.
Waseca, MN 56093

David Frea
City of Marshall
344 W. Main
Marshall, MN 56258

Pete Stalley
City of Northfield
801 Washington
Northfield, MN 55057

Jake Wolf
213 12th Ave. S.W.
Austin, MN 55912

Gaylord Olson
Glenville, MN 56036

Joseph S. Hensel
Rochester Public Utilitie
P. O. Box 6057
Rochester, MN 55901

tephen E. Guczyk
ibby, McNeill & Libby, Inc.
217 Third Avenue S.E.
ochester, MN 55901

J. A. Sturgess
Amax ESI
Box C
Babbitt, MN 55706

Kristine Legler
841 4th Ave. S.E.
Rochester, MN 55901

Walfred Burk
Spring Creek Township
Beck County
Ogema, MN 56569

Ralph Bonnell
Jackson County
Heron Lake, MN 56137

Bruce Storey
City of Blooming Prairie
Box 131
Blooming Prairie, MN 5591

Clifford McLain
City of Moorhead
1217 First Street South
Moorhead, MN 56560

Alfred Wisor
Jackson County
Jackson, MN 56143

Doug Kruckeberg
City of Blooming Prairie
Box 234
Blooming Prairie, MN 5591

C. V. Jirava
Spring Creek Township
Ogema, MN 56569

Gary E. Braun
City of Worthington
P.O. Box 111
Worthington, MN 56187

Ronald L. Anderson
City of Blooming Prairie
Blooming Prairie, MN 5591

Bud Jirava
Spring Creek Township
Ogema, MN 56569

Ira V. Fordyce
American Crystal Sugar
101 N. Third Street
Moorhead, MN 56560

Harry Dean
Potlatch Corporation
Mill Avenue N.E.
Brainerd, MN 56401

Jim Helland
Mansfield Township
Route 1
Emmon, MN 56029

Herman Podusen
R.R. 3
Willmar, MN 56201

Doug Elias
City of Hayfield
Box 222
Hayfield, MN 55940

Gordon Olson
Jackson County Zoning Comm.
Box 64
Jackson, MN 56143

Virgil C. Haugen
206 First S.E.
Hayfield, MN 55940

Bruce F. Trobnick
Blandin Wood Products Co
P. O. Box N
Grand Rapids, MN 55744

Duane Aden
City of Marshall
344 W. Main Street

Larry Turner
City of Northfield
801 Washington
Northfield, MN 55057

Milford Gentz
R. R. 1
Lakefield, Mn 56150

Michael W. MacMullen
U.S. EPA
230 S. Dearborn
Chicago, IL 60604

Robert A. Hillstrom
1330 Soo Line Building
Minneapolis, MN 55402

Dennis C. Hanselman
Box 64
Jackson, Mn 56143

Larry W. Sisk
U.S. Fish & Wildlife
U.S. Fed. Ofc. Bldg.
Fort Snelling
St. Paul, MN 55111

William Brungs
U.S. EPA
6201 Congdon Blvd.
Duluth, MN 55804

Joe Stepun
Western Lake Superior
Sanitary District
27th Ave. & Courtland
Duluth, MN 55802

Willard Brosz
Green Giant Company
1100 N. 4th Street
LeSueur, MN 56058

H. D. Lindeman
Worthington Chamber
of Commerce
2725 Rose Ave. No.
Worthington, MN 56187

Robert Merritt
MN DNR
1223 Minnesota Ave.
Detroit Lakes, MN
56501

Philip Haderer
Nestle Enterprises
100 Bloomingdale Ave.
White Plains, NY

J. Hoeft
Metro Council
300 Metro Sq. Bldg.
St. Paul, MN 55101

[illegible] S. Burk
G. Robert Johnson
Attorneys at Law
4344 IDS Center
Minneapolis, MN 55402

Daniel S. Szumski
P. O. Box 3237
Walnut Creek, CA 94598

Dennis Martenson
TKDA
2500 Amer
St. Paul, MN 55101

J. Settles
Henn. Soil & Water Cons.
250 N. Central Ave., #16
Wayzata, MN 55391

R. H. Susag
Minnesota Mining & Mfg. Co.
P. O. Box 33331
St. Paul, MN 55133

Ms. Becky Comstock
Broeker, Hartfeldt, Hedges
& Grant
2850 Metro Drive
Minneapolis, MN 55420

Stan P. Kalinoski
Larry Shaw
MN Pollution Control Agcy.
Brainerd Region
304 East River Road
Brainerd, MN 56401

Osman M. Aly
Campbell Soup Company
Campbell Place
Camden, NJ 08101

Paul K. Olson
Lincoln County Joint
Cities Committee
Box 26
Ivanhoe, MN 56142

Mr. Milford G. Gentz
Chairman
Jackson Co. Board of
Commissioners
Jackson, MN 56143

Chuck Burrows
MN DNR
3rd Fl. Cent. Ofc. Bldg.
St. Paul, MN 55155

Rodney G. Loper
Clear Air Clear Water
Unlimited
1708 University Avenue
St. Paul, MN 55114

Leland Pohlman
Lakefield, Mn 56150

Hugh Putnam, Ph.D.
P. O. Box 1121
Gainesville, FL 32602

Steve J. Gadler
MN Pollution Control Agcy.
2120 Carter Ave.
St. Paul, MN 55108

John Klaers
Western Lake Superior
Sanitary District
27th Ave. W. & Courtland
Duluth, MN 55802

Lyle R. Hobbs/John Pegors
MN Pollution Control Agcy.
1015 Torrey Bldg.
Duluth, MN 55802

Dennis W. Anderson
MN DNR
Fisheries
R. R. 3, Box 365
Brainerd, MN 56401

Tom Augustin
Larson-Peterson
522 West Main
Detroit Lakes, MN 56501

I. A. Rouslar
Bolton & Menk, Inc.
515 No. Front St.
Mankato, MN 56001

John L. Skrypek
John Enblom
MN DNR
3rd Fl. Cent. Ofc. Bldg.
St. Paul, MN 55155

Fred Burgstale
Dean Lake Township
Little Pine Route
Aitkin, MN 56431

John Keenan
Economics Laboratories
Osborn Bldg.
St. Paul, MN 55102

Sandy L. DiBrito
City of Perham
138 West Main
Perham, MN 56573

Dale R. Rossow
Dexter, MN 55926

Gyles Randall
University of Minnesota
Southern Expt. Station
Waseca, MN 56093

Art Vermedahl
Town of Munda
Route 1
Emmons, MN 56029

Marie Casey
208 First Street S.E.
Austin, MN 55912

John Pegors
Pollution Control Agency
Regional Director, Region I
Rm. 1015, Torrey Bldg.
Duluth, MN 55802

Delores Bowman
Box 268
Detroit Lakes, MN 56501

Roger E. Plumb
City of Rochester
1602 4th Street S.E.
Rochester, MN 55901

Willis Mattison
Pollution Control Agency
Regional Director, Region III
416 E. Front St.
Detroit Lakes, MN 56501

Frank Peloubet
City of Moorhead
Box 779
Moorhead, MN 56560

LaVern W. Boyd
City of Plainview
415 First Avenue S.E.
Plainview, MN 55021

Harry Johnson
Pollution Control Agency
Regional Director, Region IV
Box 286, 1104 E. College Dr.
Marshall, MN 56258

Wayne Carlson
126 N. Marshall
Litchfield, MN 56355

H. Helgeson
City of Faribault
P. O. Box 84
Faribault, MN 55021

Harry Lardherr
Pollution Control Agency
Regional Director, Region V
1200 S. Broadway
Rochester, MN 55901

F. W. Bertels
Heron Lake Improvement
Lakefield, MN 56150

V. J. Lammere
Libby, McNeill & Libby, In
1217 Third Avenue S.E.
Rochester, MN 55901

William Arderl
Minnesota Health Department
717 Delaware St. S.E.
Minneapolis, MN 55440

Chuck DeWolf
126 N. Marshall
Litchfield, MN 56355

C. P. Schmit
City of Faribault
208 N.W. First Avenue
Faribault, MN 55021

Ken Chevahier
520 First Avenue N.W.
Plainview, MN 55964

Larry Windom
Detroit Lakes Newspaper
Box 826
Detroit Lakes, MN 56501

M. T. Skodje
City of Rochester
3900 Third Avenue N.W.
Rochester, MN 55901

Dennis C. Hamich
Jackson Company
Box 64
Jackson, MN 56143

W. H. Marshall
MEPA
R.R. 10
Midland, Michigan 48640

Harold C. Ulrich
City of Owatonna
Circle Drive
Owatonna, MN 55060

Bob Harig
Mansfield Township
Route 1
Emmons, MN 56029

Glenn Oliphant
Owatonna Canning Company
100 West Winona
Owatonna, MN 55060

Ken Swaik
Faribault Canning Company
Faribault, MN 55021

Steve Perzyk
Perham Township
Route 2
Perham, MN 56573

Donald Haimes
310 Second Street S.W.
Plainview, MN 55021

Ethel Wolf
Izaak Walton League
213 12th Ave. S.W.
Austin, MN 55912

Gary E. Brown
1014 Johnson Ave.
Worthington, MN 56187

Ted Shields
00 Hanover Bldg.
480 Cedar St.
St. Paul, MN 55110

Stephen Chapman
12833 Goodview North
White Bear Lake, MN
55110

G. Robert Johnson
4344 IDS Center
Minneapolis, MN 55402

Dr. F. W. Butels, DVM
Lakefield, MN 56150

rose, VonHoltum, et al.
orthington City Attorneys
07 10th St.
orthington, MN 56187

CERTIFIFICATE OF BOARD'S AUTHORIZING RESOLUTION

I, Louis J. Breimhurst, do certify that I am the Deputy Executive Director of the Minnesota Pollution Control Agency, an agency duly authorized under the laws of the State of Minnesota, and that the following resolution was adopted at a meeting of the Agency properly called on the 16th day of December, 1980, that a quorum was present at said meeting; that the following resolution will be in the minutes of said meeting and has not been rescinded or modified:

> BE IT RESOLVED, that the Agency adopts the attached Supplemental Order Adopting Rules, which makes minor corrections in WPC 14, 15, 24, and 25 as adopted by the Agency on October 28, 1980, and that the Chairman and Executive Director are authorized to execute the Supplemental Order.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 17th day of December, 1980.

Louis J. Breimhurst
Deputy Executive Director

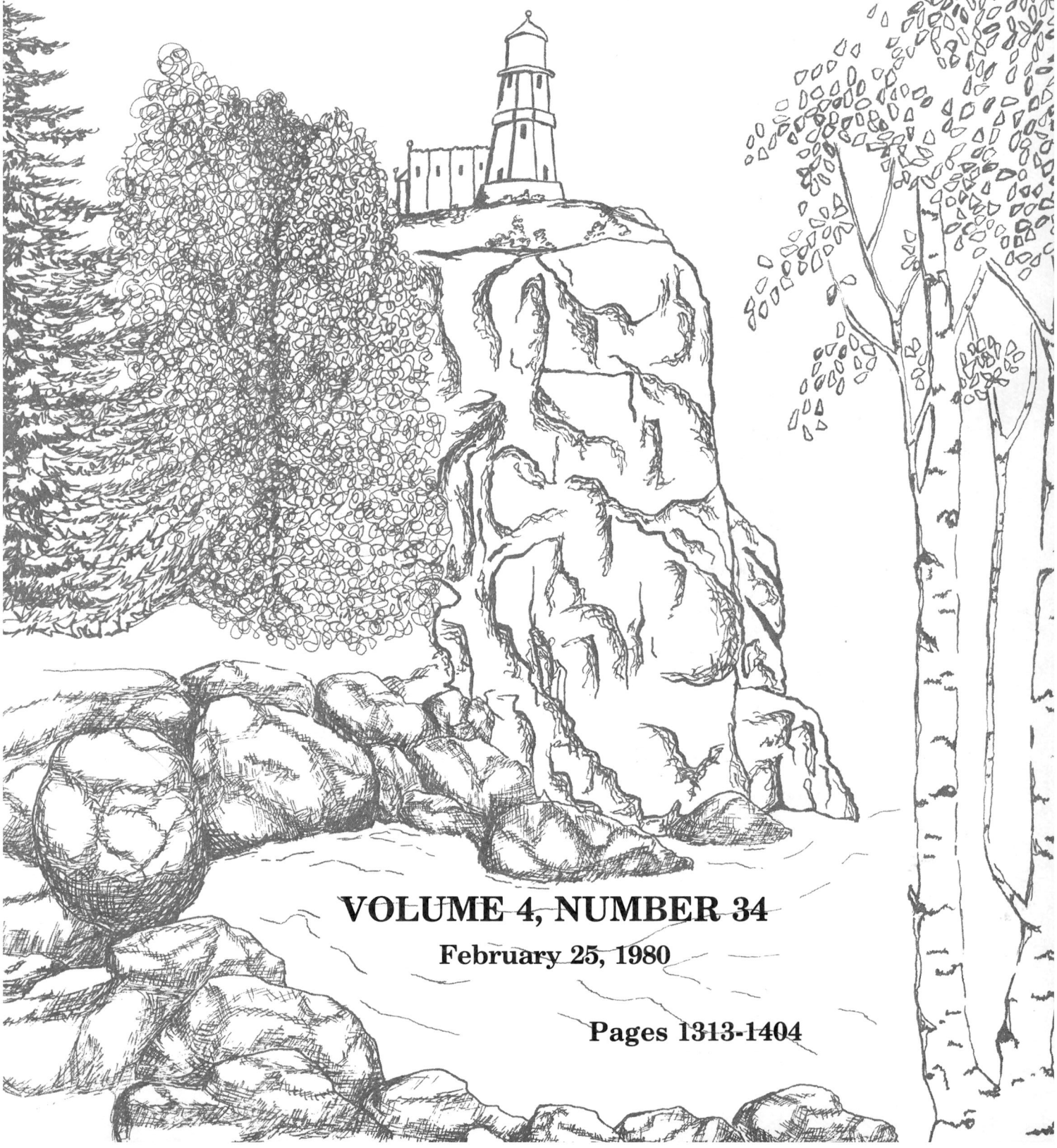
Subscribed and sworn to before me
this 17th day of December, 1980:

Notary Public

PATRICIA SCHWARZ
NOTARY PUBLIC - MINNESOTA

STATE REGISTER

STATE OF MINNESOTA



VOLUME 4, NUMBER 34

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STATE REGISTER

Volume 4 Printing Schedule for Agencies

Issue Number	*Submission deadline for Executive Orders, Adopted Rules and **Proposed Rules	*Submission deadline for State Contract Notices and other **Official Notices	Issue Date
	SCHEDULE FOR VOLUME 4		
35	Friday Feb 15	Monday Feb 25	Monday Mar 3
36	Monday Feb 25	Monday Mar 3	Monday Mar 10
37	Monday Mar 3	Monday Mar 10	Monday Mar 17
38	Monday Mar 10	Monday Mar 17	Monday Mar 24

*Deadline extensions may be possible at the editor's discretion; however, none will be made beyond the second Wednesday (12 calendar days) preceding the issue date for rules, proposed rules and executive orders, or beyond the Wednesday (5 calendar days) preceding the issue date for official notices. Requests for deadline extensions should be made only in valid emergency situations.

**Notices of Public Hearings on proposed rules are published in the Proposed Rules section and must be submitted two weeks prior to the issue date.

Instructions for submission of documents may be obtained from the Office of the State Register, Suite 415, Hamm Building, 408 St. Peter Street, St. Paul, Minnesota 55102.

The *State Register* is published by the State of Minnesota, Office of the State Register, Suite 415, Hamm Building, 408 St. Peter Street, St. Paul, Minnesota 55102, pursuant to Minn. Stat. § 15.0411. Publication is weekly, on Mondays, with an index issue in August. In accordance with expressed legislative intent that the *State Register* be self-supporting, the subscription rate has been established at $118 per year, postpaid to points in the United States. Second class postage paid at St. Paul, Minnesota, Publication Number 326630. (ISSN 0146-7751) No refunds will be made in the event of subscription cancellation. Single issues may be obtained at $2.25 per copy.

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The *State Register* is the official publication of the State of Minnesota, containing executive orders of the governor, proposed and adopted rules of state agencies, and official notices to the public. Judicial notice shall be taken of material published in the *State Register*.

Albert H. Quie
Governor

James J. Hiniker, Jr.
Commissioner
Department of Administration

Stephen A. Ordahl
Manager
Office of the State Register

Carol Anderson Porter
Editor

Paul Hoffman, Robin PanLener, Jean M. Walburg
Editorial Staff

Roy Schmidtke
Circulation Manager

David Zunker
Information Officer

Cindy Riehm
Secretarial Staff

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NOTICE

How to Follow State Agency Rulemaking Action in the *State Register*

State agencies must publish notice of their rulemaking action in the *State Register*. If an agency seeks outside opinion before promulgating new rules or rule amendments, it must publish a **NOTICE OF INTENT TO SOLICIT OUTSIDE OPINION.** Such notices are published in the **OFFICIAL NOTICES** section. Proposed rules and adopted rules are published in separate sections of the magazine.

The PROPOSED RULES section contains:

- Proposed new rules (including Notice of Hearing).
- Proposed amendments to rules already in existence in the Minnesota Code of Agency Rules (MCAR).
- Proposed temporary rules.

The ADOPTED RULES section contains:

- Notice of adoption of new rules and rule amendments (those which were adopted without change from the proposed version previously published).
- Adopted amendments to new rules or rule amendments (changes made since the proposed version was published).
- Notice of adoption of temporary rules.
- Adopted amendments to temporary rules (changes made since the proposed version was published).

All ADOPTED RULES and ADOPTED AMENDMENTS TO EXISTING RULES published in the *State Register* will be published in the Minnesota Code of Agency Rules (MCAR). Proposed and adopted TEMPORARY RULES appear in the *State Register* but are not published in the MCAR due to the short-term nature of their legal effectiveness.

The *State Register* publishes partial and cumulative listings of rule action in the MCAR AMENDMENTS AND ADDITIONS list on the following schedule:

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Issues 14-25, inclusive
Issue 26, cumulative for 1-26
Issue 27-38, inclusive
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PROPOSED RULES

Pursuant to Minn. Stat. § 15.0412, subd. 4, agencies must hold public hearings on proposed new rules and/or proposed amendment of existing rules. Notice of intent to hold a hearing must be published in the *State Register* at least 30 days prior to the date set for the hearing, along with the full text of the proposed new rule or amendment. The agency shall make at least one free copy of a proposed rule available to any person requesting it.

Pursuant to Minn. Stat. § 15.0412, subd. 5, when a statute, federal law or court order to adopt, suspend or repeal a rule does not allow time for the usual rulemaking process, temporary rules may be proposed. Proposed temporary rules are published in the *State Register*, and for at least 20 days thereafter, interested persons may submit data and views in writing to the proposing agency.

Department of Health

Proposed Amendments to Rules for Construction, Equipment, Maintenance, Operation and Licensing of Nursing Homes and Boarding Care Homes

Notice of Hearing

A public hearing concerning the proposed amendments to the rules captioned-above will be held in Room 105, Minnesota Department of Health Building, 717 Delaware Street Southeast, Minneapolis, Minnesota, on April 1, 1980, commencing at 9:30 a.m. The proposed rules may be modified as a result of the hearing process. Therefore, if you are affected in any manner by the proposed rules you are urged to participate in the rule hearing process.

Following the agency's presentation at the hearing, all interested or affected persons will have an opportunity to ask questions and make comments. Statements may be made orally and written material may be submitted. In addition, whether or not an appearance is made at the hearing, written statements or material may be submitted to George Beck, Hearing Examiner,

Public Hearings on Agency Rules March 3-10, 1980

Date	Agency and Rule Matter	Time & Place
March 4	Transportation Dept. Implementation of MN Rail Service Improvement Program Hearing Examiner: Harry S. Crump	10:00 a.m., Rm. 125, State Capitol Bldg., St. Paul, MN
March 5	Transportation Dept. Rail User Loan Guarantee Program Hearing Examiner: Harry S. Crump	same as above

Room 300, 1745 University Avenue, St. Paul, Minnesota 55104, telephone (612) 296-8108, either before the hearing or within five working days after the close of the hearing. The hearing examiner may, at the hearing, order that the record be kept open for a longer period not to exceed 20 calendar days. All such statements will be entered into and become part of the record. For those wishing to submit written statements or exhibits, it is requested that at least two (2) copies be furnished. In addition, it is suggested, to save time and avoid duplication, that

KEY: RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language. **PROPOSED RULES SECTION** — Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material."

those persons, organizations, or associations having a common viewpoint or interest in these proceedings join together where possible and present a single statement in behalf of such interests. The rule hearing procedure is governed by Minn. Stat. §§ 15.0411, 15.0417, and 15.052, and by 9 MCAR §§ 2.010-2.112 (Minnesota Code of Agency Rules). If you have any questions about the procedure, call or write the hearing examiner.

Twenty-five (25) days prior to the hearing, a Statement of Need and Reasonableness will be available for review at the agency and at the Office of Hearing Examiners. This Statement of Need and Reasonableness will include all of the evidence which the agency intends to present at the hearing to justify both the need for and the reasonableness of the proposed rule. However, additional evidence may be submitted in response to questions raised by interested persons. You are therefore urged to both review the Statement of Need and Reasonableness before the hearing and to attend the hearing. Copies of the Statement of Need and Reasonableness may be obtained from the Office of Hearing Examiners at a minimal charge.

A copy of the proposed rules is attached hereto and made a part hereof. The statutory authority of the Commissioner of Health to adopt these rules is contained in Minn. Stat. §§ 144.56, 144A.08, and 144A.10 (1978).

Any person may request notification of the date on which the hearing examiner's report will be available, after which date the agency may not take any final action on the rules for a period of five working days. Any person may request notification of the date on which the hearing record has been submitted or resubmitted to the Attorney General by the agency. If you desire to be so notified, you may so indicate at the hearing. After the hearing, you may request notification by sending a written request to the hearing examiner, in the case of the hearing examiner's report, or to the agency, in the case of the agency's submission or resubmission to the Attorney General.

Minn. Stat. ch. 10A requires each lobbyist to register with the State Ethical Practices Board within five days after he or she commences lobbying. A lobbyist is defined in Minn. Stat. § 10A.01, subd. 11, (supp. 1979) as any individual:

(a) Engaged for pay or other consideration, or authorized by another individual or association to spend money, who spends more than five hours in any month or more than $250, not including *his own* travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials; or

(b) Who spends more than $250, not including *his own* traveling expenses and membership dues, in any year for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials.

The statute provides certain exceptions. Questions should be directed to the Ethical Practices Board, 41 State Office Building, St. Paul, Minnesota 55155, telephone: (612) 296-5615.

February 11, 1980

George R. Pettersen, M.D.
Commissioner of Health

Amendments as Proposed

7 MCAR § 1.044 ~~MHD 44~~ Definitions, general provisions, issuance of licenses.

X. Variance and waivers.

1. General provisions. A nursing home or boarding care home may request that the department grant a variance or waiver from the provisions of these rules.

2. Contents of request. All requests for a variance or waiver shall be submitted to the department in writing. Each request shall contain the following information:

a. The specific rule or rules for which the variance or waiver is requested;

b. The reasons for the request;

c. The alternative measures that will be taken if a variance or waiver is granted;

d. The length of time for which the variance or waiver is requested;

e. Such other relevant information which the department shall determine is necessary to properly evaluate the request for the variance or waiver.

3. Criteria for evaluation.

a. A variance or waiver shall be granted if the department determines that:

(1) The alternative measures to be taken are equivalent or superior to those prescribed in the rule or rules;

(2) The granting of the variance or waiver will not adversely affect the health, treatment, comfort, safety or well-being of the patients or residents; and

(3) The application of the rule or rules would impose an undue burden upon the applicant.

b. The applicant shall be notified in writing of the department's decision. If a variance or waiver is granted, the notification shall specify the period of time for which the variance or waiver will be effective and the alternative measures or conditions, if any, to be met by the applicant.

4. Effect of alternative measures or conditions. All alternative measures or conditions attached to a variance or waiver shall have the force and effect of the licensure rule(s) and shall be subject to the issuance of correction orders and penalty assessments in accordance with the provisions of Minn. Stat. §§ 144.653 and 144A.10. The period of time for correction and the amount of fines specified for the particular rule for which the variance or waiver was requested shall apply.

5. Renewal.

a. Any request for the renewal of a variance or waiver shall be submitted in writing prior to its expiration date. Renewal requests shall contain the information specified in 2. above.

b. A variance or waiver may be renewed by the

department if the applicant continues to satisfy the criteria contained in 3. above and demonstrates compliance with the alternative measures or conditions imposed at the time the original variance or waiver was granted.

6. Denial, revocation or refusal to renew. The department shall deny, revoke or refuse to renew a variance or waiver if it is determined that the criteria specified in 3. above are not met. The applicant shall be notified in writing of the decision to deny, revoke or refuse to renew and informed of the right to appeal this decision.

7. Appeal procedure. An applicant may contest the denial, revocation or refusal to renew a variance or waiver by requesting a contested case hearing under the provisions of the Administrative Procedures Act, Minn. Stat. §§ 15.0411 *et seq.* The applicant shall submit, within 15 days of the receipt of the department's decision, a written request for a hearing. The request for hearing shall set forth in detail the reasons why the applicant contends the decision of the department should be reversed or modified. At the hearing, the applicant shall have the burden of proving that it satisfied the criteria specified in 3. above.

7 MCAR § 1.046 ~~MHD 46~~ General policies.

L. ~~(1)~~ Use of oxygen.

1. Oxygen~~, when~~ may be used in a nursing home ~~shall be~~ on an emergency basis. ~~only. The oxygen shall be ordered by a physician.~~ A registered nurse or other person trained in the use of oxygen shall be responsible for its administration and shall be on duty during the entire time that oxygen is administered. The following precautions shall be taken:

a. ~~(1)~~ Signs indicating "No Smoking" shall be placed at the bedside and at the entrance to the room.

b. ~~(2)~~ All matches, ash trays and other smoking material shall be removed and kept out of the room.

c. ~~(3)~~ No oil or grease shall be used on oxygen equipment.

d. ~~(4)~~ Oxygen tanks shall be securely anchored when stored or in use.

2. A nursing home which admits or retains patients in need of oxygen, on other than an emergency basis, shall comply with the following provisions:

a. The nursing home shall provide 24-hour licensed nurse coverage, unless it only admits patients who can self-administer oxygen.

b. The patient's attending physician shall submit written orders for oxygen and, if self-administration of oxygen is also ordered, the physician shall specify that the patient is mentally and physically capable of administering oxygen without the assistance of the nursing home staff.

c. The Patient Care Policy Committee shall develop and implement written policies regarding the provision of oxygen in the nursing home. These policies shall, at a minimum, include:

(1) Any limitations placed on the patient or other patients such as room assignments and smoking policies.

(2) Any restrictions placed on patients using portable oxygen equipment as to mobility within the facility or participation in activities.

(3) A mechanism to periodically assess those patients authorized to self-administer oxygen as to their continued capability to self-administer it.

(4) Precautions to be taken, in addition to those in 1.a.-d., above, to assure the safe use of oxygen.

d. All nursing homes which admit patients in need of oxygen shall inform these patients of any limitations or restrictions imposed by the nursing home prior to admission or at the time the use of oxygen is ordered by the physician.

e. The director of nursing shall be responsible for providing training to the nursing home staff regarding the procedures to be followed for the administration of oxygen, for monitoring the use and effectiveness of oxygen, special precautions to be taken, and the care and cleaning of equipment.

f. Written policies and procedures shall be developed and implemented regarding the care, storage, cleaning and sanitizing of oxygen tanks, equipment and supplies.

7 MCAR § 1.047 ~~MHD 47~~ Personnel.

A. ~~(a) Annual Tests. All employees shall, prior to employment and annually thereafter, show freedom from tuberculosis by a report of either a standard Mantoux tuberculin test or a chest X-ray. If the Mantoux test is positive or contraindicated, a chest X-ray shall be taken. The results of these tests shall be reported in writing and made a part of the employee's personnel record. (See Personnel Records, under Records and Reports, MHD 48.)~~ Tuberculosis testing of employees. The nursing home or boarding care home shall be responsible for assuring that all employees, prior to employment and as otherwise indicated in this rule, show freedom from tuberculosis in accordance with the provisions of this section. The nursing home and the boarding care home shall reimburse their employees for the costs, if any, of obtaining the necessary tests which demonstrate freedom from tuberculosis.

1. All employees, unless certified in writing by a physician to have had a positive reaction to a standard intradermal tuberculin test, shall have a standard intradermal tuberculin test with purified protein derivative (Mantoux) within 45 days prior to employment.

KEY: RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language. **PROPOSED RULES SECTION —** Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material."

a. If the tuberculin test is negative, the employee shall be considered free from tuberculosis:

b. If the tuberculin test is positive or if the employee's physician has certified a positive reaction to the tuberculin test, the employee shall submit prior to employment and annually thereafter a written report by a physician of a negative full-sized chest X-ray taken within the previous 45 days. Annual written reports of the employee's negative chest X-ray shall be required for five years after a documented positive standard intradermal tuberculin test, after which time the employee shall be considered free from tuberculosis.

2. All employees showing positive reaction to the tuberculin test who have taken a complete course of preventive therapy as directed by their physician shall be considered free from tuberculosis at the completion of the program and shall be exempt from the testing requirements of this section.

3. Written documentation of compliance with the above requirements shall be filed in the employee's personnel record.

7 MCAR § 1.048 ~~MHD 48~~ Records and reports. [Applies to both nursing homes and boarding care homes.]

A. ~~(a)~~ Patient or resident care record. An individual chart shall be kept on each patient and resident admitted to the home. All entries shall be made with a pen and signed by the person making the entry. Accurate, complete and legible records for each patient or resident from the time of admission to the time of discharge or death shall be kept current and shall be maintained in a chart holder at the nurses' or attendants' station.[1]

1. ~~(1)~~ Admission record. The admission record shall be initiated for each patient and resident within 72 hours after admission and contain identifying information including: name, previous address, social security number, sex, marital status, age, date and place of birth, previous occupation, date and hour of admission; name, address and telephone number of the nearest relative, and the person to be notified in an emergency or death; information as to funeral arrangements, if available; church affiliation and pastor; and the name of the patient's or resident's attending physician. At the time of discharge or death, this record shall be completed with the date, time, reason for discharge, discharge diagnosis and condition; or date, time and cause of death. In either case the signature and address of the responsible person to whom released shall be obtained.

2. ~~(2)~~ Medical record. The medical record shall be initiated for each patient or resident within 72 hours in accordance with 7 MCAR § 1.049 C.

3. ~~(3)~~ Filing and disposition of records. The patient or resident care record shall be incorporated into an individual folder and filed at the nurses' or attendants' station.[1] The records of discharged patients or residents shall be promptly completed and filed in the home.

Patients' or residents' medical records and patient care plans in nursing homes shall be considered confidential but they shall be made available to all persons in the home who are responsible for the care of the patient or resident and they shall be open to inspection by representatives of the department. When a patient or resident is discharged to another care facility pertinent information relative to his care shall accompany the patient or resident.

4. ~~(4)~~ Storage and preservation of records. Space shall be provided for the safe storage of patients' or residents' records at the nurses' or attendants' station[1] and in general storage. Records shall be filed so as to be readily accessible. All patients' and residents' records shall be preserved for a period of at least ~~ten (10)~~ 5 years following discharge or death.

5. ~~(5)~~ Census register. A register shall be kept in a separate bound book, listing in chronological order the names and dates of all admissions and discharges. This register shall be kept in such a manner that total admissions, discharges, deaths and patient or resident days can be calculated.

6. ~~(6)~~ Reports to the department. Reports regarding statistical data and services furnished shall be submitted on forms furnished by the department. Copies shall be retained by the home.

7. ~~(7)~~ Correspondence with department. All correspondence with the department shall be kept as a permanent, accessible record.

8. ~~(8)~~ Record of patients' and residents' funds. ~~The home shall keep a record of any personal funds, regardless of source, and of any valuables kept for a patient or resident. If purchases are made from these personal funds, proper receipts shall be kept and notations made in a separate bookkeeping system.~~

a. Admission agreement. The admission policies of the nursing home and boarding care home shall specify whether the home will accept the personal funds of patients or residents for safekeeping. If the nursing home or boarding care home accepts the personal funds of patients and residents for safekeeping, written policies regarding the handling and protection of the funds shall be established in accordance with this section.

b. Authorization.

(1) The personal funds of the patient or resident shall not be accepted for safekeeping without written authorization from the patient or resident or from the patient's or resident's legal guardian or conservator.

(2) A copy of this written authorization shall be retained in the patient's or resident's records.

c. Personal fund accounts.

(1) The personal funds of patients and residents shall not be commingled with the funds of the nursing home or boarding care home or with the funds of any person other than patients or residents of the home, unless otherwise authorized by law.

[1]A central control point for the storage of records and medications.

(2) The personal funds of patients and residents shall not be used in any way for the purpose of the nursing home, boarding care home or any other patient or resident and shall be free from any liability that the nursing home or boarding care home incurs.

(3) A person, firm, partnership, association or corporation which operates more than one facility licensed in accordance with the provisions of Minn. Stat. §§ 144.50-.56 or Minn. Stat. ch. 144A shall not commingle patient or resident funds from one facility with another.

(4) A written accounting system for the personal funds of patients and residents shall be developed and maintained.

(a) Each patient or resident and the patient's or resident's guardian, conservator, or other person designated by the patient or resident shall be allowed access to the written records of all financial arrangements and transactions involving the individual patient's or resident's funds in accordance with the nursing home's and boarding care home's written policy. Such policy shall assure that access be allowed at least one hour 5 days per week.

(b) Each patient or resident or the patient's or resident's guardian, conservator or other person designated in writing by the patient or resident shall be provided a written quarterly accounting of the financial transactions made by or on behalf of the patient or resident.

(c) An individual written record shall be maintained for each patient or resident which shall include the following items:

(i) The date, amount and source of funds deposited by or on behalf of a patient or resident.

(ii) The name of all individuals, other than the patient or resident, authorized to withdraw or expend funds from the patient's or resident's personal account.

(iii) The date and the amount of all withdrawals from the patient's or resident's personal account. Receipts for purchases made with money withdrawn from a patient's or resident's account by individuals other than the patient or resident shall be obtained and placed in the patient's or resident's record.

(5) The personal funds of any patient or resident in excess of $10,000 shall be deposited in a demand account in a financial institution authorized to do business in Minnesota, the deposits of which are federally insured, except that a facility that is operated by a county shall deposit such funds with the county treasurer. This account must be in a form which clearly indicates that the facility has only a fiduciary interest in the funds. Records shall be maintained which specify on whose behalf funds are deposited or withdrawn from this account.

(6) If a patient's or resident's personal funds are deposited in an interest bearing account, the accrued interest shall, unless otherwise specified by law, be prorated in accordance with the amounts attributable to each patient or resident and recorded on the patient's or resident's account.

(7) Upon the request of the patient or resident or the patient's or resident's guardian or conservator, the nursing home or boarding care home shall return all or any part of the patient's or resident's funds given to the nursing home or boarding care home for safekeeping, including interest, if any, accrued from deposits. The nursing home or boarding care home shall develop a policy specifying the period of time for each day of the week that funds can be withdrawn. Funds kept outside of the facility shall be returned within three banking days.

d. Discharge of patient or resident. Upon discharge of a patient or resident, unless the patient's or resident's bed is being held for anticipated readmission, all funds of that patient or resident shall be returned to the patient or resident or to an authorized individual, with a written accounting, in exchange for a signed receipt. Funds which are maintained outside of the nursing home or boarding care home shall be returned within three banking days.

e. Death of a patient or resident. Upon the death of a patient or resident, the nursing home or boarding care home shall provide a complete accounting of that patient's or resident's funds and shall return the funds to the appropriate individuals in accordance with state law.

f. Change of ownership. Prior to a change of ownership of a nursing home or boarding care home, a written verification by a public accountant of all patients' and residents' funds shall be provided to the new licensee in exchange for a signed receipt.

9. ~~(9)~~ Policy records. All policies and procedures adopted by the home shall be placed on file and be made readily accessible to the personnel.

10. ~~(10)~~ Unusual occurrences. Any occurrence of food poisoning or reportable disease shall be reported immediately to the department.

11. ~~(11)~~ Employees' personnel records. A current personnel record shall be maintained for each employee and placed on file in a locked cabinet in the office of the administrator, person in charge or the business office. These records shall be available to representatives of the department and shall contain the following information:

a. ~~(aa)~~ Person's name, address, telephone number, age and birth date; sex, marital status, Minnesota license or registration number, if applicable; name, address and telephone number of person to be called in case of emergency; social security number; and similar identifying data.

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b. ~~(bb)~~ Resume of individual's training, experience and previous employment; recommendations and references from previous employers.

c. ~~(cc)~~ Dates and results of any pre-employment physical examination and of any subsequent physical examinations.[2]

d. ~~(dd)~~ Date of employment in home; type of position currently held in home; hours of work; attendance and salary records.

e. ~~(ee)~~ The record of all illnesses and accidents.

f. ~~(ff)~~ A listing of all institutes or training courses attended.

g. ~~(gg)~~ At least annual evaluations concerning employee's work performance.

h. ~~(hh)~~ Date of resignation or discharge and reason for leaving.

7 MCAR § 1.049 ~~MHD 49~~ Medical and dental services.

C. ~~(c)~~ Physicians' examinations and orders.

1. ~~(1)~~ Each patient or resident shall have an admission medical history and complete physical examination performed and recorded by a physician within five (5) days prior to or within 72 hours after admission. The medical record shall include: the report of the admission history and physical examination; the admitting diagnosis and report of subsequent physical examinations; ~~a report of a standard Mantoux tuberculin test or, if the Mantoux test is positive or contraindicated, a chest X-ray within three (3) months in advance of admission and as indicated thereafter;~~ a report of a negative full-sized chest X-ray taken within 45 days prior to admission; if chest X-ray positive, documentation from a physician of freedom from active tuberculosis disease, or documentation from a physician of completion of a preventive tuberculosis therapy; reports of appropriate laboratory examinations; general medical condition including disabilities and limitations; instructions relative to the patient's or resident's total program of care; written orders for all medications with stop dates, treatments, special diets and for extent or restriction of activity; physician's orders and progress notes; and condition on discharge or transfer, or cause of death.

2. ~~(2)~~ Each nursing home patient shall be examined by a physician at least every 6 months and each boarding care home resident at least annually or more often if indicated by the clinical condition. A progress note shall be recorded in the patient's or resident's record at the time of each examination.

3. ~~(3)~~ If orders for the immediate care of a patient or resident are not available at the time of admission, the emergency physician shall write temporary orders which are effective for a maximum of 72 hours.

7 MCAR § 1.052 A.1. ~~MHD 52(a)(1)~~ Patient and resident units.

a. ~~(1)~~ A comfortable bed at least 36 inches wide, good springs and a clean, firm, comfortable mattress and mattress pad. At least one clean, comfortable pillow with extra pillows available to meet the patient's needs. Clean, lightweight blankets and bed linen in good condition and of the proper size shall be kept on hand for use at all times. Clean sheets and pillow cases shall be furnished at least once a week. Each bed shall have a washable bedspread. A moisture-proof mattress cover or rubber or plastic sheeting shall be provided for mattresses of all bed patients and for other beds as necessary. Rollaway type beds, cots, or folding beds ~~or double beds~~ shall not be used.

b. The nursing home and boarding care home shall develop a written policy regarding the use of double beds.

7 MCAR § 1.053 ~~MHD 53~~ Medications.

F. ~~(f)~~ Disposition of medications.

1. If authorized by the attending physician or the physician in charge, medications belonging to patients shall be given to them when discharged or transferred. This shall be recorded on the patient's chart. Unused portions of controlled substances shall be handled by contacting the ~~Bureau of Narcotics and Dangerous Drugs. The Bureau will furnish the necessary instructions and appropriate forms.~~ Minnesota Board of Pharmacy who shall furnish the necessary instructions and forms, a copy of which shall be kept on file in the home for two years. Any other unused portions of prescription drugs remaining in the nursing home after the death or discharge of the patient for whom they were prescribed, or any prescriptions discontinued permanently, shall be destroyed by the supervising nurse in the nursing home by flushing them into the sewer system and removing and destroying the labels from the containers~~.~~, or handled in accordance with F.2., below. A notation of any such destruction giving date, quantity, name of medication and prescription number shall be recorded on the patient's chart. Such destruction shall be witnessed and the notation signed by both persons.

2. Drugs and prescribed medications, other than controlled substances, used in nursing homes may be returned to the dispensing pharmacy in accordance with the provisions of the Minnesota Board of Pharmacy rule, 7 MCAR § 8.032 B.

7 MCAR § 1.055 ~~MHD 55~~ Dietary service and sanitation.

U. ~~(u)~~ Dishwashing. The dishwashing operation shall provide proper separation in the handling of soiled and clean dishes and utensils, and shall conform with the following procedures for washing, rinsing, sanitizing and drying. ~~Chemical disinfection is not acceptable.~~

1. ~~(1)~~ Machine washing of dishes and utensils.

a. Hot water sanitizing. The dishwashing machine shall be operated in accordance with the manufacturer's instructions which shall be posted nearby; see MHD 67(clii). The flow pressure shall be maintained between 15 and 25 pounds per square inch (psi) at the dishwasher. The temperatures of the water shall be maintained at 140°-160°F. for the washing cycle, and at 170°F. for the rinsing and sanitizing cycle, both temperatures measured at tray level. If the same person handles both

[2]Annual physical examinations are recommended.

soiled and clean dishes, he shall wash his hands between operations. Dishes and utensils shall be air dried.

b. Chemical sanitizing.

(1) Equipment.

(a) Dishwashing machines using chemicals for sanitizing shall bear labeling indicating that the machine has been approved by the National Sanitation Foundation.

(b) Each dishwashing machine shall be equipped with an audible signaling device which indicates when the detergent supply or chemical sanitizing supply is empty. The signaling device shall be maintained in an operating condition.

(c) The pressure of final rinse water supplies to spray-type dishwashing machines shall not be less than 15 or more than 25 pounds per square inch measured in the water line immediately adjacent to the final rinse control valve. A pressure gauge shall be provided immediately upstream from the final rinse control valve to permit checking the flow pressure of the final rinse water.

(d) The clean dish counter shall provide space for at least 4 racks of clean and sanitized dishes and utensils.

(2) Operation.

(a) The dishwashing machines shall be operated in accordance with the manufacturer's instructions which shall be posted nearby.

(b) The temperature of the wash water shall not be less than 140°F. (60°C.)

(c) Chemicals added for sanitation purposes shall be automatically dispensed in accordance with the manufacturer's specifications for time and concentration.

(d) The chemical sanitizing rinse water temperature shall not be less than 75°F. (24°C.) nor less than the temperature specified by the chemical manufacturer.

(e) All chemical sanitizers used in the dishwashing machines shall bear labeling indicating that the chemical sanitizers are registered by the Environmental Protection Agency and shall contain specific instructions for use.

(f) A test kit or other device that accurately measures the parts per million concentration of the sanitizing solution shall be available and used in accordance with this section.

(i) The concentration level shall be tested in accordance with the manufacturer's instruction each time the machine is used.

(ii) The results of the testing shall be recorded in a written log which specifies the result of the test and shall be signed by the individual making the test. The log shall include the name of the chemical used and the manufacturer's recommended concentration of the chemical. This written log shall be maintained for the previous 3 months.

(g) If the same person handles both soiled and clean dishes, he shall wash his hands between operations.

(h) Dishes and utensils shall be air dried.

(i) The dishwashing machine shall be thoroughly cleaned at least once a day in accordance with the manufacturer's recommendation.

2. ~~(2)~~ Hand washing of pots and pans. A three-compartment scullery sink (see MHD 65 (b2aa3)) shall be utilized as follows for a complete washing cycle by hand of pots and pans. The first comparment is for soaking and washing, the second compartment is for rinsing, and the third compartment for sanitizing. Sanitizing is accomplished by complete immersion for at least two (2) minutes in 170°F. water. A unit heater capable of maintaining the water in the sanitizing compartment at 170°F. shall be provided, including a long handled wire basket for the removal of the sanitized items. The temperature shall be monitored with a thermometer. If the mechanical dishwasher is used for sanitizing of pots and pans, a sanitizing comparmtent is not required. Only air drying is permitted.

