CHAPTER 7050
MINNESOTA POLLUTION CONTROL AGENCY
WATERS OF THE STATE

STANDARDS FOR PROTECTION OF QUALITY AND PURITY

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7050.0100 [Repealed, 9 SR 913]

STANDARDS FOR PROTECTION OF QUALITY AND PURITY

7050.0110 SCOPE.

Parts 7050.0130 to 7050.0227 apply to all waters of the state, both surface and underground, and include general provisions applicable to the maintenance of water quality and aquatic habitats; definitions of water use classes; standards for dischargers of sewage, industrial, and other wastes; and standards of quality and purity for specific water use classes. This chapter shall apply to point source and nonpoint source discharges and to physical alterations of wetlands. Other water quality rules of general or specific application that include any more stringent water quality or effluent standards or prohibitions are preserved.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 913; 12 SR 1810; 18 SR 2195*

7050.0120 [Repealed, 9 SR 913]

7050.0130 DEFINITIONS.

A. The terms "waters of the state," "sewage," "industrial wastes," and "other wastes," as well as any other terms for which definitions are given in the 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 or certificate of compliance of the agency shall not be construed to be "waters of the state."

B. "Commissioner" means the commissioner of the Minnesota Pollution Control Agency or the commissioner's designee.

C. "Nonpoint source" means a land management or land use activity that contributes or may contribute to ground and surface water pollution as a result of runoff, seepage, or percolation and that is not defined as a point source under Minnesota Statutes, section 115.01, subdivision 11.

D. "Physical alteration" means the dredging, filling, draining, or permanent inundating of a wetland. Restoring a degraded wetland by reestablishing its hydrology is not a physical alteration.

E. "Surface waters" means waters of the state excluding groundwater as defined in Minnesota Statutes, section 115.01, subdivision 6.

F. "Wetlands" are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Constructed wetlands designed for wastewater treatment are not waters of the state. Wetlands must have the following attributes:

(1) a predominance of hydric soils;

(2) inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in a saturated soil condition; and

(3) under normal circumstances support a prevalence of such vegetation.

G. 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.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 913; 12 SR 1810; 15 SR 1057; 18 SR 2195*

7050.0140 USES OF WATERS OF THE STATE.

The classifications are listed separately in accordance with the need for 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.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 913*

7050.0150 DETERMINATION OF COMPLIANCE WITH WATER QUALITY STANDARDS AND WATER QUALITY CONDITION.

Subpart 1. **Policy and scope.** The intent of the state is to protect and maintain surface waters in a condition which allows for the maintenance of all existing beneficial uses. The condition of a surface water body is determined by its physical, chemical, and biological qualities. The narrative water quality standards in subpart 3 prescribe the qualities or properties of surface waters that are necessary for the protection of designated public uses and benefits. If the narrative standards in this part are exceeded, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses of the waters of the state.

Subparts 5 to 7 list factors the commissioner will use to determine if surface waters are in compliance with applicable narrative standards in subpart 3. Determination of

compliance with the narrative standards will be made for individual water bodies on a case by case basis.

Subp. 2. **Other standards preserved.** The requirements of this part are in addition to the application of other narrative or numerical water quality standards in this chapter. If the requirements of this part conflict with any other narrative or numerical standard in this chapter, the more stringent standard applies.

Subp. 3. **Narrative standards.** For all Class 2 waters, the aquatic habitat, which includes the waters of the state 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 wastes to the waters.

Subp. 4. **Definitions.** For the purposes of this part, the following terms have the meanings given them.

A. "Chlorophyll-a" means a pigment in green plants including algae. The concentration of chlorophyll-a, expressed in weight per unit volume of water, is a measurement of the abundance of algae.

B. "Ecoregion" means an area of relative homogeneity in ecological systems based on similar soils, land use, land surface form, and potential natural vegetation.

C. "Hydraulic residence time" means the time water resides in a basin or, alternately, the time it would take to fill the basin if it were empty.

D. "Impaired water" or "impaired condition" means a water body that does not meet applicable water quality standards or fully support applicable beneficial uses, due in whole or in part to water pollution from point or nonpoint sources, or any combination thereof.

E. "Index of biological integrity" or "IBI" means an index developed by measuring attributes of an aquatic community that change in quantifiable and predictable ways in response to human disturbance, representing the health of that community.

F. "Lake morphometry" means the physical characteristics of the lake basin that are reasonably necessary to determine the shape of a lake, such as maximum length and width, maximum and mean depth, area, volume, and shoreline configuration.

G. "Mixing status" means the frequency of complete mixing of the lake water from surface to bottom, which is determined by whether temperature gradients are established and maintained in the water column during the summer season.

H. "Nuisance algae bloom" means an excessive population of algae that is characterized by obvious green or blue-green pigmentation in the water, floating mats of algae, reduced light transparency, aesthetic degradation, loss of recreational use, possible harm to the aquatic community, or possible toxicity to animals and humans. Algae blooms are measured through tests for chlorophyll-a, observations using a Secchi disk, and observations of impaired recreational and aesthetic conditions by the users of the water body, or any other reliable data that identifies the population of algae in an aquatic community.

I. "Readily available and reliable data and information" means chemical, biological, and physical data and information determined by the commissioner to meet the quality assurance and quality control requirements in subpart 8, that are not more than ten years old from the time they are used for the assessment. A subset of data in the ten-year period, or data more than ten years old can be used if credible scientific evidence shows that these data are representative of current conditions.

J. "Reference water body" means a water body least impacted by point or nonpoint sources of pollution that is representative of water bodies in the same

ecoregion or watershed. Reference water bodies are used as a base for comparing the quality of similar water bodies in the same ecoregion or watershed.

K. "Secchi disk transparency" means the average water depth of the point where a weighted white or black and white disk disappears when viewed from the shaded side of a boat, and the point where it reappears upon raising it after it has been lowered beyond visibility. The Secchi disk measures water clarity and is usually used in lakes.

L. "Summer-average" means a representative average of concentrations or measurements of nutrient enrichment factors, taken over one summer growing season from June 1 through September 30.

M. "Transparency tube" means a graduated clear plastic tube, 24 inches or more in length by 1-1/2 inches in diameter, with a stopper at the bottom end, the inside surface of which is painted black and white. The tube is filled with water from a surface water; the water is released through a valve at the bottom end until the painted surface of the stopper is just visible through the water column when viewed from the top of the tube. The depth of water at the point of initial visibility is the transparency. The transparency tube measures water clarity and is usually used in rivers and streams.

N. "Trophic status or condition" means the productivity of a lake as measured by the phosphorus content, algae abundance, and depth of light penetration.

O. "Water body" means a lake, reservoir, wetland, or a geographically defined portion of a river or stream.

Subp. 5. **Impairment of waters due to excess algae or plant growth.** In evaluating whether the narrative standards in subpart 3, which prohibit any material increase in undesirable slime growths or aquatic plants including algae, are being met, the commissioner will use all readily available and reliable data and information for the following factors of use impairment:

A. representative summer-average concentrations of total phosphorus and total nitrogen measured in the water body throughout the summer growing season;

B. representative summer-average concentrations of chlorophyll-a measured in the water body throughout the summer growing season;

C. representative measurements of light transparency in the water body, as measured with a Secchi disk in lakes or a transparency tube in rivers and streams, throughout the growing season; and

D. any other scientifically objective, credible, and supportable factor.

A finding of an impaired condition must be supported by data showing elevated levels of nutrients in item A, and at least one factor showing impaired conditions resulting from nutrient over-enrichment in items B and C. The trophic status data described in items A to D must be assessed in light of the magnitude, duration, and frequency of nuisance algae blooms in the water body; and documented impaired recreational and aesthetic conditions observed by the users of the water body due to excess algae or plant growth, reduced transparency, or other deleterious conditions caused by nutrient over-enrichment.

Assessment of trophic status and the response of a given water body to nutrient enrichment will take into account the trophic status of reference water bodies; and all relevant factors that affect the trophic status of the given water body appropriate for its geographic region, such as the morphometry, hydraulic residence time, mixing status, watershed size, and location. The factors in this subpart apply to lakes and, where scientifically justified, to rivers, streams, and wetlands.

Subp. 6. **Impairment of biological community and aquatic habitat.** In evaluating whether the narrative standards in subpart 3, which prohibit serious impairment of the normal fisheries and lower aquatic biota upon which they are dependent and the use thereof, material alteration of the species composition, material degradation of stream beds, and the prevention or hindrance of the propagation and migration of fish and other biota normally present, are being met, the commissioner will consider all readily available and reliable data and information for the following factors of use impairment:

A. an index of biological integrity calculated from measurements of attributes of the resident fish community, including measurements of:

(1) species diversity and composition;

(2) feeding and reproduction characteristics; and

(3) fish abundance and condition;

B. an index of biological integrity calculated from measurements of attributes of the resident aquatic invertebrate community, including measurements of:

(1) species diversity and composition;

(2) feeding characteristics; and

(3) species abundance and condition;

C. an index of biological integrity calculated from measurements of attributes of the resident aquatic plant community, including measurements of:

(1) species diversity and composition, including algae; and

(2) species abundance and condition;

D. a quantitative or qualitative assessment of habitat quality, determined by an assessment of:

(1) stream morphological features that provide spawning, nursery, and refuge areas for fish and invertebrates;

(2) bottom substrate size and variety;

(3) variations in water depth;

(4) sinuosity of the stream course;

(5) physical or hydrological alterations of the stream bed including excessive sedimentation;

(6) types of land use in the watershed; and

(7) other scientifically accepted and valid factors of habitat quality; and

E. any other scientifically objective, credible, and supportable factors.

A finding of an impaired condition must be supported by data for the factors listed in at least one of items A to C. The biological quality of any given surface water body will be assessed by comparison to the biological conditions determined for a set of reference water bodies which best represents the most natural condition for that surface water body type within a geographic region.

Subp. 7. **Impairment of waters relating to fish for human consumption.** In evaluating whether the narrative standards in subpart 3, which prevent harmful pesticide or other residues in aquatic flora or fauna, are being met, the commissioner will use the residue levels in fish muscle tissue established by the Minnesota Department of Health to identify surface waters supporting fish for which the Minnesota Department of Health recommends a reduced frequency of fish consumption for the protection of public health. A water body will be considered impaired when the recommended consumption frequency is less than one meal per week, such as one meal per month, for any member of the population. That is, a water body will not be considered impaired if the recommended consumption frequency is one meal per week, or any less restrictive recommendation such as two meals per week, for all members of the population. The impaired condition must be supported with measured data on the contaminant levels in the indigenous fish.

Subp. 8. **Determination of compliance.** In making tests or analyses of the waters of the state, sewage, industrial wastes, or other wastes to determine compliance with the standards and water quality condition, samples shall be collected in a 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. The samples shall be collected, preserved, and analyzed following accepted quality control and quality assurance methods, and according to the procedures in Code of

Federal Regulations, title 40, part 136. The agency may accept or may develop other methods, procedures, guidelines, or criteria for collecting and analyzing samples and measuring water quality characteristics. The commissioner will retain a record of all impairment decisions using the factors in this part, including all supporting data, for a minimum of eight years.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 913; 15 SR 1057; 18 SR 2195; 27 SR 1217*

7050.0160 [Repealed, 9 SR 913]

7050.0170 NATURAL WATER QUALITY.

The waters of the state may, in a natural condition, have water quality characteristics or chemical concentrations approaching or exceeding the water quality standards. Natural conditions exist where there is no discernible impact from point or nonpoint source pollutants attributable to human activity or from a physical alteration of wetlands. Natural background levels are defined by water quality monitoring. Where water quality monitoring data are not available, background levels can be predicted based on data from a watershed with similar characteristics.

Where natural background levels do not exceed applicable standards, the addition of pollutants from human activity and resulting point or nonpoint source discharges shall be limited such that, in total, the natural background levels and the additions from human activity shall not exceed the standards. When reasonable justification exists to preserve the higher natural quality of a water resource, the commissioner may use the natural background levels that are lower than the applicable site-specific standards to control the addition of the same pollutants from human activity. The reasonable justification must meet the requirements under parts 7050.0180 and 7050.0185.

Where background levels exceed applicable standards, the background levels may be used as the standards for controlling the addition of the same pollutants from point or nonpoint source discharges in place of the standards.

In the adoption of standards for individual waters of the state, the agency will be guided by the standards 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 waters of the state or the lands bordering such waters.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 913; 12 SR 1810; 18 SR 2195*

7050.0180 NONDEGRADATION FOR OUTSTANDING RESOURCE VALUE WATERS.

Subpart 1. **Policy.** The agency recognizes that the maintenance of existing high quality in some waters of outstanding resource value to the state is essential to their function as exceptional recreational, cultural, aesthetic, or scientific resources. To preserve the value of these special waters, the agency will prohibit or stringently control new or expanded discharges from either point or nonpoint sources to outstanding resource value waters.

Subp. 2. **Definitions.** For the purpose of this part, the following terms have the meanings given them:

A. "Outstanding resource value waters" are waters within the Boundary Waters Canoe Area Wilderness, Voyageur's National Park, and Department of Natural Resources designated scientific and natural areas, wild, scenic, and recreational river segments, Lake Superior, those portions of the Mississippi River from Lake Itasca to the southerly boundary of Morrison County that are included in the Mississippi Headwaters Board comprehensive plan dated February 12, 1981, and other waters of the state with high water quality, wilderness characteristics, unique scientific or

ecological significance, exceptional recreational value, or other special qualities which warrant stringent protection from pollution.

B. "New discharge" means a discharge that was not in existence on the effective date the outstanding resource value water was designated as described in parts 7050.0460 and 7050.0470.

C. "Expanded discharge" means, except as noted in this item, a discharge that changes in volume, quality, location, or any other manner after the effective date the outstanding resource value water was designated as described in parts 7050.0460 and 7050.0470, such that an increased loading of one or more pollutants results. In determining whether an increased loading of one or more pollutants would result from the proposed change in the discharge, the agency shall compare the loading that would result from the proposed discharge with the loading allowed by the agency as of the effective date of outstanding resource value water designation. This definition does not apply to the discharge of bioaccumulative chemicals of concern, as defined in part 7052.0010, subpart 4, to outstanding resource value waters in the Lake Superior Basin. For purposes of part 7050.0180, an expanded discharge of a bioaccumulative chemical of concern to an outstanding resource value water in the Lake Superior Basin is defined in part 7052.0010, subpart 18.

Subp. 3. **Prohibited discharges.** No person may cause or allow a new or expanded discharge of any sewage, industrial waste, or other waste to waters within the Boundary Waters Canoe Area Wilderness; those portions of Lake Superior north of latitude 47 degrees, 57 minutes, 13 seconds, east of Hat Point, south of the Minnesota-Ontario boundary, and west of the Minnesota-Michigan boundary; Voyageur's National Park; or Department of Natural Resources designated scientific and natural areas; or to federal or state wild river segments.

Subp. 4. **DNR designated scientific and natural areas.** Department of Natural Resources designated scientific and natural areas include but are not limited to:

A. Boot Lake, Anoka County;

B. Kettle River in sections 15, 22, 23, T 41 N, R 20, Pine County;

C. Pennington Bog, Beltrami County;

D. Purvis Lake-Ober Foundation, Saint Louis County;

E. Waters within the borders of Itasca Wilderness Sanctuary, Clearwater County;

F. Iron Springs Bog, Clearwater County;

G. Wolsfeld Woods, Hennepin County;

H. Green Water Lake, Becker County;

I. Blackdog Preserve, Dakota County;

J. Prairie Bush Clover, Jackson County;

K. Black Lake Bog, Pine County;

L. Pembina Trail Preserve, Polk County; and

M. Falls Creek, Washington County.

Subp. 5. **State designated wild river segments.** State designated wild river segments include but are not limited to:

A. Kettle River from the site of the former dam at Sandstone to its confluence with the Saint Croix River;

B. Rum River from Ogechie Lake spillway to the northernmost confluence with Lake Onamia.

Subp. 6. **Restricted discharges.** No person may cause or allow a new or expanded discharge of any sewage, industrial waste, or other waste to any of the following waters unless there is not a prudent and feasible alternative to the discharge:

A. Lake Superior, except those portions identified in subpart 3 as a prohibited discharges zone;

B. those portions of the Mississippi River from Lake Itasca to the southerly boundary of Morrison County that are included in the Mississippi Headwaters Board comprehensive plan dated February 12, 1981;

C. lake trout lakes, both existing and potential, as determined by the agency in conjunction with the Minnesota Department of Natural Resources, outside the boundaries of the Boundary Waters Canoe Area Wilderness and Voyageurs National Park and identified in parts 7050.0460 to 7050.0470;

D. federal or state designated scenic or recreational river segments; and

E. calcareous fens identified in subpart 6b.

If a new or expanded discharge to these waters is permitted, the agency shall restrict the discharge to the extent necessary to preserve the existing high quality, or to preserve the wilderness, scientific, recreational, or other special characteristics that make the water an outstanding resource value water.

Subp. 6a. **Federal or state designated scenic or recreational river segments.** Waters with a federal or state scenic or recreational designation include but are not limited to:

A. Saint Croix River, entire length;

B. Cannon River from northern city limits of Faribault to its confluence with the Mississippi River;

C. North Fork of the Crow River from Lake Koronis outlet to the Meeker-Wright county line;

D. Kettle River from north Pine County line to the site of the former dam at Sandstone;

E. Minnesota River from Lac qui Parle dam to Redwood County State-Aid highway 11;

F. Mississippi River from County State-Aid Highway 7 bridge in Saint Cloud to northwestern city limits of Anoka; and

G. Rum River from State Highway 27 bridge in Onamia to Madison and Rice Streets in Anoka.

Subp. 6b. **Calcareous fens.** The following calcareous fens are designated outstanding resource value waters:

A. Becker County: Spring Creek WMA NHR fen, 34 (T.142, R.42, S.13);

B. Carver County: Seminary fen, 75 (T.116, R.23, S.35);

C. Clay County:

(1) Barnesville Moraine fen, 44 (T.137, R.44, S.18);

(2) Barnesville WMA fen, 10 (T.137, R.45, S.1);

(3) Barnesville WMA fen, 43 (T.137, R.44, S.18);

(4) Felton Prairie fen, 28 (T.142, R.46, S.36);

(5) Felton Prairie fen, 36 (T.141, R.46, S.13);

(6) Felton Prairie fen, 48 (T.142, R.45, S.31);

(7) Felton Prairie fen, 53 (T.141, R.46, S.24);

(8) Haugtvedt WPA North Unit fen, 54 (T.137, R.44, S.28, 29); and

(9) Spring Prairie fen, 37 (T.140, R.46, S.11);

D. Clearwater County: Clearbrook fen, 61 (T.149, R.37, S.17);

E. Dakota County:

(1) Black Dog Preserve fen, 63 (T.27, R.24, S.34);

(2) Fort Snelling State Park fen, 25 (T.27, R.23, S.4); and

(3) Nicols Meadow fen, 24 (T.27, R.23, S.18);

F. Goodhue County:

(1) Holden 1 West fen, 3 (T.110, R.18, S.1);

(2) Perched Valley Wetlands fen, 2 (T.112, R.13, S.8); and

(3) Red Wing fen, 72 (T.113, R.15, S.21);

G. Houston County: Houston fen, 62 (T.104, R.6, S.26);

H. Jackson County:

(1) Heron Lake fen, 45 (T.103, R.36, S.29); and

(2) Thompson Prairie fen, 20 (T.103, R.35, S.7);

I. Le Sueur County:

(1) Ottawa Bluff fen, 56 (T.110, R.26, S.3);

(2) Ottawa WMA fen, 7 (T.110, R.26, S.11); and

(3) Ottawa WMA fen, 60 (T.110, R.26, S.14);

J. Lincoln County: Hole-in-the-Mountain Prairie fen, 6; Pipestone (T.108, R.46, S.1; T.109, R.45, S.31);

K. Mahnomen County: Waubun WMA fen, 11 (T.143, R.42, S.25);

L. Marshall County:

(1) Tamarac River fen, 71 (T.157, R.46, S.2);

(2) Viking fen, 68 (T.155, R.45, S.18);

(3) Viking fen, 70 (T.155, R.45, S.20); and

(4) Viking Strip fen, 69 (T.154, R.45, S.4);

M. Martin County: Perch Creek WMA fen, 33 (T.104, R.30, S.7);

N. Murray County: Lost Timber Prairie fen, 13 (T.105, R.43, S.2);

O. Nicollet County:

(1) Fort Ridgely fen, 21 (T.111, R.32, S.6); and

(2) Le Sueur fen, 32 (T.111, R.26, S.16);

P. Nobles County: Westside fen, 59 (T.102, R.43, S.11);

Q. Norman County:

(1) Agassiz-Olson WMA fen, 17 (T.146, R.45, S.22);

(2) Faith Prairie fen, 15 (T.144, R.43, S.26);

(3) Faith Prairie fen, 16 (T.144, R.43, S.35);

(4) Faith Prairie fen, 27 (T.144, R.43, S.25); and

(5) Green Meadow fen, 14 (T.145, R.45, S.35, 36);

R. Olmsted County:

(1) High Forest fen, 12 (T.105, R.14, S.14, 15); and

(2) Nelson WMA fen, 5 (T.105, R.15, S.16);

S. Pennington County:

(1) Sanders East fen, 65 (T.153, R.44, S.7);

(2) Sanders East fen, 74 (T.153, R.44, S.7); and

(3) Sanders fen, 64 (T.153, R.44, S.18, 19);

T. Pipestone County:

(1) Burke WMA fen, 57 (T.106, R.44, S.28); and

(2) Hole-in-the-Mountain Prairie fen, 6 (see Lincoln County, item J);

U. Polk County:

(1) Chicog Prairie fen, 39 (T.148, R.45, S.28);

(2) Chicog Prairie fen, 40 (T.148, R.45, S.33);

(3) Chicog Prairie fen, 41 (T.148, R.45, S.20, 29);

(4) Chicog Prairie fen, 42 (T.148, R.45, S.33);

(5) Kittleson Creek Mire fen, 55 (T.147, R.44, S.6, 7);

(6) Tympanuchus Prairie fen, 26 (T.149, R.45, S.17); and

(7) Tympanuchus Prairie fen, 38 (T.149, R.45, S.16);

V. Pope County:

(1) Blue Mounds fen, 1 (T.124, R.39, S.14, 15);

(2) Lake Johanna fen, 4 (T.123, R.36, S.29); and

(3) Ordway Prairie fen, 35 (T.123, R.36, S.30);

W. Redwood County:

(1) Swedes Forest fen, 8 (T.114, R.37, S.19, 20); and

(2) Swedes Forest fen, 9 (T.114, R.37, S.22, 27);

X. Rice County:

(1) Cannon River Wilderness Area fen, 18 (T.111, R.20, S.34); and

(2) Cannon River Wilderness Area fen, 73 (T.111, R.20, S.22);

Y. Scott County:

(1) Savage fen, 22 (T.115, R.21, S.17);

(2) Savage fen, 66 (T.115, R.21, S.16); and

(3) Savage fen, 67 (T.115, R.21, S.17);

Z. Wilkin County:

(1) Anna Gronseth Prairie fen, 47 (T.134, R.45, S.15);

(2) Anna Gronseth Prairie fen, 49 (T.134, R.45, S.10);

(3) Anna Gronseth Prairie fen, 52 (T.134, R.45, S.4);

(4) Rothsay Prairie fen, 46 (T.136, R.45, S.33);

(5) Rothsay Prairie fen, 50 (T.135, R.45, S.15, 16); and

(6) Rothsay Prairie fen, 51 (T.135, R.45, S.9);

AA. Winona County: Wiscoy fen, 58 (T.105, R.7, S.15); and

BB. Yellow Medicine County:

(1) Sioux Nation WMA NHR fen, 29 (T.114, R.46, S.17); and

(2) Yellow Medicine fen, 30 (T.115, R.46, S.18).

Subp. 7. **Unlisted outstanding resource value waters.** The agency shall prohibit or stringently control new or expanded discharges to outstanding resource value waters not specified in subparts 3 to 6b to the extent that this stringent protection is necessary to preserve the existing high quality, or to preserve the wilderness, scientific, recreational, or other special characteristics that make the water an outstanding resource value water.

Subp. 8. **Public hearing.** The agency shall provide an opportunity for a hearing before identifying and establishing additional outstanding resource value waters, before determining the existence or lack of prudent and feasible alternatives under subpart 6, and before prohibiting or restricting new or expanded discharges to outstanding resource value waters under subparts 3, 6, 6a, 6b, and 7.

Subp. 9. **Impact from upstream discharges.** The agency shall require new or expanded discharges to waters that flow into outstanding resource value waters be controlled so as to assure no deterioration in the quality of the downstream outstanding resource value water.

Subp. 10. **Thermal discharges.** If a thermal discharge causes potential water quality impairment, the agency shall implement the nondegradation policy consistent with section 316 of the Clean Water Act, United States Code, title 33, section 1326.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 913; 12 SR 1810; 15 SR 1057; 18 SR 2195; 22 SR 1466*

7050.0185 NONDEGRADATION FOR ALL WATERS.

Subpart 1. **Policy.** The potential capacity of the water to assimilate additional wastes and the beneficial uses inherent in water resources are valuable public re-

sources. It is the policy of the state of Minnesota to protect all waters from significant degradation from point and nonpoint sources and wetland alterations, and to maintain existing water uses, aquatic and wetland habitats, and the level of water quality necessary to protect these uses.

Subp. 2. **Definitions.** For the purpose of this part, the following terms have the meanings given them:

A. "New discharge" means a discharge that was not in existence before January 1, 1988.

B. "Expanded discharge" means a discharge that changes in volume, quality, location, or any other manner after January 1, 1988, such that an increased loading of one or more pollutants results. In determining whether an increased loading of one or more pollutants would result from the proposed change in discharge, the agency shall compare the loading that would result from the proposed discharge with the loading allowed by the agency on January 1, 1988.

C. "Baseline quality" means the quality consistently attained by January 1, 1988.

D. "Existing" means in existence before January 1, 1988.

E. "Economic or social development" means the jobs, taxes, recreational opportunities, and other impacts on the public at large that will result from a new or expanded discharge.

F. "Toxic pollutant" means a pollutant listed as toxic under section 307(a)(1) of the Clean Water Act, United States Code, title 33, section 1317(a)(1), or as defined by Minnesota Statutes, section 115.01, subdivision 20.

G. "Significant discharge" means:

(1) a new discharge of sewage, industrial, or other wastes greater than 200,000 gallons per day to any water other than a class 7, limited resource value water; or

(2) an expanded discharge of sewage, industrial, or other wastes that expands by more than 200,000 gallons per day and that discharges to any water other than a class 7, limited resource value water; or

(3) a new or expanded discharge containing any toxic pollutant at a mass loading rate likely to increase the concentration of the toxicant in the receiving water by greater than one percent over the baseline quality. This determination shall be made using:

(a) data collected from the receiving water or from a water representative of the receiving water;

(b) the entire once in ten-year, seven-day low flow of the receiving water as defined in part 7050.0210, subpart 7; and

(c) a mass balance equation that treats all toxic pollutants as conservative substances.

Subp. 3. **Minimum treatment.** Any person authorized to maintain a new or expanded discharge of sewage, industrial waste, or other waste, whether or not the discharge is significant, shall comply with applicable effluent limitations and water quality standards of this chapter and shall maintain all existing, beneficial uses in the receiving waters.

Subp. 4. **Additional requirements for significant discharges.** If a person proposes a new or expanded significant discharge from either a point or nonpoint source, the agency shall determine whether additional control measures beyond those required by subpart 3 can reasonably be taken to minimize the impact of the discharge on the receiving water. In making the decision, the agency shall consider the importance of economic and social development impacts of the project, the impact of the discharge on the quality of the receiving water, the characteristics of the receiving water, the cumulative impacts of all new or expanded discharges on the receiving water, the costs

of additional treatment beyond what is required in subpart 3, and other matters as shall be brought to the agency's attention.

Subp. 5. **Determination of significance.** A person proposing a new or expanded discharge of sewage, industrial waste, or other wastes shall submit to the commissioner the information required to determine whether the discharge is significant under subpart 2. If the discharge is sewage, the flow rate used to determine significance under this part is the design average wet weather flow for the wettest 30-day period. For discharges of industrial and other wastes, the flow rate to be used is the design maximum daily flow rate. In determining the significance of a discharge to a lake or other nonflowing receiving water, a mixing zone may be established under the guidelines of part 7050.0210, subpart 5.

Subp. 6. **Baseline quality.** If an existing discharge to a water of the state is eliminated or significantly reduced, baseline quality for purposes of this part shall be adjusted to account for the water quality impact associated with that particular discharge.

If no data are available to determine baseline quality or the data collected after January 1, 1988, are of better quality, then the commissioner shall authorize the use of data collected after January 1, 1988. If no data are available, the person proposing the discharge may collect new data in accordance with agency protocols.

Subp. 7. **Incremental expansions.** If a new or expanded discharge is proposed in increments, the increments must be added together to determine whether the discharge is a significant discharge. Once the criteria for a significant discharge are satisfied by adding together the increments, the requirements of this part shall apply to the discharge.

Subp. 8. **Determination of reasonable control measures for significant discharges.** The person proposing a new or expanded significant discharge of sewage, industrial waste, or other wastes shall submit to the commissioner information pertinent to those factors specified in subpart 4 for determining whether and what additional control measures are reasonable.

The commissioner shall provide notice and an opportunity for a public hearing in accordance with the permit requirements in chapter 7001 before establishing reasonable control requirements for a new or expanded significant discharge.

Subp. 9. **Physical alterations of wetlands.** The permit or certification applicant shall comply with part 7050.0186 if there is a proposed physical alteration that has the potential for a significant adverse impact to a designated use of a wetland and that is associated with a project that requires a National Pollutant Discharge Elimination System (NPDES) permit, a 401 certification under parts 7001.1400 to 7001.1470, or a state disposal system permit.

Statutory Authority: *MS s 115.03; 115.44*

History: *12 SR 1810; 15 SR 1057; 18 SR 614; 18 SR 2195; 22 SR 1466; 24 SR 1105*

7050.0186 WETLAND MITIGATION.

Subpart 1. **Policy.** It is the policy of the state to protect wetlands from significant adverse impacts on wetland designated uses. Wetland mitigation maintains nondegradation of wetland designated uses.

Subp. 2. **Wetland mitigation principles.** The wetland mitigative sequence incorporates the following principles in descending order of priority:

A. avoid the impact altogether by not taking a certain action or parts of an action;

B. minimize the impact by limiting the degree or magnitude of the action and its implementation, and by taking affirmative actions to rectify the impact and reduce or eliminate the impact over time; and

C. mitigate the unavoidable impact to the designated uses of a wetland by compensation. Compensatory mitigation shall be accomplished in the following descending order of priority of replacement:

(1) restoration of a previously diminished wetland; and

(2) creation of a wetland.

Subp. 3. **Determination of wetland dependency.** A project is wetland dependent if wetland designated uses are essential to fulfill the basic purpose of the project. A wetland dependent project is exempt from subpart 4, but will follow the remainder of the mitigation sequence. Where the proposed project is not wetland dependent, the wetland mitigation sequence in subpart 2 must be followed.

Subp. 4. **Impact avoidance.** No person may cause or allow a physical alteration which has the potential for a significant adverse impact on one or more designated uses of a wetland, unless there is not a prudent and feasible alternative that would avoid impacts to the designated uses of the wetland.

A. Prudent and feasible alternatives that do not involve wetlands are presumed to be available unless clearly demonstrated otherwise by the permit or certification applicant.

B. If no prudent and feasible alternative is available for avoidance, potential significant adverse impacts to the designated uses of the wetland shall be minimized in compliance with subpart 5.

Subp. 5. **Impact minimization.**

A. The permit or certification applicant shall implement actions to minimize potential significant adverse impacts of the physical alteration.

B. In evaluating the applicant's actions to minimize impacts, the agency shall consider:

(1) the spatial requirements of the project;

(2) the location of existing structural or natural features that may dictate the placement or configuration of the project;

(3) the purpose of the project and how the purpose relates to placement, configuration, or density;

(4) the sensitivity of the site design to the natural features of the site, including topography, hydrology, and existing vegetation;

(5) the designated uses and spatial distribution of the wetlands on the site;

(6) individual and cumulative impacts; and

(7) the applicable minimization activities identified in Code of Federal Regulations, title 40, part 230, subpart H, as amended.

C. If the potential for significant adverse impacts on designated uses remains after all actions to minimize the impacts have been incorporated into the proposed project, unavoidable impacts shall be compensated for in compliance with subpart 6.

Subp. 6. **Impact compensation.** The permit or certification applicant shall provide compensatory mitigation for unavoidable impacts on the designated uses of the wetland in accordance with this subpart.

A. Compensatory mitigation must be sufficient to ensure replacement of the diminished or lost designated uses of the wetland that was physically altered.

B. Compensatory mitigation shall be accomplished in the following descending order of priority of replacement:

(1) restoration of a previously diminished wetland; and

(2) creation of a wetland.

C. If compensatory mitigation is accomplished by restoration or creation, the replacement wetland shall be of the same type and in the same watershed as the impacted wetland, to the extent prudent and feasible.

D. Compensatory mitigation shall be completed before or concurrent with the actual physical alteration of the wetland affected by the proposed project to the extent prudent and feasible.

Statutory Authority: *MS s 115.03; 115.44*

History: *18 SR 2195*

7050.0190 VARIANCE FROM STANDARDS.

Subpart 1. **Standard.** 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 United States Environmental Protection Agency will be advised of any permits which may be issued under this clause together with information as to the need therefor.

Subp. 2. **Listing.** By October 1 each year, the commissioner shall prepare a list of the variances in effect granted by the agency under this part. This list shall be available for public inspection and shall be provided to the United States Environmental Protection Agency. This list shall identify the person granted the variance, the rule from which the variance was granted, the water affected, the year granted, and any restrictions that apply in lieu of the rule requirement.

Subp. 3. **Review.** Variances granted by the agency under this part shall be subject to agency and public review at least every three years. Variances may be modified or suspended under the procedures in part 7000.7000.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 913; 12 SR 1810; 19 SR 1310*

7050.0200 WATER USE CLASSIFICATIONS FOR WATERS OF THE STATE.

Subpart 1. **Introduction.** Based on considerations of best usage in the interest of the public and in conformance with the requirements of the applicable statutes, the waters of the state shall be grouped into one or more of the classes in subparts 2 to 8.

Subp. 2. **Class 1 waters, domestic consumption.** Domestic consumption includes all waters of the state 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.

Subp. 3. **Class 2 waters, aquatic life and recreation.** Aquatic life and recreation includes all waters of the state which do or may support fish, other aquatic life, bathing, boating, or other recreational purposes, and where quality control is or may be necessary to protect aquatic or terrestrial life or their habitats, or the public health, safety, or welfare.

Subp. 4. **Class 3 waters, industrial consumption.** Industrial consumption includes all waters of the state 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.

Subp. 5. **Class 4 waters, agriculture and wildlife.** Agriculture and wildlife includes all waters of the state 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 and its habitat or the public health, safety, or welfare.

Subp. 6. **Class 5 waters, aesthetic enjoyment and navigation.** Aesthetic enjoyment and navigation includes all waters of the state which are or may be used for any form of water transportation or navigation, or fire prevention, and for which quality control is or may be necessary to protect the public health, safety, or welfare.

Subp. 7. **Class 6 waters, other uses.** Other uses includes all waters of the state 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 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 waters, or any other considerations the agency may deem proper.

Subp. 8. **Class 7 waters, limited resource value waters.** Limited resource value waters include surface waters of the state which have been subject to a use attainability analysis and have been found to have limited value as a water resource. Water quantities in these waters are intermittent or less than one cubic foot per second at the once in ten year, seven-day low flow as defined in part 7050.0210, subpart 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. The use attainability analysis must take into consideration those factors listed in Minnesota Statutes, section 115.44, subdivisions 2 and 3. The agency, in cooperation and agreement with the Department of Natural Resources with respect to determination of fisheries values and potential, shall use this information to determine the extent to which the waters of the state demonstrate:

A. the existing and potential faunal and floral communities 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.

The conditions in items A and C or B and C must be established by the use attainability analysis before the waters can be classified as limited resource value waters.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 913; 12 SR 1810; 18 SR 2195; 24 SR 1105*

7050.0210 GENERAL STANDARDS FOR DISCHARGERS TO WATERS OF THE STATE.

Subpart 1. **Untreated sewage.** No untreated sewage shall be discharged into any 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 waters of the state.

Subp. 2. **Nuisance conditions prohibited.** No sewage, industrial waste, or other wastes shall be discharged from either point or nonpoint sources into any waters of the state so as to cause any nuisance conditions, such as the presence of significant amounts of floating solids, scum, visible oil film, excessive suspended solids, material discoloration, obnoxious odors, gas ebullition, deleterious sludge deposits, undesirable slimes or fungus growths, aquatic habitat degradation, excessive growths of aquatic plants, or other offensive or harmful effects.

Subp. 3. **Inadequate treatment.** 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.

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

Subp. 5. **Mixing zones.** Reasonable allowance will be made for dilution of the effluents, which are in compliance with part 7050.0211 or 7050.0212, as applicable, following discharge into waters of the state. The agency, by allowing dilution, may consider the effect on all uses of the waters of the state into which the effluents are discharged. The extent of dilution allowed regarding any specific discharge as specified in subpart 7 shall not violate the applicable water quality standards. Means for expediting mixing and dispersion of sewage, industrial waste, or other waste effluents in the receiving waters are to be provided so far as practicable when deemed necessary by the agency to maintain the quality of the receiving waters in accordance with applicable standards. Mixing zones must 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 percent of the cross sectional area and/or volume of flow of the stream, and should not extend over more than 50 percent of the width;

C. mixing zone characteristics shall not be lethal to aquatic organisms;

D. for contaminants other than heat, the FAV, as defined in part 7050.0218, subpart 3, item O, for toxic pollutants should not be exceeded as a one-day mean concentration 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 subpart applies in cases where a Class 7 water is tributary to a Class 2 water.

Subp. 6. [Renumbered 7050.0211, subpart 1]

Subp. 6a. [Renumbered 7050.0211, subpart 2]

Subp. 6b. [Renumbered 7050.0211, subpart 3]

Subp. 6c. **Other requirements preserved.** The requirements of this chapter and specifically the requirements in parts 7050.0211 to 7050.0212 are in addition to any requirement imposed on a discharge by the Clean Water Act, United States Code, title 33, sections 1251 et seq., and its implementing regulations. In the case of a conflict between the requirements of parts 7050.0110 to 7050.0220 and the requirements of the Clean Water Act or its implementing regulations, the more stringent requirement controls.

Subp. 7. **Minimum stream flow.** Dischargers of sewage, industrial waste, or other wastes 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), except for the purpose of setting ammonia effluent limits. Dischargers of ammonia in sewage, industrial waste, or other wastes shall be controlled so that the ammonia water quality standard will be maintained at all stream flows which are equal to or exceeded by 90 percent of the 30 consecutive daily average flows of record (the lowest 30-day 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. The 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 the flow augmentation of minimum flow is dependable and controlled under applicable laws or regulations.

Subp. 8. [Renumbered 7050.0213]

Subp. 9. **Water quality based effluent limitations.** Notwithstanding parts 7050.0213 and 7050.0214, the agency may require a specific discharger to meet effluent limitations for specific pollutants or whole effluent toxicity which are necessary to maintain the water quality of the receiving water at the standards of quality and purity established by this chapter. 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 chapter 7001 regarding notice of National Pollutant Discharge Elimination System and State Disposal System permits shall satisfy the notice and opportunity for hearing requirements of this subpart.

Subp. 10. **Alternative waste treatment.** 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.

Subp. 11. [Repealed, 12 SR 1810]

Subp. 12. **Liquid substances.** Liquid substances which are not commonly considered to be sewage or industrial waste but which could constitute a pollution hazard shall be stored in accordance with chapter 7151. Other wastes as defined by law or other substances which could constitute a pollution hazard, including substances from nonpoint sources and households, shall not be deposited in any manner such that the same may be likely to gain entry into any waters of the state in excess of or contrary to any of the standards herein adopted, or cause pollution as defined by law.

Subp. 13. **Pollution prohibited.** No sewage, industrial waste, or other wastes shall be discharged from either a point or a nonpoint source into the waters of the state in such quantity or in such manner alone or in combination with other substances as to cause pollution as defined by law. In any case where the waters of the state into which sewage, industrial waste, or other waste effluents discharge are assigned different standards than the waters of the state into which the receiving waters flow, the standards applicable to the waters into which the 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 waters of the state in any other class shall occur by reason of the discharge of the sewage, industrial waste, or other waste effluents.

Subp. 13a. **Wetland pollution prohibited.** Wetland conditions shall be protected from chemical, physical, biological, or radiological changes to prevent significant adverse impacts to the following designated uses: maintaining biological diversity, preserving wildlife habitat, and providing recreational opportunities as specified in part 7050.0222, subpart 6; erosion control, groundwater recharge, low flow augmentation, stormwater retention, and stream sedimentation as specified in part 7050.0224, subpart 4; and aesthetic enjoyment as specified in part 7050.0225, subpart 2.

Subp. 14. [Repealed, 15 SR 1057]

Subp. 15. **Point source dischargers must report to agency.** 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 a report to the agency upon request 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.

Subp. 16. [Renumbered 7050.0214]

Subp. 17. **Compliance with permit conditions.** No person who is in compliance with the terms and conditions of its permit issued under chapter 7001 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. Chapter 7001 shall govern the modification of any such permit.

Subp. 18. **Water quality standard based ammonia effluent limitations.** 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.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 913; 9 SR 2756; L 1987 c 186 s 15; 12 SR 1810; 15 SR 1057; 18 SR 614; 18 SR 2195; 22 SR 1466; 24 SR 1105; 27 SR 1217*

7050.0211 FACILITY STANDARDS.

Subpart 1. **Minimum secondary treatment for municipal point source and other point source dischargers of sewage.** It is established that the agency shall require secondary treatment as a minimum for all municipal point source dischargers and other point source dischargers of sewage. For purposes of this part, municipal has the adjective meaning of municipality as defined in part 7001.1020, subpart 18. 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*
Five-day carbonaceous 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	See subpart 1a
pH range	6.0 - 9.0
Toxic or corrosive pollutants	Concentrations of toxic or corrosive pollutants shall not cause acute toxicity to humans or other animals or plant life or directly damage real property or exceed the final acute value unless the effluent satisfies the

	whole effluent toxicity test below. If a whole effluent toxicity test performed on the effluent results in less than 50 percent mortality of the test organisms, the effluent will not be considered acutely toxic unless the commissioner finds that the test species do not represent sensitive organisms in the affected surface water body or the whole effluent test was performed on a sample not representative of the effluent quality. The final acute value and whole effluent toxicity test are defined in part 7050.0218, subpart 3, items O and HH, respectively

*The arithmetic mean for concentrations of five-day carbonaceous biochemical oxygen demand and total suspended solids shall not exceed the stated values in any calendar month. In any calendar week, the arithmetic mean for concentrations of five-day carbonaceous biochemical oxygen demand shall not exceed 40 milligrams per liter and total suspended solids shall not exceed 45 milligrams per liter.

**Disinfection of wastewater effluents to reduce the levels of fecal coliform organisms to the stated value is required from April 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 geometric mean of all the samples collected in a given calendar month. 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.

Subp. 1a. **Total phosphorus effluent limits.** Where the discharge of effluent is directly to or affects a lake or reservoir, phosphorus removal to one milligram per liter shall be required. The limit must be a calendar month arithmetic mean unless the commissioner finds, after considering the criteria listed in items A and B, that a different averaging period is acceptable. In no case shall the one milligram per liter limit exceed a moving mean of 12 monthly values reported on a monthly basis, or a simple mean for a specified period, not to exceed 12 months. Calendar month effluent limits in effect on February 7, 2000, must remain in effect unless an assessment of the criteria listed in items A and B indicate a different averaging period is acceptable. A different averaging period is acceptable when:

A. the effects of the phosphorus loading from the facility on the receiving water or downstream water resources is generally not measurable; and

B. the treatment technologies being considered offer environmental, financial, or other benefits.

In addition, 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. Dischargers required to control nutrients by this subpart are subject to the variance provisions of part 7050.0190.

Subp. 2. **Exception for existing trickling filter facilities.** The exception for existing trickling filter facilities is:

A. The secondary treatment effluent limitations in subpart 1, for five-day carbonaceous biochemical oxygen demand and total suspended solids does not apply to municipal point source dischargers and other point source dischargers of sewage that meet all of the following conditions:

(1) The treatment facility was in operation on January 1, 1987;

(2) The treatment facility uses a trickling filter as the principal method of biologically treating the wastewater; and

(3) The discharger has been incapable of consistently meeting the effluent limitations for five-day carbonaceous biochemical oxygen demand or total suspended solids contained in subpart 1.

B. For those municipal point source dischargers and other point source dischargers of sewage that meet the conditions of item A, the following effluent limitations for five-day carbonaceous biochemical oxygen demand and total suspended solids apply as the arithmetic mean of all samples collected during a calendar month.

Five-day carbonaceous biochemical oxygen demand	40 milligrams per liter*
Total suspended solids	45 milligrams per liter**

*In any calendar week, the arithmetic mean for five-day carbonaceous biochemical oxygen demand shall not exceed 60 milligrams per liter.

**The arithmetic mean for any calendar week shall not exceed 65 milligrams per liter for total suspended solids.

C. The other effluent limitations in subpart 1 apply to those municipal point source dischargers and other point source dischargers of sewage whose limitations for five-day carbonaceous biochemical oxygen demand and total suspended solids are established by this subpart.

Subp. 3. **Exception for pond facilities.** The exception for pond facilities is:

A. The secondary treatment effluent limitations in subpart 1 for total suspended solids does not apply to municipal point source dischargers and other point source dischargers of sewage that operate stabilization ponds or aerated ponds as the principal method of biologically treating the wastewater.

B. For such treatment works the effluent limitation for total suspended solids for a discharge from the pond is as follows:

Total suspended solids	45 milligrams per liter* (arithmetic mean of all samples collected during any calendar month)

*The arithmetic mean for any calendar week shall not exceed 65 milligrams per liter for total suspended solids.

C. The other effluent limitations in subpart 1 apply to those municipal point source dischargers and other point source dischargers of sewage whose limitations for total suspended solids are established by this subpart.

Statutory Authority: *MS s 115.03; 115.44*

History: *12 SR 1810; 15 SR 1057; 18 SR 2195; 24 SR 1105*

7050.0212 REQUIREMENTS FOR POINT SOURCE DISCHARGERS OF INDUSTRIAL OR OTHER WASTES.

Subpart 1. **Applicable effluent limitations.** Any person discharging industrial or other wastes from a point source shall comply with the following requirements:

A. Point source dischargers of industrial or other wastes shall comply with all applicable federal standards promulgated by the United States Environmental Protection Agency under sections 301, 306, and 307 of the Clean Water Act, United States Code, title 33, sections 1311, 1316, and 1317. Code of Federal Regulations, title 40, parts 401 through 469, are incorporated by reference.

B. If effluent limitations for five-day carbonaceous biochemical oxygen demand, total suspended solids, pH, or oil are not established under item A for any point source discharger of industrial or other wastes, that point source discharger shall comply with the effluent limitations for those substances established in part 7050.0211, subpart 1, or with such other equivalent mass limitations established under part 7050.0210, subpart 9, if applicable.

C. Point source dischargers of industrial or other wastes shall comply with all additional effluent limitations established by the agency in any permit proceeding for that discharger through application of the criteria provided by Code of Federal Regulations, title 40, part 125, subpart A.

Subp. 2. **Feedlot exemption.** The requirements of subpart 1, items B and C, do not apply to animal feedlots.

Subp. 2a. **Dredge disposal exemption.** The requirements for total suspended solids and phosphorus under subparts 1, item B, and 4, do not apply to waters discharged from a dredge disposal facility and returned to the water body where the water was removed if:

A. best management practices and best practicable technology are established in a state disposal system permit for the facility; and

B. the designated uses as established under part 7050.0221 to 7050.0227 are maintained.

Subp. 3. **Antibacksliding.**

A. Any point source discharger of industrial or other wastes for which a National Pollutant Discharge Elimination System permit has been issued by the agency that contains effluent limitations more stringent than those that would be established by subparts 1 and 2 shall continue to meet the effluent limitations established by the permit, unless the permittee establishes that less stringent effluent limitations are allowable pursuant to federal law, under section 402(o) of the Clean Water Act, United States Code, title 33, section 1342.

B. If a permittee establishes that it is entitled to less stringent effluent limitations under item A, the agency shall establish new effluent limitations in accordance with the following criteria:

(1) If past treatment performance data are representative of future performance, the new effluent limitations shall reflect the level of pollutant control that has been consistently achieved by the permittee in the past.

(2) If changes in the rate of production or in other operational aspects of the facility make past treatment performance data unrepresentative of future performance, in establishing new effluent limitations the agency shall consider (a) the performance capabilities of the existing treatment facility under the changed factors, and (b) the performance capabilities of any additional treatment facilities that may be required by the agency as a result of the changed factors. The new effluent limitations shall be as stringent as is reasonable applying good engineering design practices and operational and maintenance practices for the existing treatment facilities and any additional treatment facilities that may be required.

(3) The new effluent limitations shall reflect the performance capabilities of all treatment facilities under proper operation and maintenance practices.

(4) In no event shall the new effluent limitations be less stringent than the effluent limitations established under subparts 1 and 2.

(5) In all cases, the beneficial uses and the water quality standards shall be maintained in the receiving water.

(6) If less stringent effluent limitations are established in the permit, the agency may also establish other reasonable and necessary conditions for the new permit.

A request for less stringent effluent limitations in a permit shall be made in accordance with part 7001.0190, subpart 1. The agency shall follow the procedures in part 7001.0190, subpart 1, in acting upon a request for new effluent limitations.

Subp. 4. **Nutrient control requirements.** In addition to the requirements of subpart 1, a person discharging industrial or other wastes from a point source shall comply with the nutrient control requirements of part 7050.0211, subpart 1, if the discharge of effluent is directly to or affects a lake or reservoir.

Subp. 5. **Exception for total suspended solids limitations for ponds.** A point source discharger of industrial or other wastes that uses a stabilization or aerated pond as the principal method of biologically treating the waste shall comply with subparts 1 to 4, except that the total suspended solids effluent limitations applicable to a discharger under subpart 1, item B, shall be those limitations in part 7050.0211, subpart 3, rather than the total suspended solids limitations in part 7050.0211, subpart 1.

Subp. 6. **Toxic or corrosive pollutants.** In addition to the requirements of subpart 1, a person discharging industrial or other wastes from a point source shall comply with the control requirements of part 7050.0211, subpart 1, for toxic or corrosive pollutants.

Statutory Authority: *MS s 115.03; 115.44*

History: *12 SR 1810; 15 SR 1057; 18 SR 2195*

7050.0213 ADVANCED WASTEWATER TREATMENT REQUIREMENTS.

In any instance where it is evident that the minimal treatment specified in part 7050.0211, subpart 1, or 7050.0212 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 waters of the state for the stated uses:

Item	Limits*
Five-day carbonaceous biochemical oxygen demand	5 milligrams per liter (arithmetic mean of all samples taken during any calendar month)

*If a discharger is required by the commissioner 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 five milligrams per liter until such time as the program has been implemented.

The five milligram per liter limit shall not apply to discharges to surface waters classified as limited resource value waters pursuant to parts 7050.0200, subpart 8, and 7050.0400 to 7050.0470.

The concentrations specified in part 7050.0211, subpart 1, or, if applicable, part 7050.0212 may be used in lieu of this limit 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 part 7050.0211, subpart 1, or, if applicable, part 7050.0212, provided the water quality standards and all other requirements of the agency and the United States 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.

Statutory Authority: *MS s 115.03; 115.44*

History: *12 SR 1810; 18 SR 2195; 24 SR 1105*

7050.0214 REQUIREMENTS FOR POINT SOURCE DISCHARGERS TO LIMITED RESOURCE VALUE WATERS.

Subpart 1. **Effluent limitations.** For point source discharges of sewage, industrial, or other wastes to surface waters classified as limited resource value waters pursuant to parts 7050.0200, subpart 8, and 7050.0400 to 7050.0470, the agency shall require treatment facilities which will provide effluents conforming to the following limitations:

Substance or Characteristic	Limiting Concentration*
Five-day carbonaceous biochemical oxygen demand	15 milligrams per liter (arithmetic mean of all samples taken during any calendar month)

*This limit shall not apply to discharges to limited resource value waters if the principal method of treatment is through stabilization ponds, in which case the limitations in parts 7050.0211, subpart 3, and 7050.0212, subpart 5, shall apply. All effluent limitations specified in part 7050.0211, subpart 1, shall also be applicable to dischargers of sewage to limited resource value waters, provided that toxic or corrosive pollutants shall be limited to the extent necessary to protect the designated uses of the receiving water or affected downstream waters.

Subp. 2. **Alternative secondary treatment effluent limitations.** 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 part 7050.0211, 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.

Subp. 3. **Protection of downstream waters.** 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.

Subp. 4. **Public waters designation unaffected.** The classification of surface waters as limited resource value waters pursuant to parts 7050.0200, subpart 8, and 7050.0400 to 7050.0470 shall not supersede, alter, or replace the classification and designation of such waters as public waters pursuant to Minnesota Statutes, chapter 103G.

Statutory Authority: *MS s 115.03; 115.44*

History: *12 SR 1810; 15 SR 1057; 18 SR 2195; 24 SR 1105*

7050.0215 REQUIREMENTS FOR ANIMAL FEEDLOTS.

Subpart 1. **Definitions.** For the purpose of this part, the following terms have the meanings given them:

A. "Animal feedlot" has the meaning given in part 7020.0300, subpart 3.

B. "Animal manure" has the meaning given in part 7020.0300, subpart 4.

C. "Manure storage area" has the meaning given in part 7020.0300, subpart 14.

D. "Treatment works" has the meaning given in Minnesota Statutes, section 115.01, subdivision 21, and includes a vegetated filter or buffer strip located between an animal feedlot or a manure storage area and a receiving water.

Subp. 2. **Effluent limitations for a discharge.**

A. Any person discharging pollutants to surface waters of the state from an animal feedlot or manure storage area who is not regulated by federal requirements under part 7050.0212, subpart 1, shall comply with the following limitations after allowance for pollutant removal by a treatment works:

5-day biochemical oxygen demand	25 milligrams per liter (arithmetic mean of all samples taken during any calendar month).

If the discharge is directly to or affects a lake or reservoir, the person discharging the pollutants shall comply with the nutrient control requirements of part 7050.0211, subpart 1.

B. The effluent limitations in item A are not applicable whenever rainfall events, either chronic or catastrophic, cause an overflow from an animal feedlot or manure storage area designed, constructed, and operated:

(1) to meet the effluent limitations in item A for rainfall events less than or equal to a 25-year, 24-hour rainfall event for that location; or

(2) to collect and contain the runoff from a 25-year, 24-hour rainfall event for that location.

Statutory Authority: *MS s 115.03; 115.44*

History: *12 SR 1810; 18 SR 2195*

7050.0216 REQUIREMENTS FOR AQUACULTURE FACILITIES.

Subpart 1. **Definitions.** For the purposes of this part, the terms in items A to J have the meanings given them.

A. "Aquaculture therapeutics" means drugs, medications, or disease control chemicals that are approved for concentrated aquatic animal production facility use by the United States Food and Drug Administration or the United States Environmental Protection Agency.

B. "Aquatic animal production" means harvest of unprocessed aquatic animals, including mortalities, where the animals are fed fish food.

C. "Chemical additive" means an aquaculture therapeutic, growth-inducing compound, hormone, or algal control product that is added to a concentrated aquatic animal production facility.

D. "Cold water aquatic animals" means aquatic animals in the Salmonidae family of fish, such as trout and salmon.

E. "Concentrated aquatic animal production facility" means a hatchery, fish farm, or other facility that contains, grows, or holds aquatic animals as described in subitems (1) to (4).

(1) Cold water aquatic animal facilities that produce more that 9,090 harvest weight kilograms (approximately 20,000 pounds) of aquatic animals per year or feed more than 2,272 kilograms (approximately 5,000 pounds) of food during the calendar month of maximum feeding.

(2) Warm and cool water aquatic animal facilities that produce more than 45,454 harvest weight kilograms (approximately 100,000 pounds) of aquatic animals per year.

(3) Case-by-case designation of concentrated aquatic animal production facilities. The commissioner may designate any warm, cool, or cold water aquatic animal production facility as a concentrated aquatic animal facility upon determining that it may cause a violation of an applicable state or federal water quality rule or regulation. In making this designation, the commissioner shall consider the following factors:

(a) the location and quality of the receiving waters;

(b) the holding, feeding, and production capacities of the facility; and

(c) the quantity and nature of the pollutants reaching waters of the state.

A permit application is not required from a concentrated aquatic animal production facility designated under this item until the commissioner has conducted an on-site inspection of the facility and has determined that the facility is required to be regulated under the permit program. A permit will be required under this subitem only after the facility has been given notice of the commissioner's determination and an opportunity to request a hearing as provided in part 7000.1800.

(4) Harvest weight is considered the weight of aquatic animal product which leaves a production facility, minus the weight of aquatic animal product which enters the same production facility.

F. "Continuous discharge" means a discharge that occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

G. "Existing beneficial uses" means the uses that have been made or may be reasonably anticipated to be made during the time of the proposed operations of waters of the state for domestic water supply, tourism and recreational industries, transportation, industrial consumption, wellhead protection, wildlife sustenance, wetland protection, fire protection, fire prevention, assimilation of municipal and industrial wastes and other wastes or other uses within this state, and, at the discretion of the agency, any uses in another state or interstate waters flowing through or originating in this state.

H. "Fish food" means materials including processed feeds, grains and seeds, plants, plant wastes, meat, and dead fish or other dead animal parts, but not including living aquatic animals, for the purposes of sustaining growth, repairing vital processes, or furnishing energy for aquatic animals present in the facility.

I. "Recirculating flow" means wastewater, within a concentrated aquatic animal production facility, which is collected from aquatic animal rearing units, treated, and then returned to aquatic animal rearing units for reuse.

J. "Warm and cool water aquatic animals" means all other aquatic animals not included in the Salmonidae family of fish.

Subp. 2. **Permit required.** No person may construct, operate, or maintain a concentrated aquatic animal production facility until the agency has issued a National Pollutant Discharge Elimination System and State Disposal System (NPDES/SDS) permit for the facility in accordance with chapter 7001. Production levels of multiple projects and multiple stages of a single project that are connected actions or phased actions will be considered in total under subpart 1, item E.

Subp. 3. **Treatment technology discharge requirements.**

A. Collection and treatment. All concentrated aquatic animal production facilities shall collect, remove, treat, and properly dispose of unconsumed fish food and fish wastes.

B. Discharge requirements. All concentrated aquatic animal production facilities that discharge industrial or other wastes to waters of the state shall comply with the requirements of part 7050.0212, subparts 1, 3, 4, 5, and 6.

C. Recirculating flow. The owner or operator of a recirculating flow facility may apply for a variance from the requirements of item B in accordance with parts

7000.7000 and 7050.0190. The variance application shall provide detailed information on the following:

(1) treatment, collection, removal, and disposal of wastes after wastewater flow leaves aquatic animal rearing units and before the wastewater is returned for reuse to rearing units;

(2) the rate of wastewater discharge flow compared to the volume of water in the aquatic animal rearing units;

(3) reduction in the mass discharge of pollutants due to the design, operation, and maintenance of the recirculating system; and

(4) reduction in water appropriation due to the design, operation, and maintenance of the recirculating system.

Subp. 4. **Additional requirements.** Except as expressly excluded in this part, the construction, operation, and maintenance of a concentrated aquatic animal production facility shall comply with the requirements of parts 7050.0110 to 7050.0214 and 7050.0217 to 7050.0227.

Subp. 5. **Interim reversible impacts.**

A. Variance. Upon application of the responsible person or persons and in accordance with parts 7000.7000 and 7050.0190, the agency shall grant a variance from subpart 3, item A or B, if the agency also finds that:

(1) the construction, operation, and maintenance of the facility will not impair the existing beneficial uses and the level of water quality necessary to protect the existing beneficial uses;

(2) the economic or social development of concern will not occur due to the standards in subpart 3;

(3) allowing lower water quality is necessary to accommodate important economic or social development in the area in which the receiving waters are located;

(4) the baseline quality of the receiving waters has been established in accordance with item C;

(5) a closure plan for the facility has been submitted in accordance with item E;

(6) financial assurance for the facility has been established and maintained in accordance with item F;

(7) the applicant has submitted a permit application for the facility for which the variance is sought in compliance with subpart 2;

(8) the applicant has submitted a completed variance application in accordance with item B; and

(9) the receiving waters will be restored to baseline quality within three years of initiation of closure.

However, no variances may be granted that would result in noncompliance with applicable federal rules, regulations, or standards for water quality.

B. Variance application. In addition to the requirements of part 7000.7000, subpart 2, the written application must contain:

(1) the baseline quality data of the receiving waters collected under commissioner-approved protocol in accordance with item C;

(2) the closure plan in accordance with item E; and

(3) an up-to-date closure cost estimate for the facility prepared under item E and evidence of the financial assurance required in item F.

C. Baseline quality. Baseline quality shall be established by no less than two consecutive years, or equivalent, of preoperational data on the receiving waters. The equivalent testing program shall require 12 sampling events for the parameters in item E collected during the months of May through October. Testing programs used to establish baseline quality shall be reviewed and approved by the commissioner before

the start of testing. The commissioner shall supply the specific intra-year and inter-year variables.

D. Closure. If a variance is granted under item A, the permittee shall restore the receiving waters to baseline quality when:

(1) aquatic animal production from the facility ceases;

(2) any of the control pollutant limits in item G are exceeded;

(3) the permit for the facility expires, and reissuance of the permit is not applied for or is applied for and denied;

(4) the permit for the facility is revoked;

(5) an agency order to cease operation is issued; or

(6) the required financial assurance under item F for closure, postclosure monitoring, or corrective actions is not maintained with the proper payment or substitute instrument.

E. Closure plan. The applicant shall submit a closure plan with the variance application. The closure plan shall demonstrate financial assurance under item F for closure, postclosure monitoring, and corrective actions for restoration of the receiving waters to baseline quality, and shall describe the methods and processes that will be implemented to restore the receiving waters to baseline quality within three years of initiation of closure. The demonstration must show that no additional restoration is needed beyond three years. Restoration to baseline quality of the following parameters is required: dissolved oxygen, total phosphorus, and chlorophyll-a. Restoration to the baseline quality level means that the mean postclosure baseline quality levels shall not be significantly different as determined with the appropriate statistical test from the mean preoperational baseline quality level.

F. Financial assurance. The applicant shall submit to the commissioner for review and approval a closure, postclosure monitoring, and corrective action cost estimate, and evidence of financial assurance, prepared in accordance with parts 7035.2685 to 7035.2805.

G. Control pollutant limits. The following control pollutant limits are established to prevent irreversible pollution and to protect the existing beneficial uses, and apply to the receiving waters at all times:

Substance or Characteristic	Limiting Concentration or Range
Total organic carbon	5 milligrams per liter*
Nitrate nitrogen	10 milligrams per liter**
Chlorophyll-a	30 micrograms per liter***
Dissolved oxygen	Not less than 3 milligrams per liter in the bottom half of the hypolimnion and 5 milligrams per liter in the upper half of the hypolimnion****

* Annual mean.

** Instantaneous value. "Instantaneous value" means the concentration in one sample.

*** Monthly mean (May through September).

**** Instantaneous value. If the baseline monitoring shows that the preoperational oxygen concentration for the same time of the year is less than three milligrams per liter for the bottom half of the hypolimnion and five milligrams per liter for the upper

half, there shall be no further reduction of the preoperational oxygen concentrations. If the baseline quality of a pollutant is greater than the control pollutant limit, or less in the case of dissolved oxygen, the baseline quality of the pollutant shall be used as the control pollutant limit.

Subp. 6. **Special conditions.**

A. Monitoring, testing, and reporting.

(1) In addition to the requirements for monitoring, testing, and reporting under part 7001.0150, subpart 2, item B, the permittee shall report the aquatic animal production and amount of fish food used.

(2) The commissioner may require the permittee to monitor receiving waters to determine natural background levels and baseline quality and to determine compliance with state and federal antidegradation and water quality standard requirements. The monitoring shall consider natural seasonal and year-to-year variations in background levels and baseline quality.

B. Collection and disposal of aquatic animal mortalities and blood. The permittee shall transport aquatic animal mortalities for rendering or disposal at a land-based facility. Aquatic animal mortalities shall not be disposed of in waters of the state. The permittee shall prevent blood produced through harvest of aquatic animals from entering waters of the state untreated. The blood generated shall be transported to a land-based rendering or disposal facility approved by the commissioner, or discharged to a publicly owned treatment works in accordance with the applicable publicly owned treatment works NPDES/SDS permit.

C. Record keeping. The permittee shall maintain an operation record book of daily operations and other occurrences that may affect water quality including addition of fish food, composition of fish food, aquatic animal transfers and harvests, cleaning, mortalities, major weather events, and power failures. The operation record book shall be available at all times for inspection and copying by the commissioner.

D. Annual report. Each year, the permittee shall submit an annual report to the commissioner. The report shall include:

(1) a general description of the operations conducted for the past calendar year;

(2) a summary of the monitoring data;

(3) the mass of aquatic animals currently at the facility;

(4) aquatic animal production at the facility for the past calendar year;

(5) methods, amounts, and locations of the removal and disposal of waste fish food, filter backwash, sludges, sediments, mortalities, and other accumulated solids generated at the facility; and

(6) proposed changes in operation and/or production for the coming year.

E. Water treatment and chemical additives. The discharge of water treatment and chemical additives shall comply with parts 7050.0218 and 7050.0221 to 7050.0227.

Statutory Authority: *MS s 14.06; 17.498; 115.03; 115.44; 116.07*

History: *17 SR 230; 18 SR 614; 18 SR 2195; 19 SR 1310; 22 SR 1466*

7050.0217 OBJECTIVES FOR PROTECTION OF SURFACE WATERS FROM TOXIC POLLUTANTS.

Subpart 1. **Purpose and applicability.** The purpose of parts 7050.0217 and 7050.0218 are to establish methods for developing site-specific water quality criteria for toxic pollutants in the absence of numerical standards listed in parts 7050.0221 to 7050.0227. The site-specific numerical criteria established by these methods protect Class 1 surface waters for public and private domestic consumption and Class 2 waters for the propagation and maintenance of fish and aquatic life, the consumption of fish and edible aquatic life by humans, and the consumption of aquatic organisms by wildlife. These criteria also protect the uses assigned to Class 7, limited resource value, waters as described in parts 7050.0221 to 7050.0227.

Subp. 2. **Objectives.** Protection of the aquatic community from the toxic effects of pollutants means the protection of no less than 95 percent of all the species in any aquatic community. Greater protection may be applied to a community if economically, recreationally, or ecologically important species are very sensitive.

Protection of human consumers of fish, other edible aquatic organisms, and water for drinking from surface waters means that exposure from noncarcinogenic chemicals shall be below levels expected to produce known adverse effects; and the incremental cancer risk from exposure to carcinogenic chemicals, singly or in mixtures, shall not exceed one in 100,000. The combined risk from mixtures of carcinogens will be determined as described in part 7050.0222, subpart 7, item D.

Protection of wildlife that eat aquatic organisms means the protection of the most sensitive wildlife species or populations.Greater protection may be applied if the exposed animals include endangered or threatened wildlife species listed in chapter 6134, or in the Code of Federal Regulations, title 50, part 17, under the Endangered Species Act of 1973, United States Code, title 16, sections 1531 to 1543.

Statutory Authority: *MS s 115.03; 115.44*

History: *15 SR 1057; 18 SR 2195*

7050.0218 METHODS FOR PROTECTION OF SURFACE WATERS FROM TOXIC POLLUTANTS FOR WHICH NUMERICAL STANDARDS NOT PROMULGATED.

Subpart 1. **Purpose.** The numerical water quality standards for toxic pollutants in parts 7050.0221 to 7050.0227 do not address all pollutants which may be discharged to surface waters and cause toxic effects. Therefore, methods are established in this part to address on a site-by-site and case-by-case basis the discharge into surface waters of toxic pollutants not listed in parts 7050.0221 to 7050.0227.

The agency may also adopt new standards according to Minnesota Statutes, chapter 14, to replace those listed in parts 7050.0221 to 7050.0227 that are more stringent or less stringent if new scientific evidence shows that a change in the standard is justified.

Subp. 2. **Site-specific criteria for pollutants not listed in parts 7050.0221 to 7050.0227.** Site-specific criteria for toxic pollutants not listed in parts 7050.0221 to 7050.0227 shall be derived by the commissioner using the procedures in this part.

A. A site-specific criterion so derived is specific to the point source being addressed. Any effluent limitation derived from a site-specific criterion under this subpart shall only be required after the discharger has been given notice of the specific proposed effluent limitations and an opportunity to request a hearing as provided in part 7000.1800.

B. A site-specific criterion so derived for remedial action cleanup activities is specific to the affected surface water body.

Subp. 3. **Definitions.** For the purposes of parts 7050.0217 to 7050.0227, the following terms have the meanings given them.

A. "Acute-chronic ratio" or "ACR" means the ratio of the acute toxicity, expressed as a LC50 or EC50, of a toxicant to its chronic toxicity expressed as the chronic value. The ACR is used as a factor for estimating chronic toxicity on the basis of acute toxicity.

B. "Acute toxicity" means a stimulus severe enough to rapidly induce a response. In toxicity tests, a response is normally observed in 96 hours or less. Acute effects are often measured in terms of mortality or other debilitating effects, represented as LC50s or EC50s, and expressed as concentrations of mass per unit volume, percent effluent, or toxic units.

C. "Available scientific data" means information derived from scientific literature including: published literature in peer reviewed scientific journals, USEPA ambient water quality criteria documents, and other reports or documents published by the USEPA or other governmental agencies.

D. "Bioaccumulation factor" or "BAF" means the concentration of a pollutant in one or more tissues of an aquatic organism, exposed from any source of the pollutant but primarily from the diet and bottom sediments in addition to the water column, divided by the average concentration in the solution in which the organism had been living.

E. "Bioconcentration factor" or "BCF" means the concentration of a pollutant in one or more tissues of an aquatic organism, exposed only to the water as the source of the pollutant, divided by the average concentration in the solution in which the organism had been living.

F. "Cancer potency factor" or "ql*" means a factor indicative of a chemical's human cancer causing potential. The ql* is the upper 95 percent confidence limit (one-sided) of the slope from a linear nonthreshold dose-response model used by the USEPA to provide an upper bound estimate of incremental cancer risk. The ql* assumes a lifetime exposure and is expressed in days times kilogram body weight per milligram toxicant (d x kg/mg).

G. "Chronic toxicity" means a stimulus that lingers or continues for a long period of time, often one-tenth the life span or more. A chronic effect can be mortality, reduced growth, reproduction impairment, harmful changes in behavior, and other nonlethal effects.

H. "Chronic criterion" or "CC" means the highest water concentration of a toxicant or effluent to which organisms can be exposed indefinitely without causing chronic toxicity.

I. "Chronic standard" or "CS" means the highest water concentration of a toxicant to which organisms can be exposed indefinitely without causing chronic toxicity. Chronic standards are listed in part 7050.0222.

J. "Chronic value" means the geometric mean of the highest tested concentration that did not cause an unacceptable adverse effect and the lowest tested concentration that did cause an unacceptable adverse effect, and in which all higher test values cause an effect, in an approved chronic test.

K. "Cold water fisheries" means a community of fish including species of trout and salmon from the Salmonidae family that inhabit trout waters as defined in part 7050.0420.

L. "Criterion" means a number or numbers established for a pollutant derived under this part, or issued by the USEPA, to protect aquatic life, humans, or wildlife.

M. "Duration" means the time over which the instream concentration of a pollutant is averaged for comparison with the standard or criterion.

N. "Effect concentration" or "EC50" means the toxicant concentration that causes equilibrium loss, immobilization, mortality, or other debilitating effects in 50 percent of the exposed organisms during a specific time of observation.

O. "Final acute value" or "FAV" means an estimate of the concentration of a pollutant corresponding to the cumulative probability of 0.05 in the distribution of all the acute toxicity values for the genera or species from the acceptable acute toxicity tests conducted on a pollutant. The FAV is the acute toxicity limitation applied to mixing zones in part 7050.0210, subpart 5; and to dischargers in parts 7050.0211, subpart 1; 7050.0212, subpart 6; and 7050.0214, subpart 1.

P. "Genus mean acute value" or "GMAV" means the geometric mean of the SMAVs available for the genus.

Q. "K value" means the fraction of the total allowable daily dose of a toxic pollutant that is attributed to drinking water and fish consumption relative to other sources of the pollutant to humans, such as air or food, in the calculation of criteria. In the absence of sufficient data to establish a chemical-specific K value, the K value will be 0.2.

R. "Lethal concentration" or "LC50" means the toxicant concentration killing 50 percent of the exposed organisms in a specific time of observation.

S. "Lowest observable adverse effect level" or "LOAEL" means the lowest tested concentration that caused a statistically significant occurrence of an adverse effect in comparison with a control when all higher test concentrations caused adverse effects.

T. "Maximum criterion" or "MC" means the highest concentration of a toxicant in water to which aquatic organisms can be exposed for a brief time with zero to slight mortality. The MC equals the FAV divided by two.

U. "Maximum standard" or "MS" means the highest concentration of a toxicant in water to which aquatic organisms can be exposed for a brief time with zero to slight mortality. The MS equals the FAV divided by two. Maximum standards are listed in part 7050.0222.

V. "National methods" means the methods the USEPA uses to develop aquatic life criteria as described in Stephan, C.E., D.J. Mount, D.J. Hansen, J.H. Gentile, G.A. Chapman, and W.A. Brungs, 1985, "Guidelines for deriving numerical national water quality criteria for the protection of aquatic organisms and their uses," USEPA, Office of Research and Development, Environmental Research Laboratories, Duluth MN; Narragansett, RI, Corvallis, OR. 98 p; available through the National Technical Information Service, Springfield, VA.

W. "No observable adverse effect level" or "NOAEL" means the highest tested concentration that did not cause a statistically significant occurrence of an adverse effect in comparison with a control when no lower test concentration caused an injurious or adverse effect.

X. "Octanol to water partition coefficient" or "K_{ow}" means the ratio of the concentration of a substance in the octanol phase to its concentration in the aqueous phase of a two-phase octanol to water system after equilibrium of the substance between the two phases has been achieved. The $\log_{10} K_{ow}$ has been shown to be proportional to the bioconcentration potential of lipophilic organic chemicals.

Y. "Parachor" means the surface tension adjusted molar volume, and specifically is the molecular weight of a liquid times the fourth root of its surface tension, divided by the difference between the density of the liquid and the density of the vapor in equilibrium with it; essentially constant over wide ranges of temperature. Parachor relates to the physical properties of a molecule that affect its potential to bioaccumulate in aquatic organisms.

Z. "Percent effluent" means the representation of acute or chronic toxicity of an effluent as a percent of whole effluent mixed in dilution water, where acute toxicity is expressed by LC50s or EC50s and chronic toxicity is expressed by NOAELs.

AA. "Reference dose" or "RfD" means an estimate of a daily exposure to the human population, including sensitive subpopulations, that is likely to be without appreciable risk or deleterious effects over a lifetime. The RfD is expressed in units of daily dose and was formerly known as the acceptable daily intake.

BB. "Species mean acute value" or "SMAV" means the geometric mean of all the available and acceptable acute values for a species.

CC. "Standard" means a number or numbers established for a pollutant or water quality characteristic to protect a specified beneficial use as listed in parts 7050.0221 to 7050.0227. The standard for a toxic pollutant includes the CS, MS, and FAV. Some pollutants do not have an MS or an FAV due to insufficient data. For these pollutants, the CS alone is the standard.

DD. "Toxic pollutant" has the meaning given it in part 7050.0185, subpart 2, item F.

EE. "Toxic unit" means a measure of acute or chronic toxicity in an effluent. One acute toxic unit (TUa) is the reciprocal of the effluent concentration that causes 50 percent effect or mortality to organisms for acute exposures (100/LC50); one chronic toxic unit (TUc) is the reciprocal of the effluent concentration that causes no observable adverse effect level on test organisms for chronic exposures (100/NOAEL).

FF. "USEPA" means the United States Environmental Protection Agency.

GG. "Water quality characteristic" means a characteristic of natural waters, such as total hardness or pH. Some water quality characteristics can affect the toxicity of pollutants to aquatic organisms.

HH. "Whole effluent toxicity test" means the aggregate toxic effect of an effluent measured directly by a toxicity test. Effects on tested organisms are measured and expressed as toxic units or percent effluent for both acute and chronic whole effluent toxicity tests.

Subp. 4. **Adoption of USEPA national criteria.** The USEPA establishes aquatic life criteria under section 304(a)(1) of the Clean Water Act, United States Code, title 33, section 1314. The USEPA criteria, subject to modification as described in this subpart, are applicable to Class 2 waters of the state. The USEPA has described the national methods for developing aquatic life criteria in "Guidelines for deriving national numerical water quality criteria for the protection of aquatic organisms and their uses," available through the National Technical Information Service, Springfield, VA.

USEPA criteria that vary with an ambient water quality characteristic such as total hardness or pH will be established for specific waters or reaches using data available to the commissioner. Central values such as the means or medians for the characteristic will be used unless there is evidence to support using different values. Values for water quality characteristics can be estimated for specific waters or reaches that have no data by using data from a nearby watershed with similar chemical properties.

A. The USEPA criteria are adopted unchanged by the agency, unless modified under item C, as the criteria applicable to designated trout waters. Trout (Class 2A) waters are listed in parts 7050.0420 and 7050.0470.

B. The USEPA criteria are adopted, subject to modification as described in this item or item C, for application to the cool and warm water fisheries habitats. Cool and warm water fisheries (Class 2Bd, 2B, and 2C) waters are defined in part 7050.0430 or listed in part 7050.0470.

(1) Acute data, in the form of the ranked genus mean acute values used by the USEPA to determine the national criteria, are the data used to determine the Class 2Bd, 2B, and 2C criteria.

(2) GMAVs for fish in the family Salmonidae are deleted from the lowest of the ranked GMAVs so that all of the lowest four GMAVs in the USEPA data set are for nonsalmonid species. Following these deletions, no other salmonid GMAVs are deleted. If none of the lowest four GMAVs in the USEPA data set are for salmonid species, no GMAVs are deleted. The minimum of eight GMAVs specified in the national methods must be met, except that nonsalmonid fish can take the place of the salmonid requirement if the prescribed deletions eliminate all salmonids from the national data set.

(3) The number of GMAVs in the USEPA criteria data set is reduced by the number of salmonid GMAVs deleted.

(4) The FAV is determined according to the national methods as follows:

(a) for each species for which one or more acute value is available, a SMAV is calculated as the geometric mean of all the acceptable acute values;

(b) for each genus for which one or more SMAV is available, a GMAV is calculated as the geometric mean of all the SMAVs;

(c) the GMAVs are ranked from the lowest to the highest;

(d) a rank is assigned to the GMAVs from "1" for the lowest to "N" for the highest, and if two or more GMAVs are identical, successive ranks are arbitrarily assigned;

(e) the cumulative probability (P) for each GMAV is calculated as rank/(N + 1);

(f) the four GMAVs that have cumulative probabilities closest to 0.05 are selected, and if there are less than 59 GMAVs, these will always be the lowest four GMAVs; and

(g) using the selected GMAVs and their respective cumulative probabilities, calculate:

$$S^2 = \frac{\Sigma((\ln GMAV)^2)-((\Sigma(\ln GMAV))^2/4)}{\Sigma(P)-((\Sigma(\text{square root of } P))^2/4)}$$

$$L = (\Sigma(\ln GMAV)-S(\Sigma(\text{square root of } P)))/4$$

$$A = S(\text{square root of } 0.05) + L$$

$$FAV = e^A$$

where: FAV = final acute value
N = number of GMAVs
P = rank/N+1
ln = natural logarithm
S,L, and A are intermediate steps

(5) If, as a result of the recalculation of the USEPA criterion for application to Class 2Bd, 2B, and 2C waters, the FAV for the Class 2Bd, 2B, and 2C water is lower than the FAV for Class 2A waters, the Class 2Bd, 2B, and 2C FAV will be changed to equal the Class 2A FAV, unless the lower Class 2Bd, 2B, and 2C FAV is justified based on the available toxicological data.

(6) The MC is the FAV divided by two.

(7) The CC is determined using the national methods. If sufficient chronic data is available to determine the CC directly from chronic values, salmonid chronic values will be deleted from the national data set following the same procedures used for acute data in this item. If sufficient chronic data is not available, the USEPA ACR, subject to modification under item C, is divided into the FAV to determine the CC.

C. If the commissioner finds that the information that supports a USEPA criterion is no longer current or complete for reasons including, but not limited to, changes to the relationship between a water quality characteristic and toxicity; the ACR; the weight given to toxicity data for a commercially or recreationally important species; the RfD; the ql*; or the BAF; then the commissioner shall evaluate all available information and modify the criterion according to the information and with the objectives in part 7050.0217. Any effluent limitation determined to be necessary based on criteria derived under this item shall only be required after the discharger has been given notice to the specific proposed effluent limitations and an opportunity to request a hearing as provided in part 7000.1800.

Subp. 5. **Toxicity-based criteria.** Toxicity-based aquatic life criteria shall be determined using the methods in this subpart when no USEPA criterion is available.

A. Criteria shall be determined using the USEPA national method if the minimum data required in this item and item B are met. Data for saltwater organisms can be used for nonionizable organic chemicals. Data for saltwater organisms cannot be used for ionizable organic or inorganic chemicals. Data for all North American species can be used. A minimum of eight GMAVs representing the following groups must be available:

(1) species in three families in the phylum Chordata, one of which must be a salmonid;

(2) a freshwater or saltwater crustacean;

(3) a freshwater cladoceran;

(4) a family in a phylum other than Chordata or Arthropoda; and

(5) two other families not in the phylum Chordata.

B. The additional acute data requirements in subitems (1) and (2) apply when developing criteria for pesticides.

(1) If the chemical is an insecticide, one of the eight GMAVs required in item A, subitem (5), must be for an insect.

(2) If the chemical is a herbicide, the eight GMAVs required in item A must be supplemented with acute data for two plant species, one of which is an algal species.

C. The FAV is calculated as described in subpart 4, item B, subitem (4). No more than two of the lowest four GMAVs may be for a saltwater species.

D. The MC is the FAV divided by two.

E. The CC is the FAV divided by an ACR. Available chronic data are used to determine ACRs as described in item F and measured chronic values are compared to the CC. If an approved chronic value for a commercially, recreationally, or ecologically important freshwater species is lower than the CC, the CC will be set to equal that chronic value.

F. The ACR is determined according to subitems (1) to (3).

(1) A measured ACR is determined by dividing the acute value by the chronic value for the same species from tests that meet the requirements for determining ACRs in the national method. If more than one ACR is available for a species, a species mean ACR is calculated as the geometric mean of the available ACRs.

(2) A minimum of three measured ACRs, each for a different species, must be available to determine a final measured ACR. The final measured ACR is the geometric mean of all the available species mean ACRs.

(3) If no measured ACRs are available, the following default ACRs shall be used:

(a) an ACR of 20 is used with nonpesticide, nonbioaccumulative organic chemicals with log K_{ow} values of three or less; and

(b) an ACR of 55 is used with pesticides, inorganic chemicals, or bioaccumulative organic chemicals with log K_{ow} values greater than three.

(4) If two or fewer measured ACRs are available, the default ACRs in subitem (3) are incorporated into the calculation of the final ACR as follows:

(a) if two measured ACRs are available, the final ACR is the geometric mean of the two measured ACRs and the appropriate default ACR; and

(b) if one measured ACR is available, the final ACR is the geometric mean of the measured ACR and two appropriate default ACRs.

G. If the acute data available do not meet the requirements in items A and B, toxicity-based criteria can be determined by the method in this item. This method is not applicable to ionizable organic chemicals, or to bioaccumulative organic chemicals and pesticides with BCFs greater than 5,000 or log K_{ow} values greater than 5.19.

(1) Acute data are assembled. A minimum of two acute values in the following groups must be available:

(a) a member of the class Osteichthyes (fish); and

(b) a member of one of the following genera in the family Daphnidae: *Daphnia, Ceriodaphnia, Simocephalus*.

(2) For insecticides, a third acute value must be available for an insect species in addition to the acute values required in subitem (1).

(3) For herbicides, two acute values for plant species, one of which is an algal species, must be available in addition to the acute values required in subitem (1).

(4) Data for saltwater species shall not be used except for purposes of determining ACRs.

(5) SMAVs are calculated as the geometric mean of all the acute values for one species.

(6) GMAVs are calculated as the geometric mean of the SMAVs.

(7) The lowest GMAV from among the available GMAVs is selected.

(8) The FAV is calculated by dividing the lowest GMAV by the appropriate factor listed below, depending on the number of GMAVs available that meet the minimum data requirements in subitems (2) and (3) and in item A.

Number of GMAVs	Factor
2	13.0
3	8.0
4	7.0
5	6.1
6	5.2
7	4.3

(9) The MC is calculated by dividing the FAV by two.

(10) A final ACR is determined as described in item F, except that the default ACR shall be 18 for all chemicals for which this method is applicable as specified in this item.

(11) The CC is calculated by dividing the FAV by the appropriate ACR.

(12) If chronic data are available, they are used to determine measured ACRs as described in item F, and chronic data are compared to the CC.

Subp. 6. **Human health-based criteria.** Human health-based aquatic life criteria protect humans from potential adverse effects of eating fish and edible aquatic organisms from Class 2 waters and from the consumption of drinking water from Class 1 surface waters.

The RfDs used to calculate criteria for noncarcinogenic chemicals and the ql*s used to calculate criteria for carcinogenic chemicals are obtained from the Integrated Risk Information System (IRIS), online, maintained and made available by the USEPA, Office of Health and Environmental Assessment, Environmental Criteria and Assessment Office, Cincinnati, OH.

A. Criteria for noncarcinogenic chemicals applicable to surface waters designated Class 2A or 2Bd are calculated as follows:

$$\text{dfCC mg/l} = \frac{\text{RfD mg/kg/day} \times 70 \text{ kg} \times \text{K}}{2 \text{ l/day} + [0.030 \text{ kg/day (BAF)}]}$$

where dfCC = drinking water plus fish consumption criterion in mg/l
RfD = reference dose in mg/kg/day
70 kg = standard weight of an adult
K = exposure attributed to drinking water and fish consumption (see item E)
2 l/day = two liters of water consumed per day
0.030 kg/day = amount of fish assumed to be consumed per day
BAF = final BAF in liters per kg.

B. Criteria for noncarcinogenic chemicals applicable to Class 2B or 2C surface waters are calculated as follows:

$$\text{fCC mg/l} = \frac{\text{RfD mg/kg/day} \times 70 \text{ kg} \times \text{K}}{0.01 \text{ l/day} + [0.030 \text{ kg/day (BAF)}]}$$

where fCC = fish consumption criterion in mg/l
0.01 l/day = assumed incidental ingestion of water.

C. Criteria for carcinogenic chemicals applicable to surface waters designated Class 2A or 2Bd are calculated as follows:

$$\text{dfCC mg/l} = \frac{70 \text{ kg} \times 10^{-5}}{q1^* \, [2 \text{ 1/day} + 0.030 \text{ kg/day (BAF)}]}$$

where 10^{-5} = a risk level of one chance in 100,000

$q1^*$ = the cancer potency factor in days x kg/mg.

D. Criteria for carcinogenic chemicals applicable to Class 2B or 2C surface waters are calculated as follows:

$$\text{fCC mg/l} = \frac{70 \text{ kg} \times 10^{-5}}{q1^* \, [0.01 \text{ 1/day} + 0.030 \text{ kg/day (BAF)}]}$$

E. A default exposure value (K) of 0.2 will be used unless the Minnesota Department of Health uses a different exposure value in the calculation of a drinking water criterion, or sufficient exposure data is available to support an alternative value.

Subp. 7. **Bioaccumulation.** A final BAF can be determined either from bioaccumulation measurements in the field or from laboratory bioconcentration experiments. Laboratory tests should have a duration of at least 28 days, or the bioconcentration should have achieved steady state. Bioconcentration tests should meet the requirements in the national methods.

If measured BAFs and BCFs are not available for lipophilic organic chemicals, a final BAF can be estimated using the relationship between bioconcentration and the log of the octanol to water partition coefficient (log K_{ow}) as described in item D.

A. A final BAF for inorganic chemicals is equal to the geometric mean of the available BCFs and BAFs. The BCFs and BAFs can be for either whole body or edible tissue, or both.

B. A final BAF for lipophilic organic chemicals is determined when measured BAFs or BCFs and percent lipid data are available according to subitems (1) to (10).

(1) Measured BAFs and BCFs are assembled from USEPA documents, scientific literature, and other available sources of scientific data. BAFs and BCFs may be for edible portions of aquatic organisms or for the whole body.

(2) Normalized BAFs and BCFs are obtained by dividing the BAFs and BCFs by the arithmetic average percent lipid for the test organisms.

(3) Species mean BAFs are calculated as the geometric mean of all the normalized BAFs for a species. Species mean BCFs are calculated as the geometric mean of all the normalized BCFs for a species.

(4) A chemical-specific mean BAF or BCF is calculated as the geometric mean of the species mean BAFs or BCFs. The species mean normalized BAFs and BCFs for chemicals with log K_{ow} values less than three are averaged together. The species mean normalized BAFs and BCFs for chemicals with log K_{ow} values of three or more are averaged separately.

(5) A final BAF for a chemical with a log K_{ow} value of less than three is determined as follows:

(a) for cold water fish, the normalized mean of the combined BAFs and BCFs is multiplied by six percent lipid; and

(b) for cool and warm water fish, the normalized mean of the combined BAFs and BCFs is multiplied by 1.5 percent lipid.

(6) A final BAF for a chemical with a log K_{ow} value of three or more, for which measured BAFs and percent lipid data are available, is determined by multiply-

ing the normalized mean BAF by six percent lipid for Class 2A waters or 1.5 percent lipid for Class 2Bd, 2B, and 2C waters.

(7) The final BAF for chemicals with a log K_{ow} value of three or more, for which BCF and percent lipid data are available, is the value determined in subitem (6), multiplied by the appropriate factor from subitem (8).

(8) The BCF to BAF adjustment factor is applicable to lipophilic organic chemicals with log K_{ow} values of three or more, unless chemical-specific data indicates the application of the factor is not appropriate. A value of six is used to calculate the factor for chemicals with log K_{ow} values greater than six. The BCF to BAF adjustment factor is calculated using the following equation; the results shall not be less than one nor greater than 15: $\log_{10}$ (BCF to BAF factor) = 0.384 $\log_{10}$ K_{ow} - 0.00055 Parachor - 1.128.

(9) The following are representative factors from the equation in subitem (8):

log K_{ow}	Factor (at Parachor = 500)
3.0	0.6 (1.0 is used)
3.5	0.9 (1.0 is used)
4.0	1.4
4.5	2.1
5.0	3.3
5.5	5.1
6.0	8.0

(10) When both measured BAFs and BCFs are available for chemicals with log K_{ow} values of three or more, the commissioner will evaluate both BCFs and BAFs and other available scientific data to select the appropriate values to use.

C. A final BAF is determined for lipophilic organic chemicals having measured BAF or BCF data, but no percent lipid data, as follows:

(1) the geometric mean of the species mean BAFs is the final BAF;

(2) the geometric mean of the species mean BCFs and BAFs is the final BAF for chemicals having log K_{ow} values less than three; and

(3) the final BAF for chemicals having log K_{ow} values of three or more is the geometric mean of the species mean BCFs multiplied by the appropriate factor from the equation in item B, subitem (8). Chemicals may have both BAF and BCF data. The geometric mean BCF will be adjusted by the factor from the equation in item B, subitem (8), and the results compared to the measured BAFs. The commissioner will evaluate both BCFs and BAFs and other available scientific data to select a final BAF. BAF data are usually preferred over BCF data.

D. A final BAF for lipophilic organic chemicals is determined according to subitems (1) to (4) when no measured BAFs or BCFs are available.

(1) A BCF can be estimated based on the relationship between BCFs and the log K_{ow}. A value of six is used to calculate the BCF for chemicals with log K_{ow} values greater than six. The equation is: $\log_{10}$ BCF = 0.79 $\log_{10}$ K_{ow} value - 0.40. Where $\log_{10}$ K_{ow} = the log of the octanol to water partition coefficient. If measured log K_{ow} values are not available in the scientific literature, they may be estimated using quantitative structure activity relationships. The average percent lipid of the organisms used to establish this relationship is 7.6.

(2) BCFs estimated from the equation in subitem (1) are adjusted for the percent lipid of edible portions.

(a) The BCF for cold water fish equals the estimated BCF from the equation in subitem (1) times 6/7.6.