7 MCAR § 1.057 ~~MHD 57~~ Schedule of fines for uncorrected deficiencies.
[Applies to both nursing homes and boarding care homes.]

A. ~~(a)~~ A $50 penalty assessment will be issued under the provisions of Minn. Stat. § 144.653, subd. 6 (1974) for non-compliance with correction orders relating to the sections of these rules listed below.

MHD 44 (o); (p); (q); (s); (t); (u)
MHD 45 (a) (3); (f); (h)(1); (h)(2)(aa); (h)(2)(ff); (h)(4)
MHD 46 (a); (b); (j); (k)
MHD 47 (c); (e)
MHD 48 (a)(4); (a)(5); (a)(6); (a)(7); (a)(9); (a)(11)
MHD 50 (a); (j)
MHD 52 (a)(2); (a)(3); (a)(4); (a)(9); (d); (e)
MHD 54 (a)(7); (b)(5)
MHD 55 (i)
MHD 56 (f); (h)
MHD 64 (a)(22); (b)(15)

B. ~~(b)~~ A $250 penalty assessment will be issued under the provisions of Minn. Stat. § 144.653, subd. 6 (1974) for non-compliance with correction orders relating to all other sections of these regulations not specifically enumerated in A. ~~(a)~~ above or C.

C. Nursing homes.

1. A $50 penalty assessment will be assessed on a daily basis to a nursing home for non-compliance with correction orders relating to the following rules:

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a. 7 MCAR § 1.048 A.4.

b. 7 MCAR § 1.048 A.8.a.

c. 7 MCAR § 1.048 A.8.b.(2)

d. 7 MCAR § 1.048 A.8.c.(3)

e. 7 MCAR § 1.048 A.8.c.(5)

f. 7 MCAR § 1.048 A.8.c.(6)

g. 7 MCAR § 1.048 A.8.d.

h. 7 MCAR § 1.048 A.8.e.

i. 7 MCAR § 1.048 A.8.f.

j. 7 MCAR § 1.052 A.1.b.

k. 7 MCAR § 1.053 F.2.

l. 7 MCAR § 1.055 U.1.b.(1)(d)

m. 7 MCAR § 1.064 A.3.f.(1)(a)

2. A $150 penalty assessment will be assessed on a daily basis to a nursing home for non-compliance with correction orders relating to the following rules:

a. 7 MCAR § 1.046 L.2.b.

b. 7 MCAR § 1.046 L.2.c.

c. 7 MCAR § 1.046 L.2.d.

d. 7 MCAR § 1.046 L.2.e.

e. 7 MCAR § 1.046 L.2.f.

f. 7 MCAR § 1.047 A.

g. 7 MCAR § 1.048 A.8.b.(1)

h. 7 MCAR § 1.048 A.8.c.(1)

i. 7 MCAR § 1.048 A.8.c.(2)

j. 7 MCAR § 1.048 A.8.c.(4)(a)

k. 7 MCAR § 1.048 A.8.c.(4)(b)

l. 7 MCAR § 1.048 A.8.c.(4)(c)

m. 7 MCAR § 1.048 A.8.c.(7)

n. 7 MCAR § 1.055 U.1.b.(1)(a)

o. 7 MCAR § 1.055 U.1.b.(1)(b)

p. 7 MCAR § 1.055 U.1.b.(1)(c)

q. 7 MCAR § 1.055 U.1.b.(2)(a)

r. 7 MCAR § 1.055 U.1.b.(2)(b)

s. 7 MCAR § 1.055 U.1.b.(2)(c)

t. 7 MCAR § 1.055 U.1.b.(2)(d)

u. 7 MCAR § 1.055 U.1.b.(2)(e)

v. 7 MCAR § 1.055 U.1.b.(2)(f)

w. 7 MCAR § 1.055 U.1.b.(2)(g)

x. 7 MCAR § 1.055 U.1.b.(2)(h)

y. 7 MCAR § 1.055 U.1.b.(2)(i)

3. A $250 penalty assessment shall be assessed on a daily basis to a nursing home for non-compliance with correction orders relating to the following rules:

a. 7 MCAR § 1.046 L.2.a.

b. 7 MCAR § 1.049 C.1.

c. 7 MCAR § 1.064 A.3.f.(1)(b)

7 MCAR § 1.058 Allowable time periods for correction.

A. Allowable time periods for correction. The allowable time periods for complying with a correction order issued by the department shall be as follows:

1. 7 MCAR § 1.046.	
a. L.2.a.	30 days
b. L.2.b.	14 days
c. L.2.c.	14 days
d. L.2.d.	14 days
e. L.2.e.	14 days
f. L.2.f.	14 days
2. 7 MCAR § 1.047 A.	14 days
3. 7 MCAR § 1.048.	
a. A.4.	14 days
b. A.8.a.	30 days
c. A.8.b.	14 days
d. A.8.c.(1)	30 days
e. A.8.c.(2)	30 days
f. A.8.c.(3)	30 days
g. A.8.c.(4)(a)	14 days
h. A.8.c.(4)(b)	30 days
i. A.8.c.(4)(c)	30 days
j. A.8.c.(5)	30 days
k. A.8.c.(6)	30 days
l. A.8.c.(7)	14 days
m. A.8.d.	14 days
n. A.8.e.	14 days
o. A.8.f.	30 days
4. 7 MCAR § 1.049 C.1.	14 days
5. 7 MCAR § 1.052 A.1.b.	30 days
6. 7 MCAR § 1.053 F.2.	30 days
7. 7 MCAR § 1.055.	
a. U.1.b.(1)(a)	60 days
b. U.1.b.(1)(b)	30 days
c. U.1.b.(1)(c)	14 days
d. U.1.b.(1)(d)	60 days
e. U.1.b.(2)(a)	14 days

f. U.1.b.(2)(b)	14 days
g. U.1.b.(2)(c)	14 days
h. U.1.b.(2)(d)	14 days
i. U.1.b.(2)(e)	14 days
j. U.1.b.(2)(f)	14 days
k. U.1.b.(2)(g)	14 days
l. U.1.b.(2)(h)	14 days
m. U.1.b.(2)(i)	14 days
8. 7 MCAR § 1.064.	
a. A.3.f.(1)(a)	30 days
b. A.3.f.(1)(b)	14 days

B. Extension of the allowable time period for correction.

1. Request for extension. The administrator of the nursing home may request an extension of the allowable time for correction for those rules specified in A., above. The request for extension of the allowable period of time for correction shall be received by the department prior to the expiration of the time period cited in the correction order. The failure to submit a request within that time period shall result in a denial of the request.

2. Contents of request.

a. All requests for an extension of the allowable time period for correction shall contain the following information:

(1) The identification of the rule or rules for which the correction order was issued;

(2) The date the correction order was received;

(3) The allowable time period for correction;

(4) The reasons for requesting an extension of the allowable time period for correction which shall specify, in detail, the steps that have been taken by the nursing home to attain compliance;

(5) The length of additional time required to attain compliance with the correction order; and

(6) Such other relevant information which the department shall determine is necessary to evaluate the request for the extension of time.

b. If the request for an extension is made orally, the administrator shall mail, within 24 hours, a written confirmation which contains the information specified under 2.a., above.

3. Criteria for evaluation.

a. A request for an extension of the allowable period of time shall be granted if the department determines that:

(1) Continued non-compliance with the rule for the length of the extension will not jeopardize the health, treatment, comfort, safety or well-being of the patients; and

(2) The nursing home:

(a) Has entered into a contract to obtain the materials, labor, personnel, or other items necessary to obtain compliance with the correction order, but the supplies, contractor or individual has failed to perform or is unable to perform within the time period specified and the inability of the nursing home to comply with the correction order is due solely to that failure; or

(b) Has otherwise made a diligent good faith effort to comply with the correction order since its receipt.

b. The administrator shall be notified, in writing, of the department's decision. If an extension of time is granted, the notification shall specify the additional time allowed for correction.

4. Renewal.

a. Any request for the renewal of an extension of the allowable time period for correction shall be made in accordance with B.1. and 2., above.

b. Approval for the renewal of an extension of the allowable time period for correction shall be granted if the department determines that the nursing home continues to meet the criteria contained in B.3., above.

5. Denial. The department shall deny any request for an extension of the allowable time period for correction if it determines that the criteria specified in B.3., above, are not met. The denial shall be in writing and shall list the reasons for the denial.

7 MCAR § 1.064 A.3.f. ~~MHD 64(a)(3)(ff)~~ Bedroom doors.

(1) ~~(ff1)~~ Existing and new. ~~There shall be no locks on patient room doors.~~

(a) The nursing home shall develop a written policy regarding the use of locks on patient bedroom doors. The policy shall address whether or not doors can be locked while the patient is in the room.

(b) Any locks installed on patient bedroom doors shall be so arranged that they can be locked only from the corridor side. All such locks shall permit exit from the room by a simple operation without the use of a key. All locks shall be openable with a master key which is located at each nursing station.

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Department of Health Health Systems Division

Notice of Public Hearing to Solicit Outside Opinion on Certain Rules Relating to the Licensing of Nursing Homes

Notice is hereby given that a public hearing will be held in Room 105 of the Minnesota Department of Health, 717 Delaware Street S.E., Minneapolis, Minnesota on April 2, 1980 at 9:30 a.m. and continuing until all persons have had an opportunity to be heard. The purpose of the hearing will be to obtain public comment concerning certain nursing home rules.

The Legislative Commission to Review Administrative Rules has requested that the Department of Health hold a public hearing to solicit outside opinion regarding certain provisions contained in the department's rules for the licensing and regulation of nursing homes. Testimony received at this hearing will assist the department in determining whether or to what extent these rules should be amended. The rules which shall be reviewed during this meeting are as follows:

MHD 50(e)(1)—Nursing staff.

The nursing home shall have on duty at all times a sufficient number of qualified nursing personnel which includes registered nurses, licensed practical nurses, nurses aides and orderlies to meet the needs of the patients on all nurses' stations, on all floors and in all buildings if more than one building is involved. This includes relief duty, weekends and vacation replacements. On and after July 1, 1973, a minimum of two (2) hours of nursing personnel per patient per 24 hours plus additional qualified nursing staff commensurate with the needs of the patients shall be provided.

MHD 54(a)(5)—Laundering of linen.

Linen shall be washed in commercial-type washers. The water temperature inside the washers shall be at least 160°F. during the main washing and rinsing cycles for a total time of at least 30 minutes, excluding time for filling and draining. Contaminated linen shall be thoroughly preflushed separately before being introduced to the main washing and rinsing process.

MHD 64(a)(1)(aa)—Bedroom capacities.

New construction: At least 5% of the rooms shall be designed for single person occupancy (1 bed), and shall have private toilet rooms. At least 75% of the beds shall be located in rooms designed for one or two beds. No room shall have more than four (4) beds.

All persons will be afforded the opportunity to be heard through the presentation of oral and written statements. Evidence submitted for consideration should be pertinent to the matter at hand. Written material received by the Department of Health will become part of the hearing record. For further information, contact Michael Tripple at the above address, or by phone at (612) 296-5418.

February 11, 1980

George R. Pettersen, M.D.
Commissioner of Health

Housing Finance Agency

Proposed Amendments to Rules Relating to the Home Improvement Grant Program, the Definition of Developmentally Disabled, and American Indian Housing Programs

Notice of Hearing

Notice is hereby given that a public hearing will be held in the above entitled matter in the Capitol Square Building, Conference Room A, 550 Cedar Street, St. Paul, Minnesota, 55101, on Friday, March 28, 1980, commencing at 9:00 a.m. and continuing until all interested or affected persons have had an opportunity to participate.

All representatives of associations or other interested groups and all interested or affected persons will have an opportunity to be heard concerning the adoption of the proposed rules captioned above by submitting either oral or written data, statements or arguments. Statements or briefs may be submitted by mail without personally appearing at the hearing to Natalie Gaull, Hearing Examiner, at Room 300, 1745 University Avenue, St. Paul, Minnesota 55104, telephone (612) 296-8114. For those wishing to submit written statements or exhibits, it is requested that at least three (3) copies be furnished. In addition, it is suggested to save time and avoid duplication, that those persons, organizations or associations having a common viewpoint or interest in these proceedings join together where possible and present a single statement on behalf of such interests. All such statements will be entered into and become part of the record. The conduct of the hearing will be governed by the rules of the Office of Hearing Examiners.

Notice is hereby given that 25 days prior to the hearing a Statement of Need and Reasonableness will be available for review at the agency and at the Office of Hearing Examiners. This Statement of Need and Reasonableness will include a summary of all of the evidence which will be presented by the agency at the hearing, justifying both the need for and the reasonableness of the proposed rules. Copies of the Statement of Need and Reasonableness may be obtained from the Office of Hearing Examiners at a minimal charge.

After the public hearing, written material may be submitted to the hearing examiner and recorded in the hearing record for five working days, or for a longer period not to exceed 20 calendar days if so ordered by the hearing examiner.

Notice: Any person may request notification of the date on which the hearing examiner's report will be available, after which date the agency may not take any final action on the rules for a period of five working days. Any person may request notification of the date on which the hearing record has been submitted (or resubmitted) to the Attorney General by the agency. If you desire to be so notified, you may so indicate at the hearing. After the hearing you may request notification by sending a written request to the hearing examiner (in the case of the hearing examiner's report) or to the agency (in the case of the agency's submission or resubmission to the Attorney General).

The agency proposes to adopt rules of the Minnesota Housing Finance Agency Relating to the Home Improvement Grant Program, the Definition of Developmentally Disabled, and American Indian Housing Programs. Notice: The proposed rules are subject to change as a result of the rule hearing process. The agency, therefore, strongly urges those who are potentially affected in any manner by the substance of the proposed rules to participate in the rule hearing process.

A copy of the proposed rules is attached hereto. One free copy may be obtained by writing to the Executive Director, Minnesota Housing Finance Agency, 333 Sibley Street, St. Paul, Minnesota, 55101. Additional copies will be available at the door on the date of the hearing.

The agency's statutory authority to promulgate the proposed rules is contained in Minn. Stat. §§ 462A.03, subd. 10, 462A.06, subds. 4 and 11, and 462A.07, subd. 14.

Under Minn. Stat. § 10A.01, subd. 11 a lobbyist must register with the State Ethical Practices Board within five (5) days after he commences lobbying. According to the statute:

"Lobbyist" means any individual:

(a) Engaged for pay or other consideration, or authorized by another individual or association to spend money, who spends more than five hours in any month or more than $250, not including *his own* travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials; or

(b) Who spends more than $250, not including *his own* traveling expenses and membership dues, in any year for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials.

"Lobbyist" does not include any:

(a) Public official or employee of the state or any of its political subdivisions or public bodies acting in his official capacity;

(b) Party or his representative appearing in a proceeding before a state board, commission or agency of the executive branch unless the board, commission or agency is taking administrative action;

(c) Individual while engaged in selling goods or services to be paid for by public funds;

(d) News media or their employees or agents while engaged in the publishing or broadcasting of news items, editorial comments or paid advertisements which directly or indirectly urge official action;

(e) Paid expert witness whose testimony is requested by the body before which he is appearing, but only to the extent of preparing or delivering testimony; or

(f) Stockholder of a family farm corporation as defined in § 500.24, subd. 1, who does not spend over $250, excluding *his own* travel expenses, in any year in communicating with public officials; or

(g) Party or his representative appearing to present a claim to the legislature and communicating to legislators only by the filing of a claim form and supporting documents and by appearing at public hearings on the claim.

Questions regarding only lobbying should be directed to the State Ethical Practices Board, Room 41, State Office Building, Wabasha Street, St. Paul, Minnesota, 55155; telephone (612) 296-5615.

February 8, 1980

James J. Solem
Executive Director

Amendments as Proposed

12 MCAR § 3.002 O. "Persons and families of low and moderate income" means:

3. with respect to Home Improvement Grants to be made by the agency, those persons and families whose adjusted income does not exceed ~~$5,000~~ $6,000 and whose assets, excluding the property to be improved, does not exceed $25,000; and

12 MCAR § 3.002 P. "Developmentally disabled" means an individual who has a severe, chronic disability which:

~~1. is attributable to mental retardation, cerebral palsy, epilepsy, or other neurological condition found to be closely related to mental retardation or to require treatment similar to that for mentally retarded individuals;~~

~~2. originated at an age earlier than 18 years of age, is continuing, and can be expected to continue indefinitely; and~~

~~3. constitutes a substantial handicap to the individual.~~

1. is attributable to a mental or physical impairment or a

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combination of mental and physical impairments;

2. is manifested before the person attains the age of twenty-two;

3. is likely to continue indefinitely;

4. results in substantial functional limitations in three or more of the following areas of major life activity; (i) self-care (ii) receptive and expressive language (iii) learning (iv) mobility (v) self-direction (vi) capacity for independent living and (vii) economic sufficiency;

5. reflects the person's need for a combination and sequence of special interdisciplinary or generic care, treatment, or other services which are of lifelong or extended duration.

12 MCAR § 3.061 ~~**C. The agency shall submit all plans to the applicable Regional Development Commission (including the Metropolitan Council) and shall consider the comments and recommendations of such commissions with respect to the extent to which the plan assists in satisfying the housing needs for such region.**~~

12 MCAR § 3.061 ~~**D.**~~ **C.** The agency shall allocate the ~~total~~ funds available at any time ~~ratably~~ among the several regions, based upon data assembled by the agency and accurately reflecting housing needs and related factors. The agency shall submit its proposed allocation of funds to the applicable Regional Development Commission (including the Metropolitan Council) and shall consider the comments and recommendations of the commissions with respect to the extent to which the proposed allocation assists in satisfying the housing needs for the region.

12 MCAR § 3.096 Duration of loan. No loan shall be made for a term in excess of thirty (30) years on a structure or structures designed for occupancy by not more than four families, or a dwelling unit in a planned unit development or a condominium. The maximum term of a rehabilitation loan for an existing structure or structures designed for occupancy by not more than four families or a dwelling unit in a planned unit development or a condominium shall not exceed ~~twelve (12)~~ fifteen (15) years. For all other residential structures, the maximum term of any loan including a rehabilitation loan, granted pursuant to the Act, Plan, and these Rules shall not exceed forty (40) years.

Chapter 13: Urban Indian Housing Loan Program

12 MCAR § 3.150 Scope of rules. The rules provided in 12 MCAR §§ 3.150 to 3.157 shall govern the implementation of the urban Indian housing loan program established in Minn. Stat. § 462A.07, subd. 15.

12 MCAR § 3.151 Definition. "Administrator" means a nonprofit entity or local community as defined by 12 MCAR § 3.002 or Indian tribal organization eligible pursuant to 12 MCAR §§ 3.090 to 3.108 which carries out a loan program of housing for low and moderate income American Indians using urban Indian housing loan program funds.

12 MCAR § 3.152 The urban Indian housing loan program. The urban Indian housing loan program provides loans for housing for American Indian persons and families residing in urban areas of the state. The program is implemented through administrators selected by the agency after review of proposals submitted pursuant to these rules. A proposal by an administrator may serve all or a portion of the eligible areas of the State of Minnesota. The eligible areas are the metropolitan area as defined in Minn. Stat. § 473.121, subd. 2 and any city with a population greater than 50,000 persons. To the extent practicable, the agency shall allocate urban Indian loan program funds equitably among eligible areas, based upon American Indian population estimates. To assist potential applicants, the agency shall provide, upon request, information describing potential uses of urban Indian housing loan program funds and may provide additional technical assistance upon request by the applicants.

12 MCAR § 3.153 Proposal from administrators.

A. The agency shall announce the availability of urban Indian loan program funds by publishing in the *State Register* a Notice of Request For Proposals and by sending such notice to the persons and organizations on the agency's urban Indian mailing list. The notice shall specify that interested parties should obtain a complete Request for Proposals from the agency and shall specify the period in which proposals may be submitted, which period may not be less than 60 days from the date on which the notice is published in the *State Register*.

B. The Request for Proposals shall be prepared by the agency and made available to interested parties as provided in paragraph A. The Request for Proposals shall contain a description of the purposes and objectives of the urban Indian housing loan program, the content of a proposal, and the agency process for selecting proposals.

C. The Request for Proposals shall provide that each proposal submitted to the agency shall contain:

1. evidence that the organization submitting the proposal is a nonprofit entity, local community or Indian tribal organization and evidence that the organization has the capacity to successfully carry out the program;

2. a proposed program which describes, in adequate detail as determined by the agency:

a. the communities or portions thereof to be served.

b. the housing needs of the American Indians residing in the areas to be served and the manner in which the proposed program assists in meeting those needs.

c. a financial description of the program, including the dollar amount of program funds requested, types of loans to be made, the terms of the loans and the costs of program administration and the manner in which these costs will be paid.

d. a description of the manner in which the program will be implemented and operated, including the duration of the program method of outreach and selection of loan recipients, and procedures for servicing loans over the life of the program.

e. the source of any funds other than the urban Indian housing loan program to be included in the program of the applicant, and evidence that these funds will be available.

3. any additional information which the agency in its reasonable discretion deems necessary after initial review of the proposal to evaluate the merits of the program. The agency may meet with representatives of the organizations submitting proposals to review proposals and request such additional information.

D. The agency shall provide a copy of each proposal it receives to the Advisory Council on Urban Indians, and shall forward to the Advisory Council a copy of any additional written material received regarding each proposal. The Advisory Council on Urban Indians shall review all proposals. Upon request of the Advisory Council, the organization submitting a proposal shall present the proposal before the Advisory Council.

E. The Request For Proposals shall provide that an organization submitting a proposal which meets the objectives of the urban Indian housing loan program and which the organization determines is not best presented in the form of proposal required by the Request For Proposals may submit the proposal in any form desired, provided that the organization also submits a proposal meeting the requirements of the Request for Proposals.

12 MCAR § 3.154 Additional requirements. Each program must provide for loans for the construction, purchase, or rehabilitation of residential housing. Except as otherwise provided herein and by 12 MCAR § 3.034, each person or family initially occupying a dwelling unit financed pursuant to the act, program and these rules shall be an American Indian as defined by Minn. Stat. § 254A.02, subd. 11 or an American Indian family as defined by 12 MCAR § 3.092, and of low and moderate income, as defined by 12 MCAR § 3.002; provided that developers of multifamily housing developments need not be American Indians or low and moderate income. In obtaining assistance under this program, Indian persons and families shall not be discriminated against on the basis of tribal affiliation or tribal enrollment.

12 MCAR § 3.155 Application of other rules. 12 MCAR §§ 3.093 to 3.098, 3.101 and 3.105 shall apply to programs under this chapter, except that loans may be made with appropriated funds without interest.

12 MCAR § 3.156 Selection of proposals. The agency may approve a program of an administrator in whole or in part, and may approve a program for a limited geographic area. In determining whether or not to approve applications to administer programs under the urban Indian program, the members shall examine the following facts and make their determinations thereon:

A. Any written comments received by the agency from the Advisory Council regarding the applications for the proposed programs. The agency shall consider the conclusions of the Advisory Council and the reasons given in support of the conclusions, including the council's evaluation of the applications under the criteria listed in paragraphs B. and C.;

B. The extent to which the program will assist in serving the housing needs of the urban Indian community. Factors to be considered include:

1. the extent to which the program duplicates or is in conflict with other programs which provide housing for urban Indians and the extent to which the program will demonstrate the feasibility of alternative methods for providing housing for urban Indians.

2. the geographic location of the proposed program and the percentage of the Minnesota urban Indian community residing in the geographic area or areas to be served, as determined by the agency according to population data.

3. the method of program administration, the time required to implement the program, and the capacity of the administrator to carry out the program.

4. the extent to which American Indians are involved in the administration of the program, and in the ownership, management, and labor force of any contractors and subcontractors intended to be employed in the program.

C. The extent to which the use of appropriated funds reduces housing costs to American Indian persons or families and the extent to which the program combines the proceeds of appropriated funds with proceeds of bonds of the agency, or of other issues of bonds, or otherwise uses available money to leverage the appropriated funds.

12 MCAR § 3.157 Agreements. Any decision by the agency to select a proposal to administer funds pursuant to these rules shall be contingent upon the execution of an agreement, satisfactory to the agency, between the agency and the administrator. The agreement shall include a detailed description of the program to be administered and shall provide:

A. The conditions for repayment, without interest of all funds advanced by the agency;

B. The circumstances under which the agency shall provide technical assistance to the administrator and the amount of remuneration to be received by the agency from the administrator for its assistance and monitoring;

C. That, except for loans made under programs administered by the agency under other programs, the final decision on applications for loans to eligible borrowers shall be made by the administrator and that the duties of the originator and rights of

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the agency shall be the same as those provided for the tribe, band, and communities and the agency pursuant to 12 MCAR §§ 3.104, 3.107, and 3.108; and

D. Any other provision deemed necessary by MHFA in its reasonable discretion to assure that the program will be carried out.

Minnesota Pollution Control Agency

Proposed Amendments and Renumbering of WPC 14, 15, 24 and 25, and Proposed Repeal of WPC 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 26, 29, 31 and 32

Notice of Hearing

Notice is hereby given that a hearing in the above-entitled matter will be held at the following times and locations:

1. Monday, March 31, 1980, 9:30 a.m. and the rest of the week

MPCA Board Room
1935 West County Road B-2
Roseville, Minnesota

(Please note that the hearing on April 1, 1980, will not be held in the Board Room but will be held in a place announced by the hearing examiner on March 31.)

2. Monday, April 7, 1980, 7:00 p.m. and Tuesday, April 8, 1980, 9:00 a.m.

Building IL
Room 219
Southwest State College
Marshall, Minnesota

3. Tuesday, April 8, 1980, 7:00 p.m. and Wednesday, April 9, 1980, 9:00 a.m.

City Administration Building
1025 Roosevelt Avenue
Detroit Lakes, Minnesota

4. Wednesday, April 9, 1980, 7:00 p.m. and Thursday, April 10, 1980, 9:00 a.m.

County Services Building
Laurel Street
Brainerd, Minnesota

5. Thursday, April 10, 1980, 7:00 p.m. and Friday, April 11, 1980, 9:00 a.m.

St. Louis County Courthouse
Duluth, Minnesota

6. Monday, April 14, 1:00 p.m. and 7:00 p.m.

Friedel Building
1200 South Broadway
Rochester, Minnesota

The hearing will be continued on subsequent days, if necessary, at a time and place to be determined by the hearing examiner during the hearing.

At the hearing the agency will, through written or oral testimony, or both, and the introduction of exhibits, explain the proposed amendments (when used in this notice the term "proposed amendments" refers to both the above-captioned proposed amendments and proposed repeal) and the agency's reasons for proposing the amendments. After the agency has introduced its exhibits in support of the proposed amendments and all the witnesses for the agency have presented their oral or written comments, interested persons will be given an opportunity to ask questions of the agency. Questioners will be asked to identify the issues and the facts that are of concern. All interested or affected persons will be given an opportunity to participate and to make oral presentations or submit written comments. In addition, written materials may be submitted by mail to Mr. Allan Klein, Hearing Examiner, Office of Hearing Examiners, 1745 University Avenue, St. Paul, Minnesota 55104, (612) 296-8104, at any time before the record closes. The record will remain open for five working days after the actual hearing ends, or for a longer period not to exceed twenty calendar days if ordered by the hearing examiner.

In the interests of economy and efficiency and helpfulness, the agency hereby requests that any person who has any objection to any part of the proposed amendments submit a statement of such objection to the agency (Attention: Mr. John McGuire) and to the hearing examiner as soon as possible and prior to March 31, 1980. Such statement should:

(1) state concisely and with particularity each portion of the proposed amendments to which objection is taken;

(2) state the basis for such objection; and

(3) state the objector's proposed modification, the reason such modification is sought, and the scientific or other basis for the proposed modification.

To the extent possible, the agency will respond at the hearing to each such objection to the proposed amendments. Failure to submit such objections will not prohibit any person from submitting written or oral statements or comments.

Please be advised that the proposed amendments are subject to change as a result of the rule hearing process. For example, changes may be made in specific proposed water quality standards or in methods of sampling and determining compliance. Any changes made could make the rules more stringent or less stringent. The agency urges those who are interested to any extent in the substance of the proposed amendments, including those who support the amendments as proposed, to participate in the rule hearing process.

Notice is hereby given that 25 days prior to the hearing, a Statement of Need and Reasonableness will be available for review at the agency and at the Office of Hearing Examiners. This Statement of Need and Reasonableness will include a summary of all of the evidence which will be presented by the agency at the hearing justifying both the need for and the

reasonableness of the proposed amendments. Copies of the Statement of Need and Reasonableness may be obtained from the Office of Hearing Examiners at a minimal charge.

The Statement of Need and Reasonableness will summarize the agency's reasons for the proposed amendments, identify manuals and reports and other documents relied upon by the agency, and list those persons, including experts, who will present written or oral comments and information at the hearing on behalf of the agency. In addition to the Office of Hearing Examiners, copies of the Statement of Need and Reasonableness are available from Mr. McGuire.

Copies of the proposed amendments are now available and one free copy may be obtained by contacting Mr. John McGuire, Division of Water Quality, 1935 West County Road B-2, Roseville, Minnesota, 55113 (Phone (612) 296-7242). Additional copies will be available at the hearing at each location.

The agency has proposed amendments to the following water quality rules:

a. WPC 14 Criteria for the classification of the intrastate waters of the state and the establishment of standards of quality and purity.

b. WPC 15 Criteria for the classification of the interstate waters of the state and the establishment of standards of quality and purity.

c. WPC 24 Classifications of intrastate waters of Minnesota.

d. WPC 25 Classifications of interstate waters of Minnesota.

The proposed amendments to WPC 14 and 15, if adopted, would:

(1) modify the water quality standards for fecal coliform organisms and ammonia;

(2) modify and clarify the water quality standards for dissolved oxygen;

(3) add water quality standards for chlorine;

(4) modify the effluent limitation for fecal coliform organisms and total suspended solids;

(5) establish a new class of waters to be known as limited resource value waters and establish water quality standards and effluent limitations for such waters;

(6) eliminate the common level of treatment requirement of (c) (10) in WPC 14 and 15 which applied to all dischargers in the same reach; and

(6) amend other provisions of the rules for purposes of clarification, consistency and administration, and to conform the rules to the most recent available scientific information.

The proposed amendments to WPC 24 and 25 would add a class of limited resource value waters and provide a list of waters so classified. In addition, proposed amendments to WPC 25 would change the designated classification of certain portions of the Minnesota River and the Mississippi River.

Finally, the agency is proposing to repeal the following rules:

a. WPC 2 Classification and Standards for the Mississippi River and Tributaries from the Upper Lock and Dam at St. Anthony Falls to the Outfall of the Minneapolis-St. Paul Sanitary District Sewage Treatment Plant.

b. WPC 3 Classification and Standards for the Mississippi River and Tributaries from the Outfall of the Minneapolis-St. Paul Sanitary District Sewage Treatment Plant to Lock and Dam No. 2 near Hastings.

c. WPC 5 Classification and Standards for the Minnesota River and Tributary Waters from Carver Rapids to the Outlet of Reilly Creek and Grass Lake Below Shakopee, Zone 36-22.4.

d. WPC 6 Classification and Standards for the Minnesota River and Tributary Waters from the Outlet of Reilly (Terrell) Creek and Grass Lake Below Shakopee to the Junction with the Mississippi River at Fort Snelling, Zone 22.4-0.

e. WPC 7 Classification and Standards for Reilly (Terrell) Creek, Bluff Creek, the Chaska Creeks, Spring Creek, Carver Creek and Sand Creek and Tributary Waters.

f. WPC 8 Classification and Standards for Eagle Creek and Purgatory Creek and Tributary Waters.

g. WPC 9 Classification and Standards for Nine Mile Creek and the Credit River and Tributary Waters.

h. WPC 10 Classification and Establishment of Standards of Water Quality and Purity for the Red River of the North, the Otter Tail River from Fergus Falls to the Mouth, and the Red Lake River from Crookston to the Mouth.

i. WPC 11 Classification and Standards of Water Quality and Purity for the Rainy River from the Outlet of Rainy Lake at Ranier to the Minnesota and Ontario Paper Company Dam in International Falls.

j. WPC 12 Classification and Standards of Water Quality and purity for the Rainy River from the Minnesota and Ontario Paper Company Dam in International Falls to the Canadian National Railway Bridge in Baudette.

k. WPC 13 Classification and Standards of Water Quality and Purity for the Rainy River from the Canadian National Railway Bridge in Baudette to Lake of the Woods.

l. WPC 16 Classification and Establishment of Standards of Water Quality and Purity for Anderson Creek, Big Silver Creek, the Blackhoof River, Canutrup Creek (and Mary Brook), Clear Creek, Deer Creek, the Little Net River, the Net River, North Ford Creek, Skunk Creek, Stateline Creek and Stony Brook, Carlton and Pine Counties.

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m. WPC 17 Classification and Establishment of Standards of Water Quality and Purity for the Nemadji River System, Carlton and Pine Counties (Except Waters Included in WPC 16).

n. WPC 18 Effluent Standards for Disposal Systems Discharging to the Mississippi River from the Outfall of the Minneapolis-St. Paul Sanitary District Sewage Treatment Plant to Lock and Dam No. 2 near Hastings.

o. WPC 19 Effluent Standards for Disposal Systems Discharging to the Minnesota River from above Chaska to the Junction with the Mississippi River at Fort Snelling.

p. WPC 20 Effluent Standards for Disposal Systems Discharging to the Minnesota River from Mankato to Chaska.

q. WPC 21 Effluent Standards for Disposal Systems Discharging to the Mississippi River from the Junction of the Rum River to the Outfall of the Minneapolis-St. Paul Sanitary District Sewage Treatment Plant, and from Lock and Dam No. 2 Near Hastings, to the Junction with the Chippewa River, and to the St. Croix River from Taylors Falls to the Junction with the Mississippi River.

r. WPC 23 Standards of Quality and Purity for Effluents Discharged to Intrastate Waters.

s. WPC 26 Effluent Standards for Disposal Systems Discharging to Lake Superior, Lake of the Woods and Fall Lake.

t. WPC 29 Effluent Standards for Disposal Systems Discharging to that Portion of the Mississippi River from the Blandin Dam in the City of Grand Rapids to the Mouth of the Rum River and from the Mouth of the Chippewa River to the Iowa Border, the Red Cedar River from Austin to the Minnesota-Iowa Border, the Minnesota River from the Mouth of the Pomme De Terre River and Including Marsh Lake to Mankato, and the Blue Earth River from the Mouth of Elm Creek to the Junction with the Minnesota River in Mankato.

u. WPC 31 Effluent Standards for Disposal Systems Discharging to the Roseau River from Its Source to the Canadian Border, the North Fork of the Yellow Medicine River, the West Fork of the Lac Qui Parle River, the Blue Earth River from the Iowa Border to the Mouth of Elm Creek, the Little Rock River, the West Fork of the Little Sioux River, the Rock River, the West Fork of the Des Moines River from Its Source to the Minnesota-Iowa Border, the Red Cedar River from Its Source to Austin, Bear Creek, the Upper Iowa River, Pine Creek, and the Root River.

v. WPC 32 Effluent Standards for Disposal Systems Discharging to Crooked Creek from Its Source to Its Mouth.

These proposed amendments would require the Metropolitan Waste Control Commission, which services over 80 metro area communities, and most of the over 200 outstate communities to incur additional capital expenditures and operating and maintenance expenses to meet the new standards in the operation of their sewage treatment plants. The impact on each community will have to be determined individually, and some communities will actually realize a savings, but the agency estimates that the total cost to all local public bodies in the state to implement the proposed amendments will be approximately 150 million dollars. These expenses will be incurred in a period extending as long as ten years after the amendments are adopted and no major expenses are likely within the first couple of years after adoption. Under present law 90% or more of the capital expenditures will be eligible for state and federal funding.

The agency's authority to promulgate the proposed amendments is contained in Minn. Stat. §§ 115.03 and 115.44 (1978).

Notice: Any person may request notification of the date on which the Hearing Examiner's Report will be available, after which date the agency may not take any final action on the rules for a period of five working days. Any person may request notification of the date on which the hearing record has been submitted (or resubmitted) to the Attorney General by the agency. If you desire to be so notified, you may so indicate at the hearing. After the hearing, you may request notification by sending a written request to the hearing examiner (in the case of the Hearing Examiner's Report), or to the agency (in the case of the agency's submission or resubmission to the Attorney General).

Please be advised that Minn. Stat. ch. 10A (1978) requires each lobbyist to register with the Ethical Practices Board within five days after he/she commences lobbying. Lobbying includes attempting to influence rulemaking by communicating or urging others to communicate with public officials. A lobbyist is generally any individual who spends more than $250.00 per year for lobbying or any individual who is engaged for pay or authorized to spend money by another individual or association and who spends more than $250.00 per year or five hours per month lobbying. The statute in question provides certain exceptions. Questions should be directed to the Minnesota Ethical Practices Board, 41 State Office Building, St. Paul, Minnesota 55155, telephone (612) 296-5615.

February 6, 1980

Art Engelbrecht
Chairman

Terry Hoffman
Executive Director

Amendments as Proposed

6 MCAR § 4.8014 ~~WPC 14~~ Criteria for the classification of the intrastate waters of the state and the establishment of standards of quality and purity. The official policy and purpose of the State of Minnesota in regard to these matters is set forth in the Minnesota Water Pollution Control Statutes as amended by Laws of 1973, ch. 374:

§ 115.42. It is the policy of the state to provide for the prevention, control and abatement of pollution of all waters of the state, so far as feasible and practical, in furtherance of conservation of such waters and protection of the public health and in furtherance of the development of the economic welfare of the state.

. . . It is the purpose of Laws of 1963, ch. 874, to safeguard the waters of the state from pollution by: (a) preventing any new pollution; and (b) abating pollution existing when Laws of 1963, ch. 874, become effective, under a program consistent with the declaration of policy above stated.

§ 115.44, subd. 2. In order to attain the objectives of Laws of 1963, ch. 874, the agency, after proper study and after conducting public hearing upon due notice, shall, as soon as practicable, group the designated waters of the state into classes and adopt classifications and standards of purity and quality therefor. Such classification shall be made in accordance with considerations of best usage in the interest of the public and with regard to the considerations mentioned in subdivision 3 hereof.

§ 115.44, subd. 8. If the agency finds in order to comply with the federal water pollution control act or any other federal law or rule or regulation promulgated thereunder that it is impracticable to comply with the requirements of this section in classifying waters or adopting standards or in meeting any of the requirements thereof, compliance with the requirements of such section are waived to the extent necessary to enable the agency to comply with federal laws and rules and regulations promulgated thereunder. The agency may classify waters and adopt criteria and standards in such form and based upon such evidence as it may deem necessary and sufficient for the purposes of meeting requirements of such federal laws, notwithstanding any provisions in chapter 115 or any other state law to the contrary. In the event waters are classified and criteria and standards are adopted to meet the requirements of federal law, the agency shall thereafter proceed to otherwise comply with the provisions of this section which were waived as rapidly as is practicable. This authority shall extend to proceedings pending before the agency on May 20, 1973.

. . . Wherever advisable and practicable the agency may establish standards for effluent or disposal systems discharging into waters of the state regardless of whether such waters are or are not classified.

§ 115.03, subd. 5. Notwithstanding any other provisions prescribed in or pursuant to chapter 115 and, with respect to the pollution of waters of the state, in chapter 116, or otherwise, the agency shall have the authority to perform any and all acts minimally necessary including, but not limited to, the establishment and application of standards, procedures, regulations, orders, variances, stipulation agreements, schedules of compliance, and permit conditions, consistent with and, therefore, not less stringent than the provisions of the Federal Water Pollution Control Act, as amended, applicable to the participation by the state of Minnesota in the National Pollutant Discharge Elimination System (NPDES). . . .

In accordance with this declaration of policy and legislative intent, and under the powers delegated to the agency, the following intrastate water use classifications and corresponding standards of quality and purity are hereby adopted by the Pollution Control Agency as provided by law.

A. ~~(a)~~ Introduction.

1. ~~(1)~~ Scope. The following classifications, criteria and standards of water and effluent quality and purity as hereby adopted and established shall apply to all intrastate waters of the state, notwithstanding any other intrastate water quality or effluent regulations of general or specific application, except that any more stringent water quality or effluent standards or prohibitions in the other applicable regulations are preserved.

2. ~~(2)~~ Severability. All provisions of this rule shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not void any other lettered paragraph or subparagraph, subdivision or any part thereof.

3. ~~(3)~~ Definitions. The terms "waters of the state" for the purposes of this rule shall be construed to mean intrastate waters as herein below defined, and the terms "sewage," "industrial wastes," and "other wastes," as well as any other terms for which definitions are given in the Water Pollution Control Statutes, as used herein have the meanings ascribed to them in Minn. Stat. §§ 115.01 and 115.41, with the exception that disposal systems or treatment works operated under permit of the agency shall not be construed to be "waters of the state" as the term is used herein. Interstate waters are defined as all rivers, lakes, and other waters that flow across or form part of state boundaries. All of the remaining designated waters of the state which do not meet the definition of interstate waters given above are to be construed herein as constituting intrastate waters. Other terms and abbreviations used herein which are not specifically defined in applicable federal or state law shall be construed in conformance with the context, and in relation to the applicable section of the statutes pertaining to the matter at hand, and current professional usage.

4. ~~(4)~~ Uses of the intrastate waters. The classifications are listed separately in accordance with the need for intrastate water quality protection, considerations of best use in the interest of the public and other considerations, as indicated in Minn. Stat. § 115.44. The classifications should not be construed to be an order of priority, nor considered to be exclusive or prohibitory of other beneficial uses.

5. ~~(5)~~ Determination of compliance. In making tests or analyses of the intrastate waters of the state, sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered necessary by the agency from the viewpoint of adequately reflecting the condition of the intrastate waters, the composition

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of the effluents, and the effects of the pollutants upon the specified uses. Reasonable allowance will be made for dilution of the effluents, which are in compliance with C.6. ~~(c)(6)~~, following discharge into waters of the state. The agency by allowing dilution may consider the effect on all uses of the intrastate waters into which the effluents are discharged. The extent of dilution allowed regarding any specific discharge shall not violate the applicable water quality standards. The samples shall be preserved and analyzed in accordance with procedures given in the 1971 edition of *Standard Methods for the Examination of Water and Waste-Water*, by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, and any revisions or amendments thereto. The agency may accept or may develop other methods, procedures, guidelines or criteria for measuring, analyzing and collecting samples.

6. ~~(6)~~ Unclassified intrastate waters. Adoption of specific classifications and standards for unclassified intrastate waters, and/or changes in existing classifications and standards, will be done as soon as practicable by the Minnesota Pollution Control Agency for individually designated waters after the necessary studies and public hearings relating to the determination of present and future quality, characteristics and uses have been completed as required by law. In the absence of such official classifications and standards for any given intrastate waters, it shall be the policy of the agency to consider all unclassified intrastate waters as waters of the highest quality consistent with their actual or potential use, and deserving of the equivalent degree of protection from pollution, until the same may be affirmed or altered by adoption of standards or other official act of the agency; except that where sewage, industrial wastes or other wastes are being discharged to unclassified intrastate waters during such interim period the concentrations of polluting substances in such separate industrial waste or other effluents shall be no higher than the permissible concentrations of polluting substances of a comparable nature in the effluents of municipal sewage treatment works which discharge into the same intrastate waters, unless specifically exempted from this requirement by other effluent standards or the terms of a valid waste disposal permit issued by the agency.

7. ~~(7)~~ Natural intrastate water quality. The intrastate waters may, in a state of nature, have some characteristics or properties approaching or exceeding the limits specified in the water quality standards. The standards shall be construed as limiting the addition of pollutants of human activity to those of natural origin, where such be present, so that in total the specified limiting concentrations will not be exceeded in the intrastate waters by reason of such controllable additions. Where the background level of the natural origin is reasonably definable and normally is higher than the specified standard the natural level may be used as the standard for controlling the addition of pollutants of human activity which are comparable in nature and significance with those of natural origin. The natural background level may be used instead of the specified water quality standard as a maximum limit of the addition of pollutants, in those instances where the natural level is lower than the specified standard and reasonable justification exists for preserving the quality to that found in a state of nature.