(b) The BCF for cool and warm water fish equals the estimated BCF from the equation in subitem (1) times 1.5/7.6.

(3) The final BAF for chemicals with log K_{ow} values less than three equals the estimated BCF from subitem (2).

(4) The final BAF for chemicals with log K_{ow} values of three or more equals the estimated BCF from subitem (2), multiplied by the factor from the equation in item B, subitem (8).

Subp. 8. **Taste and odor criteria.** The agency shall limit the addition of pollutants to surface waters to the extent necessary to protect fish and other edible freshwater organisms from acquiring objectionable tastes and odors. The agency will use the USEPA national organoleptic criteria, established under section 304(a)(1) of the Clean Water Act, United States Code, title 33, section 1314, when establishing concentrations above which unacceptable tastes and odors could be imparted to aquatic organisms.

Subp. 9. **Wildlife-based criteria.** The agency shall use the procedures in this subpart to establish wildlife-based criteria. Wildlife criteria shall protect wildlife consumers of freshwater aquatic organisms from adverse effects of toxic pollutants. Wildlife criteria are applicable to all surface waters, subject to the exceptions in subpart 10, item B, subitem (1).

A. Wildlife-based criteria shall be determined using toxicological information from available sources of scientific data for wildlife or domestic animal species, exposed to toxic pollutants through ingestion including gavage.

B. Wildlife-based criteria are calculated using the following formula:

$$\text{WCC mg/l} = \frac{\text{NOAEL} \times \text{BWt} \times \text{SSF}}{\text{DW} + (\text{F} \times \text{BAF})}$$

where: WCC = wildlife CC mg/l

NOAEL = no observable adverse effect level in mg of substance per kg of body weight per day (mg/kg BWt/day) as derived from mammalian or avian toxicity studies. If the NOAEL is in mg/l, the NOAEL will be multiplied by the average daily volume of water consumed by the test animals in liters per day and divided by the average weight of the test animals in kg. If the NOAEL is in mg/kg of food consumed, the NOAEL will be multiplied by the average amount of food consumed daily by the test animals and divided by the average weight of the test animals in kg.

BWt = average body weight of test organisms in kg.

SSF = species sensitivity factor to account for difference in the sensitivity in test species. This factor will vary between 1 and 0.1. The appropriate factor will be determined by the commissioner based on available scientific data on the relative sensitivity of the test organism compared to other wildlife species.

DW = average volume of water consumed per day by the test animals in liters.

F = average amount of food consumed per day by test animals in kg.

BAF = BAF in liters per kg.

C. Drinking (DW) and feeding (F) rates for test organisms can be estimated using the following equations if these rates are not available from the original study:

(1) for mammalian species:

(a) $DW = 0.099 \times (BWt)^{0.90}$; and

(b) $F = 0.0687 \times (BWt)^{0.82}$; and

(2) for avian species:

(a) $DW = 0.059 \times (BWt)^{0.67}$; and

(b) $F = 0.058 \times (BWt)^{0.65}$.

D. A final BAF for calculating a wildlife chronic criterion (WCC) is determined as in subpart 7, except that the BCFs and BAFs are adjusted to represent whole body BCFs and BAFs.

(1) Normalized BCFs and BAFs are multiplied by 12 percent lipid for WCC applicable to Class 2A waters.

(2) Normalized BCFs and BAFs are multiplied by five percent lipid for WCC applicable to Class 2Bd, 2B, and 2C waters.

(3) If percent lipid data is not available, whole body BCFs and BAFs are used as reported.

(4) BCFs estimated using the relationship between BCFs and the log K_{ow} are normalized by dividing the estimated BCF by 7.6 and then multiplying by 12 for Class 2A waters or by five for Class 2Bd, 2B, and 2C waters.

(5) Measured or estimated BCFs for lipophilic organic chemicals with log K_{ow} values in the range of three or more are multiplied by the factor from subpart 7, item B, subitem (8).

Subp. 10. **Applicable criteria.** The criterion for a pollutant includes: the CC, the MC, and the FAV. The criteria for toxic pollutants for surface waters are the lowest of the applicable criteria derived under this part.

A. Applicable criteria for Class 2A, 2Bd, 2B, and 2C surface waters are the lowest of the following:

(1) a CC and MC based on toxicity to aquatic organisms from subpart 4 or 5;

(2) a CC based on plant toxicity from subpart 4 or 5;

(3) a dfCC or fCC from subparts 6 and 7;

(4) a concentration that will prevent unacceptable taste or odor in water, fish, or other edible aquatic organisms from subpart 8; or

(5) a WCC from subpart 9.

B. Applicable criteria for Class 7 waters are the lowest of the following:

(1) a WCC from subpart 9, if aquatic organisms can be sustained in the Class 7 water so that they are subject to predation by wildlife; or

(2) other drinking water or aquatic life standards for toxic pollutants, consistent with the uses Class 7 waters are protected for under part 7050.0200.

C. In the site-specific application of criteria developed in this subpart to establish an effluent limitation for National Pollutant Discharge Elimination System and State Disposal System permits or to establish the degree of remedial action cleanup activities, the provisions of part 7050.0222, subpart 7, items B to E shall apply.

Statutory Authority: *MS s 14.06; 115.03; 115.44; 116.07*

History: *15 SR 1057; 18 SR 2195; 19 SR 1310; 24 SR 1105*

7050.0220 SPECIFIC STANDARDS OF QUALITY AND PURITY BY ASSOCIATED USE CLASSES.

Subpart 1. **General.** The numerical and narrative water quality standards in parts 7050.0221 to 7050.0227 prescribe the qualities or properties of the waters of the state that are necessary for the designated public uses and benefits. If the standards in this part are exceeded, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to designated uses or established classes of the waters of the state.

Standards for metals are expressed as total metal but must be converted to dissolved metal standards to determine water quality-based effluent limits. Water

quality-based effluent limits for metals are expressed as total metal. Conversion factors for converting total to dissolved metal standards are listed in part 7050.0222, subpart 9. The conversion factor for metals not listed in part 7050.0222, subpart 9, is one. The dissolved metal standard equals the total metal standard times the conversion factor.

The standards are listed for associated classes in tables under subparts 3a to 6a:

A. subpart 3a, Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5;

B. subpart 4a, Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5;

C. subpart 5a, Classes 2B, 2C, or 2D; 3A, 3B, 3C, or 3D; 4A and 4B or 4C; and 5; and

D. subpart 6a, Classes 3C, 4A and 4B, 5, and 7.

Subp. 2. **Explanation of tables.** Class 1 standards listed in the tables in subparts 3a and 4a are the United States Environmental Protection Agency primary (maximum contaminant levels) and secondary drinking water standards, as contained in Code of Federal Regulations, title 40, part 141, subparts B and G, and part 143 (1992); and sections 141.61 and 141.62 as amended through July 17, 1992, excluding the bacteriological, radiological, treatment technological, and water treatment additive standards.

The tables include the following abbreviations and acronyms:

AN	means aesthetic enjoyment and navigation, Class 5 waters
(c)	means the chemical is assumed to be a human carcinogen
CS	or "chronic standard" means the highest water concentration of a toxicant to which organisms can be exposed indefinitely without causing chronic toxicity
DC	means domestic consumption (drinking water), Class 1 waters
exp. ()	means the natural antilogarithm (base e) of the expression in parenthesis
FAV	or "final acute value" means an estimate of the concentration of a pollutant corresponding to the cumulative probability of 0.05 in the distribution of all the acute toxicity values for the genera or species from the acceptable acute toxicity tests conducted on a pollutant
IC	means industrial consumption, Class 3 waters
IR	means agriculture irrigation use, Class 4A waters
LS	means agriculture livestock and wildlife use, Class 4B waters
MS	or "maximum standard" means the highest concentration of a toxicant in water to which aquatic organisms can be exposed for a brief time with zero to slight mortality. The MS equals the FAV divided by two
(S)	means the associated value is a secondary drinking water standard
su	means "standard unit." It is the reporting unit for pH

TH means total hardness in mg/l, which is the sum of the calcium and magnesium concentrations expressed as $CaCO_3$

TON means threshold odor number

For the FAV and MS values noted with an asterisk (*), see part 7050.0222, subpart 7, item E.

Important synonyms or acronyms for some chemicals are listed in parentheses below the primary name. Standards that vary with total hardness or pH are in the form of formulas and are listed as numbered notes at the end of the tables.

When two or more use classes have standards for the same pollutant, the most stringent standard applies pursuant to part 7050.0450. All surface waters are protected for Class 6, but this class has no numerical standards so it is not included in the tables.

Subp. 3. [Repealed, 24 SR 1105]

Subp. 3a. **Water quality standards applicable to use Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5.**

A. MISCELLANEOUS SUBSTANCE OR CHARACTERISTIC

STANDARDS FOR USE CLASSES

2A CS	2A MS	2A FAV	1B DC	3A/3B IC	4A IR	4B LS	5 AN
(1) Ammonia, un-ionized as N - Units: µg/l							
16	none	none	-	-	-	-	-
(2) Asbestos, >10 µm (c) - Units: fibers/l							
-	-	-	7.0e+06	-	-	-	-
(3) Bicarbonates (HCO_3) - Units: meq/l							
-	-	-	-	-	5	-	-
(4) Chloride - Units: mg/l							
230	860	1720	250(S)	50/100	-	-	-
(5) Chlorine, total residual - Units: µg/l							
11	19	38	-	-	-	-	-
(6) Color - Units: Pt-Co							
30	none	none	15(S)	-	-	-	-
(7) Cyanide, free - Units: µg/l							
5.2	22	45	200	-	-	-	-

(8) Dissolved oxygen - Units: mg/l

-	7 as a daily minimum	-	-	-	-	-	-

(9) Fecal coliform organisms - See Note No. 1 below

(10) Fluoride - Units: mg/l

-	-	-	4	-	-	-	-

(11) Fluoride - Units: mg/l

-	-	-	2(S)	-	-	-	-

(12) Foaming agents - Units: μg/l

-	-	-	500(S)	-	-	-	-

(13) Hardness, Ca + Mg as $CaCO_3$ - Units: mg/l

-	-	-	-	50/250	-	-	-

(14) Hydrogen sulfide - Units: mg/l

-	-	-	-	-	-	-	0.02

(15) Nitrate, as N - Units: mg/l

-	-	-	10	-	-	-	-

(16) Nitrite, as N - Units: mg/l

-	-	-	1	-	-	-	-

(17) Nitrate + Nitrite, as N - Units: mg/l

-	-	-	10	-	-	-	-

(18) Odor - Units: TON

-	-	-	3(S)	-	-	-	-

(19) Oil - Units: μg/l

500	5000	10000	-	-	-	-	-

(20) pH, low - Units: su

6.5	none	none	6.5(S)	6.5/6.0	6.0	6.0	6.0

(21) pH, high - Units: su

8.5	none	none	8.5(S)	8.5/9.0	8.5	9.0	9.0

(22) Radioactive materials - See Note No. 2 below

(23) Salinity, total - Units: mg/l

-	-	-	-	-	-	1000	-

(24) Sodium - Units: meq/l

-	-	-	-	-	60% of total cations	-	-

(25) Sulfate - Units: mg/l

-	-	-	250(S)	-	-	-	-

(26) Sulfates, wild rice present - Units: mg/l

-	-	-	-	-	10	-	-

(27) Specific conductance, at 25°C - Units: µmhos/cm

-	-	-	-	-	1000	-	-

(28) Temperature - Units: °F - No material increase

(29) Total dissolved salts - Units: mg/l

-	-	-	-	-	700	-	-

(30) Total dissolved solids - Units: mg/l

-	-	-	500(S)	-	-	-	-

(31) Turbidity - Units: NTU

10	none	none	1-5	-	-	-	-

B. METALS AND ELEMENTS SUBSTANCE OR CHARACTERISTIC

STANDARDS FOR USE CLASSES

2A CS	2A MS	2A FAV	1B DC	3A/3B IC	4A IR	4B LS	5 AN
(1) Aluminum - Units: µg/l							
87	748	1496	50-200 (S)	-	-	-	-
(2) Antimony - Units: µg/l							
5.5	90	180	6	-	-	-	-

(3) Arsenic - Units: µg/l

2.0	360	720	50	-	-	-	-

(4) Barium - Units: µg/l

-	-	-	2000	-	-	-	-

(5) Beryllium - Units: µg/l

-	-	-	4.0	-	-	-	-

(6) Boron - Units: µg/l

-	-	-	-	-	500	-	-

(7) Cadmium - Units: µg/l - See Note No. 3 below

-	-	-	5	-	-	-	-

(8) Chromium, +3 - Units: µg/l - See Note No. 4 below
(9) Chromium, +6 - Units: µg/l

11	16	32	-	-	-	-	-

(10) Chromium, total - Units: µg/l

-	-	-	100	-	-	-	-

(11) Cobalt - Units: µg/l

2.8	436	872	-	-	-	-	-

(12) Copper - Units: µg/l - See Note No. 5 below

-	-	-	1000(S)	-	-	-	-

(13) Iron - Units: µg/l

-	-	-	300(S)	-	-	-	-

(14) Lead - Units: µg/l - See Note No. 6 below
(15) Manganese - Units: µg/l

-	-	-	50(S)	-	-	-	-

(16) Mercury - Units: µg/l

0.0069	2.4*	4.9*	2	-	-	-	-

(17) Nickel - Units: µg/l - See Note No. 7 below

-	-	-	100	-	-	-	-

(18) Selenium - Units: µg/l

5.0	20	40	50	-	-	-	-

(19) Silver - Units: µg/l - See Note No. 8 below

0.12	-	-	100(S)	-	-	-	-

(20) Thallium - Units: µg/l

0.28	64	128	2	-	-	-	-

(21) Zinc - Units: µg/l - See Note No. 9 below

-	-	-	5000(S)	-	-	-	-

C. ORGANICS SUBSTANCE OR CHARACTERISTIC

STANDARDS FOR USE CLASSES

2A CS	2A MS	2A FAV	1B DC	3A/3B IC	4A IR	4B LS	5 AN

(1) Acenaphthene - Units: µg/l

20	56	112	-	-	-	-	-

(2) Acrylonitrile (c) - Units: µg/l

0.38	1140*	2281*	-	-	-	-	-

(3) Alachlor (c) - Units: µg/l

3.8	800*	1600*	2	-	-	-	-

(4) Aldicarb - Units: µg/l

-	-	-	3	-	-	-	-

(5) Aldicarb sulfone - Units: µg/l

-	-	-	2	-	-	-	-

(6) Aldicarb sulfoxide - Units: µg/l

-	-	-	4	-	-	-	-

(7) Anthracene - Units: µg/l

0.035	0.32	0.63	-	-	-	-	-

(8) Atrazine (c) - Units: µg/l

3.4	323	645	3	-	-	-	-

(9) Benzene (c) - Units: µg/l

9.7	4487*	8974*	5	-	-	-	-

(10) Benzo(a)pyrene - Units: µg/l

-	-	-	0.2	-	-	-	-

(11) Bromoform - Units: µg/l

33	2900	5800	-	-	-	-	-

(12) Carbofuran - Units: µg/l

-	-	-	40	-	-	-	-

(13) Carbon tetrachloride (c) - Units: µg/l

1.9	1750*	3500*	5	-	-	-	-

(14) Chlordane (c) - Units: ng/l

0.073	1200*	2400*	2000	-	-	-	-

(15) Chlorobenzene (Monochlorobenzene) - Units: µg/l

20	423	846	100	-	-	-	-

(16) Chloroform (c) - Units: µg/l

53	1392	2784	-	-	-	-	-

(17) Chlorpyrifos - Units: µg/l

0.041	0.083	0.17	-	-	-	-	-

(18) Dalapon - Units: µg/l

-	-	-	200	-	-	-	-

(19) DDT (c) - Units: ng/l

0.11	550*	1100*	-	-	-	-	-

(20) 1,2-Dibromo-3-chloropropane (c) - Units: µg/l

-	-	-	0.2	-	-	-	-

(21) Dichlorobenzene (ortho) - Units: µg/l

-	-	-	600	-	-	-	-

(22) 1,4-Dichlorobenzene (para) (c) - Units: µg/l

-	-	-	75	-	-	-	-

(23) 1,2-Dichloroethane (c) - Units: µg/l

3.5	45050*	90100*	5	-	-	-	-

(24) 1,1-Dichloroethylene - Units: µg/l

-	-	-	7	-	-	-	-

(25) 1,2-Dichloroethylene (cis) - Units: µg/l

-	-	-	70	-	-	-	-

(26) 1,2-Dichloroethylene (trans) - Units: µg/l

-	-	-	100	-	-	-	-

(27) 2,4-Dichlorophenoxyacetic acid (2,4-D) - Units: µg/l

-	-	-	70	-	-	-	-

(28) 1,2-Dichloropropane (c) - Units: µg/l

-	-	-	5	-	-	-	-

(29) Dieldrin (c) - Units: ng/l

0.0065	1300*	2500*	-	-	-	-	-

(30) Di-2-ethylhexyl adipate - Units: µg/l

-	-	-	400	-	-	-	-

(31) Di-2-ethylhexyl phthalate (c) - Units: µg/l

1.9	none*	none*	6	-	-	-	-

(32) Di-n-Octyl phthalate - Units: µg/l

30	825	1650	-	-	-	-	-

(33) Dinoseb - Units: µg/l

-	-	-	7	-	-	-	-

(34) Diquat - Units: µg/l

-	-	-	20	-	-	-	-

(35) Endosulfan - Units: µg/l

0.0076	0.084	0.17	-	-	-	-	-

(36) Endothall - Units: µg/l

-	-	-	100	-	-	-	-

(37) Endrin - Units: µg/l

0.0039	0.090	0.18	2	-	-	-	-

(38) Ethylbenzene (c) - Units: µg/l

68	1859	3717	700	-	-	-	-

(39) Ethylene dibromide - Units: µg/l

-	-	-	0.05	-	-	-	-

(40) Fluoranthene - Units: µg/l

1.9	3.5	6.9	-	-	-	-	-

(41) Glyphosate - Units: µg/l

-	-	-	700	-	-	-	-

(42) Heptachlor (c) - Units: ng/l

0.10	260*	520*	400	-	-	-	-

(43) Heptachlor epoxide (c) - Units: ng/l

0.12	270*	530*	200	-	-	-	-

(44) Hexachlorobenzene (c) - Units: ng/l

0.061	none*	none*	1000	-	-	-	-

(45) Hexachlorocyclopentadiene - Units: µg/l

-	-	-	50	-	-	-	-

(46) Lindane (c) (Hexachlorocyclohexane, gamma-) - Units: µg/l

0.0087	1.0*	2.0*	0.2	-	-	-	-

(47) Methoxychlor - Units: µg/l

-	-	-	40	-	-	-	-

(48) Methylene chloride (c) (Dichloromethane) - Units: µg/l

45	13875*	27749*	5	-	-	-	-

(49) Oxamyl (Vydate) - Units: µg/l

-	-	-	200	-	-	-	-

(50) Naphthalene - Units: µg/l

81	409	818	-	-	-	-	-

(51) Parathion - Units: µg/l

0.013	0.07	0.13	-	-	-	-	-

(52) Pentachlorophenol - Units: µg/l

0.93	See Note	-	1	-	-	-	-
-	No. 10 below	-	-	-	-	-	-

(53) Phenanthrene - Units: µg/l

3.6	32	64	-	-	-	-	-

(54) Phenol - Units: µg/l

123	2214	4428	-	-	-	-	-

(55) Picloram - Units: µg/l

-	-	-	500	-	-	-	-

(56) Polychlorinated biphenyls (c) (PCBs, total) - Units: ng/l

0.014	1000*	2000*	500	-	-	-	-

(57) Simazine - Units: µg/l

-	-	-	4	-	-	-	-

(58) Styrene (c) - Units: µg/l

-	-	-	100	-	-	-	-

(59) 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD-dioxin) - Units: ng/l

-	-	-	0.03	-	-	-	-

(60) 1,1,2,2-Tetrachloroethane (c) - Units: µg/l

1.1	1127*	2253*	-	-	-	-	-

(61) Tetrachloroethylene (c) - Units: µg/l

3.8	428*	857*	5	-	-	-	-

(62) Toluene - Units: µg/l

253	1352	2703	1000	-	-	-	-

(63) Toxaphene (c) - Units: ng/l

0.31	730*	1500*	3000	-	-	-	-

(64) 2,4,5-TP (Silvex) - Units: µg/l

-	-	-	50	-	-	-	-

(65) 1,2,4-Trichlorobenzene - Units: µg/l

-	-	-	70	-	-	-	-

(66) 1,1,1-Trichloroethane - Units: µg/l

329	2957	5913	200	-	-	-	-

(67) 1,1,2-Trichloroethane - Units: µg/l

-	-	-	5	-	-	-	-

(68) 1,1,2-Trichloroethylene (c) - Units: µg/l

25	6988*	13976*	5	-	-	-	-

(69) 2,4,6-Trichlorophenol - Units: µg/l

2.0	102	203	-	-	-	-	-

(70) Trihalomethanes, total (c) (Bromodichloromethane) (Bromoform) (Chlorodibromomethane) (Chloroform) - Units: µg/l

-	-	-	100	-	-	-	-

(71) Vinyl chloride (c) - Units: µg/l

0.17	none*	none*	2	-	-	-	-

(72) Xylenes, total - Units: µg/l

166	1407	2814	10000	-	-	-	-

Note No. 1, FECAL COLIFORM ORGANISMS

Not to exceed 200 organisms per 100 milliliters as a geometric mean of not less than five samples in any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. The standard applies only between April 1 and October 31.

Note No. 2, RADIOACTIVE MATERIALS

See parts 7050.0221, subparts 2, 3, 4, and 5; 7050.0222, subparts 4, 5, and 6; and 7050.0224, subparts 2, 3, and 4.

Note No. 3, CADMIUM

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.7852[ln(TH mg/l)]-3.49)	0.66	1.1	2.0	2.7	3.4
MS = exp.(1.128[ln(TH mg/l)]-3.828)	1.8	3.9	8.6	14	19
FAV = exp.(1.128[ln(TH mg/l)]-3.1349)	3.6	7.8	17	27	37

Note No. 4, CHROMIUM +3

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.819[ln(TH mg/l)] + 1.561)	117	207	365	509	644
MS = exp.(0.819[ln(TH mg/l)] + 3.688)	984	1737	3064	4270	5405
FAV = exp.(0.819[ln(TH mg/l)] + 4.380)	1966	3469	6120	8530	10797

Note No. 5, COPPER

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.620[ln(TH mg/l)]-0.57)	6.4	9.8	15	19	23
MS = exp.(0.9422[ln(TH mg/l)]-1.464)	9.2	18	34	50	65
FAV = exp.(0.9422[ln(TH mg/l)]-0.7703)	18	35	68	100	131

Note. No. 6, LEAD

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(1.273[ln(TH mg/l)]-4.705)	1.3	3.2	7.7	13	19

MS = exp.(1.273[ln(TH mg/l)]-1.460)	34	82	197	331	477
FAV = exp.(1.273[ln(TH mg/l)]-0.7643)	68	164	396	663	956

Note No. 7, NICKEL

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.846[ln(TH mg/l)]+1.1645)	88	158	283	297	297
not to exceed 297 µg/l					
MS = exp.(0.846[ln(TH mg/l)]+3.3612)	789	1418	2549	3592	4582
FAV = exp.(0.846[ln(TH mg/l)]+4.0543)	1578	2836	5098	7185	9164

Note No. 8, SILVER

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = 0.12	0.12	0.12	0.12	0.12	0.12
MS = exp.(1.72[ln(TH mg/l)]-7.2156)	0.61	2.0	6.7	13	22
FAV = exp.(1.72[ln(TH mg/l)]-6.520)	1.2	4.1	13	27	44
The MS and FAV shall be no less than 0.12 Sg/l					

Note No. 9, ZINC

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.8473[ln(TH mg/l)]+0.7615)	59	106	191	269	343
MS = exp.(0.8473[ln(TH mg/l)]+0.8604)	65	117	211	297	379
FAV = exp.(0.8473[ln(TH mg/l)]+1.5536)	130	234	421	594	758

Note No. 10, PENTACHLOROPHENOL

STANDARD THAT VARIES WITH pH	EXAMPLE STANDARDS IN µg/l AT pH OF: 6.5	7.0	7.5	8.0	8.5
CS = 0.93	0.93	0.93	0.93	0.93	0.93
MS = exp.(1.005(pH)-4.830)	5.5	9.1	15	25	41
FAV = exp.(1.005(pH)-4.1373)	11	18	30	50	82

Subp. 4. [Repealed, 24 SR 1105]

Subp. 4a. **Water quality standards applicable to use Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5.**

A. MISCELLANEOUS SUBSTANCE OR CHARACTERISTIC

STANDARDS FOR USE CLASSES

2Bd CS	**2Bd MS**	**2Bd FAV**	**1B/1C DC**	**3A/3B IC**	**4A IR**	**4B LS**	**5 AN**
(1) Ammonia, un-ionized as N - Units: µg/l							
40	none	none	-	-	-	-	-
(2) Asbestos, >10 µm (c) - Units: fibers/l							
-	-	-	7.0e+06	-	-	-	-
(3) Bicarbonates (HCO_3) - Units: meq/l							
-	-	-	-	-	5	-	-
(4) Chloride - Units: mg/l							
230	860	1720	250(S)	50/100	-	-	-
(5) Chlorine, total residual - Units: µg/l							
11	19	38	-	-	-	-	-
(6) Color - Units: Pt-Co							
-	-	-	15(S)	-	-	-	-

(7) Cyanide, free - Units: µg/l

5.2	22	45	200	-	-	-	-

(8) Dissolved oxygen - Units: mg/l - See part 7050.0222, subp. 3
(9) Fecal coliform organisms - See Note No. 1 below
(10) Fluoride - Units: mg/l

-	-	-	4	-	-	-	-

(11) Fluoride - Units: mg/l

-	-	-	2(S)	-	-	-	-

(12) Foaming agents - Units: µg/l

-	-	-	500(S)	-	-	-	-

(13) Hardness, Ca + Mg as $CaCO_3$ - Units: mg/l

-	-	-	-	50/250	-	-	-

(14) Hydrogen sulfide - Units: mg/l

-	-	-	-	-	-	-	0.02

(15) Nitrate, as N - Units: mg/l

-	-	-	10	-	-	-	-

(16) Nitrite, as N - Units: mg/l

-	-	-	1	-	-	-	-

(17) Nitrate + Nitrite, as N - Units: mg/l

-	-	-	10	-	-	-	-

(18) Odor - Units: TON

-	-	-	3(S)	-	-	-	-

(19) Oil - Units: µg/l

500	5000	10000	-	-	-	-	-

(20) pH, low - Units: su

6.5	none	none	6.5(S)	6.5/6.0	6.0	6.0	6.0

(21) pH, high - Units: su

9.0	none	none	8.5(S)	8.5/9.0	8.5	9.0	9.0

(22) Radioactive materials - See Note No. 2 below

(23) Salinity, total - Units: mg/l

-	-	-	-	-	-	1000	-

(24) Sodium - Units: meq/l

-	-	-	-	-	60% of total cations	-	-

(25) Specific conductance, at 25°C - Units: μmhos/cm

-	-	-	-	-	1000	-	-

(26) Sulfate - Units: mg/l

-	-	-	250(S)	-	-	-	-

(27) Sulfates, wild rice present - Units: mg/l

-	-	-	-	-	10	-	-

(28) Temperature - Units: °F - See Note No. 3 below

(29) Total dissolved salts - Units: mg/l

-	-	-	-	-	700	-	-

(30) Total dissolved solids - Units: mg/l

-	-	-	500(S)	-	-	-	-

(31) Turbidity - Units: NTU

25	none	none	1-5/25	-	-	-	-

B. METALS AND ELEMENTS SUBSTANCE OR CHARACTERISTIC

STANDARDS FOR USE CLASSES

2Bd CS	2Bd MS	2Bd FAV	1B/1C DC	3A/3B IC	4A IR	4B LS	5 AN
(1) Aluminum - Units: μg/l							
125	1072	2145	50-200 (S)	-	-	-	-
(2) Antimony - Units: μg/l							
5.5	90	180	6	-	-	-	-

(3) Arsenic - Units: µg/l

2.0	360	720	50	-	-	-	-

(4) Barium - Units: µg/l

-	-	-	2000	-	-	-	-

(5) Beryllium - Units: µg/l

-	-	-	4	-	-	-	-

(6) Boron - Units: µg/l

-	-	-	-	-	500	-	-

(7) Cadmium - Units: µg/l - See Note No. 4 below

-	-	-	5	-	-	-	-

(8) Chromium, +3 - Units: µg/l - See Note No. 5 below
(9) Chromium, +6 - Units: µg/l

11	16	32	-	-	-	-	-

(10) Chromium, total - Units: µg/l

-	-	-	100	-	-	-	-

(11) Cobalt - Units: µg/l

2.8	436	872	-	-	-	-	-

(12) Copper - Units: µg/l - See Note No. 6 below

-	-	-	1000(S)	-	-	-	-

(13) Iron - Units: µg/l

-	-	-	300(S)	-	-	-	-

(14) Lead - Units: µg/l - See Note No. 7 below
(15) Manganese - Units: µg/l

-	-	-	50(S)	-	-	-	-

(16) Mercury - Units: µg/l

0.0069	2.4*	4.9*	2	-	-	-	-

(17) Nickel - Units: µg/l - See Note No. 8 below

-	-	-	100	-	-	-	-

(18) Selenium - Units: µg/l

5.0	20	40	50	-	-	-	-

(19) Silver - Units: µg/l - See Note No. 9 below

1.0	-	-	100(S)	-	-	-	-

(20) Thallium - Units: µg/l

0.28	64	128	2	-	-	-	-

(21) Zinc - Units: µg/l - See Note No. 10 below

-	-	-	5000(S)	-	-	-	-

C. ORGANICS SUBSTANCE OR CHARACTERISTIC

STANDARDS FOR USE CLASSES

2Bd CS	**2Bd MS**	**2Bd FAV**	**1B/1C DC**	**3A/3B IC**	**4A IR**	**4B LS**	**5 AN**

(1) Acenaphthene - Units: µg/l

20	56	112	-	-	-	-	-

(2) Acrylonitrile (c) - Units: µg/l

0.38	1140*	2281*	-	-	-	-	-

(3) Alachlor (c) - Units: µg/l

4.2	800*	1600*	2	-	-	-	-

(4) Aldicarb - Units: µg/l

-	-	-	3	-	-	-	-

(5) Aldicarb sulfone - Units: µg/l

-	-	-	2	-	-	-	-

(6) Aldicarb sulfoxide - Units: µg/l

-	-	-	4	-	-	-	-

(7) Anthracene - Units: µg/l

0.035	0.32	0.63	-	-	-	-	-

(8) Atrazine (c) - Units: µg/l

3.4	323	645	3	-	-	-	-

(9) Benzene (c) - Units: µg/l

11	4487*	8974*	5	-	-	-	-

(10) Benzo(a)pyrene - Units: µg/l

-	-	-	0.2	-	-	-	-

(11) Bromoform - Units: µg/l

41	2900	5800	-	-	-	-	-

(12) Carbofuran - Units: µg/l

-	-	-	40	-	-	-	-

(13) Carbon tetrachloride (c) - Units: µg/l

1.9	1750*	3500*	5	-	-	-	-

(14) Chlordane (c) - Units: ng/l

0.29	1200*	2400*	2000	-	-	-	-

(15) Chlorobenzene (Monochlorobenzene) - Units: µg/l

20	423	846	100	-	-	-	-

(16) Chloroform (c) - Units: µg/l

53	1392	2784	-	-	-	-	-

(17) Chlorpyrifos - Units: µg/l

0.041	0.083	0.17	-	-	-	-	-

(18) Dalapon - Units: µg/l

-	-	-	200	-	-	-	-

(19) DDT (c) - Units: ng/l

1.7	550*	1100*	-	-	-	-	-

(20) 1,2-Dibromo-3-chloropropane (c) - Units: µg/l

-	-	-	0.2	-	-	-	-

(21) Dichlorobenzene (ortho) - Units: µg/l

-	-	-	600	-	-	-	-

(22) 1,4-Dichlorobenzene (para) (c) - Units: µg/l

-	-	-	75	-	-	-	-

(23) 1,2-Dichloroethane (c) - Units: µg/l

3.8	45050*	90100*	5	-	-	-	-

(24) 1,1-Dichloroethylene - Units: µg/l

-	-	-	7	-	-	-	-

(25) 1,2-Dichloroethylene (cis) - Units: µg/l

-	-	-	70	-	-	-	-

(26) 1,2-Dichloroethylene (trans) - Units: µg/l

-	-	-	100	-	-	-	-

(27) 2,4-Dichlorophenoxyacetic acid (2,4-D) - Units: µg/l

-	-	-	70	-	-	-	-

(28) 1,2-Dichloropropane (c) - Units: µg/l

-	-	-	5	-	-	-	-

(29) Dieldrin (c) - Units: ng/l

0.026	1300*	2500*	-	-	-	-	-

(30) Di-2-ethylhexyl adipate - Units: µg/l

-	-	-	400	-	-	-	-

(31) Di-2-ethylhexyl phthalate (c) - Units: µg/l

1.9	none*	none*	6	-	-	-	-

(32) Di-n-Octyl phthalate - Units: µg/l

30	825	1650	-	-	-	-	-

(33) Dinoseb - Units: µg/l

-	-	-	7	-	-	-	-

(34) Diquat - Units: µg/l

-	-	-	20	-	-	-	-

(35) Endosulfan - Units: µg/l

0.029	0.28	0.56	-	-	-	-	-

(36) Endothall - Units: µg/l

-	-	-	100	-	-	-	-

(37) Endrin - Units: µg/l

0.016	0.090	0.18	2	-	-	-	-

(38) Ethylbenzene (c) - Units: µg/l

68	1859	3717	700	-	-	-	-

(39) Ethylene dibromide - Units: µg/l

-	-	-	0.05	-	-	-	-

(40) Fluoranthene - Units: µg/l

1.9	3.5	6.9	-	-	-	-	-

(41) Glyphosate - Units: µg/l

-	-	-	700	-	-	-	-

(42) Heptachlor (c) - Units: ng/l

0.39	260*	520*	400	-	-	-	-

(43) Heptachlor epoxide (c) - Units: ng/l

0.48	270*	530*	200	-	-	-	-

(44) Hexachlorobenzene (c) - Units: ng/l

0.24	none*	none*	1000	-	-	-	-

(45) Hexachlorocyclopentadiene - Units: µg/l

-	-	-	50	-	-	-	-

(46) Lindane (c) (Hexachlorocyclohexane, gamma-) - Units: µg/l

0.032	4.4*	8.8*	0.2	-	-	-	-

(47) Methoxychlor - Units: µg/l

-	-	-	40	-	-	-	-

(48) Methylene chloride (c) (Dichloromethane) - Units: µg/l

46	13875*	27749*	5	-	-	-	-

(49) Oxamyl (Vydate) - Units: µg/l

-	-	-	200	-	-	-	-

(50) Naphthalene - Units: µg/l

81	409	818	-	-	-	-	-

(51) Parathion - Units: µg/l

0.013	0.07	0.13	-	-	-	-	-

(52) Pentachlorophenol - Units: µg/l - See Note No. 11 below

1.9	-	-	1	-	-	-	-

(53) Phenanthrene - Units: µg/l

3.6	32	64	-	-	-	-	-

(54) Phenol - Units: µg/l

123	2214	4428	-	-	-	-	-

(55) Picloram - Units: µg/l

-	-	-	500	-	-	-	-

(56) Polychlorinated biphenyls (c) (PCBs, total) - Units: ng/l

0.029	1000*	2000*	500	-	-	-	-

(57) Simazine - Units: µg/l

-	-	-	4	-	-	-	-

(58) Styrene (c) - Units: µg/l

-	-	-	100	-	-	-	-

(59) 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD-dioxin) - Units: ng/l

-	-	-	0.03	-	-	-	-

(60) 1,1,2,2-Tetrachloroethane (c) - Units: µg/l

1.5	1127*	2253*	-	-	-	-	-

(61) Tetrachloroethylene (c) - Units: µg/l

3.8	428*	857*	5	-	-	-	-

(62) Toluene - Units: µg/l

253	1352	2703	1000	-	-	-	-

(63) Toxaphene (c) - Units: ng/l

1.3	730*	1500*	3000	-	-	-	-

(64) 2,4,5-TP (Silvex) - Units: µg/l

-	-	-	50	-	-	-	-

(65) 1,2,4-Trichlorobenzene - Units: µg/l

-	-	-	70	-	-	-	-

(66) 1,1,1-Trichloroethane - Units: µg/l

329	2957	5913	200	-	-	-	-

(67) 1,1,2-Trichloroethane - Units: µg/l

-	-	-	5	-	-	-	-

(68) 1,1,2-Trichloroethylene (c) - Units: µg/l

25	6988*	13976*	5	-	-	-	-

(69) 2,4,6-Trichlorophenol - Units: µg/l

2.0	102	203	-	-	-	-	-

(70) Trihalomethanes, total (c) (Bromodichloromethane) (Bromoform) (Chlorodibromomethane) (Chloroform) - Units: µg/l

-	-	-	100	-	-	-	-

(71) Vinyl chloride (c) - Units: µg/l

0.18	none*	none*	2	-	-	-	-

(72) Xylenes, total - Units: µg/l

166	1407	2814	10000	-	-	-	-

Note No. 1, FECAL COLIFORM ORGANISMS

Not to exceed 200 organisms per 100 milliliters as a geometric mean of not less than five samples in any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters. The standard applies only between April 1 and October 31.

Note No. 2, RADIOACTIVE MATERIALS

See parts 7050.0221, subparts 2, 3, 4, and 5; 7050.0222, subparts 4, 5, and 6; and 7050.0224, subparts 2, 3, and 4.

Note No. 3, TEMPERATURE

Five degrees Fahrenheit above natural in streams and three degrees Fahrenheit above natural in lakes, based on monthly average of maximum daily

temperature, except in no case shall it exceed the daily average temperature of 86 degrees Fahrenheit.

Note No. 4, CADMIUM

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.7852[ln(TH mg/l)]-3.490)	0.66	1.1	2.0	2.7	3.4
MS = exp.(1.128[ln(TH mg/l)]-1.685)	15	33	73	116	160
FAV = exp.(1.128[ln(TH mg/l)]-0.9919)	31	67	146	231	319

Note No. 5, CHROMIUM +3

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.819[ln(TH mg/l)]+1.561)	117	207	365	509	644
MS = exp.(0.819[ln(TH mg/l)]+3.688)	984	1737	3064	4270	5405
FAV = exp.(0.819[ln(TH mg/l)]+4.380)	1966	3469	6120	8530	10797

Note No. 6, COPPER

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.620[ln(TH mg/l)]-0.57)	6.4	9.8	15	19	23
MS = exp.(0.9422[ln(TH mg/l)]-1.464)	9.2	18	34	50	65
FAV = exp.(0.9422[ln(TH mg/l)]-0.7703)	18	35	68	100	131

Note. No. 7, LEAD

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(1.273[ln(TH mg/l)]-4.705)	1.3	3.2	7.7	13	19

MS = exp.(1.273[ln(TH mg/l)]-1.460)	34	82	197	331	477
FAV = exp.(1.273[ln(TH mg/l)]-0.7643)	68	164	396	663	956

Note No. 8, NICKEL

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.846[ln(TH mg/l)] + 1.1645)	88	158	283	297	297
not to exceed 297 µg/l					
MS = exp.(0.846[ln(TH mg/l)] + 3.3612)	789	1418	2549	3592	4582
FAV = exp.(0.846[ln(TH mg/l)] + 4.0543)	1578	2836	5098	7185	9164

Note No. 9, SILVER

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = 1.0	1.0	1.0	1.0	1.0	1.0
MS = exp.(1.72[ln(TH mg/l)]-7.2156)	1.0	2.0	6.7	13	22
FAV = exp.(1.72[ln(TH mg/l)]-6.520)	1.2	4.1	13	27	44
The MS and FAV shall be no less than 1.0 µg/l					

Note No. 10, ZINC

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.8473[ln(TH mg/l)] + 0.7615)	59	106	191	269	343
MS = exp.(0.8473[ln(TH mg/l)] + 0.8604)	65	117	211	297	379

FAV = exp.(0.8473[ln(TH mg/l)] + 1.5536)	130	234	421	594	758

Note No. 11, PENTACHLOROPHENOL

STANDARD THAT VARIES WITH pH	EXAMPLE STANDARDS IN µg/l AT pH OF: 6.5	7.0	7.5	8.0	8.5
CS = 1.9	1.9	1.9	1.9	1.9	1.9
MS = exp.(1.005(pH)-4.830)	5.5	9.1	15	25	41
FAV = exp.(1.005(pH)-4.1373)	11	18	30	50	82

Subp. 5. [Repealed, 24 SR 1105]

Subp. 5a. **Water quality standards applicable to use Classes 2B, 2C, or 2D; 3A, 3B, 3C, or 3D; 4A and 4B or 4C; and 5.** See Note No. 1 below.

A. MISCELLANEOUS SUBSTANCE OR CHARACTERISTIC

STANDARDS FOR USE CLASSES

2B,C&D CS	**2B,C&D MS**	**2B,C&D FAV**	**3A/3B/3C IC**	**4A IR**	**4B LS**	**5 AN**
(1) Ammonia, un-ionized as N - Units: µg/l						
40	none	none	-	-	-	-
(2) Bicarbonates (HCO_3) - Units: meq/l						
-	-	-	-	5	-	-
(3) Chloride - Units: mg/l						
230	860	1720	50/100/250	-	-	-
(4) Chlorine, total residual - Units: µg/l						
11	19	38	-	-	-	-
(5) Cyanide, free - Units: µg/l						
5.2	22	45	-	-	-	-
(6) Dissolved oxygen - Units: mg/l - See Note No. 2 below						
(7) Fecal coliform organisms - See Note No. 3 below						
(8) Hardness, Ca + Mg as $CaCO_3$ - Units: mg/l						
-	-	-	50/250/500	-	-	-

(9) Hydrogen sulfide - Units: mg/l

-	-	-	-	-	-	0.02

(10) Oil - Units: µg/l

500	5000	10,000	-	-	-	-

(11) pH, low - Units: su - See Note No. 4 below

6.5	-	-	6.5/6.0/6.0	6.0	6.0	6.0

(12) pH, high - Units: su - See Note No. 4 below

9.0	-	-	8.5/9.0/9.0	8.5	9.0	9.0

(13) Radioactive materials - See Note No. 5 below

(14) Salinity, total - Units: mg/l

-	-	-	-	-	1000	-

(15) Sodium - Units: meq/l

-	-	-	-	60% of total cations	-	-

(16) Specific conductance, at 25°C - Units: µmhos/cm

-	-	-	-	1000	-	-

(17) Sulfates, wild rice present - Units: mg/l

-	-	-	-	10	-	-

(18) Temperature - Units: °F - See Note No. 6 below

(19) Total dissolved salts - Units: mg/l

-	-	-	-	700	-	-

(20) Turbidity - Units: NTU

25	none	none	-	-	-	-

B. METALS AND ELEMENTS SUBSTANCE OR CHARACTERISTIC

STANDARDS FOR USE CLASSES

2B,C&D CS	**2B,C&D MS**	**2B,C&D FAV**	**3A/3B/3C IC**	**4A IR**	**4B LS**	**5 AN**

(1) Aluminum - Units: µg/l

125	1072	2145	-	-	-	-

(2) Antimony - Units: µg/l

31	90	180	-	-	-	-

(3) Arsenic - Units: µg/l

53	360	720	-	-	-	-

(4) Boron - Units: µg/l

-	-	-	-	500		

(5) Cadmium - Units: µg/l - See Note No. 7 below
(6) Chromium, +3 - Units: µg/l - See Note No. 8 below
(7) Chromium, +6 - Units: µg/l

11	16	32	-	-	-	-

(8) Cobalt - Units: µg/l

5.0	436	872	-	-	-	-

(9) Copper - Units: µg/l - See Note No. 9 below
(10) Lead - Units: µg/l - See Note No. 10 below
(11) Mercury - Units: µg/l

0.0069	2.4*	4.9*	-	-	-	-

(12) Nickel - Units: µg/l - See Note No. 11 below
(13) Selenium - Units: µg/l

5.0	20	40	-	-	-	-

(14) Silver - Units: µg/l - See Note No. 12 below

1.0	-	-	-	-	-	-

(15) Thallium - Units: µg/l

0.56	64	128	-	-	-	-

(16) Zinc - Units: µg/l - See Note No. 13 below
C. ORGANICS SUBSTANCE OR CHARACTERISTIC

STANDARDS FOR USE CLASSES

2B,C&D CS	**2B,C&D MS**	**2B,C&D FAV**	**3A/3B/3C IC**	**4A IR**	**4B LS**	**5 AN**

(1) Acenaphthene - Units: µg/l

20	56	112	-	-	-	-

(2) Acrylonitrile (c) - Units: µg/l

0.89	1140*	2281*	-	-	-	-

(3) Alachlor - Units: µg/l

59	800	1600	-	-	-	-

(4) Anthracene - Units: µg/l

0.035	0.32	0.63	-	-	-	-

(5) Atrazine - Units: µg/l

10	323	645	-	-	-	-

(6) Benzene - Units: µg/l

114	4487	8974	-	-	-	-

(7) Bromoform - Units: µg/l

466	2900	5800	-	-	-	-

(8) Carbon tetrachloride (c) - Units: µg/l

5.9	1750*	3500*	-	-	-	-

(9) Chlordane (c) - Units: ng/l

0.29	1200*	2400*	-	-	-	-

(10) Chlorobenzene (Monochlorobenzene) - Units: µg/l

20	423	846	-	-	-	-

(11) Chloroform - Units: µg/l

155	1392	2784	-	-	-	-

(12) Chlorpyrifos - Units: µg/l

0.041	0.083	0.17	-	-	-	-

(13) DDT (c) - Units: ng/l

1.7	550*	1100*	-	-	-	-

(14) 1,2-Dichloroethane (c) - Units: µg/l

190	45050*	90100*	-	-	-	-

(15) Dieldrin (c) - Units: ng/l

0.026	1300*	2500*	-	-	-	-

(16) Di-2-ethylhexyl phthalate (c) - Units: µg/l

2.1	none*	none*	-	-	-	-

(17) Di-n-Octyl phthalate - Units: µg/l

30	825	1650	-	-	-	-

(18) Endosulfan - Units: µg/l

0.031	0.28	0.56	-	-	-	-

(19) Endrin - Units: µg/l

0.016	0.090	0.18	-	-	-	-

(20) Ethylbenzene (c) - Units: µg/l

68	1859	3717	-	-	-	-

(21) Fluoranthene - Units: µg/l

1.9	3.5	6.9	-	-	-	-

(22) Heptachlor (c) - Units: ng/l

0.39	260*	520*	-	-	-	-

(23) Heptachlor epoxide (c) - Units: ng/l

0.48	270*	530*	-	-	-	-

(24) Hexachlorobenzene (c) - Units: ng/l

0.24	none*	none*	-	-	-	-

(25) Lindane (c) (Hexachlorocyclohexane, gamma-) - Units: µg/l

0.036	4.4*	8.8*	-	-	-	-

(26) Methylene chloride (c) (Dichloromethane) - Units: µg/l

1940	13875	27749	-	-	-	-

(27) Naphthalene - Units: µg/l

81	409	818	-	-	-	-

(28) Parathion - Units: µg/l

0.013	0.07	0.13	-	-	-	-

(29) Pentachlorophenol - Units: µg/l - See Note No. 14 below

(30) Phenanthrene - Units: µg/l

3.6	32	64	-	-	-	-

(31) Phenol - Units: µg/l

123	2214	4428	-	-	-	-

(32) Polychlorinated biphenyls (c) (PCBs, total) - Units: ng/l

0.029	1000*	2000*	-	-	-	-

(33) 1,1,2,2-Tetrachloroethane (c) - Units: µg/l

13	1127	2253	-	-	-	-

(34) Tetrachloroethylene (c) - Units: µg/l

8.9	428	857	-	-	-	-

(35) Toluene - Units: µg/l

253	1352	2703	-	-	-	-

(36) Toxaphene (c) - Units: ng/l

1.3	730*	1500*	-	-	-	-

(37) 1,1,1-Trichloroethane - Units: µg/l

329	2957	5913	-	-	-	-

(38) 1,1,2-Trichloroethylene (c) - Units: µg/l

120	6988	13976	-	-	-	-

(39) 2,4,6-Trichlorophenol - Units: µg/l

2.0	102	203	-	-	-	-

(40) Vinyl chloride (c) - Units: µg/l

9.2	none*	none*	-	-	-	-

(41) Xylenes, total - Units: µg/l

166	1407	2814	-	-	-	-

Note No. 1, CLASS 3D, 4C, and 5 STANDARDS, applicable to wetlands

In general, if Class 3, 4, or 5 standards are exceeded, background conditions shall be maintained. See parts 7050.0223, subpart 5; 7050.0224, subpart 4; and 7050.0225, subpart 2.