In the adoption of standards for individual intrastate waters, the agency will be guided by the standards set forth herein but may make reasonable modifications of the same on the basis of evidence brought forth at a public hearing if it is shown to be desirable and in the public interest to do so in order to encourage the best use of the intrastate waters or the lands bordering such intrastate waters.

8. ~~(8)~~ Non-degradation. Waters which are of quality better than the established standards shall be maintained at high quality unless a determination is made by the agency that a change is justifiable as a result of necessary economic or social development and will not preclude appropriate beneficial present and future uses of the waters. Any project or development which would constitute a source of pollution to waters of the state shall be required to provide the best practicable control technology currently available not later than July 1, 1977 and the best available technology economically achievable not later than July 1, 1983, and any other applicable treatment standards as defined by and in accordance with the requirements of the Federal Water Pollution Control Act, 33 U.S.C. 1251 *et. seq.*, as amended, in order to maintain high water quality and keep water pollution at a minimum. In implementing this policy, the Administrator of the U.S. Environmental Protection Agency will be provided with such information as he requires to discharge his responsibilities under the Federal Water Pollution Control Act, as amended.

9. ~~(9)~~ Variance from standards. In any case where, upon application of the responsible person or persons, the agency finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship, that disposal of the sewage, industrial waste or other waste is necessary for the public health, safety or welfare; and that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances; the agency in its discretion may grant a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these classifications and standards and the intent of the applicable state and federal laws. The U.S. Environmental Protection Agency will be advised of any permits which may be issued under this clause together with information as to the need therefor.

B. ~~(b)~~ Water use classifications — all intrastate waters of the state. Based on considerations of best usage in the interest of the public and in conformance with the requirements of the applicable statutes, the intrastate waters of the state shall be grouped into one or more of the following classes:

1. ~~(1)~~ Domestic consumption. (To include all intrastate waters which are or may be used as a source of supply for drinking, culinary or food-processing use or other domestic purposes, and for which quality control is or may be necessary to protect the public health, safety or welfare.)

2. ~~(2)~~ Fisheries and recreation. (To include all intrastate waters which are or may be used for fishing, fish culture, bathing or any other recreational purposes, and for which quality control is or may be necessary to protect aquatic or terrestrial life, or the public health, safety or welfare.)

3. ~~(3)~~ Industrial consumption. (To include all intrastate waters which are or may be used as a source of supply for industrial process or cooling water, or any other industrial or commercial purposes, and for which quality control is or may be necessary to protect the public health, safety or welfare.)

4. ~~(4)~~ Agriculture and wildlife. (To include all intrastate waters which are or may be used for any agriculture purposes, including stock watering and irrigation, or by waterfowl or other wildlife, and for which quality control is or may be necessary to protect terrestrial life or the public health, safety or welfare.)

5. ~~(5)~~ Navigation and waste disposal. (To include all intrastate waters which are or may be used for any form of water transportation or navigation, dispoasl of sewage, industrial waste or other waste effluents, or fire prevention, and for which quality control is or may be necessary to protect the public health, safety or welfare.)

6. ~~(6)~~ Other uses. (To include intrastate waters which are or may serve the above listed uses or any other beneficial uses not listed herein, including without limitation any such uses in this or any other state, province, or nation of any intrastate waters flowing through or originating in this state, and for which quality control is or may be necessary for the above declared purposes, or to conform with the requirements of the legally constituted state or national agencies having jurisdiction over such intrastate waters, or any other considerations the agency may deem proper.)

7. Limited resource value waters. This class includes surface waters of the state which are of limited value as a water resource and where water quantities are intermittent or less than one (1) cubic feet per second at the once in ten year, seven day low flow as defined in section C.7. These waters shall be protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the water. It is the intent of the agency that very few waters be classified as limited resource value waters. In conjunction with those factors listed in Minn. Stat. § 115.44, subd. 2 and subd. 3 (1978), the agency shall determine the extent to which the waters of the state demonstrate the conditions set forth below:

a. The existing fishery and potential fishery are severely limited by natural conditions as exhibited by poor water quality characteristics, lack of habitat, or lack of water; or

b. The quality of the resource has been significantly altered by human activity and the effect is essentially irreversible; and

c. There are limited recreational opportunities (such as fishing, swimming, wading or boating) in and on the water resource.

Conditions a. and c. or b. and c. must be established by the agency water assessment procedure before the waters can be classified as limited resource value waters.

C. ~~(c)~~ General standards applicable to all intrastate waters of the state.

1. ~~(1)~~ No untreated sewage shall be discharged into any intrastate waters of the state. ~~No treated sewage, or industrial waste or other wastes continuing viable pathogenic organisms, shall be discharged into intrastate waters of the state without effective disinfection.~~ Effective disinfection of any discharges, including combined flows of sewage and storm water, will be required where necessary to protect the specified uses of the intrastate waters.

2. ~~(2)~~ No sewage, industrial waste or other wastes shall be discharged into any intrastate waters of the state so as to cause any nuisance conditions, such as the presence of significant amounts of floating solids, scum, oil slicks, excessive suspended solids, material discoloration, obnoxious odors, gas ebullition, deleterious sludge deposits, undersirable slimes or fungus growths, or other offensive or harmful effects.

3. ~~(3)~~ Existing discharges of inadequately treated sewage, industrial waste or other wastes shall be abated, treated or controlled so as to comply with the applicable standards. Separation of sanitary sewage from natural runoff may be required where necessary to ensure continuous effective treatment of sewage.

4. ~~(4)~~ The highest levels of water quality, including, but not limited to, dissolved oxygen, which are attainable in the intrastate waters by continuous operation at their maximum capability of all primary and secondary units of treatment works or their equivalent discharging effluents into the intrastate waters shall be maintained in order to enhance conditions for the specified uses.

5. ~~(5)~~ Means for expediting mixing and dispersion of sewage, industrial waste, or other waste effluents in the receiving intrastate waters are to be provided so far as practicable when deemed necessary by the agency to maintain the quality of the receiving intrastate waters in accordance with applicable standards. Mixing zones be established by the agency on an individual basis, with primary consideration being given to the following guidelines: (a) mixing zones in rivers should permit an acceptable passageway for the movement of fish; (b) the total mixing zone or zones at any transect of the stream should contain no more than 25% of the crossectional area and/or volume of flow of the stream, and should not extend over more than 50% of the width; (c) mixing zone characteristics shall not be lethal to

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aquatic organisms; (d) for contaminants other than heat, the 96 hour median tolerance limit for indigenous fish and fish food organisms should not be exceeded at any point in the mixing zone; (e) mixing zones should be as small as possible, and not intersect spawning or nursery areas, migratory routes, water intakes, nor mouths of rivers; and (f) overlapping of mixing zones should be minimized and measures taken to prevent adverse synergistic effects.

6. ~~(6)~~ It is herein established that the agency shall require secondary treatment as a minimum for all municipal sewage and biodegradable industrial or other wastes to meet the adopted water quality standards. A comparable high degree of treatment or its equivalent also shall be required of all nonbiodegradable industrial or other wastes unless the discharger can demonstrate to the agency that a lesser degree of treatment or control will provide for water quality enhancement commensurate with present and proposed future water uses and a variance is granted under the provisions of the variance clause. Secondary treatment facilities are defined as works which will provide effective sedimentation, biochemical oxidation, and disinfection, or the equivalent, including effluents conforming to the following:

Substance or Characteristic	**Limiting Concentration or Range***
5-Day Biochemical Oxygen Demand*	25 milligrans per liter
Fecal coliform group organisms***	200 ~~most probable number~~ organisms per 100 milliliters (May 1 through October 31)
Total suspended solids*	30 milligrams per liter
~~Pathogenic organisms~~	~~None~~
Oil	Essentially free of visible oil
Phosphorus**	1 milligram per litter
Turbidity	25
pH range	6.5-8.5
Unspecified toxic or corrosive substance	None at levels acutely toxic to humans or other animals or plants life, or directly damaging to real property.

*The arithmetic mean for concentrations of 5-day biochemical oxygen demand and total suspended solids shall not exceed the stated values in a period of 30 consecutive days and 45 milligrams per liter in a period of 7 consecutive days. ~~Disinfection of wastewater effluents to reduce the coliform organisms levels is required year around. The geometric mean for the fecal coliform organisms shall not exceed the stated value in a period of 30 consecutive days and 400 most probable number per 100 milliliters in a period of 7 consecutive days. The application of the coliform and pathogenic organism standards ordinarily shall be limited to sewage or other effluents containing admixtures of sewage and shall not apply to industrial wastes except where the presence of sewage, fecal coliform organisms or viable pathogenic organisms in such wastes is known or reasonably certain.~~

**Where the discharge of effluent is directly to or affects a lake or reservoir. Removal of nutrients from all wastes shall be provided to the fullest practicable extent wherever sources of nutrients are considered to be actually or potentially detrimental to preservation of enhancement of the designated water uses.

***Disinfection of wastewater effluents to reduce the levels of fecal coliform organisms to the stated value is required from May 1 through October 31 except that where the effluent is discharged 25 miles or less upstream of a water intake supplying a potable water system, the reduction to the stated value is required year around. The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of five samples, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. The application of the fecal coliform group organism standards shall be limited to sewage or other effluents containing admixtures of sewage and shall not apply to industrial wastes except where the presence of sewage, fecal coliform organisms or viable pathogenic organisms in such wastes is known or reasonably certain.

~~In addition to providing secondary treatment as defined above, all dischargers of sewage, industrial wastes or other wastes also shall provide the best practicable control technology not later than July 1, 1977, and best available technology economically achievable by July 1, 1983, and any other applicable treatment standards as defined by and in accordance with the requirements and schedules of the Federal Water Pollution Control Act, 33 U.S.C. 1251 et. seq., as amended, and applicable regulations or rules promulgated pursuant thereto by the Administrator of the U.S. Environmental Protection Agency~~.

The requirements of this rule and specifically the requirement of secondary treatment as stated above shall be in addition to any requirement imposed on a discharge by the Clean Water Act, 33 U.S.C. 1251 *et seq.*, and its implementing regulations. In the case of a conflict between the requirements of this rule and the requirements of the Clean Water Act or its implementing regulations, the more stringent requirement shall be controlling.

7. ~~(7)~~ Dischargers of sewage, industrial waste or other waste effluents shall be controlled so that the water quality standards will be maintained at all stream flows which are equal to or exceeded by 90 percent of the seven consecutive daily average flows of record (the lowest weekly flow with a once in ten year recurrence interval) for the critical month(s). The period of record for determining the specific flow for the stated recurrence interval, where records are available, shall include at least the most recent ten years of record, including flow records obtained after establishment of flow regulation devices, if any. Such calculations shall not be applied to lakes and their embayments which have no comparable flow recurrence interval. Where stream flow records are not available, the flow may be estimated on the basis of available information on the watershed characteristics, precipitation, run-off and other relevant data.

Allowance shall not be made in the design of treatment works for low stream flow augmentation unless such flow augmentation of minimum flow is dependable and controlled under applicable laws or regulations.

8. ~~(8)~~ In any instance where it is evident that the minimal treatment specified in C.6. ~~(c)(6)~~ and dispersion are not effective in preventing pollution, or if at the applicable flows it is evident that the specified stream flow is inadequate to protect the specified water quality standards, the specific standards may be interpreted as effluent standards for control purposes. In addition, the following effluent standards may be applied without any allowance for dilution where stream flow or other factors are such as to prevent adequate dilution, or where it is otherwise necessary to protect the intrastate waters for the stated uses:

Item*	Limits
5-day biochemical oxygen demand	5 milligrans per liter
~~Total suspended solids~~	~~5 milligrams per liter~~

This section shall not apply to discharges to surface waters classified as limited resource value waters pursuant to B.7. of this rule and 6 MCAR § 4.8024.

~~(9) In any case where, after a public hearing, the Agency finds it necessary for conformance with Federal requirements, or conservation of the intrastate waters of the state, or protection of the public health, or in furtherance of the development of the economic welfare of the state, it may prohibit or futher limit the discharge to any designated intrastate waters of any sewage, industrial waste, or other waste effluents, or any component thereof, whether such effluents are treated or untreated or existing or new, notwithstanding any other provisions of classifications or specific standards stated herein which may be applicable to such designated intrastate waters.~~

9. Notwithstanding the provisions of C.8. and C.16. of this rule, the agency may require a specific discharger to meet effluent limitations which are necessary to maintain the water quality of the receiving water at the standards of quality and purity established by this rule. Any effluent limitation determined to be necessary under this section shall only be required of a discharger after the discharger has been given notice of the specific effluent limitations and an opportunity for public hearing provided that compliance with the requirements of 6 MCAR § 4.8036 H. regarding notice of National Pollutant Discharge Elimination System and State Disposal System permits shall satisfy the notice and opportunity for hearing requirements of this section.

10. ~~(10) It shall be incumbent upon all persons responsible for existing or new sources of sewage, industrial wastes or other wastes which are or will be discharged to intrastate waters, to treat or control their wastes so as to produce effluents having a common level or concentration of pollutants of comparable nature or effect as may be necessary to meet the specified standards or better, but this shall not be interpreted to prohibit the Agency, a~~ After providing an opportunity for public hearing ~~from accepting~~ the agency shall accept effective loss prevention and/or water conservation measures or process changes or other waste control measures or arrangements if it finds that such measures, changes or arrangements are as being equivalent to the waste treatment measures required for compliance with applicable effluent and/or water quality standards or load allocations.

11. ~~(11)~~ All sources of sewage, industrial waste, or other waste which do not at present have a valid operation and discharge permit, or an application for the same pending before the agency, shall apply for the same within 30 days of the adoption of this rule, or the agency may abate the source forthwith. The provisions of C.6.~~(c)(6)~~ relating to effluent quality standards, and the other provisions of this rule, are applicable to existing sewage, industrial waste or other waste disposal facilities and the effluent discharged therefrom. Nothing herein shall be construed to prevent the agency subsequently from modifying any existing permits so as to conform with federal requirements and the requirements of this regulation.

12. ~~(12)~~ Liquid substances which are not commonly considered to be sewage or industrial wastes but which could constitute a pollution hazard shall be stored in accordance with ~~Regulation WPC 4,~~ 6 MCAR § 4.8004, and any revisions or amendments thereto. Other wastes as defined by law or other substances which could constitute a pollution hazard shall not be deposited in any manner such that the same may be likely to gain entry into any intrastate waters of the state in excess of or contrary to any of the standards herein adopted, or cause pollution as defined by law.

13. ~~(13)~~ No sewage, industrial waste or other wastes shall be discharged into the intrastate waters of the state in such quantity or in such manner alone or in combination with other substances as to cause pollution thereof as defined by law. In any case where the intrastate waters of the state into which sewage, industrial wastes or other waste effluents discharge are assigned different standards than the interstate or intrastate waters into which such receiving intrastate waters flow, the standards applicable to the intrastate waters into which such sewage, industrial waste or other wastes discharged shall be supplemented by the following:

The quality of any waters of the state receiving sewage, industrial waste or other waste effluents shall be such that no violation of the standards of any interstate or intrastate waters of the state in any other class shall occur by reason of the discharge of such sewage, industrial waste or other waste effluents.

14. ~~(14)~~ Questions concerning the permissible levels, or changes in the same, of a substance, or combination of substances, of undefined toxicity to fish or other biota shall be resolved in accordance with the latest methods recommended by the U.S. Environmental Protection Agency. ~~The recommendations of the National Technical Advisory Committee appointed by the U.S. Environmental Protection Agency shall be used as~~

*The concentrations specified in section C.6.~~(c)(6)~~ of this rule may be used in lieu thereof if the discharge of effluent is restricted to the spring flush or other high runoff periods when the stream flow rate above the discharge point is sufficiently greater than the effluent flow rate to insure that the applicable water quality standards are met during such discharge period. If treatment works are designed and constructed to meet the specified limits given above for a continuous discharge, at the discretion of the agency the operation of such works may allow for the effluent quality to vary between the limits specified above and in C.6.~~(c)(6)~~, provided the water quality standards and all other requirements of the agency and the U.S. Environmental Protection Agency are being met. Such variability of operation must be based on adequate monitoring of the treatment works and the effluent and receiving waters as specified by the agency.

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~~official guidelines in all aspects where the recommendations may be applicable.~~ The agency shall consider the recommendations of the Quality Criteria for Water, USEPA 1976, in making determinations under this section. Toxic substances shall not exceed 1/10 of the 96 hour median tolerance limit (TLM) as a water quality standard except that other ~~more stringent~~ application factors shall be used when justified on the basis of available scientific evidence.

15. ~~(15)~~ All persons operating or responsible for sewage, industrial waste or other waste disposal systems which are adjacent to or which discharge effluents to these waters or to tributaries which affect the same, shall submit regularly every month a report to the agency on the operation of the disposal system, the effluent flow, and the characteristics of the effluents and receiving waters. Sufficient data on measurements, observations, sampling and analyses, and other pertinent information shall be furnished as may be required by the agency to adequately evaluate the condition of the disposal system, the effluent, the waters receiving or affected by the effluent.

16. Limited resource value waters.

a. For point source discharges to surface waters classified as limited resource value waters pursuant to section B.7. of this rule and 6 MCAR § 4.8024 the agency shall require treatment facilities which will provide effluents conforming to the following limitations:

Substance or Characteristic	Limiting Concentration
5-Day Biochemical oxygen Demand	15 milligrams per liter*

b. The agency may allow treatment works to be constructed and/or operated to produce effluents to limited resource value waters at levels up to those stated in C.6. of this rule provided that it is demonstrated that the water quality standards for limited resource value waters will be maintained during all periods of discharge from the treatment facilities.

c. Notwithstanding the effluent limitations established by this section the quality of limited resource value waters shall not be such as to allow a violation of applicable water quality standards in waters of the state which are connected to or affected by water classified as limited resource value waters.

D. ~~(d)~~ Specific standards of quality and purity for designated classes of intrastate waters of the state. The following standards shall prescribe the qualities or properties of the intrastate waters of the state which are necessary for the designated public use or benefit and which if the limiting conditions given are exceeded, shall be considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental or injurious with respect to such designated uses or established classes of the intrastate waters:

1. ~~(1)~~ Domestic consumption.

Class A. The quality of this class of the intrastate waters of the state shall be such that without treatment of any kind the raw waters will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to underground waters with a high degree of natural protection. The basic requirements are given below:

Substance or Characteristic	Limit or Range
Total coliform organisms	1 most probable number per 100 milliliters
Turbidity value	5
Color value	15
Threshold odor number	3
Methylene blue active substance (MBAS)	0.5 milligram per liter
Arsenic (As)	0.01 milligram per liter
Chlorides (Cl)	250 milligrams per liter
Copper (Cu)	1 milligram per liter
Carbon Chloroform extract	0.2 milligram per liter
Cyanides (CN)	0.01 milligram per liter
Fluorides (F)	1.5 milligrams per liter
Iron (Fe)	0.3 milligram per liter
Manganese (Mn)	0.05 milligram per liter
Nitrates (NO_3)	45 milligrams per liter
Phenol	0.001 milligram per liter
Sulfates (SO_4)	250 milligrams per liter
Total dissolved solids	500 milligrams per liter
Zinc (Zn)	5 milligrams per liter
Barium (Ba)	1 milligram per liter
Cadmium (Cd)	0.01 milligram per liter
Chromium (Hexavalent, Cr)	0.05 milligram per liter
Lead (Pb)	0.05 milligram per liter
Selenium (Se)	0.01 milligram per liter
Silver (Ag)	0.05 milligram per liter
Radioactive material	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.

Class B. The quality of this class of the intrastate waters of the state shall be such that with approved disinfection, such as simple chlorination or its equivalent, the treated water will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to surface and underground waters with a moderately high degree of natural protection. The physical and chemical standards quoted above for Class A intrastate waters shall also apply to these intrastate waters in the untreated state~~, except as listed below:~~

~~Substance or Characteristic~~	~~Limit or Range~~
~~Fecal coliform organisms~~	~~10 most probable number per 100 milliliters~~

*As measured by the arithmetic mean of all samples taken during any calendar month.

Class C. The quality of this class of the intrastate waters of the state shall be such that with treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment processes, the treated water will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to surface waters, and ground waters in aquifers not considered to afford adequate protection against contamination from surface or other sources of pollution. Such aquifers normally would include fractured and channeled limestone, unprotected impervious hard rock where intrastate water is obtained from mechanical fractures, joints, etc., with surface connections, and coarse gravels subjected to surface water infiltration. The physical and chemical standards quoted above for Class A intrastate waters shall also apply to these intrastate waters in the untreated state, except as listed below:

Substance or Characteristic	Limit or Range
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~
Turbidity value	25

Class D. The quality of this class of the intrastate waters of the state shall be such that after treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, plus additional pre, post, or intermediate stages of treatment, or other equivalent treatment processes, the treated water will meet in all respects the recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to surface waters, and ground waters in aquifers not considered to afford adequate protection against contamination from surface or other sources of pollution. Such aquifers normally would include fractured and channeled limestone, unprotected impervious hard rock where water is obtained from mechanical fractures, joints, etc., with surface connections, and coarse gravels subjected to surface water inflitration. The concentrations or ranges given below shall not be exceeded in the raw waters before treatment:

Substance or Characteristic	Limit or Range
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~
Arsenic (As)	0.05 milligram per liter
Barium (Ba)	1 milligram per liter
Cadmium (Cd)	0.01 milligram per liter
Chromium (Cr + 6)	0.05 milligram per liter
Cyanide (CN)	0.2 milligram per liter
Fluoride (F)	1.5 milligrams per liter
Lead (Pb)	0.05 milligram per liter
Selenium (Se)	0.01 milligram per liter
Silver (Ag)	0.05 milligram per liter
Radioactive Material	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.

In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged into or permitted by any person to gain access to any intrastate waters classified for domestic consumption so as to cause any material undesirable increase in the taste, hardness, temperature, toxicity, corrosiveness or nutrient content, or in any other manner to impair the natural quality or value of the intrastate waters for use as a source of drinking water.

2. ~~(2)~~ Fisheries and recreation.

Class A. The quality of this class of the intrastate waters of the state shall be such as to permit the propagation and maintenance of warm or cold water sport or commercial fishes and be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable. Limiting concentrations or ranges of substances or characteristics which should not be exceeded in the intrastate waters are given below:

Substance or Characteristic	Limit or Range
Dissolved oxygen	~~Not less than 7 milligrams per liter from October 1st and continuing through May 31st, and Not not less than 6 milligrams per liter at other times.~~ Not less than 7 milligrams per liter at all times (instantaneous minimum concentration)
Temperature	No material increase
Ammonia (N) *	~~0.2 milligram per liter~~ 0.016 milligram per liter (un-ionized as N)
Chlorides (Cl)	50 milligrams per liter
Chromium (Cr)	0.02 milligram per liter
Copper (Cu)	0.01 milligram per liter or not greater than 1/10 the 96 hour TLM value.
Cyanides (CN)	0.2 milligram per liter
Oil	0.5 milligram per liter
pH value	6.5-8.5
Phenols	0.01 milligram per liter and none that could impart odor or taste to fish flesh or other fresh-water edible products such as crayfish, clams, prawns

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Substance or Characteristic	Limit or Range
	and like creatures. Where it seems probable that a discharge may result in tainting of edible aquatic products, bioassays and taste panels will be required to determine whether tainting is likely or present.
Turbidity value	10
Color value	30
Fecal coliform organisms	~~200 most probable number per 100 milliliters as a monthly geometric mean based on not less than 5 samples per month, nor exceed 400 most probable number per 100 milliliters in more than 10% of all samples during any month.~~ 200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between May 1 and October 31)
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Total Residual Chlorine**	0.003 milligrams per liter

Class B. The quality of this class of the intrastate waters of the state shall be such as to permit the propagation and maintenance of cool or warm water sport or commercial fishes and be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable. Limiting concentrations or ranges of substances or characteristics which should not be exceeded in the intrastate waters are given below:

Substance or Characteristic	Limit or Range
Dissolved oxygen	~~Not less than 6 milligrams per liter from April 1 through May 31, and Not less than 5 milligrams per liter at other times.~~ Not less than 5 milligrams per liter at all times (instantaneous minimum concentration)
Temperature	5°F above natural in streams and 3°F above natural in lakes, based on monthly average of the maximum daily temperature, except in no case shall it exceed the daily average temperature of 86°F.
Ammonia (N) *	~~1 milligram per liter~~ 0.04 milligram per liter (un-ionized as N)
Chromium (Cr)	0.05 milligram per liter
Copper (Cu)	0.01 milligram per liter or not greater than 1/10 the 96 hour TLM value.
Cyanides (Cn)	0.02 milligram per liter
Oil	0.5 milligram per liter
pH value	6.5-9.0
Phenols	0.01 milligram per liter and none that could impart odor or taste to fish flesh or other fresh-water edible products such as crayfish, clams, prawns and like creatures. Where it seems probable that a discharge may result in tainting of edible aquatic products, bioassays and taste panels will be required to determine whether tainting is likely or present.
Turbidity value	25
Fecal coliform organisms	~~200 most probable number per 100 milliliters as a monthly geometric mean based on not less than 5 samples per month, nor equal or exceed 2000 most probable number per 100 milliliters in more than 10% of all samples during any month.~~ 200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between May 1 and October 31).
Radioactive materials	Not to exceed the lowest concontration permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Total Residual Chlorine**	0.003 milligrams per liter

*The percent un-ionized ammonia can be calculated for any temperature and pH by using the following formula taken from Thurston, R.V., R.C. Russo, and K. Emerson, 1974. Aqueous ammonia equilibrium calculations. Technical Report Number 74-1, Fisheries Bioassay Laboratory, Montana State University, Bozeman, MT. 18 p.

$$f = \frac{1}{10^{pk_a - pH} + 1} \times 100$$

where:

f = the percent of total ammonia in the un-ionized state

$pk_a = 0.0901821 + \frac{2729.92}{T}$, dissociation constant for ammonia

T = temperature in degrees Kelvin (273.16° Kelvin = 0° Celsius)

**Applies to conditions of continuous exposure, where continuous exposure refers to effluents which are discharged for more than a total of two hours in any 24 hour period.

*See ammonia footnote for Class 2A waters.

**See chlorine footnote for Class 2A waters.

Class C. The quality of this class of the intrastate waters of the state shall be such as to permit the propagation and maintenance of rough fish or species commonly inhabiting waters of the vicinity under natural conditions, and be suitable for boating and other forms of aquatic recreation for which the intrastate waters may be usable. Limiting concentrations or ranges of substances or characteristics which should not be exceeded in the intrastate waters are given below:

Substance or Characteristic	Limit or Range
Dissolved oxygen	~~Not less than 5 milligrams per liter from April 1 through November 30, and not less than 4 milligrams per liter at other times.~~ Not less than 5 milligrams per liter at all times (instantaneous minimum concentration)
Temperature	5°F above natural in streams and 3°F above natural in lakes, based on monthly average of the maximum daily temperature except in no case shall it exceed the daily average temperature of 90°F.
Ammonia (N) *	~~1.5 milligrams per liter 0.04~~ milligram per liter (un-ionized as N)
Chromium (Cr)	0.05 milligram per liter
Copper (Cu)	0.01 milligram per liter or not greater than 1/10 the 96 hour TLM value.
Cyanides (CN)	0.02 milligram per liter
Oil	10 milligrams per liter, and none in such quantities as to (1) produce a visible color film on the surface, (2) impart an oil odor to water or an oil taste to fish and edible invertebrates, (3) coat the banks and bottom of the watercourse or taint any of the associated biota, or (4) become effective toxicants according to the criteria recommended.
pH value	6.5-9.0
Phenols	0.1 milligram per liter and none that could impart odor or taste to fish flesh or other fresh-water edible products such as crayfish, clams, prawns and like creatures. Where it seems probable that a discharge may result in tainting of edible aquatic products, bioassays and taste panels will be required to determine whether tainting is likely or present.
Turbidity value	25
Fecal coliform organisms	~~200 most probable number per 100 milliliters as a geometric mean nor equal or exceed 2000 most probable number per 100 milliliters in more than 10% of the samples.~~ 200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between May 1 and October 31).
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Total Residual Chlorine**	0.003 milligrams per liter

For all classes of fisheries and recreation waters, the aquatic habitat, which includes the intrastate waters and stream bed, shall not be degraded in any material manner, there shall be no material increase in undesirable slime growths or aquatic plants, including algae, nor shall there be any significant increase in harmful pesticide or other residues in the waters, sediments and aquatic flora and fauna; the normal fishery and lower aquatic biota upon which it is dependent and the use thereof shall not be seriously impaired or endangered, the species composition shall not be altered materially, and the propagation or migration of the fish and other biota normally present shall not be prevented or hindered by the discharge of any sewage, industrial waste or other waste effluents to the intrastate waters.

No sewage, industrial waste or other wastes shall be discharged into any of the intrastate waters of this category so as to cause any material change in any other substances or characteristics which may impair the quality of the intrastate waters or the aquatic biota of any of the above listed classes or in any manner render them unsuitable or objectionable for fishing, fish culture or recreational uses. Additional selective limits or changes in the discharge bases may be imposed on the basis of local needs.

3. ~~(3)~~ Industrial consumption.

Class A. The quality of this class of the intrastate waters of the state shall be such as to permit their use without chemical

*See ammonia footnote for Class 2A waters.

**See chlorine footnote for Class 2A waters.

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treatment, except softening for ground water, for most industrial purposes, except food processing and related uses, for which a high quality of water is required. The quality shall be generally comparable to Class B waters for domestic consumption, except for the following:

Substance or Characteristic	Limit or Range
Chlorides (Cl)	50 milligrams per liter
Hardness	50 milligrams per liter
pH value	6.5-8.5
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~

Class B. The quality of this class of the intrastate waters of the state shall be such as to permit their use for general industrial purposes, except for food processing, with only a moderate degree of treatment. The quality shall be generally comparable to Class D intrastate waters used for domestic consumption, except the following:

Substance or Characteristic	Limit or Range
Chlorides (Cl)	100 milligrams per liter
Hardness	250 milligrams per liter
pH value	6.0-9.0
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~

Class C. The quality of this class of the intrastate waters of the state shall be such as to permit their use for industrial cooling and materials transport without a high degree of treatment being necessary to avoid severe fouling, corrosion, scaling, or other unsatisfactory conditions. The following shall not be exceeded in the intrastate waters:

Substance or Characteristic	Limit or Range
Chlorides (Cl)	250 milligrams per liter
Hardness	500 milligrams per liter
pH value	6.0-9.0
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~

Additional selective limits may be imposed for any specific intrastate waters as needed.

In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged into or permitted by any person to gain access to any intrastate waters classified for industrial purposes so as to cause any material impairment of their use as a source of industrial water supply.

4. ~~(4)~~ Agriculture and wildlife.

Class A. The quality of this class of the intrastate waters of the state shall be such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the waters or area, including truck garden crops. The following concentrations or limits shall be used as a guide in determining the suitability of the waters for such uses, together with the recommendations contained in Handbook 60 published by the Salinity Laboratory of the U.S. Department of Agriculture, and any revisions, amendments or supplements thereto:

Substance or Characteristic	Limit or Range
Bicarbonates (HCO_3)	5 milliequivalents per liter
Boron (B)	0.5 milligram per liter
pH value	6.0-8.5
Specific conductance	1,000 micromhos per centimeter
Total dissolved salts	700 milligrams per liter
Sodium (Na)	60% of total cations as milliequivalents per liter
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~
Sulfates (SO_4)	10 milligrams per liter, applicable to water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels.
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.

Class B. The quality of this class of the intrastate waters of the state shall be such as to permit their use by livestock and wildlife without inhibition or injurious effects. The limits or concentrations of substances or characteristics given below shall not be exceeded in the intrastate waters:

Substance or Characteristic	Limit or Range
pH value	6.0-9.0
Total salinity	1,000 milligrams per liter
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Unspecified toxic substances	None at levels harmful either directly or indirectly.

Additional selective limits may be imposed for any specific intrastate waters as needed.

5. ~~(5)~~ Navigation and waste disposal. The quality of this class of the intrastate waters of the state shall be such as to be suitable for esthetic enjoyment of scenery and to avoid any interference with navigation or damaging effects on property. The following limits or concentrations shall not be exceeded in the intrastate waters:

Substance or Characteristic	Limit or Range
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~
pH value	6.0-9.0
Hydrogen sulfide	0.02 milligrams per liter

Additional selective limits may be imposed for any specific intrastate waters as needed.

6. ~~(6)~~ Other uses. The uses to be protected in this class may be under other jurisdictions and in other areas to which the intrastate waters of the state are tributary, and may include any

or all of the uses listed in the foregoing categories, plus any other possible beneficial uses. The agency therefore reserves the right to impose any standards necessary for the protection of this class, consistent with legal limitations.

7. Limited resource value waters. The quality of this class of intrastate waters shall be such as to protect aesthetic qualities, secondary body contact use, and ground water for use as a potable water supply. The limits or concentrations of substances or characteristics given below shall not be exceeded in the intrastate waters:

Substance or Characteristic	Limit or Range
Fecal Coliform Organisms	1,000 organisms per 100 milliliters* (applies only between May 1 and October 31)
pH	6.0 to 9.0
Dissolved Oxygen	At concentrations which will avoid odors, or putrid conditions in the receiving water provided that the concentration shall be not less than 1 milligram per liter at all times (instantaneous minimum concentration in order to avoid these conditions unless lower concentrations can be shown to avoid these conditions on a site specific basis.
Unspecified Substances	Unspecified substances shall not be allowed in such quantities or concentrations that will impair the specified uses.

*The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of 5 samples, nor shall more than 10% of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters.

~~CHAPTER FIFTEEN WPC 15~~

6 MCAR § 4.8015 ~~WPC 15~~ Criteria for the classification of the interstate waters of the state and the establishment of standards of quality and purity. The official policy and purpose of the State of Minnesota in regard to these matters is set forth in the Minnesota Water Pollution Control Statutes as amended by Laws of 1973, ch. 374:

§ 115.42. It is the policy of the state to provide for the prevention, control and abatement of pollution of all waters of the state, so far as feasible and practical, in furtherance of conservation of such waters and protection of the public health and in furtherance of the development of the economic welfare of the state.

. . . It is the purpose of Laws of 1963, ch. 874, to safeguard the waters of the state from pollution by: (a) preventing any new pollution; and (b) abating pollution existing when Laws of 1963, ch. 874, become effective, under a program consistent with the declaration of policy above stated.

§ 115.44, subd. 2. In order to attain the objectives of Laws of 1963, ch. 874, the agency, after proper study and after conducting public hearing upon due notice, shall, as soon as practicable, group the designated waters of the state into classes and adopt classifications and standards of purity and quality therefor. Such classification shall be made in accordance with considerations of best usage in the interest of the public and with regard to the considerations mentioned in subdivision 3 hereof.

§ 115.44, subd. 8. If the agency finds in order to comply with the federal water pollution control act or any other federal law or rule or regulation promulgated thereunder that it is impracticable to comply with the requirements of this section in classifying waters or adopting standards or in meeting any of the requirements thereof, compliance with the requirements of such section are waived to the extent necessary to enable the agency to comply with federal laws and rules and regulations promulgated thereunder. The agency may classify waters and adopt criteria and standards in such form and based upon such evidence as it may deem necessary and sufficient for the purposes of meeting requirements of such federal laws, notwithstanding any provisions in chapter 115 or any other state law to the contrary. In the event waters are classified and criteria and standards are adopted to meet the requirements of federal law, the agency shall thereafter proceed to otherwise comply with the provisions of this section which were waived as rapidly as is practicable. This authority shall extend to proceedings pending before the agency on May 20, 1973.

. . . Wherever advisable and practicable the agency may establish standards for effluent or disposal systems discharging into waters of the state regardless of whether such waters are or are not classified.

§ 115.03, subd. 5. Notwithstanding any other provisions prescribed in or pursuant to chapter 115 and, with respect to the pollution of waters of the state, in chapter 116, or otherwise, the agency shall have the authority to perform any and all acts minimally necessary including, but not limited to, the establishment and application of standards, procedures, regulations, orders, variances, stipulation agreements, schedules of compliance, and permit conditions, consistent with and, therefore, not less stringent than the provisions of the Federal Water Pollution Control Act, as amended, applicable to the participation by the state of Minnesota in the National Pollutant Discharge Elimination System (NPDES). . . .

In accordance with this declaration of policy and legislative intent, and under the powers delegated to the agency, the following interstate water use classifications and corresponding standards of quality and purity are hereby adopted by the Pollution Control Agency as provided by law.

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A. ~~(a)~~ Introduction.

1. ~~(1)~~ Scope. The following classifications, criteria and standards of water and effluent quality and purity as hereby adopted and established shall apply to all interstate waters of the state, notwithstanding any other interstate water quality or effluent regulations of general or specific application, except that any more stringent water quality or effluent standards or prohibitions in the other applicable regulations are preserved.

2. ~~(2)~~ Severability. All provisions of this rule shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not void any other lettered paragraph or subparagraph, subdivision or any part thereof.

3. ~~(3)~~ Definitions. The terms "waters of the state" for the purposes of this rule shall be construed to mean interstate waters as herein below defined, and the terms "sewage," "industrial wastes," and "other wastes," as well as any other terms for which definitions are given in the Water Pollution Control Statutes, as used herein have the meanings ascribed to them in Minn. Stat. §§ 115.01 and 115.41, with the exception that disposal systems or treatment works operated under permit of the agency shall not be construed to be "waters of the state" as the term is used herein. Interstate waters are defined as all rivers, lakes, and other waters that flow across or form part of state boundaries. Other terms and abbreviations used herein which are not specifically defined in applicable federal or state law shall be construed in conformance with the context, and in relation to the applicable section of the statutes pertaining to the matter at hand, and current professional usage.

4. ~~(4)~~ Uses of the interstate waters. The classifications are listed separately in accordance with the need for interstate water quality protection, considerations of best use in the interest of the public and other considerations, as indicated in Minn. Stat., § 115.44. The classifications should not be construed to be an order of priority, nor considered to be exclusive or prohibitory of other beneficial uses.

5. ~~(5)~~ Determination of compliance. In making tests or analyses of the interstate waters of the state, sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered necessary by the agency from the viewpoint of adequately reflecting the condition of the interstate waters, the composition of the effluents, and the effects of the pollutants upon the specified uses. Reasonable allowance will be made for dilution of the effluents, which are in compliance with C.6. ~~(c)(6)~~, following discharge into waters of the state. The agency by allowing dilution may consider the effect on all uses of the interstate waters into which the effluents are discharged. The extent of dilution allowed regarding any specific discharge shall not violate the applicable water quality standards. The samples shall be preserved and analyzed in accordance with procedures given in the 1971 edition of *Standard Methods for the Examination of Water and Waste-Water*, by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, and any revisions or amendments thereto. The agency may accept or may develop other methods, procedures, guidelines or criteria for measuring, analyzing and collecting samples.

6. ~~(6)~~ Natural interstate water quality. The interstate waters may, in a state of nature, have some characteristics or properties approaching or exceeding the limits specified in the water quality standards. The standards shall be construed as limiting the addition of pollutants of human activity to those of natural origin, where such be present, so that in total the specified limiting concentrations will not be exceeded in the interstate waters by reason of such controllable additions. Where the background level of the natural origin is reasonably definable and normally is higher than the specified standard the natural level may be used as the standard for controlling the addition of pollutants of human activity which are comparable in nature and significance with those of natural origin. The natural background level may be used instead of the specified water quality standard as a maximum limit of the addition of pollutants, in those instances where the natural level is lower than the specified standard and reasonable justification exists for preserving the quality to that found in a state of nature.

In the adoption of standards for individual interstate waters, the agency will be guided by the standards set forth herein but may make reasonable modifications of the same on the basis of evidence brought forth at a public hearing if it is shown to be desirable and in the public interest to do so in order to encourage the best use of the interstate waters or the lands bordering such interstate waters.

7. ~~(7)~~ Non-degradation. Waters which are of quality better than the established standards shall be maintained at high quality unless a determination is made by the agency that a change is justifiable as a result of necessary economic or social development and will not preclude appropriate beneficial present and future uses of the waters. Any project or development which would constitute a source of pollution to waters of the state shall be required to provide the best practicable control technology currently available not later than July 1, 1977 and the best available technology economically achievable not later than July 1, 1983, and any other applicable treatment standards as defined by and in accordance with the requirements of the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., as amended, in order to maintain high water quality and keep water pollution at a minimum. In implementing this policy, the administrator of the U.S. Environmental Protection Agency will be provided with such information as he requires to discharge his responsibilities under the Federal Water Pollution Control Act, as amended.

8. ~~(8)~~ Variance from standards. In any case where, upon application of the responsible person or persons, the agency finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship, that disposal of the sewage, industrial waste or other waste is necessary for the public health, safety or welfare; and that strict conformity with the standards would be unreason-

able, impractical or not feasible under the circumstances; the agency in its discretion may grant a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these classifications and standards and the intent of the applicable state and federal laws. The U.S. Environmental Protection Agency will be advised of any permits which may be issued under this clause together with information as to the need therefor.

B. ~~(b)~~ Water use classifications—all interstate waters of the state. Based on considerations of best usage in the interest of the public and in conformance with the requirements of the applicable statutes, the interstate waters of the state shall be grouped into one or more of the following classes:

1. ~~(1)~~ Domestic consumption. (To include all interstate waters which are or may be used as a source of supply for drinking, culinary or food processing use or other domestic purposes, and for which quality control is or may be necessary to protect the public health, safety or welfare.)

2. ~~(2)~~ Fisheries and recreation. (To include all interstate waters which are or may be used for fishing, fish culture, bathing or any other recreational purposes, and for which quality control is or may be necessary to protect aquatic or terrestrial life, or the public health, safety or welfare.)

3. ~~(3)~~ Industrial consumption. (To include all interstate waters which are or may be used as a source of supply for industrial process or cooling water, or any other industrial or commercial purposes, and for which quality control is or may be necessary to protect the public health, safety or welfare.)

4. ~~(4)~~ Agriculture and wildlife. (To include all interstate waters which are or may be used for any agriculture purposes, including stock watering and irrigation, or by waterfowl or other wildlife, and for which quality control is or may be necessary to protect terrestrial life or the public health, safety or welfare.)

5. ~~(5)~~ Navigation and waste disposal. (To include all interstate waters which are or may be used for any form of water transportation or navigation, disposal of sewage, industrial waste or other waste effluents, or fire prevention, and for which quality control is or may be necessary to protect the public health, safety or welfare.)

6. ~~(6)~~ Other uses. (To include interstate waters which are or may serve the above listed uses or any other beneficial uses not listed herein, including without limitation any such uses in this or any other state, province, or nation of any interstate waters flowing through or originating in this state, and for which quality control is or may be necessary for the above declared purposes, or to conform with the requirements of the legally constituted state or national agencies having jurisdiction over such interstate waters, or any other considerations the agency may deem proper.)

7. Limited resource value waters. This class includes surface waters of the state which are of limited value as a water resource and where water quantities are intermittent or less than one (1) cubic feet per second at the once in ten year, seven day low flow as defined in C.7. These waters shall be protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the water. It is the intent of the agency that very few waters be classified as limited resource value waters. In conjunction with those factors listed in Minn. Stat. § 115.44, subd. 2 and subd. 3 (1978), the agency shall determine the extent to which the waters of the state demonstrate the conditions set forth below:

a. The existing fishery and potential fishery are severely limited by natural conditions as exhibited by poor water quality characteristics, lack of habitat, or lack of water; or

b. The quality of the resource has been significantly altered by human activity and the effect is essentially irreversible; and

c. There are limited recreational opportunities (such as fishing, swimming, wading or boating) in and on the water resource.

Conditions a. and c. or b. and c. must be established by the agency water assessment procedure before the waters can be classified as limited resource value waters.

C. ~~(c)~~ General standards applicable to all interstate waters of the state.

1. ~~(1)~~ No untreated sewage shall be discharged into any interstate waters of the state. ~~No treated sewage, or industrial waste or other wastes containing viable pathogenic organisms, shall be discharged into interstate waters of the state without effective disinfection.~~ Effective disinfection of any discharges, including combined flows of sewage and storm water, will be required where necessary to protect the specified uses of the interstate waters.

2. ~~(2)~~ No sewage, industrial waste or other wastes shall be discharged into any interstate waters of the state so as to cause any nuisance conditions, such as the presence of significant amounts of floating solids, scum, oil slicks, excessive suspended solids, material discoloration, obnoxious odors, gas ebullition, deleterious sludge deposits, undesirable slimes or fungus growths, or other offensive or harmful effects.

3. ~~(3)~~ Existing discharges of inadequately treated sewage, industrial waste or other wastes shall be abated, treated or controlled so as to comply with the applicable standards. Separation of sanitary sewage from natural runoff may be required where necessary to ensure continuous effective treatment of sewage.

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4. ~~(4)~~ The highest levels of water quality, including, but not limited to, dissolved oxygen, which are attainable in the interstate waters by continuous operation at their maximum capability of all primary and secondary units of treatment works or their equivalent discharging effluents into the interstate waters shall be maintained in order to enhance conditions for the specified uses.

5. ~~(5)~~ Means for expediting mixing and dispersion of sewage, industrial waste, or other waste effluents in the receiving interstate waters are to be provided so far as practicable when deemed necessary by the agency to maintain the quality of the receiving interstate waters in accordance with applicable standards. Mixing zones be established by the agency on an individual basis, with primary consideration being given to the following guidelines: (a) mixing zones in rivers shall permit an acceptable passageway for the movement of fish; (b) the total mixing zone or zones at any transect of the stream should contain no more than 25% of the crossectional area and/or volume of flow of the stream, and should not extend over more than 50% of the width; (c) mixing zone characteristics shall not be lethal to aquatic organisms; (d) for contaminants other than heat, the 96 hour median tolerance limit for indigenous fish and fish food organisms should not be exceeded at any point in the mixing zone; (e) mixing zones should be as small as possible, and not intersect spawning or nursery areas, migratory routes, water intakes, nor mouths of rivers; and (f) overlapping of mixing zones should be minimized and measures taken to prevent adverse synergistic effects.

6. ~~(6)~~ It is herein established that the agency shall require secondary treatment as a minimum for all municipal sewage and biodegradable industrial or other wastes to meet the adopted water quality standards. A comparable high degree of treatment or its equivalent also shall be required of all non-biodegradable industrial or other wastes unless the discharger can demonstrate to the agency that a lesser degree of treatment or control will provide for water quality enhancement commensurate with present and proposed future water uses and a variance is granted under the provisions of the variance clause. Secondary treatment facilities are defined as works which will provide effective sedimentation, biochemical oxidation, and disinfection, or the equivalent, including effluents conforming to the following:

Substance or Characteristic	Limiting Concentration or Range*
5-Day Biochemical Oxygen Demand*	25 milligrams per liter
Fecal coliform group organisms***	200 ~~most probable number~~ organisms per 100 milliliters (May 1 through October 31)
Total suspended solids*	30 milligrams per liter
~~Pathogenic organisms~~	~~None~~
Oil	Essentially free of visible oil
Phosphorus**	1 milligram per liter
Turbidity	25
pH range	6.5-8.5
Unspecified toxic or corrosive substances	None at levels acutely toxic to humans or other animals or plant life, or directly damaging to real property.

~~In addition to providing secondary treatment as defined above, all dischargers of sewage, industrial wastes or other wastes also shall provide the best practicable control technology not later than July 1, 1977, and best available technology economically achievable by July 1, 1983, and any other applicable treatment standards as defined by and in accordance with the requirements and schedules of the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., as amended, and applicable regulations or rules promulgated pursuant thereto by the Administrator of the U.S. Environmental Protection Agency~~.

The requirements of this rule and specifically the requirement of secondary treatment as stated above shall be in addition to any requirement imposed on a discharge by the Clean Water Act, 33 U.S.C. 1251 et seq., and its implementing regulations. In the case of a conflict between the requirements of this rule and the requirements of the Clean Water Act or its implementing regulations, the more stringent requirement shall be controlling.

7. ~~(7)~~ Dischargers of sewage, industrial waste or other waste effluents shall be controlled so that the water quality standards will be maintained at all stream flows which are equal to or exceeded by 90 percent of the seven consecutive daily average flows of record (the lowest weekly flow with a once in ten year recurrence interval) for the critical month(s). The period of record for determining the specific flow for the stated recurrence interval, where records are available, shall include at least the most recent ten years of record, including flow records obtained after establishment of flow regulation devices, if any. Such calculations shall not be applied to lakes and their embayments which have no comparable flow recurrence interval. Where stream flow records are not available, the flow may be estimated on the basis of available information on the watershed characteristics, precipitation, run-off and other relevant data.

Allowance shall not be made in the design of treatment works

*The arithmetic mean for concentrations of 5-day biochemical oxygen demand and total suspended solids shall not exceed the stated values in a period of 30 consecutive days and 45 milligrams per liter in a period of 7 consecutive days. ~~Disinfection of wastewater effluents to reduce the coliform organisms levels is required year around. The geometric mean for the fecal coliform organisms shall not exceed the stated value in a period of 30 consecutive days and 400 most probable number per 100 milliliters in a period of 7 consecutive days. The application of the coliform and pathogenic organism standards ordinarily shall be limited to sewage or other effluents containing admixtures of sewage and shall not apply to industrial wastes except where the presence of sewage, fecal coliform organisms or viable pathogenic organisms in such wastes is known or reasonably certain.~~

**Where the discharge of effluent is directly to or affects a lake or reservoir. Removal of nutrients from all wastes shall be provided to the fullest practicable extent wherever sources of nutrients are considered to be actually or potentially detrimental to preservation of enhancement of the designated water uses.

***Disinfection of wastewater effluents to reduce the levels of fecal coliform organisms to the stated value is required from May 1 through October 31 except that where the effluent is discharged 25 miles or less upstream of a water intake supplying a potable water system, the reduction to the stated value is required year around. The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of five samples, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. The application of the fecal coliform group organism standards shall be limited to sewage or other effluents containing admixtures of sewage and shall not apply to industrial wastes except where the presence of sewage, fecal coliform organisms or viable pathogenic organisms in such wastes is known or reasonably certain.

for low stream flow augmentation unless such flow augmentation of minimum flow is dependable and controlled under applicable laws or regulations.

8. ~~(8)~~ In any instance where it is evident that the minimal treatment specified in C.6. ~~(e)(6)~~ and dispersion are not effective in preventing pollution, or if at the applicable flows it is evident that the specified stream flow is inadequate to protect the specified water quality standards, the specific standards may be interpreted as effluent standards for control purposes. In addition, the following effluent standards may be applied without any allowance for dilution where stream flow or other factors are such as to prevent adequate dilution, or where it is otherwise necessary to protect the interstate waters for the stated uses:

Item*	Limits
5-day biochemical oxygen demand	5 milligrams per liter
~~Total suspended solids~~	~~5 milligrams per liter~~

This section shall not apply to discharges to surface waters classified as limited resource value waters pursuant to B.7. of this rule and 6 MCAR § 4.8025.

~~(9) In any case where, after a public hearing, the Agency finds it necessary for conformance with Federal requirements, or conservation of the interstate waters of the state, or protection of the public health, or in furtherance of the development of the economic welfare of the state, it may prohibit or further limit the discharge to any designated interstate waters of any sewage, industrial waste, or other waste effluents, or any component thereof, whether such effluents are treated or untreated or existing or new, notwithstanding any other provisions of classifications or specific standards stated herein which may be applicable to such designated interstate waters.~~

9. Notwithstanding the provisions of C.8. and C.16. of this rule, the agency may require a specific discharger to meet effluent limitations which are necessary to maintain the water quality of the receiving water at the standards of quality and purity established by this rule. Any effluent limitation determined to be necessary under this section shall only be required of a discharger after the discharger has been given notice of the specific effluent limitations and an opportunity for public hearing provided that compliance with the requirements of 6 MCAR § 4.8036 H. regarding notice of National Pollutant Discharge Elimination System and State Disposal System permits shall satisfy the notice and opportunity for hearing requirements of this section.

10. ~~(10) It shall be incumbent upon all persons responsible for existing or new sources of sewage, industrial wastes or other wastes which are or will be discharged to interstate waters, to treat or control their wastes so as to produce effluents having a common level or concentration of pollutants of comparable nature or effect as may be necessary to meet the specified standards or better, but this shall not be interpreted to prohibit the Agency, a~~ After providing an opportunity for public hearing ~~from accepting~~ the agency shall accept effective loss prevention and/or water conservation measures or process changes or other waste control measures or arrangements if it finds that such measures, changes or arrangements are ~~as being~~ equivalent to the waste treatment measures required for compliance with applicable effluent and/or water quality standards or load allocations.

11. ~~(11)~~ All sources of sewage, industrial waste, or other waste which do not at present have a valid operation and discharge permit, or an application for the same pending before the agency, shall apply for the same within 30 days of the adoption of this regulation, or the agency may abate the source forthwith. The provisions of C.6. ~~(e)(6)~~ relating to effluent quality standards, and the other provisions of this rule, are applicable to existing sewage, industrial waste or other waste disposal facilities and the effluent discharged therefrom. Nothing herein shall be construed to prevent the agency subsequently from modifying any existing permits so as to conform with federal requirements and the requirements of this rule.

12. ~~(12)~~ Liquid substances which are not commonly considered to be sewage or industrial wastes but which could constitute a pollution hazard shall be stored in accordance with ~~Regulation WPC 4,~~ 6 MCAR § 4.8004, and any revisions or amendments thereto. Other wastes as defined by law or other substances which could constitute a pollution hazard shall not be deposited in any manner such that the same may be likely to gain entry into any interstate waters of the state in excess of or contrary to any of the standards herein adopted, or cause pollution as defined by law.

13. ~~(13)~~ No sewage, industrial waste or other wastes shall be discharged into the interstate waters of the state in such quantity or in such manner alone or in combination with other substances as to cause pollution thereof as defined by law. In any case where the interstate waters of the state into which sewage, industrial wastes or other waste effluents discharge are assigned different standards than the interstate waters into which such receiving interstate waters flow, the standards applicable to the interstate waters into which such sewage, industrial waste or other wastes discharged shall be supplemented by the following:

*The concentrations specified in C.6. ~~(e)(6)~~ of this rule may be used in lieu thereof if the discharge of effluent is restricted to the spring flush or other high runoff periods when the stream flow rate above the discharge point is sufficiently greater than the effluent flow rate to insure that the applicable water quality standards are met during such discharge period. If treatment works are designed and constructed to meet the specified limits given above for a continuous discharge, at the discretion of the Agency the operation of such works may allow for the effluent quality to vary between the limits specified above and in C.6. ~~(e)(6)~~, provided the water quality standards and all other requirements of the Agency and the U.S. Environmental Protection Agency are being met. Such variability of operation must be based on adequate monitoring of the treatment works and the effluent and receiving waters as specified by the agency.

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The quality of any waters of the state receiving sewage, industrial waste or other waste effluents shall be such that no violation of the standards of any interstate waters of the state in any other class shall occur by reason of the discharge of such sewage, industrial waste or other waste effluents.

14. ~~(14)~~ Questions concerning the permissible levels, or changes in the same, of a substance, or combination of substances, of undefined toxicity to fish or other biota shall be resolved in accordance with the latest methods recommended by the U.S. Environmental Protection Agency. ~~The recommendations of the National Technical Advisory Committee appointed by the U.S. Environmental Protection Agency shall be used as official guidelines in all aspects where the recommendations may be applicable.~~ The agency shall consider the recommendations of the Quality Criteria for Water, USEPA 1976, in making determinations under this section. Toxic substances shall not exceed 1/10 of the 96 hour median tolerance limit (TLM) as a water quality standard except that other ~~more stringent~~ application factors shall be used when justified on the basis of available scientific evidence.

15. ~~(15)~~ All persons operating or responsible for sewage, industrial waste or other waste disposal systems which are adjacent to or which discharge effluents to these waters or to tributaries which affect the same, shall submit regularly every month a report to the agency on the operation of the disposal system, the effluent flow, and the characteristics of the effluents and receiving waters. Sufficient data on measurements, observations, sampling and analyses, and other pertinent information shall be furnished as may be required by the Agency to adequately evaluate the condition of the disposal system, the effluent, and the waters receiving or affected by the effluent.

16. Limited resource value waters.

a. For point source discharges to surface waters classified as limited resource value waters pursuant to B.7. of this rule and 6 MCAR § 4.8025 the agency shall require treatment facilities which will provide effluents conforming to the following limitations:

Substance or Characteristic	Limiting Concentration
5-Day Biochemical Oxygen Demand	15 milligrams per liter*

b. The agency may allow treatment works to be constructed and/or operated to produce effluents to limited resource value waters at levels up to those stated in C.6. of this rule provided that it is demonstrated that the water quality standards for limited resource value waters will be maintained during all periods of discharge from the treatment facilities.

c. Notwithstanding the effluent limitations established by this section the quality of limited resource value waters shall not be such as to allow a violation of applicable water quality standards in waters of the state which are connected to or affected by water classified as limited resource value waters.

D. ~~(d)~~ Specific standards of quality and purity for designated classes of interstate waters of the state. The following standards shall prescribe the qualities or properties of the interstate waters of the state which are necessary for the designated public use or benefit and which, if the limiting conditions given are exceeded, shall be considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental or injurious with respect to such designated uses or established classes of the interstate waters:

1. ~~(1)~~ Domestic consumption.

Class A. The quality of this class of the interstate waters of the state shall be such that without treatment of any kind the raw waters will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to underground waters with a high degree of natural protection. The basic requirements are given below:

Substance or Characteristic	Limit or Range
Total coliform organisms	1 most probable number per 100 milliliters
Turbidity value	5
Color value	15
Threshold odor number	3
Methylene blue active substance (MBAS)	0.5 milligram per liter
Arsenic (As)	0.01 milligram per liter
Chlorides (Cl)	250 milligrams per liter
Copper (Cu)	1 milligram per liter
Carbon Chloroform extract	0.2 milligram per liter
Cyanides (CN)	0.01 milligram per liter
Fluorides (F)	1.5 milligrams per liter
Iron (Fe)	0.3 milligram per liter
Manganese (Mn)	0.05 milligram per liter
Nitrates (NO_3)	45 milligrams per liter
Phenol	0.001 milligram per liter
Sulfates (SO_4)	250 milligrams per liter
Total dissolved solids	500 milligrams per liter
Zinc (Zn)	5 milligrams per liter
Barium (Ba)	1 milligram per liter
Cadmium (Cd)	0.01 milligram per liter
Chromium (Hexavalent, Cr)	0.05 milligram per liter
Lead (Pb)	0.05 milligram per liter
Selenium (Se)	0.01 milligram per liter
Silver (Ag)	0.05 milligram per liter
Radioactive material	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.

Class B. The quality of this class of the interstate waters of the state shall be such that with approved disinfection, such as simple chlorination or its equivalent, the treated water will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U.S. Department

*As measured by the arithmetic mean of all samples taken during any calendar month.

of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to surface and underground waters with a moderately high degree of natural protection. The physical and chemical standards quoted above for Class A interstate waters shall also apply to these interstate waters in the untreated state~~:~~ ~~except as listed below:~~

~~Substance or Characteristic~~	~~Limit or Range~~
~~Fecal coliform organisms~~	~~10 most probable number per 100 milliliters~~

Class C. The quality of this class of the interstate waters of the state shall be such that with treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment processes, the treated water will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to surface waters, and ground waters in aquifers not considered to afford adequate protection against contamination from surface or other sources of pollution. Such aquifers normally would include fractured and channeled limestone, unprotected impervious hard rock where interstate water is obtained from mechanical fractures, joints, etc., with surface connections, and coarse gravels subjected to surface water infiltration. The physical and chemical standards quoted above for Class A interstate waters shall also apply to these interstate waters in the untreated state, except as listed below:

Substance or Characteristic	Limit or Range
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~
Turbidity value	25

Class D. The quality of this class of the interstate waters of the state shall be such that after treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, plus additional pre, post, or intermediate states of treatment, or other equivalent treatment processes, the treated water will meet in all respects the recommended requirements of the Public Health Service Drinking Water Standards-1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revisions, amendments or supplements thereto. This standard will ordinarily be restricted to surface waters, and ground waters in aquifers not considered to afford adequate protection against contamination from surface or other sources of pollution. Such aquifers normally would include fractured and channeled limestone, unprotected impervious hard rock where water is obtained from mechanical fractures, joints, etc., with surface connections, and coarse gravels subjected to surface water infiltration. The concentrations or ranges given below shall not be exceeded in the raw waters before treatment:

Substance or Characteristic	Limit or Range
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~
Arsenic (As)	0.05 milligram per liter
Barium (Ba)	1 milligram per liter
Cadmium (Cd)	0.01 milligram per liter
Chromium (Cr + 6)	0.05 milligram per liter
Cyanide (CN)	0.2 milligram per liter
Fluoride (F)	1.5 milligrams per liter
Lead (Pb)	0.05 milligram per liter
Selenium (Se)	0.01 milligram per liter
Silver (Ag)	0.05 milligram per liter
Radioactive Material	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.

In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged into or permitted by any person to gain access to any interstate waters classified for domestic consumption so as to cause any material undesirable increase in the taste, hardness, temperature, toxicity, corrosiveness or nutrient content, or in any other manner to impair the natural quality or value of the interstate waters for use as a source of drinking water.

2. ~~(2)~~ Fisheries and recreation.

Class A. The quality of this class of the interstate waters of the state shall be such as to permit the propagation and maintenance of warm or cold water sport or commercial fishes and be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable. Limiting concentrations or ranges of substances or characteristics which should not be exceeded in the interstate waters are given below:

Substance or Characteristic	Limit or Range
Dissolved oxygen	~~Not less than 7 milligrams per liter from October 1st and continuing through May 31st, and Not not less than 6 milligrams per liter at other times.~~ Not less then 7 milligrams per liter at all times (instantaneous minimum concentration)
Temperature	No material increase

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Substance or Characteristic	Limit or Range
Ammonia (N) *	~~0.2 milligram per liter~~ 0.016 milligram per liter (un-ionized as N)
Chlorides (Cl)	50 milligrams per liter
Chromium (Cr)	0.02 milligram per liter
Copper (Cu)	0.01 milligram per liter or not greater than 1/10 the 96 hour TLM value.
Cyanides (CN)	0.2 milligram per liter
Oil	0.5 milligram per liter
pH value	6.5-8.5
Phenols	0.01 milligram per liter and none that could impart odor or taste to fish flesh or other fresh-water edible products such as crayfish, clams, prawns and like creatures. Where it seems probable that a discharge may result in tainting of edible aquatic products, bio-assays and taste panels will be required to determine whether tainting is likely or present.
Turbidity value	10
Color value	30
Fecal coliform organisms	~~200 most probable number per 100 milliliters as a monthly geometric mean based on not less than 5 samples per month, nor exceed 400 most probable number per 100 milliliters in more than 10% of all samples during any month.~~ 200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between May 1 and October 31)
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Total Residual Chlorine**	0.003 milligrams per liter

*The percent un-ionized ammonia can be calculated for any temperature and pH using the following formula taken from Thurston, R.V., R.C. Russo, and K. Emerson, 1974. Aqueous ammonia equilibrium calculations. Technical Report Number 74-1, Fisheries Bioassay Laboratory, Montana State University, Bozeman, MT. 18 p.

$$f = \frac{1}{10^{pk_a - pH} + 1} \times 100$$

where:

f = the percent of total ammonia in the un-ionized state

$^{pk}a = \frac{0.0901821 + 2729.92}{T}$, dissociation constant for ammonia

T = temperature in degrees Kelvin (273.16° Kelvin = 0° Celsius)

Class B. The quality of this class of the interstate waters of the state shall be such as to permit the propagation and maintenance of cool or warm water sport or commercial fishes and be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable. Limiting concentrations or ranges of substances or characteristics which should not be exceeded in the interstate waters are given below:

Substance or Characteristic	Limit or Range
Dissolved oxygen	~~Not less than 6 milligrams per liter from April 1 through May 31, and Not less than 5 milligrams per liter at other times.~~ Not less than 5 milligrams per liter at all times (instantaneous minimum concentration)
Temperature *	5°F above natural in streams and 3°F above natural in lakes, based on monthly average of the maximum daily temperature, except in no case shall it exceed the daily average temperature of 86°F.
Ammonia (N)**	~~1 milligram per liter~~ 0.04 milligram per liter (un-ionized as N)
Chromium (Cr)	0.05 milligram per liter
Copper (Cu)	0.01 milligram per liter or not greater than 1/10 the 96 hour TLM value.
Cyanides (CN)	0.02 milligram per liter
Oil	0.5 milligram per liter
pH value	6.5-9.0
Phenols	0.01 milligram per liter and none that could impart odor or taste to fish flesh or other fresh-water edible products such as crayfish, clams, prawns and like creatures. Where it seems probable that a discharge may result in tainting of edible aquatic products, bioassays and taste panels will be required to determine whether tainting is likely or present.
Turbidity value	25
Fecal coliform organisms	~~200 most probable number per 100 milliliters as a monthly geometric mean based on not less than 5 samples per month, nor equal or exceed 2000 most probable number per 100 milliliters in more than 10% of all samples during any month.~~ 200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month,

**Applies to conditions of continuous exposure, where continuous exposure refers to effluents which are discharged for more than a total of two hours in any 24 hour period.

Substance or Characteristic	Limit or Range
	nor shall more than 10% of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between May 1 and October 31).
Radioactive materials	Not to exceed the lowest concentration permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Total Residual Chlorine***	0.003 milligrams per liter

Class C. The quality of this class of the interstate waters of the state shall be such as to permit the propagation and maintenance of rough fish or species commonly inhabiting waters of the vicinity under natural conditions, and be suitable for boating and other forms of aquatic recreation for which the interstate waters may be usable. Limiting concentrations or ranges of substances or characteristics which should not be exceeded in the interstate waters are given below:

Substance or Characteristic	Limit or Range
Dissolved oxygen	~~Not less than 5 milligrams per liter from April 1 through November 30, and not less than 4 milligrams per liter at other times.~~ Not less than 5 milligrams per liter at all times (instantaneous minimum concentration)
Temperature*	5°F above natural in streams and 3°F above natural in lakes, based on monthly average of the maximum daily temperature except in no case shall it exceed the daily average temperature of 90°F.
Ammonia (N)**	~~1.5 milligrams per liter~~ 0.04 milligram per liter (un-ionized as N)
Chromium (Cr)	0.05 milligram per liter
Copper (Cu)	0.01 milligram per liter or not greater than 1/10 the 96 hour TLM value.
Cyanides (Cn)	0.02 milligram per liter
Oil	10 milligrams per liter, and none in such quantities as to (1) produce a visible color film on the surface, (2) impart an oil odor to water or an oil taste to fish and edible invertebrates, (3) coat the banks and bottom of the watercourse or taint any of the associated biota, or (4) become effective toxicants according to the criteria recommended.
pH value	6.5-9.0
Phenols	0.1 milligram per liter and none that could impart odor or taste to fish flesh or other fresh-water edible products such as crayfish, clams, prawns and like creatures. Where it seems probable that a discharge may result in tainting of edible aquatic products, bioassays and taste panels will be required to determine whether tainting is likely or present.
Turbidity value	25
Fecal coliform organisms	~~200 most probable number per 100 milliliters as a geometric mean nor equal or exceed 2000 most probable number per 100 milliliters in more than 10% of the samples.~~ 200 organisms per 100 milliliters as a logarithmic mean measured in not less than five samples in any calendar month, nor shall more than 10% of all samples taken during any

*The following temperature criteria will be applicable for the Mississippi River from Lake Itasca to the outlet of the Metro Wastewater Treatment Works in St. Paul in addition to or superseding the above. The weekly average temperature shall not exceed the following temperatures during the specified months:

January	40°F	July	83°F
February	40°F	August	83°F
March	48°F	September	78°F
April	60°F	October	68°F
May	72°F	November	50°F
June	78°F	December	40°F

For the Mississippi River from Lock and Dam No. 2 at Hastings to the Iowa Border, the weekly average temperature shall not exceed the following temperatures during the specified months:

January	40°F	July	84°F
February	40°F	August	84°F
March	54°F	September	82°F
April	65°F	October	73°F
May	75°F	November	58°F
June	84°F	December	48°F

**See ammonia footnote for Class 2A waters.
***See chlorine footnote for Class 2A waters.

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Substance or Characteristic	Limit or Range
	calendar month individually exceed 400 organisms per 100 milliliters. (Applies only between May 1 and October 31).
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Total Residual Chlorine***	0.003 milligrams per liter

For all classes of fisheries and recreation waters, the aquatic habitat, which includes the interstate waters and stream bed, shall not be degraded in any material manner, there shall be no material increase in undesirable slime growths or aquatic plants, including algae, nor shall there be any significant increase in harmful pesticide or other residues in the waters, sediments and aquatic flora and fauna; the normal fishery and lower aquatic biota upon which it is dependent and the use thereof shall not be seriously impaired or endangered, the species composition shall not be altered materially, and the propagation or migration of the fish and other biota normally present shall not be prevented or hindered by the discharge of any sewage, industrial waste or other waste effluents to the interstate waters.

No sewage, industrial waste or other wastes shall be discharged into any of the interstate waters of this category so as to cause any material change in any other substances or characteristics which may impair the quality of the interstate waters or the aquatic biota of any of the above listed classes or in any manner render them unsuitable or objectionable for fishing, fish culture or recreational uses. Additional selective limits or changes in the discharge bases may be imposed on the basis of local needs.

3. ~~(3)~~ Industrial consumption.

Class A. The quality of this class of the interstate waters of the state shall be such as to permit their use without chemical treatment, except softening for ground water, for most industrial purposes, except food processing and related uses, for which a high quality of water is required. The quality shall be generally comparable to Class B waters for domestic consumption, except for the following:

Substance or Characteristic	Limit or Range
Chlorides (Cl)	50 milligrams per liter
Hardness	50 milligrams per liter
pH value	6.5-8.5
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~

Class B. The quality of this class of the interstate waters of the state shall be such as to permit their use for general industrial purposes, except for food processing, with only a moderate degree of treatment. The quality shall be generally comparable to Class D interstate waters used for domestic consumption, except the following:

Substance or Characteristic	Limit or Range
Chlorides (Cl)	100 milligrams per liter
Hardness	250 milligrams per liter
pH value	6.0-9.0
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~

Class C. The quality of this class of the interstate waters of the state shall be such as to permit their use for industrial cooling and materials transport without a high degree of treatment being necessary to avoid severe fouling, corrosion, scaling, or other unsatisfactory conditions. The following shall not be exceeded in the interstate waters:

Substance or Characteristic	Limit or Range
Chlorides (Cl)	250 milligrams per liter
Hardness	500 milligrams per liter
pH value	6.0-9.0
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~

Additional selective limits may be imposed for any specific interstate waters as needed.

In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged into or permitted by any person to gain access to any interstate waters classified for industrial purposes so as to cause any material impairment of their use as a source of industrial water supply.

4. ~~(4)~~ Agriculture and wildlife.

Class A. The quality of this class of the interstate waters of the state shall be such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the waters or area, including truck garden crops. The following concentrations or limits shall be used as a guide in determining the suitability of the waters for such uses, together with the recommendations contained in Handbook 60 published by the Salinity Laboratory of the U.S. Department of Agriculture, and any revisions, amendments or supplements thereto:

Substance or Characteristic	Limit or Range
Bicarbonates (HCO_3)	5 milliequivalents per liter
Boron (B)	0.5 milligram per liter
pH value	6.0-8.5
Specific conductance	1,000 micromhos per centimeter

*The following temperature criteria will be applicable for the Mississippi River from the outlet of the Metro Wastewater Treatment Works in St. Paul to Lock and Dam No. 2 at Hastings in addition to or superseding the above. The weekly average temperature shall not exceed the following temperatures during the specified months.

January	40°F	July	83°F
February	40°F	August	83°F
March	48°F	September	78°F
April	60°F	October	68°F
May	72°F	November	50°F
June	78°F	December	40°F

**See ammonia footnote for Class 2A waters.
***See chlorine footnote for Class 2A waters.

Substance or Characteristic	Limit or Range
Total dissolved salts	700 milligrams per liter
Sodium (Na)	60% of total cations as milliequivalents per liter
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~
Suflates (SO_4)	10 milligrams per liter, applicable to water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels.
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.

Class B. The quality of this class of the interstate waters of the state shall be such as to permit their use by livestock and wildlife without inhibition or injurious effects. The limits or concentrations of substances or characteristics given below shall not be exceeded in the interstate waters:

Substance or Characteristic	Limit or Range
pH value	6.0-9.0
Total salinity	1,000 milligrams per liter
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Unspecified toxic substances	None at levels harmful either directly or indirectly.

Additional selective limits may be imposed for any specific interstate waters as needed.

5. ~~(5)~~ Navigation and waste disposal. The quality of this class of the interstate waters of the state shall be such as to be suitable for esthetic enjoyment of scenery and to avoid any interference with navigation or damaging effects on property. The following limits or concentrations shall not be exceeded in the interstate waters:

Substance or Characteristic	Limit or Range
~~Fecal coliform organisms~~	~~200 most probable number per 100 milliliters~~
pH value	6.0-9.0
Hydrogen sulfide	0.02 milligrams per liter

Additional selective limits may be imposed for any specific interstate waters as needed.

6. ~~(6)~~ Other uses. The uses ot be protected in this class may be under other jurisdictions and in other areas to which the interstate waters of the state are tributary, and may include any or all of the uses listed in the foregoing categories, plus any other possible beneficial uses. The agency therefore reserves the right to impose any standards necessary for the protection of this class, consistent with legal limitations.

7. Limited resource value waters. The quality of this class of interstate waters shall be such as to protect aesthetic qualities, secondary body contact use, and ground water for use as a potable water supply. The limits or concentrations of substances or characteristics given below shall not be exceeded in the interstate waters:

Substance or Characteristic	Limit or Range
Fecal Coliform Organisms	1,000 organisms per 100 milliliters* (applies only between May 1 and October 31)
pH	6.0 to 9.0
Dissolved Oxygen	At concentrations which will avoid odors, or putrid conditions in the receiving water provided that the concentration shall be not less than 1 milligram per liter at all times (instantaneous minimum concentration) in order to avoid these conditions unless lower concentrations can be shown to avoid these conditions on a site specific basis.
Unspecified Substances	Unspecified substances shall not be allowed in such quantities or concentrations that will impair the specified uses.

~~CHAPTER TWENTY FOUR: WPC 24~~

6 MCAR § 4.8024 ~~WPC 24~~ Classifications of Intrastate Waters of Minnesota. The following regulation establishing classifications pertains to all intrastate surface waters of the state.

A. ~~(a)~~ All intrastate waters are included, although some minor watercourses such as unnamed streams or interconnecting waters and/or intermittently flowing creeks, ditches, or draws, etc., are not listed individually herein. All intrastate waters are classified herein and this classification shall supersede the classification of the intrastate waters given in WPC ~~1, 2, 5, 6, 7, 8, 9, 10, 16 and 17~~.

B. ~~(b)~~ All known present uses and/or uses which may be made of the waters in the future are included. In addition to the

*The stated value is not to be exceeded in any calendar month as determined by the logarithmic mean of a minimum of 5 samples, nor shall nore than 10% of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters.

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classification given below, all of the waters named herein are also included in Classes 2C, 3C, 4A and B, 5 and 6, where such uses are possible, provided that waters specifically classified as limited resource value shall only be included in the following additional classes: 3C, 4A, 4B, 5 and 6. All other waters not specifically named herein shall be classified as 2B, 2C, 3B, 3C, 4A and B, 5 and 6. ~~unless deletion of any one or all of such designations is recommended by the Minnesota Department of Natural Resources on the basis of information available as to its actual or potential suitability for the given uses.~~ Where specific criteria are common to two or more listed classes the more restrictive value shall apply. For additional information refer to 6 MCAR § 4.8014 ~~Regulation WPC 14~~, Criteria for the classification of the intrastate waters of the state and the establishment of standards of quality and purity~~, and to Regulation WPC 23, Standards of Quality and Purity for Effluents Discharged to Intrastate Waters~~.

C. ~~(c)~~ Interstate waters as defined in the Federal Water Pollution Control Act, as amended (33 U.S.C. 466 et seq.), § 13(e) thereof as including all rivers, lakes, and other waters that flow across or form a part or state boundaries. All of the remaining designated waters of the state which do not meet the definition of interstate waters given above are to be construed herein as constituting intrastate waters.

D. ~~(d)~~ The provisions of this regulation shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not make void any other lettered paragraph, subparagraph, subdivision or any other party thereof.

E. Supplement 1 to this rule lists intrastate waters that are classified as limited resource value waters, Class 7. For those intrastate waters identified with an asterisk (*), the revised classification in Supplement 1 shall supersede any previous classification; provided, however, that the limited resource value classification shall apply only to that portion of the water specifically described in Supplement 1.

Supplement 1

CLASS 7 Limited Resource Value Waters

Lake Superior Basin	
St. Louis River Watershed (No. 1)	
Streams	
*Barber Creek (East Swan River) (Chisholm Creek) Chisholm	T 58 R20 S21,22,26,27,34,35
*Elbow Creek Eveleth	T 57 R17 S6 T 57 R18 S1
Unnamed Creek Meadowlands	T 53 R19 S22,23
Unnamed Ditch Eveleth	T 57 R17 S6
Unnamed Ditch Gilbert	T 58 R17 S23,24,25,36
Lake Superior Watershed (No. 2)	
Lake of the Woods Basin	
Rainy Lake Watershed (No. 3)	
Unnamed Swamp Winton	T 63 R11 S19 T 63 R12 S24
Little Fork River Watershed (No. 4)	
Big Fork River Watershed (No. 5)	
Lake of the Woods Watershed (No. 6)	
Bad River of the North Basin	
Mustinka-Boise de Sioux Rivers Watershed (No. 7)	
Streams	
*Twelve Mile Creek (County Ditch No. 1) Donnelly	T126 R43 S16,17,18,19,21,22, 25,26,27 T126 R44 S23,24,25,26,27,28, 29,30,31,32,33 T126 R45 S25,26,27,28,36
Otter Tail River Watershed (No. 8)	
Streams	
County Ditch No. 65 New York Mills	T135 R37 S18 T135 R38 S13
Willow Creek New York Mills	T135 R38 S13,14,15,16,17,18
Lakes	
Unnamed Slough Vergas	T137 R40 S18 T137 R41 S13,24
Buffalo River Watershed (No. 9)	
Streams	
County Ditch No. 6A-2 Rothsay	T135 R45 S21,28,33
County Ditch No. 32 Sabin	T138 R48 S13,14,15,16,17,18
Unnamed Creek Rothsay	T135 R45 S21,22,23,25,26
Unnamed Ditch Audubon	T139 R42 S4,9
Unnamed Ditch Lake Park	T139 R43 S4
Unnamed Ditch Glyndon	T139 R47 S1,2,12 T140 R47 S35
Unnamed Ditch Callaway	T140 R41 S6 T140 R42 S1,2,10,11
Wild Rice River Watershed (No. 10)	
Unnamed Ditch Gary	T145 R44 S22,27,34
Red Lake River Watershed (No. 11)	
Streams	
Judicial Ditch No. 13 Goodridge	T154 R40 S16,17,18
Judicial Ditch No. 18 Goodridge	T154 R40 S18,19,27,28,29,30 T154 R41 S13,14,15,16,17,18 T154 R42 S7,8,13,14,15,16 T154 R43 S9,10,11,12,16
Unnamed Creek Shevlin	T147 R36 S17,18 T147 R37 S11,12,13,14
Unnamed Ditch Erskine	T149 R42 S34,35
Unnamed Ditch Thief River Falls	T154 R43 S31,32,33
Middle River Watershed (No. 12)	
Two Rivers Watershed (No. 13)	
Roseau River Watershed (No. 14)	
Upper Mississippi River Basin	
Mississippi River Headwaters Watershed (No. 15)	

Streams	
County Ditch No. 42	T 48 R23 S29,32
McGregor	
*Sandy River	T 48 R23 S19,29,30
McGregor	T 48 R24 S13,24
Unnamed Creek	T 56 R23 S21
Calumet	
Unnamed Ditch	T 48 R23 S31,32
McGregor	
Unnamed Ditch	T 56 R22 S4,5
Nashwauk	T 57 R22 S32
Unnamed Ditch	T 56 R24 S22
Taconite	
Lakes	
Unnamed Swamp	T 56 R24 S22
Taconite	

Crow Wing River Watershed (No. 16)

Streams	
County Ditch No. 15	T132 R35 S2
(Bear Creek)	T133 R34 S7
Bertha	T133 R35 S12,13,24,25,26,35
County Ditch No. 23	T129 R38 S26,27
Garfield	
Unnamed Creek	T129 R36 S6
Miltona	T130 R36 S30,31
Unnamed Ditch	T130 R36 S30
Miltona	T130 R37 S25,36
Lakes	
Unnamed Slough	T130 R37 S26,35,36
Miltona	
Unnamed Swamp	T133 R33 S1
Staples	

Crow River Watershed (No. 17)

Streams	
County Ditch No. 23A	T119 R34 S29,30
Willmar	T119 R35 S23,25,26
County Ditch No. 132	T116 R31 S16,21
Lakeside	
Lakeside Coop Cry.	
*Crane Creek	T117 R27 S14,20,21,22,23
Winsted	
Judicial Ditch No. 1	T116 R31 S28,33
Lakeside	
Lakeside Coop Cry.	
Judicial Ditch No. 15	T115 R31 S15,16,20,21,29,30
Buffalo Lake	T115 R32 S22,25,26,27,28,32, 33
Iowa Pork Industries	
Hector	
*Skunk River (Co. Dt. No. 37)	T123 R35 S4,5,9
(Co. Dt. No. 29)	T123 R35 S9,10,11,12
Brooten	T123 R34 S3,4,5,6,7,8
Unnamed Creek	T119 R26 S22,26,27,35
Hiller Mobile Home Court	
Unnamed Ditch	T115 R28 S14,23
Glencoe	
Green Giant	
Unnamed Ditch	T115 R28 S21,22,27,28
Glencoe	
Green Giant	
Unnamed Ditch	T116 R30 S19,20,21,28,33
Near Hutchinson	
West Lynn Coop Creamery	
Unnamed Ditch	T117 R27 S10,11
Winsted	
Green Giant	
Unnamed Ditch	T119 R26 S34,35
Hiller Mobile Home Court	
Unnamed Ditch	T119 R34 S10,15,21,22,28, 29,32
Kandiyohi	
Unnamed Ditch	T123 R34 S19,30
Belgrade	
Unnamed Stream	T117 R27 S11,12
Winsted	

Rum River Watershed (No. 18)

Streams	
Lower Stanchfield Brook	T 37 R23 S3,10,15,22
Braham	
Unnamed Ditch	T 37 R23 S2,3
Braham	
Unnamed Ditch	T 38 R28 S4,5
Ramey	T 39 R28 S29,30,32
Ramey Farmers Coop Cry.	T 39 R29 S25,26,27,28

Mississippi-Sauk Rivers Watershed (No. 19)

Streams	
*Buckman Creek	T 39 R30 S4,5,6,9
Buckman	T 39 R31 S1,2,10,11
Buckman Coop Cry.	T 40 R30 S31
	T 40 R31 S36
*Bunker Hill Creek	T 38 R30 S6
Little Rock	T 38 R31 S1
Little Rock Coop Cry.	T 39 R30 S31,32,33
*Pike Creek	T129 R30 S17,18,19,20
Flensburg	
*Stony Brook	T 36 R29 S2,9,10,11,16
(Stoney Brook)	T 37 R29 S35,36
Foley	
*Two Rivers, South Branch	T125 R31 S13,21,22,23,24
Albany	
Unnamed Creek	T121 R23 S30
Albertville	T121 R24 S25,26
Unnamed Creek	T121 R31 S2
Eden Valley	T122 R31 S35
Rumland Feeds	
Unnamed Creek	T123 R33 S11,14
Lake Henry	
Unnamed Ditch	T129 R30 S30
Flensburg	T129 R31 S25
Unnamed Stream	T129 R30 S19,30
Flensburg	
Lakes	

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Unnamed Swamp
Flensburg

T129 R31 S25

Minnesota River Basin
Big Stone Lake Watershed (No. 20)

Lakes
Unnamed Marsh
Barry

T124 R47 S8

Pomme de Terre River Watershed (No. 21)

Streams
*Muddy Creek

T124 R42 S6,7,15,16,17,18,21, 22,23
T124 R43 S1,4,5,6,7,8
T124 R44 S1,2,3,12
T125 R43 S34,35,36

(Mud Creek)
(County Ditch No. 2)
(County Ditch No. 4)
Chokio
Unnamed Ditch
Alberta

T124 R43 S3,4

Lac Qui Parle River Watershed (No. 22)

Streams
County Ditch No. 5
Marietta

T117 R45 S6,7,18
T117 R46 S1
T118 R46 S23,25,26,36

County Ditch No. 27
Madison

T117 R43 S3,4,5,6
T117 R44 S1
T118 R43 S34
T118 R44 S35,36

County Ditch No. 28
Marietta
Unnamed Ditch
Madison
Unnamed Stream
Dawson
Dawson Mills Soy Isolate

T118 R46 S22,23,26

T118 R44 S27,28,34,35

T117 R43 S22

Chippewa River Watershed (No. 23)

Streams
County Ditch No. 7
Lowry

T126 R39 S25,26

*County Ditch No. 60

T130 R39 S14,22,23,27,28,32, 33

(Chippewa River)
Millerville
Millerville Coop Cry.
County Ditch No. 61
Kerkhoven
Unnamed Ditch
Hancock

T120 R37 S21,22

T122 R40 S6
T122 R41 S1,12
T123 R40 S18,19,30,31
T123 R41 S11,12

Unnamed Ditch
Farwell
Farwell Coop Cry. Assn.

T126 R39 S6

Unnamed Ditch
Lowry

T126 R39 S26,35

Unnamed Ditch
Brandon

T129 R39 S21,22

Unnamed Ditch
Evansville

T129 R40 S10,11

Lakes
Unnamed Slough
Kensington

T127 R40 S34

Unnamed Slough
Brandon

T129 R39 S21,22

Unnamed Swamp
Sunburg
Sunburg Coop Creamery

T122 R36 S30

Unnamed Swamp
Lowry

T126 R39 S35,36

Yellow Medicine River Watershed (No. 24)

Streams
*Boiling Springs Creek
(County Ditch No. 18)
Echo

T113 R38 S5,8
T114 R37 S19,30
T114 R38 S25,26,27,32,33,34

County Ditch No. 1
Echo

T113 R38 S8,9

County Ditch No. 12
(Rice Creek)
Belview

T113 R36 S4,5,7,8,18,19
T113 R37 S15,21,22,23,24

Rice Creek

See County Ditch No. 12

Unnamed Ditch
Porter

T114 R44 S21,28

Unnamed Ditch
Clarkfield

T115 R41 S16

Unnamed Ditch
Clarkfield

T115 R41 S16,21

Redwood River Watershed (No. 25)

Streams
County Ditch No. 14
Tyler

T109 R43 S18
T109 R44 S2,3,11,13,14
T110 R44 S33,34

Judicial Ditch No. 12
Tyler

T109 R43 S9,15,16,17,18

Cottonwood River Watershed (No. 26)

Streams
County Ditch No. 38
Storden

T107 R37 S28,29

County Ditch No. 63
Hanska
County Ditch No. 109
Morgan

T108 R30 S11,12,14,17,18,19, 20,21,22,23,27,28
T111 R34 S4,5,8,17
T112 R34 S22,23,27,28,33

Judicial Ditch No. 6
Hanska

T107 R30 S4
T108 R30 S28,33

Judicial Ditch No. 10
Hanska

T108 R30 S1
T109 R30 S35,36

Judicial Ditch No. 30
Sleepy Eye
Del Monte Corp.

T109 R32 S4,5,6
T110 R32 S31

Lone Tree Creek
Tracy

T109 R39 S2,3,4,7,8,9
T110 R38 S19,20,30
T110 R39 S25,34,35,36

*Pell Creek
Walnut Grove

T109 R38 S25,26,27,28

*Sleepy Eye Creek
Wabasso

T110 R35 S7,8,9,14,15,16
T110 R36 S1,2,3,12

Unnamed Ditch
Jeffers

T107 R36 S21

Unnamed Ditch
Storden

T107 R37 S19,30

Unnamed Dry Run
Near Minneopa
Blue Earth-Nicolet Elec.