Note No. 2, DISSOLVED OXYGEN

See part 7050.0222, subparts 4 and 5 for the Class 2B and 2C Dissolved Oxygen standards, respectively. Class 2D standard: If background is less than 5 mg/l, as a daily minimum, maintain background.

Note No. 3, FECAL COLIFORM ORGANISMS

Not to exceed 200 organisms per 100 milliliters as a geometric mean of not less than five samples in any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters. The standard applies only between April 1 and October 31.

Note No. 4, pH

Class 2D standard: Maintain background.

Note No. 5, RADIOACTIVE MATERIALS

See parts 7050.0222, subparts 4, 5, and 6; and 7050.0224, subparts 2, 3, and 4.

Note No. 6, TEMPERATURE

Class 2B standard: Five degrees Fahrenheit above natural in streams and three degrees Fahrenheit above natural in lakes, based on monthly average of maximum daily temperature, except in no case shall it exceed the daily average temperature of 86 degrees Fahrenheit. Class 2C standard: five degrees Fahrenheit above natural in streams and three degrees Fahrenheit above natural in lakes, based on monthly average of maximum daily temperature, except in no case shall it exceed the daily average temperature of 90 degrees Fahrenheit. Class 2D standard: Maintain background.

Note No. 7, CADMIUM

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.7852[ln(TH mg/l)]-3.490)	0.66	1.1	2.0	2.7	3.4
MS = exp.(1.128[ln(TH mg/l)]-1.685)	15	33	73	116	160
FAV = exp.(1.128[ln(TH mg/l)]-0.9919)	31	67	146	231	319

Note No. 8, CHROMIUM +3

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.819[ln(TH mg/l)]+1.561)	117	207	365	509	644

MS = exp.(0.819[ln(TH mg/l)]+3.688)	984	1737	3064	4270	5405
FAV = exp.(0.819[ln(TH mg/l)]+4.380)	1966	3469	6120	8530	10797

Note No. 9, COPPER

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.620[ln(TH mg/l)]-0.570)	6.4	9.8	15	19	23
MS = exp.(0.9422[ln(TH mg/l)]-1.464)	9.2	18	34	50	65
FAV = exp.(0.9422[ln(TH mg/l)]-0.7703)	18	35	68	100	131

Note. No. 10, LEAD

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(1.273[ln(TH mg/l)]-4.705)	1.3	3.2	7.7	13	19
MS = exp.(1.273[ln(TH mg/l)]-1.460)	34	82	197	331	477
FAV = exp.(1.273[ln(TH mg/l)]-0.7643)	68	164	396	663	956

Note No. 11, NICKEL

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.846[ln(TH mg/l)]+1.1645)	88	158	283	399	509
MS = exp.(0.846[ln(TH mg/l)]+3.3612)	789	1418	2549	3592	4582
FAV = exp.(0.846[ln(TH mg/l)]+4.0543)	1578	2836	5098	7185	9164

Note No. 12, SILVER

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = 1.0	1.0	1.0	1.0	1.0	1.0
MS = exp.(1.72[ln(TH mg/l)]-7.2156)	1.0	2.0	6.7	13	22
FAV = exp.(1.72[ln(TH mg/l)]-6.520)	1.2	4.1	13	27	44

The MS and FAV shall be no less than 1.0 µg/l

Note No. 13, ZINC

STANDARDS THAT VARY WITH TOTAL HARDNESS (TH)	EXAMPLE STANDARDS IN µg/l AT TOTAL HARDNESS OF: 50	100	200	300	400
CS = exp.(0.8473[ln(TH mg/l)] + 0.7615)	59	106	191	269	343
MS = exp.(0.8473[ln(TH mg/l)] + 0.8604)	65	117	211	297	379
FAV = exp.(0.8473[ln(TH mg/l)] + 1.5536)	130	234	421	594	758

Note No. 14, PENTACHLOROPHENOL

STANDARD THAT VARIES WITH pH	EXAMPLE STANDARDS IN µg/l AT pH OF: 6.5	7.0	7.5	8.0	8.5
CS = exp.(1.005(pH)-5.290) not to exceed 5.5 µg/l	3.5	5.5	5.5	5.5	5.5
MS = exp.(1.005(pH)-4.830)	5.5	9.1	15	25	41
FAV = exp.(1.005(pH)-4.1373)	11	18	30	50	82

Subp. 6. [Repealed, 24 SR 1105]

Subp. 6a. **Water quality standards applicable to use Classes 3C, 4A and 4B, 5, and 7.**

MISCELLANEOUS SUBSTANCE OR CHARACTERISTIC STANDARDS FOR USE CLASSES

7 LIMITED RESOURCES	3C IC	4A IR	4B LS	5 AN
(1) Bicarbonates (HCO_3) - Units: meq/l				
-	-	5	-	-
(2) Boron - Units: µg/l				
-	-	500	-	-
(3) Chloride - Units: mg/l				
-	250	-	-	-
(4) Dissolved oxygen - Units: mg/l - See Note No. 1 below				
(5) Fecal coliform organisms - See Note No. 2 below				
(6) Hardness, Ca + Mg as $CaCO_3$ - Units: mg/l				
-	500	-	-	-
(7) Hydrogen sulfide - Units: mg/l				
-	-	-	-	0.02
(8) pH, low - Units: su				
6.0	6.0	6.0	6.0	6.0
(9) pH, high - Units: su				
9.0	9.0	8.5	9.0	9.0
(10) Radioactive materials - See Note No. 3 below				
(11) Salinity, total - Units: mg/l				
-	-	-	1000	-
(12) Sodium - Units: meq/l				
-	-	60% of total cations	-	-
(13) Specific conductance, at 25°C - Units: µmhos/cm				
-	-	1000	-	-

(14) Sulfates, wild rice present - Units: mg/l

-	-	10	-	-	

(15) Total dissolved salts - Units: mg/l

-	-	700	-	-	

(16) Toxic pollutants - See Note No. 4 below

Note No. 1, 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.

Note No. 2, FECAL COLIFORM ORGANISMS

Not to exceed 1,000 organisms per 100 milliliters in any calendar month as determined by a geometric mean of a minimum of five samples, nor shall more than ten percent of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters. The standard applies only between May 1 and October 31.

Note No. 3, RADIOACTIVE MATERIALS

See part 7050.0224, subparts 2, 3, and 4.

Note No. 4, TOXIC POLLUTANTS

Toxic pollutants shall not be allowed in such quantities or concentrations that will impair the specified uses.

Statutory Authority: *MS s 115.03; 115.44*
History: *9 SR 913; 12 SR 1810; 15 SR 1057; 18 SR 2195; 24 SR 1105; 24 SR 1133*

7050.0221 SPECIFIC STANDARDS OF QUALITY AND PURITY FOR CLASS 1 WATERS OF THE STATE; DOMESTIC CONSUMPTION.

Subpart 1. **General.** The numerical and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the domestic consumption designated public uses and benefits. If the standards in this part are exceeded in waters of the state that have the Class 1 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.

Subp. 2. **Class 1A waters; domestic consumption.** The quality of Class 1A waters of the state shall be such that without treatment of any kind the raw waters will meet in all respects both the primary (maximum contaminant levels) and secondary drinking water standards issued by the United States Environmental Protection Agency as contained in Code of Federal Regulations, title 40, part 141, subparts B and G, and part 143, (1992); and section 141.61 and 141.62, as amended through July 17, 1992. These Environmental Protection Agency standards are adopted and incorporated by reference. These standards will ordinarily be restricted to underground waters with a high degree of natural protection.

Subp. 3. **Class 1B waters.** The quality of Class 1B waters of the state shall be such that with approved disinfection, such as simple chlorination or its equivalent, the treated water will meet both the primary (maximum contaminant levels) and secondary drinking water standards issued by the United States Environmental Protection Agency as contained in Code of Federal Regulations, title 40, part 141, subparts B and G, and part 143, (1992); and sections 141.61 and 141.62, as amended through July 17, 1992; except that the bacteriological standards shall not apply. These Environmental Protection Agency standards, as modified in this part, are adopted and incorporated by reference. These standards will ordinarily be restricted to surface and underground waters with a moderately high degree of natural protection and apply to these waters in the untreated state.

Subp. 4. **Class 1C waters.** The quality of Class 1C 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 both the primary (maximum contaminant levels) and secondary drinking water standards issued by the United States Environmental Protection Agency as contained in Code of Federal Regulations, title 40, part 141, subparts B and G, and part 143, (1992); and sections 141.61 and 141.62, as amended through July 17, 1992; except that the bacteriological standards shall not apply, and the turbidity standard shall be 25 NTU. These Environmental Protection Agency standards, as modified in this part, are adopted and incorporated by reference. These standards will ordinarily be restricted to surface waters, and groundwaters 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 or joints with surface connections, and coarse gravels subjected to surface water infiltration. These standards shall also apply to these waters in the untreated state.

Subp. 5. **Class 1D waters.** The quality of Class 1D 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 both the primary (maximum contaminant levels) and secondary drinking water standards issued by the United States Environmental Protection Agency as contained in Code of Federal Regulations, title 40, part 141, subparts B and G, and part 143, (1992); and sections 141.61 and 141.62, as amended through July 17, 1992; except that the bacteriological standards shall not apply, and the standards for the substances identified below shall apply. These Environmental Protection Agency standards, as modified in this part, are adopted and incorporated by reference. These standards will ordinarily be restricted to surface waters, and groundwaters 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 or joints with surface connections, and coarse gravels subjected to surface water infiltration. These standards shall not be exceeded in the raw waters before treatment:

Substance or Characteristic	Class 1D Standard
Arsenic (As)	0.05 milligram per liter
Barium (Ba)	1 milligram per liter
Cadmium (Cd)	0.01 milligram per liter
Chromium (Hexavalent, Cr)	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.

Subp. 6. **Additional standards.** In addition to the standards in subparts 2 to 5, no sewage, industrial waste, or other wastes from point or nonpoint sources, treated or untreated, shall be discharged into or permitted by any person to gain access to any waters of the state classified for domestic consumption so as to cause any material undesirable increase in the taste, hardness, temperature, chronic toxicity, corrosiveness,

or nutrient content, or in any other manner to impair the natural quality or value of the waters for use as a source of drinking water.

Statutory Authority: *MS s 115.03; 115.44*

History: *18 SR 2195; 24 SR 1105*

7050.0222 SPECIFIC STANDARDS OF QUALITY AND PURITY FOR CLASS 2 WATERS OF THE STATE; AQUATIC LIFE AND RECREATION.

Subpart 1. **General.** The numerical and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the aquatic life and recreation designated public uses and benefits. If the standards in this part are exceeded in waters of the state that have the Class 2 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.

Standards for metals are expressed as total metal but must be converted to dissolved metal standards to determine water quality-based effluent limits. Water quality-based effluent limits for metals are expressed as total metal. Conversion factors for converting total to dissolved metal standards are listed in subpart 9. The conversion factor for metals not listed in subpart 9 is one. The dissolved metal standard equals the total metal standard times the conversion factor.

Subp. 2. **Class 2A waters; aquatic life and recreation.** The quality of Class 2A surface waters shall be such as to permit the propagation and maintenance of a healthy community of cold water sport or commercial fish and associated aquatic life, and their habitats. These waters shall be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable. This class of surface waters is also protected as a source of drinking water. The applicable standards are given below, with substances considered carcinogenic followed by a (c). The basis columns to the right of the chronic standards and to the right of the acute standards indicate whether the chronic and acute standards, respectively, are based on the protection of the aquatic community from adverse toxic effects (Tox.), or the protection of human consumers of drinking water and sport-caught fish (HH). "NA" means not applicable. Subpart 7, item E, should be referenced for FAV and MS values and "none" noted with an asterisk (*):

Substance or Characteristic (c) = carcinogen	Units	Class 2A Chronic Standard CS	Basis	Class 2A Acute Standards MS	FAV	Basis
Acenaphthene	µg/l	20	HH	56	112	Tox.
Acrylonitrile (c)	µg/l	0.38	HH	1140*	2281*	Tox.
Alachlor (c)	µg/l	3.8	HH	800*	1600*	Tox.
Aluminum, total	µg/l	87	Tox.	748	1496	Tox.
Ammonia un-ionized as N	µg/1	16	Tox.	None	None	NA

The percent un-ionized ammonia can be calculated for any temperature and pH by using the following formula taken from Emerson, K., R.C. Russo, R.E. Lund, and R.V. Thurston. 1975. Aqueous ammonia equilibrium calculations; effect of pH and temperature. Journal of the Fisheries Research Board of Canada 32: 2379-2383.

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

where:

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

$$pk_a = 0.09 + \frac{2730}{T}, \text{ dissociation constant for ammonia}$$

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

Anthracene	µg/l	0.035	Tox.	0.32	0.63	Tox.
Antimony	µg/l	5.5	HH	90	180	Tox.
Arsenic, total	µg/l	2.0	HH	360	720	Tox.
Atrazine (c)	µg/l	3.4	HH	323	645	Tox.
Benzene (c)	µg/l	9.7	HH	4487*	8974*	Tox.
Bromoform	µg/l	33	HH	2900	5800	Tox.
Cadmium, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Cadmium, total

The CS shall not exceed: exp (0.7852[ln(total hardness mg/l)]-3.490)

The MS shall not exceed: exp.(1.128[ln(total hardness mg/l)]-3.828)

The FAV shall not exceed: exp.(1.128[ln(total hardness mg/l)]-3.1349)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Cadmium standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	0.66	1.1	2.0
	MS	1.8	3.9	8.6
	FAV	3.6	7.8	17

Carbon tetrachloride(c)	µg/l	1.9	HH	1750*	3500*	Tox.
Chlordane (c)	ng/l	0.073	HH	1200*	2400*	Tox.
Chloride	mg/L	230	Tox.	860	1720	Tox.
Chlorine, total residual	µg/l	11	Tox.	19	38	Tox.

Chlorine standard applies to conditions of continuous exposure, where continuous exposure refers to chlorinated effluents that are discharged for more than a total of two hours in any 24-hour period.

Chlorobenzene (Monochlorobenzene)	µg/l	20	HH	423	846	Tox.
Chloroform (c)	µg/l	53	HH	1392	2784	Tox.
Chlorpyrifos	µg/l	0.041	Tox.	0.083	0.17	Tox.
Chromium +3, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Chromium +3, total

The CS shall not exceed: exp.(0.819[ln(total hardness mg/l)]+1.561)

The MS shall not exceed: exp.(0.819[ln(total hardness mg/l)] + 3.688)

The FAV shall not exceed: exp.(0.819[ln(total hardness mg/l)] + 4.380)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Chromium +3 standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	117	207	365
	MS	984	1737	3064
	FAV	1966	3469	6120

Chromium +6, total	µg/l	11	Tox.	16	32	Tox.
Cobalt	µg/l	2.8	HH	436	872	Tox.
Color value	Pt/Co	30	NA	None	None	NA
Copper, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Copper, total

The CS shall not exceed: exp.(0.620[ln(total hardness mg/l)]-0.570)

The MS shall not exceed: exp.(0.9422[ln(total hardness mg/l)]-1.464)

The FAV shall not exceed: exp.(0.9422[ln(total hardness mg/l)]-0.7703)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Copper standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	6.4	9.8	15
	MS	9.2	18	34
	FAV	18	35	68

Cyanide, free	µg/l	5.2	Tox.	22	45	Tox.
DDT (c)	ng/l	0.11	HH	550*	1100*	Tox.
1,2-Dichloro-ethane (c)	µg/l	3.5	HH	45,050*	90,100*	Tox.
Dieldrin (c)	ng/l	0.0065	HH	1300*	2500*	Tox.
Di-2-ethylhexyl phthalate (c)	µg/l	1.9	HH	None*	None*	NA
Di-n-octyl phthalate	µg/l	30	Tox.	825	1650	Tox.
Dissolved oxygen	mg/l	7.0 as a daily minimum				

This dissolved oxygen standard requires 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).

Endosulfan	µg/l	0.0076	HH	0.084	0.17	Tox.
Endrin	µg/l	0.0039	HH	0.090	0.18	Tox.
Ethylbenzene	µg/l	68	Tox.	1859	3717	Tox.

Fecal coliform organisms	Not to exceed 200 organisms per 100 milliliters as a geometric mean of not less than five samples in any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 400 organisms per 100 milliliters. The standard applies only between April 1 and October 31.					
Fluoranthene	µg/l	1.9	Tox.	3.5	6.9	Tox.
Heptachlor (c)	ng/l	0.10	HH	260*	520*	Tox.
Heptachlor epoxide (c)	ng/l	0.12	HH	270*	530*	Tox.
Hexachloro-benzene (c)	ng/l	0.061	HH	None*	None*	Tox.
Lead, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Lead, total

The CS shall not exceed: exp.(1.273[ln(total hardness mg/l)]-4.705)

The MS shall not exceed: exp.(1.273[ln(total hardness mg/l)]-1.460)

The FAV shall not exceed: exp.(1.273[ln(total hardness mg/l)]-0.7643)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Lead standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	1.3	3.2	7.7
	MS	34	82	197
	FAV	68	164	396

Lindane (c) (Hexachlorocyclo-hexane, gamma-)	µg/l	0.0087	HH	1.0*	2.0*	Tox.
Mercury, total	µg/l	0.0069	HH	2.4*	4.9*	Tox.
Methylene chloride (c) (Dichloromethane)	µg/l	45	HH	13,875*	27,749*	Tox.
Naphthalene	µg/l	81	Tox.	409	818	Tox.
Nickel, total	µg/l	Formula	Tox/HH	Formula	Formula	Tox.

Nickel, total

The CS shall not exceed the human health-based standard of 297 µg/l. For waters with total hardness values less than 212 mg/l, the CS shall not exceed: exp.(0.846[ln(total hardness mg/l)] + 1.1645)

The MS shall not exceed: exp.(0.846[ln(total hardness mg/l)] + 3.3612)

The FAV shall not exceed: exp.(0.846[ln(total hardness mg/l)] + 4.0543)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Nickel standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	88	158	283
	MS	789	1418	2549
	FAV	1578	2836	5098

Oil	µg/l	500	NA	5000	10,000	NA
Parathion	µg/l	0.013	Tox.	0.07	0.13	Tox.
Pentachlorophenol	µg/l	0.93	HH	Formula	Formula	Tox.

Pentachlorophenol

The CS shall not exceed: 0.93

The MS shall not exceed: exp.(1.005[pH]-4.830)

The FAV shall not exceed: exp.(1.005[pH]-4.1373)

Pentachlorophenol standards in µg/l for three pH values:

pH (su)		7.0	7.5	8.0
Standard:	CS	0.93	0.93	0.93
	MS	9.1	15	25
	FAV	18	30	50

pH (su)	Not less than 6.5 nor greater than 8.5					
Phenanthrene	µg/l	3.6	Tox.	32	64	Tox.
Phenol	µg/l	123	Tox.	2214	4428	Tox.
Polychlorinated biphenyls, total (c)	ng/l	0.014	HH	1000*	2000*	Tox.
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as permitted by the appropriate authority having control over their use.					
Selenium	µg/l	5.0	Tox.	20	40	Tox.
Silver, total	µg/l	0.12	Tox.	Formula	Formula	Tox.

Silver, total

The CS shall not exceed: 0.12

The MS shall not exceed: exp.(1.720[ln(total hardness mg/l)]-7.2156)

The FAV shall not exceed: exp.(1.720[ln(total hardness mg/l)]-6.520) provided that the MS and FAV shall be no less than 0.12 µg/l

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Silver standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	0.12	0.12	0.12
	MS	0.61	2.0	6.7
	FAV	1.2	4.1	13

Temperature	No material increase					
1,1,2,2 -Tetrachloroethane (c)	µg/l	1.1	HH	1127*	2253*	Tox.
Tetrachloroethylene (c)	µg/l	3.8	HH	428*	857*	Tox.
Thallium	µg/l	0.28	HH	64	128	Tox.
Toluene	µg/l	253	Tox.	1352	2703	Tox.
Toxaphene (c)	ng/l	0.31	HH	730*	1500*	Tox.
1,1,1 -Trichloroethane	µg/l	329	Tox.	2957	5913	Tox.
1,1,2 -Trichloroethylene (c)	µg/l	25	HH	6988*	13,976*	Tox.
2,4,6 -Trichlorophenol	µg/l	2.0	HH	102	203	Tox.
Turbidity value	NTU	10	NA	None	None	NA
Vinyl chloride (c)	µg/l	0.17	HH	None*	None*	NA
Xylene, total m,p,o	µg/l	166	Tox.	1407	2814	Tox.
Zinc, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Zinc, total

The CS shall not exceed: exp.(0.8473[ln(total hardness mg/l)] + 0.7615)

The MS shall not exceed: exp.(0.8473[ln(total hardness mg/l)] + 0.8604)

The FAV shall not exceed: exp.(0.8473[ln(total hardness mg/l)] + 1.5536)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Zinc standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	59	106	191
	MS	65	117	211
	FAV	130	234	421

Subp. 3. **Class 2Bd waters.** The quality of Class 2Bd surface waters shall be such as to permit the propagation and maintenance of a healthy community of cool or warm water sport or commercial fish and associated aquatic life and their habitats. These waters shall be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable. This class of surface waters are also protected as a source of drinking water. The applicable standards are given below, with substances considered carcinogenic followed by a (c). The basis columns to the right of the chronic standards and to the right of the acute standards indicate whether the chronic and acute standards, respectively, are based on the protection of the aquatic community from adverse toxic effects (Tox.), or the protection of human consumers of drinking water

and sport-caught fish (HH). "NA" means not applicable. Subpart 7, item E, should be referenced for FAV and MS values and "none" noted with an asterisk (*):

Substance or Characteristic (c) = carcinogen	Units	Class 2Bd Chronic Standard CS	Basis	Class 2Bd Acute Standards MS	FAV	Basis
Acenaphthene	µg/l	20	HH	56	112	Tox.
Acrylonitrile (c)	µg/l	0.38	HH	1140*	2281*	Tox.
Alachlor (c)	µg/l	4.2	HH	800*	1600*	Tox.
Aluminum, total	µg/l	125	Tox.	1072	2145	Tox.
Ammonia un-ionized as N	µg/1	40	Tox.	None	None	NA

The percent un-ionized ammonia can be calculated for any temperature and pH as described in subpart 2.

Anthracene	µg/l	0.035	Tox.	0.32	0.63	Tox.
Antimony	µg/l	5.5	HH	90	180	Tox.
Arsenic, total	µg/l	2.0	HH	360	720	Tox.
Atrazine (c)	µg/l	3.4	HH	323	645	Tox.
Benzene (c)	µg/l	11	HH	4487*	8974*	Tox.
Bromoform	µg/l	41	HH	2900	5800	Tox.
Cadmium, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Cadmium, total

The CS shall not exceed: exp.(0.7852[ln(total hardness mg/l)]-3.490)

The MS shall not exceed: exp.(1.128[ln(total hardness mg/l)]-1.685)

The FAV shall not exceed: exp.(1.128[ln(total hardness mg/l)]-0.9919)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Cadmium standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	0.66	1.1	2.0
	MS	15	33	73
	FAV	31	67	146

Carbon tetra-chloride (c)	µg/l	1.9	HH	1750*	3500*	Tox.
Chlordane (c)	ng/l	0.29	HH	1200*	2400*	Tox.
Chloride	mg/l	230	Tox.	860	1720	Tox.
Chlorine, total residual	µg/l	11	Tox.	19	38	Tox.

Chlorine standard applies to conditions of continuous exposure, where continuous exposure refers to chlorinated effluents that are discharged for more than a total of two hours in any 24-hour period.

Chlorobenzene (Monochlorobenzene)	µg/l	20	HH	423	846	Tox.
Chloroform (c)	µg/l	53	HH	1392	2784	Tox.
Chlorpyrifos	µg/l	0.041	Tox.	0.083	0.17	Tox.
Chromium +3, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Chromium +3, total

The CS shall not exceed: exp.(0.819[ln(total hardness mg/l)] + 1.561)

The MS shall not exceed: exp.(0.819[ln(total hardness mg/l)] + 3.688)

The FAV shall not exceed: exp.(0.819[ln(total hardness mg/l)] + 4.380)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Chromium +3 standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	117	207	365
	MS	984	1737	3064
	FAV	1966	3469	6120

Chromium +6, total	µg/l	11	Tox.	16	32	Tox.
Cobalt	µg/l	2.8	HH	436	872	Tox.
Copper, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Copper, total

The CS shall not exceed: exp.(0.620[ln(total hardness mg/l)]-0.570)

The MS shall not exceed: exp.(0.9422[ln(total hardness mg/l)]-1.464)

The FAV shall not exceed: exp.(0.9422[ln(total hardness mg/l)]-0.7703)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Copper standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	6.4	9.8	15
	MS	9.2	18	34
	FAV	18	35	68

Cyanide, free	µg/l	5.2	Tox.	22	45	Tox.
DDT (c)	ng/L	1.7	HH	550*	1100*	Tox.
1,2-Dichloro-ethane (c)	µg/l	3.8	HH	45,050*	90,100*	Tox.
Dieldrin (c)	ng/l	0.026	HH	1300*	2500*	Tox.
Di-2-ethylhexyl phthalate (c)	µg/l	1.9	HH	None*	None*	NA
Di-n-octyl phthalate	µg/l	30	Tox.	825	1650	Tox.
Dissolved oxygen	mg/l	5 as a daily minimum				

This dissolved oxygen standard may be modified on a site-specific basis according to subpart 8, except that no site-specific standard shall be less than

5 mg/l as a daily average and 4 mg/l as a daily minimum. Compliance with this standard is required 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).

Endosulfan	µg/l	0.029	HH	0.28	0.56	Tox.
Endrin	µg/l	0.016	HH	0.090	0.18	Tox.
Ethylbenzene	µg/l	68	Tox.	1859	3717	Tox.
Fecal coliform organisms	Not to exceed 200 organisms per 100 milliliters as a geometric mean of not less than five samples in any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 2000 organisms per 100 milliliters. The standard applies only between April 1 and October 31.					
Fluoranthene	µg/l	1.9	Tox.	3.5	6.9	Tox.
Heptachlor (c)	ng/l	0.39	HH	260*	520*	Tox.
Heptachlor epoxide (c)	ng/l	0.48	HH	270*	530*	Tox.
Hexachloro-benzene (c)	ng/l	0.24	HH	None*	None*	Tox.
Lead, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Lead, total

The CS shall not exceed: exp.(1.273[ln(total hardness mg/l)]-4.705)

The MS shall not exceed: exp.(1.273[ln(total hardness mg/l)]-1.460)

The FAV shall not exceed: exp.(1.273[ln(total hardness mg/l)]-0.7643)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Lead standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	1.3	3.2	7.7
	MS	34	82	197
	FAV	68	164	396

Lindane (c) (Hexachlorocyclo-hexane, gamma-)	µg/l	0.032	HH	4.4*	8.8*	Tox.
Mercury, total	µg/l	0.0069	HH	2.4*	4.9*	Tox.
Methylene chloride (c) (Dichloromethane)	µg/l	46	HH	13,875*	27,749*	Tox.
Naphthalene	µg/l	81	Tox.	409	818	Tox.
Nickel, total	µg/l	Formula	Tox/HH	Formula	Formula	Tox.

Nickel, total

The CS shall not exceed the human health-based standard of 297 µg/l: For waters with total hardness values less than 212 mg/l, the CS shall not exceed: exp.(0.846[ln(total hardness mg/l)] + 1.1645)

The MS shall not exceed: exp.(0.846[ln(total hardness mg/l)] + 3.3612)

The FAV shall not exceed: exp.(0.846[ln(total hardness mg/l)] + 4.0543)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Nickel standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	88	158	283
	MS	789	1418	2549
	FAV	1578	2836	5098

Oil	µg/l	500	NA	5000	10,000	NA
Parathion	µg/l	0.013	Tox.	0.07	0.13	Tox.
Pentachlorophenol	µg/l	1.9	HH	Formula	Formula	Tox.

Pentachlorophenol

The CS shall not exceed: 1.9

The MS shall not exceed: exp.(1.005[pH]-4.830)

The FAV shall not exceed: exp.(1.005[pH]-4.1373)

Pentachlorophenol standards in µg/l for three pH values:

pH (su)		7.0	7.5	8.0
Standard:	CS	1.9	1.9	1.9
	MS	9.1	15	25
	FAV	18	30	50

pH (su)	Not less than 6.5 nor greater than 9.0					
Phenanthrene	µg/l	3.6	Tox.	32	64	Tox.
Phenol	µg/l	123	Tox.	2214	4428	Tox.
Polychlorinated biphenyls, total (c)	ng/l	0.029	HH	1000*	2000*	Tox.
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as permitted by the appropriate authority having control over their use.					
Selenium	µg/l	5.0	Tox.	20	40	Tox.
Silver, total	µg/l	1.0	Tox.	Formula	Formula	Tox.

Silver, total

The CS shall not exceed: 1.0

The MS shall not exceed: exp.(1.720[ln(total hardness mg/l)]-7.2156)

The FAV shall not exceed: exp.(1.720[ln(total hardness mg/l)]-6.520)

Provided that the MS and FAV shall be no less than 1.0 µg/l

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Silver standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	1.0	1.0	1.0
	MS	1.0	2.0	6.7
	FAV	1.2	4.1	13

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					
1,1,2,2 -Tetrachloroethane (c)	µg/l	1.5	HH	1127*	2253*	Tox.
Tetrachloroethylene (c)	µg/l	3.8	HH	428*	857*	Tox.
Thallium	µg/l	0.28	HH	64	128	Tox.
Toluene	µg/l	253	Tox.	1352	2703	Tox.
Toxaphene (c)	ng/l	1.3	HH	730*	1500*	Tox.
1,1,1 -Trichloroethane	µg/l	329	Tox.	2957	5913	Tox.
1,1,2 -Trichloroethylene (c)	µg/l	25	HH	6988*	13,976*	Tox.
2,4,6 -Trichlorophenol	µg/l	2.0	HH	102	203	Tox.
Turbidity value	NTU	25	NA	None	None	NA
Vinyl chloride (c)	µg/l	0.18	HH	None*	None*	NA
Xylene, total m,p,o	µg/l	166	Tox.	1407	2814	Tox.
Zinc, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Zinc, total

The CS shall not exceed: exp.(0.8473[ln(total hardness mg/l)] + 0.7615)

The MS shall not exceed: exp.(0.8473[ln(total hardness mg/l)] + 0.8604)

The FAV shall not exceed: exp.(0.8473[ln(total hardness mg/l)] + 1.5536)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Zinc standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	59	106	191
	MS	65	117	211
	FAV	130	234	421

Subp. 4. **Class 2B waters.** The quality of Class 2B surface waters shall be such as to permit the propagation and maintenance of a healthy community of cool or warm water sport or commercial fish and associated aquatic life, and their habitats. These waters shall be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable. This class of surface water is not protected as a source of drinking water. The applicable standards are given below, with substances considered carcinogenic followed by a (c). The basis columns to the right of the chronic standards and to the right of the acute standards indicate whether the chronic and acute standards, respectively, are based on the protection of the aquatic community from adverse toxic effects (Tox.), or the protection of human consumers of sport-caught fish (HH). "NA" means not applicable. Subpart 7, item E, should be referenced for FAV and MS values and "none" noted with an asterisk (*):

Substance or Characteristic (c) = carcinogen	**Units**	**Class 2B Chronic Standard CS**	**Basis**	**Class 2B Acute Standards MS**	**FAV**	**Basis**
Acenaphthene	µg/l	20	HH	56	112	Tox.
Acrylonitrile (c)	µg/l	0.89	HH	1140*	2281*	Tox.
Alachlor	µg/l	59	Tox.	800	1600	Tox.
Aluminum, total	µg/l	125	Tox.	1072	2145	Tox.
Ammonia un-ionized as N	µg/1	40	Tox.	None	None	NA

The percent un-ionized ammonia can be calculated for any temperature and pH as described in subpart 2.

Anthracene	µg/l	0.035	Tox.	0.32	0.63	Tox.
Antimony	µg/l	31	Tox.	90	180	Tox.
Arsenic, total	µg/l	53	HH	360	720	Tox.
Atrazine	µg/l	10	Tox.	323	645	Tox.
Benzene	µg/l	114	Tox.	4487	8974	Tox.
Bromoform	µg/l	466	HH	2900	5800	Tox.
Cadmium, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Cadmium, total

The CS shall not exceed: exp.(0.7852[ln(total hardness mg/l)]-3.490)

The MS shall not exceed: exp.(1.128[ln(total hardness mg/l)]-1.685)

The FAV shall not exceed: exp.(1.128[ln(total hardness mg/l)]-0.9919)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Cadmium standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	0.66	1.1	2.0
	MS	15	33	73
	FAV	31	67	146

Carbon tetrachloride (c)	µg/l	5.9	HH	1750*	3500*	Tox.

Chlordane (c)	ng/l	0.29	HH	1200*	2400*	Tox.
Chloride	mg/l	230	Tox.	860	1720	Tox.
Chlorine, total residual	µg/l	11	Tox.	19	38	Tox.

Chlorine standard applies to conditions of continuous exposure, where continuous exposure refers to chlorinated effluents that are discharged for more than a total of two hours in any 24-hour period.

Chlorobenzene (Monochlorobenzene)	µg/l	20	HH	423	846	Tox.
Chloroform	µg/l	155	Tox.	1392	2784	Tox.
Chlorpyrifos	µg/l	0.041	Tox.	0.083	0.17	Tox.
Chromium +3, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Chromium +3, total

The CS shall not exceed: exp.(0.819[ln(total hardness mg/l)]+1.561)

The MS shall not exceed: exp.(0.819[ln(total hardness mg/l)]+3.688)

The FAV shall not exceed: exp.(0.819[ln(total hardness mg/l)]+4.380)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Chromium +3 standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	117	207	365
	MS	984	1737	3064
	FAV	1966	3469	6120

Chromium +6, total	µg/l	11	Tox.	16	32	Tox
Cobalt	µg/l	5.0	Tox.	436	872	Tox.
Copper, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Copper, total

The CS shall not exceed: exp.(0.6200[ln(total hardness mg/l)]-0.570)

The MS shall not exceed: exp.(0.9422[ln(total hardness mg/l)]-1.464)

The FAV shall not exceed: exp.(0.9422[ln(total hardness mg/l)]-0.7703)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Copper standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	6.4	9.8	15
	MS	9.2	18	34
	FAV	18	35	68

Cyanide, free	µg/l	5.2	Tox.	22	45	Tox.
DDT (c)	ng/l	1.7	HH	550*	1100*	Tox.

1,2-Dichloro-ethane (c)	µg/l	190	HH	45,050*	90,100*	Tox.
Dieldrin (c)	ng/l	0.026	HH	1300*	2500*	Tox.
Di-2-ethylhexyl phthalate (c)	µg/l	2.1	HH	None*	None*	NA
Di-n-octyl phthalate	µg/l	30	Tox.	825	1650	Tox.
Dissolved oxygen	mg/l	5.0 as a daily minimum				

This dissolved oxygen standard may be modified on a site-specific basis according to subpart 8, except that no site-specific standard shall be less than 5 mg/l as a daily average and 4 mg/l as a daily minimum. Compliance with this standard is required 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). This standard applies to all Class 2B waters except for those portions of the Mississippi River from the outlet of the metro wastewater treatment works in Saint Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River the standard is not less than 5 mg/l as a daily average from April 1 through November 30, and not less than 4 mg/l at other times.

Endosulfan	µg/l	0.031	HH	0.28	0.56	Tox.
Endrin	µg/l	0.016	HH	0.090	0.18	Tox.
Ethylbenzene	µg/l	68	Tox.	1859	3717	Tox.
Fecal coliform organisms	Not to exceed 200 organisms per 100 milliliters as a geometric mean of not less than five samples in any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters. The standard applies only between April 1 and October 31.					
Fluoranthene	µg/l	1.9	Tox.	3.5	6.9	Tox.
Heptachlor (c)	ng/l	0.39	HH	260*	520*	Tox.
Heptachlor epoxide (c)	ng/l	0.48	HH	270*	530*	Tox.
Hexachloro-benzene (c)	ng/l	0.24	HH	None*	None*	Tox.
Lead, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Lead, total

The CS shall not exceed: exp.(1.273[ln(total hardness mg/l)]-4.705)

The MS shall not exceed: exp.(1.273[ln(total hardness mg/l)]-1.460)

The FAV shall not exceed: exp.(1.273[ln(total hardness mg/l)]-0.7643)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Lead standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	1.3	3.2	7.7
	MS	34	82	197
	FAV	68	164	396

Lindane (c) (Hexachlorocyclo-hexane, gamma-)	µg/l	0.036	HH	4.4*	8.8*	Tox.
Mercury, total	µg/l	0.0069	HH	2.4*	4.9*	Tox.
Methylene chloride (c) (Dichloromethane)	µg/l	1940	HH	13,875	27,749	Tox.
Naphthalene	µg/l	81	Tox.	409	818	Tox.
Nickel, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Nickel, total

The CS shall not exceed: exp.(0.846[ln(total hardness mg/l)] + 1.1645)

The MS shall not exceed: exp.(0.846[ln(total hardness mg/l)] + 3.3612)

The FAV shall not exceed: exp.(0.846[ln(total hardness mg/l)] + 4.0543)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Nickel standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	88	158	283
	MS	789	1418	2549
	FAV	1578	2836	5098

Oil	µg/l	500	NA	5000	10,000	NA
Parathion	µg/l	0.013	Tox.	0.07	0.13	Tox.
Pentachloro-phenol	µg/l	Formula	Tox. /HH	Formula	Formula	Tox.

For waters with pH values greater than 6.95, the CS shall not exceed the human health-based standard of 5.5 µg/l. For waters with pH values less than 6.96, the CS shall not exceed: exp.(1.005[pH]-5.290)

The MS shall not exceed: exp.(1.005[pH]-4.830)

The FAV shall not exceed: exp.(1.005[pH]-4.1373)

Pentachlorophenol standards in µg/l for three pH values:

pH (su)		7.0	7.5	8.0
Standard:	CS	5.5	5.5	5.5
	MS	9.1	15	25
	FAV	18	30	50

pH (su)	Not less than 6.5 nor greater than 9.0					
Phenanthrene	µg/l	3.6	Tox.	32	64	Tox.
Phenol	µg/l	123	Tox.	2214	4428	Tox.
Polychlorinated biphenyls, total (c)	ng/l	0.029	HH	1000*	2000*	Tox.
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as permitted by the appropriate authority having control over their use.					
Selenium	µg/l	5.0	Tox.	20	40	Tox.
Silver, total	µg/l	1.0	Tox.	Formula	Formula	Tox.

Silver, total

The CS shall not exceed: 1.0

The MS shall not exceed: exp.(1.720[ln(total hardness mg/l)]-7.2156)

The FAV shall not exceed: exp.(1.720[ln(total hardness mg/l)]-6.520)

Provided that the MS and FAV shall be no less than 1.0 µg/l

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Silver standards in µg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	1.0	1.0	1.0
	MS	1.0	2.0	6.7
	FAV	1.2	4.1	13

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					
1,1,2,2 -Tetrachloroethane (c)	µg/l	13	HH	1127	2253	Tox.
Tetrachloroethylene (c)	µg/l	8.9	HH	428	857	Tox.
Thallium	µg/l	0.56	HH	64	128	Tox.
Toluene	µg/l	253	Tox.	1352	2703	Tox.
Toxaphene (c)	ng/l	1.3	HH	730*	1500*	Tox.
1,1,1 -Trichloroethane	µg/l	329	Tox.	2957	5913	Tox.
1,1,2 -Trichloroethylene (c)	µg/l	120	HH	6988	13,976	Tox.
2,4,6 -Trichlorophenol	µg/l	2.0	HH	102	203	Tox.
Turbidity value	NTU	25	NA	None	None	NA
Vinyl chloride (c)	µg/l	9.2	HH	None*	None*	NA
Xylene, total m,p,o	µg/l	166	Tox.	1407	2814	Tox.
Zinc, total	µg/l	Formula	Tox.	Formula	Formula	Tox.

Zinc, total

The CS shall not exceed: exp.(0.8473[ln(total hardness mg/l)] + 0.7615)

The MS shall not exceed: exp.(0.8473[ln(total hardness mg/l)] + 0.8604)

The FAV shall not exceed: exp.(0.8473[ln(total hardness mg/l)] + 1.5536)

For hardness values greater than 400 mg/l, 400 mg/l shall be used to calculate the standard.

Zinc standards in μg/l for three hardness values:

Hardness (mg/l)		50	100	200
Standard:	CS	59	106	191
	MS	65	117	211
	FAV	130	234	421

Subp. 5. **Class 2C waters.** The quality of Class 2C surface waters shall be such as to permit the propagation and maintenance of a healthy community of indigenous fish and associated aquatic life, and their habitats. These waters shall be suitable for boating and other forms of aquatic recreation for which the waters may be usable. The standards for Class 2B waters listed in subpart 4 shall apply to these waters except as listed below:

Substance or Characteristic

Dissolved oxygen 5 mg/l as a daily minimum. This dissolved oxygen standard may be modified on a site-specific basis according to subpart 8, except that no site-specific standard shall be less than 5 mg/l as a daily average and 4 mg/l as a daily minimum. Compliance with this standard is required 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).

This dissolved oxygen standard applies to all Class 2C waters except for those portions of the Mississippi River from the outlet of the metro wastewater treatment works in Saint Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815) and except for the reach of the Minnesota River from the outlet of the Blue Lake wastewater treatment works (River Mile 21) to the mouth at Fort Snelling. For this reach of the Mississippi River the standard is not less than 5 mg/l as a daily average from April 1 through November 30, and not less than 4 mg/l at other times. For the specified reach of the Minnesota River the standard shall be not less than 5 mg/l as a daily average year-round.

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.

Subp. 6. **Class 2D waters.** The quality of Class 2D wetlands shall be such as to permit the propagation and maintenance of a healthy community of aquatic and terrestrial species indigenous to wetlands, and their habitats. Wetlands also add to the biological diversity of the landscape. These waters shall be suitable for boating and other forms of aquatic recreation for which the wetland may be usable. The standards for Class 2B waters listed under subpart 4 shall apply to these waters except as listed below:

Substance or Characteristic	Class 2D Standard
Dissolved oxygen	If background is less than 5.0 mg/l as a daily minimum, maintain background*
pH	Maintain background
Temperature	Maintain background

*"Maintain background" means the concentration of the water quality substance or characteristic shall not deviate from the range of natural background concentrations or conditions such that there is a potential significant adverse impact to the designated uses.

Activities in wetlands which involve the normal farm practices of planting with annually seeded crops or the utilization of a crop rotation seeding of pasture grasses or legumes, including the recommended applications of fertilizer and pesticides, are excluded from the standards in this subpart and the wetland standards in parts 7050.0224, subpart 4; 7050.0225, subpart 2; and 7050.0227. All other activities in these wetlands must meet water quality standards.

Subp. 7. **Additional standards.** The following additional standards and requirements apply to all Class 2 waters.

A. No sewage, industrial waste, or other wastes from point or nonpoint sources shall be discharged into any of the waters of this category so as to cause any material change in any other substances or characteristics which may impair the quality of the waters of the state or the aquatic biota of any of the classes in subparts 2 to 6 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.

B. To prevent acutely toxic conditions, concentrations of toxic pollutants from point or nonpoint sources must not exceed the FAV as a one-day average at the point of discharge or in the surface water consistent with parts 7050.0210, subpart 5; 7050.0211, subpart 1; 7050.0212, subpart 6; and 7050.0214, subpart 1.

If a discharge is composed of a mixture of more than one chemical, and the chemicals have the same mode of toxic action, the commissioner has the option to apply an additive model to determine the toxicity of the mixture using the following formula:

$$\frac{C1}{FAV1} + \frac{C2}{FAV2} + \ldots + \frac{Cn}{FAVn}$$

equals a value of one or more, an acutely toxic condition is indicated

where: C1 .... Cn is the concentration of the first to the nth toxicant.
FAV1 .... FAVn is the FAV for the first to the nth toxicant.

C. To prevent chronically toxic conditions, concentrations of toxic pollutants must not exceed the applicable CS or MS in surface waters outside allowable mixing zones as described in part 7050.0210, subpart 5. The CS and MS will be averaged over the following durations: the MS will be a one-day average; the CS, based on toxicity to aquatic life, will be a four-day average; and the CS, based on human health or wildlife toxicity, will be a 30-day average.