T108 R27 S16

Unnamed Ditch Walnut Grove	T109 R38 S28
Unnamed Ditch Tracy	T109 R39 S18 T109 R40 S13
Unnamed Ditch Wabasso	T110 R36 S3 T111 R36 S18,19,20,28,29,33,34 T111 R37 S13
Unnamed Ditch Wabasso	T111 R37 S13,24
Lakes	
Unnamed Swamp Storden	T107 R37 S30
Streams	
*Boot Creek New Richland	T105 R22 S6,7 T105 R23 S12,13,24
Cobb Creek Freeborn	T104 R23 S7,8,17 T104 R24 S11,12
Cobb Creek Ditch Freeborn	T103 R23 S2 T104 R23 S14,15,16,23,26,35
County Ditch No. 6 Janesville	T107 R24 S4,8,9,17,18 T107 R25 S13
County Ditch No. 87 Wells	T103 R24 S6 T104 R24 S31 T104 R25 S36
*Foster Creek Alden	T103 R23 S31 T103 R24 S25,36
Judicial Ditch No. 1 Delavan	T104 R27 S23,25,26,36
Judicial Ditch No. 49 (Providence Creek) Amboy	T105 R27 S18,19 T105 R28 S13
*St. James Creek St. James	T106 R31 S5,7,8,18 T107 R31 S21,22,28,32,33
Unnamed Ditch Alden	T102 R23 S4,5 T103 R23 S31,32
Unnamed Ditch Truman	T104 R30 S2,11 T105 R30 S25,26,35
Unnamed Ditch New Richland	T105 R22 S17,18,19 T105 R23 S24
Unnamed Ditch Lewisville	T105 R30 S3 T106 R30 S14,23,26,34,35
Unnamed Ditch Waldorf	T106 R24 S34
Unnamed Ditch Eagle Lake	T108 R25 S18,19 T108 R26 S13
Lakes	
One Hundred Acre Slough St. James	T106 R31 S7
Unnamed Swamp Minnesota Lake	T104 R25 S3,4
Streams	

Minnesota River-Hawk Creek Watershed (No. 28)

*Beaver Creek, East Fork (County Ditch No. 63) Olivia	T115 R35 S13,14,23,24,25,26
County Ditch No. 45 Renville	T114 R36 S5,6,7,18 T114 R37 S13 T115 R36 S7,18,19,29,30,32
County Ditch No. 46 Willmar	T119 R35 S19,20,29
County Ditch No. 66 Bird Island	T115 R34 S15,16,17,18,22,23
County Ditch No. 104 Sacred Heart	T114 R38 S1,2 T115 R37 S7,18 T115 R38 S13,24,25,35,36
East Fork Beaver Creek	See Beaver Creek, East Fork
*Hawk Creek	T118 R36 S2,3,8,10,15,16,17,18,19
(County Ditch No. 10)	T118 R37 S5,6,7,8,9,14,15,16,18, 19,23,24,30,31
Willmar/Pennock	T119 R35 S19 T119 R36 S24,25,26,35
Unnamed Creek Pennock	T118 R37 S2,3,4,5 T119 R36 S4,5,6,7,18,19 T119 R37 S24,25,26,35
Unnamed Ditch Pennock	T119 R36 S2,3,4,9,10

Lower Minnesota River Watershed (No. 29)

Streams	
*Cherry Creek Cleveland	T110 R25 S7,8,16,17 T110 R26 S12
County Ditch No. 4 Norwood	T115 R25 S30 T115 R26 S13,14,24,25
County Ditch No. 40A Lafayette	T111 R29 S8,14,15,16,17,23,24
County Ditch No. 42 Winthrop	T112 R29 S6,7
County Ditch No. 51 Le Center	T110 R24 S5,6 T111 R24 S31,32 T111 R25 S26,35,36
County Ditch No. 54 Montgomery	T112 R23 S26,33,34,35
Judicial Ditch No. 1A Lafayette	T111 R27 S5,6,7 T111 R28 S10,11,12,15,16,17,18,19 T111 R29 S24
*Rush River, Middle Branch Winthrop	T112 R27 S16,19,20,21,30 T112 R28 S18,19,20,21,22,25,26,27 T112 R29 S7,8,9,13,14,15,16,17,18
Unnamed Dry Run Mankato Southview Hts Coop Assn	T108 R26 S19,30 T108 R27 S24
Unnamed Ditch Lafayette	T111 R29 S6,7,8 T111 R30 S12

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Unnamed Ditch	T112 R23 S33
Montgomery	
Unnamed Ditch	T113 R30 S5
Near Fernando	T114 R29 S19,20,30
Round Grove Coop Creamery	T114 R30 S25,26,27,28,29,32
Unnamed Ditch	T115 R25 S9,16
Bongards	
Bongards Creameries	
Unnamed Stream	T109 R26 S20,21,28
Mankato	
Midwest Electric Products	

St. Croix River Basin
Kettle River Watershed (No. 30)

Streams	
Unnamed Ditch	T 46 R19 S30
Moose Lake	

Snake River Watershed (No. 31)

Unnamed Dry Run	T 41 R25 S3
Wahkon	T 42 R25 S29,32,33,34

Lower St. Croix River Watershed (No. 32)

Streams	
Unnamed Ditch	T 34 R20 S19,29,30,31,32
Chisago City	
Unnamed Ditch	T 35 R20 S25
Almelund	
Almelund Coop Cry.	
Unnamed Stream	T 34 R19 S32,33,34
Shafer	
Lakes	
Unnamed Swamp	T 34 R19 S31,32
Shafer	

Lower Mississippi River Basin
Metropolitan Area Watershed (No. 33)

Streams	
Unnamed Ditch	T113 R18 S5,6
Hampton	T114 R18 S31
Lakes	
Unnamed Swamp	T113 R18 S8
Hampton	

Cannon River Watershed (No. 34)

Streams	
County Ditch No. 15	T110 R23 S22,23
Kilkenny	
Unnamed Ditch	T112 R22 S25,35,36
Lonsdale	
Lakes	
Unnamed Marsh	T110 R23 S22,23
Kilkenny	

Zumbro River Watershed (No. 35)

Streams	
*Trout Brook	T110 R15 S3,4
(Mazeppa Creek)	T111 R15 S28,33,34
Goodhue	
Unnamed Creek	T108 R17 S17,20,21
West Concord	
Unnamed Ditch	T107 R18 S27,34
Claremont	

Root River Watershed (No. 36)

Streams	
*Carters Creek	T103 R12 S4,9,15,16,22
Wykoff	
North Fork Whitewater River	See Whitewater River, North Fork
Unnamed Creek	T101 R 7 S14,22,23,27
Spring Grove	
Unnamed Dry Run	T107 R 9 S7,18
Altura	
*Whitewater River, North Fork	T108 R12 S25,26,27
Elgin	

Missouri-Cedar-Des Moines Rivers Basin
Cedar River Watershed (No. 37)

Streams	
County Ditch No. 48	T102 R22 S19,20
Conger	T102 R23 S24,25,26,35
*Goose Creek	T101 R20 S31
Twin Lakes	T101 R21 S16,17,18,21,22,26, 27,35,36
	T101 R 22 S12,13
Unnamed Creek	T103 R17 S4,9
Brownsdale	
Unnamed Creek	T104 R18 S5,8,9,16
Blooming Prairie	T105 R18 S31

Des Moines River Watershed (No. 38)

Streams	
County Ditch No. 11	T101 R32 S4,9,10
Sherburne	T102 R32 S7,8,16,17,21,27, 28,33,34
*Jack Creek	T104 R41 S25,26,30,31,32,33, 34,35,36
Wilmont	
*Okabena Creek	T102 R38 S6,7
Worthington	T102 R39 S8,9,10,11,12,14, 15,16
Worthington Lagoons and	T103 R38 S21,22,28,29,30,31
Allied Mills	
Unnamed Creek	T105 R41 S3,4,9
Iona	T106 R40 S19,29,30,32
	T106 R41 S24,25,26,34,35

Rock River Watershed (No. 39)

Streams	
Judicial Ditch No. 6	T101 R40 S2
Worthington	T102 R40 S25,26,35
Campbell Soup Co.	
Unnamed Creek	T104 R46 S6
Jasper	
Unnamed Creek	T105 R44 S6,7,8
Hatfield	T105 R45 S1
	T106 R45 S36
Unnamed Creek	T106 R45 S34,35,36
Hatfield	
Unnamed Ditch	T109 R45 S17,19,20

~~CHAPTER TWENTY-FIVE: WPC 25~~

6 MCAR § 4.8025 ~~WPC 25~~ Classifications of interstate waters of Minnesota. The following regulation establishing classifications applies to all interstate surface waters of the state.

A. ~~(a)~~ All interstate waters are included, although some minor watercourses such as unnamed streams or interconnecting

waters and/or intermittently flowing creeks, ditches, or draws, etc., are not listed individually herein. All interstate waters are classified herein and this classification shall supersede the classification of the interstate waters listed in previously adopted WPC ~~1, 2, 3, 5, 6, 10, 11, 12, 13, 16 and 17~~.

B. ~~(b)~~ The regulation includes known present uses and/or uses which may be made of the waters in the future. In addition to the classification(s) given below, all of the interstate waters whether or not specifically named herein are also included in Classes 2C, 3C, 4A and B, 5 and 6 for all reaches or areas where such uses are possible, provided that waters specifically classified as limited resource value shall only be included in the following additional classes: 3C, 4A, 4B, 5 and 6. Where specific criteria are common to two or more listed classes the more restrictive value shall apply. For additional information refer to 6 MCAR § 4.8015 ~~Regulation WPC 15~~, Criteria for the classification of the interstate waters of the state and the establishment of standards of quality and purity.

C. ~~(c)~~ The provisions of this rule shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not make void any other lettered paragraph, subparagraph, subdivision or any other party thereof.

D. Supplement 1 to this rule lists interstate waters that are classified as limited resource value waters, Class 7. For those interstate waters identified with an asterisk (*), the revised classification in Supplement 1 shall supersede any previous classification; provided, however, that the limited resource value classification shall apply only to that portion of the water specifically described in Supplement 1.

Waters	Reach or Area Involved or Location	Classification
	. . . . .	
Streams	Minnesota River Basin	
	. . . . .	
Minnesota River	Big Stone Lake outlet to Granite Falls	1C, 2B, 3B
Minnesota River	Granite Falls to Mankato	2B, 3B
~~Minnesota River~~	~~Mankato to Carve Rapids~~	~~2B, 3B~~
~~Minnesota River~~	~~Carver Rapids to mouth~~	~~2C, 3B~~
Minnesota River	Mankato to river mile 22 (Head of 9 feet navigation channel)	2B, 3B
Minnesota River	River mile 22 to mouth	2C, 3B
	. . . . .	
Streams	Lower Mississippi River Basin	
	. . . . .	
~~Mississippi River~~	~~Outlet of Metro Wastewater treatment Works in St. Paul to Lock and Dam No. 2 at Hastings~~	~~2C, 3B~~
~~Misissippi River~~	~~Lock and Dam No. 2 at Hastings to Iowa Border~~	~~2B, 3B~~
	. . . . .	
Mississippi River	Outlet of Metro Wastewater Treatment Works in St. Paul to river mile 830 (Rock Island RR Bridge)	2C, 3B
Mississippi River	River mile 830 to Iowa Border	2B, 3B
	. . . . .	
Streams	Upper Mississippi River Basin	
	. . . . .	
Mississippi River	Lake Itasca to Fort Ripley	2B, 3B
Mississippi River	Fort Ripley to the Upper Lock and Dam at St. Anthony Falls in Minneapolis	1C, 2B, 3B
Mississippi River	Upper Lock and Dam at St. Anthony Falls in Minneapolis to outfall of the Metro wastewater treatment plant in St. Paul	2B, 3B
	. . . . .	

Supplement 1

Class 7 Limited Resource Value Waters

Red Cedar River Basin	
Streams	
Unnamed Creek	T101 R22 S31
Emmons	
Lower Mississippi River Basin	
Streams	
*Bear Creek, North	T101 R7 S26,27,35
Spring Grove	
*Pine Creek	T101 R 9 S31
Harmony	T101 R10 S24,25,36
*Riceford Creek	T101 R 8 S24,25,26
Mabel	
Missouri River Basin	
Streams	
*Flandreau Creek	T108 R46 S1,2,11
Lake Benton	T109 R45 S30,31
	T109 R46 S36
*Rock River	T107 R44 S18,19,20,29
Holland	T107 R45 S12,13
Unnamed Ditch	T101 R46 S28,33
Hills	

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Amendments as Proposed (repeal)

~~CHAPTER TWO: WPC 2~~

~~CLASSIFICATION AND STANDARDS FOR THE MISSISSIPPI RIVER AND TRIBUTARIES FROM THE UPPER LOCK AND DAM AT ST. ANTHONY FALLS TO THE OUTFALL OF THE MINNEAPOLIS-ST. PAUL SANITARY DISTRICT SEWAGE TREATMENT PLANT~~

~~The classification for use and the pollution standards as hereinafter set forth are hereby adopted and established for that portion of the Mississippi River from the upper lock and dam at St. Anthony Falls, approximately at the northeastward extension of Fifth Avenue South in the City of Minneapolis, to immediately above the outfall of the Minneapolis-St. Paul Sanitary District sewage treatment plant in the City of St. Paul, approximately at the eastward extension of Baker Street East in said city, and streams tributary thereto except the Minnesota River.~~

~~(a) Classification for Use.~~

~~(1) The uses of the waters requiring maintenance of water quality in accordance with the standards hereinafter prescribed are pleasure boating, fishing, and other recreational uses, subject to such restriction on any such uses which involve close, frequent, or prolonged contact with the water as may be necessary for protection of public health.~~

~~(2) The waters may be used for navigation, general industrial purposes, and other beneficial uses for which water of lower quality may be suitable, provided the effects do not actually or potentially conflict with the uses specified in paragraph (1).~~

~~(b) Related Conditions. The waters are suitable for the aforesaid uses and for maintenance of game fish of species commonly inhabiting waters of the vicinity under natural conditions, but not as a source of drinking water or special quality industrial process water, or for bathing or swimming, subject to such restrictions on any such uses which involve close, frequent, or prolonged contact with the water as may be necessary for protection of public health.~~

~~(c) Standards.~~

~~(1) No major quantities of sewage, industrial waste, or other wastes, treated or untreated, shall be discharged into the waters. No treated sewage, industrial waste, or other wastes containing viable pathogenic organisms shall be discharged into the waters without effective disinfection during the summer months, except under emergency conditions. Effective disinfection of any discharges, including combined flows of sewage and storm water, may be required to protect the aforesaid uses of the waters.~~

~~(2) No sewage, industrial waste, or other wastes shall be discharged into the waters so as to cause any nuisance conditions, including, without limitation, the presence of substantial amounts of floating solids, scum, oil slicks, suspended solids, material discoloration, obnoxious odors, visible gassing, sludge deposits, substantial fungus growths, or other offensive effects.~~

~~(3) The discharge of oxygen-demanding sewage, industrial waste, or other wastes shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters the dissolved oxygen content of such waters will be maintained at not less than 4 milligrams per liter, based on the monthly average flow which is exceeded by 90 per cent of the monthly flows of record for the month of August or February, whichever is lower, and so that a level of not less than 3 milligrams per liter will be maintained under the minimum daily flow which is exceeded by 98 per cent of the minimum daily flows of record for the month of August or February, whichever is lower.~~

~~(4) The discharge of industrial waste or other wastes shall be controlled so that the heat content of such discharges, after reasonable opportunity for mixing and dilution thereof with the receiving waters, does not raise the temperature of such waters above 93°F, based on the critical month of August and the monthly average flow specified in paragraph (3).~~

~~(5) The discharge of sewage, industrial waste, or other wastes shall be restricted so that, on the basis of the monthly average flow specified in paragraph (3), the limits hereinafter specified will not be exceeded in the waters after reasonable opportunity for mixing and dilution:~~

~~Ammonia~~	~~2.0 milligrams per liter (as Nitrogen)~~
~~Chromium~~	~~1.0 milligrams per liter (as Chromium)~~
~~Copper~~	~~0.2 milligrams per liter (as Copper)~~
~~Cyanide~~	~~0.02 milligrams per liter (as Cyanide ion)~~
~~Oil~~	~~10 milligrams per liter~~
~~pH range~~	~~6.0-9.0~~
~~Phenolic materials~~	~~0.01 milligrams per liter (as Phenol)~~
~~Radioactive materials~~	~~Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health~~

~~Means for expediting mixing and dispersion of such sewage, industrial waste, or other wastes in the receiving waters shall be provided so far as practicable whenever deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with applicable standards.~~

~~(6) No sewage, industrial waste, or other wastes shall be discharged into the waters in such quantity or in such manner alone or in combination with other substances as to cause pollution thereof as defined by law.~~

~~(7) In any case where, upon application of the responsible person or persons, the Commission finds after a hearing thereon that by reason of exceptional circumstances the strict enforcement of a provision of these standards would cause undue hardship and would be unreasonable, that disposal of the sewage, industrial waste, or other wastes involved is necessary for public health, safety, and welfare, and that no means for such disposal in strict conformity with the standards is reasonably available, the Commission, in its discretion, may permit a~~

variance therefrom upon such conditions as it may prescribe for prevention, control, or abatement of pollution and in harmony with the general purpose and intent of the standards.

CHAPTER THREE: WPC 3

CLASSIFICATION AND STANDARDS FOR THE MISSISSIPPI RIVER AND TRIBUTARIES FROM THE OUTFALL OF THE MINNEAPOLIS-ST. PAUL SANITARY DISTRICT SEWAGE TREATMENT PLANT TO LOCK AND DAM NO. 2 NEAR HASTINGS

The classification for use and the pollution standards as hereinafter set forth are hereby adopted and established for that portion of the Mississippi River from immediately above the outfall of the Minneapolis-St. Paul Sanitary District sewage treatment plant in the City of St. Paul, approximately at the eastward extension of Baker Street East in said city to the U. S. Lock and Dam No. 2 above Hastings.

(a) Classification for Use. The uses of the waters requiring maintenance of water quality in accordance with the standards hereinafter prescribed are for industrial processes, general cooling water, stock and wild life watering, restricted irrigation, disposal of treated sewage and waste effluents, fish survival, esthetic enjoyment of river scenery, and passage of watercraft in connection with navigation and pleasure boating in such manner as to avoid close, frequent, or prolonged contact with the water.

(b) Related Conditions. The waters are suitable for the aforesaid uses and for survival or passage of game fish of species commonly inhabiting waters of the vicinity under natural conditions, and for disposal of treated sewage and industrial waste effluents for which no other means of disposal is available. Treatment of the waters may be necessary for some industrial uses.

(c) Standards.

(1) No major quantities of untreated sewage, industrial waste, or other wastes shall be discharged into the waters. No treated sewage, industrial waste, or other wastes containing viable pathogenic organisms shall be discharged into the waters without effective disinfection during the summer months, except under emergency conditions. Effective disinfection of any discharges, including combined flows of sewage and storm water, may be required to protect the aforesaid uses of the waters.

(2) No sewage, industrial waste, or other wastes shall be discharged into the waters so as to cause any nuisance conditions, including, without limitation, the presence of substantial amounts of floating solids, scum, oil slicks, suspended solids, material discoloration, obnoxious odors, visible gassing, sludge deposits, substantial fungus growths, or other offensive effects.

(3) The discharge of oxygen-demanding sewage, industrial waste, or other wastes shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters the dissolved oxygen content of such waters will be maintained at not less than 2 milligrams per liter, based on the monthly average flow which is exceeded by 90 per cent of the monthly average flows of record for the month of August or February, whichever is lower, and so that a level of not less than 1 milligram per liter will be maintained under the minimum daily flow which is exceeded by 95 per cent of the minimum daily flows of record for the month of August or February, whichever is lower. In addition to the aforesaid requirements, the highest levels of dissolved oxygen which are attainable by continuous operation of all the units of the treatment works discharging into this reach of the river at the maximum capability/consistent with practical limitations of such works shall be maintained in the waters, except for emergencies, in order to improve conditions for fish and for other uses of the waters.

(4) The discharge of industrial waste or other wastes shall be controlled so that the heat content of such discharges, after reasonable opportunity for mixing and dilution thereof with the receiving waters, does not raise the temperature of such waters above 93°F based on the critical month of August and the monthly average flow specified in paragraph (3). Further reduction in heat discharges may be required if necessary to avoid substantial interference with or adverse effects upon other uses.

(5) The discharge of sewage, industrial waste, or other wastes shall be restricted so that, on the basis of the monthly average flow specified in paragraph (3), the limits hereinafter specified will not be exceeded in the waters after reasonable opportunity for mixing dilution:

Ammonia	2.0 milligrams per liter (as Nitrogen)
Chromium	1.0 milligrams per liter (as Chromium)
Copper	0.2 milligrams per liter (as Copper)
Cyanide	0.02 milligrams per liter (as Cyanide ion)
Fluoride	2.0 milligrams per liter (as Fluoride ion)
Oil	10 milligrams per liter
pH range	6.0-9.5
Phenolic materials	0.1 milligrams per liter (as Phenol)
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health.

Means for expediting mixing and dispersion of such treated sewage effluent, industrial waste, or other wastes in the receiving waters shall be provided so far as practicable whenever deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with applicable standards.

(6) No sewage, industrial waste, or other wastes shall be discharged into the waters in such quantity or in such manner alone or in combination with other substances as to cause pollution thereof as defined by law.

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(7) In any case where, upon application of the responsible person or persons the Commission finds, after a hearing thereon, that by reason of exceptional circumstances the strict enforcement of a provision of these standards would cause undue hardship and would be unreasonable; that disposal of the sewage, industrial waste, or other wastes involved is necessary for public health, safety, and welfare; and that no means for such disposal in strict conformity with the standards is reasonably available; the Commission, in its discretion, may permit a variance therefrom upon such conditions as it may prescribe for prevention, control, or abatement of pollution, and in harmony with the general purpose and intent of the standards.

CHAPTER FIVE: WPC 5

CLASSIFICATION AND STANDARDS FOR THE MINNESOTA RIVER AND TRIBUTARY WATERS FROM CARVER RAPIDS TO THE OUTLET OF REILLY CREEK AND GRASS LAKE, BELOW SHAKOPEE ZONE 36-22.4

The classification for use and the standards of quality and purity as hereinafter set forth are hereby adopted and established for that portion of the Minnesota River from below the Carver Rapids, approximately at the eastward extension of the Carver Village south boundary lying between sections 30 and 31, Louisville Township, Scott County, to immediately below the outlet of Reilly (Terrell) Creek and Grass Lake below Shakopee, approximately at the northward extension of the boundary between sections 4 and 5, Eagle Creek Township, Scott County, and waters tributary thereto except Reilly (Terrell), Bluff, Chaska (East), Chaska (West), Spring, Carver, and Sand Creeks, and waters tributary thereto.

(a) Classification for Use.

(1) The present or potential uses of the waters requiring maintenance of water quality in accordance with the standards hereinafter prescribed include fishing, pleasure boating, esthetic enjoyment, irrigation, stock watering, wildlife, subject to such restrictions on any such uses which involve close, frequent, or prolonged contact with the water as may be necessary for protection of public health.

(2) The waters also may be used for navigation or general industrial purposes, or any other beneficial uses for which the waters may be suitable.

(b) Related Conditions. The waters are suitable for the aforesaid uses and for maintenance of game fish of species commonly inhabiting waters of the vicinity under natural conditions, and for disposal of treated sewage and waste effluents for which no other means of disposal is available.

(c) Standards.

(1) No untreated sewage shall be discharged into the waters. No treated sewage, industrial waste, or other wastes containing viable pathogenic organisms, shall be discharged into the waters without effective disinfection. Effective disinfection of any discharges, including combined flows of sewage and storm water, may be required to protect the aforesaid uses of the waters.

(2) Existing discharges of untreated sewage, and untreated industrial waste or other wastes shall be abated or treated and controlled so as to comply with these standards.

(3) No treated sewage, and no industrial waste or other wastes shall be discharged into the waters so as to cause any nuisance conditions such as the presence of floating solids, scum, oil slicks, suspended solids, material discoloration, obnoxious odors, visible gassing, sludge deposits, slimes or fungus growths, or other offensive effects.

(4) No treated sewage, and no industrial waste, or other wastes shall be discharged into the waters so as to cause any material increase in constituents or characteristics which may impair the quality of the water so as to render it objectionable or unsuitable for fish or wildlife, or as a source of water for general industrial use or agricultural purposes, including irrigation.

(5) The discharge of oxygen-demanding sewage or waste effluents shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters the dissolved oxygen content of such waters will be maintained at not less than 4 milligrams per liter during April and May, based on the monthly average flow which is exceeded by 90 per cent of the monthly flows of record for the month of April or May, whichever is lower, and so that a level of not less than 3 milligrams per liter will be maintained during August and February, based on the minimum daily flow which is exceeded by 90 per cent of the minimum daily flows of record for the month of August or February, whichever is lower.

(6) In addition to the aforesaid requirements, the highest levels of dissolved oxygen which are attainable by continuous operation of all the units of the treatment works discharging into this reach of the river at their maximum capability consistent with practical limitations of such works, shall be maintained in the waters, in order to improve conditions for fish and for other uses of the waters.

(7) The discharge of industrial waste or other wastes shall be controlled so that the heat content of such discharges, after reasonable opportunity for mixing and dilution thereof with the receiving waters, does not raise the temperature of such waters above 93°F, based on the average natural water temperature in the month of August, and the August monthly average flow which is exceeded by 90 per cent of the monthly average flows of record for August.

(8) The discharge of treated sewage, industrial waste, or other wastes shall be restricted so that, on the basis of the monthly average flow specified in paragraph (5), the limits hereinafter specified will not be exceeded in the waters by reason of such discharges after reasonable opportunity for mixing and dilution:

Ammonia	2 milligrams per liter (as Nitrogen)
Chlorides	100 milligrams per liter (as Chloride ion)
Chromium	1 milligram per liter (as Chromium)
Copper	0.2 milligram per liter (as Copper)
Cyanides	0.02 milligram per liter (as Cyanide ion)
Oil	10 milligrams per liter
pH range	6.0-9.5

Phenolic materials	0.01 milligram per liter (as Phenol)
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health.

(9) Means for expediting mixing and dispersion of sewage, industrial waste, or other wastes in the receiving waters shall be provided so far as practicable whenever deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with applicable standards.

(10) Liquid substances which could constitute a pollution hazard shall be stored in accordance with Regulation WPC 4. Other wastes as defined by law, or other substances which could constitute a pollution hazard, shall not be deposited in any manner such that the same may be likely to gain entry into these waters in excess of or contrary to the standards herein adopted, or cause pollution as defined by law.

(11) No sewage, industrial waste, or other wastes shall be discharged into the waters in such quantity or in such manner alone or in combination with other substances as to cause pollution thereof as defined by law. In any case where the waters into which sewage, industrial waste or other waste effluents discharge are assigned different standards than the waters into which such receiving waters flow, the standards applicable to the waters which receive such sewage or waste effluents shall be supplemented by the following:

The quality of any waters receiving sewage, industrial waste, or other waste discharges shall be such that no violation of the standards established for any other waters shall occur by reason of such sewage, industrial waste or other waste discharges.

(12) In any case where, upon application of the responsible person or persons, the Commission finds after a hearing thereon that by reason of exceptional circumstances the strict enforcement of a provision of these standards would cause undue hardship and would be unreasonable; that disposal of the sewage, industrial waste, or other wastes involved is necessary for public health, safety, and welfare, and that no means for such disposal in strict conformity with the standards is reasonably available, the Commission, in its discretion, may permit a variance therefrom upon such conditions as it may prescribe for prevention, control, or abatement of pollution and in harmony with the general purpose and intent of the standards. Upon similar application, the Commission may permit a temporary variance from the provisions of these standards without a hearing to enable existing non-complying facilities to be brought into compliance within a reasonable time period and under other such conditions as it may prescribe.

CHAPTER SIX: WPC 6

CLASSIFICATION AND STANDARDS FOR THE MINNESOTA RIVER AND TRIBUTARY WATERS FROM THE OUTLET OF REILLY (TERRELL) CREEK AND GRASS LAKE, BELOW SHAKOPEE TO THE JUNCTION WITH THE MISSISSIPPI RIVER AT FORT SNELLING ZONE 22.4-0

The classification for use and the standards of quality and purity as hereinafter set forth are hereby adopted and established for the portion of the Minnesota River from a point immediately below the outlet of Reilly Creek and Grass Lake, below Shakopee, approximately at the northward extension of the boundary between sections 4 and 5, Eagle Creek Township, Scott County, to immediately above the junctions with the Mississippi River at Fort Snelling, approximately at the due southward extension of Edgecumbe Road from the intersection with West Seventh Street, and the due southward extension of Lexington Parkway from the intersection with West Seventh Street, in sections 21 and 22, St. Paul, and waters tributary thereto except Nine Mile Creek, the Credit River, Eagle Creek, Purgatory Creek, and waters tributary thereto.

(a) Classification for Use.

(1) The present or potential uses of the waters requiring maintenance of water quality in accordance with the standards hereinafter prescribed include pleasure boating, wildlife, fishing, esthetic enjoyment, and other recreational uses, subject to such restrictions on any such uses which involve close, frequent, or prolonged contact with the water as may be necessary for protection of public health.

(2) The waters also may be used for navigation, general industrial purposes, agriculture, and other beneficial uses for which the waters may be suitable, and which do not conflict with the uses stated above.

(b) Related Conditions. The waters are suitable for the aforesaid uses and for maintenance of game fish of species commonly inhabiting waters of the vicinity under natural conditions, but not as a source of drinking water or special quality industrial process water.

(c) Standards.

(1) No untreated sewage, and no untreated industrial waste or other wastes containing viable pathogenic organisms or any substances which may cause disease, endanger the public health, or otherwise impair the quality of the receiving waters for the stated uses, shall be discharged into the waters.

(2) No major quantities of treated sewage from any source originating after the taking effect hereof, shall be discharged into the waters. No treated sewage, and no treated industrial waste or other wastes containing viable pathogenic

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organisms shall be discharged into the waters without effective disinfection. Effective disinfection of any discharges, including combined flows of sewage and storm water, may be required to protect the aforesaid uses of the waters.

(3) Existing discharges of major quantities of sewage, industrial waste, or other wastes, treated or untreated, shall be abated or divered out of the watershed, or otherwise controlled so as to comply with these standards.

(4) No sewage, industrial waste, or other wastes shall be discharged into the waters so as to cause any nuisance conditions, such as the presence of floating solids, scum, oil slicks, suspended solids, material discoloration, obnoxious odors, visible gassing, sludge deposits, slimes or fungus growth, or other offensive effects.

(5) No sewage, industrial waste, or other wastes shall be discharged into the waters so as to cause any material increase in any constituents or characteristics which may impair the quality of the water so as to render it objectionable or unsuitable for fish and wildlife, or as a source of water for general industrial use or agricultural purposes, including irrigation.

(6) The discharge of oxygen demanding sewage or waste effluents shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters, the dissolved oxygen content of such waters will be maintained at not less than 4 milligrams per liter during April and May, based on the monthly average flow which is exceeded by 90 per cent of the monthly flows of record for the month of April or May, whichever is lower, and so that a level of not less than 3 milligrams per liter will be maintained during August and February, based on the minimum daily flow which is exceeded by 90 per cent of the minimum daily flows of record for the month of August or February, whichever is lower.

(7) In addition to the aforesaid requirements, the highest levels of dissolved oxygen which are attainable by continuous operation of all the units of the treatment works discharging into this reach of the river at their maximum capability consistent with practical limitations of such works, shall be maintained in the waters in order to improve conditions for fish and for other uses of the waters.

(8) The discharge of industrial waste or other wastes shall be controlled so that the heat content of such discharges, after reasonable opportunity for mixing and dilution thereof with the receiving waters, does not raise the temperatures of such waters above 93°F, based on the average natural water temperature in the month of August and the August monthly average flow with is exceeded by 90 per cent of the monthly average flows of record for August.

(9) The discharge of sewage, industrial waste, or other wastes shall be restricted so that, on the basis of the monthly average flow specified in paragraph (6), the limits hereinafter specified will not be exceeded in the waters by reason of such discharges, after reasonable opportunity for mixing and dilution:

Ammonia	2 milligrams per liter (as Nitrogen)
Chlorides	100 milligrams per liter (as Chloride ion)
Chromium	1 milligram per liter (as Chromium)
Copper	0.2 milligram per liter (as Copper)
Cyanides	0.02 milligram per liter (as Cyanide ion)
Oil	10 milligrams per liter
pH range	6.0 9.5
Phenolic materials	0.01 milligram per liter (as Phenol)
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health.

(10) Means for expediting mixing and dispersion of sewage, industrial waste, or other wastes in the receiving waters shall be provided so far as practicable whenever deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with applicable standards.

(11) Liquid substances which could constitute a pollution hazard shall be stored in accordance with Regulation WPC 4. Other wastes as defined by law, or other substances which could constitute a pollution hazard shall not be deposited in any manner such that the same may be likely to gain entry into these waters in excess of or contrary to the standards herein adopted, or cause pollution as defined by law.

(12) No sewage, industrial waste, or other wastes shall be discharged into the waters in such quantity or in such manner (alone or in combination with other substances) as to cause pollution thereof as defined by law. In any case where the waters into which sewage, industrial waste or other waste effluents discharge are assigned different standards than the waters into which such receiving waters flow, the standards applicable to the waters which receive such sewage or waste effluents shall be supplemented by the following:

The quality of any waters receiving sewage, industrial waste or other waste discharges shall be such that no violation of the standards established for any other waters shall occur by reason of such sewage, industrial waste or other waste discharges.

(13) In any case where, upon application of the responsible person or persons, the Commission finds after a hearing thereon that by reason of exceptional circumstances the strict enforcement of a provision of these standards would cause undue hardship and would be unreasonable; that disposal of the sewage, industrial waste, or other wastes involved is necessary for public health, safety, and welfare, and that no means for such disposal in strict conformity with the standards is reasonably available, the Commission, in its discretion, may permit a variance therefrom upon such conditions as it may prescribe for prevention, control, or abatement of pollution and in harmony with the general purpose and intent of the standards. Upon similar application, the Commission may permit a temporary variance from the provisions of these standards without a hearing to enable existing non-complying facilities to be brought into compliance within a reasonable time period and under other such conditions as it may prescribe.

~~CHAPTER SEVEN: WPC 7~~

~~CLASSIFICATION AND STANDARDS FOR REILLY (TERRELL) CREEK, BLUFF CREEK, THE CHASKA CREEKS, SPRING CREEK, CARVER CREEK AND SAND CREEK, AND TRIBUTARY WATERS~~

~~The classification for use and the standards of quality and purity as hereinafter set forth are hereby adopted and established for the waters of Reilly (Terrell) Creek, Bluff Creek, Chaska Creek (East), Chaska Creek (West), Spring Creek, Carver Creek and Sand Creek, and waters tributary thereto, in Carver, Hennepin, Scott, Le Sueur, and Rice Counties, from the source to the junction with the Minnesota River in sections 32 and 33, Eden Prairie, Hennepin County, and sections 31 and 32, Eden Prairie, Hennepin County; in section 4, Chaska, Carver County; in section 9, Chaska, Carver County; in section 20, Carver, Carver County; in section 20, Carver, Carver County, in section 20, Louisville township, Scott County, respectively.~~

~~(a) Classification for Use.~~

~~(1) The present or potential uses of the waters requiring maintenance of water quality in accordance with the standards hereinafter prescribed include fishing, swimming, esthetic enjoyment, and other recreational uses, subject to such restrictions on any such uses which involve close, frequent, or prolonged contact with the water as may be necessary for the protection of public health.~~

~~(2) The waters also may be used for general industrial purposes, agriculture, and other beneficial uses for which the waters may be suitable, and which do not conflict with the stated uses.~~

~~(b) Related Conditions. The waters are suitable for the aforesaid uses and for growth and propagation of game fish of species commonly inhabiting waters of the vicinity under natural conditions, but not as a source of drinking water or special quality industrial process water, and for disposal of treated sewage and industrial waste effluents for which no other means of disposal is available.~~

~~(c) Standards.~~

~~(1) No untreated sewage, and no untreated industrial waste or other wastes containing viable pathogenic organisms or any substances which may cause disease, endanger the public health, or otherwise impair the quality of the receiving waters for the stated uses, shall be discharged into the waters.~~

~~(2) No treated sewage, industrial waste, or other wastes containing viable pathogenic organisms shall be discharged into the waters without effective disinfection. Effective disinfection of any discharges, including combined flows of sewage and storm water, may be required to protect the aforesaid uses of the waters.~~

~~(3) Existing discharges of untreated sewage, and untreated industrial waste or other wastes shall be abated, or treated, or otherwise controlled so as to comply with these standards.~~

~~(4) No treated sewage, and no industrial waste or other wastes shall be discharged into the waters so as to cause any nuisance conditions, such as the presence of floating solids, scum, oil slicks, suspended solids, material discoloration, obnoxious odors, visible gassing, sludge deposits, slimes or fungus growths, or other offensive effects.~~

~~(5) No treated sewage, and no industrial waste or other wastes shall be discharged into the waters so as to cause any material increase in any constituents or characteristics which may impair the quality of the water so as to render it objectionable or unsuitable for fish and wildlife, or as a source of water for general industrial use or agricultural purposes, including irrigation.~~

~~(6) The discharge of oxygen-demanding sewage or waste effluents shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters, the dissolved oxygen content of such waters will be maintained at not less than 5 milligrams per liter during April and May, based on the monthly average flow which is exceeded by 90 per cent of the monthly flows of record for the month of April or May, whichever is lower, and so that a level of not less than 3 milligrams per liter will be maintained during August and February, based on the minimum daily flow which is exceeded by 90 per cent of the minimum daily flows of record for the month of February or August, whichever is lower. Where flow records are not available, the indicated flows may be estimated on the basis of available information on the watershed characteristics, precipitation, run-off, and other pertinent data.~~

~~(7) In addition to the aforesaid requirements, the highest levels of dissolved oxygen which are attainable by continuous operation of all the units of the treatment works discharging into these creeks at their maximum capability consistent with practical limitations of such works, shall be maintained in the waters in order to improve conditions for fish and other uses of the waters.~~

~~(8) The discharge of industrial waste or other wastes shall be controlled so that the heat content of such discharges, after reasonable opportunity for mixing and dilution thereof with the receiving waters, does not raise the temperature of such waters above 93°F, based on the average natural water temperature in the month of August and the August minimum daily flow specified in paragraph (6), and during the months of December through May does not raise the temperature of such waters above 73°F, based on the applicable monthly average water temperature, and the applicable monthly average flow which is exceeded by 90 per cent of such flows of record.~~

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(9) The discharge of the treated sewage, industrial waste, or other wastes shall be restricted so that, on the basis of the minimum daily flow specified in paragraph (6), the limits hereinafter specified will not be exceeded in the waters by reason of such discharges, after reasonable opportunity for mixing and dilution:

Ammonia	2 milligrams per liter (as Nitrogen)
Chlorides	100 milligrams per liter (as Chloride ion)
Chromium	1 milligram per liter (as Chromium)
Copper	0.2 milligram per liter (as Copper)
Cyanides	0.02 milligram per liter (as Cyanide ion)
Oil	Not to exceed a trace
pH range	6.5-9.0
Phenolic materials	0.01 milligram per liter (as Phenol)
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health.

(10) Means for expediting mixing and dispersion of sewage, industrial waste, or other wastes in the receiving waters shall be provided, so far as practicable, whenever deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with applicable standards.

(11) Liquid substances which could constitute a pollution hazard shall be stored in accordance with Regulation WPC 4. Other wastes as defined by law, or other substances which could constitute a pollution hazard, shall not be deposited in any manner such that the same may be likely to gain entry into these waters in excess of or contrary to the standards herein adopted, or cause pollution as defined by law.

(12) In any instance where it is found that it may not be feasible to provide for effective mixing or dispersion of an effluent, or if at the applicable stream flows mentioned in the preceding sections on standards of water quality and purity, it is evident that the stream flow may be less than the effluent flow at any time, the aforesaid standards may be interpreted as effluent standards for control purposes, where applicable. In addition, the following effluent standards may be applied in special situations where it is found necessary to protect the waters for the stated uses:

Turbidity value	25
Total Phosphorus	1 milligram per liter (as Phosphorus)
Biochemical oxygen demand	20 milligrams per liter (as 5-day Demand)
Total suspended solids	20 milligrams per liter

(13) No sewage, industrial waste, or other wastes shall be discharged into the waters in such quantity or in such manner alone or in combination with other substances, as to cause pollution thereof as defined by law. In any case where the waters into which sewage, industrial wastes or other waste effluents discharge are assigned different standards than the waters into which such receiving waters flow, the standards applicable to the waters which receive such sewage or waste effluents shall be supplemented by the following:

The quality of any waters receiving sewage, industrial waste, or other waste discharges shall be such that no violation of the standards established for any other waters shall occur by reason of such sewage, industrial waste or other waste discharges.

(14) In any case where, upon application of the responsible person or persons, the Commission finds after a hearing thereon that by reason of exceptional circumstances the strict enforcement of a provision of these standards would cause undue hardship and would be unreasonable; that disposal of the sewage, industrial waste, or other wastes involved is necessary for public health, safety, and welfare, and that no means for such disposal in strict conformity with the standards is reasonably available, the Commission, in its discretion, may permit a variance therefrom upon such conditions as it may prescribe for prevention, control, or abatement of pollution and in harmony with the general purpose and intent of the standards. Upon similar application, the Commission may permit a temporary variance from the provisions of these standards without a hearing to enable existing non-complying facilities to be brought into compliance within a reasonable time period and under other such conditions as it may prescribe.

CHAPTER EIGHT: WPC 8

CLASSIFICATION AND STANDARDS FOR EAGLE CREEK AND PURGATORY CREEK, AND TRIBUTARY WATERS

The classification for use and the standards of quality and purity as hereinafter set forth are hereby adopted and established for the waters of Eagle Creek and Purgatory Creek and waters tributary thereto in Scott, Dakota, Hennepin, and Carver Counties, from the source to the junction with the Minnesota River in section 7, Glendale Township, Scott County, and in section 36, Eden Prairie, Hennepin County, respectively.

(a) Classification for Use.

(1) The present and potential uses of the waters requiring maintenance of water quality in accordance with the standards hereinafter prescribed include fishing, swimming, esthetic enjoyment, and other recreational uses.

(2) The waters also may be used for general industrial purposes, agriculture, and other beneficial uses for which the waters may be suitable and which do not conflict with the stated uses.

(b) Related Conditions. The waters are suitable for the aforesaid uses and for growth and propagation of game fish, including trout, and other species commonly inhabiting waters of the vicinity under natural conditions, but not as a source of drinking water or special quality industrial process water.

(c) Standards.

(1) No untreated sewage, and no untreated industrial waste or other wastes containing viable pathogenic organisms or any substances which may cause disease, endanger the public health, or otherwise impair the quality of the receiving waters for the stated uses, shall be discharged into the waters.

(2) No treated sewage effluent originating after the tak-

ing effect hereof, shall be discharged into the waters. No treated sewage, and no treated industrial waste or other wastes containing viable pathogenic organisms, shall be discharged into the waters without effective disinfection. Effective disinfection of any discharges, including mixtures of sewage with storm water, may be required to protect the aforesaid uses of the waters.

(3) Existing discharges of sewage, industrial waste, or other wastes, treated or untreated, shall be abated or diverted out of the watershed, or otherwise controlled so as to comply with these standards.

(4) No sewage, industrial waste, or other wastes shall be discharged into the waters so as to cause any nuisance conditions, such as the presence of visible floating solids, scum, foam, oil slicks, suspended solids, material discoloration, obnoxious odors, gas ebullition, sludge deposits, slimes or fungus growths, or any other offensive effects attributable to such discharges.

(5) No sewage, industrial waste, or other wastes shall be discharged into the waters so as to cause any material increase in any constituents or characteristics which may impair the quality of the water so as to render it objectionable or unsuitable for the growth and propagation of fish and wildlife, or as a source of water for general industrial use or agricultural purposes, including irrigation.