D. Concentrations of carcinogenic chemicals from point or nonpoint sources, singly or in mixtures, should not exceed a risk level of one chance in 100,000 in surface waters. Carcinogenic chemicals will be considered additive in their effect according to the following formula unless an alternative model is supported by available scientific

evidence. The additive formula applies to chemicals that have a human health-based standard calculated with a cancer potency factor.

$$\frac{C1}{CC1} + \frac{C2}{CC2} + \ldots + \frac{Cn}{CCn}$$ equals a value of one or more, a risk level greater than 10^{-5} is indicated

where: C1 .... Cn is the concentration of the first to the nth carcinogen.
CC1 .... CCn is the drinking water plus fish consumption criterion (dfCC) or fish consumption criterion (fCC) for the first to nth carcinogenic chemical.

E. For carcinogenic or highly bioaccumulative chemicals with BCFs greater than 5,000 or log Kow values greater than 5.19, the human health-based CS may be two or more orders of magnitude smaller than the acute toxicity-based MS. If the commissioner finds that a very large MS and FAV, relative to the CS for such pollutants is not protective of the public health, the MS and FAV shall be reduced according to the following guidelines:

If the ratio of the MS to the CS is greater than 100, the CS times 100 should be substituted for the applicable MS, and the CS times 200 should be substituted for the applicable FAV. Any effluent limitation derived using the procedures of this item shall only be required after the discharger has been given notice of the specific proposed effluent limitations and an opportunity to request a hearing as provided in part 7000.1800. The relevant MS and FAV values, or if there is no MS or FAV, the word "none," are marked by an asterisk (*) in subparts 2 to 4 and part 7050.0220.

Subp. 8. **Site-specific modifications of standards.** The standards in subparts 2 to 6 are subject to review and modification as applied to a specific surface water reach or segment in the course of development of a permit effluent limitation or the evaluation of a remedial action cleanup activity. If site-specific information is available that shows that a site-specific modification is more appropriate than the statewide standard for a particular water or reach to be protected by the permit or cleanup activity, the site-specific information will be applied.

The information supporting a site-specific modification can be provided by the commissioner, or by any person outside the agency. The commissioner shall evaluate all data in support of a modified standard and determine whether a change in the standard for a specific water or reach is justified.

Any effluent limitation determined to be necessary based on a modified standard shall only be required after the discharger has been given notice to the specific proposed effluent limitations and an opportunity to request a hearing as provided in part 7000.1800.

Subp. 9. **Conversion factors for dissolved metal standards.**

Metal	Chronic standard	Maximum standard and Final Acute Value
Cadmium*	0.909	0.946
Chromium III	0.860	0.316
Chromium VI	0.962	0.982
Copper	0.960	0.960
Lead*	0.791	0.791
Mercury	1.0	0.850
Nickel	0.997	0.998

Silver	0.850	0.850
Zinc	0.986	0.978

*Conversion factors for cadmium and lead are hardness dependent. The values shown in the table are for a total hardness of 100 mg/l (as $CaCO_3$). The hardness dependent conversion factors for cadmium are calculated using the following formulas:

Chronic standard: 1.101672-[(ln total hardness) (0.041838)]

Maximum standard and final acute value: 1.136672-[(ln total hardness) (0.041838)]

The hardness dependent conversion factors for lead are calculated using the following formula:

Chronic and maximum standards and final acute value: 1.46203-[(ln total hardness) (0.145712)]

Statutory Authority: *MS s 14.06; 115.03; 115.44 116.07*

History: *18 SR 2195; 19 SR 1310; 24 SR 1105; 27 SR 1217*

7050.0223 SPECIFIC STANDARDS OF QUALITY AND PURITY FOR CLASS 3 WATERS OF THE STATE; INDUSTRIAL CONSUMPTION.

Subpart 1. **General.** The numerical and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the industrial consumption designated public uses and benefits. If the standards in this part are exceeded in waters of the state that have the Class 3 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.

Subp. 2. **Class 3A waters; industrial consumption.** The quality of Class 3A waters of the state shall be such as to permit their use without chemical treatment, except softening for groundwater, 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 1B waters for domestic consumption, except for the following:

Substance or Characteristic	Class 3A Standard
Chlorides (Cl)	50 milligrams per liter
Hardness, Ca + Mg as $CaCO_3$	50 milligrams per liter
pH value	6.5 - 8.5

Subp. 3. **Class 3B waters.** The quality of Class 3B 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 1D waters of the state used for domestic consumption, except the following:

Substance or Characteristic	Class 3B Standard
Chlorides (Cl)	100 milligrams per liter
Hardness, Ca + Mg as $CaCO_3$	250 milligrams per liter
pH value	6.0 - 9.0

Subp. 4. **Class 3C waters.** The quality of Class 3C 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 waters of the state:

Substance or Characteristic	Class 3C Standard
Chlorides (Cl)	250 milligrams per liter
Hardness, Ca + Mg as $CaCO_3$	500 milligrams per liter
pH value	6.0 - 9.0

Subp. 5. **Class 3D waters.** The quality of Class 3D wetlands shall be such as to permit their use for general industrial purposes, except for food processing, with only a moderate degree of treatment. The following standards apply:

Substance or Characteristic	Class 3D Standard
Chlorides (Cl)	Maintain background
Hardness, Ca + Mg as $CaCO_3$	Maintain background
pH	Maintain background

For the purposes of this subpart, "maintain background" means the concentration of the water quality substance or characteristic shall not deviate from the range of natural background concentrations or conditions such that there is a potential significant adverse impact to the designated uses.

Subp. 6. **Additional standards.** Additional selective limits may be imposed for any specific waters of the state as needed.

In addition to the standards in subparts 2 to 5, no sewage, industrial waste, or other wastes from point or nonpoint sources, treated or untreated, shall be discharged into or permitted by any person to gain access to any waters of the state classified for industrial purposes so as to cause any material impairment of their use as a source of industrial water supply.

Statutory Authority: *MS s 115.03; 115.44*

History: *18 SR 2195*

7050.0224 SPECIFIC STANDARDS OF QUALITY AND PURITY FOR CLASS 4 WATERS OF THE STATE; AGRICULTURE AND WILDLIFE.

Subpart 1. **General.** The numerical and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the agriculture and wildlife designated public uses and benefits. Wild rice is an aquatic plant resource found in certain waters within the state. The harvest and use of grains from this plant serve as a food source for wildlife and humans. In recognition of the ecological importance of this resource, wild rice waters have been specifically identified and listed in parts 7050.0460 and 7050.0470, subpart 1. The quality of these waters and the aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded. If the standards in this part are exceeded in waters of the state that have the Class 4 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.

Subp. 2. **Class 4A waters.** The quality of Class 4A 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 standards 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 United States Department of Agriculture, and any revisions, amendments, or supplements to it:

Substance or Characteristic	Class 4A Standard
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 at 25°C
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.

Subp. 3. **Class 4B waters.** The quality of Class 4B waters of the state shall be such as to permit their use by livestock and wildlife without inhibition or injurious effects. The standards for substances or characteristics given below shall not be exceeded in the waters of the state:

Substance or Characteristic	Class 4B Standard
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.
Toxic substances	None at levels harmful either directly or indirectly.

Additional selective limits may be imposed for any specific waters of the state as needed.

Subp. 4. **Class 4C waters.** The quality of Class 4C wetlands shall be such as to permit their use for irrigation and by wildlife and livestock without inhibition or injurious effects and be suitable for erosion control, groundwater recharge, low flow augmentation, stormwater retention, and stream sedimentation. The standards for Classes 4A and 4B waters shall apply to these waters except as listed below:

Substance or Characteristic	Class 4C Standard
pH	Maintain background
Settleable solids	Shall not be allowed in concentrations sufficient to create the potential for significant adverse impacts on one or more designated uses.

For the purposes of this subpart, "maintain background" means the concentration of the water quality substance or characteristic shall not deviate from the range of natural background concentrations or conditions such that there is a potential significant adverse impact to the designated uses.

Statutory Authority: *MS s 115.03; 115.44*
History: *18 SR 2195; 22 SR 1466; 24 SR 1105*

7050.0225 SPECIFIC STANDARDS OF QUALITY AND PURITY FOR CLASS 5 WATERS OF THE STATE; AESTHETIC ENJOYMENT AND NAVIGATION.

Subpart 1. **General.** The numerical and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the aesthetic enjoyment and navigation designated public uses and benefits. If the standards in this part are exceeded in waters of the state that have the Class 5 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.

Subp. 2. **Class 5 waters; aesthetic enjoyment and navigation.** The quality of Class 5 waters of the state shall be such as to be suitable for aesthetic enjoyment of scenery, to avoid any interference with navigation or damaging effects on property. The following standards shall not be exceeded in the waters of the state:

Substance or Characteristic	Class 5 Standard
For nonwetlands	
pH value	6.0 - 9.0
Hydrogen sulfide as S	0.02 milligram per liter
For wetlands	
pH value	Maintain background
Hydrogen sulfide as S	Maintain background

For the purposes of this subpart, "maintain background" means the concentration of the water quality substance or characteristic shall not deviate from the range of natural background concentrations or conditions such that there is a potential significant adverse impact to the designated uses.

Additional selective limits may be imposed for any specific waters of the state as needed.

Statutory Authority: *MS s 115.03; 115.44*
History: *18 SR 2195*

7050.0226 SPECIFIC STANDARDS OF QUALITY AND PURITY FOR CLASS 6 WATERS OF THE STATE; OTHER USES.

Subpart 1. **General.** The numerical and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for other designated public uses and benefits. If the standards in this part are exceeded in waters of the state that have the Class 6 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.

Subp. 2. **Class 6 waters; other uses.** The uses to be protected in Class 6 waters may be under other jurisdictions and in other areas to which the waters of the state are tributary, and may include any or all of the uses listed in parts 7050.0221 to 7050.0225, 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.

Statutory Authority: *MS s 115.03; 115.44*
History: *18 SR 2195*

7050.0227 SPECIFIC STANDARDS OF QUALITY AND PURITY FOR CLASS 7 WATERS OF THE STATE; LIMITED RESOURCE VALUE WATERS.

Subpart 1. **General.** The numerical and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that have limited resource value designated public uses and benefits. If the standards in this part are exceeded in waters of the state that have the Class 7 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.

Subp. 2. **Class 7 waters; limited resource value waters.** The quality of Class 7 waters of the state shall be such as to protect aesthetic qualities, secondary body contact use, and groundwater for use as a potable water supply. Standards of substances or characteristics given below shall not be exceeded in the waters:

Substance or Characteristic	Class 7 Standard
Fecal coliform organisms	Not to exceed 1,000 organisms per 100 milliliters in any calendar month as determined by a geometric mean of a minimum of five samples, nor shall more than ten percent of all samples taken during any calendar month individually exceed 2,000 organisms per 100 milliliters. The standard applies only between May 1 and October 31.
pH value	Not less than 6.0 nor greater than 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.
Toxic pollutants	Toxic pollutants shall not be allowed in such quantities or concentrations that will impair the specified uses.

Statutory Authority: *MS s 115.03; 115.44*
History: *18 SR 2195; 24 SR 1105*

7050.0300 [Repealed, 9 SR 913]

7050.0310 [Repealed, 9 SR 913]

7050.0320 [Repealed, 9 SR 913]

7050.0330 [Repealed, 9 SR 913]

7050.0340 [Repealed, 9 SR 913]

7050.0350 [Repealed, 9 SR 913]

7050.0360 [Repealed, 9 SR 913]

7050.0370 [Repealed, 9 SR 913]

7050.0380 [Repealed, 9 SR 913]

CLASSIFICATIONS

7050.0400 PURPOSE.

Parts 7050.0400 to 7050.0470 classify all surface waters within or bordering Minnesota and designate appropriate beneficial uses for these waters. The use classifications are defined in part 7050.0200.

Statutory Authority: *MS s 115.03; 115.44*
History: *9 SR 914; 12 SR 1810*

7050.0410 LISTED WATERS.

Those waters of the state, except wetlands, that are specifically listed in part 7050.0470 are, in addition to any classifications listed in part 7050.0470, also classified as Class 3C, 4A, 4B, 5, and 6 waters. Wetlands that are specifically listed in part 7050.0470 are, in addition to any classifications listed in part 7050.0470, also classified as Class 3D, 4C, 5, and 6 waters.

Statutory Authority: *MS s 115.03; 115.44*
History: *9 SR 914; 18 SR 2195*

7050.0420 TROUT WATERS.

Trout lakes identified in part 6264.0050, subpart 2, as amended through September 14, 1999, are classified as trout waters and are listed under part 7050.0470. Trout streams and their tributaries within the sections specified that are identified in part 6264.0050, subpart 4, as amended through September 14, 1999, are classified as trout waters. Trout streams are listed in part 7050.0470. Other lakes that are classified as trout waters are listed in part 7050.0470. All waters listed in part 7050.0470 as Class 1B, 2A, and 3B are also classified as Class 3C, 4A, 4B, 5, and 6 waters.

Statutory Authority: *MS s 115.03; 115.44*
History: *9 SR 914; 12 SR 1810; 15 SR 1057; 18 SR 2195; 24 SR 1105*

7050.0425 UNLISTED WETLANDS.

Those waters of the state that are wetlands as defined by part 7050.0130, item F, and that are not listed in part 7050.0470 are classified as Class 2D, 3D, 4C, 5, and 6 waters.

Statutory Authority: *MS s 115.03; 115.44*
History: *18 SR 2195*

7050.0430 UNLISTED WATERS.

All surface waters of the state that are not listed in part 7050.0470 and that are not wetlands as defined under part 7050.0130, item F, are hereby classified as Class 2B, 3B, 4A, 4B, 5, and 6 waters.

Statutory Authority: *MS s 115.03; 115.44*
History: *9 SR 914; 12 SR 1810; 18 SR 2195*

7050.0440 OTHER CLASSIFICATIONS SUPERSEDED.

Parts 7050.0400 to 7050.0470 supersede any other previous classifications and any classifications in other rules including parts 7056.0010 to 7056.0040.

Statutory Authority: *MS s 115.03; 115.44*
History: *9 SR 914; 12 SR 1810*

7050.0450 MULTICLASSIFICATIONS.

If a water of the state is classified in more than one class, all the water quality standards for each of the classes apply. If the water quality standards for particular parameters for the various classes are different, the more restrictive of the standards apply.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 914*

7050.0460 WATERS SPECIFICALLY CLASSIFIED.

The waters of the state listed in part 7050.0470 are classified as specified. The specific stretch of watercourse or the location of a waterbody is described by township, range, and section, abbreviated as T., R., S., respectively. Any community listed in part 7050.0470 is the community nearest the water classified, and is included solely to assist in identifying the water.

Outstanding resource value waters are listed in part 7050.0470 and are denoted by an asterisk (*) preceding the name of the water resource. Following the name is the effective date the water resource was designated as an outstanding resource value water and a letter code that corresponds to the applicable discharge restrictions in part 7050.0180, subpart 3 or 6. The letter code P corresponds to the prohibited discharges provision in part 7050.0180, subpart 3. The letter code R corresponds to the restricted discharges provision in part 7050.0180, subpart 6. The waters listed in part 7050.0470, subpart 1, that are not designated as outstanding resource value waters or classified as Class 7 waters are designated as outstanding international resource waters under part 7052.0300, subpart 3. Unlisted waters classified in part 7050.0430 and unlisted wetlands classified in part 7050.0425 that are located in the Lake Superior Basin are also designated as outstanding international resource waters under part 7052.0300, subpart 3.

Waters listed in part 7050.0470 that are classified as Class 2Bd are Class 2B waters also classified for domestic consumption purposes. Applicable standards for Class 2Bd waters are listed in part 7050.0222, subpart 3.

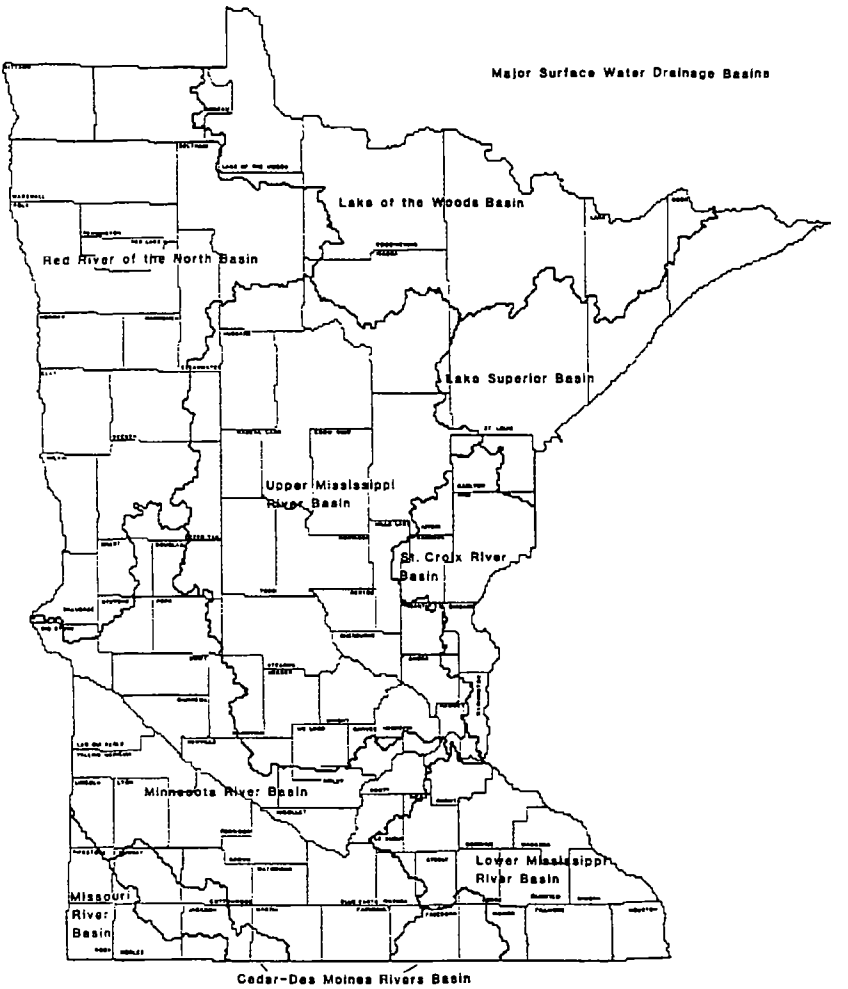
Waters designated as wild rice waters in part 7050.0470, subpart 1, are identified by the letters WR appearing in brackets following the name of the water.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 914; 12 SR 1810; 15 SR 1057; 18 SR 2195; 22 SR 1466*

7050.0465 [Repealed, 18 SR 2195]

7050.0466 MAP: MAJOR SURFACE WATER DRAINAGE BASINS.



Statutory Authority: *MS s 115.03; 115.44*

History: *18 SR 2195*

7050.0470 CLASSIFICATIONS FOR WATERS IN MAJOR SURFACE WATER DRAINAGE BASINS.

Subpart 1. **Lake Superior Basin.** The water use classifications for the listed waters in the Lake Superior Basin are as identified in items A, B, and D.

A. Streams:

(1) Ahlenius Creek, (T.53, R.14, S.9, 10): 1B, 2A, 3B;

(2) Amenda Creek, (T.59, R.5W): 2C;

(3) Amity Creek, (T.50, R.13, S.5, 6; T.50, R.14, S.1; T.51, R.13, S.31, 32; T.51, R.14, S.26, 27, 28, 35, 36): 1B, 2A, 3B;

(4) Amity Creek, East Branch (T.51, R.13, S.30, 31; T.51, R.14, S.13, 14, 15, 22, 24, 25, 36): 1B, 2A, 3B;

(5) Anderson Creek, (T.46, R.17, S.14, 15, 22, 26, 27): 1B, 2A, 3B;

(6) Anderson Creek, (T.49, R.15, S.16, 17, 18; T.49, R.16, S.12, 13): 1B, 2A, 3B;

(7) Artichoke Creek, (T.52, R.17, S.7, 17, 18): 1B, 2A, 3B;

(8) Assinika Creek, (T.63, R.1E, S.1; T.63, R.2E, S.7, 8, 16, 17, 21; T.64, R.1E, S.36; T.64, R.2E, S.31): 1B, 2A, 3B;

(9) Bally Creek, (T.61, R.1W, S.3, 4, 5, 6, 7, 8, 9, 10, 11; T.61, R.2W, S.12): 1B, 2A, 3B;

(10) Baptism River, East Branch, (T.57, R.6, S.6; T.57, R.7, S.1, 2, 3, 9, 10, 11, 12, 16, 17, 20; T.58, R.6, S.30, 31; T.58, R.7, S.13, 17, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30, 36; T.58, R.8, S.22, 23, 24, 25, 26): 1B, 2A, 3B;

(11) Baptism River, Main Branch, (T.56, R.7, S.3, 4, 5, 9, 10, 14, 15; T.57, R.7, S.20, 27, 28, 29, 33, 34): 1B, 2A, 3B;

(12) Baptism River, West Branch, (T.57, R.7, S.7, 17, 18, 20; T.57, R.8, S.1, 2, 12; T.58, R.8, S.2, 3, 4, 9, 10, 11, 15, 16, 20, 21, 22, 28, 33, 34, 35, 36; T.59, R.8, S. 34, 35): 1B, 2A, 3B;

(13) Barber Creek (East Swan River) (Chisholm Creek) Chisholm, (T.58, R.20, S.21, 22, 26, 27, 34, 35): 7;

(14) Barker Creek, (T. 60, R.3W, S.5, 6, 7, 8; T.60, R.4W, S.2, 3, 9, 10, 11, 12; T.61, R.4W, S.34, 35): 1B, 2A, 3B;

(15) Barrs Creek, (T.53, R.13, S.20, 27, 28, 29): 1B, 2A, 3B;

(16) Bear Trap Creek, (T.51, R.16, S.30; T.51, R.17, S.16, 21, 22, 23, 25, 26, 27, 28): 1B, 2A, 3B;

(17) Beaver Dam Creek, (T.63, R.3E, S.2, 3, 4, 5; T.64, R.3E, S.32, 33, 34, 35): 1B, 2A, 3B;

(18) Beaver River, (T.55, R.8, S.2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 16, 17; T.55, R.9, S.1, 2; T.56, R.8, S.31; T.56, R.9, S.4, 5, 6, 8, 9, 16, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 32, 33, 34, 35, 36; T.57, R.9, S.28, 32, 33): 1B, 2A, 3B;

(19) Beaver River, East Branch, (T.55, R.8, S.2; T.56, R.8, S.4, 5, 6, 8, 9, 15, 16, 21, 22, 25, 26, 27, 35, 36; T.57, R.8, S.7, 18, 19, 30, 31, 32; T.57, R.9, S.2, 3, 11, 12, 13, 14, 15, 23, 24, 25, 26, 36): 1B, 2A, 3B;

(20) Beaver River, West Branch, (T.55, R.8, S.7, 17, 18; T.55, R.9, S.2, 3, 4, 10, 11, 12, 13, 14): 1B, 2A, 3B;

(21) Berry Creek (Breda), (T.55, R.12, S.6, 7; T.55, R.13, S.12, 13; T.56, R.11, S.6; T.56, R.12, S.1, 11, 12, 14, 15, 16, 21, 28, 29, 31, 32; T.57, R.11, S.10, 15, 16, 21, 28, 29, 31, 32): 1B, 2A, 3B;

(22) Blackhoof River, (T. 47, R.16, S.29, 30; T.47, R.17, S.6, 7, 9, 10, 14, 15, 16, 17, 18, 19, 20, 22, 25, 26, 27, 28; T.48, R.17, S.30, 31): 1B, 2A, 3B;

(23) Blesner Creek, (T.58, R.6, S.20, 29, 30, 31): 1B, 2A, 3B;

(24) Blind Temperance Creek, (T.60, R.4W, S.19, 29, 30, 32; T.60, R.5W, S.24, 25, 36): 1B, 2A, 3B;

(25) Bluff Creek, (T.63, R.1W, S.13, 23, 24, 25): 1B, 2A, 3B;

(26) Boulder Creek, (T.53, 54, R.14): 2C;

(27) Bruce Creek, (T.53, R.22, S.6, 7; T.53, R.23, S.25, 26; T.54, R.22, S.18, 19, 30, 31; T.54, R.23, S.25, 26): 1B, 2A, 3B;

(28) Brule River, (T.62, R.2E, S.1, 2; T.62, R.3E, S.4, 5, 6, 9, 10, 15, 16, 22, 27, 34; T.63, R.2E, S.21, 22, 23, 25, 26, 27, 28, 33, 35, 36; T.63, R.3E, S.30, 31, 32): 1B, 2A, 3B;

(29) Brule River (excluding trout waters), (T.62, 63, 64, R.1W, 1E, 2E, 3E): 1B, 2Bd, 3B;

(30) Brule River, Little, (T.62, R.3E, S.19, 20, 29, 32, 33): 1B, 2A, 3B;

(31) Budd Creek, (T.55, R.9, S.7, 17, 18, 20, 21): 1B, 2A, 3B;

(32) Buhl Creek, Buhl, (T.58, R.19, S.20, 29): 7;

(33) *Burnt Creek, [11/5/84P] (T.62, R.4W, S.8, 9): 1B, 2A, 3B;

(34) Burnt Creek, (T.62, R.4W, S.16, 17, 20): 1B, 2A, 3B;

(35) Cabin Creek, (T.59, R.6W, S.19, 20; T.59, R.7, S.24): 1B, 2A, 3B;

(36) Captain Jacobson Creek, (T.52, R.12, S.1, 2, 3; T.53, R.12, S.33, 34, 35): 1B, 2A, 3B;

(37) Carey Creek, (T.53, R.14, S.28, 33): 1B, 2A, 3B;

(38) Caribou Creek, (T.60, R.3W, S.2, 3, 10): 1B, 2A, 3B;

(39) Caribou River, (T.58, R.6, S.1, 2, 11, 13, 14, 15, 22, 23, 24, 25, 26, 36; T.59, R.5W, S.19, 20, 29, 30, 31; T.59, R.6, S.23, 24, 25, 26, 35, 36): 1B, 2A, 3B;

(40) Carlson Creek, (T.52, R.12, S.19; R.13, S.14, 15, 23, 24): 1B, 2A, 3B;

(41) Carlson Creek (Stony Brook), (T.62, R.4E, S.3, 4, 9, 10; T.63, R.4E, S.31, 32, 33, 34): 1B, 2A, 3B;

(42) Cascade River, (T.60, R.2W, S.1; T.61, R.1W, S.19, 20, 21, 30, 31; T.61, R.2W, S.1, 12, 13, 14, 24, 25, 26, 35, 36; T.62, R.2W, S.10, 11, 14, 15, 16, 22, 23, 24, 25, 36): 1B, 2A, 3B;

(43) *Cascade River, [11/5/84P] (T.62, R.2W, S.3): 1B, 2A, 3B;

(44) Castle Danger Creek (Campers), (T.54, R.9, S.30, 31, 32): 1B, 2A, 3B;

(45) Cedar Creek, (T.56, R.8, S.13, 14, 23, 24, 26): 1B, 2A, 3B;

(46) Cedar Creek, (T.59, R.5W, S.2; T.60, R.5W, S.14, 22, 23, 25, 26, 35, 36): 1B, 2A, 3B;

(47) Cemetery Creek, (T.51, R.17, S.4, 5, 9): 1B, 2A, 3B;

(48) Chellberg Creek, (T.51, R.16, S.7; T.51, R.17, S.1, 2, 3, 10, 12): 1B, 2A, 3B;

(49) Chester Creek, (T.50, R.14, S.7, 8, 9, 14, 15, 16, 23): 1B, 2A, 3B;

(50) Chester Creek, East Branch, (T.50, R.14, S.4, 5, 9, 15, 16): 1B, 2A, 3B;

(51) Chicken Creek, (T.52, R.16, S.5, 7, 8, 18, 19; T.52, R.17, S.13, 24, 25; T.53, R.16, S.32): 1B, 2A, 3B;

(52) Clear Creek, (T.46, R.17, S.9, 10, 11, 12, 16, 17, 20, 29): 1B, 2A, 3B;

(53) Clear Creek, (T.47, R.15, S.7; T.47, R.16, S.1, 2, 3, 4, 12; T.48, R.16, S.33): 1B, 2A, 3B;

(54) Cliff Creek, (T.61, R. 2E, S.3, 4, 5, 9, 10; T.62, R.2E, S.29, 30, 31, 32): 1B, 2A, 3B;

(55) Cloudy Spring Creek, (T.57, R.9, S.5, 6, 7, 18; T.57, R.10, S.12, 13, 24): 1B, 2A, 3B;

(56) Colville Creek, East, (T.61, R.3E, S.5; T.62, R.2E, S.25; T.62, R.3E, S.30, 31, 32): 1B, 2A, 3B;

(57) Coolidge Creek, (T.55, R.14, S.19, 29, 30; T.55, R.15, S.25, 26, 35, 36): 1B, 2A, 3B;

(58) Cranberry Creek, (T.58, R.13): 2C;

(59) Cross River, (T.58, R.4W, S.6; T.58, R.5W, S.1; T.59, R.4W, S.31; T.59, R.5W, S.4, 5, 8, 9, 15, 16, 21, 22, 23, 25, 26, 35, 36; T.60, R.5W, S.30, 31, 32; T.60, R.6, S.13, 24, 25, 36): 1B, 2A, 3B;

(60) Crow Creek, (T.53, R.10, S.1, 2; T.54, R.10, S.15, 22, 23, 26, 35): 1B, 2A, 3B;

(61) Crown Creek, (T.57, R.8, S.2, 3, 4, 5, 9, 10, 11; T.58, R.8, S.5, 6, 7, 18, 19, 20, 29, 30, 31, 32, 33; T.58, R.9, S.1, 12, 13, 14, 24, 36; T.59, R.8, S.32): 1B, 2A, 3B;

(62) Crystal Creek, (T.48, R.16, S.6; T.48, R.17, S.1): 1B, 2A, 3B;

(63) Cutface Creek (Good Harbor Creek), (T.61, R.1W, S.27, 28, 29, 34): 1B, 2A, 3B;

(64) Dago Creek, (T.54, R.9, S.18, 19; T.54, R.10, S.2, 11, 12, 13; T.55, R.10, S.27, 34, 35): 1B, 2A, 3B;

(65) Deer Creek, (T.47, R.16, S.19, 20, 28, 29, 30; T.47, R.17, S.11, 12, 13, 24): 1B, 2A, 3B;

(66) Deer Yard Creek (Spruce Creek), (T.60, R.2W, S.4, 5, 6, 7, 8, 9, 10, 15, 16, 17; T.61, R.2W, S.32): 1B, 2A, 3B;

(67) Devil Track River, (T.61, R.1E, S.1, 2, 3, 10, 11, 12, 13; T.62, R.1E, S.26, 31, 32, 33, 34, 35, 36): 1B, 2A, 3B;

(68) Devil Track River, Little, (T.61, R.1E, S.4, 5, 6, 7, 8, 9, 10; T.61, R.1W, S.1, 2, 11, 12): 1B, 2A, 3B;

(69) Dragon Creek, (T.57, R.6, S.8, 9, 16, 17, 21): 1B, 2A, 3B;

(70) Durfee Creek, (T.61, R.2E, S.5, 6, 8; T.62, R.1E, S.25, 36; T.62, R.2E, S.31): 1B, 2A, 3B;

(71) Dutchess Slough Creek, (T.50, R.17, S.4, 9, 10, 13, 14, 15, 24): 1B, 2A, 3B;

(72) Egge Creek, (T.57, R.7, S.2, 3, 4, 11): 1B, 2A, 3B;

(73) Elbow Creek, (T.62, R.1E, S.3, 4, 9, 10, 15, 22, 27, 34; T.63, R.1E, S.33, 34): 1B, 2A, 3B;

(74) Elbow Creek, Eveleth, (T.57, R.17, S.6; T.57, R.18, S.1): 7;

(75) Elm Creek, (T.49, R.16, S.1, 2; T.50, R.16, S.35): 1B, 2A, 3B;

(76) Encampment River, (T.53, R.10, S.3, 10, 11; T.54, R.10, S.8, 16, 17, 21, 27, 28, 34): 1B, 2A, 3B;

(77) Farquhar Creek, (T.62, R.4E, S.2, 11; T.63, R.4E, S.34, 35): 1B, 2A, 3B;

(78) *Fiddle Creek, [11/5/84P] (T.64, R.1W, S.34):1B, 2A, 3B;

(79) Fiddle Creek, (T.63, R.1W, S.2, 3, 10, 15; T.64, R.1W, S.35): 1B, 2A, 3B;

(80) Flute Reed River, (T.62, R.3E, S.1, 2, 3, 10, 11, 12, 13, 14, 15; T.62, R.4E, S.17, 18, 19, 20; T.63, R.3E, S.26, 34, 35, 36): 1B, 2A, 3B;

(81) Fox Farm Creek, (T.62, R.1E, S.19, 30): 1B, 2A, 3B;

(82) French River, (T.51, R.12, S.7, 17, 18; T.51, R.13, S.1, 2, 3, 12; T.52, R.13, S.8, 9, 16, 17, 20, 21, 23, 26, 27, 28, 29, 34, 35): 1B, 2A, 3B;

(83) Fry Creek, (T.62, R.2W, S.25; T.62, 1W, S.29, 30, 31): 1B, 2A, 3B;

(84) Gauthier Creek, (T.62, R.3E, S.16, 20, 21, 22, 27): 1B, 2A, 3B;

(85) Gill Creek, (T.48, R.16, S.2): 1B, 2A, 3B;

(86) Gooseberry River, (T.54, R.9, S.18, 19, 20, 21, 22, 27; T.54, R.10, S.4, 5, 6, 8, 9, 10, 11, 12, 13; T.55, R.10, S.4, 9, 16, 17, 20, 29, 30, 31, 32; T.56, R.10, S.33): 1B, 2A, 3B;

(87) Gooseberry River, Little, (T.54, R,10, S.6; T.54, R.11, S.1; T.55, R.10, S.31; T.55, R.11, S.34, 35, 36): 1B, 2A, 3B;

(88) Grand Portage Creek, (T.63, R.5E, S.1; T.63, R.6E, S.4, 5, 6; T.64,; R.6E, S.31, 32, 33): 1B, 2A, 3B;

(89) Greenwood River, (T.63, R.2E, S.1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24; T.63, R.3E, S.6; T.64, R.2E, S.34; T.64, R.3E, S.31): 1B, 2A, 3B;

(90) Hay Creek, (T.49, R.16, S.3, 4, 9, 10, 15; T.50, R.16, S.20, 21, 28, 29, 32, 33): 1B, 2A, 3B;

(91) Heartbreak Creek, (T.59, R.4W, S.18, 19; T.59, R.5W, S.2, 11, 12, 13; T.60, R.5W, S.27, 28, 33, 34, 35): 1B, 2A, 3B;

(92) Hellwig Creek, (T.52, R.17, S.3, 10, 14, 15, 23, 26; T.53, R.16, S.16, 18, 19, 20, 30; T.53, R.17, S.13, 14, 23, 24, 25, 26, 34, 35): 1B, 2A, 3B;

(93) Hockamin Creek, (T.57, R.7, S.17, 18, 19; T.57, R.8, S.13, 16, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 32, 33): 1B, 2A, 3B;

(94) Hollow Rock Creek, (T.63, R.5E, S.9, 10, 11, 14, 15, 16, 23, 24, 25): 1B, 2A, 3B;

(95) Honeymoon Creek (Spring Creek), (T.61, R.4W, S.28, 31, 32, 33): 1B, 2A, 3B;

(96) Hornby Junction Creek, (T.55, R.13, S.5,6, 7; T.56, R.13, S.28, 32, 33): 1B, 2A, 3B;

(97) Horn Creek, (T.62, R.4W): 1B, 2Bd, 3B;

(98) Houghtaling Creek, (T.59, R.6, S.2, 3, 4, 5, 6; T.60, R.6, S.25, 32, 33, 35, 36): 1B, 2A, 3B;

(99) Humphrey Creek, (T.54, R.14, S.23, 26, 27, 33, 34): 1B, 2A, 3B;

(100) Hunter Creek, (T.46, R.18, S.2, 11, 12, 13; T.47, R.18, S.34, 35): 1B, 2A, 3B;

(101) Indian Camp Creek, (T.60, R.2W, S.3, 10, 11; T.61, R2W, S.34): 1B, 2A, 3B;

(102) Indian Creek, (T.55, R.12, S.3; T.56, R.12, S.14, 22, 23, 27, 34): 1B, 2A, 3B;

(103) Irish Creek, (T.63, R.3E, S.8, 9, 10, 13, 14, 15, 23, 24, 25, 26; T.63, R.4E, S.17, 18, 19): 1B, 2A, 3B;

(104) Joe Martin Creek, (T.50, R.18, S.3, 4, 5, 7, 8; T.50, R.19, S.12): 1B, 2A, 3B;

(105) Johnson Creek, (T.50, R.17, S.3, 10, 11, 14; T.51, R.17, S.34): 1B, 2A, 3B;

(106) Johnson Creek, (T.55, R.12, S.35, 36): 1B, 2A, 3B;

(107) Jonvick Creek, (T.60, R.2W, S.7, 19; T.60, R.3W, S.12, 13, 14, 24): 1B, 2A, 3B;

(108) Junco Creek, (T.62, R.1W, S.1, 2, 9, 10, 11, 12, 13, 14, 15, 16, 21, 28; T.62, R.1E, S.6, 7; T.63, R.1E, S.20, 29, 30, 31; T.63, R.1W, S.24, 25, 35): 1B, 2A, 3B;

(109) Kadunce Creek, (T.61, R.2E, S.2; T.62, R.2E, S.9, 10, 12, 13, 14, 15, 16, 22, 23, 24, 26, 35): 1B, 2A, 3B;

(110) Keene Creek, (T.49, R.14, S.18; T.49, R.15, S.1, 12, 13; T.50, R.15, S.24, 25, 36): 1B, 2A, 3B;

(111) Kehtel Creek, (T.51, R.15, S.8, 17, 18, 19, 20): 1B, 2A, 3B;

(112) Kimball Creek, (T.61, R.2E, S.3, 4, 10; T.62, R.2E, S.7, 16, 17, 18, 19, 20, 21, 28, 29, 33, 34): 1B, 2A, 3B;

(113) Kingsbury Creek, (T.49, R.15, S.4, 9, 10, 11, 13, 14; T.50, R.15, S.33, 34): 1B, 2A, 3B;

(114) Kinney Creek, (T.57, R.10, S.15, 21, 22, 28, 33): 1B, 2A, 3B;

(115) Knife River, (T.52, R.11, S.4, 5, 8, 9, 17, 18, 19, 31; T.53, R.11, S.4, 5, 7, 8, 17, 18, 20, 29, 32, 33; T.54, R.11, S.20, 29, 30, 32; T.52, R.12, S.24, 25, 36): 1B, 2A, 3B;

(116) Knife River, Little, (T.52, R.12, S.16, 17, 21, 22, 23, 26, 27, 28, 35, 36): 1B, 2A, 3B;

(117) Knife River, Little, East Branch, (T.53, R.11, S.17, 20, 21, 22, 27, 33, 34): 1B, 2A, 3B;

(118) Knife River, Little, West Branch, (T.52, R.11, S.5, 6; T.53, R.11, S.31; T.53, R.12, S.13, 14, 23, 24, 25, 26, 36): 1B, 2A, 3B;

(119) Knife River, West Branch, (T.52, R.11, S.5, 6, 8; T.52, R.12, S.1; T.53, R.12, S.2, 3, 10, 15, 16, 22, 23, 27, 28, 34, 35, 36; T.54, R.12, S.35, 36): 1B, 2A, 3B;

(120) Koski Creek, (T.61, R.4W, S.5, 8; T.62, R.4W, S.31, 32): 1B, 2A, 3B;

(121) Lavi Creek, (T.52, R.15, S.21, 28): 1B, 2A, 3B;

(122) Leppanen Creek (Leskinen Creek), (T.57, R.7, S.15, 21, 22, 28): 1B, 2A, 3B;

(123) Lester River, (T.50, R.13, S.4, 5, 8; T.51, R.13, S.5, 6, 7, 8, 16, 17, 18, 19, 20, 21, 28, 32, 33; T.51, R.14, S.1, 2, 10, 11, 12, 13, 15, 16, 24; T.52, R.13, S.31, 32; T.52, R.14, S.21, 22, 23, 27, 28, 34, 35): 1B, 2A, 3B;

(124) Lindstrom Creek, (T.56, R.7, S.4; T.57, R.7, S.19, 30, 31, 32, 33; T.57, R.8, S.25): 1B, 2A, 3B;

(125) Lullaby Creek, (T.63, R.1E, S.4, 5, 8, 9): 1B, 2A, 3B;

(126) Manganika Creek, Virginia, (T.58, R.17, S.19; T.58, R.18, S.24): 7;

(127) Manitou River, (T.57, R.6, S.3, 4, 10, 11; T.58, R.6, S.4, 5, 6, 7, 8, 16, 17, 18, 20, 21, 28, 29, 32, 33, 34): 1B, 2A, 3B;

(128) Manitou River, Little, (T.57, R.6, S.2; T.58, R.6, S.34, 35): 1B, 2A, 3B;

(129) Manitou River, North Branch, (T.58, R.6, S.6; T.58, R.7, S.1, 2; T.59, R.6, S.31; T.59, R.7, S.15, 16, 18, 19, 20, 21, 22, 25, 26, 27, 28, 33, 34, 35, 36; T.59, R.8, S.1, 2, 12, 13, 24, 25, 26): 1B, 2A, 3B;

(130) Manitou River, South Branch, (T.58, R.6, S.6; T.58, R.7, S.1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 17, 18; T.58, R.8, S.1; T.59, R.7, S.29, 30, 31, 32, 33): 1B, 2A, 3B;

(131) Marais River, Little, (T.57, R.6, S.5, 8, 16, 17, 21): 1B, 2A, 3B;

(132) Mark Creek, (T.61, R.2W, S.1, 2, 3, 4, 5, 6, 9): 1B, 2A, 3B;

(133) Marshall Creek, (T.52, R.15, S.10, 15): 1B, 2A, 3B;

(134) Martin Creek, (T.58, R.6, S.2, 3, 11): 1B, 2A, 3B;

(135) McCarthy Creek, (T.53, R.11, S.18; T.53, R.12, S.12, 13): 1B, 2A, 3B;

(136) Midway River, (T.49, R.15, S.5, 6; T.49, R.16, S.1, 12, 13, 14, 15, 21, 22; T.50, R.15, S.7, 8, 14, 15, 16, 17, 20, 21, 22, 23, 28, 29, 32, 33): 1B, 2A, 3B;

(137) Mile Post Forty-Three Creek, (T.56, R.8, S.2, 3, 9, 10, 11, 13, 14, 15): 1B, 2A, 3B;

(138) Miller Creek, (T.49, R.14, S.4; T.50, R.14, S.6, 18, 19, 29, 30, 32, 33; T.50, R.15, S.12, 13; T.51, R.14, S.31, 32): 1B, 2A, 3B;

(139) Mink Creek, (T.54, R.9, S.4, 5, 9; T.55, R.9, S.30, 31, 32; T.55, R.10, S.25, 26, 36): 1B, 2A, 3B;

(140) Mission Creek, (T.48, R.15, S.5, 6; T.49, R.15, S.31; T.49, R.16, S.25, 26, 36): 1B, 2A, 3B;

(141) Mississippi Creek, (T.61, R.2W, S.1, 2, 3; T.61, R.3W, S.1; T.62, R.2W, S.31, 32, 33, 34, 35, 36; T.62, R.3W, S.24, 25, 35, 36): 1B, 2A, 3B;

(142) Mississippi Creek, Little, (T.62, R.2W, S.20, 21, 26, 29, 32, 33, 34, 35): 1B, 2A, 3B;

(143) Mistletoe Creek, (T.60, R.3W, S.3, 4; T.61, R.2W, S.7, 18, 19; T.61, R.3W, S.11, 13, 14, 15, 23, 24, 25, 26, 34, 35): 1B, 2A, 3B;

(144) Monker Creek, (T.61, R.1E, S.6, 7; T.62, R.1E, S.31; T.62, R.1W, S.36): 1B, 2A, 3B;

(145) Mons Creek, (T.62, R.3E, S.4; T.63, R.3E, S.28, 29, 33): 1B, 2A, 3B;

(146) Moose Creek, (T.59, R.6, S.31, 32, 33, 34): 1B, 2A, 3B;

(147) Mud Creek, (T.47, R.15, S.18; T.47, R.16, S.5, 6, 8, 9, 10, 11, 13, 14, 15, 16): 1B, 2A, 3B;

(148) Mud Creek, (T.54, R.12, S.20, 21, 22, 29, 30): 1B, 2A, 3B;

(149) Mud Creek, (T.62, R.1E, S.8, 9, 16, 17, 21, 22): 1B, 2A, 3B;

(150) Mud Creek, Little, (T.57, R.11, S.11, 12, 14, 22, 23): 1B, 2A, 3B;

(151) Murmur Creek, (T.61, R.2W, S.15, 20, 21, 22, 29, 30): 1B, 2A, 3B;

(152) Murphy Creek, (T.56, R.11, S.4, 5, 8, 17, 18, 19; T.57, R.10, S.4, 7, 8, 9, 18; T.57, R.11, S.13, 21, 22, 23, 24, 26, 27, 28, 33, 34): 1B, 2A, 3B;

(153) Myhr Creek, (T.62, R.3E, S.23, 24, 26): 1B, 2A, 3B;

(154) Nemadji Creek, (T.46, R.17, S.7, 8, 9, 18; T.46, R.18, S.13, 14, 15, 16, 22): 1B, 2A, 3B;

(155) Nemadji River, North Fork, (T.46, R.17, S.1, 2, 3, 8, 9, 10, 17, 18, 19, 31, 32, 33; T.46, R.18, S.24, 25, 36; T.47, R.15, S.19, 30; T.47, R.16, S.23, 24, 25, 26, 27, 28, 29, 31, 32; T.47, R.17, S.35, 36): 1B, 2A, 3B;

(156) Nemadji River, South Fork, (T.46, R.16, S.4, 5, 6, 7; T.46, R.17, S.1, 11, 12; T.47, R.15, S.30; T.47, R.16, S.25, 33, 34, 35, 36): 1B, 2A, 3B;

(157) Nestor, (T.61, R.1W, S.4, 5, 6; T.61, R.2W, S.1; T.62, R.1W, S.31, 32, 33): 1B, 2A, 3B;