(6) The discharge of oxygen demanding sewage or waste effluents shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters, the dissolved oxygen content of such waters will be maintained at not less than 7 milligrams per liter during April and May, based on the monthly average flow which is exceeded by 95 per cent of the monthly flows of record for the month of April or May, whichever is lower, and so that a level of not less than 5 milligrams per liter will be maintained during August and February, based on the minimum daily flow which is exceeded by 95 per cent of the minimum daily flows of record for the month of August or February, whichever is lower. Where flow records are not available, the indicated flows may be estimated on the basis of available information on the watershed characteristics, precipitation, run-off, and other pertinent data.

(7) In addition to the aforesaid requirements, the highest levels of dissolved oxygen which are attainable by continuous operation of all the units of the treatment works discharging into these creeks at the maximum capability consistent with practical limitations of such works, shall be maintained in the waters in order to maintain conditions suitable for fish and for other uses of the waters.

(8) The discharge of sewage, industrial waste or other wastes shall be controlled so that the heat content of such discharges does not materially raise the temperature of these waters above naturally prevailing levels at any time.

(9) The discharge of sewage, industrial waste, or other wastes shall be restricted so that, on the basis of the minimum daily flow specified in paragraph (6), the limits hereinafter specified will not be exceeded in the waters by reason of such discharges, after reasonable opportunity for mixing and dilution:

Ammonia	Not to exceed a trace (as Nitrogen)
Chlorides	50 milligrams per liter (as Chloride ion)
Chromium	Not to exceed a trace (as Chromium)
Copper	Not to exceed a trace (as Copper)
Cyanides	Not to exceed a trace (as Cyanide ion)
Oil	Not to exceed a trace
pH range	6.5-8.5
Phenolic materials	Not to exceed a trace (as Phenol)
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health.

(10) Means for expediting mixing and dispersion of sewage, industrial waste, or other wastes in the receiving waters shall be provided, so far as practicable, whenever deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with applicable standards.

(11) Liquid substances which could constitute a pollution hazard shall be stored in accordance with Regulation WPC 4. Other wastes as defined by law, or other substances which could constitute a pollution hazard, shall not be deposited in any manner such that the same may be likely to gain entry into these waters in excess of or contrary to the standards herein adopted, or cause pollution as defined by law.

(12) In any instance where it is found that it may not be feasible to provide for effective mixing or dispersion of an effluent, or if at the applicable stream flows mentioned in the preceding sections on standards of water quality and purity it is evident that the stream flow may be less than the effluent flow at any time, the aforesaid standards may be interpreted as effluent standards for control purposes where applicable. In addition, the following effluent standards may be applied in special situations where it is found necessary to protect the waters for the stated uses:

Turbidity value	10
Total phosphorus	1 milligram per liter (as Phosphorus)
Biochemical oxygen demand	10 milligrams per liter (as 5-day demand)
Total suspended solids	10 milligrams per liter

(13) No sewage, industrial waste, or other wastes shall be discharged into the waters in such quantity or in such manner alone or in combination with other substances, as to cause pollution thereof as defined by law. In any case where the waters into which sewage, industrial wastes or other waste effluents

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discharge are assigned different standards than the waters into which such receiving waters flow, the standards applicable to the waters which receive such sewage or waste effluents shall be supplemented by the following:

The quality of any waters receiving sewage, industrial waste or other waste discharges shall be such that no violation of the standards established for any other waters shall occur by reason of such sewage, industrial waste or other waste discharges.

(14) In any case where, upon application of the responsible person or persons, the Commission finds after a hearing thereon that by reason of exceptional circumstances the strict enforcement of a provision of these standards would cause undue hardship and would be unreasonable; that disposal of the sewage, industrial waste or other wastes involved is necessary for public health, safety, and welfare, and that no means for such disposal in strict conformity with the standards is reasonably available, the Commission, in its discretion, may permit a variance therefrom upon such conditions as it may prescribe for prevention, control, or abatement of pollution and in harmony with the general purpose and intent of the standards. Upon similar application, the Commission may permit a temporary variance from the provisions of these standards without a hearing to enable existing non-complying facilities to be brought into compliance within a reasonable time period and under other such conditions as it may prescribe.

CHAPTER NINE: WPC 9

CLASSIFICATION AND STANDARDS FOR NINE MILE CREEK AND THE CREDIT RIVER AND TRIBUTARY WATERS

The classification for use and standards of quality and purity as hereinafter set forth are hereby adopted and established for the waters of the Nine Mile Creek and the Credit River, and waters tributary thereto, in Hennepin, Dakota, and Scott Counties, from the source to the junction with the Minnesota River in sections 28 and 29 in Bloomington, Hennepin County, and in section 31, Savage, Scott County, respectively.

(a) Classification for Use.

(1) The present or potential uses of the waters requiring maintenance of water quality in accordance with the standards hereinafter prescribed include fishing, swimming, esthetic enjoyment, and other recreational uses, subject to such restrictions on any such uses which involve close, frequent, or prolonged contact with the water as may be necessary for the protection of public health.

(2) The waters also may be used for general industrial purposes, agriculture, and other beneficial uses for which the waters may be suitable, and which do not conflict with the stated uses.

(b) Related Conditions. The waters are suitable for the aforesaid uses and for growth and propagation of game fish of species commonly inhabiting waters of the vicinity under natural conditions, but not as a source of drinking water or special quality industrial process water.

(c) Standards.

(1) No untreated sewage, and no untreated industrial waste or other wastes containing viable pathogenic organisms or any substances which may cause disease, endanger the public health, or otherwise impair the quality of the receiving waters for the stated uses, shall be discharged into the waters.

(2) No major quantities of treated sewage from any source originating after the taking effect hereof shall be discharged into the waters. No treated sewage, and no treated industrial waste or other wastes containing viable pathogenic organisms shall be discharged into the waters without effective disinfection. Effective disinfection of any discharges, including combined flows of sewage and storm water, may be required to protect the aforesaid uses of the water.

(3) Existing discharges of major quantities of sewage, industrial waste, or other wastes, treated or untreated, shall be abated or diverted out of the watershed, or otherwise controlled so as to comply with these standards.

(4) No sewage, industrial waste, or other wastes shall be discharged into the waters so as to cause any nuisance conditions, such as the presence of floating solids, scum, oil slicks, suspended solids, material discoloration, obnoxious odors, visible gassing, sludge deposits, slimes or fungus growths, or other offensive effects.

(5) No sewage, industrial waste, or other wastes shall be discharged into the waters so as to cause any material increase in any constituents or characteristics which may impair the quality of the water so as to render it objectionable or unsuitable for fish and wildlife, or as a source of water for general industrial use or agricultural purposes, including irrigation.

(6) The discharge of oxygen-demanding sewage or waste effluents shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters, the dissolved oxygen content of such waters will be maintained at not less than 5 milligrams per liter during April and May, based on the monthly average flow which is exceeded by 90 per cent of the monthly flows of record for the month of April or May, whichever is lower, and so that a level of not less than 3 milligrams per liter will be maintained during August and February, based on the minimum daily flow which is exceeded by 90 per cent of the minimum daily flows of record for the month of August or February, whichever is lower. Where flow records are not available, the indicated flows may be estimated on the basis of available information on the watershed characteristics, precipitation, run-off and other pertinent data.

(7) In addition to the aforesaid requirements, the highest levels of dissolved oxygen which are attainable by continuous operation of all the units of the treatment works discharging into these creeks or rivers at their maximum capability consistent with practical limitations of such works, shall be maintained in the waters in order to maintain conditions suitable for fish and for other uses of the waters.

(8) The discharge of industrial waste or other wastes shall be controlled so that the heat content of such discharges,

after reasonable opportunity for mixing and dilution thereof with the receiving waters, does not raise the temperature of such waters above 93°F, based on the average natural water temperature in the month of August and the August minimum daily flow specified in paragraph (6), and during the months of December through May does not raise the temperature of such waters above 73°F, based on the applicable monthly average water temperature and the applicable monthly average flow which is exceeded by 90 per cent of such flows of record.

(9) The discharge of sewage, industrial waste, or other wastes shall be restricted so that, on the basis of the minimum daily flow specified in paragraph (6), the limits hereinafter specified will not be exceeded in the waters by reason of such discharges after reasonable opportunity for mixing and dilution:

Ammonia	2 milligrams per liter (as Nitrogen)
Chlorides	100 milligrams per liter (as Chloride ion)
Chromium	1 milligram per liter (as Chromium)
Copper	0.2 milligram per liter (as Copper)
Cyanides	0.02 milligram per liter (as Cyanide ion)
Oil	Not to exceed a trace
pH	6.5-9.0
Phenolic materials	0.01 milligram per liter (as Phenol)
Radioactive materials	Not to exceed the lowest concentration, permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health.

(10) Means for expediting mixing and dispersion of sewage, industrial waste, or other wastes in the receiving waters shall be provided so far as practicable whenever deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with applicable standards.

(11) Liquid substances which could constitute a pollution hazard shall be stored in accordance with Regulation WPC 4. Other wastes as defined by law, or other substances which could constitute a pollution hazard, shall not be deposited in any manner such that the same may be likely to gain entry into these waters in excess of or contrary to the standards herein adopted, or cause pollution as defined by law.

(12) In any instance where it is found that it may not be feasible to provide for effective mixing and dispersion of an effluent, or if at the applicable stream flow mentioned in the preceding sections on standards of water quality and purity it is evident that the stream flow may be less than the effluent flow at any time, the aforesaid standards may be interpreted as effluent standards for control purposes, where applicable. In addition, the following effluent standards may be applied in special situations where it is found necessary to protect the waters for the stated uses:

Turbidity value	25
Total phosphorus	1 milligram per liter (as Phosphorus)
Biochemical oxygen demand	20 milligrams per liter (as 5-day demand)
Total suspended solids	20 milligrams per liter

(13) No sewage, industrial waste, or other wastes shall be discharged into the waters in such quantity or in such manner alone or in combination with other substances, as to cause pollution thereof as defined by law. In any case where the waters into which sewage, industrial waste or other waste effluents discharge are assigned different standards than the waters into which such receiving waters flow, the standards applicable to the waters which receive such sewage or waste effluents shall be supplemented by the following:

The quality of any waters receiving sewage, industrial waste or other waste discharges shall be such that no violation of the standards established for any other waters shall occur by reason of such sewage, industrial waste or other waste discharges.

(14) In any case where, upon application of the responsible person or persons, the Commission finds after a hearing thereon that by reason of exceptional circumstances the strict enforcement of a provision of these standards would cause undue hardship and would be unreasonable; that disposal of the sewage, industrial waste, or other wastes involved is necessary for public health, safety, and welfare, and that no means for such disposal in strict conformity with the standards is reasonably available, the Commission, in its discretion, may permit a variance therefrom upon such conditions as it may prescribe for prevention, control, or abatement of pollution and in harmony with the general purpose and intent of the standards. Upon similar application, the Commission may permit a temporary variance from the provisions of these standards without a hearing to enable existing non-complying facilities to be brought into compliance within a reasonable time period and under other such conditions as it may prescribe.

CHAPTER TEN: WPC 10

CLASSIFICATION AND ESTABLISHMENT OF STANDARDS OF WATER QUALITY AND PURITY FOR THE RED RIVER OF THE NORTH, THE OTTER TAIL RIVER FROM FERGUS FALLS TO THE MOUTH, AND THE RED LAKE RIVER FROM CROOKSTON TO THE MOUTH

The classification for use and the standards of quality and purity as hereinafter set forth are hereby adopted and established for the Red River of the North from its origin at the junction of the Bois de Sioux and Otter Tail Rivers in Breckenridge to the United States – Canada boundary; the Otter Tail River from the Pisgah Dam located approximately at the northward extension of Wendell Road in Fergus Falls to the mouth in Breckenridge;

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and the Red Lake River from the dam located approximately at the extensions of Loring Street and Cascade Avenue in Crookston to the mouth in East Grand Forks.

(a) Classification for Use.

(1) The present and potential uses of the waters which require maintenance of water quality in accordance with the standards hereinafter prescribed are domestic consumption, fisheries and recreation, industrial consumption, agriculture and wildlife, and waste disposal.

(2) The waters may also be used for navigation or any other uses for which the waters may be suitable in this state, or other areas through which the waters may flow.

(b) Related Conditions.

(1) The quality of the waters shall be such that with treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment processes, the treated water will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards—1962 for drinking water, as specified in Publication No. 956, published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revisions or amendments thereto.

(2) The quality of the waters shall be such as to permit the propagation and maintenance of fish of species commonly inhabiting the waters of the vicinity under natural conditions, and be suitable for boating and other forms of aquatic recreation not involving prolonged intimate contact with the water.

(3) The quality of the waters shall be such as to permit their use for industrial cooling and materials transport without a high degree of treatment being necessary to avoid severe fouling, corrosion, scaling or other unsatisfactory conditions.

(4) The quality of the waters shall be such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the area.

(5) The quality of the waters shall be such as to permit their use for livestock and wildlife without inhibition or injurious effects.

(6) The quality of the waters shall be such as to be suitable for esthetic enjoyment of scenery and avoidance of any damaging effects on property.

(c) Standards.

(1) No untreated sewage, and no untreated industrial waste or other wastes containing viable pathogenic organisms or any substances which may cause disease or endanger the public health, shall be discharged into the waters.

(2) No treated sewage, and no treated industrial waste or other wastes containing viable pathogenic organisms, shall be discharged into the waters without effective disinfection. Effective disinfection of any discharges, including combined flows of sewage and storm water, may be required to protect the aforesaid uses of the waters. Separation of sanitary sewage from natural runoff may be required, if necessary, to enable continuous effective treatment of sewage or conformance with the applicable standards. In any case where the discharge of sewage, industrial waste or other wastes, whether treated or untreated and whether from existing or new sources, may be such as to constitute an actual or potential hazard to the safety of a municipal water supply, facilities for storage of the effluents over critical river flow periods may be required. All units of treatment works discharging effluent into the waters shall be operated continuously at their maximum capability, and reports on the operation of the treatment works shall be submitted regularly at monthly intervals.

(3) The discharge of oxygen demanding sewage, industrial waste or other wastes shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters, the dissolved oxygen content of such waters will be maintained at not less than 5 milligrams per liter based on the minimum monthly average flow which is exceeded by 90 per cent of the monthly flows of record for January or February, whichever is lower; except that seasonal discharge of certain agricultural products processing wastes shall be controlled so as to maintain at least 5 milligrams of dissolved oxygen per liter in the receiving waters at all river flows equal to or greater than the minimum monthly average flow which is exceeded by 90 per cent of the monthly flows for April or May, whichever is lower, and so as to maintain during the same seasonal discharge period at least 3 milligrams of dissolved oxygen per liter in the receiving waters at all lower river flows.

(4) The discharge of industrial waste or other wastes shall be controlled so that the heat content of such discharges, after reasonable opportunity for mixing and dilution thereof with the receiving waters, does not raise the temperature of such waters above 93°F based on the minimum monthly average flow which is exceeded by 90 per cent of the monthly flows for July or August, whichever is lower.

(5) The discharge of sewage, industrial waste or other wastes shall be restricted so that at any river flow the maximum limits for chemicals in the waters shall be such that after treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment, the following concentrations will not be exceeded in the treated water:

Substance or Characteristic	Maximum Limit or Range
Turbidity value	5
Color value	15
Threshold odor number	3
Methylene blue active substance (MBAS)	0.5 milligram per liter
Arsenic (As)	0.01 milligram per liter
Carbon chloroform extract	0.2 milligram per liter
Iron (Fe)	0.3 milligram per liter
Manganese (Mn)	0.05 milligram per liter
Phenol	1 microgram per liter
Sulfates (SO_4)	250 milligrams per liter
Total dissolved solids	500 milligrams per liter

(6) The concentrations given below shall not be exceeded at any river flow at any point in the river after reasonable opportunity for mixing and dilution of the sewage, industrial waste or other wastes with the receiving waters:

Substance or Characteristic	Maximum Limit or Range
Coliform group organisms	5,000 most probable number per 100 milliliters
Ammonia (N)	2 milligrams per liter
Barium (Ba)	1 milligram per liter
Bicarbonates (HCO_3)*	5 milliequivalents per liter
Boron (B)*	0.5 milligram per liter
Cadium (Cd)	0.01 milligram per liter
Chromium (Hexavalent Cr)	0.05 milligram per liter
Chromium (Total Cr)	1 milligram per liter
Chlorides (Cl)	250 milligrams per liter
Copper (Cu)	0.2 milligram per liter
Cyanides (CN)	0.02 milligram per liter
Fluorides (F)	1.5 milligrams per liter
Hardness ($CaCO_3$)	500 milligrams per liter
Lead (Pb)	0.05 milligram per liter
Oil	10 milligrams per liter
pH value	6.0—9.0
Selenium (Se)	Not to exceed a trace
Silver (Ag)	0.05 milligram per liter
Sodium (Na)*	60% of total cations as milliequivalents per liter
Zinc	1 milligram per liter
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health.
Other unspecified substances	None at levels harmful or detrimental either directly or indirectly.

(7) The natural aquatic habitat, which includes the waters and stream bed shall not be degraded in any material manner; there shall be no material increase in slime growths or undesirable aquatic plants, nor shall there be any material increase in harmful pesticide residues in the waters, sediments and aquatic flora and fauna; the natural fishery or the use thereof and lower aquatic biota upon which it is dependent shall not be degraded or endangered significantly; the species composition shall not be altered substantially, and the normal propagation of the fish and other biota shall not be prevented or seriously hindered by the discharge of sewage, industrial waste or other waste effluents to these waters.

(8) No sewage, industrial waste or other wastes shall be discharged into these waters so as to cause any nuisance conditions, such as the presence of substantial amounts of floating or suspended solids, scums, or slicks, material discoloration, obnoxious odors, visible gassing, excessive fungus growths, deleterious sludge deposits or other offensive or objectionable effects.

(9) In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged in such quanity or in such manner, alone or in combination with other substances, or permitted by any person to gain access to these waters, so as to cause any material undesirable increase in the taste or corrosiveness or nutrient content of the river waters or in any other manner to impair the natural quality or value of the waters or render them unsuitable or objectionable for the stated uses. The maximum practical reduction of nutrients, including nitrogen, phosphorus and sugars, in the sewage and wastes shall be accomplished as soon as practicable. Existing discharges of untreated or inadequately treated sewage, industrial wastes or other wastes shall be abated, treated or otherwise controlled so as to comply with these standards.

(10) Means for expediting mixing and dispersion of sewage, industrial waste or other waste effluents in the receiving waters shall be provided so far as practicable when deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with the applicable standards. In any instance where it is evident that it may not be feasible to provide for effective mixing or dispersion of an effluent or if at the applicable stream flows mentioned in the preceding paragraphs of the standards it is evident that the specified stream flow may be less than the effluent flow, these standards may be interpreted as effluent standards for control purposes where applicable.

(11) The following effluent standards are herein established and made applicable to all persons responsible for sewage discharges to these waters, both existing and new. Treatment facilities shall be provided which will produce an effluent with characteristics, originating directly from or directly attributable to the sewage per se, not exceeding the following:

Biochemical oxygen demand, 5 day	25 milligrams per liter
Total suspended solids	30 milligrams per liter
Coliform group organisms	5,000 most probable number of 100 milliliters

Allowance shall not be made in the design of treatment works for low stream flow augmentation unless such flow augmentation or minimum flow is dependable under applicable laws and regulations.

(12) It shall be encumbent on all persons responsible for existing or new sources of any sewage, industrial wastes or other wastes which are or will be discharged to these waters to treat or control their wastes so as to produce effluents having a common level or concentration, of pollutants of a comparable nature, as may be necessary to meet the standards, or better, and in no case

*May be based on the July or August river flow as specified in paragraph (4) above.

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shall the concentration of polluting substances in any individual effluent be permitted to exceed the common concentration or level required of the other sources discharging to these waters, except for controlled discharges of certain agricultural products processing wastes during the spring flush under special permit of the Commission, regardless of differences in the amount of pollutional substances discharged or degree of treatment which may be involved.

(13) Liquid substances which are not commonly considered to be sewage or industrial wastes but which could constitute a pollution hazard shall be stored in accordance with Regulation WPC 4. Other wastes as defined by law or other substances which could constitute a pollution hazard shall not be deposited in any manner such that the same may be likely to gain entry into these waters in excess of or contrary to any of the standards herein adopted or cause pollution as defined by law.

(14) The discharge of sewage, industrial wastes or other wastes to waters of the state which are tributary to these waters shall be controlled so that no violation of the standards for these waters shall occur by reason of such discharges to the tributary waters.

(15) Some of the waters may in a state of nature have characteristics or properties approaching or exceeding some of the limits specified in the standards. The standards shall be construed as regulating or limiting the addition of pollutants of human origin to those of natural origin, if such be present, so that in total the specified limiting concentrations will not be exceeded in the waters by reason of such controllable additions, except that if the background level of natural origin is reasonably definable and is higher than the specified standard such natural background level may be used as the standard for controlling such additions of human origin.

(16) In any case where, upon application of the responsible person or persons, the Commission finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship; and that disposal of the sewage, industrial waste or other waste is necessary for the public health, safety or welfare; and that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances; then the Commission in its discretion may permit a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these classifications and standards and the intent of the applicable state and national laws.

CHAPTER ELEVEN: WPC 11

CLASSIFICATION AND STANDARDS OF WATER QUALITY AND PURITY FOR THE RAINY RIVER FROM THE OUTLET OF RAINY LAKE AT RAINIER TO THE MINNESOTA AND ONTARIO PAPER COMPANY DAM IN INTERNATIONAL FALLS

The classification for use and the standards of quality and purity as hereinafter set forth are hereby adopted and established for the Rainy River from its origin at the outlet of Rainy Lake near the Duluth, Winnipeg and Pacific Railway bridge, approximately at the westward extension of Main Street in Ranier, to the Minnesota and Ontario Paper Company dam, approximately at the northward extension of Third Street in International Falls.

(a) Classification for Use.

(1) The present and potential uses of the waters which require maintenance of water quality in accordance with the standards hereinafter prescribed are domestic consumption, fisheries and recreation, and industrial consumption and wildlife.

(2) The waters may also be used for navigation or any other uses for which the waters may be suitable in this state or other areas through which the waters may flow.

(b) Related Conditions.

(1) The quality of the waters shall be such that with treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment processes, the treated water will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards—1962 for drinking water as specified in Publication No. 957 published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revisions or amendments thereto.

(2) The quality of the waters shall be such as to permit the propagation and maintenance of warm or cold water sport or commercial fishes and be suitable for aquatic recreation of all kinds, including bathing, for which the waters may otherwise be usable.

(3) The quality of the waters shall be such as to permit their use without chemical treatment for most industrial purposes, except food processing and related uses, for which a high quality water is required.

(4) The quality of the waters shall be such as to permit their use by wildlife without inhibition or injurious effects, and be suitable for esthetic enjoyment of scenery and avoidance of any interference with navigation or damaging effects on property.

(c) Standards.

(1) No untreated sewage, and no untreated industrial wastes or other wastes containing viable pathogenic organisms or any substances which may cause disease or endanger the public health, shall be discharged into the waters from sources now existing. No sewage effluent, and no industrial waste or other waste effluents containing viable pathogenic organisms or any substances which may cause disease or endanger the public health, shall be discharged into the waters from any source originating after the taking effect hereof, including without limitation, discharges from watercraft.

(2) No treated sewage, and no treated industrial wastes or other wastes containing viable pathogenic organisms from sources now existing, shall be discharged into the waters without effective disinfection. Effective disinfection of any contami-

nated discharges, including combined flows of sewage and storm water, and/or separation of sanitary sewage from natural runoff, will be required to protect the aforesaid uses of the waters.

(3) The discharge of oxygen demanding sewage, industrial wastes or other wastes, shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters, the dissolved oxygen content of such waters will be maintained at not less than 7 milligrams per liter in October and continuing through May, based on the monthly average flow which is exceeded by 96 per cent of the monthly flows of record for February; and so that a level of not less than 5 milligrams of dissolved oxygen per liter will be maintained during June through September, based on the monthly average flow which is exceeded by 96 per cent of the monthly flows of record for August; and so as to maintain at least 3 milligrams of dissolved oxygen per liter in the receiving waters at all river flows equal to or greater than the minimum daily average flow which is exceeded by 96 per cent of the minimum daily average flows of record for August.

(4) The discharge of sewage, industrial wastes or other wastes shall be restricted so that the limits given below are not exceeded at any river flow at any point in the river after reasonable opportunity for mixing and dilution of the effluents with the receiving waters:

Substance or Characteristic	Limiting Value or Range
Alkalinity ($CaCO_3$)	No material increase above natural levels
Ammonia (N)	No material increase above natural levels
Arsenic (As)	No material increase above natural levels
Barium (Ba)	No material increase above natural levels
Cadmium (Cd)	No material increase above natural levels
Carbon chloroform extract	No material increase above natural levels
Chlorides (Cl)	No material increase above natural levels
Chromium (Total Cr)	Not to exceed a trace
Coliform group organisms	500 most probable number per 100 milliliters
Color value	No material increase above natural levels
Copper (Cu)	No material increase above natural levels
Cyanides (CN)	Not to exceed a trace
Dissolved solids	No material increase above natural levels
Fluorides (F)	No material increase above natural levels
Hardness ($CaCO_3$)	No material increase above natural levels
Iron (Fe)	No material increase above natural levels
Lead (Pb)	No material increase above natural levels
Manganese (Mn)	No material increase above natural levels
Methylene blue active substance (MBAS)	Not to exceed a trace
Nitrates (NO_3)	No material increase above natural levels
Oil	Not to exceed a trace
Phosphorus (P)	No material increase above natural levels
Selenium (Se)	Not to exceed a trace
Silica (SiO_2)	No material increase above natural levels
Silver (Ag)	No material increase above natural levels
Sulfates (SO_4)	No material increase above natural levels
Suspended solids	No material increase above natural levels
Temperature*	75°F
Threshold odor number	No material increase above natural levels
Turbidity value	No material increase above natural levels
pH value*	6.5 - 8.0
Zinc	No material increase above natural levels
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health.
Unspecified substances	None at levels harmful or detrimental either directly or indirectly.

(5) In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged in such quantity or in such manner, alone or in combination with other substances, or permitted by any person to gain access to these waters, so as to cause any material undesirable increase in the taste or corrosiveness or nutrient content of the river waters or in any other manner to impair the natural quality or value of the waters or render them unsuitable or objectionable for the stated uses. Existing discharges of untreated or inadequately treated sewage, industrial wastes or

*May be based on the minimum daily average river flow in August as specified in the preceding paragraph.

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other wastes, shall be abated, treated or otherwise controlled so as to comply with these standards.

(6) The aquatic habitat, which includes the waters and stream bed, shall not be degraded in any material manner; there shall be no material increase in slime growths or undesirable aquatic plants, including algae, nor shall there be any detectable increase in harmful pesticide residues in the waters, sediments and aquatic flora and fauna; the normal fishery and lower aquatic biota upon which it is dependent shall not be degraded or endangered, the species composition shall not be altered materially, and the normal propagation of the fish and other biota shall not be prevented or hindered; by the discharge of any sewage, industrial waste or other waste effluents to these waters.

(7) No sewage, industrial waste or other wastes shall be discharged into these waters so as to cause any nuisance conditions, such as the presence of floating solids, scum, oil slicks, suspended solids, material discoloration, obnoxious odors, visible gassing, slime or fungus growths, or sludge deposits, or any other offensive or objectionable effects.

(8) Means for expediting mixing and dispersion of sewage, industrial waste or other waste effluents in the receiving waters shall be provided so far as practicable when deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with the applicable standards. In any instance where it is evident that it may not be feasible to provide for effective mixing or dispersion of an effluent or if at the applicable stream flows mentioned in the preceding paragraphs of the standards it is evident that the specified stream flow may be less than the effluent flow, these standards may be interpreted as effluent standards for control purposes where applicable. Allowance shall not be made in the design of treatment works for low stream flow augmentation unless such flow augmentation or minimum flow is dependable under applicable laws and regulations. All units of treatment works discharging effluent into the waters shall be operated continuously at their maximum capability and reports on their operation shall be submitted regularly at monthly intervals.

(9) It shall be incumbent on all persons responsible for existing or new sources of industrial or other wastes which are or will be discharged to these waters to treat or control their wastes so as to produce effluents having a common level or concentration, of pollutants of a comparable nature, as may be necessary to meet the standards, or better, and in no case shall the concentration of polluting substances in any individual effluent be permitted to exceed the common concentration or level required of the other sources discharging to these waters, regardless of differences in the amount of pollutional substances discharged or degree of treatment which may be involved.

(10) Liquid substances which are not commonly considered to be sewage or industrial wastes but which could constitute a pollution hazard shall be stored in accordance with Regulation WPC 4. Other wastes as defined by law or other substances which could constitute a pollution hazard shall not be deposited in any manner such that the same may be likely to gain entry into these waters in excess of or contrary to any of the standards herein adopted or cause pollution as defined by law.

(11) The quality of the waters of the state which are tributary to these waters shall be such that no violation of the standards for these waters shall occur by reason of the discharge of sewage, industrial waste or other wastes to the tributary waters.

(12) In any case where, upon application of the responsible person or persons, the Commission finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship; that disposal of the sewage, industrial waste or other wastes is necessary for the public health, safety or welfare; and that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances; the Commission in its discretion may permit a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these classifications and standards and the intent of the applicable state and national laws.

CHAPTER TWELVE: WPC 12

CLASSIFICATION AND STANDARDS OF WATER QUALITY AND PURITY FOR THE RAINY RIVER FROM THE MINNESOTA AND ONTARIO PAPER COMPANY DAM IN INTERNATIONAL FALLS TO THE CANADIAN NATIONAL RAILWAY BRIDGE IN BAUDETTE

The classification for use and the standards of quality and purity as hereinafter set forth are hereby adopted and established for the Rainy River from the Minnesota and Ontario Per Company dam, approximately at the northward extension of Third Street in International Falls, to the Canadian National Railway bridge, approximately 0.1 mile west of the mouth of the Baudette River in Baudette.

(a) Classification for Use.

(1) The present and potential uses of the waters which require maintenance of water quality in accordance with the standards hereinafter prescribed are domestic consumption, fisheries and recreation, industrial consumption, and agriculture and wildlife.

(2) The waters may also be used for navigation or any other uses for which the waters may be suitable in this state or other areas through which the waters may flow.

(b) Related Conditions.

(1) The quality of the waters shall be such that with treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment processes, the treated water will meet in all respects both the mandatory and recommended requirements of the Public Health Service Drinking Water Standards—1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revision or amendments thereto.

(2) The quality of the waters shall be such as to permit the propagation and maintenance of sport or commercial fishes, and

be suitable for boating and other forms of aquatic recreation not involving prolonged intimate contact with the water for which the waters may otherwise be usable.

(3) The quality of the waters shall be such as to permit their use for general industrial purposes, except food processing, with only a moderate degree of treatment.

(4) The quality of the waters shall be such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the area.

(5) The quality of the waters shall be such as to permit their use by livestock and wildlife without inhibition or injurious effects, and be suitable for esthetic enjoyment of scenery and avoidance of any interference with navigation or damaging effects on property.

(c) Standards.

(1) No untreated sewage, and no untreated industrial wastes or other wastes containing viable pathogenic organisms or any substances which may cause disease or endanger the public health, shall be discharged into the waters.

(2) No treated sewage, and no treated industrial wastes or other wastes containing viable pathogenic organisms, shall be discharged into the waters without effective disinfection. Effective disinfection of any contaminated discharges, including combined flows of sewage and storm water, and/or separation of sanitary sewage from natural runoff, will be required to protect the aforesaid uses of the waters.

(3) The discharge of oxygen demanding sewage, industrial wastes or other wastes, shall be restricted so that after reasonable opportunity for mixing and dilution htereof with the receiving waters the dissolved oxygen content of such waters will be maintained at not less than 6 milligrams per liter in April and May, based on the monthly average flow which is exceeded by 95 per cent of the monthly flows of record for April or May, whichever is lower; and so as to maintain during June through March at least 5 milligrams of dissolved oxygen per liter, based on the monthly flow which is exceeded by 95 per cent of the monthly flows of record for August; and so as to maintain at least 3 milligrams of dissolved oxygen per liter in the receiving waters at all river flows equal to or greater than the minimum daily average flow which is exceeded by 95 per cent of the minimum daily average flows of record for August.

(4) The discharge of industrial wastes or other wastes shall be controlled so that the heat content of such discharges after reasonable opportunity for mixing and dilution thereof with the receiving waters does not raise the temperature of such waters above 85°F based on the minimum monthly average flow which is exceeded by 95 per cent of the monthly flows for August.

(5) The discharge of sewage, industrial wastes or other wastes shall be restricted so that at any river flow the maximum limits for chemicals in the waters shall be such that after treatment consisting of coagulation, sedimentation, filtration, storage and chlorination, or other equivalent treatment, the following concentrations will not be exceeded in the treated water:

Substance or Characteristic	Maximum Limit or Range
Arsenic (As)	0.01 milligram per liter
Carbon chloroform extract	0.2 milligram per liter
Color value	15
Iron (Fe)	0.3 milligram per liter
Manganese (Mn)	0.05 milligram per liter
Threshold odor number	3
Methylene blue active substance (MBAS)	0.5 milligram per liter
Phenol	1 microgram per liter

(6) The concentrations given below shall not be exceeded at any river flow at any point in the river after reasonable opportunity for mixing and dilution of the sewage, industrial waste or other waste with the receiving waters:

Substance or Characteristic	Maximum Limit or Range
Ammonia (N)*	1 milligram per liter
Barium (Ba)	1 milligram per liter
Bicarbonates (HCO_3)*	5 milliequivalents per liter
Boron (B)*	0.5 milligram per liter
Cadmium (Cd)	0.01 milligram per liter
Chlorides (Cl)*	50 milligrams per liter
Chromium (Hexavalent Cr)	0.05 milligram per liter
Chromium (Total Cr)*	1 milligram per liter
Coliform group organisms	2,400 most probable number per 100 milliliters
Specific conductance*	1,000 micromho per centimeter
Copper (Cu)	0.2 milligram per liter
Cyanides (CN)	0.02 milligram per liter
Fluorides (F)	1.5 milligrams per liter
Hardness ($CaCO_3$)*	50 milligrams per liter
Lead (Pb)	0.05 milligram per liter
Oil	Not to exceed a trace
pH value*	6.5-8.5
Selenium (Se)	Not to exceed a trace
Silver (Ag)	0.05 milligram per liter
Sodium (Na)*	60 per cent of total cations as milliequivalents per liter
Dissolved solids*	200 milligrams per liter
Turbidity value	10
Zinc*	1 milligram per liter
Radioactive Materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health.
Unspecified substances	None at levels harmful or detrimental either directly or indirectly.

*May be based on the minimum monthly August river flow as specified in the paragraphs above.

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(7) In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged in such quantity or in such manner, alone or in combination with other substances, or permitted by any person to gain access to these waters, so as to cause any material undesirable increase in the taste or corrosiveness or nutrient content of the river waters or in any other manner to impair the natural quality or value of the waters or render them unsuitable or objectionable for the stated uses. The maximum practical reducation of nutrients, including phosphorus, nitrogen and sugars, in the sewage and wastes shall be accomplished as soon as possible. Existing discharges of untreated or inadequately treated sewage, industrial wastes or other wastes, shall be abated, treated or otherwise controlled so as to comply with these standards.

(8) The aquatic habitat, which includes the waters and stream bed, shall not be degraded in any material manner; there shall be no material increase in slime growths or undesirable aquatic plants, including algae, nor shall there be any detectable increase in harmful pesticide residues in the waters, sediments and aquatic flora and fauna; the normal fishery and lower aquatic biota upon which it is dependent shall not be degraded or endangered, the species compositon shall not be altered materially, and the normal propagation of the fish and other biota shall not be prevented or hindered; by the discharge of any sewage, industrial waste or other waste effluents to these waters.

(9) No sewage, industrial waste or other wastes shall be discharged into the waters so as to cause any nuisance conditions, such as the presence of substantial amounts of floating or suspended solids, scums or slicks, material discoloration, obnoxious odors, visible gassing, excessive fungus growths, deleterious sludge deposits, or other offensive or objectionable effects.

(10) Means for expediting mixing and dispersion of sewage, industrial waste or other waste effluents in the receiving waters shall be provided so far as practicable when deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with the applicable standards. In any instance where it is evident that it may not be feasible to provide for effective mixing or dispersion of an effluent, or if at the applicable stream flows mentioned in the preceding paragraphs of the standards it is evident that the specified stream flow may be less than the effluent flow, the standards may be intepreted as effluent standards for control purposes where applicable.

(11) It is herein established as a requirement applicable to all persons responsible for industrial waste discharges to these waters that a minimum of primary treatment shall be provided, so as to produce an effluent not exceeding the following:

Substance or Characteristic	Maximum Limit or Range
Floating solids or liquids	Non visible
Total suspended solids	100 milligrams per liter

Allowance shall not be made in the design of treatment works for low stream flow augmentation unless such flow augmentation or minimum flow is dependable under applicable laws and regulations. All units of treatment works discharging effluent into the waters shall be operated continuously at their maximum capability and reports on their operation shall be submitted regularly at monthly intervals.

(12) It shall be encumbent on all persons responsible for existing or new sources of sewage, industrial wastes or other wastes which are or will be discharged to these waters to treat or control their wastes so as to produce effluents having a common level or concentration, of pollutants of a comparable nature, as may be necessary to meet the standards, or better, and in no case shall the concentration of polluting substances in any individual effluent be permitted to exceed the common concentration or level required of the other sources discharging to these waters, except for possible controlled discharges of certain stored wastes under special permit of the Commission, regardless of differences in the amount of pollutional substances discharged or degree of treatment which may be involved.

(13) Liquid substances which are not commonly considered to be sewage or industrial wastes but which could constitute a pollution hazard shall be stored in accordance with Regulation WPC 4. Other wastes as defined by law or other substances which could constitute a pollution hazard shall not be deposited in any manner such that the same may be likely to gain entry into these waters in excess of or contrary to any of the standards herein adopted or cause pollution as defined by law.

(14) The quality of the waters of the state which are tributary to these waters shall be such that no violation of the standards for these waters shall occur by reason of the discharge of sewage, industrial waste or other wastes to the tributary waters.

(15) Some of the waters may in a state of nature have characteristics or properties approaching or exceeding some of the limits specified in the standards. These standards shall be construed as regulating or limiting the addition of pollutants of human origin to those of natural origin, if such be present, so that in total the specified limiting concentrations will not be exceeded in the waters by reason of such controllable additions, except that if the background level of natural origin is reasonably definable and is higher than the specified standard for controlling such additions of human origin.

(16) In any case where, upon application of the responsible person or persons, the Commission finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship; that disposal of the sewage, industrial waste or other wastes is necessary for the public health, safety or welfare; and that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances; the Commission in its discretion may permit a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these classifications and standards and the intent of the applicable state and national laws.

CHAPTER THIRTEEN: WPC 13

CLASSIFICATION AND STANDARDS OF WATER QUALITY AND PURITY FOR THE RAINY RIVER FROM THE CANADIAN NATIONAL RAILWAY BRIDGE IN BAUDETTE TO THE LAKE OF THE WOODS

The classification for use and the standards of quality and purity as hereinafter set forth are hereby adopted and established for the Rainy River from the Canadian National Railway bridge, approximately 0.1 mile west of the mouth of the Buadette River to the mouth at Wheeler's Point on Lake of the Woods, approximately to the northeast-southwest line joining International Boundary Commission reference monuments no. 50 and 51.

(a) Classification for Use.

(1) The present and potential uses of the waters which require maintenance of water quality in accordance with the standards hereinafter prescribed are fisheries and recreation, industrial consumption, and agriculture and wildlife.

(2) The waters may also be used for navigation or any other uses for which the waters may be suitable in this state or other areas through which the waters may flow.

(b) Related Conditions.

(1) The quality of the waters shall be such as to permit the propagation and maintenance of sport or commercial fishes, and be suitable for aquatic recreation of all kinds, including bathing, for which the waters may otherwise be usable.

(2) The quality of the waters shall be such as to permit their use for general industrial purposes, except food processing, with only a moderate degree of treatment.

(3) The quality of the waters shall be such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the area.

(4) The quality of the waters shall be such as to permit their use by livestock and wildlife without inhibition or injurious effects, and be suitable for esthetic enjoyment of scenery and avoidance of any interference with navigation or damaging effects on property.

(c) Standards.

(1) No untreated sewage, and no untreated industrial wastes or other wastes containing viable pathogenic organisms or any substances which may cause disease or endanger the public health, shall be discharged into the waters.

(2) No treated sewage, and no treated industrial wastes or other wastes containing viable pathogenic organisms, shall be discharged into the waters without effective disinfection. Effective disinfection of any contaminated discharges, including combined flows of sewage and storm water, and/or separation of sanitary sewage from natural runoff, will be required to protect the aforesaid uses of the waters.

(3) The discharge of oxygen demanding sewage, industrial wastes or other wastes, shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters the dissolved oxygen content of such waters will be maintained at not less than 6 milligrams per liter in April and May, based on the monthly average flow which is exceeded by 95 per cent of the monthly flows of record for April or May, whichever is lower; and so as to maintain at least 5 milligrams of dissolved oxygen per liter during June through March, based on the monthly flow which is exceeded by 95 per cent of the monthly flows of record for August; and so as to maintain at least 3 milligrams of dissolved oxygen per liter in the waters at all river flows equal to or greater than the minimum daily average flow which is exceeded by 95 per cent of the minimum daily average flows of record for August.

(4) The discharge of industrial wastes or other wastes shall be controlled so that the heat content of such discharges after reasonable opportunity for mixing and dilution thereof with the receiving waters does not raise the temperature of such waters above 85°F based on the minimum monthly average flow which is exceeded by 95 per cent of the monthly flows for August.

(5) The discharge of sewage, industrial wastes or other wastes shall be restricted so that at any river flow at any point in the river after reasonable opportunity for mixing and dilution, the following concentrations will not be exceeded in the waters:

Substance or Characteristic	Maximum Limit or Range
Methylene blue active substance (MBAS)*	0.5 milligram per liter
Ammonia (N)	1 milligram per liter
Bicarbonates (HCO_3)*	5 milliequivalents per liter
Boron (B)*	0.5 milligram per liter
Chromium (Total Cr)	1 milligram per liter
Chlorides (Cl)*	50 milligrams per liter
Coliform group organisms	1,000 most probable number per 100 milliliters
Specific conductance*	1,000 micromho per centimeter
Copper (Cu)	0.2 milligram per liter
Cyanides (CN)	0.02 milligram per liter
Hardness ($CaCo_3$)*	50 milligrams per liter
Oil	Not to exceed a trace
pH value*	6.5-8.5
Phenol	0.01 milligram per liter
Sodium (Na)*	60 per cent of total cations as milliequivalents per liter
Dissolved solids	200 milligrams per liter
Turbidity value	10
Unspecified substances	None at levels harmful or detrimental either directly or indirectly.

*May be based on the minimum monthly August river flow as specified in the paragraphs above.

KEY: RULES SECTION — Underlining indicates additions to proposed rule language. Strike outs indicate deletions from proposed rule language. **PROPOSED RULES SECTION** — Underlining indicates additions to existing rule language. Strike outs indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material."

(6) In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged in such quantity or in such manner, alone or in combination with other substances, or permitted by any person to gain access to these waters, so as to cause any material undesirable increase in the corrosiveness or nutrient content of the river waters or in any other manner to impair the natural quality or value of the waters or render them unsuitable or objectionable for the stated uses. Existing discharges of untreated or inadequately treated sewage, industrial wastes or other wastes, shall be abated, treated or otherwise controlled so as to comply with these standards.

(7) The aquatic habitat, which includes the waters and stream bed shall not be degraded in any material manner; there shall be no material increase in slime growths or undesirable aquatic plants, nor shall there be any detectable increase in harmful pesticide residues in the waters, sediments and aquatic flora and fauna; the normal fishery and lower aquatic biota upon which it is dependent shall not be degraded or endangered, the species composition shall not be altered materially, and the normal propagation of the fish and other biota shall not be prevented or hindered, by the discharge of any sewage, industrial waste or other waste effluents to these waters.