(158) Net River, (T.45, R.16, S.6; T.45, R.17, S.1; T.46, R.16, S.3, 4, 8, 9, 17, 20, 21, 29, 31, 32, 33; T.47, R.16, S.34;): 1B, 2A, 3B;

(159) Net River, Little, (T.46, R.16, S.3, 10, 15, 22, 26, 27, 34): 1B, 2A, 3B;

(160) Nicadoo Creek (Nicado Creek), (T.56, R.7, S.7; T.56, R.8, S.1, 12; T.57, R.8, S.27, 35, 36): 1B, 2A, 3B;

(161) Nine Mile Creek, (T.58, R.6, S.3, 4, 9, 16, 17; T.59, R.6, S.27, 28, 33, 34): 1B, 2A, 3B;

(162) Oliver Creek (Silver), (T.57, R.7, S.5, 6; T.57, R.8, S.1; T.58, R.7, S.31, 32): 1B, 2A, 3B;

(163) Onion Creek, (T.59, R.4W, S.1, 2, 3, 4, 12; T.60, R.4W, S.24, 25, 26, 35, 36): 1B, 2A, 3B;

(164) Otter Creek, Big, (T.48, R.16, S.7; T.48, R.17, S.3, 4, 10, 11, 12; T.49, R.17, S.19, 20, 26, 27, 28, 29, 30, 32, 33, 34, 35; T.49, R.18, S.25, 26): 1B, 2A, 3B;

(165) Otter Creek, Little, (T.48, R.17, S.7, 10, 15, 16, 17, 18; T.48, R.18, S.11, 12, 13, 14): 1B, 2A, 3B;

(166) Palisade Creek, (T.56, R.7, S.16, 17, 18, 19, 20, 21, 22; T.56, R.8, S.24): 1B, 2A, 3B;

(167) Pancake Creek, (T.54, R.22, S.20, 28, 29, 32, 33): 1B, 2A, 3B;

(168) Pancake Creek, (T.60, R.4W, S.17, 18; T.60, R.5W, S.11, 13, 14): 1B, 2A, 3B;

(169) Pecore Creek, (T.61, R.4W, S.19, 20, 21): 1B, 2A, 3B;

(170) Peters Creek, (T.54, R.22, S.22, 23, 27, 28): 1B, 2A, 3B;

(171) Pigeon River (South of Fowl Lake to Pigeon Bay of Lake Superior): 1B, 2Bd, 3A;

(172) Pike Lake Creek, (T.61, R.2W, S.10, 11, 15): 1B, 2A, 3B;

(173) Pine Mountain Creek, (T.63, R.1E, S.23, 26, 27, 28, 33): 1B, 2A, 3B;

(174) Pine River (White Pine River), (T.50, R.16, S.4, 8, 9, 15, 16, 17, 18, 19, 20, 21, 29, 30, 32; T.50, R.17, S.23, 24, 26): 1B, 2A, 3B;

(175) Plouff Creek, (T.61, R.4W, S.17, 18; T.61, R.5W, S.2, 3, 11, 13, 14, 15, 23; T.62, R.5W, S.26, 34, 35): 1B, 2A, 3B;

(176) *Plouff Creek [11/5/84P] (T.62, R.5W, S.23): 1B, 2A, 3B;

(177) Poplar River, (T.60, R.3W, S.3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 19, 20, 21, 28, 33; T.61, R.3W, S.30, 31; T.61, R.4W, S.10, 13, 14, 15, 22, 23, 25, 26, 36): 1B, 2A, 3B;

(178) Portage Brook, (T.64, R.3E, S.24, 25, 26, 27, 28, 29, 32, 33, 34; T.64, R.4E, S.19, 20): 1B, 2A, 3B;

(179) Railroad Creek, (T.50, R.17, S.1, 11, 12, 14): 1B, 2A, 3B;

(180) Red River, (T.48, R.15, S.30; T.48, R.16, S.25, 26): 1B, 2A, 3B;

(181) Red Rock Creek, (T.63, R.5E, S.21, 22, 26, 27, 28, 35): 1B, 2A, 3B;

(182) Reservation River, (T.62, R.5E, S.6; T.63, R.4E, S.23, 25, 26, 36; T.63, R.5E, S.16, 17, 18, 19, 20, 21, 29, 30, 31): 1B, 2A, 3B;

(183) Rock Creek, (T.47, R.16, S.7, 17, 18, 20, 21, 22, 23, 24; T.47, R.17, S.12): 1B, 2A, 3B;

(184) Rock Cut Creek, (T.58, R.6, S.18, 19, 20; T.58, R.7, S.13): 1B, 2A, 3B;

(185) Rocky Run Creek, (T.49, R.15, S.6; T.50, R.15, S.30, 31; T.50, R.16, S.11, 12, 13, 24, 25): 1B, 2A, 3B;

(186) Rollins Creek, (T.59, R.3W, S.6; T.60, R.3W, S.29, 30, 31; T.60, R.4W, S.36): 1B, 2A, 3B;

(187) Rosebush Creek (Fall River), (T.61, R.1W, S.13, 23, 24, 25; T.61, R.1E, S.18): 1B, 2A, 3B;

(188) Ross Creek, (T.52, R.13, S.1, 2, 3, 4, 5; T.53, R.13, S.33): 1B, 2A, 3B;

(189) Ryan Creek, (T.55, R.14, S.14, 15, 22): 1B, 2A, 3B;

(190) St. Louis River, [WR] (T.58, R.12, S.21, 22, 27, 28, 31, 32, 33; T.58, R.13, S.36): 2B, 3B;

(191) Sargent Creek, (T.48, R.15, S.4, 5, 9, 10; T.49, R.15, S.28, 29, 32): 1B, 2A, 3B;

(192) Sawbill Creek, (T.62, R.4W, S.7, 18, 19, 20, 28, 29, 30; T.62, R.5W, S.25): 1B, 2A, 3B;

(193) Sawmill Creek, (T.57, R.6, S.18; T.57, R.7, S.12, 13, 22, 23, 24, 26, 27, 34): 1B, 2A, 3B;

(194) Scanlon Creek, (T.49, R.16, S.30; T.49, R.17, S.25): 1B, 2A, 3B;

(195) Schmidt Creek, (T.51, R.12, S.17): 1B, 2A, 3B;

(196) Schoolhouse Creek, (T.58, R.7, S.35, 36): 1B, 2A, 3B;

(197) Section 16 Creek, (T.58, R.5W, S.16): 1B, 2A, 3B;

(198) Section 36 Creek, (T.46, R.16, S.1, 2, 11, 12, 13; T.47, R.16, S.36): 1B, 2A, 3B;

(199) Silver Creek, (T.48, R.16, S.15, 16, 17, 21, 28, 29): 1B, 2A, 3B;

(200) Silver Creek, (T.53, R.10, S.6, 7, 16, 17, 18, 21; T.53, R.11, S.1; T.54, R.10, S.18, 19, 30; T.54, R.11, S.11, 12, 13, 25, 36): 1B, 2A, 3B;

(201) Silver Creek, Big, (T.46, R.17, S.14, 23, 24, 25, 36): 1B, 2A, 3B;

(202) Silver Creek, East Branch, (T.53, R.10, S.5, 8, 9, 16, 21): 1B, 2A, 3B;

(203) Sixmile Creek, (T.60, R.4W, S.13, 14, 15, 22, 23, 27, 28, 33): 1B, 2A, 3B;

(204) Skunk Creek, (T.54, R.9, S.4, 9, 16, 17, 20; T.55, R.9, S.19, 29, 30, 32, 33; T.55, R.10, S.13, 14, 24): 1B, 2A, 3B;

(205) Skunk Creek, (T.46, R.17, S.4, 5, 6; T.47, R.17, S.31, 33, 34, 35, 36; T.47, R.18, S.36): 1B, 2A, 3B;

(206) Spider Creek, (T.52, R.18, S.19, 20, 21, 22, 27, 28, 29, 30; T.52, R.19, S.9, 10, 13, 14, 15, 24): 1B, 2A, 3B;

(207) Split Rock River, (T.54, R.8, S.6, 7; T.54, R.9, S.1, 2, 12; T.55, R.9, S.26, 28, 34, 35, 36): 1B, 2A, 3B;

(208) Split Rock River, East Branch, (T.55, R.9, S.4, 5, 6, 9, 10, 14, 15, 22, 23, 24, 25, 26; T.56, R.9, S.30, 31, 32; T.56, R.10, S.1, 11, 12, 13, 14, 24, 25): 1B, 2A, 3B;

(209) Split Rock River, West Branch, (T.55, R.9, S.6, 7, 8, 16, 17, 21, 22, 26, 27, 28; T.55, R.10, S.1; T.56, R.10, S.22, 26, 27, 33, 34, 35, 36): 1B, 2A, 3B;

(210) Spring Creek, (T.46, R.17, S.3, 4, 5, 6): 1B, 2A, 3B;

(211) Spring Creek, (T.54, R.12, S.1, 2): 1B, 2A, 3B;

(212) Squaw Creek, (T.49, R.17, S.9, 16, 17, 18, 19, 20, 21): 1B, 2A, 3B;

(213) Stanley Creek, (T.52, R.11, S.18, 19; T.52, R.12, S.4, 5, 8, 9, 10, 11, 12, 13): 1B, 2A, 3B;

(214) State Line Creek, (T.46, R.15, S.6, 7, 18, 19, 30, 31; T.46, R.16, S.12, 13, 24, 25, 36; T.47, R.15, S.30, 31): 1B, 2A, 3B;

(215) Stewart Creek, (T.49, R.15, S.21, 22, 26, 27): 1B, 2A, 3B;

(216) Stewart River, (T.53, R.10, S.18, 19, 20, 29; T.53, R.11, S.2, 3, 10, 11, 13, 14, 15; T.54, R.11, S.3, 4, 10, 15, 22, 26, 27, 34, 35): 1B, 2A, 3B;

(217) Stewart River, (T.55, R.11, S.7; T.55, R.12, S.12, 13): 1B, 2A, 3B;

(218) Stewart River, Little, (T.53, R.10, S.19, 20, 29; T.53, R.11, S.9, 15, 16, 22, 23, 24): 1B, 2A, 3B;

(219) Stickle Creek, (T.63, R.1W, S.1, 2, 11, 12, 14): 1B, 2A, 3B;

(220) Stone Creek, (T.61, R.2E, S.2, 3; T.62, R.2E, S.21, 22, 27, 34, 35): 1B, 2A, 3B;

(221) Stoney Creek (Rock), (T.55, R.9, S.30; T.55, R.10, S.20, 23, 24, 25, 27): 1B, 2A, 3B;

(222) Stony Brook, (T.46, R.17, S.10, 11, 15, 16, 21): 1B, 2A, 3B;

(223) Stony Creek, Little, (T.63, R.2E, S.4, 5, 9; T.64, R.2E, S.31, 32, 33): 1B, 2A, 3B;

(224) Stream Number 30, (T.54, R.8, S.5, 6; T.55, R.8, S.19, 30, 31): 1B, 2A, 3B;

(225) Stumble Creek, (T.59, R.5W, S.16, 21, 22, 26, 27, 28): 1B, 2A, 3B;

(226) Stump River, (T.64, R.4E, S.18; T.64, R.3E, S.8, 9, 13, 14, 15, 16, 17, 21, 22, 23, 24): 1B, 2A, 3B;

(227) Sucker River, (T.51, R.12, S.3, 4, 10; T.52, R.12, S.18, 19, 29, 30, 31, 32, 33; T.52, R.13, S.1, 12, 13, 24, 25; T.53, R.12, S.19, 20, 30, 31; T.53, R.13, S.24, 25, 36): 1B, 2A, 3B;

(228) Sucker River, Little, (T.51, R.12, S.2, 3): 1B, 2A, 3B;

(229) Sugar Loaf Creek, (T.58, R.5W, S.17, 19, 20, 29): 1B, 2A, 3B;

(230) Sullivan Creek, (T.56, R.11, S.1, 2, 10, 11, 15; T.57, R.10, S.19, 30; T.57, R.11, S.24, 25, 36): 1B, 2A, 3B;

(231) Sundling Creek, (T.61, R.1W, S.10, 11, 14, 15, 16, 17, 18; T.61, R.2W, S.13): 1B, 2A, 3B;

(232) Swamp River, (T.63, R.3E, S.25, 26, 36; T.63, R.4E, S.20, 29, 30; T.64, R.4E, S.21, 27, 28): 1B, 2A, 3B;

(233) Swamper Creek, (T.64, R.1E, S.20, 29, 32): 1B, 2A, 3B;

(234) Swan Creek, East, (T.56, R.20, S.3, 4, 5, 10, 11): 1B, 2A, 3B;

(235) Swan Creek, Little, (T.56, R.19, S.17, 19, 20, 30; T.56, R.20, S.25, 26, 35): 1B, 2A, 3B;

(236) Swan River, East, (T.55, R.19, S.18, 19, 30, 31; T.55, R.20, S.1, 2, 12, 13; T.56, R.20, S.2, 3, 11, 14, 23, 26, 27, 35; T.57, R.20, S.28, 33, 34): 1B, 2A, 3B;

(237) Swan River, West, (T.55, R.20, 21): 2C;

(238) Swanson Creek, (T.61, R.4W, S.6, 7, 8; T.61, R.5W, S.1): 1B, 2A, 3B;

(239) Tait River, (T.60, R.3W, S.4; T.61, R.3W, S.28, 33): 1B, 2A, 3B;

(240) Talmadge Creek, (T.51, R.12, S.19; T.51, R.13, S.9, 10, 13, 14, 15, 24): 1B, 2A, 3B;

(241) Temperance River, (T.59, R.4W, S.5, 6, 7, 8, 18, 19, 30, 31, 32; T.60, R.4W, S.5, 6, 7, 8, 17, 20, 28, 29, 32, 33; T.61, R.4W, S.4, 8, 9, 16, 17, 19, 20, 30, 31): 1B, 2A, 3B;

(242) Temperance River (excluding trout waters), (T.59, 60, 61, 62, R.4W): 1B, 2Bd, 3B;

(243) Thirty-nine Creek, Big, (T.56, R.8, S.19, 30, 31; T.56, R.9, S.1, 2, 3, 11, 12, 13, 14, 15, 22, 23, 24, 25; T.57, R.9, S.22, 26, 27, 35, 36): 1B, 2A, 3B;

(244) Thirty-nine Creek, Little, (T.56, R.8, S.6, 7, 8, 17, 18, 19, 20, 29, 30; T.56, R.9, S.1, 12): 1B, 2A, 3B;

(245) Thompson Creek, (T.62, R.1W, S.17, 19, 20; T.62, R.2W, S.24): 1B, 2A, 3B;

(246) Tikkanen Creek, (T.57, R.7, S.5, 6, 8, 16, 17): 1B, 2A, 3B;

(247) Timber Creek, (T.62, R.1E, S.1; T.63, R.1E, 2W, S.25, 36; T.63, R.2E, S.31): 1B, 2A, 3B;

(248) Tischer Creek (Congdon Creek/Hartley), (T.50, R.14, S.2, 3, 4, 10, 11, 13, 14; T.51, R.14, S.29, 33, 34): 1B, 2A, 3B;

(249) Torgenson Creek, (T.61, R.4W, S.30; T.61, R.5W, S.24, 25): 1B, 2A, 3B;

(250) Tower Creek, (T.55, R.14, S.8, 9, 17, 18, 19; T.55, R.15, S.24, 25, 26): 1B, 2A, 3B;

(251) Tower Creek, (T.57, R.7, S.9): 1B, 2A, 3B;

(252) Trappers Creek, (T.56, R.11, S.2, 3, 9, 10, 16, 17, 19, 20; T.57, R.11, S.35): 1B, 2A, 3B;

(253) Trout Brook, (T.54, R.22, S.1): 1B, 2A, 3B;

(254) Twin Points Creek, (T.54, R.9, S.10, 11, 13, 14): 1B, 2A, 3B;

(255) Two Island River, (T.58, R.5W, S.2, 3, 4, 11; T.59, R.5W, S.7, 8, 17, 18, 20, 21, 27, 28, 29, 31, 32, 33, 34; T.59, R.6, S.11, 12): 1B, 2A, 3B;

(256) Ugstad Creek, (T.51, R.15, S.21, 22, 26, 27, 28): 1B, 2A, 3B;

(257) Unnamed (Deer) Creek, (T.47, R.16, S.19, 29, 30; T.47, R.17, S.13, 14, 24): 1B, 2A, 3B;

(258) Unnamed Creek, (T.47, R.17, S.28, 29, 33, 34, 35): 1B, 2A, 3B;

(259) Unnamed Creek, (T.47, R.17, S.31, 32, 33, 34): 1B, 2A, 3B;

(260) Unnamed Creek, (T.55, R.8, S.20, 21, 29, 32, 33): 1B, 2A, 3B;

(261) Unnamed Creek, Meadowlands, (T.53, R.19, S.22, 23): 7;

(262) Unnamed Creek, (S-17-6), (T.53, R.11, S.30, 31, 32; T.53, R.12, S.25): 1B, 2A, 3B;

(263) Unnamed Creek, (S-17-9), (T.53, R.11, S.5; T.54, R.11, S.20, 29, 30, 32): 1B, 2A, 3B;

(264) Unnamed Ditch, Gilbert, (T.58, R.17, S.23, 24, 25, 36): 7;

(265) Us-kab-wan-ka (Rush), (T.52, R.16, S.2, 11, 14, 23; T.53, R.15, S.5, 6; T.53, R.16, S.1, 11, 12, 14, 15, 22, 23, 27, 34, 35; T.54, R.15, S.23, 24, 26, 27, 32, 33, 34): 1B, 2A, 3B;

(266) Wanless Creek, (T.60, R.6, S.27, 33, 34, 35, 36): 1B, 2A, 3B;

(267) Whyte Creek, (T.57, R.10, S.1, 2, 11, 14, 23, 26, 27, 34): 1B, 2A, 3B;

(268) Woods Creek, (T.61, R.1E, S.1, 12, 13; T.62, R.1E, S.35, 36): 1B, 2A, 3B;

(269) Wyman Creek, (T.58, R.14, S.3, 4; T.59, R.14, S.11, 13, 14, 23, 24, 26, 27, 34, 35): 1B, 2A, 3B; and

(270) *All other streams in the Boundary Waters Canoe Area Wilderness [11/5/84P]: 1B, 2Bd, 3B.

B. Lakes:

(1) *Alder Lake, [11/5/84P] (T.64, R.1E): 1B, 2A, 3B;

(2) *Alton Lake, [11/5/84P] (T.62, 63, R.4, 5): 1B, 2A, 3B;

(3) Artichoke Lake, [WR] (T.52, R.17, S.17, 18, 19, 20): 2B, 3B;

(4) Bath Lake, (T.62, R.1W, S.5, 6; T.63, R.1W, S.31, 32): 1B, 2A, 3B;
(5) Bean Lake (Lower Twin), (T.56, R.8W, S.25, 26): 1B, 2A, 3B;
(6) Bear Lake (Upper Twin), (T.56, R.8W, S.25): 1B, 2A, 3B;
(7) Bearskin Lake, East, (T.64, R.1E, 1W): 1B, 2A, 3B;
(8) *Bearskin Lake, West, [3/7/88R] (T.64, 65, R.1): 1B, 2A, 3B;
(9) *Bench Lake, [11/5/84P] (T.64, 2E, S.6): 1B, 2A, 3B;
(10) Benson Lake, (T.58, R.6W, S.29, 32): 1B, 2A, 3B;
(11) *Birch Lake, [3/7/88R] (T.65, R.1, 2): 1B, 2A, 3B;
(12) *Black Lake, [3/7/88P] (T.45, R.15): 1B, 2Bd, 3B;
(13) Bluebill Lake, [WR] (T.59, R.7, S.15): 2B, 3B;
(14) Bogus Lake, (T.62, R.2E, S.12): 1B, 2A, 3B;
(15) Bone Lake, (T.61, R.6W, S.13, 14): 1B, 2A, 3B;
(16) Boys Lake, (T.62, R.2E, S.5, 8): 1B, 2A, 3B;
(17) Breda Lake, [WR] (T.56, R.12, S.16): 2B, 3B;
(18) Briar Lake, (T.53, R.13W, S.14, 15, 23): 1B, 2A, 3B;
(19) *Brule Lake, [11/5/84P] (T.63, R.2, 3): 1B, 2A, 3B;
(20) Cabin Lake, [WR] (T.59, R.7, S.13, 14, 23, 24): 2B, 3B;
(21) Canton Mine Pit Lake, (T.58, R.16, S.2, 3): 1C, 2Bd, 3B;
(22) Caribou Lake, [WR] (T.60, R.3W, S.1, 2, 11, 12; T.61, R.3W, S.35, 36): 2B, 3B;
(23) Carrot Lake, (T.64, R.2E, S.17): 1B, 2A, 3B;
(24) Cedar Lake, (T.58, R.15W, S.20): 1B, 2A, 3B;
(25) Chester Lake, (T.64, R.3E, S.32, 33): 1B, 2A, 3B;
(26) Christine Lake, [WR] (T.61, R.3W, S.28, 29, 32): 2B, 3B;
(27) Clear Lake, (T.52, R.15W, S.23): 1B, 2A, 3B;
(28) *Clearwater Lake (Emby Lake), [11/5/84P] (T.65, R.1E): 1B, 2A, 3B;
(29) Colby Lake, (T.58, R.14): 1B, 2Bd, 3B;
(30) *Cone Lake, North, [11/5/84P] (T.63, 64, R.3): 1B, 2A, 3B;
(31) Corona Lake, (T.48, R.19W, S.11, 12): 1B, 2A, 3B;
(32) Corsica Mine Pit Lake, (T.58, R.16, S.18): 1C, 2Bd, 3B;
(33) *Crystal Lake, [11/5/84P] (T.64, R.1E, 2E): 1B, 2A, 3B;
(34) *Daniels Lake, [11/5/84P] (T.65, R.1E, 1W): 1B, 2A, 3B;
(35) *Davis Lake, [11/5/84P] (T.64, R.3): 1B, 2A, 3B;
(36) Devilfish Lake, (T.64, R.3E): 1B, 2A, 3B;
(37) Divide (Towhey) Lake, (T.59, R.7W, S.7, 8): 1B, 2A, 3B;
(38) Duke Lake, (T.63, R.1E, S.30): 1B, 2A, 3B;
(39) *Duncan Lake, [11/5/84P] (T.65, R.1): 1B, 2A, 3B;
(40) *Dunn Lake, [11/5/84P] (T.65, R.1, 2): 1B, 2A, 3B;
(41) East Lake, (T.59, R.6W, S.1, 2): 1B, 2A, 3B;
(42) *Echo Lake, [3/7/88R] (T.59, R.6): 1B, 2A, 3B;
(43) Echo Lake, (T.59, R.6W, S.14, 15, 22, 23): 1B, 2A, 3B;
(44) Elbow Lake, Little, (T.57, R.18W, S.9, 10, 16): 1B, 2A, 3B;
(45) Embarrass Mine Pit (Lake Mine), (T.58, R.15W, S.5, 6): 1B, 2A, 3B;
(46) Esther Lake, (T.63, R.3E, S.6; T.64, R.3E, S.31): 1B, 2A, 3B;
(47) *Fan Lake, [11/5/84P] (T.65, R.2E): 1B, 2Bd, 3A;
(48) Feather Lake, (T.61, R.5W, S.35): 1B, 2A, 3B;
(49) Flour Lake, (T.64, R.1E, 1W): 1B, 2A, 3B;
(50) Forsyth Mine Pit, (T.58, R.19W, S.11): 1B, 2A, 3B;
(51) Fourmile Lake, [WR] (T.60, R.5W, S.4, 8, 9, 10, 16, 17): 2B, 3B;

(52) Fowl Lake, North, (T.64, 65, R.3E): 1B, 2Bd, 3A;

(53) Fowl Lake, South, (T.64, 65, R.3E): 1B, 2Bd, 3A;

(54) Fraser Mine Pit Lake, (T.58, R.20, S.23): 1C, 2Bd, 3B, until the city of Chisholm no longer uses Fraser Mine Pit Lake as a water supply source for its public water system, and then the classification is identified in part 7050.0430;

(55) *Gadwall Lake, [11/5/84P] (T.64, R.2E, S.3): 1B, 2A, 3B;

(56) *Gaskin Lake, [11/5/84P] (T.64, R.2): 1B, 2A, 3B;

(57) *Gogebic Lake, [11/5/84P] (T.65, R.2E, S.30, 31): 1B, 2A, 3B;

(58) Goldeneye (Duck) Lake, (T.59, R.6W, S.15): 1B, 2A, 3B;

(59) *Greenwood Lake, [3/7/88R] (T.64, R.2E): 1B, 2A, 3B;

(60) Hay Lake, [WR] (T.59, R.15, S.8): 2B, 3B;

(61) Hungry Jack Lake, (T.64, 65, R.1): 1B, 2A, 3B;

(62) Jim Lake (Jerry Lake), (T.64, R.1E): 1B, 2A, 3B;

(63) Judson Mine Pit, (T.58, R.19W, S.20, 29): 1B, 2A, 3B;

(64) Junco Lake, (T.62, R.1W, S.11, 12, 13): 1B, 2A, 3B;

(65) *Kemo Lake, [3/7/88R] (T.63, R.1): 1B, 2A, 3B;

(66) Kimball Lake, (T.62, R.2E, S.7, 8, 17): 1B, 2A, 3B;

(67) Leo Lake, (T.64, R.1W, S.4, 5): 1B, 2A, 3B;

(68) Lieung (Lieuna) Lake, [WR] (T.53, R.13, S.3, 4, 9, 10): 2B, 3B;

(69) *Lily Lakes, [11/5/84P] (T.65, R.2E): 1B, 2Bd, 3A;

(70) Lima Lake, (T.64, R.1W, S.35): 1B, 2A, 3B;

(71) *Lizzie Lake, [11/5/84P] (T.64, R.1W, S.7, 18): 1B, 2A, 3B;

(72) Loaine (Sand) Lake, (T.54, R.12W, S.16, 17): 1B, 2A, 3B;

(73) Loft Lake, (T.64, R.3E, S.21): 1B, 2A, 3B;

(74) Long Lake, [WR] (T.57, R.12, S.4, 5; T.58, R.12, S.32, 33): 2B, 3B;

(75) Margaret Lake, (T.64, R.3E, S.27, 28, 33, 34): 1B, 2A, 3B;

(76) Marsh Lake, [WR] (T.62, R.4W, S.22, 23, 27, 28): 2B, 3B;

(77) McFarland Lake, (T.64, R.3E): 1B, 2A, 3B;

(78) Mink Lake, (T.62, R.2E, S.8): 1B, 2A, 3B;

(79) Mirror Lake, (T.52, R.14W, S.19, 30): 1B, 2A, 3B;

(80) *Misquah Lake, [11/5/84P] (T.64, R.1): 1B, 2A, 3B;

(81) Missabe Mountain Mine Pit Lake, (T.58, R.17, S.8): 1C, 2Bd, 3B;

(82) Moore Lake, [WR] (T.62, R.4W, S.23, 24): 2B, 3B;

(83) Moosehorn Lake, (T.63, R.3E, S.36; T.63, R.4E, S.31): 1B, 2A, 3B;

(84) *Moose Lake, [11/5/84P] (T.65, R.2E, 3E): 1B, 2A, 3A;

(85) Morton Mine Pit Lake, (T.57, R.21, S.10, 11, 14): 1C, 2Bd, 3B;

(86) *Moss Lake, [3/7/88R] (T.65, R.1): 1B, 2A, 3B;

(87) *Mountain Lake, [11/5/84P] (T.65, R.1E, 2E): 1B, 2A, 3B;

(88) Muckwa Lake, (T.63, R.1E, S.21, 28): 1B, 2A, 3B;

(89) *Mulligan Lake, [11/5/84P] (T.63, R.3W, S.1, 12): 1B, 2A, 3B;

(90) Musquash Lake, (T.63, R.1E, S.20, 28, 29): 1B, 2A, 3B;

(91) Normanna Lake, (T.52, R.13W, S.7, 8): 1B, 2A, 3B;

(92) Northern Light Lake, [WR] (T.63, R.2E, S.29, 30, 31, 32, 33; T.63, R.1E, S.25): 2B, 3B;

(93) Olson Lake, (T.62, R.1W, S.9, 16): 1B, 2A, 3B;

(94) *Onega Lake (Omega Lake), [11/5/84P] (T.64, R.2, 3): 1B, 2A, 3B;

(95) *Otto Lake, Lower, [11/5/84P] (T.64, R.2): 1B, 2A, 3B;

(96) Pancore (Lost) Lake, (T.61, R.4W, S.22, 27): 1B, 2A, 3B;

(97) Papoose Lake, [WR] (T.55, R.12, S.9): 2B, 3B;

(98) *Partridge Lake, [11/5/84P] (T.65, R.1): 1B, 2A, 3B;
(99) *Pemmican Lake, [11/5/84P] (T.65, R.2E, S.22): 1B, 2A, 3B;
(100) *Pike Lake, West, [11/5/84P] (T.65, R.2E): 1B, 2A, 3B;
(101) Pine Lake, (T.63, R.1W, S.35, 36): 1B, 2A, 3B;
(102) *Pine Lake, [11/5/84P] (T.64, 65, R.1E, 2E, 3E): 1B, 2A, 3B;
(103) Pine Mountain Lake, (T.63, R.1E, S.26, 27, 34, 35): 1B, 2A, 3B;
(104) Poplar Lake, (T.64N, R.1, 2W): 1C, 2Bd, 3B;
(105) *Ram Lake, [11/5/84P] (T.63, R.1W, S.9, 10): 1B, 2A, 3B;
(106) Rice Lake, [WR] (T.61 R.3W, S.7; T.61, R.4W, S.2, 11, 12): 2B, 3B;
(107) *Rose Lake, [11/5/84P] (T.65, R.1): 1B, 2A, 3B;
(108) Round Island Lake, [WR] (T.59, R.8, S.12): 2B, 3B;
(109) Round Lake, [WR] (T.58, R.12, S.25, 26): 2B, 3B;
(110) St. James Mine Pit, (T.58, R.15W, S.3, 4): 1B, 2A, 3B;
(111) Saint Mary's Lake, (T.57, R.17, S.9, 16, 17): 1C, 2Bd, 3B;
(112) *Sawbill Lake, [11/5/84P] (T.62, 63, R.4): 1B, 2Bd, 3B;
(113) Section 8 Lake, (T.59, R.7W, S.8): 1B, 2A, 3B;
(114) Seven Beaver Lake, [WR] (T.58, R.11, 12): 2B, 3A;
(115) Shady, North, Lake, (T.64, R.2E, S.21, 22): 1B, 2A, 3B;
(116) Shoe Lake, (T.64, 2E, S.30): 1B, 2A, 3B;
(117) Sled Lake, (T.63, R.1W, S.3): 1B, 2A, 3B;
(118) *Sock Lake, [11/5/84P] (T.65, R.2W, S.26): 1B, 2A, 3B;
(119) Sonju Lake, (T.58, R.7W, S.27, 28): 1B, 2A, 3B;
(120) *South Lake, [11/5/84P] (T.65, R.1, 2): 1B, 2A, 3B;
(121) Spring Hole Lake, (T.55, R.14W, S.14): 1B, 2A, 3B;
(122) Squaw Lake, (T.63, R.3E, S.6; T.64, R.3E, S.31): 1B, 2A, 3B;
(123) *State Lake, [11/5/84P] (T.63, 64, R.2): 1B, 2A, 3B;
(124) Steer Lake, (T.60, R.6W, S.32): 1B, 2A, 3B;
(125) Stone Lake, [WR] (T.55, R.17, S.6; T.55, R.18, S.1; T.56, R.17, S.31; T.56, R.18, S.36): 2B, 3B;
(126) Stone Lake (Skibo Lake), [WR] (T.58, R.12, S.17, 19, 20): 2B, 3B;
(127) Stone Lake (Murphy Lake), [WR] (T.56, R.12, S.13, 24): 2B, 3B;
(128) *Superior, Lake, excluding the portions identified in subitem (129) [11/5/84R] (T.49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, R.14W-7E): 1B, 2A, 3A;
(129) *Superior, Lake, [3/9/98P] (those portions of Lake Superior north of latitude 47 degrees, 57 minutes, 13 seconds, east of Hat Point, south of the Minnesota-Ontario boundary, and west of the Minnesota-Michigan boundary): 1B, 2A, 3A;
(130) Swamp River (Reservoir), [WR] (T.63, R.4E, S.4; T.64, R.4E, S.33): 2B, 3B;
(131) *Swan Lake, [11/5/84P] (T.63, R.2): 1B, 2A, 3B;
(132) Talus Lake, (T.63, R.1W, S.26, 27): 1B, 2A, 3B;
(133) Thompson Lake, (T.62, R.1W, S.19, 20, 29, 30): 1B, 2A, 3B;
(134) Thrasher Lake, (T.63, R.1W, S.31): 1B, 2A, 3B;
(135) Thrush Lake, (T.63, R.1W, S.31): 1B, 2A, 3B;
(136) *Topper Lake, [11/5/84P] (T.65, R.2W, S.27): 1B, 2A, 3B;
(137) Trip Lake, (T.65, R.3W, S.32): 1B, 2A, 3B;
(138) *Trout Lake, [3/7/88R] (T.62, R.2E): 1B, 2A, 3B;
(139) *Trout Lake, Little, [11/5/84P] (T.63, R.1): 1B, 2A, 3B;
(140) Turnip Lake, (T.64, R.1E, S.24): 1B, 2A, 3B;

(141) Twin Lake, (T.50, R.14W, S.28, 33): 1B, 2A, 3B;

(142) *Twin Lake, Upper (Bear Lake), [3/7/88R] (T.56, R.8): 1B, 2A, 3B;

(143) Unnamed Lake, (T.63, R.3E, S.20, 21, 28, 29): 1B, 2A, 3B;

(144) Unnamed Lake, (T.63, R.1W, S.31): 1B, 2A, 3B;

(145) *Vale Lake, [11/5/84P] (T.64, R.2E, S.3): 1B, 2A, 3B;

(146) *Vista Lake, [11/5/84P] (T.64, R.1): 1B, 2A, 3B;

(147) *Wanihigan Lake (Trap Lake), [11/5/84P] (T.63, 64, R.2, 3): 1B, 2A, 3B;

(148) *Wee Lake, [11/5/84P] (T.62, R.4W, S.13): 1B, 2A, 3B;

(149) *Wench Lake, [11/5/84P] (T.63, R.3W, S.7, 18): 1B, 2A, 3B;

(150) White Pine Lake, [WR] (T.61, R.3W, S.19, 20, 29, 30): 2B, 3B;

(151) *Winchell Lake, [11/5/84P] (T.64, R.2, 3): 1B, 2A, 3B;

(152) *All other lakes in the Boundary Waters Canoe Area Wilderness [11/5/84P]: 1B, 2Bd, 3B; and

(153) *All wetlands in the Boundary Waters Canoe Area Wilderness [11/5/84P]: 2D.

C. Calcareous Fens: None currently listed.

D. Scientific and Natural Areas: *Black Lake Bog [3/7/88P] Waters within the Black Lake Bog Scientific and Natural Area, Pine County, (T.45, R.15, S.18, 19, 30; T.45, R.16, S.13, 24, 25): 2B, 3B, except wetlands which are 2D.

Subp. 2. **Lake of the Woods Basin.** The water use classifications for the listed waters in Lake of the Woods Basin are as identified in items A, B, and D.

A. Streams:

(1) Angora Creek, (T.61, R.18, S.9, 10, 15, 16, 21, 22): 1B, 2A, 3B;

(2) Arrowhead Creek, (T.60, R.8, S.3, 10, 11, 13, 14, 15, 22, 23, 26, 27, 28, 34; T.61, R.8, S.14, 15, 21, 22, 27, 28, 34): 1B, 2A, 3B;

(3) Ash River, (T.66, R.20, S.4, 5, 9; T.67, R.20, S.5, 6, 8, 16, 17, 18, 19, 20, 29, 30, 31, 32; T.67, R.21, S.36; T.68, R.20, S.13, 14, 20, 21, 22, 23, 24, 28, 29, 31, 33; T.68, R.19, S.17, 18; T.68, R.21, S.36): 1B, 2A, 3B;

(4) Beaver Creek, (T.62, 63, R.20): 2C;

(5) Beauty Creek, (T.67, R.21, S.23, 24, 25, 26): 1B, 2A, 3B;

(6) Blackduck River, (T.66, R.19, S.5, 6, 7, 8, 17; T.66, R.20, S.1; T.67, R.19, S.29, 31, 32; T.67, R.20, S.2, 3, 4, 10, 14, 15, 23, 24, 25, 26, 36; T.68, R.20, S.26, 27, 28, 33, 34): 1B, 2A, 3B;

(7) Camp Creek, (T.60, R.8, S.3, 4, 5, 7, 8, 9, 10, 16, 17, 20, 21, 29; T.61, R.8, S.33): 1B, 2A, 3B;

(8) Camp Creek, East, (T.60, R.9, S.7, 18; T.60, R.10, S.11, 12, 14): 1B, 2A, 3B;

(9) Dark River, (T.60, R.19, S.19, 20, 30; T.60, R.20, 10, 11, 12, 13, 24): 1B, 2A, 3B;

(10) Dinner Creek, (T.153, R.26, S.4, 9, 10, 12, 13, 14, 15, 23, 24; T.154, R.26, S.7, 18, 19, 29, 30, 32, 33; T.154, R.27, S.1, 12; T.155, R.26, S.30, 31; T.155, R.27, S.25, 35, 36): 1B, 2A, 3B;

(11) Fawn Creek, (T.66, R.20, S.1, 2, 3, 4, 12; T.67, R.20, S.15, 22, 23, 26, 34, 35): 1B, 2A, 3B;

(12) Gardner Brook, (T.63, 64, R.23): 2C;

(13) Grassy Creek, (T.61, R.13, S.6; T.61, R.14, S.1): 1B, 2A, 3B;

(14) Harrigan Creek, (T.62, R.23, S.10): 1B, 2A, 3B;

(15) Harris Lake Creek, (T.60, R.10, S.6; T.61, R.10, S.19, 30, 31): 1B, 2A, 3B;

(16) Hay Creek, (T.153, R.26, S.4, 8, 9, 17, 20): 1B, 2A, 3B;

(17) Hill Creek, (T.60, R.8, S.19, 30; T.60, R.9, S.24, 25): 1B, 2A, 3B;

(18) Indian Sioux River, Little, (T.65, R.15): 1B, 2Bd, 3B;

(19) Inga Creek, (T.60, R.9, S.2, 3; T.61, R.9, S.14, 22, 23, 27, 34, 35): 1B, 2A, 3B;

(20) *Inga Creek [11/5/84P] (T.61, R.9, S.11, 12): 1B, 2A, 3B;

(21) Isabella River, Little, (T.59, R.8, S.3, 4, 5, 6, 9, 10, 15, 16, 22; T.60, R.8, S.31, 32; T.60, R.9, S.5, 6, 8, 9, 10, 15, 16, 22, 25, 26, 27, 36; T.61, R.9, S.9, 16, 17, 20, 21, 22, 29, 32): 1B, 2A, 3B;

(22) *Isabella River, Little, [11/5/84P] (T.61, R.9, S.3, 4, 9, 10; T.62, R.9, S.34);

(23) Island River, (T.61, R.7, 8): 1B, 2Bd, 3B;

(24) Jack Pine Creek, (T.60, R.8, S.5, 6, 7, 8, 18; T.61, R.8, S.19, 20, 29, 30, 31, 32): 1B, 2A, 3B;

(25) Johnson Creek, (T.60, R.18, S.6, 7, 8, 17, 20): 1B, 2A, 3B;

(26) Kawishiwi River, (Source to Fall Lake): 1B, 2Bd, 3B;

(27) Kinmount Creek, (T.67, R.20, S.19; T.67, R.21, S.13, 14, 15, 20, 21, 22, 23, 24): 1B, 2A, 3B;

(28) Longstorff Creek, (T.62, R.12, S.6, 7; T.63, R.12, S.31): 1B, 2A, 3B;

(29) Lost River, (T.65, R.19, S.6; T.65, R.20, S.1, 2, 3, 4, 5, 6, 7, 8, 12; T.65, R.21, S.1; T.66, R.20, S.20, 25, 27, 29, 31, 32, 33, 34, 35, 36): 1B, 2A, 3B;

(30) Mary Ann Creek, (T.58, R.10, S.16, 21): 1B, 2A, 3B;

(31) Mike Kelly Creek, (T.60, R.11, S.14, 15, 23): 1B, 2A, 3B;

(32) Mitawan Creek, (T.60, R.9, S.1, 12; T.61, R.8, S.18, 19, 31; T.61, R.9, S.13, 24, 25, 36): 1B, 2A, 3B;

(33) *Mitawan Creek, [11/5/84P] (T.61, R.8, S.5, 6, 7; T.61, R.9, S.1, 2, 12; T.62, R.9, S.35): 1B, 2A, 3B;

(34) Moose River, (T.68, R.18, 19): 1B, 2Bd, 3B;

(35) Moose River, (T.65, R.14): 1B, 2Bd, 3B;

(36) Nine Mile Creek, (T.66, R.19, S.4; T.67, R.19, S.7, 8, 18, 19, 20, 21, 27, 28, 29, 33; T.67, R.20, S.12, 13, 14, 23): 1B, 2A, 3B;

(37) Nip Creek, (T.59, R.11, S.3, 4; T.60, R.11, S.21, 22, 27, 28, 34): 1B, 2A, 3B;

(38) Nira Creek, (T.61, R.11, S.22, 23, 27): 1B, 2A, 3B;

(39) Pitt Creek, (T.159, R.32, S.4, 9, 16; T.160, R.32, S.21, 28, 33): 1B, 2A, 3B;

(40) Portage Creek, (T.65, R.21): 2C;

(41) Portage River, (T.65, 66, R.14): 1B, 2Bd, 3B;

(42) Rainy River, (Outlet of Rainy Lake to Dam in International Falls): 1B, 2Bd, 3A;

(43) Rainy River, (Dam in International Falls to Railroad Bridge in Baudette): 1C, 2Bd, 3A;

(44) Rainy River, (Railroad Bridge in Baudette to Lake of the Woods): 2B, 3A;

(45) Sand Creek, (T.60, R.21, S.3, 4, 5, 10, 11, 14; T.61, R.20, S.19; T.61, R.21, S.3, 10, 11, 14, 15, 23, 24, 25, 26, 27, 33, 34, 35; T.62, R.21, S.34): 1B, 2A, 3B;

(46) Scott Creek, (T.59, R.7, S.4; T.60, R.7, S.9, 10, 15, 16, 21, 22, 27, 33, 34, 35): 1B, 2A, 3B;

(47) Section 30 Creek, (T.63, R.11, S.30; T.63, R.12, S.24, 25): 1B, 2A, 3B;

(48) Sea Gull River, (T.66N, R.4W, S.30, 31): 1C, 2Bd, 3B;

(49) Shine Brook, (T.62, R.25, S.11, 14, 15, 16): 1B, 2A, 3B;

(50) Snake Creek, (T.60, R.10, S.1; T.61, R.9, S.19, 30, 31; T.61, R.10, S.24, 25, 36): 1B, 2A, 3B;

(51) Snake River, (T.60, R.10, S.3; T.61, R.9, S.18, 19; T.61, R.10, S.23, 24, 26, 27, 34): 1B, 2A, 3B;

(52) *Snake River, [11/5/84P] (T.61, R.9, S.7; T.61, R.10, S.12): 1B, 2A, 3B;

(53) Sphagnum Creek, (T.60, R.9, S.4; T.61, R.9, S.28, 29, 33): 1B, 2A, 3B;

(54) Stoney Brook, (T.60, R.22, S.3, 4; T.61, R.22, S.13, 24, 25, 35, 36; T.61, R.21, S.7, 18): 1B, 2A, 3B;

(55) Tomlinson Creek, (T.60, R.7, S.18, 19, 31; T.60, R.8, S.24, 25, 36): 1B, 2A, 3B;

(56) Tomato Creek, (T.161, R.34, S.3, 9, 10; T.162, R.34, S.35): 1B, 2A, 3B;

(57) Trout Brook, (T.66, R.26, S.19, 30; T.66, R.27, S.24, 25): 1B, 2A, 3B;

(58) Two Rivers, East, (T.61, R.14, S.7, 8; T.61, R.15, S.1, 2, 3, 4, 12; T.62, R.14, S.29, 30, 31, 32; T.62, R.15, S.32, 33, 34, 35, 36): 1B, 2A, 3B;

(59) Two Rivers, West, (T.61, R.15, S.6, 7, 8, 9, 14, 15, 16, 17): 1B, 2A, 3B;

(60) Unnamed Creek, (T.65, R.19, S.4, 5; T.66, R.19, S.33): 1B, 2A, 3B;

(61) Valley River, (T.62, R.23, S.1, 2, 3, 4, 10, 11, 12, 13, 14, 24; T.63, R.22, S.6, 7, 8, 9, 16, 17, 18, 19, 20, 21, 28, 29, 30; T.63, R.23, S.24, 25, 26, 35): 1B, 2A, 3B;

(62) Venning Creek, (T.60, R.23, S.1, 2, 11, 12, 13, 14; T.61, R.23, S.35): 1B, 2A, 3B;

(63) Victor Creek, (T.60, R.9, S.12, 13): 1B, 2A, 3B;

(64) Weiss Creek, (T.59, R.9, S.2, 3, 11; T.60, R.9, S.27, 34): 1B, 2A, 3B;

(65) Wenho Creek, (T.58, R.10, S.17, 20, 21, 27, 28, 34): 1B, 2A, 3B;

(66) Zippel Creek, West Branch, (T.162, R.33, 34): 2C;

(67) *All other streams in the Boundary Waters Canoe Area Wilderness [11/5/84P]: 1B, 2Bd, 3B; and

(68) *All other streams in the Voyageurs National Park [11/5/84P]: 2B, 3B.