(8) No sewage, industrial waste or other wastes shall be discharged into the waters so as to cause any nuisance conditions, such as the presence of substantial amounts of floating or suspended solids, scums, or slicks, material discoloration, obnoxious odors, visible gassing, excessive fungus growths, deleterious sludge deposits, or other offensive or objectionable effects.

(9) Means for expediting mixing and dispersion of sewage, industrial waste or other waste effluents in the receiving waters shall be provided so far as practicable when deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with the applicable standards. In any instance where it is evident that it may not be feasible to provide for effective mixing or dispersion of an effluent, or if at the applicable stream flows mentioned in the preceding paragraphs of the standards it is evident that the specified stream flow may be less than the effluent flow, the standards may be interpreted as effluent standards for control purposes where applicable.

(10) It is herein established as a requirement applicable to all persons responsible for sewage discharges to these waters that secondary treatment shall be provided for all such discharges of sewage. Allowance shall not be made in the design of treatment works for low stream flow augmentation unless such flow augmentation or minimum flow is dependable under applicable laws and regulations. All units of treatment works discharging effluent into the waters shall be operated continuously at their maximum capability and reports on their operation shall be submitted regularly at monthly intervals.

(11) It shall be encumbent on all persons responsible for existing or new sources of sewage, industrial wastes or other wastes which are or will be discharged to these waters to treat or control their wastes so as to produce effluents having a common level or concentration, of pollutants of a comparable nature, as may be necessary to meet the standards, or better, and in no case shall the concentration or level exceed that required of the other sources discharging to these waters, regardless of differences in the amount of pollutional substances discharged or degree of treatment which may be involved.

(12) Liquid substances which are not commonly considered to be sewage or industrial wastes but which could constitute a pollution hazard shall be stored in accordance with Regulation WPC 4. Other wastes as defined by law or other substances which could constitute a pollution hazard shall not be deposited in any manner such that the same may be likely to gain entry into these waters in excess of or contrary to any of the standards herein adopted or cause pollution as defined by law.

(13) The quality of the waters of the state which are tributary to these waters shall be such that no violation of the standards for these waters shall occur by reason of the discharge of sewage, industrial waste or other wastes to the tributary waters.

(14) Some of the waters may in a state of nature have characteristics or properties approaching or exceeding some of the limits specified in the standards. These standards shall be construed as regulating or limiting the addition of pollutants of human origin to those of natural origin, if such be present, so that in total the specified limiting concentrations will not be exceeded in the waters by reason of such controllable additions, except that if the background level of natural origin is reasonably definable and is higher than the specified standard such natural background level may be used as the standard for controlling such additions of human origin.

(15) In any case where, upon application of the responsible person or persons, the Commission finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship; that disposal of the sewage, industrial waste or other wastes is necessary for the public health, safety or welfare; and that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances; the Commission in its discretion may permit a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these classifications and standards and the intent of the applicable state and national laws.

CHAPTER SIXTEEN: WPC 16

CLASSIFICATION AND ESTABLISHMENT OF STANDARDS OF WATER QUALITY AND PURITY FOR ANDERSON CREEK, BIG SILVER CREEK, THE BLACKHOOF RIVER, CANUTRUP CREEK (AND MARY BROOK), CLEAR CREEK, DEER CREEK, THE LITTLE NET RIVER, THE NET RIVER, NORTH FORK CREEK, SKUNK CREEK, STATELINE CREEK AND STONY BROOK CARLTON AND PINE COUNTIES

The classification for use and the standards of quality and purity as hereinafter set forth are hereby adopted and established for the waters of Anderson Creek, Big Silver Creek, the Black-

~~hoof River, Canutrup Creek (and Mary Brook), Clear Creek, Deer Creek, the Little Net River, the Net River, North Fork Creek (Hunters and Nemadji Creeks), Skunk Creek, Stateline Creek and Stone Brook, and waters tributary thereto, in Carlton and Pine Counties, from the source to the mouth in Section 14, Township 46 North, Range 17 West; Section 12, Township 46 North, Range 17 West; Section 32, Township 47 North, Range 16 West; Section 19, Township 46 North, Range 17 West; Section 12, Township 46 North, Range 17 West; Section 28, Township 47 North, Range 16 West; Section 3, Township 46 North, Range 16 West; Section 34, Township 47 North, Range 16 West; Section 9, Township 46 North, Range 17 West; Section 36, Township 47 North, Range 17 West; Section 30, Township 47, Range 15 West; and Section 11, Township 46 North, Range 17 West, respectively.~~

~~(a) Classification for Use.~~

~~(1) The present or potential uses of the waters requiring maintenance of water quality in accordance with the standards hereinafter prescribed are domestic consumption, fisheries and recreation, and agriculture and wildlife.~~

~~(2) The waters also may be used for industrial consumption or any other uses for which the waters may be suitable naturally in this state or other areas through which the waters may flow.~~

~~(b) Related Conditions.~~

~~(1) The quality of the waters shall be such that with approved disinfection, such as simple chlorination, or its equivalent, the treated water will meet the mandatory requirements of the Public Health Service Drinking Water Standards—1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revisions or amendments thereto.~~

~~(2) The quality of the waters shall be such as to permit the propagation and maintenance of warm or cold water sport or commercial fishes and be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable.~~

~~(3) The quality of the waters shall be such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the area, and permit their use by livestock and wildlife without inhibition or injurious effects.~~

~~(c) Standards.~~

~~(1) No untreated sewage, and no untreated industrial waste or other wastes containing viable pathogenic organisms or any substances which may cause disease or endanger the health of humans, shall be discharged into the waters.~~

~~(2) No treated sewage, and no treated industrial wastes or other wastes containing viable pathogenic organisms shall be discharged into the waters without effective disinfection. Effective disinfection of any such contaminated discharges, including combined flows of sewage and storm water, and/or separation of sanitary sewage from natural runoff, will be required to protect the aforesaid uses of the waters. In any case, where the discharge of sewage, industrial wastes or other wastes, whether treated or untreated, may be such as to constitute an actual or potential hazard to the safety of users of those waters, storage of the effluents and controlled release over non-critical periods may be required. All units of treatment works discharging effluent into the waters shall be operated continuously at their maximum capability and reports on the operation of the treatment works shall be submitted regularly at monthly intervals.~~

~~(3) The discharge of oxygen demanding sewage, industrial wastes or other wastes shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters the dissolved oxygen content of such waters will be maintained during October through May at not less than 7 milligrams per liter, based on the minimum monthly average flow which is exceeded by 96 per cent of the monthly stream flows of record for January or February, whichever is lower; and so as to maintain at other times at least 5 milligrams of dissolved oxygen per liter in the receiving waters, based on the minimum monthly average flow which is exceeded by 96 per cent of the monthly flows for July or August, whichever is lower. Where flow records are not available the indicated flows may be estimated on the basis of available information on the watershed characteristics, precipitation, run-off and other pertinent data.~~

~~(4) The discharge of industrial wastes or other wastes shall be controlled so that the heat content of such discharges after reasonable opportunity for mixing and dilution thereof with the receiving waters does not materially increase the temperature of such waters above prevailing natural levels, based on the minimum monthly average temperature and flow, as indicated above for July or August, whichever is lower.~~

~~(5) The discharge of sewage, industrial wastes or other waste effluents shall be restricted so that at any stream flow the concentrations given below shall not be exceeded at any point in the waters after reasonable opportunity for mixing and dilution:~~

~~Substance or Characteristic~~	~~Maximum Limit or Range~~
~~Methylene blue active substance (MBAS)~~	~~Not to exceed a trace~~
~~Ammonia (N)~~	~~Not to exceed a trace~~
~~Arsenic (As)~~	~~0.01 milligram per liter~~
~~Barium (Ba)~~	~~1 milligram per liter~~
~~Bicarbonates (HCO_3)*~~	~~5 milliequivalents per liter~~
~~Boron (B)*~~	~~0.5 milligram per liter~~
~~Cadmium (Cd)~~	~~0.01 milligram per liter~~
~~Chlorides~~	~~50 milligrams per liter~~

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Substance or Characteristic	Maximum Limit or Range
Chromium (Total Cr)	Not to exceed a trace
Copper (Cu)	Not to exceed a trace
Cyanides (CN)	Not to exceed a trace
Fluorides (F)	1.5 milligrams per liter
Lead (Pb)	0.05 milligram per liter
Oil	Not to exceed a trace
pH value	6.5 – 8.5
Phenol	Not to exceed a trace
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health.
Selenium (Se)	Not to exceed a trace
Silver (Ag)	0.5 milligram per liter
Sodium (Na)*	60% of total cations as milliequivalents per liter
Dissolved solids	500 milligrams per liter
Specific conductance*	1,000 micromho per centimeter
Unspecified substances	None at levels harmful or detrimental either directly or indirectly.

(6) The natural aquatic habitat, which includes the waters and stream bed, shall not be degraded in any material manner, there shall be no material increase in slime growths or undesirable aquatic plants, nor shall there be any material increase in harmful pesticide residues in the waters, sediments and aquatic flora and fauna; the natural fishery and lower aquatic biota upon which it is dependent shall not be degraded or endangered significantly, the species composition shall not be altered substantially, and the propagation of the fish and other biota shall not be prevented or seriously hindered; by the discharge of sewage, industrial waste or other waste effluents to these waters.

(7) No sewage, industrial waste or other wastes shall be discharged into these waters so as to cause any nuisance conditions such as the presence of substantial amounts of floating or suspended solids, scums, or slicks, material discoloration, obnoxious odors, visible gassing, excessive fungus growths, deleterious sludge deposits or other offensive or objectionable effects.

(8) In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged in such quantity or in such manner, along or in combination with other substances, or permitted by any person to gain access to these waters, so as to cause any material undesirable increase in the taste or corrosiveness or nutrient content of the waters or in any other manner to impair the natural quality or value of the waters or render them unsuitable or objectionable for the stated uses.

(9) Means for expediting mixing and dispersion of sewage, industrial waste or other waste effluents in the receiving waters shall be provided so far as practicable when deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with the applicable standards. In any instance where it is evident that it may not be feasible to provide for effective mixing or dispersion of an effluent or if at the applicable stream flows mentioned in the preceding paragraphs of the standards it is evident that the specified stream flow may be less than the effluent flow, these standards may be interpreted as effluent standards for control purposes where applicable.

(10) The following effluent standards are herein established and made applicable to all persons responsible for sewage discharges to these waters originating after the taking effect hereof. Unless otherwise required under the preceding standards, treatment facilities shall be provided which will produce an effluent with characteristics, originating directly from or directly attributable to the sewage per se, not exceeding the following:

Substance or Characteristic	Maximum Limit or Range
Biochemical oxygen demand, 5-day	25 milligrams per liter
Coliform group organisms	50 most probable number per 100 milliliters
Phosphorus	1 milligram per liter
Suspended solids	30 milligrams per liter
Turbidity value	25

Allowance shall not be made in the design of treatment works for stream flow augmentation unless such augmentation of minimum flow is dependable under applicable laws and regulations.

(11) It shall be encumbent on all persons responsible for existing or new sources of any sewage, industrial wastes or other wastes which are or will be discharged to these waters to treat or control their waste so as to produce effluents having a common level or concentration, of pollutants of a comparable nature, as may be necessary to meet the standards, or better, and in no case shall the concentration of polluting substances in any individual effluent be permitted to exceed the common concentration or level required of the other sources discharging to these waters, regardless of differences in the amount of pollutional substances discharged or degree of treatment which may be involved.

(12) Liquid substances which are not commonly considered to be sewage or industrial wastes but which could constitute a pollution hazard shall be stored in accordance with Regulation WPC 4. Other wastes as defined by law or other substances which could constitute a pollution hazard shall not be deposited in any manner such that the same may be likely to gain entry into these waters in excess of or contrary to any of the standards herein adopted or cause pollution as defined by law.

(13) The discharge of sewage, industrial wastes or other wastes to waters of the state which are tributary to these waters shall be controlled so that no violation of the standards for these waters shall occur by reason of such discharges to the tributary waters.

(14) Some of the waters may in a state of nature have characteristics or properties approaching or exceeding some of

*May be based on the July or August river flow as specified in the paragraphs above.

~~the limits specified in the standards. The standards shall be construed as regulating or limiting the addition of pollutants of human origin to those of natural origin, if such be present, so that in total the specified limiting concentrations will not be exceeded in the waters by reason of such controllable additions, except that if the background level of natural origin is reasonably definable and is higher than the specified standard such natural background level may be used as the standard for controlling such additions of human origin.~~

~~(15) In any case where, upon application of the responsible person or persons, the Commission finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship; that disposal of the sewage, industrial waste or other waste is necessary for the public health, safety or welfare; and that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances; the Commission in its discretion may permit a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these classifications and standards and the intent of the applicable state and national laws.~~

~~CHAPTER SEVENTEEN: WPC 17~~

~~CLASSIFICATION AND ESTABLISHMENT OF STANDARDS OF WATER QUALITY AND PURITY FOR THE NEMADJI RIVER SYSTEM, CARLTON AND PINE COUNTIES (Except Waters Included in WPC 16)~~

~~The classification for use and the standards of quality and purity as hereinafter set forth are hereby adopted and established for the waters of the Black River, Clear Creek, the Nemadji River, Mud Creek, and the South Fork of the Nemadji River, and waters tributary thereto except those designated in Regulation WPC 16, in Carlton and Pine Counties, from the source to the Minnesota-Wisconsin border in Section 19, Township 45 North, Range 15 West; Section 7, Township 47 North, Range 15 West; Section 19, Township 47 North, Range 15 West; Section 18, Township 47 North, Range 15 West; and Section 30, Township 47 North, Range 15 West, respectively.~~

~~(a) Classification for Use.~~

~~(1) The present or potential uses of the waters requiring maintenance of water quality in accordance with the standards hereinafter prescribed are domestic comsumption, fisheries and recreation, agriculture and wildlife.~~

~~(2) The waters also may be used for industrial consumption or any other uses for which the waters may be suitable naturally in this state or other areas through which the waters may flow.~~

~~(b) Related Conditions.~~

~~(1) The quality of the waters shall be such that with approved disinfection, such as simple chlorination, or its equivalent, the treated water will meet the mandatory requirements of the Public Health Service Drinking Water Standards—1962 for drinking water as specified in Publication No. 956 published by the Public Health Service of the U.S. Department of Health, Education and Welfare, and any revisions or amendments thereto.~~

~~(2) The quality of the waters shall be such as to permit the propagation and maintenance of sport or commercial fishes of species commonly inhabiting the waters of the vicinity under natural conditions and be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable.~~

~~(3) The quality of the waters shall be such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the area, and such as to permit their use by livestock and wildlife without inhibition or injurious effects.~~

~~(c) Standards.~~

~~(1) No untreated sewage, and no untreated industrial waste or other wastes containing viable pathogenic organisms or any substances which may cause disease or endanger the health of humans, shall be discharged into the waters.~~

~~(2) No treated sewage, and no treated industrial wastes or other wastes containing viable pathogenic organisms shall be discharged into the waters without effective disinfection. Effective disinfection of any such contaminated discharges, including combined flows of sewage and storm water, and/or separation of sanitary sewage from natural runoff, will be required to protect the aforesaid uses of the waters. In any case, where the discharge of sewage, industrial wastes or other wastes, whether treated or untreated, may be such to consitute an actual or potential hazard to the safety of users of those waters, storage of the effluents and controlled release over non-critical periods may be required. All units of treatment works discharging effluent into the waters shall be operated continuously at their maximum capability and reports on the operation of the treatment works shall be submitted regularly at monthly intervals.~~

~~(3) The discharge of oxygen demanding sewage, industrial wastes or other wastes shall be restricted so that after reasonable opportunity for mixing and dilution thereof with the receiving waters the dissolved oxygen content of such waters will be maintained during April and May at not less than 6 milligrams per liter, based on the minimum monthly average flow which is exceeded by 95 per cent of the monthly stream flows of record for April or May, whichever is lower; and so as to maintain at other times at least 5 milligrams of dissolved oxygen per liter in the receiving waters, based on the minimum~~

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monthly average flow which is exceeded by 95 per cent of the monthly flows for July or August, whichever is lower. Where flow records are not available the indicated flows may be estimated on the basis of available information on the watershed characteristics, precipitation, run-off and other pertinent data.

(4) The discharge of industrial wastes or other wastes shall be controlled so that the heat content of such discharges after reasonable opportunity for mixing and dilution thereof with the receiving waters does not raise the temperature of such waters above 86°F based on the minimum monthly average flow which is exceeded by 95 per cent of the monthly flows for July or August, whichever is lower.

(5) The discharge of sewage, industrial wastes or other waste effluents shall be restricted so that at any stream flow the concentrations given below shall not be exceeded at any point in the waters after reasonable opportunity for mixing and dilution:

Substance or Characteristic	Maximum Limit or Range
Methylene blue active substance (MBAS)	0.5 milligram per liter
Arsenic (As)	0.01 milligram per liter
Phenol	0.01 milligram per liter
Total dissolved solids	700 milligrams per liter
Ammonia (N)	1 milligram per liter
Barium (Ba)	1 milligram per liter
Bicarbonates (HCO_3)*	5 milliequivalents per liter
Boron (B)*	0.5 milligram per liter
Cadmium (Cd)	0.01 milligram per liter
Chromium (Hexavalent Cr)	0.05 milligram per liter
Chromium (Total Cr)	1 milligram per liter
Copper (Cu)	0.2 milligram per liter
Cyanides (CN)	0.02 milligram per liter
Fluorides (F)	1.5 milligrams per liter
Lead (Pb)	0.05 milligram per liter
Oil	Not to exceed a trace
pH Value	6.5 – 9.0
Selenium (Se)	Not to exceed a trace
Silver (Ag)	0.05 milligram per liter
Sodium (Na)*	60% of total cations as milliequivalents per liter
Specific conductance*	1,000 micromho per centimeter
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate Federal authority or by the State Board of Health.
Other unspecified substances	None at levels harmful or detrimental either directly or indirectly.

(6) The natural aquatic habitat, which includes the waters and stream bed, shall not be degraded in any material manner, there shall be no material increase in slime growths or undesirable aquatic plants, nor shall there be any material increase in harmful pesticide residues in the waters, sediments and aquatic flora and fauna; the natural fishery and lower aquatic biota upon which it is dependent shall not be degraded or endangered significantly, the species composition shall not be altered substantially, and the propagation of the fish and other biota shall not be prevented or seriously hindered; by the discharge of sewage, industrial waste or other waste effluents to these waters.

(7) No sewage, industrial waste or other wastes shall be discharged into these waters so as to cause any nuisance conditions such as the presence of substantial amounts of floating or suspended solids, scums, or slicks, material discoloration, obnoxious odors, visible gassing, excessive fungus growths, deleterious sludge deposits or other offensive or objectionable effects.

(8) In addition to the above listed standards, no sewage, industrial waste or other wastes, treated or untreated, shall be discharged in such quantity or in such manner, alone or in combination with other substances, or permitted by any person to gain access to these waters, so as to cause any material undesirable increase in the taste or corrosiveness or nutrient content of the waters or in any other manner to impair the natural quality or value of the waters or render them unsuitable or objectionable for the stated uses.

(9) Means for expediting mixing and dispersion of sewage, industrial waste or other waste effluents in the receiving waters shall be provided so far as practicable when deemed necessary by the Commission to maintain the quality of the receiving waters in accordance with the applicable standards. In any instance where it is evident that it may not be feasible to provide for effective mixing or dispersion of an effluent or if at the applicable stream flows mentioned in the preceding paragraphs of the standards it is evident that the specified stream flow may be less than the effluent flow, these standards may be interpreted as effluent standards for control purposes where applicable.

(10) The following effluent standards are herein established and made applicable to all persons responsible for sewage discharges to these waters originating after the taking effect hereof. Unless otherwise required under the preceding standards, treatment facilities shall be provided which will produce an effluent with characteristics, originating directly from or directly attributable to the sewage per se, not exceeding the following:

Substance or Characteristic	Maximum Limit or Range
Biochemical oxygen demand, 5-day	25 milligrams per liter
Coliform group organisms	50 most probable number per 100 milliliters
Phosphorus	1 milligram per liter
Suspended solids	30 milligrams per liter
Turbidity value	25

Allowance shall not be made in the design of treatment works for stream flow augmentation unless such augmentation of minimum flow is dependable under applicable laws and regulations.

*May be based on the July or August river flow as specified in the paragraphs above.

(11) It shall be encumbent on all persons responsible for existing or new sources of any sewage, industrial wastes or other wastes which are or will be discharged to these waters to treat or control their wastes so as to produce effluents having a common level or concentration, of pollutants of a comparable nature, as may be necessary to meet the standards, or better, and in no case shall the concentration of polluting substances in any individual effluent be permitted to exceed the common concentration or level requied of the other sources discharging to these waters, regardless of differences in the amount of pollutional substances discharged or degree of treatment which may be involved.

(12) Liquid substances which are not commonly considered to be sewage or industrial wastes but which could constitute a pollution hazard shall be stored in accordance with Regulation WPC 4. Other wastes as defined by law or other substances which could constitute a pollution hazard shall not be deposited in any manner such that the same may be likely to gain entry into these waters in excess of or contrary to any of the standards herein adopted or cause pollution as defined by law.

(13) The discharge of sewage, industrial wastes or other wastes to waters of the state which are tributary to these waters shall be controlled so that no violation of the standards for these waters shall occur by reason of such discharges to the tributary waters.

(14) Some of the waters may in a state of nature have characteristics or properties approaching or exceeding some of the limits specified in the standards. The standards shall be construed as regulating or limiting the addition of pollutants of human origin to those of natural origin, if such be present, so that in total the specified limiting concentrations will not be exceeded in the waters by reason of such controllable additions, except that if the background level of natural origin is reasonably definable and is higher than the specified standard such natural background level may be used as the standard for controlling such additions of human origin.

(15) In any case where, upon application of the responsible person or persons, the Commission finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship; that disposal of the sewage, industrial waste or other waste is necessary for the public health, safety or welfare; and that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances; the Commission in its discretion may permit a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these classifications and standards and the intent of the applicable state and national laws.

CHAPTER EIGHTEEN: WPC 18

PROPOSED EFFLUENT STANDARDS FOR DISPOSAL SYSTEMS DISCHARGING TO THE MISSISSIPPI RIVER FROM THE OUTFALL OF THE MINNEAPOLIS-ST. PAUL SANITARY DISTRICT SEWAGE TREATMENT PLANT TO LOCK AND DAM NO. 2 NEAR HASTINGS

The following standards of effluent quality and purity are hereby adopted and established for that portion of the Mississippi River from the outfall of the Minneapolis-St. Paul Sanitary District sewage treatment plant in the City of St. Paul, approximately at the eastward extension of Baker Street East in said city, to the U.S. lock and dam No. 2 above Hastings.

(a) Definitions: The terms ''person,'' ''sewage,'' ''industrial wastes,'' ''other wastes,'' ''treatment works,'' ''disposal systems,'' and ''waters of the state,'' as well as any other pertinent terms for which definitions are given in the water pollution control statutes, as used herein have the meanings ascribe to them in Minnesota Statutes (1967), Chapter 115. Other terms and abbreviations used herein not specifically defined in the law shall be construed in conformance with the context and professional usage.

(b) Standards: It is hereby established as a minimum requirement applicable to all persons responsible for disposal systems discharging sewage, industrial waste or other waste effluents to the above delineated waters, or which may affect these waters, that from May 1 through October 31 there shall be effective continuous chlorination of sewage and other effluents containing viable pathogenic organisms. It is further established that all effluents shall be treated prior to discharge so as to meet the following limiting permissible concentrations:

Substance or Characteristic	Limiting Concentration
5-day biochemical oxygen demand	35 milligrams per liter
Total suspended solids	30 milligrams per liter
Total coliform group organisms	5,000 most probable number per 100 milliliters
Oil	10 milligrams per liter
Turbidity	25

(c) Monthly Reports: All persons operating sewage, industrial waste or other waste disposal systems adjacent to or discharging to the waters covered by this Regulation shall submit every month a report to the Minnesota Pollution Control Agency on the operation of such disposal system, the effluent flow, and the characteristics and concentrations of the effluents and receiving waters. Sufficient data on measurements, observations, sampling and analyses, and other pertinent information shall be furnished as may be required by the Agency to reflect adequately the condition of the disposal system, the effluent and the waters receiving the effluent.

(d) Determination of Compliance: In making tests or analyses

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of the sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered satisfactory by the Agency. No allowance will be ade for dilution of the effluents in the waters of the state into which they are discharged. The samples shall be preserved and analyzed in accordance with procedures given in the Standard Methods for the Examination of Water and Waste-Water, by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, or other methods acceptable to the Agency.

(e) Variance: Where upon written application of the responsible person or persons and after public hearing the Agency finds that, by reason of exceptional circumstances, strict conformity with any provision of these standards would cause undue hardship, would be unreasonable, impractical or not feasible under the circumstances, the Agency may by Order grant a variance from these standards to such person or persons upon such conditions and within such time limitations as it may prescribe for prevention, control or abatement of pollution in harmony with the intent of state and federal laws.

CHAPTER NINETEEN: WPC 19

EFFLUENT STANDARDS FOR DISPOSAL SYSTEMS DISCHARGING TO THE MINNESOTA RIVER FROM ABOVE CHASKA TO THE JUNCTION WITH THE MISSISSIPPI RIVER AT FORT SNELLING

The following standards of effluent quality and purity are hereby adopted and established for that portion of the Minnesota River from the Chaska Village south boundary to the junction with the Mississippi River at Fort Snelling.

(a) Definitions: The terms ''person,'' ''sewage,'' ''industrial wastes,'' ''other wastes,'' ''treatment works,'' ''disposal systems,'' and ''waters of the state,'' as well as any other pertinent terms for which definitions are given in the water pollution control statutes, as used herein have the meanings ascribed to them in Minnesota Statutes (1967), Chapter 115. Other terms and abbreviations used herein not specifically defined in the law shall be construed in conformance with the context and professional usage.

(b) Standards: It is hereby established as a minimum requirement applicable to all persons responsible for disposal systems discharging sewage, industrial waste or other waste effluents to the above delineated waters, or which may affect these waters, that from May 1 through October 31 there shall be effective continuous chlorination of sewage and other effluents containing viable pathogenic organisms. It is further established that all effluents shall be treated prior to discharge so as to meet the following limiting permissible concentrations:

Substance or Characteristic	Limiting Concentration
5-day biochemical oxygen demand	25 milligrams per liter
Total suspended solids	30 milligrams per liter
Total coliform group organisms	5,000 most probable number per 100 milliliters
Oil	10 milligrams per liter
Turbidity	25

(c) Monthly Reports: All persons operating sewage, industrial waste or other waste disposal systems adjacent to or discharging to the waters covered by this Regulation shall submit every month a report to the Minnesota Pollution Control Agency on the operation of such disposal system, the effluent flow, and the characteristics and concentrations of the effluents and receiving waters. Sufficient data on measurements, observations, sampling and analyses, and other pertinent information shall be furnished as may be required by the Agency to reflect adequately the condition of the disposal system, the effluent and the waters receiving the effluent.

(d) Determination of Compliance: In making tests or analyses of the sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered satisfactory by the Agency. No allowance will be made for dilution of the effluents in the waters of the state into which they are discharged. The samples shall be preserved and analyzed in accordance with procedures given in the Standard Methods for the Examination of Water and Waste-Water, by the American Health Association, American Water Works Association, and the Water Pollution Control Federation, or other methods acceptable to the Agency.

(e) Variance: Where upon written application of the responsible person or persons and after public hearing, the Agency finds that, by reason of exceptional circumstances, strict conformity with any provisions of these standards would cause undue hardship, would be unreasonable, impractical or not feasible under the circumstances, the Agency may by Order grant a variance from these standards to such person or persons upon such conditions and within such time limitations as it may prescribe for prevention, control or abatement of pollution in harmony with the intent of state and federal laws.

CHAPTER TWENTY: WPC 20

EFFLUENT STANDARDS FOR DISPOSAL SYSTEMS DISCHARGING TO THE MINNESOTA RIVER FROM MANKATO TO CHASKA.

The following standards of effluent quality and purity are hereby adopted and established for that portion of the Minnesota River from the mouth of the Blue Earth River in Mankato, to the Chaska Village south boundary.

(a) Definitions: The terms ''person,'' ''sewage,'' ''industrial wastes,'' ''other wastes,'' ''treatment works,'' ''disposal systems,'' and ''waters of the state,'' as well as any other pertinent terms for which definitons are given in the water pollution control statutes, as used herein have the meanings ascribed to them in Minnesota Statutes (1967), Chapter 115. Other terms and abbreviations used herein not specifically defined in the law shall be construed in conformance with the context and professional usage.

(b) Standards: It is hereby established as a minimum requirement applicable to all persons responsible for disposal systems discharging sewage, industrial waste or other waste effluents to the above delineated waters, or which may affect these waters,

that from May 1 through October 31 there shall be effective continuous chlorination of sewage and other effluents containing viable pathogenic organisms. It is further established that all effluents shall be treated prior to discharge so as to meet the following limiting permissible concentrations:

Substance or Characteristic	Limiting Concentration
5-day biochemical oxygen demand	50 milligrams per liter
Total suspended solids	30 milligrams per liter
Total colifrom group organisms	5000 most probable number per 100 milliliters
Oil	10 milligrams per liter
Turbidity value	25

(c) Monthly Reports: All persons operating sewage, industrial waste or other waste disposal systems adjacent to or discharging to the waters covered by this Regulation shall submit every month a report to the Minnesota Pollution Control Agency on the operation of such disposal system, the effluent flow, and the characteristics and concentrations of the effluents and receiving waters. Sufficient data on measurements, observations, sampling and analyses and other pertinent information shall be furnished as may be required by the Agency to reflect adequately the condition of the disposal system, the effluent and the waters receiving the effluent.

(d) Determination of Compliance: In making tests or analyses of the sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered satisfactory by the Agency. No allowance will be made for dilution of the effluents in the waters of the state into which they are discharged. The samples shall be preserved and analyzed in accordance with procedures given in the Standard Methods for the Examination of Water and Waste Water, by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation or other methods acceptable to the Agency.

(e) Variance: Where upon written application of the responsible person or persons and after public hearing the Agency finds that by reason of exceptional circumstances strict conformity with any provision of these standards would cause undue hardship, would be unreasonable, impractical or not feasible under the circumstances, the Agency may by Order grant a variance from these standards to such person or persons upon such conditions and within such time limitations as it may prescribe for prevention, control or abatement of pollution in harmony with the intent of state and federal laws.

CHAPTER TWENTY-ONE: WPC 21

EFFLUENT STANDARDS FOR DISPOSAL SYSTEMS DISCHARGING TO THE MISSISSIPPI RIVER FROM THE JUNCTION OF THE RUM RIVER TO THE OUTFALL OF THE MINNEAPOLIS-ST. PAUL SANITARY DISTRICT SEWAGE TREATMENT PLANT, AND FROM LOCK AND DAM NO. 2 NEAR HASTINGS TO THE JUNCTION WITH THE CHIPPEWA RIVER, AND TO THE ST. CROIX RIVER FROM TAYLORS FALLS TO THE JUNCTION WITH THE MISSISSIPPI RIVER.

The following standards of effluent quality and purity are hereby adopted and established for that portion of the Mississippi River from the mouth of the Rum River in the City of Anoka, to the outfall of the Minneapolis-St. Paul Sanitary District sewage treatment plant in the City of St. Paul, and from the U.S. Lock and Dam No. 2 above Hastings to the mouth of the Chippewa River at the lower end of Lake Pepin near the Village of Wabasha, and that portion of the St. Croix River from the Nevers Dam in Taylors Falls, approximately at the eastward extension of the boundary between Sections 24 and 25, Shafer Township, Chisago County, to the junction with the Mississippi River near Hastings.

(a) Definitions: The terms ''person,'' ''sewage,'' ''industrial wastes,'' ''other wastes,'' ''treatment works,'' ''disposal systems,'' and ''waters of the state,'' as well as any other pertinent terms for which definitions are given in the water pollution control statutes, as used herein have the meanings ascribed to them in Minnesota Statutes (1967), Chapter 115. Other terms and abbreviations used herein not specifically defined in the law shall be construed in conformance with the context and professional usage.

(b) Standards: It is hereby established as a minimum requirement applicable to all persons responsible for disposal systems discharging sewage, industrial waste or other waste effluents to the above delineated waters, or which may affect these waters, that there shall be year-round effective continuous chlorination of sewage and other effluents containing viable pathogenic organisms which are discharged at or above public water supply intakes, and effective continuous chlorination from May 1 through October 31 of sewage and other effluents containing viable pathogenic organisms which are discharged to other reaches. It is further established that all effluents shall be treated prior to discharge so as to meet the following limiting permissible concentrations:

Substance or Characteristic	Limiting Concentration
5-day biochemical oxygen demand	50 milligrams per liter
Total suspended solids	30 milligrams per liter
Total coliform group organisms	1,000 most probable number per 100 milliliters
Oil	Not to exceed a trace
Turbidity value	25

KEY: RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language. **PROPOSED RULES SECTION —** Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated ''all new material.''

(c) Monthly Reports: All persons operating sewage, industrial waste or other waste disposal systems adjacent to or discharging to the water covered by this Regulation shall submit every month a report to the Minnesota Pollution Control Agency on the operation of such disposal system, the effluent flow, and the characteristics and concentration of the effluents and receiving waters. Sufficient data on measurements, observations, sampling and analyses and other pertinent information shall be furnished as may be required by the Agency to reflect adequately the condition of the disposal system, the effluent and the waters receiving the effluent.

(d) Determination of Compliance: In making tests or analyses of the sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered satisfactory by the Agency. No allowance will be made for dilution of the effluents in the waters of the state into which they are discharged. The samples shall be preserved and analyzed in accordance with procedures given in the Standard Methods for the Examination of Water and Waste Water, by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation or other methods acceptable to the Agency.

(e) Variance: Where upon written application of the responsible person or persons and after public hearing the Agency finds that by reason of exceptional circumstances, strict conformity with any provision of these standards would cause undue hardship, would be unreasonable, impractical or not feasible under the circumstances, the Agency may by Order grant a variance from these standards to such person or persons upon such conditions and within such time limitations as it may prescribe for prevention, control or abatement of pollution in harmony with the intent of state and federal laws.

CHAPTER TWENTY-THREE: WPC 23

STANDARDS OF QUALITY AND PURITY FOR EFFLUENTS DISCHARGED TO INSTRASTATE WATERS

The following regulation setting effluent standards obtains to all instrastate surface waters of the state except as herein indicated.

(a) Scope: The following standards of effluent quality and purity as hereby adopted and established obtain to all intrastate surface waters of the state except those reaches or waters now governed by specific prior effluent standards. ''Waters of the state'' as hereinafter used shall be construed within these qualifications. Classifications, water quality criteria, and effluent standards which may later be enacted for waters named herein shall supercede this regulation as to such waters without specific amendment or modification hereof.

(b) Definitions: The terms ''person,'' ''industrial wastes,'' ''other wastes,'' ''sewage,'' ''treatment works,'' ''disposal systems,'' and other pertinent terms for which definitions are given in the water pollution control statutes as used herein have the meanings ascribed to them in Minnesota Statutes (1967), Chapter 115, but ''waters of the state'' is limited as defined in paragraph (a) above. ''Agency'' as used herein means the Minnesota Pollution Control Agency. Other terms and abbreviations used herein but not specifically defined in law shall be construed in conformance with the context and professional usage.

(c) Severability: The provisions of this regulation shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not make void any other lettered paragraph or subparagraph, subdivision or any other part thereof.

(d) Standards of Effluent Quality and Purity: Except as otherwise provided herein or otherwise provided by specific effluent standards for certain reaches of named instrastate waters, it is hereby established as a minimum requirement applicable to all persons operating or causing to be operated or in any way responsible for the operation of a disposal system which discharges, directly or indirectly, sewage, industrial waste or other wastes to the intrastate waters of the state, that treatment or control be provided so as to achieve any or all of the following limiting permissible concentrations of quality and purity as may be reasonably appropriate for such effluents prior to discharge:

Substance or Characteristic	Maximum or Limiting Range
Coliform Group Organisms*	1,000 MPN/100 ml
5-day Biochemical Ozygen Demand	25 mg/l
Suspended Solids	30 mg/l (not including algal cells)
Oil	Essentially free of visible floating oil
Turbidity value	25 (or average natural background level, if greater)
pH range	6.5-8.5
Phosphorus**	2 mg/l
Unspecified toxic or corrosive	None at levels acutely toxic to humans or other animals or plant life, or directly damaging to real property

(e) Effluent Standards Applicable to Classifications: The limiting permissible concentrations of sewage, industrial waste or other waste effluent quality and purity prior to discharge, for the following water use classifications for which stream quality standards have previously been designed or for which criteria are established in regulation WPC 14, excepting those waters where specific prior effluent standards now obtain, as a minimum requirement, shall be:

Maximum Permissible Limit or Range for Effluents Discharged to the Following Classes of Intrastate Surface Waters

Substances or Characteristic	1. Domestic Consumption				2. Fisheries and Recreation		
	A	B	C	D	A	B	C
Coliform Group Organisms (MPN/100 ml)*	—	50	4,000	4,000	1,000	1,000	5,000

*Chlorination of the sewage effluent or other controls to reduce the coliform organism level is required from May 1 through October 31, except that where the effluent may affect a water supply, reduction to the application coliform level is required year around. To determine compliance with this standard, not more than 20% of the samples examined may have coliform organisms in excess of the specified limits. The application of this standards ordinarily shall be limited to sewage effluents or other effluents containing admixtures of sewage and shall not apply to industrial wastes except where the presence of sewage or viable pathogenic organisms in such wastes is known or reasonably certain.

**Applies where discharge is directly to a lake or reservoir.

Maximum Permissible Limit or Range for Effluents Discharged to the Following Classes of Intrastate Surface Waters

Substance or Characteristic	1. Domestic Consumption A	B	C	D	2. Fisheries and Recreation A	B	C
5-day Biochemical Oxygen Demand (mg/l)	—	25	25	25	25	25	25
Suspended Solids (mg/l)	—	10	30	30	30	30	30
Oil	Essentially free of visible floating oil						
Turbidity value	—	5	25	—	10	25	25
pH range	—	6.5 8.5	6.5 8.5	6.5 8.5	6.5 8.5	6.5 9.0	6.0 9.5
Phosphorus** (mg/l)	—	2	2	2	2	2	2
Unspecified toxic or corrosive substances	None at levels acutely toxic to humans or other animals or plant life, or directly damaging to real property.						

Substance or Characteristic	3. Industrial Consumption A	B	C	4. Agriculture & Wildlife A	B	5. Navigation & Waste Disposal
Coliform Group Organisms (MPN/100 ml)*	5,000	5,000	5,000	5,000	5,000	5,000
5-day Biochemical Oxygen Demand (mg/l)	25	50	50	50	50	50
Suspended Solids (mg/l)	30	50	50	50	50	50
Oil	Essentially free of visible floating oil					
Turbidity value	25	50	—	—	—	—
pH range	6.5 8.5	6.0 9.0	6.0 9.5	5.0 8.5	6.0 9.5	5.0 10.0
Phosphorus (mg/l)**	2	2	—	—	—	—
Unspecified toxic or corrosive substances	None at levels acutely toxic to humans or other animals or plant life, or directly damaging to real property.					

(f) Determination of Classification: Any person now operating a disposal system where the effluents may, directly or indirectly, reach intrastate waters of the state may seek a determination of appropriate classification as listed in regulation WPC 14. Such person shall apply for such a determination from the Agency by written application to be made within thirty (30) days subsequent to the effective date of this regulation, directed to the Agency at its Minneapolis offices. If no such application is made, it shall be conclusively presumed that the person or persons operating such disposal system shall have accepted the general effluent standards established in lettered paragraph (d) hereof to be applicable to such disposal system. Sources originating after the adoption of this regulation may make application for a determination of classification concurrently with their application for approval of plans and issuance of a permit for construction and operation of treatment works, but to be valid the application and requisite information must be submitted not less than one hundred and fifty (150) days prior to the start of construction of the treatment works.

To secure a determination of appropriate classification within the meaning of this lettered paragraph, the person or persons operating a disposal system must submit the following information within one hundred and twenty (120) days subsequent to the submission of the written application therefor:

(1) The size, depth, surface area covered, volume, direction and rate of flow, stream gradient, and temperature of the water;

(2) The character of the district bordering said waters and its particular suitability for residential, agricultural, industrial, or recreational purposes;

(3) The uses which have been made, are being made, or may be made of said waters for transportation, domestic and industrial consumption, bathing, fishing and fish culture, fire prevention, and the disposal of sewage, industrial wastes and other wastes.

Failure to submit such information within the appropriate time limit shall void the application for determination of classification.

If subsequent to determination of applicable classifications applicant feels aggrieved by such determination, the same may be appealed to the appropriate District in accordance with Minnesota Statutes (1967), Section 115.05. Such appeal shall not, however, act as a bar to the state pursuing statutory, other administrative, or common law powers to abate the discharge.

(g) Monthly Reports: All persons operating sewage, industrial waste or other waste disposal systems adjacent to or discharging to intrastate waters covered by this regulation shall submit every month to the Agency a report on the operation of such disposal system, the effluent flow, and the characteristics of the effluent and receiving intrastate waters. Sufficient data on measurements, observations, sampling and analyses, and other pertinent information shall be furnished as may be required by the Agency to reflect adequately the condition of the disposal system, the effluent and the intrastate waters receiving the effluent.

(h) Determination of Compliance: In making tests or analy-

*Chlorination of the sewage effluent or other controls to reduce the coliform organism level is required from May 1 through October 31 except that where the effluent may affect a water supply reduction to the applicable coliform level is required year around. To determine compliance with this standard, not more than 20% of the samples examined may have coliform organisms in excess of the specified limits. The application of this standards ordinarily shall be limited to sewage effluents or other effluents containing admixtures of sewage and shall not apply to industrial wastes except where the presence of sewage or viable pathogenic organisms in such wastes is known or reasonably certain.

**Applies where discharge is directly to a lake or reservoir.

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ses of the sewage, industrial wastes or other wastes, or intrastate waters, to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered representative and satisfactory by the Agency. No allowance will be made for dilution of the effluents by the waters of the state into which they are discharged. The sample shall be preserved and analyzed in accordance with procedures given by the Standard Methods for the Examination of Water and Waste Water, published by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, or other methods acceptable to the Agency.

Existing sources of sewage, industrial waste or other wastes with effluents having 5-day biochemical oxygen demand and suspended solids concentrations equal to or less than 40 milligrams per liter will not be required to construct additional treatment works, except for nutrient removal where necessary, until the existing treatment or control facilities are overloaded by increasing flow or concentration of raw sewage or waste to the extent that the original design criteria for the disposal system is exceeded, or unless the effluent 5-day biochemical oxygen demand or suspended solid concentrations exceed 40 milligrams per liter, or the effect of the effluent upon the receiving waters is such that the applicable water quality standards are violated. When construction of a new treatment works or a major addition is required, or new or additional major sources of pollutional effluents are proposed, the disposal system to be constructed shall be designed to produce effluents conforming in all respects with the applicable standards. All sources of sewage, industrial waste, or other waste which do not at present have a valid operation or discharge permit, or an application for the same pending before the Agency, shall apply for the same within thirty (30) days of the adoption of this regulation, or the source may be abated forthwith. The design of new treatment works or disposal systems to conform with the effluent standards specified herein also provide for maintaining the appropriate stream standards contained in regulation WPC 14, where the same may be applicable as provided herein, at all stream flows which equal or exceed the seven consecutive day minimum flow having a recurrence interval of ten years. The effluent standards specified herein shall supercede the effluent standards specified in section (c) (6) regulation WPC 14.

(i) Variance: Where upon written application of the responsible person or persons the Agency finds that by reason of exceptional circumstances strict conformity with any provisions of the effluent standards contained herein would cause undue hardship, would be unreasonable, impractical or not feasible under the circumstances, the Agency may permit a variance from these effluent standards upon such conditions and within such time limitations as it may prescribe for prevention, control or abatement of pollution in harmony with the intent of the state and any applicable federal laws.