B. Lakes:

(1) *Adams Lake, [11/5/84P] (T.64, R.6): 1B, 2A, 3B;

(2) *Agamok Lake, [11/5/84P] (T.65, R.5, 6): 1B, 2A, 3B;

(3) *Ahmakose Lake, [11/5/84P] (T.64, R.7): 1B, 2A, 3B;

(4) *Ahsub Lake, [11/5/84P] (T.64, R.8W, S.27, 28): 1B, 2A, 3B;

(5) *Alpine Lake, [11/5/84P] (T.65, R.5): 1B, 2A, 3B;

(6) *Alruss Lake, [11/5/84P] (T.64, R.11W, S.7; T.64, R.12W, S.12): 1B, 2A, 3B;

(7) *Amoeber Lake, [11/5/84P] (T.65, R.6, 7): 1B, 2A, 3B;

(8) *Arkose Lake, [11/5/84P] (T.64, 65, R.7): 1B, 2A, 3B;

(9) *Ashdick Lake (Caribou Lake), [11/5/84P] (T.66, R.6): 1B, 2A, 3B;

(10) *Basswood Lake, [11/5/84P] (T.64, 65, R.9, 10): 1B, 2A, 3B;

(11) *Bat Lake, [11/5/84P] (T.64, 65, R.5): 1B, 2A, 3B;

(12) *Beartrack Lake, [11/5/84P] (T.67, R.15): 1B, 2A, 3B;

(13) *Beaver Lake (Elbow Lake), [11/5/84P] (T.63, 64, R.6, 7): 1B, 2A, 3B;

(14) Beaver Hut Lake, (T.61, R.10W, S.30, 31; T.61, R.11, S.25, 36): 1B, 2A, 3B;

(15) Beetle Lake, (T.60, R.9W, S.7): 1B, 2A, 3B;
(16) Big Lake, (T.64, 65, R.13): 1C, 2Bd, 3B;
(17) *Bingshick Lake, [11/5/84P] (T.65, R.4, 5): 1B, 2A, 3B;
(18) *Brandt Lake, [11/5/84P] (T.65, R.4): 1B, 2A, 3B;
(19) *Burntside Lake, [3/7/88R] (T.63, 64, R.12, 13, 14): 1B, 2A, 3B;
(20) Camp Four (Wessman) Lake, (T.59, R.19W, S.4): 1B, 2A, 3B;
(21) *Camp Lake, [11/5/84P] (T.64, R.11): 1B, 2Bd, 3B;
(22) *Caribou Lake, [3/7/88R] (T.58, R.26): 1B, 2A, 3B;
(23) *Cash Lake, [11/5/84P] (T.64, R.3): 1B, 2A, 3B;
(24) Cedar Lake, (T.63, R.11, 12): 1C, 2Bd, 3B;
(25) Chant Lake, (T.63, R.13W, S.10): 1B, 2A, 3B;
(26) *Cherokee Lake, [11/5/84P] (T.63, 64, R.4): 1B, 2A, 3B;
(27) *Cherry Lake, [11/5/84P] (T.65, R.6): 1B, 2A, 3B;
(28) *Conchu Lake, [11/5/84P] (T.63, R.10W, S.21, 22): 1B, 2A, 3B;
(29) *Crab Lake, [11/5/84P] (T.63, R.13, 14): 1B, 2A, 3B;
(30) Crab Lake, (T.65, R.2, 3): 1B, 2A, 3B;
(31) Crane Lake, (T.67, 68, R.16, 17): 1B, 2A, 3A;
(32) *Crooked Lake, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;
(33) *Crooked Lake, [11/5/84P] (T.66, R.11, 12): 1B, 2A, 3B;
(34) *Cruiser Lake (Trout Lake), [11/5/84P] (T.69, 70, R.19): 1B, 2A, 3B;
(35) Cub Lake, (T.61, R.14W, S.2): 1B, 2A, 3B;
(36) Dan Lake, (T.63, R.10W, S.17): 1B, 2A, 3B;
(37) Deepwater Lake, (T.59, R.20W, S.2): 1B, 2A, 3B;
(38) Dry Lake, (T.63, R.12W, S.9): 1B, 2A, 3B;
(39) Dry Lake, Little, (T.63, R.12W, S.9): 1B, 2A, 3B;
(40) *Eddy Lake, [11/5/84P] (T.65, R.6): 1B, 2A, 3B;
(41) Eikela Lake, (T.60, R.10W, S.22): 1B, 2A, 3B;
(42) Ennis Lake, (T.64, R.9W, S.33): 1B, 2A, 3B;
(43) Erskine Lake, (T.61, R.24W, S.2, 3): 1B, 2A, 3B;
(44) *Ester Lake (Gnig Lake), [11/5/84P] (T.65, 66, R.6): 1B, 2A, 3B;
(45) *Eugene Lake, [11/5/84P] (T.67, R.15): 1B, 2A, 3B;
(46) *Explorer Lake (South Three Lake), [11/5/84P] (T.64, R.7, 8): 1B, 2A, 3B;
(47) Extortion Lake, (T.65, R.3W, S.31, 32): 1B, 2A, 3B;
(48) Fall Lake, (T.63, 64, R.11, 12): 1B, 2Bd, 3B;
(49) Farm Lake, (T.62, 63, R.11): 1C, 2Bd, 3B;
(50) *Fat Lake, [11/5/84P] (T.67, R.15): 1B, 2A, 3B;
(51) *Fay Lake, [11/5/84P] (T.65, R.5): 1B, 2A, 3B;
(52) *Fern Lake, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;
(53) *Fern Lake, West, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;
(54) *Finger Lake, [11/5/84P] (T.67, R.14): 1B, 2A, 3B;
(55) *Fishdance Lake, [11/5/84P] (T.63, R.7): 1B, 2A, 3B;
(56) *Found Lake, [11/5/84P] (T.64, R.9W, S.10, 15): 1B, 2A, 3B;
(57) *Fraser Lake, [11/5/84P] (T.64, R.7): 1B, 2A, 3B;
(58) *French Lake, [11/5/84P] (T.64, 65, R.5): 1B, 2A, 3B;
(59) *Frost Lake, [11/5/84P] (T.64, R.4): 1B, 2A, 3B;
(60) *Gabimichigami Lake, [11/5/84P] (T.64, 65, R.5, 6): 1B, 2A, 3B;
(61) *Ge-Be-On-Equat Lake, [11/5/84P] (T.67, R.14): 1B, 2A, 3B;
(62) *Gijikiki Lake (Cedar Lake), [11/5/84P] (T.65, 66, R.6): 1B, 2A, 3B;

(63) *Gillis Lake, [11/5/84P] (T.64, 65, R.5): 1B, 2A, 3B;
(64) Glacier Pond No. 1, (T.63, R. 10W, S.11): 1B, 2A, 3B;
(65) Glacier Pond No. 2, (T.63, R.10W, S.11): 1B, 2A, 3B;
(66) *Gordon Lake, [11/5/84P] (T.64, R.4): 1B, 2A, 3B;
(67) *Gun Lake, [11/5/84P] (T.67, 68, R.15): 1B, 2A, 3B;
(68) *Gunflint Lake, [3/7/88R] (T.65, R.2, 3, 4): 1B, 2A, 3B;
(69) Gunflint Lake, Little, (T.65, R.2): 1B, 2Bd, 3B;
(70) Gypsy Lake, (T.60, R.10W, S.6, 7): 1B, 2A, 3B;
(71) Hanson Lake, (T.64, R.13W, S.36): 1B, 2A, 3B;
(72) *Hanson Lake, [11/5/84P] (T.65, 66, R.6): 1B, 2A, 3B;
(73) High Lake, (T.63, R.12W, S.3, 4, 5; T.64, R.12W, S.33, 34): 1B, 2A, 3B;
(74) Hogback (Twin) Lake, (T.60, R.6W, S.31): 1B, 2A, 3B;
(75) *Holt Lake, [11/5/84P] (T.65, R.6): 1B, 2A, 3B;
(76) *Howard Lake, [11/5/84P] (T.65, R.5): 1B, 2A, 3B;
(77) *Hustler Lake, [11/5/84P] (T.66, 67, R.14): 1B, 2A, 3B;
(78) *Ima Lake (Slate Lake), [11/5/84P] (T.64, R.7, 8): 1B, 2A, 3B;
(79) Indian Lake, (T.60, R.8W, S.35): 1B, 2A, 3B;
(80) *Jacob (Louis) Lake, [11/5/84P] (T.64, R.12W, S.11, 12): 1B, 2A, 3B;
(81) James (Jammer) Lake, (T.60, R.18W, S.27): 1B, 2A, 3B;
(82) *Jap Lake, [11/5/84P] (T.65, R.4W, S.19; T.65, R.5W, S.24): 1B, 2A, 3B;
(83) Jasper Lake, (T.63, 64, R.9, 10): 1C, 2Bd, 3B;
(84) *Jasper Lake, [11/5/84P] (T.65, R.5): 1B, 2A, 3B;
(85) *Johnson Lake, [3/7/88R] (T.67, 68, R.17, 18): 1B, 2A, 3B;
(86) Jouppi Lake, (T.59, R.8W, S.14, 22, 23): 1B, 2A, 3B;
(87) Judd Lake, (T.63, R.9W, S.4, 5; T.64, R.9W, S.32, 33): 1B, 2A, 3B;
(88) *Kabetogama Lake, [11/5/84P] (T.69, 70, R.20, 21, 22): 1B, 2Bd, 3A;
(89) *Karl Lake, [11/5/84P] (T.64, R.3, 4): 1B, 2A, 3B;
(90) *Kek Lake, Little, [11/5/84P] (T.65, R.6, 7): 1B, 2A, 3B;
(91) *Kekekabic Lake, [11/5/84P] (T.64, 65, R.6, 7): 1B, 2A, 3B;
(92) *Knife Lake, [11/5/84P] (T.65, R.7, 8): 1B, 2A, 3B;
(93) *Lake of the Clouds Lake (Dutton Lake), [11/5/84P] (T.65, R.6): 1B, 2A, 3B;
(94) Lake of the Woods, (T.161, 162, 163, 164, 165, 166, 167, 168, R.30, 31, 32, 33, 34, 35, 36): 1B, 2Bd, 3A;
(95) Lake Vermilion, (T.61, 62, 63, R.14, 15, 16, 17, 18): 1C, 2Bd, 3B;
(96) *Larson Lake, [3/7/88R] (T.61, R.24W, S.16, 21): 1B, 2A, 3B;
(97) Little Long Lake, (T.63, R.12): 1C, 2Bd, 3B;
(98) *Long Island Lake, [11/5/84P] (T.64, R.3, 4): 1B, 2A, 3B;
(99) *Loon Lake, [3/7/88R] (T.65, R.3): 1B, 2A, 3B;
(100) *Loon Lake, [11/5/84P] (T.66, 67, R.15): 1B, 2A, 3B;
(101) *Lunar Lake (Moon Lake), [11/5/84P] (T.65, R.6): 1B, 2A, 3B;
(102) *Lynx Lake, [11/5/84P] (T.66, R.14, 15): 1B, 2A, 3B;
(103) *Magnetic Lake, [3/7/88R] (T.65, R.3, 4): 1B, 2A, 3B;
(104) *Makwa Lake (Bear Lake), [11/5/84P] (T.64, R.6): 1B, 2A, 3B;
(105) *Marble Lake, [11/5/84P] (T.64, R.6): 1B, 2A, 3B;
(106) *Mavis Lake, [11/5/84P] (T.64, R.4W, S.4): 1B, 2A, 3B;
(107) *Mayhew Lake, [3/7/88R] (T.65, R.2): 1B, 2A, 3B;

(108) *Meditation Lake, [11/5/84P] (T.65, R.4W, S.7, 8): 1B, 2A, 3B;
(109) *Mesaba Lake, [11/5/84P] (T.63, R.5): 1B, 2A, 3B;
(110) Miner's Mine Pit, (T.63, R.12W, S.26, 27, 28): 1B, 2A, 3B;
(111) *Missing Link Lake, [11/5/84P] (T.64, R.4W, S.4): 1B, 2A, 3B:
(112) *Missionary Lake (East Three Lake), [11/5/84P] (T.64, R.7, 8): 1B, 2A, 3B;
(113) *Moose Lake, [11/5/84P] (T.64, R.9, 10): 1B, 2Bd, 3B;
(114) *Mora Lake, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;
(115) *Mukooda Lake, [11/5/84P] (T.68, R.17): 1B, 2A, 3B;
(116) *Namakan Lake, [11/5/84P] (T.69, R.17, 18, 19): 1B, 2Bd, 3A;
(117) *Neglige Lake, [11/5/84P] (T.64, R.8W, S.1, 2, 11, 12): 1B, 2A, 3B;
(118) Nickel (Nichols) Lake, (T.59, R.25W, S.12): 1B, 2A, 3B;
(119) Norberg Lake, (T.61, R.14W, S.1): 1B, 2A, 3B;
(120) *North Lake, [3/7/88R] (T.65, R.2): 1B, 2A, 3B;
(121) North Lake, Little, (T.65, R.2): 1B, 2Bd, 3B;
(122) Norway Lake, (T.61, R.10W, S.3): 1B, 2A, 3B;
(123) *Ogishkemuncie Lake, [11/5/84P] (T.65, R.6): 1B, 2A, 3B;
(124) *Ojibway Lake (Upper Twin), [3/7/88R] (T.63, R.9, 10): 1B, 2A, 3B;
(125) *Owl Lake, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;
(126) *Oyster Lake, [11/5/84P] (T.66, R.14): 1B, 2A, 3B;
(127) Peanut Lake, (T.60, R.10W, S.5): 1B, 2A, 3B;
(128) Pelican Lake, (T.64, 65, R.19, 20, 21): 1C, 2Bd, 3B;
(129) *Peter Lake, [11/5/84P] (T.64, 65, R.5): 1B, 2A, 3B;
(130) Pickerel Lake, (T.60, R.21W, S.17): 1B, 2A, 3B;
(131) Portage Lake, (T.64, R. 2W, S.3, 4, 5; T.65, R.2W, S.33): 1B, 2A, 3B;
(132) *Portage Lake, [11/5/84P] (T.65, R.8): 1B, 2A, 3B;
(133) Portage Lake, Little, (T.64, R.2W, S.3): 1B, 2A, 3B;
(134) *Powell Lake, [11/5/84P] (T.64, 65, R.5): 1B, 2A, 3B;
(135) *Rabbit Lake, [11/5/84P] (T.66, R.6): 1B, 2A, 3B;
(136) *Rainy Lake, [11/5/84P] (T.70, 71, R.18, 19, 20, 21, 22, 23): 1B, 2Bd, 3A;
(137) *Raven Lake (Lynx Lake), [11/5/84P] (T.64, R.6): 1B, 2A, 3B;
(138) *Red Rock Lake, [11/5/84P] (T.65, 66, R.5): 1B, 2A, 3B;
(139) Regenbogan Lake, (T.64, R.12W, S.18): 1B, 2A, 3B;
(140) *Rog Lake, [11/5/84P] (T.65, R.5W, S.16, 17): 1B, 2A, 3B;
(141) *Ruby Lake, Big, [11/5/84P] (T.66, R.14): 1B, 2A, 3B;
(142) *Saganaga Lake, [11/5/84P] (T.66, 67, R.4, 5): 1B, 2A, 3B;
(143) *Saganaga Lake, Little, [11/5/84P] (T.64, R.5, 6): 1B, 2A, 3B;
(144) *Sand Point Lake, [11/5/84P] (T.68, 69, R.16, 17): 1B, 2A, 3A;
(145) Scarp (Cliff) Lake, (T.60, R.6W, S.31, 32): 1B, 2A, 3B;
(146) *Sea Gull Lake, [11/5/84P] (T.65, 66, R.4, 5): 1B, 2A, 3B;
(147) *Sema Lake (Coon Lake), [11/5/84P] (T.65, R.7): 1B, 2A, 3B;
(148) Shoo-fly Lake, (T.59, R.8W, S.1; T.60, R.8W, S.36): 1B, 2A, 3B;
(149) *Skull Lake, [11/5/84P] (T.64, R.9W, S.14): 1B, 2A, 3B;
(150) *Snowbank Lake, [11/5/84P] (T.63, 64, R.8, 9): 1B, 2A, 3B;
(151) *Spoon Lake (Fames Lake), [11/5/84P] (T.65, R.7): 1B, 2A, 3B;
(152) *Spring Lake, [3/7/88R] (T.68, R.18): 1B, 2A, 3B;

(153) Steamhaul Lake, (T.60, R.9W, S.32): 1B, 2A, 3B;

(154) *Strup Lake, [11/5/84P] (T.64, R.7): 1B, 2A, 3B;

(155) *Sumpet Lake, [11/5/84P] (T.61, R.7): 1B, 2Bd, 3B;

(156) Surber Lake, (T.65, R.2W, S.34): 1B, 2A, 3B;

(157) *Takucmich Lake, [11/5/84P] (T.67, 68, R.14): 1B, 2A, 3B;

(158) *Tarry Lake, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;

(159) *Thomas Lake, [11/5/84P] (T.63, 64, R.7): 1B, 2A, 3B;

(160) *Thumb Lake, [11/5/84P] (T.67, R.14): 1B, 2A, 3B;

(161) Tofte Lake, (T.63, R.10W, S.2, 3, 10, 11; T.64, R.10W, S.35): 1B, 2A, 3B;

(162) *Topaz Lake (Star Lake), [11/5/84P] (T.65, R.6): 1B, 2A, 3B;

(163) *Town Lake, [11/5/84P] (T.63, 64, R.3, 4): 1B, 2A, 3B;

(164) Trappers Lake, (T.60, R.8W, S.27, 34): 1B, 2A, 3B;

(165) Trip Lake, (T.65, R.3W, S.32): 1B, 2A, 3B;

(166) *Trout Lake, Big, [11/5/84P] (T.63, 64, R.15, 16): 1B, 2A, 3B;

(167) *Trout Lake, Little (Pocket Lake), [11/5/84P] (T.68, R.17): 1B, 2A, 3B;

(168) *Trygg (Twigg) Lake, [11/5/84P] (T.68, R.14W, S.31; T.68, R.15W, S.36): 1B, 2A, 3B;

(169) *Tucker Lake, [11/5/84P] (T.64, R.3): 1B, 2Bd, 3B;

(170) *Tuscarora Lake, [11/5/84P] (T.64, R.4, 5): 1B, 2A, 3B;

(171) *Vera Lake, [11/5/84P] (T.64, R.8): 1B, 2A, 3B;

(172) *Virgin Lake, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;

(173) *Wine Lake, [11/5/84P] (T.63, R.5): 1B, 2A, 3B;

(174) *Wisini Lake, [11/5/84P] (T.64, R.7): 1B, 2A, 3B;

(175) Woods, Lake of the (see Lake of the Woods);

(176) Unnamed (Pear) Lake, (T.60, R.11W, S.4): 1B, 2A, 3B;

(177) Unnamed Swamp, Winton, (T.63, R.11, S.19; T.63, R.12, S.24): 7;

(178) White Iron Lake, (T.62, 63, R.11, 12): 1C, 2Bd, 3B;

(179) *All other lakes in the Boundary Waters Canoe Area Wilderness [11/5/84P]: 1B, 2Bd, 3B;

(180) *All wetlands in the Boundary Waters Canoe Area Wilderness [11/5/84P]: 2D;

(181) *All other lakes in the Voyageurs National Park [11/5/84P]: 2B, 3B; and

(182) *All other wetlands in the Voyageurs National Park [11/5/84P]: 2D.

C. Calcareous Fens: None currently listed.

D. Scientific and Natural Areas: *Purvis Lake-Ober, [11/5/84P] Waters within the Purvis Lake-Ober Foundation Scientific and Natural Area, Saint Louis County, (T.62, R.13): 2B, 3B, except wetlands which are 2D.

Subp. 3. **Red River of the North Basin.** The water use classifications for the listed waters in the Red River of the North Basin are as identified in items A, B, C, and D.

A. Streams:

(1) Auganash Creek, (T.144, R.38, S.5; T.145, R.38, S.27, 28, 31, 32, 33): 1B, 2A, 3B;

(2) Bad Boy Creek, (T.144, R.39, S.13, 14, 22, 23, 27, 28, 34): 1B, 2A, 3B;

(3) Badger Creek, (T.149, 150, 151, R.42, 43, 44): 2C;

(4) Barnums Creek (Burnham Creek), (T.148, 149, 150, R.44, 45, 46, 47, 48): 2C;

(5) Battle River, South Branch, (T.151, R.30, S.2, 3, 4, 11): 1B, 2A, 3B;

(6) Bemis Hill Creek, (T.161, R.37, S.17, 19, 20, 29, 30): 1B, 2A, 3B;

(7) Bois de Sioux River, (Mud Lake outlet to Breckenridge): 2C;

(8) Brandberg Creek, (T.133, R.38, S.20, 21, 28, 29, 30): 1B, 2A, 3B;

(9) Buckboard Creek, (T.144, R.37, S.19, 30, 31; T.144, R.38, S.11, 12, 13, 24): 1B, 2A, 3B;

(10) Clearwater River, (T.148, R.35, S.5, 6, 8, 17, 20, 29, 31, 32; T.149, R.35, S.20, 29, 31, 32): 1B, 2A, 3B;

(11) County Ditch No. 6A-2, Rothsay, (T.135, R.45, S.21, 28, 33): 7 (see subitem (68));

(12) County Ditch No. 32, Sabin, (T.138, R.48, S.13, 14, 15, 16, 17, 18): 7;

(13) County Ditch No. 65, New York Mills, (T.135, R.37, S.18; T.135, R.38, S.13): 7;

(14) Dead Horse Creek, (T.138, R.38, S.3, 4, 7, 8, 9, 16): 1B, 2A, 3B;

(15) Deerhorn Creek, (T.136, R.44, 45, 46): 2C;

(16) Doran Slough, (T.131, 132, R.46, 47): 2C;

(17) Eighteen Mile Creek, (T.127, R.46, 47): 2C;

(18) Elbow Lake Creek, (T.142, R.38, S.6; T.143, R.38, S.31, 32): 1B, 2A, 3B;

(19) Felton Creek, (T.141, R.44, S.7, 8, 17; T.141, R.45, S.7, 8, 12, 13, 14, 15, 16, 17, 18, 22; T.141, R.46, S.12, 13, 14): 1B, 2A, 3B;

(20) Five Mile Creek, (T.127, 128, R.45): 2C;

(21) Gentilly River, (T.149, 150, R.45): 2C;

(22) Hay Creek, (T.137, 138, R.44, 45, 46): 2C;

(23) Hay Creek, (T.161, 162, 163, R.37, 38, 39): 2C;

(24) Hill River, (T.148, 149, 150, R.39, 40, 41, 42): 2C;

(25) Holmstad Creek, (T.136, R.37, S.7; T.136, R.38, S.12, 13, 14): 1B, 2A, 3B;

(26) Hoover Creek, (T.152, 153, 154, R.29, 30): 2C;

(27) Joe River, (T.162, 163, 164, R.49, 50): 2C;

(28) Joe River, Little, (T.163, R.47, 48): 2C;

(29) Judicial Ditch No. 13, Goodridge, (T.154, R.40, S.16, 17, 18): 7;

(30) Judicial Ditch No. 18, Goodridge, (T.154, R.40, S.18, 19, 27, 28, 29, 30; T.154, R.41, S.13, 14, 15, 16, 17, 18; T.154, R.42, S.7, 8, 13, 14, 15, 16; T.154, R.43, S.9, 10, 11, 12, 16): 7;

(31) Lawndale Creek, (T.135, R.45, S.5, 6; T.135, R.46, S.1, 2): 1B, 2A, 3B;

(32) Lengby Creek, (T.147, R.39, S.33, 34): 1B, 2A, 3B;

(33) Long Branch Creek, (T.134, R.42, S.7): 1B, 2A, 3B;

(34) Lost River, (T.148, R.38, S.20, 21, 22, 27, 28): 1B, 2A, 3B;

(35) Maple Creek, (T.147, 148, R.44, 45, 46): 2C;

(36) Marsh Creek, (T.144, 145, 146, R.41, 42, 43): 2C;

(37) Meadow Creek, (T.151, R.30, S.6; T.151, R.31, S.1, 2): 1B, 2A, 3B;

(38) Mud Creek, (T.144, R.37, S.13, 14, 22, 23, 24): 1B, 2A, 3B;

(39) Mud River, (T.150, R.33, S.21, 28): 1B, 2A, 3B;

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

(41) Mustinka River, West Branch, (T.125, 126, 127, 128, R.45, 46, 47): 2C;

(42) Nassett Creek, (T.148, R.38, S.20, 28, 29): 1B, 2A, 3B;

(43) O'Brien Creek, (T.149, R.32, S.2; T.150, R.32, S.23, 24, 26, 35): 1B, 2A, 3B;

(44) Otter Tail River, (Height of Land Lake to mouth): 1C, 2Bd, 3B;

(45) Rabbit River, (T.130, 131, R.45, 46, 47): 2C;

(46) Rabbit River, South Fork, (T.130, R.45, 46): 2C;

(47) Red Lake River, (Outlet of Lower Red Lake to mouth): 1C, 2Bd, 3B;

(48) Red River of the North, (Breckenridge to Canadian border): 1C, 2Bd, 3B;

(49) Roy Creek (Roy Lake Creek), (T.144, 145, R.39): 2C;

(50) Rush Lake Creek, (T.135, R.38, S.23, 26, 27, 28): 1B, 2A, 3B;

(51) Schermerhorn Creek, (T.144, R.39, S.6; T.145, R.39, S.31; T.145, R.40, S.25, 26, 36): 1B, 2A, 3B;

(52) Spring Creek, (T.145, 146, R.45, 46, 47): 2C;

(53) Spring Creek, (T.142, R.41, 42): 2C;

(54) Spring Creek, (T.149, R.30, S.4, 5, 9, 10): 1B, 2A, 3B;

(55) Spring Lake Creek, (T.148, R.35, S.34, 35): 1B, 2A, 3B;

(56) Stony Creek, (T.137, R.45, 46): 2C;

(57) Sucker Creek, (T.138, R.40, S.18; T.138, R.41, S.13): 1B, 2A, 3B;

(58) Sucker Creek, (T.160, 161, R.39): 2C;

(59) Tamarac River (Source to Stephen), (T.157, 158, R.45, 46, 47, 48): 1C, 2Bd, 3B;

(60) Toad River, (T.138, R.38, S.6, 7, 18, 19, 30; T.139, R.38, S.30, 31; T.139, R.39, S.25, 36; T.138, R.39, S.25, 36): 1B, 2A, 3B;

(61) Twelve Mile Creek (excluding Class 7 segment), (T.126, 127, R.45): 2C;

(62) Twelve Mile Creek (County Ditch No. 1), Donnelly, (T.126, R.43, S.16, 17, 18, 19, 21, 22, 25, 26, 27; T.126, R.44, S.23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33; T.126, R.45, S.25, 26, 27, 28, 36): 7;

(63) Twelve Mile Creek, East Fork, (T.125, 126, R.44, 45): 2C;

(64) Twelve Mile Creek, West Fork, (T.125, 126, R.44, 45): 2C;

(65) Twin Lake Creek, (T.144, 145, R.40): 2C;

(66) Two Rivers, Middle Branch, (Source to Hallock): 1C, 2Bd, 3B;

(67) Two Rivers, South Branch, (T.161, R.41-49): 1C, 2Bd, 3B;

(68) Unnamed Creek, Rothsay, (T.135, R.45, S.21, 22, 23, 25, 26): 7 (see subitem (11));

(69) Unnamed Creek, Shevlin, (T.147, R.36, S.17, 18; T.147, R.37, S.11, 12, 13, 14): 7;

(70) Unnamed Ditch, Audubon, (T.139, R.42, S.4, 9): 7;

(71) Unnamed Ditch, Lake Park, (T.139, R.43, S.4; T.140, R.43, S.33): 7;

(72) Unnamed Ditch, Glyndon, (T.139, R.47, S.1, 2, 12; T.140, R.47, S.35): 7;

(73) Unnamed Ditch, Callaway, (T.140, R.41, S.6; T.140, R.42, S.1, 2, 10, 11): 7;

(74) Unnamed Ditch, Gary, (T.145, R.44, S.22, 27, 34): 7;

(75) Unnamed Ditch, Erskine, (T.149, R.42, S.34, 35): 7;

(76) Unnamed Ditch, Thief River Falls, (T.154, R.43, S.31, 32, 33): 7;

(77) Unnamed Ditch, Warroad, (T.163, R.37, S.19, 20, 21, 22, 23; T.163, R.38, S.19, 20, 21, 22, 23, 24, 30; T.163, R.39, S.25, 31, 32, 33, 34, 35, 36): 7;

(78) Whiskey Creek, (T.137, R.44, 45, 46): 2C;

(79) Whiskey Creek, (T.133, 134, R.47, 48): 2C;

(80) White Earth River, (T.143, 144, R.40, 41, 42): 2C;

(81) Willow Creek, New York Mills, (T.135, R.38, S.13, 14, 15, 16, 17, 18): 7; and

(82) Wolverton Creek, (T.135, 136, 137, R.48): 2C.

B. Lakes:

(1) Bass Lake, (T.135, R.42W, S.10, 11): 1B, 2A, 3B;

(2) Hanson Lake, (T.139, R.39W, S.6): 1B, 2A, 3B;

(3) Lake Bronson, (T.160, 161, R.46): 1C, 2Bd, 3B;

(4) Twin Lake, East, (T.138, R.41): 1B, 2A, 3B;

(5) Unnamed Slough, Vergas, (T.137, R.40, S.18; T.137, R.41, S.13, 24): 7; and

(6) Wapatus (Island) Lake, (T.144, R.38W, S.21, 28): 1B, 2A, 3B.

C. Calcareous Fens:

(1) *Agassiz-Olson WMA fen, 17, Norman [4/18/94R] (T.146, R.45, S.22): 2D;

(2) *Anna Gronseth Prairie fen, 47, Wilkin [4/18/94R] (T.134, R.45, S.15): 2D;

(3) *Anna Gronseth Prairie fen, 49, Wilkin [4/18/94R] (T.134, R.45, S.10): 2D;

(4) *Anna Gronseth Prairie fen, 52, Wilkin [4/18/94R] (T.134, R.45, S.4): 2D;

(5) *Barnesville Moraine fen, 44, Clay [4/18/94R] (T.137, R.44, S.18): 2D;

(6) *Barnesville WMA fen, 10, Clay [3/7/88R] (T.137, R.45, S.1): 2D;

(7) *Barnesville WMA fen, 43, Clay [4/18/94R] (T.137, R.44, S.18): 2D;

(8) *Chicog Prairie fen, 39, Polk [4/18/94R] (T.148, R.45, S.28): 2D;

(9) *Chicog Prairie fen, 40, Polk [3/7/88R] (T.148, R.45, S.33): 2D;

(10) *Chicog Prairie fen, 41, Polk [3/7/88R] (T.148, R.45, S.20, 29): 2D;

(11) *Chicog Prairie fen, 42, Polk [3/7/88R] (T.148, R.45, S.33): 2D;

(12) *Clearbrook fen, 61, Clearwater [3/7/88R] (T.149, R.37, S.17): 2D;

(13) *Faith Prairie fen, 15, Norman [4/18/94R] (T.144, R.43, S.26): 2D;

(14) *Faith Prairie fen, 16, Norman [4/18/94R] (T.144, R.43, S.35): 2D;

(15) *Faith Prairie fen, 27, Norman [3/7/88R] (T.144, R.43, S.25): 2D;

(16) *Felton Prairie fen, 28, Clay [3/7/88R] (T.142, R.46, S.36): 2D;

(17) *Felton Prairie fen, 36, Clay [3/7/88R] (T.141, R.46, S.13): 2D;

(18) *Felton Prairie fen, 48, Clay [4/18/94R] (T.142, R.45, S.31): 2D;

(19) *Felton Prairie fen, 53, Clay [4/18/94R] (T.141, R.46, S.24): 2D;

(20) *Green Meadow fen, 14, Norman [4/18/94R] (T.145, R.45, S.35, 36): 2D;

(21) *Haugtvedt WPA North Unit, 54, Clay [4/18/94R] (T.137, R.44, S.28, 29): 2D;

(22) *Kittleson Creek Mire fen, 55, Polk [4/18/94R] (T.147, R.44, S.6, 7): 2D;

(23) *Rothsay Prairie fen, 46, Wilkin [4/18/94R] (T.136, R.45, S.33): 2D;

(24) *Rothsay Prairie fen, 50, Wilkin [4/18/94R] (T.135, R.45, S.15, 16): 2D;

(25) *Rothsay Prairie fen, 51, Wilkin [4/18/94R] (T.135, R.45, S.9): 2D;

(26) *Sanders East fen, 65, Pennington [4/18/94R] (T.153, R.44, S.7): 2D;

(27) *Sanders East fen, 74, Pennington [4/18/94R] (T.153, R.44, S.7): 2D;

(28) *Sanders fen, 64, Pennington [4/18/94R] (T.153, R.44, S.18, 19): 2D;

(29) *Spring Creek WMA NHR fen, 34, Becker [3/7/88R] (T.142, R.42, S.13): 2D;

(30) *Spring Prairie fen, 37, Clay [3/7/88R] (T.140, R.46, S.11): 2D;

(31) *Tamarac River fen, 71, Marshall [4/18/94R] (T.157, R.46, S.2): 2D;

(32) *Tympanuchus Prairie fen, 26, Polk [3/7/88R] (T.149, R.45, S.17): 2D;

(33) *Tympanuchus Prairie fen, 38, Polk [3/7/88R] (T.149, R.45, S.16): 2D;

(34) *Viking fen, 68, Marshall [4/18/94R] (T.155, R.45, S.18): 2D;

(35) *Viking fen, 70, Marshall [4/18/94R] (T.155, R.45, S.20): 2D;

(36) *Viking Strip fen, 69, Marshall [4/18/94R] (T.154, R.45, S.4): 2D; and

(37) *Waubun WMA fen, 11, Mahnomen [3/7/88R] (T.143, R.42, S.25): 2D.

D. Scientific and Natural Areas:

(1) *Green Water Lake, [11/5/84P] Waters within the Green Water Lake Scientific and Natural Area, Becker County, (T.141, R.38, S.28, 33, 34): 2B, 3B, except wetlands which are 2D; and

(2) *Pembina Trail Preserve, [3/7/88P] Waters within the Pembina Trail Preserve Scientific and Natural Area, Polk County, (T.148, R.45, S.1, 2; T.149, R.44, S.18, 19, 30, 31; T.149, R.45, S.13, 24, 25, 36): 2B, 3B, except wetlands which are 2D.

Subp. 4. **Upper Mississippi River Basin.** The water use classifications for the listed waters in the Upper Mississippi River Basin are as identified in items A, B, and D.

A. Streams:

(1) Alcohol Creek, (T.143, 144, R.34): 2C;

(2) Arramba Creek, (T.40, R.30): 2C;

(3) Barbour Creek, (T.44, R.28, S.28): 1B, 2A, 3B;

(4) Basswood Creek, (T.141, 142, R.36): 2C;

(5) Battle Brook, (T.35, R.26, 27): 2C;

(6) Battle Creek, (T.120, R.30, 31): 2C;

(7) Bear Brook, (T.144, R.27): 2C;

(8) Bear Creek, (T.145, R.36): 2C;

(9) Beautiful Creek, (T.127, R.31): 2C;

(10) Beaver Creek, (T.136, 137, R.32, 33): 2C;

(11) Belle Creek, (T.117, 118, R.32): 2C;

(12) Black Bear Brook, (T.44, R.28, S.7, 8): 1B, 2A, 3B;

(13) Birch Brook, (T.141, R.25): 2C;

(14) Black Brook, (T.41, 42, R.26): 2C;

(15) Black Brook, (T.42, 43, R.30): 2C;

(16) Blackhoof Creek, (T.46, R.29, S.16): 1B, 2A, 3B;

(17) Blackwater Creek, (T.55, R.26): 2C;

(18) Blueberry River, (T.138, 139, R.35, 36): 2C;

(19) Bluff Creek, (T.135, 136, R.36, 37): 2C;

(20) Bogus Brook (excluding Class 7 segment), (T.37, 38, R.26): 2C;

(21) Bogus Brook, Bock, (T.38, R.26, S.13, 14): 7;

(22) Borden Creek, (T.44, R.28, S.8, 9, 17, 20): 1B, 2A, 3B;

(23) Branch No. 3, Lateral 2, East Bethel, (T.33, R.23, S.29, 32): 7;

(24) Briggs Creek, (T.35, R.29, S.2, 11, 12, 14, 15, 22): 1B, 2A, 3B;

(25) Buckman Creek (excluding Class 7 segment), (T.39, 40, R.30, 31): 2C;

(26) Buckman Creek, Buckman, Buckman Coop Cry., (T.39, R.30, S.4, 5, 6, 9; T.39, R.31, S.1, 2, 10, 11; T.40, R.30, S.31; T.40, R.31, S.36): 7;

(27) Bungo Creek, (T.137, R.30, S.6; T.137, R.31, S.1, 11, 12, 14, 21, 22, 23; T.138, R.30, S.31): 1B, 2A, 3B;

(28) Bungoshine Creek, (T.145, R.32, S.28, 29, 30; T.145, R.33, S.25, 26, 34, 35): 1B, 2A, 3B;

(29) Bunker Hill Brook, (T.38, R.30, S.6; T.38, R.31, S.1, 2, 10, 11): 1B, 2A, 3B;

(30) Camp Creek, (T.43, R.28, S.4, 5): 1B, 2A, 3B;

(31) Camp Ripley Brook, (T.132, R.29, S.18, 19; T.132, R.30, S.13, 24): 1B, 2A, 3B;

(32) Cat Creek, (T.137, R.35, S.4, 9, 10, 11, 12, 13): 1B, 2A, 3B;

(33) Cat River (excluding trout waters), (T.136, 137, R.33, 34, 35): 2C;

(34) Cedar Lake Creek, (T.138, R.31, S.14, 23, 26, 27, 28): 1B, 2A, 3B;

(35) Chase Brook, (T.38, 39, R.27): 2C;

(36) Clearwater Creek, (T.56, 57, R.24, 25): 2C;

(37) Cold Creek, (T.145, R.33, S.19): 1B, 2A, 3B;

(38) Cold Spring Creek, (T.123, R.30, S.14, 15): 1B, 2A, 3B;

(39) Coon Creek, (T.43, R.29, 30): 2C;

(40) Corey Brook, (T.135, R.30, S.9, 15, 16, 21, 22, 27): 1B, 2A, 3B;

(41) County Ditch No. 15 (Bear Creek), Bertha, (T.132, R.35, S.2; T.133, R.34, S.7; T.133, R.35, S.12, 13, 24, 25, 26, 35): 7;

(42) County Ditch No. 17, St. Cloud, (T.124, R.29, S.13, 24, 25): 7;

(43) County Ditch No. 23, Garfield, (T.129, R.38, S.26, 27): 7;

(44) County Ditch No. 23A, Willmar, (T.119, R.34, S.29, 30; T.119, R.35, S.23, 25, 26): 7;

(45) County Ditch No. 28, Ham Lake, (T.32, R.23, S.4, 5, 6; T.33, R.23, S.29, 32): 7;

(46) County Ditch No. 42, McGregor, (T.47, R.23, S.6; T.47, R.24, S.1; T.48, R.23, S.29, 31, 32): 7;

(47) County Ditch No. 63, Near Hutchinson, West Lynn Coop Cry., (T.116, R.30, S.19, 20, 21, 28, 33): 7;

(48) County Ditch No. 132, Lakeside, Lakeside Coop Cry., (T.116, R.31, S.16, 21): 7;

(49) Crane Creek (excluding Class 7 segment), (T.116, 117, R.26, 27): 2C;

(50) Crane Creek, Winsted, (T.117, R.27, S.14, 20, 21, 22, 23, 24, 25): 7;

(51) *Crow River, North Fork, [11/5/84R] (From the Lake Koronis outlet to the Meeker - Wright County line): 2B, 3B;

(52) Cullen Brook, (T.136, R.28, S.18, 19, 30; T.136, R.29, S.13): 1B, 2A, 3B;

(53) Dabill Brook, (T.137, R.31, S.1, 2, 9, 10, 11, 16; T.138, R.31, S.36): 1B, 2A, 3B;

(54) Dagget Brook, (T.43, R.29, 30): 2C;

(55) Duel Creek, (T.129, R.32, S.20): 1B, 2A, 3B;

(56) Eagle Creek, (T.120, R.29): 2C;

(57) Elk River, Little, (T.130, 131, R.30, 31): 2C;

(58) Elk River, South Branch, Little, (T.130, R.30, 31, 32): 2C;

(59) Estes Brook, (T.36, 37, 38, R.27, 28): 2C;

(60) Everton Creek, (T.149, R.30): 2C;

(61) Fairhaven Creek, (T.121, R.28, S.5; T.122, R.28, S.29, 31, 32): 1B, 2A, 3B;

(62) Farley Creek, (T.147, R.28): 2C;

(63) Farnham Creek, (T.135, R.32, S.5, 6, 7; T.136, R.32, S.2, 3, 9, 10, 16, 19, 20, 21, 29, 31, 32): 1B, 2A, 3B;

(64) Fawn Creek, (T.134, R.33, S.22, 27, 33, 34): 1B, 2A, 3B;

(65) Finn Creek, (T.135, R.37, S.27, 34): 1B, 2A, 3B;

(66) Fish Creek, (T.28, R.22): 2C;

(67) Fletcher Creek, (T.42, R.31): 2C;

(68) Foley Brook, (T.141, R.25): 2C;

(69) Frederick Creek, (T.119, R.25): 2C;

(70) Frontenac Creek, (T.145, R.34): 2C;

(71) Hanson Brook, (T.40, R.27): 2C;

(72) Hanson Brook (Three-Mile), (T.122, R.28, S.21, 22, 25, 26, 27, 36): 1B, 2A, 3B;

(73) Hasty Brook, (T.49, R.19, S.18; T.49, R.20, S.4, 5, 9, 10, 13, 14, 15, 23; T.50, R.20, S.28, 29, 32, 33): 1B, 2A, 3B;

(74) Hay Creek, (T.43, 44, R.30, 31): 2C;

(75) Hay Creek, (T.134, R.33, S.7, 8, 9, 10, 11, 17, 18): 1B, 2A, 3B;

(76) Hay Creek, (T.135, R.31, S.8, 9, 17): 1B, 2A, 3B;

(77) Hazel Creek, (T.127, R.29, 30): 2C;

(78) Hellcamp Creek, (T.140, R.33, S.19; T.140, R.34, S.24): 1B, 2A, 3B;

(79) Hennepin Creek, (T.144, R.35, S.3, 10, 15, 16, 21; T.145, R.35, S.34): 1B, 2A, 3B;

(80) Hennepin Creek (excluding trout waters), (T.144, 145, 146, R.34, 35): 2C;

(81) Hoblin Creek, (T.137, R.30, S.17, 18, 19): 1B, 2A, 3B;

(82) Indian Creek, (T.141, 142, R.36, 37): 2C;

(83) Irish Creek, (T.129, R.31): 2C;

(84) Iron Creek, (T.135, R.32): 2C;

(85) Jewett Creek, (T.119, 120, R.30, 31): 2C;

(86) Johnson Creek, (T.137, R.28): 2C;

(87) Judicial Ditch No. 1, Lakeside, Lakeside Coop Cry., (T.116, R.31, S.28, 33): 7;

(88) Judicial Ditch No. 15, Buffalo Lake, Iowa Pork Industries, Hector, (T.115, R.31, S.15, 16, 20, 21, 29, 30; T.115, R.32, S.22, 25, 26, 27, 28, 32, 33): 7;

(89) Kabekona River, (T.143, R.32, S.6, 7, 18, 19; T.143, R.33, S.2, 3, 4, 9, 11, 12, 24; T.144, R.33, S.29, 30, 32, 33; T.144, R.34, S.24, 25, 36): 1B, 2A, 3B;

(90) Kawishiwash Creek, (T.142, R.32, S.12): 1B, 2A, 3B;

(91) Kettle Creek, (T.138, R.35, 36, 37): 2C;

(92) Kinzer Creek, (T.123, R.30, S.27, 34): 1B, 2A, 3B;

(93) Kitchi Creek, (T.146, 147, R.29, 30): 2C;

(94) Kitten Creek, (T.137, R.34, 35): 2C;

(95) Larson Creek, (T.128, R.32, S.6): 1B, 2A, 3B;

(96) LaSalle Creek (excluding trout waters), (T.143, 144, R.35): 2C;

(97) LaSalle Creek, (T.143, R.35, S.6; T.144, R.35, S.19, 30, 31): 1B, 2A, 3B;

(98) LaSalle River, (T.144, 145, R.35): 2C;

(99) Laura Brook, (T.141, R.26): 2C;

(100) Libby Brook, (T.50, R.23, S.5, 6; T.50, R.24, S.1, 2): 1B, 2A, 3B;

(101) Long Brook, Lower South, (T.44, R.30, S.12, 13): 1B, 2A, 3B;

(102) Long Brook, Upper South, (T.44, R.29, S.6, 7): 1B, 2A, 3B;

(103) Long Lake Creek, (T.46, R.25, S.10, 15): 1B, 2A, 3B;

(104) Luxemburg Creek, (T.123, R.28, S.16, 17, 18, 19, 20, 21, 22, 30): 1B, 2A, 3B;

(105) Matuska's Creek, (T.54, R.26, S.35, 36): 1B, 2A, 3B;

(106) Meadow Creek, (T.128, R.30): 2C;

(107) Meyers Creek, (T.122, R.28, S.4; T.123, R.28, S.22, 27, 33, 34): 1B, 2A, 3B;

(108) Michaud Brook, (T.140, R.25, S.7, 17, 18): 1B, 2A, 3B;

(109) Mike Drew Brook, (T.38, 39, R.26, 27): 2C;

(110) Mink Creek, Big, (T.41, 42, R.30, 31): 2C;

(111) Mink Creek, Little, (T.41, 42, R.29, 30, 31): 2C;

(112) *Mississippi River, [11/5/84R] (From Lake Itasca to Fort Ripley): 2B, 3B;

(113) *Mississippi River, [11/5/84R] (From Fort Ripley to the southerly boundary of Morrison County): 1C, 2Bd, 3B;

(114) Mississippi River, (From the southerly boundary of Morrison County to County State-Aid Highway 7 bridge in Saint Cloud): 1C, 2Bd, 3B;

(115) *Mississippi River, [11/5/84R] (County State-Aid Highway 7 bridge in Saint Cloud to the northwestern city limits of Anoka): 1C, 2Bd, 3B;

(116) Mississippi River, (From the northwestern city limits of Anoka to the Upper Lock and Dam at Saint Anthony Falls in Minneapolis): 1C, 2Bd, 3B;

(117) Mississippi River, (Outlet of Metro Wastewater Treatment Works in Saint Paul to river mile 830, Rock Island RR Bridge): 2C, 3B;

(118) Morrison Brook, (T.52, R.26, S.4, 9, 10, 14, 15; T.53, R.26, S.7, 8, 18, 19, 29, 30, 32, 33): 1B, 2A, 3B;

(119) Muckey Creek, (T.139, R.33, S.1, 2, 10, 11, 12): 1B, 2A, 3B;