(j) Existing Permits: The foregoing provisions in sections (d), (e), and (f) relating to effluent quality standards are not applicable to existing sewage, industrial waste or other waste disposal facilities and the effluent therefrom so long as such facilities are operated and the effluents discharged in conformance with the terms of an existing operation or discharge permit which has been issued in accordance with law by the Agency or its predecessor, the Water Pollution Control Commission, while such operation or discharge permit remains in force, but nothing herein shall be construed to prevent the Agency subsequently from modifying such permits in the manner prescribed by law.

CHAPTER TWENTY-SIX: WPC 26 EFFLUENT STANDARDS FOR DISPOSAL SYSTEMS DISCHARGING TO LAKE SUPERIOR, LAKE OF THE WOODS AND FALL LAKE

The following standards of effluent quality and purity are hereby adopted and established for the waters of Lake Superior (Townships 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, North, Ranges 7 East - 14 West), Lake of the Woods (Townships 161, 162, 163, 164, 165, 166, 167, 168 North, Ranges 30, 31, 32, 33, 34, 35 West) and Fall Lake (Townships 63, 64 North, Ranges 11, 12 West).

(a) Definitions. The terms ''person,'' ''sewage,'' ''industrial wastes,'' ''other wastes,'' ''treatment works,'' ''disposal systems,'' and ''waters of the state,'' as well as any other pertinent terms for which definitions are given in the water pollution control statutes, as used herein have the meanings ascribed to them in Minnesota Statutes (1969), Chapters 115 and 116. Other terms and abbreviations used herein not specifically defined in the law shall be construed in conformance with the context and professional usage.

(b) Severability. The provisions of this regulation shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not make void any other lettered paragraph, subparagraph, subdivision or any other part thereof.

(c) Standards of Effluent Quality and Purity. Except as otherwise provided herein it is hereby established as a minimum requirement applicable to all persons operating or causing to be operated or in any way responsible for the operation of a disposal system which discharges sewage, industrial waste or other wastes directly to the above delineated waters, or which may affect these waters, that all effluents shall be treated prior to discharge so as to meet any or all of the following limiting permissible concentrations:

Substance or Characteristic	Limiting Concentration
5-day biochemical oxygen demand	25 milligrams per liter
Total suspended solids	30 milligrams per liter
Fecal coliform group organisms	10 most probable number per 100 milliliters
Total coliform group organisms*	50 most probable number per 100 milliliters
Pathogenic organisms	None
Oil	Essentially free of visible oil
Turbidity value	5
Phosphorus	1 milligram per liter
pH	6.5-8.5
Unspecified toxic or corrosive substances	None at levels acutely toxic to humans or other animals or plant life, or directly damaging to real property

*May be used as the control parameter in lieu of fecal coliforms if desired.

(d) Monthly Reports. All persons operating sewage, industrial waste or other waste disposal systems adjacent to or discharging to the waters covered by this regulation shall submit every month a report to the Minnesota Pollution Control Agency on the operation of such disposal system, the effluent flow, and the characteristics and concentration of the effluents and receiving waters. Sufficient data on measurements, observations, sampling and analyses and other pertinent information shall be furnished as may be required by the Agency to reflect adequately the condition of the disposal system, the effluent and the water receiving the effluent.

(e) Determination of Compliance. In making tests or analyses of the sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered satisfactory by the Agency. No allowance will be made for dilution of the effluents in the waters of the state into which they are discharged. The samples shall be preserved and analyzed in accordance with procedures given in Standard Methods for the Examination of Water and Waste Water, by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, which is in effect on the effective date of this regulation, or other methods acceptable to the Agency.

For the purpose of determining compliance with this regulation the characteristics of the sewage industrial waste, or other wastes to be controlled shall be construed to be those which are attributable to changes resulting from the use or conveyance of surface water by an industry, or other person within the meaning of the statute.

(f) Variance from Standards. In any case where, upon application of the responsible person or persons, the Agency finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship, that disposal of the sewage, industrial waste or other waste is necessary for the public health, safety or welfare, or that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances, the Agency in its discretion may permit a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these standards and the intent of the applicable state and national laws.

CHAPTER TWENTY-NINE: WPC 29

EFFLUENT STANDARDS FOR DISPOSAL SYSTEMS DISCHARGING TO THAT PORTION OF THE MISSISSIPPI RIVER FROM THE BLANDIN DAM IN THE CITY OF GRAND RAPIDS TO THE MOUTH OF THE RUM RIVER AND FROM THE MOUTH OF THE CHIPPEWA RIVER TO THE IOWA BORDER, THE RED CEDAR RIVER FROM AUSTIN TO THE MINNESOTA-IOWA BORDER, THE MINNESOTA RIVER FROM THE MOUTH OF THE POMME DE TERRE RIVER AND INCLUDING MARSH LAKE TO MANKATO, AND THE BLUE EARTH RIVER FROM THE MOUTH OF ELM CREEK TO THE JUNCTION WITH THE MINNESOTA RIVER IN MANKATO

The following standards of effluent quality and purity are hereby adopted and established for that portion of the Mississippi River from the Blandin dam at the outlet of Paper Mill Reservoir in the City of Grand Rapids approximately 400 feet upstream from the U.S. Highway 169 bridge to the mouth of the Rum River in the City of Anoka, and from the mouth of the Chippewa River at the lower end of Lake Pepin near the Village of Wabasha to the Minnesota-Iowa border; and that portion of the Red Cedar River from the bridge on Interstate Highway 90 in the City of Austin to the Minnesota-Iowa border in Section 33, Township 101 North, Range 18 West; and for that portion of the Minnesota River from the mouth of the Pomme de Terre River (Township 120 North, Range 43 West) to the mouth of the Blue Earth River in Mankato, and that portion of the Blue Earth River from the mouth of Elm Creek in Section 4, Township 103 North, Range 28 West of the mouth in Mankato.

(a) Definitions. The terms ''person,'' ''sewage,'' ''industrial wastes,'' ''other wastes,'' ''treatment works,'' ''disposal systems,'' and ''waters of the state,'' as well as any other pertinent terms for which definitions are given in the water pollution control statutes, as used herein have the meanings ascribed to them in Minnesota Statutes (1969), Chapters 115 and 116. Other terms and abbreviations used herein not specifically defined in the law shall be construed in conformance with the context and professional usage.

(b) Severability. The provisions of this regulation shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not make void any other lettered paragraph, subparagraph, subdivision or any other part thereof.

(c) Standards of Effluent Quality and Purity. Except as otherwise provided herein and notwithstanding any prior regulation it is hereby established as a requirement applicable to all persons operating or causing to be operated or in any way responsible for the operation of a disposal system which discharges sewage, industrial waste or other wastes to the above delineated waters,

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or which may affect these waters, that all effluents shall be treated prior to discharge so as to meet any or all of the following limiting concentrations:

Substance or Characteristic	Limiting Concentration
5-day biochemical oxygen demand	25 milligrams per liter
Total suspended solids	30 milligrams per liter
Fecal coliform group organisms	200 most probable number per 100 milliliters
Total coliform group organisms*	1,000 most probable number per 100 millilieters
Pathogenic organisms	None
Oil	Essentially free of visible oil
Turbidity value	25
pH	6.5 — 8.5
Unspecified toxic or corrosive substances	None at levels acutely toxic to humans or other animals or plant life, or directly damaging to real property.

(d) Monthly Reports. All persons operating sewage, industrial waste or other waste disposal systems adjacent to or discharging to the waters covered by this regulation shall submit every month a report to the Minnesota Pollution Control Agency on the operation of such disposal system, the effluent flow, and the characteristics and concentration of the effluents and receiving waters. Sufficient data on measurements, observations, sampling and analyses and other pertinent information shall be furnished as may be required by the Agency to reflect adequately the condition of the disposal system, the effluent and the waters receiving the effluent.

(e) Determination of Compliance. In making tests or analyses of the sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered satisfactory by the Agency. No allowance will be made for dilution of the effluents in the waters of the state into which they are discharged. The samples shall be preserved and analyzed in accordance with procedures given in Standard Methods for the Examination of Water and Waste Water, by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, which is in effect on the effective date of this regulation or other methods acceptable to the Agency.

(f) Variance from Standards. In any case where, upon application of the responsible person or persons, the Agency finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship, that disposal of the sewage, industrial waste or other waste is necessary for the public health, safety or welfare, or that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances, the Agency in its discretion may permit a variance therefrom upon such conditions as it may prescribe for the prevention, control or abatement of pollution in harmony with the general purposes of these standards and the intent of the applicable state and national laws.

*May be used as the control parameter in lieu of fecal coliforms if desired.

CHAPTER THIRTY-ONE: WPC 31

EFFLUENT STANDARDS FOR DISPOSAL SYSTEMS DISCHARGING TO THE ROSEAU RIVER FROM ITS SOURCE TO THE CANADIAN BORDER, THE NORTH FORK OF THE YELLOW MEDICINE RIVER, THE WEST FORK OF THE LAC QUI PARLE RIVER, THE BLUE EARTH RIVER FROM THE IOWA BORDER TO THE MOUTH OF ELM CREEK, THE LITTLE ROCK RIVER, THE WEST FORK OF THE LITTLE SIOUX RIVER, THE ROCK RIVER, THE WEST FORK OF THE DES MOINES RIVER FROM ITS SOURCE TO THE MINNESOTA-IOWA BORDER, THE RED CEDAR RIVER FROM ITS SOURCE TO AUSTIN, BEAR CREEK, THE UPPER IOWA RIVER, PINE CREEK, AND THE ROOT RIVER

The following standards of effluent quality and purity are hereby adopted and established for the waters of the Roseau River from its source to the Minnesota-Manitoba border (Section 29, Township 164 North, Range 45 West) near Caribou; for that portion of the waters of the North Fork of the Yellow Medicine River from the source on the South Dakota border crossing to the mouth in Section 7, Township 113 North, Range 4 West, the West Fork of the Lac qui Parle River from the South Dakota Border to the mouth in Section 22, Township 117 North, Range 43 West, the Blue Earth River from the Iowa border to the mouth of Elm Creek in Section 4, Township 103 North, Range 28 West, Little Rock River from the source to the Iowa border in Section 35, Township 101 North, Range 42 West, West Fork of the Little Sioux River from the source to the Iowa border in Section 33, Township 101 North, Range 37 West, the Rock River from the source to the Iowa border in Section 36, Township 101 North, Range 45 West, Rock County, West Fork of the Des Moines River from its source at the outlet of Lake Yankton near Balaton to the Minnesota-Iowa border in Section 34, Township 101 North, Range 34 West, Jackson County, that portion of the Red Cedar River from the source to the bridge on Interstate Highway 90 in the City of Austin, Bear Creek from the source to the Minnesota-Iowa border in Section 25, Township 101 North, Range 7 West, those portions of the Upper Iowa River in Minnesota from the source to the lowest crossing of the Minnesota-Iowa border in Section 31, Township 101 North, Range 13 West, Pine Creek from the source to the Minnesota-Iowa border in Section 31, Township 101 North, Range 9 West, the Root River from the mouth of the south Fork to the mouth in Section 36, Township 101 North, Range 4 West, Houston County.

(a) Definitions. The terms ''person,'' ''sewage,'' ''industrial wastes,'' ''other wastes,'' ''treatment works,'' ''disposal systems,'' and ''waters of the state,'' as well as any other pertinent terms for which definitions are given in the water pollution control statutes, as used herein have the meanings ascribed to them in Minnesota Statutes (1969), Chapters 115 and 116. Other terms and abbreviations used herein not specifically defined in the law shall be construed in conformance with the context and professional usage.

(b) Severability. The provisions of this regulation shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not make void any other lettered paragraph, subparagraph, subdivision or any other part thereof.

(c) Standards of Effluent Quality and Purity. Except as otherwise provided herein it is hereby established as a requirement applicable to all persons operating or causing to be operated or in any way responsible for the operation of a disposal system which discharges sewage, industrial waste or other wastes to the above delinated waters, or which may affect these waters that all effluents shall be treated prior to discharge so as to meet any or all of the following limiting concentrations:

Substance or Characteristic	Limiting Concentrations
5-day biochemical oxygen demand*	5 milligrams per liter
Total suspended solids*	5 milligrams per liter
Fecal coliform group organisms	200 most probable number per 100 milliters
Total coliform group organisms**	1,000 most probable number per 100 milliters
Pathogenic organisms	None
Oil	Essentially free of visible oil
Turbidity value	25
pH	6.5 – 8.5
Unspecified toxic or corrosive substances	None at levels acutely toxic to humans or other animals or plant life, or directly damaging to real property

(d) Monthly Reports. All persons operating sewage, industrial waste or other waste disposal systems adjacent to or discharging to the waters covered by this regulation shall submit every month a report to the Minnesota Pollution Control Agency on the operation of such disposal system, the effluent flow, and the characteristics and concentration of the effluents and receiving waters. Sufficient data on measurements, observations, sampling and analyses and other pertinent information shall be furnished as may be required by the Agency to reflect adequately the condition of the disposal system, the effluent and the waters receiving the effluent.

(e) Determination of Compliance. In making tests or analyses of the sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered satisfactory by the Agency. No allowance will be made for dilution of the effluents in the waters of the state into which they are discharged. The samples shall be preserved and analyzed in accordance with procedures given in Standard Methods for the Examination of Water and Waste Water, by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, which is in effect on the effective date of this regulation, or other methods acceptable to the Agency.

(f) Variance from Standards. In any case where, upon application of the responsible person or persons, the Agency finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship, that disposal of the sewage, industrial waste or other waste is necessary for the public health, safety or welfare, or that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances, the Agency in its discretion may permit a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these standards and the intent of the applicable state and national laws.

CHAPTER THIRTY-TWO: WPC 32

EFFLUENT STANDARDS FOR DISPOSAL SYSTEMS DISCHARGING TO CROOKED CREEK FROM ITS SOURCE TO ITS MOUTH

The following standards of effluent quality and purity are hereby adopted and established for the following waters of Crooked Creek from its source to the mouth in Section 35, Township 102 North, Range 4 West, Houston County.

(a) Definitions. The terms ''person,'' ''sewage,'' ''industrial wastes,'' ''treatment works,'' ''other wastes,'' ''disposal systems,'' and ''waters of the state,'' as well as any other pertinent terms for which definitions are given in the water pollution control statutes, as used herein have the meanings ascribed to them in Minnesota Statutes (1969), Chapters 115 and 116. Other terms and abbreviations used herein not specifically defined in the law shall be construed in conformance with the context and professional usage.

(b) Severability. The provisions of this regulation shall be severable and the invalidity of any lettered paragraph or any subparagraph or subdivision thereof shall not make void any other lettered paragraph, subparagraph, subdivision or any other part thereof.

(c) Standards of Effluent Quality and Purity. Except as otherwise provided herein it is hereby establshed as a requirement applicable to all persons operating or causing to be operated or in any way responsible for the operation of a disposal system which discharges sewage, industrial waste or other wastes to the above delineated waters, or which may affect these waters, that all effluents shall be treated prior to discharge so as to meet any or all of the following limiting concentrations:

*The concentrations specified in Regulation WPC-15, section (c) (6), may be used in lieu thereof if the discharge of effluent is restricted to the spring flush or other high run-off periods when the stream flow rate above the discharge point is sufficiently greater than the effluent flow rate to insure that the applicable water quality standards are met during such discharge periods.

**May be used as the control parameter in lieu of fecal coliforms if desired.

KEY: RULES SECTION — Underlining indicates additions to proposed rule language. Strike outs indicate deletions from proposed rule language. **PROPOSED RULES SECTION** — Underlining indicates additions to existing rule language. Strike outs indicate deletions from existing rule language. If a proposed rule is totally new, it is designated ''all new material.''

Substance or Characteristic	Limiting Concentration
5-day biochemical oxygen demand*	5 milligrams per liter
Total suspended solids*	5 milligrams per liter
Fecal coliform group organisms	10 most probable number per 100 milliliters
Total coliform group organisms**	50 most probable number per 100 milliliters
Pathogenic organisms	None
Oil	Essentially free of visible oil
Turbidity value*	10
pH	6.5 – 8.5
Unspecified toxic or corrosive substances	None at levels acutely toxic to humans or other animals or plant life, or directly damaging to real property.

(d) Monthly Reports. All persons operating sewage, industrial waste or other waste disposal systems adjacent to or discharging to the waters covered by this regulation shall submit every month a report to the Minnesota Pollution Control Agency on the operation of such disposal system, the effluent flow, and the characteristics and concentration of the effluents and receiving waters. Sufficient data on measurements, observations, sampling and analyses and other pertinent information shall be furnished as may be required by the Agency to reflect adequately the condition of the disposal system, the effluent and the waters receiving the effluent.

(e) Determination of Compliance. In making tests or analyses of the sewage, industrial wastes or other wastes to determine compliance with the standards, samples shall be collected in such manner and place, and of such type, number and frequency as may be considered satisfactory by the Agency. No allowance will be made for dilution of the effluents in the waters of the state into which they are discharged. The samples shall be preserved and analyzed in accordance with procedures given in Standard Methods for the Examination of Water and Waste Water, by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, which is in effect on the effective date of this regulation, or other methods acceptable to the Agency.

(f) Variance from Standards. In any case where, upon application of the responsible person or persons, the Agency finds that by reason of exceptional circumstances the strict enforcement of any provision of these standards would cause undue hardship that disposal of the sewage, industrial waste or other waste is necessary for the public health, safety or welfare, on that strict conformity with the standards would be unreasonable, impractical or not feasible under the circumstances, the Agency in its discretion may permit a variance therefrom upon such conditions as it may prescribe for prevention, control or abatement of pollution in harmony with the general purposes of these standards and the intent of the applicable state and national laws.

*The concentrations specified in Regulation WPC 15, Section (c) (6), may be used in lieu thereof if the discharge of effluent is restricted to the spring flush or other high run-off periods when the stream flow rate above the discharge point is sufficiently greater than the effluent flow rate to insure that the applicable water quality standards are met during such discharge periods.

**May be used as the control parameter in lieu of fecal coliforms if desired.

Department of Transportation Aeronautics Division

Proposed Deletion of Aeronautics Rules Pertaining to Flying Clubs

Notice of Second Hearing

Notice is hereby given that a public hearing in the above-entitled matter will be held pursuant to Minn. Stat. § 15.0412 in the Transportation Building, Room 406, St. Paul, Minnesota 55155, on March 28, 1980, commencing at 9:30 a.m., and continuing until all persons have had an opportunity to be heard.

The Commissioner of Transportation has been provided the statutory authority to promulgate rules governing aeronautics pursuant to Minn. Stat. § 360.015, subd. 3 (1978).

The proposed deletion of rules is being made as a correction to the proposed rules published at 4 S.R. 631 on October 22, 1979.

The proposed rules published at 4 S.R. 631 erroneously omitted the deletion of a part of the existing 14 MCAR § 1.3027 dealing with flying clubs. The sole purpose of this notice and the aforementioned hearing is to delete that portion of § 1.3027 which was not typed in and then crossed out in the October 22, 1979, publication.

This proposed deletion will have the following effect:

1. The existing 14 MCAR § 1.3027 contains statutory definitions of the terms "commercial operations," "air instruction," "air school," "aeronautics instructor" and "person." All of these definitions will be deleted. (A portion of the definition of "commercial operations" was previously deleted.)

2. The existing definitions of "assets" now found at § 1.3027 G. appears verbatim at § 1.3029 F. as published at 4 S.R. 661. The old reference at § 1.3027 G. will therefore be deleted.

3. The existing § 1.3027 H. dealing with the question of when flying clubs are deemed to be commercial operations, will now be found at § 1.3029 G. as published at 4 S.R. 661. The existing section which is to be deleted and the proposed section as published are virtually identical. The existing § 1.3027 H. will therefore be deleted. (A portion of this section was previously deleted at 4 S.R. 651.)

A copy of the proposed rules is attached. Copies of the proposed rules are available and one free copy may be obtained by writing to the Minnesota Department of Transportation, Attention Robert Bissonnette, St. Paul Downtown Airport, St. Paul, Minnesota 55107. The proposed rules will also be available at the door on the date of the hearing.

All interested or affected persons will have an opportunity to participate in the hearing. Statements may be made orally and written materials may be submitted. In addition, whether or not an appearance is made, written statements or materials may be submitted by mail to Mr. Harry Seymour Crump, Hearing Examiner, Office of Hearing Examiners, 1745 University Avenue, Saint Paul, Minnesota 55104, Telephone (612) 296-8111 either before the hearing, or within five (5) working days after the close of the hearing, or for a longer period not to exceed twenty (20) calendar days, if so ordered by the Hearing Examiner.

Notice is hereby given that twenty-five (25) days prior to the hearing, a Statement of Need and Reasonableness will be available for review at the address of the Department of Transportation given above, and at the Office of Hearing Examiners. The Statement of Need and Reasonableness contains substance of the evidence and will be presented at the hearing justifying both the need for and reasonableness of the proposed rules. It is recommended that the public obtain and read the Statement of Need and Reasonableness prior to the hearing. Copies of the Statement of Need and Reasonableness may be obtained from the Office of Hearing Examiners at a minimal charge.

Please be advised that a lobbyist must register with the State Ethical Practices Board within five (5) days after he or she commences lobbying. A lobbyist is defined by Minn. Stat. § 10A.01, subd. 11, as any individual who is:

A. Engaged for pay or other consideration, or authorized by another individual or association to spend money, who spends more than five hours in any month, or more than $250, not including *his own* travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials; or

B. Spends more than $250, not including *his own* travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials.

A lobbyist does not include any:

A. Public official or employee of the state or any of its political subdivisions or public bodies acting in his official capacity;

B. Party or his representative appearing in a proceeding before a state board, commission or agency of the executive branch unless the board, commission or agency is taking administrative action;

KEY: RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language. **PROPOSED RULES SECTION** — Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material."

C. Individual while engaged in selling goods or services to be paid for by public funds;

D. News media or their employees or agents while engaged in the publishing or broadcasting of news items, editorial comments or paid advertisements which directly or indirectly urge official action;

E. Paid expert witness whose testimony is requested by the body before which he is appearing but only to the extent of preparing or delivering testimony; or

F. Stockholder of a family farm corporation as defined in § 500.24, subd. 1, who does not spend over $250, excluding *his own* travel expenses in any year in communicating with public officials.

Questions should be addressed to the State Ethical Practices Board, Room 41, State Office Building, Wabasha Street, Saint Paul, Minnesota 55155, Telephone (612) 296-5615.

Notice: Any person may request a notification of the date on which the Hearing Examiner's Report will be available, after which date the Department of Transportation may not take any final action on the rules for a period of five working days. Any person may request notification of the date on which the hearing record has been submitted (or resubmitted) to the Attorney General by the Department of Transportation. If you desire to be so notified, you may so indicate at the hearing. After the hearing, you may request notification by sending a written request to the hearing examiner (in case of the Hearing Examiner's Report), or to the department representative listed above (in case of the department's submission or resubmission to the Attorney General).

February 7, 1980

Richard P. Braun
Commissioner

Rule as Proposed

[Note: Rule 14 MCAR § 1.3027 F.—H.1.b. should have appeared at 4 S.R. 651-652, October 22, 1979, as follows:]

~~14 MCAR § 1.3027 Flying Clubs~~

~~F. Statutory definitions. Statutory definitions, where applicable, shall apply to these rules. As a matter of convenience, the following statutory definitions are set forth below.~~

~~1. Commercial Operations, Minn. Stat. § 360.013, subd. 11. "'Commercial Operations' means any operations of an aircraft for compensation or hire; or any services performed incidental to the operation of any aircraft for which a fee is charged or compensation received; including, but not limited to, the servicing, maintaining and repairing of aircraft, the rental or charter of aircraft, the operation of flight or ground schools, the operation of aircraft for the application or distribution of chemicals or other substances, aerial photography and surveys, air shows or expositions, parachute jumping, and the operation of aircraft for fishing. 'Commercial Operations' also mean brokering or selling of any of the aforesaid services but do not include any operation of aircraft as common carriers certificated (certified) by the federal government or the services incidental thereto."~~

~~2. Air Instruction, Minn. Stat. § 360.013, subd. 16. "'Air Instruction' means the imparting of aeronautical information by any aeronautics instructor or in or by any air school or flying club."~~

~~3. Air School, Minn. Stat. § 360.013, sub. 17. "'Air School' means any person engaged in giving or offering to give, instruction in aeronautics, either in flying or ground subjects, or both, for or without hire or reward and advertising, representing, or holding himself out as giving or offering to give such instructions. It does not include any public school of this state, the University of Minnesota, or any institution of higher learning accredited by the North Central Association of Colleges and Secondary Schools and approved by it for carrying on collegiate work."~~

~~4. Aeronautics Instructor, Minn. Stat. § 360.013, subd. 19 (1967). "'Aeronautics Instructor' means any individual engaged in giving instruction or offering to give instruction in aeronautics either in flying or ground subjects, or both, for hire or reward, without advertising such occupation, without calling facilities an 'Air School,' or anything equivalent thereto, and without employing or using other instructors. It does not include any public school of this state, the University of Minnesota, or any institution of higher learning accredited by the North Central Association of Colleges and Secondary Schools and approved by it for carrying on such collegiate work, while engaged in his duties as such instructor."~~

~~5. Person, Minn. Stat. § 360.013, subd. 8 (1967). "'Person' means any individual, firm, partnership, corporation, company, association, joint stock association, or body politic; and includes any trustee, receiver, assignee, or either similar representative thereof."~~

~~G. Assets. The word "assets" when used herein, shall mean property which the flying club owns, in whole or in part, or over which it has control, including the club's interest in any owned, rented or leased aircraft.~~

~~H. Flying clubs can be deemed to be commercial operations. A flying club shall be deemed to be engaged in commercial operations and therefore a commercial operations license shall be required:~~

~~1. If any of the club's assets are used by members of the club who:~~

~~a. Do not have a bona fide and significant percentage of the property interest in the assets of the club; or~~

~~b. Hold property interest in the club's assets, which property interest is subject to an unreasonable forfeiture; however, a club may set forth in its operating rules and bylaws any reasonable penalties and any reasonable forfeitures so long as the purpose and the actual effect thereof is to enforce valid club rules; or~~



(Photograph from *Minneapolis Journal*, May 10, 1936. Reprinted courtesy of Minneapolis Star and Tribune Co.)

SUPREME COURT

Decisions Filed Friday, February 15, 1980

Compiled by John McCarthy, Clerk

49968/53 In the Matter of the Welfare of S. R. Hennepin County.

Evidence at delinquency hearing was insufficient to establish that juvenile committed act of criminal sexual conduct in the second degree but record does support finding that he committed criminal sexual conduct in the fourth degree.

Order modified. Sheran, C. J.

49734/59 State of Minnesota vs. Gary William Severson, Appellant. Itasca County.

Evidence of defendant's guilt was sufficient.

Defendant, by failing to object to trial court's responses to jury requests after retiring for deliberations, forfeited his right to have this court review the propriety of the trial court's responses, and our review of the record fails to disclose any plain error.

Affirmed. Otis, J.

49621/50 State of Minnesota vs. Michael Dale Eilola, Appellant. Hennepin County.

Evidence adduced at defendant's trial is held to be sufficient to sustain the guilty verdict.

Record on appeal is deemed adequate to sustain defendant's waiver of counsel at trial against claim that waiver was not knowing, voluntary and intelligent.

Trial court did not prejudicially abuse its discretion in denying jury request for rereading of testimony of defendant.

Affirmed. Rogosheske, J.

49776/57 State of Minnesota vs. Larry Mings, Appellant. Kittson County.

Evidence of defendant's guilt was not, as defendant contends, legally insufficient, and trial court did not abuse its discretion in failing to order a Schwartz hearing on speculative claim of defendant that jury misconduct had occurred.

Affirmed. Rogosheske, J.

49512/338 Frederick G. Wegscheider, et al., Appellants, vs. Plastics, Inc. Ramsey County.

Where plaintiff was aware of a general risk of injury from a fall off a tanker trailer but there was no evidence he was aware that the particular trailer to which he was assigned on the day of the accident was defective in such a way that it would cause a fall, the submission of an instruction on assumption of risk was reversible error.

The refusal of the trial court to give a requested instruction on strict liability was not, in the circumstances of this case, reversible error.

Reversed in part, affirmed in part, and remanded with instructions. Peterson, J.

49472/44 Rosella Sonsteby, Appellant vs. Beverly H. Hagen, et al., Anoka County.

As a matter of law, defendants' claim of abuse of process predicated upon the alleged repetitive and vexatious nature of this litigation lacked sufficient evidence to sustain it.

Reversed in part and remanded with instructions. Peterson, J. Took no part, Otis, J.

50063/5 In Re: The Estate of Bellida Ulrikson, Deceased. Tillman Olson, et al., Appellants, vs. Annabelle Erickson, et al., Hennepin County.

Where the residuary estate is devised to a brother and sister, "and in the event that either one of them shall predecease me, then to the other surviving brother or sister," but in fact both brother and sister predecease the testatrix, the brother leaving issue, the anti-lapse statute, Minn. Stat. § 524.2-605 (1978), applies in the absence of clear intention to the contrary.

Affirmed. Yetka, J.

50055/18 Steven D. Kurtz, petitioner, vs. City of Apple Valley, et al., Appellants. Dakota County.

An honorably discharged veteran who is a police officer may not be suspended without pay pending the resolution of criminal charges brought against the officer.

Affirmed and remanded. Yetka, J.

49218/52 State of Minnesota vs. Kirk Anderson Bolts, Appellant. Hennepin County.

Trial court did not abuse its discretion in admitting other-crime evidence, and evidence of defendant's guilt of the crime of uttering a forged instrument was not, as defendant contends, legally insufficient.

Affirmed. Wahl, J.

50211/64 Stephen K. Ani, petitioner, Appellant, vs. State of Minnesota. Hennepin County.

Petitioner, seeking postconviction relief in the form of a new trial, failed to meet his burden of proving that his trial counsel represented him inadequately, and there is no merit to his contention that the interests of justice require a new trial; however, petitioner's maximum sentence is reduced from 30 years to 20 years, on the authority of *State v. Coolidge*, 282 N.W.2d 511 (Minn. 1978).

Denial of new trial affirmed; sentence reduced. Wahl, J.

49921/67 Minnesota Cable Communications Association, Inc., et al., Appellants, vs. Minnesota Cable Communications Board. Ramsey County.

Minn. Stat. § 238.07 (1978), which as applied imposes on only some cable communications systems the cost of regulatory activities enjoyed by all, violated the uniformity of taxation requirement. Article X, § 1, of the Minnesota Constitution.

Reversed. Wahl, J. Took no part, Todd, J.

49857/62 State of Minnesota vs. Theodore Walter William, Appellant. Lake County.

Trial court properly denied a motion to suppress, which was based on a claim of unlawful arrest on less than probable cause, and a motion for a mistrial, based on a claim that the prosecutor elicited evidence which impermissibly informed the jury that defendant had a prior record.

Affirmed. Per Curiam.

STATE CONTRACTS

Pursuant to the provisions of Minn. Stat. § 16.098, subd. 3, an agency must make reasonable effort to publicize the availability of any consultant services contract or professional and technical services contract which has an estimated cost of over $2,000.

Department of Administration procedures require that notice of any consultant services contract or professional and technical services contract which has an estimated cost of over $10,000 be printed in the *State Register*. These procedures also require that the following information be included in the notice: name of contact person, agency name and address, description of project and tasks, cost estimate, and final submission date of completed contract proposal.

Department of Health Community Services Division

Notice of Request for Proposals for a Family Planning Public Information Project

The Community Services Division, Bureau of Health Services, Minnesota Department of Health, is requesting proposals from public and private organizations to develop and produce materials to continue and expand the statewide multi-media family planning public information campaign initiated in 1979. This project, which will be provided under contract, is outlined in detail in the Request for Proposals (RFP) Statement of work. The formal RFP may be requested and inquiries should be directed to:

Judi Kapuscinski, Supervisor
Family Planning Unit
Minnesota Department of Health
717 S.E. Delaware Street
Minneapolis, Minnesota 55440

The department prefers responders with experience in family planning public information. It is anticipated that the activities to accomplish this project will not exceed the total cost to the state of $50,000. The deadline for the submission of completed proposals will be the close of the working day March 14, 1980.

State Planning Agency Environmental Quality Board

Notice of Request for Proposals for Professional Service Contract

The Environmental Quality Board requires the service of a qualified consultant to conduct a study and present a documented report on "Status and Expectations for Emerging Technologies in Electric Power Generation." An assessment of new technologies in electric generation that will be available and applicable to Minnesota municipal and rural electric systems within the next 15 years.

Estimated fee range—$75,000.00

Time contract aware—March 28, 1980.

Firms/individual desiring consideration should send their response to:

Dennis Rothenmaier
Environmental Quality Board
15B Capitol Square Building
St. Paul, Minnesota 55101
(612) 296-2169

Request for Proposal is available on request.

All responses should be sent in no later than 5:00 p.m., March 21, 1980. Late responses will not be accepted.

Notice of Request for Proposals for Professional Service Contract

Notice is hereby given that the Environmental Quality Board intends to engage the service of a qualified consultant to conduct a study and prepare a documented report on "Local Taxing of Electric Utility Property, Matching Benefits with Burden." The purpose of this project is to examine the tax benefit of plants and other electric facilities and to determine how closely they match or can match the local incidence of those burdens. The project is designed to:

1) Describe the location specific burdens imposed by electric utility property.

2) Describe how electric utilities are taxed in Minnesota and other states.

3) Discuss utility taxing concepts and describe how well they are able to associate location specific burdens with tax revenue.

Estimated fee range: $25,000.00.

Time: Contract award March 24, 1980.

Firms/individual considering to respond should send their response to:

Steve Nelson
Power Plant Siting
State Planning Agency
15B Capitol Square Building
550 Cedar Street
St. Paul, Minnesota 55101
612/297-2605

Request for Proposal is available on request. All responses should be sent in no later than 5:00 p.m. March 17, 1980. Late responses will not be accepted.

Notice of Request for Proposal for Professional Service Contract

The Environmental Quality Board requires the service of a qualified consultant to conduct a study and present a documented report on:

1. Characterization of regional sulfate pollution and its relationship to air mass history; and

2. Characterization of local pollution from large point sources using snow, soil and plant data on pollutant deposition and accumulation.

Estimated fee range: about $75,000.00.

Time: March 31, 1980.

Firms/individuals desiring consideration should send their response and resume of their training and work experience to David Lang, Project Manager, Environmental Quality Board, 15B Capitol Square Building, 550 Cedar Street, St. Paul, Minnesota 55101. Phone 612/296-2399.

RFP is available on request.

All responses should be sent in no later than 5:00 p.m., March 5, 1980. Late responses will not be accepted.

Notice of Request for Professional Service Contract

Notice is hereby given that the Environmental Quality Board intends to engage the service of a qualified consultant to prepare an addendum to the report "Public Health and Safety Effects of High Voltage Overhead Transmission Lines," prepared by the Minnesota Department of Health. The consultant should emphasize the following topics:

1. AC and DC electric field shock thresholds.

2. Relationships between "worst case" and "electric case" shock exposure.

3. New laboratory and field research and epidemiological findings on the biological effects of 60 HZ electric fields.

4. New laboratory and field research and epidemiological findings on the biological effects of DC electrostatic fields.

5. A thorough description of the space charge phenomena and of the biological effects of air ions on human and animal subjects. This review shall be based on the work of the Minnesota Department of Health and on a critical review of the literature and current research.

6. An annotated bibliography.

The product of the study should be a documented report and copies of the most significant work in the field.

Estimated Fee Range: about $12,000.00.

Time: Contract award March 26, 1980.

Firms/individuals desiring consideration should send their response and resume of their training and work experience to George Durfee, Power Plant Siting Program, Environmental Quality Board, 15B Capitol Square Building, 550 Cedar Street, St. Paul, Minnesota 55101. Phone (612) 296-2878.

RFP is available on request.

All responses should be sent in no later than 5:00 p.m., March 18, 1980. Late responses will not be accepted.

OFFICIAL NOTICES

Pursuant to the provisions of Minn. Stat. § 15.0412, subd. 6, an agency, in preparing proposed rules, may seek information or opinion from sources outside the agency. Notices of intent to solicit outside opinion must be published in the *State Register* and all interested persons afforded the opportunity to submit data or views on the subject, either orally or in writing.

The *State Register* also publishes other official notices of state agencies, notices of meetings, and matters of public interest.

Energy Agency
Fuel Allocation Activity

Notice of Extension of Comment Period for Outside Opinion Concerning Development of A State Emergency Plan for Gasoline Conservation

The agency hereby extends the comment period for the state emergency gasoline conservation plan to May 14, 1980.

The previous notice to solicit outside opinion and comment was published in the *State Register* on February 11, 1980, Volume 4, Number 32, p. 1278.

All written comments should be addressed to:

Dixie Lee Diehl
Manager, Fuel Allocations
Minnesota Energy Agency
980 American Center Building
150 East Kellogg Boulevard
St. Paul, Minnesota 55101

Metropolitan Council

EIS Preparation

Burnsville, Freeway and Pinebend Landfill Expansions
Public Meeting on EIS Preparations

The Metropolitan Council is beginning the process of preparing environmental impact statements on three proposed landfill expansions. The proposed expansions are the Burnsville and Freeway landfills in Burnsville, Minnesota and the Pinebend landfill in Inver Grove Heights, Minnesota. The three proposals are to expand the capacities and operating life of the landfills. In an effort to ensure that all relevant issues and information have been identified, the Solid Waste Advisory Committee of the Metropolitan Council will seek public comment early in the EIS preparation process and will hold a public meeting at 2 p.m., Wednesday, March 6 at the Metropolitan Council Chambers located at 300 Metro Square Building, 7th & Robert Sts., St. Paul.

The public meeting will begin with Metropolitan Council staff briefly discussing state environmental regulatory process, the proposed projects, and a description of how the council intends to prepare the EISs. After this summary, the council staff will listen to comments and respond to questions concerning the proposed EISs. The council is particularly interested in public participation regarding:

1. local issues pertinent to the landfill expansions;

2. any information which may be useful to the council in preparing the EISs.

It is expected that the draft EIS will be completed by May 8.

Charles Weaver
Chairman

Pollution Control Agency

Application by St. Regis Paper Co. for National Pollutant Discharge Elimination System (NPDES) and State Disposal System Permit and An Air Quality Installation Permit for Operation and Expansion of Paper Mill at Sartell, MN

Order and Notice of Hearing

It is hereby ordered and notice is hereby given that a contested case hearing concerning the above-entitled matter will be held by the Minnesota Pollution Control Agency (MPCA) on Thursday, March 27, 1980, in the City of St. Cloud Council Chambers, 315 St. Germain Street in St. Cloud, Minnesota, commencing at 10:00 a.m. and continuing until closed by the hearing examiner. The purpose of the hearing is to receive and review testimony, evidence, and argument regarding the terms and conditions and proposed issuance of the above-referenced permits.

The St. Regis Paper Company presently owns and operates a paper mill on the Mississippi River in Sartell, Minnesota, with a capacity of 140 tons per day of pulp and 240 tons per day of lightweight coated paper. The company presently discharges approximately five million gallons per day of process wastewater from its activated sludge treatment plant to the Mississippi River near its plant in Sartell. The company's existing operations are presently permitted by the MPCA under NPDES and

State Disposal System Permit No. MN 0000973 and Air Quality Operating Permit No. 1004-80-OT-2B.

The St. Regis Paper Company has proposed to expand its mill by installing a new paper machine capable of producing 507 tons per day of coated, magazine-grade paper. A Draft Environmental Impact Statement (EIS) has been completed on the proposed expansion and a Final EIS is in the process of being completed.

Notice is hereby given that the St. Regis Paper Company, Gulf Life Tower, Jacksonville, Florida, 32207, has applied to the MPCA for a NPDES and State Disposal System permit for new wastewater treatment facilities, which, along with the existing facilities, will discharge up to approximately eight million gallons of treated wastewater per day when the expansion is complete, and for an Air Quality Installation Permit for a boiler and air pollution control equipment. The MPCA has prepared a draft modified NPDES and State Disposal System Permit No. MN 0000973 and a draft Air Quality Installation Permit that would authorize the proposed expansion. As drafted, the modified NPDES and State Disposal System Permit would be issued for a period expiring on June 30, 1982. The Air Quality Installation Permit would be in effect until installation was completed.

The wastewater treatment facilities which St. Regis proposes to install consist of bar screens, a primary clarifier, aeration basins and final clarifiers. The discharges when the expansion is complete will be to the Mississippi River at the plant site, the same location as the present discharges. These discharges are described in greater detail in a fact sheet that has been prepared by the MPCA, which includes a map locating the discharge points. Emissions from the proposed facility are projected to consume a substantial portion of pollution increments allowed under Prevention of Significant Deterioration (PSD) requirements set forth in federal law.

The draft permits, the fact sheet, and the Draft EIS are available for public inspection at the MPCA offices in Roseville, at the MPCA Regional Office at 615 Oak Street, Brainerd, Minnesota 56401, and at the public library in St. Cloud. Copies of the draft permits and the fact sheet will be mailed to any interested person upon request. Persons wishing copies of the draft permits and the fact sheet should contact Ms. Terry Mader at:

Minnesota Pollution Control Agency
1935 W. County Road B2
Roseville, Minnesota 55113
Telephone: (612) 296-7320

The decision to issue the permits as drafted is tentative. Interested persons are invited to submit written comments to the MPCA in regard to the determination to issue the permits or in regard to any of the terms and conditions of the draft permits. Comments should be submitted in person or by mail and received by the MPCA by no later than March 26, 1980. Comments should be directed to the attention of Ms. Mader. Any written comments received will be offered to the Hearing Examiner as part of the hearing record.

The hearing will be held before the Chief Hearing Examiner, or his designee, Room 300, 1745 University Avenue, St. Paul, Minnesota, 55104, telephone (612) 296-8100. The hearing will be held pursuant to Minn. Stat. §§ 115.03, subds. 1(e) and (h); 116.07, subd. 4a; 116.075; and 116.081 (1978); and WPC 36(k), APC 3(a), and MPCA 9. The hearing will be conducted pursuant to the contested case procedures set out in Minn. Stat. § 15.0411 through Minn. Stat. § 15.052 and 6 MCAR §§ 2.201-2.299 and, to the extent they are not inconsistent, pursuant to the MPCA's procedural rules, 6 MCAR §§ 4.3001-4.3013. Procedural rules 6 MCAR §§ 2.201-2.299 are available at the Office of Hearing Examiners or may be purchased from the Documents Section of the Department of Administration, 140 Centennial Building, St. Paul, Minnesota, 55155 (296-2974).

Any person who desires to become a Party to this matter must submit a timely Petition to Intervene to the hearing examiner pursuant to 6 MCAR § 2.210, showing how the person's legal rights, duties and privileges may be determined or affected by the decision in this case. The petition must also set forth the grounds and purposes for which intervention is sought. Persons intending to intervene as parties are requested to mail or deliver a copy of the Petition to Intervene to the agency. In addition, each Party must also submit the Notice of Appearance form enclosed with this order to the hearing examiner at least 10 days before the hearing date.

A Party to a case has the right to present evidence and argument with respect to the issues and to cross-examine witnesses. All parties have the right to be represented by legal counsel or any other representative of their choice, if not otherwise prohibited as the unauthorized practice of law, throughout the proceeding.

Interested persons may speak at the hearing without becoming parties and without submitting a Notice of Appearance. However, such persons may not cross-examine witnesses and exercise other rights of parties without filing a Petition to Intervene.

If no person intervenes as a party and no person appears at the hearing at 10:00 a.m. on March 27, the permits may be issued by the MPCA as presently drafted. In any event, some time after the close of the hearing, the hearing examiner will submit a report to the MPCA and make a recommendation on the permits. The MPCA Board will then make the final decision.

Any questions regarding this Order and Notice or regarding informal disposition or access to information may be directed to Special Assistant Attorney General Alan R. Mitchell, 1935 West County Road B2, Roseville, Minnesota, 55113 (296-7344).

February 14, 1980

Terry Hoffman
Executive Director

STATE OF MINNESOTA
OFFICE OF THE STATE REGISTER

Suite 415, Hamm Building
408 St. Peter Street
St. Paul, Minnesota 55102
(612) 296-8239

ORDER FORM

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