(120) Necktie River (T.145, R.32, S.6, 7, 8, 9, 16; T.145, R.33, S.1): 1B, 2A, 3B;

(121) Nelson Hay Creek, (T.130, R.31, S.1, 2): 1B, 2A, 3B;

(122) Northby Creek, (T.140, R.27): 2C;

(123) Norway Brook, (T.139, R.30): 2C;

(124) O'Brien Creek, (T.56, 57, R.22): 2C;

(125) O'Neill Brook, (T.38, R.26): 2C;

(126) Oak Ridge Creek (Oak Creek), (T.133, 134, R.36): 2C;

(127) Olson Brook, (T.136, R.30, S.12, 13, 14): 1B, 2A, 3B;

(128) Peterson Creek, (T.134, R.30, S.29, 33): 1B, 2A, 3B;

(129) Pickerel Creek, (T.56, R.22, S.7, 18; T.56, R.23, S.13): 1B, 2A, 3B;

(130) Pigeon River, (T.147, R.27): 2C;

(131) Pike Creek (excluding Class 7 segment), (T.129, R.30): 2C;

(132) Pike Creek, Flensburg, (T.129, R.30, S.17, 18, 19, 20): 7;

(133) Pillager Creek, (T.133, R.30): 2C;

(134) Pioneer Creek, (T.118, R.24): 2C;

(135) Pokegama Creek, (T.54, R.26, S.26, 27, 28): 1B, 2A, 3B;

(136) Pokegama Creek, Little, (T.54, R.26, S.26, 27, 34, 35): 1B, 2A, 3B;

(137) Pokety (Pickedee Creek), (T.144, R.32, S.29, 30; T.144, R.33, S.24, 25): 1B, 2A, 3B;

(138) Poplar Brook, (T.135, R.32, S.5, 6; T.136, R.32, S.22, 27, 28, 32, 33): 1B, 2A, 3B;

(139) Prairie Brook, (T.36, R.27): 2C;

(140) Rat Creek, (T.144, 145, R.34): 2C;

(141) Rice Creek, (T.30, 31, 32, R.22, 23, 24): 1C, 2Bd, 3B;

(142) Rice Creek, (T.35, R.29): 2C;

(143) Robinson Hill Creek, (T.123, R.28, S.4, 9, 10, 15; T.124, R.28, S.31, 32, 33): 1B, 2A, 3B;

(144) Rock Creek, Little (Benton), (T.38, R.31, S.3, 4, 10, 15, 21, 22, 28; T.39, R.30, S.17, 18, 20, 21, 22; T.39, R.31, S.13, 14, 22, 23, 26, 27, 33, 34): 1B, 2A, 3B;

(145) Rogers Brook, (T.134, R.30, S.29, 32): 1B, 2A, 3B;

(146) Rosholt Creek, (T.55, R.23, S.22, 23, 24): 1B, 2A, 3B;

(147) Round Creek, (T.43, R.31, S.14, 15): 1B, 2A, 3B;

(148) Round Prairie Creek, (T.127, R.33, S.4; T.128, R.33, S.20, 29, 32, 33): 1B, 2A, 3B;

(149) *Rum River, [11/5/84P] (From the Ogechie Lake spillway to the northernmost confluence with Lake Onamia): 2B, 3B;

(150) *Rum River, [11/5/84R] (From the State Highway 27 bridge in Onamia to Madison and Rice Streets in Anoka): 2B, 3B;

(151) Sand Creek, (T.45, R.30, S.2, 3, 11, 13, 14; T.46, R.30, S.34): 1B, 2A, 3B;

(152) Sand Creek, (T.55, R.23, S.15, 22, 27, 28, 29, 32, 33): 1B, 2A, 3B;

(153) Sauk Creek, Little, (T.127, R.34, S.1; T.128, R.34, S.36): 1B, 2A, 3B;

(154) Schoolcraft Creek, (T.142, R.34, S.5, 7, 8, 17): 1B, 2A, 3B;

(155) Seven Mile Creek, (T.133, 134, R.30, 31): 2C;

(156) Sisseebakwet Creek, (T.54, R.26, S.19, 29, 30): 1B, 2A, 3B;

(157) Six Mile Brook, (T.143, 144, R.26, 27): 2C;

(158) Skimmerhorn Creek, (T.149, R.30): 2C;

(159) Skunk Creek, (T.144, R.34): 2C;

(160) Skunk River (Co. Dt. No. 37) (Co. Dt. No. 29), Brooten, (T.123, R.35, S.4, 5, 9; T.123, R.35, S.9, 10, 11, 12; T.123, R.34, S.3, 4, 5, 6, 7, 8): 7;

(161) Smart's Creek, (T.126, R.28, S.17, 18, 20): 1B, 2A, 3B;

(162) Smith Creek, (T.53, R.26, S.1, 9, 10, 11, 12, 13, 14, 15; T.54, R.26, S.35, 36): 1B, 2A, 3B;

(163) Smith Creek, Unnamed Tributary, (T.53, R.26, S.11, 12): 1B, 2A, 3B;

(164) Smith Creek, Unnamed Tributary, (T.54, R.26, S.35, 36): 1B, 2A, 3B;

(165) Snake River, (T.33, R.28, S.1; T.34, R.28, S.2, 11, 14, 23, 26, 35, 36; T.35, R.28, S.20, 28, 29, 33, 34, 35): 1B, 2A, 3B;

(166) Snowball Creek, (T.56, R.23): 2C;

(167) Split Hand Creek, (T.53, R.24): 2C;

(168) Spring Brook, (T.121, R.28, S.7; T.121, R.29, S.12): 1B, 2A, 3B;

(169) Spring Brook, (T.138, R.28, S.27, 34): 1B, 2A, 3B;

(170) Spring Brook, (T.139, R.26, S.3, 10, 11, 14): 1B, 2A, 3B;

(171) Spring Brook, Lower, (T.57, R.25, S.6; T.58, R.25, S.31): 1B, 2A, 3B;

(172) Spring Creek, (T.55, R.23, S.25, 26, 27): 1B, 2A, 3B;

(173) Spruce Creek (Douglas), (T.131, R.36, S.28, 29, 31, 32, 33, 34): 1B, 2A, 3B;

(174) Spruce Creek (Otter Tail), (T.130, R.36, S.3, 4, 9, 10): 1B, 2A, 3B;

(175) Stag Brook, (T.121, 122, R.30, 31): 2C;

(176) Stall Creek, (T.143, R.33, S.12, 13, 14): 1B, 2A, 3B;

(177) Stanchfield Branch, Lower Braham, (T.37, R.23, S.3, 10, 15, 22): 7;

(178) Stocking Creek, (T.138, R.35): 2C;

(179) Stoney Brook, (T.135, R.29, S.5, 8, 9; T.136, R.29, S.30, 31, 32; T.136, R.30, S.20, 21, 22, 25, 26, 27, 29, 30; T.136, R.31, S.24, 25, 26): 1B, 2A, 3B;

(180) Stony Brook (Stoney Brook), Foley, (T.36, R.29, S.2, 9, 10, 11, 16; T.37, R.29, S.35, 36): 7;

(181) Stony Creek, (T.140, R.28): 2C;

(182) Stony Point Brook, (T.147, R.28): 2C;

(183) Straight Creek, Upper, (T.140, R.36, S.6; T.141, R.36, S.30, 31; T.141, R.37, S.24, 25): 1B, 2A, 3B;

(184) Straight Lake Creek, (T.140, R.36, S.6; T.140, R.37, S.1, 2): 1B, 2A, 3B;

(185) Straight River, (T.139, R.34, S.7; T.139, R.35, S.4, 5, 6, 9, 10, 11, 12; T.139, R.36, S.1; T.140, R.36, S.28, 29, 33, 34, 35, 36): 1B, 2A, 3B;

(186) Sucker Brook (Gould Creek), (T.144, R.36, S.27, 28, 29, 30, 32, 33): 1B, 2A, 3B;

(187) Sucker Creek, (T.118, R.30, S.4, 5, 6, 7): 1B, 2A, 3B;

(188) Sucker Creek (Gould Creek) (excluding trout waters), (T.143, R.36): 2C;

(189) Swamp Creek, Big, (T.137, 138, 139, R.32, 33): 2C;

(190) Swamp Creek, Little, (T.136, 137, R.33): 2C;

(191) Swan Creek, (T.134, 135, R.32): 2C;

(192) Swan Creek, Little, (T.135, R.32): 2C;

(193) Swift River, (T.142, R.27): 2C;

(194) Taylor Creek, (T.128, R.31): 2C;

(195) Ted Brook Creek, (T.130, R.31): 2C;

(196) Thiel Creek (Teal), (T.121, R.28, S.5, 6, 8): 1B, 2A, 3B;

(197) Tibbits Brook, (T.33, 34, R.26, 27): 2C;

(198) Tibbetts Creek (Tibbetts Brook), (T.39, 40, R.27, 28): 2C;

(199) Trout Brook, St. Paul, (T.29, R.22, S.18, 19): 7;

(200) Tower Creek, (T.135, R.32, 33): 2C;

(201) Two Rivers, South Branch, Albany, (T.125, R.31, S.21, 22, 23): 7;

(202) Two Rivers Springs, (T.51, R.23, S.19; T.51, R.24, S.24, 25, 26): 1B, 2A, 3B;

(203) Union Creek, (T.134, R.35, S.4, 5, 7, 8, 18, 19, 30, 31; T.135, R.35, S.27, 28, 33, 34): 1B, 2A, 3B;

(204) Unnamed Creek, (T.137, R.31, S.4, 5): 1B, 2A, 3B;

(205) Unnamed Creek, (T.139, R.26, S.3, 10): 1B, 2A, 3B;

(206) Unnamed Creek, Calumet, (T.56, R.23, S.21): 7;

(207) Unnamed Creek, Hiller Mobile Home Court, (T.119, R.26, S.22, 26, 27, 35): 7;

(208) Unnamed Creek, Rogers, (T.120, R.23, S.15, 16, 22, 23): 7;

(209) Unnamed Creek, Grove City, (T.120, R.32, S.34, 35, 36): 7;

(210) Unnamed Creek, Albertville, (T.121, R.23, S.30; T.121, R.24, S.25, 36): 7;

(211) Unnamed Creek, Eden Valley, Ruhland Feeds, (T.121, R.31, S.2; T.122, R.31, S.35): 7;

(212) Unnamed Creek, Lake Henry, (T.123, R.33, S.11, 14): 7;

(213) Unnamed Creek, Miltona, (T.129, R.36, S.6; T.130, R.36, S.30, 31): 7;

(214) Unnamed Ditch, Braham, (T.37, R.23, S.2, 3): 7;

(215) Unnamed Ditch, Ramey, Ramey Farmers Coop Cry., (T.38, R.28, S.4, 5; T.39, R.28, S.29, 30, 32; T.39, R.29, S.25, 26, 27, 28): 7;

(216) Unnamed Ditch, McGregor, (T.48, R.23, S.31, 32): 7;
(217) Unnamed Ditch, Nashwauk, (T.56, R.22, S.4, 5; T.57, R.22, S.32): 7;
(218) Unnamed Ditch, Taconite, (T.56, R.24, S.22): 7;
(219) Unnamed Ditch, Glencoe, Green Giant, (T.115, R.28, S.21, 22, 27, 28): 7;
(220) Unnamed Ditch, Glencoe, Green Giant, (T.115, R.28, S.14, 23): 7;
(221) Unnamed Ditch, Winsted, Green Giant, (T.117, R.27, S.10, 11): 7;
(222) Unnamed Ditch, Hiller Mobile Home Court, (T.119, R.26, S.34, 35): 7;
(223) Unnamed Ditch, Kandiyohi, (T.119, R.34, S.10, 15, 21, 22, 28, 29, 32): 7;
(224) Unnamed Ditch, Rogers, (T.120, R.23, S.15): 7;
(225) Unnamed Ditch, Belgrade, (T.123, R.34, S.19, 30): 7;
(226) Unnamed Ditch, Flensburg, (T.129, R.30, S.30; T.129, R.31, S.25): 7;
(227) Unnamed Ditch, Miltona, (T.130, R.36, S.30; T.130, R.37, S.25, 36): 7;
(228) Unnamed Stream, Winsted, (T.117, R.27, S.11, 12): 7;
(229) Unnamed Stream, Flensburg, (T.129, R.30, S.19, 30): 7;
(230) Vandell Brook, (T.37, 38, R.26): 2C;
(231) Van Sickle Brook, (T.138, R.26, S.14, 15, 23, 24): 1B, 2A, 3B;
(232) Wallingford Brook, (T.139, R.33, S.1, 2, 11; T.140, R.33, S.25, 36): 1B, 2A, 3B;
(233) Warba Creek, (T.54, R.23, S.13, 14, 15, 21, 22, 23, 24): 1B, 2A, 3B;
(234) Welcome Creek, (T.56, 57, R.22): 2C;
(235) Whitley's Creek, (T.45, R.30, S.16, 17, 20, 21): 1B, 2A, 3B;
(236) Whitney Brook, (T.39, R.26, 27): 2C;
(237) Willow Creek, (T.133, R.38, S.2, 11; T.134, R.38, S.26, 35): 1B, 2A, 3B;
(238) Willow Creek, (T.121, R.29, S.10, 11, 14, 23): 1B, 2A, 3B;
(239) Willow River, North Fork, (T.142, R.25): 2C;
(240) Willow River, South Fork, (T.142, R.25): 2C;
(241) Wilson Creek, (T.137, R.30): 2C; and
(242) Wolf Creek, (T.42, R.30): 2C.

B. Lakes:

(1) Allen Lake, (T.138, R.26W, S.5): 1B, 2A, 3B;
(2) Bald Eagle Lake, (T.30, 31, R.21, 22): 1C, 2Bd, 3B;
(3) Bee Cee Lake, (T.58, R.25W, S.28, 33): 1B, 2A, 3B;
(4) Benedict Lake, (T.142, R.32): 1B, 2A, 3B;
(5) Benjamin Lake, (T.148, R.30W, S.7, 18; T.148, R.31W, S.13): 1B, 2A, 3B;
(6) Blacksmith Lake, (T.142, R.35W, S.13): 1B, 2A, 3B;
(7) *Blue Lake, [3/7/88R] (T.46, 47, R.27): 1B, 2A, 3B;
(8) *Blue Lake, [3/7/88R] (T.141, R.34): 1B, 2A, 3B;
(9) *Bluewater Lake, [3/7/88R] (T.57, R.25): 1B, 2A, 3B;
(10) Cenaiko Lake (Unnamed), (T.31, R.24W, S.26): 1B, 2A, 3B;
(11) Centerville Lake, (T.31, R.22): 1C, 2Bd, 3B;
(12) Charley Lake, (T.30, R.23): 1C, 2Bd, 3B;
(13) Crappie Lake, (T.143, R.33W, S.31): 1B, 2A, 3B;

(14) Deep Lake, (T.30, R.22): 1C, 2Bd, 3B;
(15) Diamond Lake, (T.141, R.30W, S.26, 27, 34): 1B, 2A, 3B;
(16) Hazel Lake, (T.141, R.29W, S.25): 1B, 2A, 3B;
(17) Hay Lake, Lower, (T.137, R.28, 29): 1B, 2A, 3B;
(18) *Kabekona Lake, [3/7/88R] (T.142, 143, R.32, 33): 1B, 2A, 3B;
(19) Kennedy Lake, (T.58, R.23): 1B, 2A, 3B;
(20) Kremer Lake, (T.58, R.26W, S.33, 34): 1B, 2A, 3B;
(21) LaSalle Lake, Lower, (T.145, R.35): 1B, 2A, 3B;
(22) Loon (Townline) Lake, (T.50, R.22W, S.7; T.50, R.23W, S.12, 13): 1B, 2A, 3B;
(23) Lucky Lake, (T.57, R.26W, S.14): 1B, 2A, 3B;
(24) Mallen Mine Pit, (T.46, R.29W, S.17): 1B, 2A, 3B;
(25) Manuel (South Yawkey) Mine Pit, (T.46, R.29W, S.1): 1B, 2A, 3B;
(26) Margaret Lake, (T.139, R.26W, S.16): 1B, 2A, 3B;
(27) Marion Lake, (T.139, R.26W, S.16, 17): 1B, 2A, 3B;
(28) Martin (Huntington, Feigh) Mine Pit, (T.46, R.29W, S.9, 10, 16): 1B, 2A, 3B;
(29) Moonshine Lake, Little (Moonshine), (T.58, R.25W, S.28, 33): 1B, 2A, 3B;
(30) Newman (Putnam) Lake, (T.145, R.34W, S.10, 11): 1B, 2A, 3B;
(31) Otter Lake, (T.30, 31, R.22): 1C, 2Bd, 3B;
(32) Pennington (Mahnomen, Alstead, Arco) Mine Pit, (T.46, R.29W, S.3, 9, 10, 11): 1B, 2A, 3B;
(33) Perch Lake, (T.139, R.31W, S.33): 1B, 2A, 3B;
(34) Pleasant Lake, (T.30, R.22, 23): 1C, 2Bd, 3B;
(35) Pleasant Lake, (T.137, R.27W, S.19): 1B, 2A, 3B;
(36) *Pokegama Lake, [3/7/88R] (T.54, 55, R.25, 26): 1B, 2A, 3B;
(37) Portsmouth Mine Pit, (T.46, R.29W, S.1, 2, 11): 1B, 2A, 3B;
(38) *Roosevelt Lake, [3/7/88R] (T.138, 139, R.26): 1B, 2A, 3B;
(39) Sagamore Mine Pit, (T.46, R.29W, S.19; T.46, R.30W, S.24): 1B, 2A, 3B;
(40) Section 6 Mine Pit, (T.46, R.29W, S.6): 1B, 2A, 3B;
(41) Snoshoe Mine Pit, (T.46, R.29W, S.17, 18): 1B, 2A, 3B;
(42) Snowshoe (Little Andrus) Lake, (T.139, R.26W, S.29, 30): 1B, 2A, 3B;
(43) Strawberry Lake, (T.137, R.28W, S.27, 34): 1B, 2A, 3B;
(44) Sucker Lake, (T.30, R.22): 1C, 2Bd, 3B;
(45) Taylor Lake, (T.52, R.25W, S.16): 1B, 2A, 3B;
(46) Teepee Lake, (T.141, R.29W, S.30; T.141, R.30W, S.25): 1B, 2A, 3B;
(47) Tioga Mine Pit, (T.55, R.26W, S.26): 1B, 2A, 3B;
(48) Trout Lake, (T.55, 56, R.24): 1B, 2A, 3B;
(49) *Trout Lake, Big, [3/7/88R] (T.57, 58, R.25): 1B, 2A, 3B;
(50) *Trout Lake, Big, [3/7/88R] (T.137, 138, R.27, 28): 1B, 2A, 3B;
(51) *Trout Lake, Little, [3/7/88R] (T.57, R.25): 1B, 2A, 3B;
(52) Unnamed Swamp, Flensburg, (T.129, R.31, S.25): 7;
(53) Unnamed Slough, Miltona, (T.130, R.37, S.26, 35, 36): 7;
(54) Unnamed Swamp, Staples, (T.133, R.33, S.1): 7;
(55) Unnamed Swamp, Taconite, (T.56, R.24, S.22): 7;
(56) Vadnais Lake, (T.30, R.22): 1C, 2Bd, 3B;

(57) Wabana Lake, (T.57, R.25): 1B, 2A, 3B;

(58) Watab Lake, Big, (T.124, R.30): 1B, 2A, 3B;

(59) Wilkinson Lake, (T.30, R.22): 1C, 2Bd, 3B;

(60) Willard Lake, (T.139, R.30W, S.15): 1B, 2A, 3B; and

(61) Yawkey (North Yawkey) Mine Pit, (T.46, R.29W, S.1): 1B, 2A, 3B.

C. Calcareous Fens: None currently listed.

D. Scientific and Natural Areas:

(1) *Itasca Wilderness Sanctuary, [11/5/84P] Waters within the Itasca Wilderness Sanctuary, Clearwater County, (T.143, R.36): 2B, 3B, except wetlands which are 2D;

(2) *Iron Springs Bog, [11/5/84P] Waters within the Iron Springs Bog Scientific and Natural Area, Clearwater County, (T.144, R.36): 2B, 3B, except wetlands which are 2D;

(3) *Pennington Bog, [11/5/84P] Waters within the Pennington Bog Scientific and Natural Area, Beltrami County, (T.146, R.30): 2B, 3B, except wetlands which are 2D; and

(4) *Wolsfeld Woods, [11/5/84P] Waters within the Wolsfeld Woods Scientific and Natural Area, Hennepin County, (T.118, R.23): 2B, 3B, except wetlands which are 2D.

Subp. 5. **Minnesota River Basin.** The water use classifications for the listed waters in the Minnesota River Basin are as identified in items A, B, C, and D.

A. Streams:

(1) Altermatts Creek (County Ditch No. 39), Comfrey, (T.108, R.33, S.17, 19, 20, 30; T.108, R.34, S.24, 25, 35, 36): 7;

(2) Assumption Creek, (T.115, R.23, S.2; T.116, R.23, S.34, 35): 1B, 2A, 3B;

(3) Badger Creek, (T.101, 102, R.28): 2C;

(4) Beaver Creek, East Fork (County Ditch No. 63), Olivia, Olivia Canning Company, (T.115, R.34, S.1, 2, 3, 4, 5, 6; T.115, R.35, S.1, 12, 13, 14, 23, 24, 25, 26; T.116, R.34, S.16, 20, 21, 28, 29, 30, 32, 33, 34, 35): 7;

(5) Blue Earth River, East Fork, (Brush Creek to mouth): 2C, 3B;

(6) Blue Earth River, West Fork, (Iowa border to mouth): 2C, 3B;

(7) Boiling Spring Creek (excluding Class 7 segment), (T.113, 114, R.37, 38): 2C;

(8) Boiling Springs Creek (County Ditch No. 1B), Echo, (T.113, R.38, S.5, 8; T.114, R.37, S.19, 30; T.114, R.38, S.25, 26, 27, 32, 33, 34): 7;

(9) Boot Creek (excluding Class 7 segment), (T.105, 106, R.22, 23): 2C;

(10) Boot Creek, New Richland, (T.105, R.22, S.6, 7; T.105, R.23, S.12, 13, 24): 7;

(11) Brafees Creek, (T.116, 117, R.40): 2C;

(12) Brush Creek, (Iowa border to mouth): 2C, 3B;

(13) Bull Run Creek, Little, (T.106, R.24, 25): 2C;

(14) Butterfield Creek, (T.106, 107, R.31, 32, 33): 2C;

(15) Canby Creek, (T.114, R.45, S.17, 18; T.114, R.46, S.13, 14, 21, 22, 23): 1B, 2A, 3B;

(16) Canby Creek (excluding trout waters), (South Dakota border to mouth): 2C, 3B;

(17) Cedar Run Creek, (T.103, 104, R.32, 33): 2C;

(18) Cherry Creek, Cleveland, (T.110, R.25, S.7, 8, 16, 17; T.110, R.26, S.12): 7;

(19) Chetomba Creek (excluding Class 7 segment), (T.116, 117, R.36, 37, 38): 2C;

(20) Chetomba Creek, Prinsburg, (T.116, R.36, S.6, 7, 18, 19; T.116, R.37, S.8, 9, 14, 15, 16, 23, 24; T.117, R.36, S.8, 9, 16, 17, 21, 28, 29, 30, 31, 32): 7;

(21) Cobb Creek, Freeborn, (T.104, R.23, S.7, 8, 17; T.104, R.24, S.11, 12): 7;

(22) Cobb Creek Ditch, Freeborn, (T.103, R.23, S.2; T.104, R.23, S.14, 15, 16, 23, 26, 35): 7;

(23) Cobb River, Big, (T.104, 105, 106, 107, R.23, 24, 25, 26): 2C;

(24) Cobb River, Little, (T.105, 106, R.23, 24, 25, 26): 2C;

(25) Cottonwood Creek (excluding trout waters), (T.119, 120, 121, R.41, 42): 2C;

(26) Cottonwood Creek, (T.119, R.41, S.4; T.120, R.41, S.21, 28, 33): 1B, 2A, 3B;

(27) County Ditch No. 1, Echo, (T.113, R.38, S.8, 9): 7;

(28) County Ditch No. 4, Arco, (T.110, R.44, S.5; T.111, R.44, S.32, 33): 7;

(29) County Ditch No. 4, Norwood, (T.115, R.25, S.30; T.115, R.26, S.13, 14, 24, 25): 7;

(30) County Ditch No. 5, Marietta, (T.117, R.45, S.6, 7, 18; T.117, R.46, S.1; T.118, R.46, S.23, 25, 26, 36): 7;

(31) County Ditch No. 6 (Judicial Ditch No. 11), Janesville, (T.107, R.24, S.4, 8, 9, 17, 18; T.107, R.25, S.13): 7;

(32) County Ditch No. 7, Lowry, (T.126, R.39, S.25, 26): 7;

(33) County Ditch No. 9 (see Hazel Creek);

(34) County Ditch No. 12 (County Ditch No. 45), Waseca, (T.107, R.23, S.22, 23): 7;

(35) County Ditch No. 12 (Rice Creek), Belview, (T.113, R.36, S.7, 8, 18, 19; T.113, R.37, S.15, 21, 22, 23, 24): 7;

(36) County Ditch No. 14, Tyler, (T.109, R.43, S.18; T.109, R.44, S.2, 3, 11, 13, 14; T.110, R.44, S.33, 34): 7;

(37) County Ditch No. 22, Montgomery, Green Giant Company, (T.111, R.23, S.4, 9, 10; T.112, R.23, S.33): 7;

(38) County Ditch No. 27, Madison, (T.117, R.43, S.3, 4, 5, 6; T.117, R.44, S.1; T.118, R.43, S.34; T.118, R.44, S.35, 36): 7;

(39) County Ditch No. 28, Marietta, (T.118, R.46, S.22, 23, 26): 7;

(40) County Ditch No. 38, Storden, (T.107, R.37, S.28, 29): 7;

(41) County Ditch No. 40A, Lafayette, (T.111, R.29, S.8, 14, 15, 16, 17, 23, 24): 7;

(42) County Ditch No. 42, Winthrop, (T.112, R.29, S.6, 7): 7;

(43) County Ditch No. 44, Bricelyn, Owatonna Canning Company, (T.101, R.25, S.7, 8, 16, 17; T.101, R.26, S.1, 12; T.102, R.26, S.36): 7;

(44) County Ditch No. 45, Renville, (T.114, R.36, S.5, 6, 7, 18; T.114, R.37, S.13; T.115, R.36, S.7, 18, 19, 29, 30, 32): 7;

(45) County Ditch No. 46, Willmar, (T.119, R.35, S.19, 20, 29): 7;

(46) County Ditch No. 51, Le Center, (T.110, R.24, S.5, 6; T.111, R.24, S.31, 32; T.111, R.25, S.26, 35, 36): 7;

(47) County Ditch No. 54, Montgomery, (T.112, R.23, S.26, 33, 34, 35): 7;

(48) County Ditch No. 55, see Rush River, North Branch;

(49) County Ditch No. 60 (Chippewa River), Millerville, Millerville Coop Cry., (T.130, R.39, S.14, 22, 23, 27, 28, 32, 33): 7;

(50) County Ditch No. 61, Kerhoven, (T.120, R.37, S.21, 22): 7;

(51) County Ditch No. 63, Hanska, (T.108, R.30, S.11, 12, 14, 17, 18, 19, 20, 21, 22, 23, 27, 28): 7;

(52) County Ditch No. 66, Bird Island, (T.115, R.34, S.15, 16, 17, 18, 22, 23): 7;

(53) County Ditch No. 87, Wells, (T.103, R.24, S.6; T.104, R.24, S.31; T.104, R.25, S.36): 7;

(54) County Ditch No. 104, Sacred Heart, (T.114, R.38, S.1, 2; T.115, R.37, S.7, 18; T.115, R.38, S.13, 24, 25, 35, 36): 7;

(55) County Ditch No. 109, Morgan, (T.111, R.34, S.4, 5, 8, 17; T.112, R.34, S.22, 23, 27, 28, 33): 7;

(56) Crow Creek, (T.112, R.35): 2C;

(57) Dry Creek, (T.108, 109, R.36): 2C;

(58) Dry Weather Creek, (T.117, 118, R.39, 40, 41): 2C;

(59) Dry Wood Creek, (T.122, R.42, 43): 2C;

(60) Eagle Creek, East Branch, (T.115, R.21, S.18): 1B, 2A, 3B;

(61) Eagle Creek, Main Branch, (T.115, R.21, S.7, 18; T.115, R.22, S.13): 1B, 2A, 3B;

(62) Echo Creek, (T.114, R.37): 2C;

(63) Eight Mile Creek, (T.111, 112, 113, R.31): 2C;

(64) Elm Creek, North Fork, (T.104, R.34): 2C;

(65) Elm Creek, South Fork, (T.103, R.34): 2C;

(66) Emily Creek, (T.118, 119, R.43): 2C;

(67) Fish Creek, (T.123, 124, R.47, 48): 2C;

(68) Five Mile Creek, (T.120, R.44): 2C;

(69) Florida Creek, (South Dakota border to mouth): 2C, 3B;

(70) Foster Creek (excluding Class 7 segment), (T.102, 103, R.24): 2C;

(71) Foster Creek, Alden, (T.103, R.23, S.31; T.103, R.24, S.25, 36): 7;

(72) Hassel Creek, (T.122, 123, R.38, 39): 2C;

(73) Hawk Creek (County Ditch No. 10), Willmar/Pennock, (T.118, R.36, S.2, 3, 8, 10, 15, 16, 17, 18, 19; T.118, R.37, S.5, 6, 7, 8, 9, 14, 15, 16, 18, 19, 23, 24, 30, 31; T.119, R.35, S.19; T.119, R.36, S.24, 25, 26, 35): 7;

(74) Hazel Creek (County Ditch No. 9), (T.115, R.39, 40, 41, 42): 2C;

(75) High Island Ditch, Arlington, (T.113, R.27, S.16, 17, 21, 22, 27): 7;

(76) Hindeman Creek, (T.111, R.32, S.19, 20; T.111, R.33, S.24): 1B, 2A, 3B;

(77) Iosco Creek, (T.108, R.23): 2C;

(78) John's Creek, (T.110, R.32, S.1; T.111, R.31, S.31; T.111, R.32, S.36): 1B, 2A, 3B;

(79) Judicial Ditch No. 1, Delavan, (T.104, R.27, S.23, 25, 26, 36): 7;

(80) Judicial Ditch No. 1A, Lafayette, (T.111, R.27, S.5, 6, 7; T.111, R.28, S.10, 11, 12, 15, 16, 17, 18, 19; T.111, R.29, S.24): 7;

(81) Judicial Ditch No. 5, Murdock, (T.120, R.38, S.4, 5, 6, 9, 10, 11; T.120, R.39, S.1, 4, 9, 10, 11, 12): 7;

(82) Judicial Ditch No. 6, Hanska, (T.107, R.30, S.4; T.108, R.30, S.28, 33): 7;

(83) Judicial Ditch No. 10, (see Wood Lake Creek);

(84) Judicial Ditch No. 10, Hanska, (T.108, R.30, S.1; T.109, R.30, S.35, 36): 7;

(85) Judicial Ditch No. 12, Tyler, (T.109, R.43, S.9, 15, 16, 17, 18): 7;

(86) Judicial Ditch No. 29, Arco, (T.111, R.44, S.21, 28, 33): 7;

(87) Judicial Ditch No. 30, Sleepy Eye, Del Monte Corporation, (T.109, R.32, S.4, 5, 6; T.110, R.32, S.31): 7;

(88) Judicial Ditch No. 49 (Providence Creek), Amboy, (T.105, R.27, S.18, 19; T.105, R.28, S.13): 7;

(89) Kennaley's Creek, (T.27, R.23, S.18): 1B, 2A, 3B;

(90) Lac qui Parle River, (Lake Hendricks outlet to Minnesota River): 2C, 3B;

(91) Lac qui Parle River, West Fork, (South Dakota border to mouth): 2C, 3B;

(92) Lateral Ditch C of County Ditch No. 55, Gaylord, (T.112, R.28, S.2, 3; T.113, R.28, S.32, 33, 34): 7;

(93) Lazarus Creek, (South Dakota border to Canby Creek): 2C, 3B;

(94) Le Sueur River, Little, (T.106, R.22): 2C;

(95) Lone Tree Creek, Tracy, (T.109, R.39, S.2, 3, 4, 7, 8, 9; T.110, R.38, S.19, 20, 30; T.110, R.39, S.25, 34, 35, 36): 7;

(96) Long Lake Creek, (T.132, R.41, S.9): 1B, 2A, 3B;

(97) Middle Creek, (T.113, 114, R.36): 2C;

(98) Mink Creek, (T.104, R.30, 31): 2C;

(99) Minneopa Creek, Lake Crystal, (T.108, R.28, S.26, 27, 32, 33, 34): 7;

(100) Minnesota River, (Big Stone Lake outlet to the Lac qui Parle dam): 1C, 2Bd, 3B;

(101) *Minnesota River, [11/5/84R] (Lac qui Parle dam to Granite Falls): 1C, 2Bd, 3B;

(102) *Minnesota River, [11/5/84R] (Granite Falls to Redwood County State-Aid Highway 11 bridge): 2B, 3B;

(103) Minnesota River, (River Mile 22 to mouth): 2C, 3B;

(104) Minnesota River, Little, (South Dakota border crossing to Big Stone Lake): 2C, 3B;

(105) Morgan Creek, (T.109, R.29, 30): 2C;

(106) Mud Creek, (T.114, R.43, 44, 45): 2C;

(107) Mud Creek, (T.123, R.36, S.28, 29): 1B, 2A, 3B;

(108) Mud Creek, DeGraff/Murdock, (T.121, R.37, S.31; T.121, R.38, S.18, 19, 20, 28, 29, 33, 34, 35, 36; T.121, R.39, S.11, 12, 13): 7;

(109) Muddy Creek (Mud Creek) (County Ditch No. 2) (County Ditch No. 4), Chokio, (T.124, R.42, S.6, 7, 15, 16, 17, 18, 21, 22, 23; T.124, R.43, S.1, 4, 5, 6, 7, 8; T.124, R.44, S.1, 2, 3, 12; T.125, R.43, S.34, 35, 36): 7;

(110) Palmer Creek, (T.116, 117, 118, R.39): 2C;

(111) Paul's Creek, (T.110, R.26, S.14, 15): 1B, 2A, 3B;

(112) Pelican Creek, (T.130, R.41, 42): 2C;

(113) Pell Creek, Walnut Grove, (T.109, R.38, S.25, 26, 27, 28): 7;

(114) Perch Creek, (T.104, 105, 106, R.29, 30): 2C;

(115) Ramsey Creek, (T.112, R.36, S.1; T.113, R.36, S.35, 36): 1B, 2A, 3B;

(116) Redwood River, (T.110, R.42, S.5, 8, 17; T.111, R.42, S.32): 1B, 2A, 3B;

(117) Rice Creek, See County Ditch No. 12;

(118) Rush River, Middle Branch, Winthrop, (T.112, R.27, S.16, 19, 20, 21, 30; T.112, R.28, S.18, 19, 20, 21, 22, 25, 26, 27; T.112, R.29, S.7, 8, 9, 13, 14, 15, 16, 17, 18): 7;

(119) Rush River, North Branch, (County Ditch No. 55), Gaylord (T.112, R.27, S.7, 8, 17; T.112, R.28, S.1, 2, 12): 7;

(120) Saint James Creek (excluding Class 7 segment), (T.105, 106, R.31, 32, 33): 2C;

(121) Saint James Creek, Saint James, (T.106, R.31, S.5, 7, 8, 18; T.107, R.31, S.21, 22, 28, 32, 33): 7;

(122) Seven Mile Creek, (T.109, R.27, S.2, 3, 4, 10, 11, 12): 1B, 2A, 3B;

(123) Shakopee Creek, (T.119, 120, R.36, 37, 38, 39, 40): 2C;

(124) Silver Creek, (T.108, R.23, 24): 2C;

(125) Smith Creek, (T.113, R.35, 36): 2C;

(126) South Creek, (T.102, 103, R.28, 29, 30): 2C, 3B;

(127) Spring Branch Creek, (T.106, R.29, 30): 2C;

(128) Spring Creek, (T.110, 111, R.32, 33, 34): 2C;

(129) Spring Creek, (T.117, R.40): 2C;

(130) Stony Run, (T.121, 122, R.45, 46): 2C;

(131) Stony Run Creek, (T.116, R.40): 2C;

(132) Three Mile Creek, (T.112, R.33): 2C;

(133) Timms Creek, (T.114, 115, R.36): 2C;

(134) Unnamed #1, (T.27, R.23, S.18; T.27, R.24, S.13): 1B, 2A, 3B;

(135) Unnamed #4, (T.27, R.24, S.24): 1B, 2A, 3B;

(136) Unnamed #7, (T.27, R.24, S.26): 1B, 2A, 3B;

(137) Unnamed Creek, (T.108, R.28, S.1, 2): 1B, 2A, 3B;

(138) Unnamed Creek, (T.108, R.28, S.5; T.109, R.28, S.32): 1B, 2A, 3B;

(139) Unnamed Creek, (T.110, R.26, S.10, 11): 1B, 2A, 3B;

(140) Unnamed Creek, (T.108, R.28, S.6; T.109, R.29, S.25, 36): 1B, 2A, 3B;

(141) Unnamed Creek, Green Isle, (T.114, R.26, S.2, 3, 4, 8, 9, 17): 7;

(142) Unnamed Creek, Lake Town Township, (T.115, R.24, S.3, 10, 11; T.116, R.24, S.27, 34): 7;

(143) Unnamed Creek, Pennock, (T.118, R.37, S.2, 3, 4, 5; T.119, R.36, S.4, 5, 6, 7, 18, 19; T.119, R.37, S.24, 25, 26, 35): 7;

(144) Unnamed Creek, Murdock, (T.120, R.38, S.1, 2; T.121, R.38, S.35): 7;

(145) Unnamed Ditch, Burnsville Freeway Sanitary Landfill, (T.27, R.24, S.28, 33): 7;

(146) Unnamed Ditch, Bricelyn, Owatonna Canning Company, (T.101, R.25, S.10): 7;

(147) Unnamed Ditch, Alden, (T.102, R.23, S.4, 5; T.103, R.23, S.31, 32): 7;

(148) Unnamed Ditch, Truman, (T.104, R.30, S.2, 11; T.105, R.30, S.25, 26, 35): 7;

(149) Unnamed Ditch (County Ditch No. 47), New Richland, (T.105, R.22, S.17, 18, 19; T.105, R.23, S.24): 7;

(150) Unnamed Ditch, Lewisville, (T.105, R.30, S.3; T.106, R.30, S.14, 23, 26, 34, 35): 7;

(151) Unnamed Ditch, Waldorf, (T.106, R.24, S.34): 7;

(152) Unnamed Ditch (County Ditch No. 45), Waseca, (T.107, R.23, S.14, 23): 7;

(153) Unnamed Ditch, Jeffers, (T.107, R.36, S.21): 7;

(154) Unnamed Ditch, Storden, (T.107, R.37, S.19, 30): 7;

(155) Unnamed Ditch, Eagle Lake, (T.108, R.25, S.18, 19; T.108, R.26, S.13): 7;

(156) Unnamed Ditch, Walnut Grove, (T.109, R.38, S.28): 7;

(157) Unnamed Ditch, Tracy, (T.109, R.39, S.18; T.109, R.40, S.13): 7;

(158) Unnamed Ditch, Wabasso, (T.110, R.36, S.3; T.111, R.36, S.18, 19, 20, 28, 29, 33, 34; T.111, R.37, S.13): 7;

(159) Unnamed Ditch, Lafayette, (T.111, R.29, S.6, 7, 8; T.111, R.30, S.12): 7;

(160) Unnamed Ditch, Wabasso, (T.111, R.37, S.13, 24): 7;

(161) Unnamed Ditch, Montgomery, (T.112, R.23, S.33): 7;

(162) Unnamed Ditch, Arlington, (T.113, R.27, S.21): 7;

(163) Unnamed Ditch, Near Fernando, Round Grove Coop Cry., (T.113, R.30, S.5; T.114, R.29, S.19, 20, 30; T.114, R.30, S.25, 26, 27, 28, 29, 32): 7;

(164) Unnamed Ditch, Green Isle, (T.114, R.26, S. 19; T.114, R.27, S.11, 12, 13, 14, 24): 7;

(165) Unnamed Ditch, New Auburn, (T.114, R.28, S.20): 7;

(166) Unnamed Ditch, Porter, (T.114, R.44, S.21, 28): 7;

(167) Unnamed Ditch, Bongards, Bongards Creameries, (T.115, R.25, S.9, 16): 7;

(168) Unnamed Ditch, Clarkfield, (T.115, R.41, S.16): 7;

(169) Unnamed Ditch, Clarkfield, (T.115, R.41, S.16, 21): 7;

(170) Unnamed Ditch, Madison, (T.118, R.44, S.27, 28, 34, 35): 7;

(171) Unnamed Ditch, Pennock, (T.119, R.36, S.2, 3, 4, 9, 10): 7;

(172) Unnamed Ditch, DeGraff, (T.121, R.38, S.19, 29, 30): 7;

(173) Unnamed Ditch, Hancock, (T.122, R.40, S.6; T.122, R.41, S.1, 12; T.123, R.40, S.18, 19, 30, 31; T.123, R.41, S.11, 12): 7;

(174) Unnamed Ditch, Alberta, (T.124, R.43, S.3, 4): 7;

(175) Unnamed Ditch, Farwell, Farwell Coop Cry. Assn., (T.126, R.39, S.6): 7;

(176) Unnamed Ditch, Lowry, (T.126, R.39, S.26, 35): 7;

(177) Unnamed Ditch, Brandon, (T.129, R.39, S.21, 22): 7;

(178) Unnamed Ditch, Evansville, (T.129, R.40, S.10, 11): 7;

(179) Unnamed Dry Run, Near Minneopa, Blue Earth - Nicollet Electric, (T.108, R.27, S.16): 7;

(180) Unnamed Dry Run, Mankato, Southview Heights Coop Association, (T.108, R.26, S.19, 30; T.108, R.27, S.24): 7;

(181) Unnamed Stream, Mankato, Midwest Electric Products, (T.109, R.26, S.20, 21, 28): 7;

(182) Unnamed Stream, Savage, (T.115, R.21, S.8, 9): 7;

(183) Unnamed Stream, Dawson, (T.117, R.43, S.22): 7;

(184) Wabasha Creek, (T.112, R.34): 2C;

(185) Whetstone River, (South Dakota border to mouth): 2C, 3B;

(186) Old Whetstone River Channel, Ortonville, Big Stone Canning Company, (T.121, R.46, S.16, 21): 7;

(187) Willow Creek, (T.104, 105, R.31, 32): 2C;

(188) Wood Lake Creek, (Judicial Ditch No. 10), (T.113, 114, R.38, 39): 2C;

(189) Yellow Bank River, North Fork, (South Dakota border to mouth): 2C, 3B;

(190) Yellow Bank River, South Fork, (South Dakota border to mouth): 2C, 3B; and

(191) Yellow Medicine River, North Fork, (South Dakota border to mouth): 2C, 3B.

B. Lakes:

(1) Amber Lake, (T.102, R.30): 1C, 2Bd, 3B;
(2) Bardwell Lake, (T.102, R.30): 1C, 2Bd, 3B;
(3) Budd Lake, (T.102, R.30): 1C, 2Bd, 3B;
(4) Courthouse Lake, (T.115, R.23W, S.9): 1B, 2A, 3B;
(5) George Lake, (T.102, R.30): 1C, 2Bd, 3B;
(6) Hall Lake, (T.102, R.30): 1C, 2Bd, 3B;
(7) Mud Lake, (T.102, R.30): 1C, 2Bd, 3B;
(8) One Hundred Acre Slough, Saint James, (T.106, R.31, S.7): 7;
(9) Silver Lake, North, (T.101, R.30): 1C, 2Bd, 3B;
(10) Sisseton Lake, (T.102, R.30): 1C, 2Bd, 3B;
(11) Unnamed Marsh, Barry, (T.124, R.47, S.8): 7;
(12) Unnamed Slough, Kensington, (T.127, R.40, S.34): 7;
(13) Unnamed Slough, Brandon, (T.129, R.39, S.21, 22): 7;
(14) Unnamed Swamp, Minnesota Lake, (T.104, R.25, S.3, 4): 7;
(15) Unnamed Swamp (Skauby Lake), Storden, (T.107, R.37, S.30): 7;
(16) Unnamed Swamp, Sunburg, Sunburg Coop Cry., (T.122, R.36, S.30): 7;
(17) Unnamed Swamp, Lowry, (T.126, R.39, S.35, 36): 7; and
(18) Wilmert Lake, (T.101, R.30): 1C, 2Bd, 3B.

C. Calcareous Fens:

(1) *Blackdog Preserve fen, 63, Dakota [3/7/88R] (T.27, R.24, S.27, 34): 2D;
(2) *Blue Mounds fen, 1, Pope [4/18/94R] (T.124, R.39, S.14, 15): 2D;
(3) *Fort Ridgely fen, 21, Nicollet [3/7/88R] (T.111, R.32, S.6): 2D;
(4) *Fort Snelling State Park fen, 25, Dakota [3/7/88R] (T.27, R.23, S.4): 2D;
(5) *Lake Johanna fen, 4, Pope [4/18/94R] (T.123, R.36, S.29): 2D;
(6) *Le Sueur fen, 32, Nicollet [3/7/88R] (T.111, R.26, S.16): 2D;
(7) *Nicols Meadow fen, 24, Dakota [3/7/88R] (T.27, R.23, S.18): 2D;
(8) *Ordway Prairie fen, 35, Pope [3/7/88R] (T.123, R.36, S.30): 2D;
(9) *Ottawa Bluffs fen, 56, Le Sueur [4/18/94R] (T.110, R.26, S.3): 2D;
(10) *Ottawa WMA fen, 7, Le Sueur [3/7/88R] (T.110, R.26, S.11): 2D;
(11) *Ottawa WMA fen, 60, Le Sueur, [3/7/88R] (T.110, R.26, S.14): 2D;
(12) *Perch Creek WMA fen, 33, Martin [3/7/88R] (T.104, R.30, S.7): 2D;
(13) *Savage fen, 22, Scott [3/7/88R] (T.115, R.21, S.17): 2D;
(14) *Savage fen, 66, Scott [3/7/88R] (T.115, R.21, S.16, 17): 2D;
(15) *Savage fen, 67, Scott [3/7/88R] (T.115, R.21, S.17): 2D;
(16) *Seminary fen, 75, Carver [4/18/94R] (T.116, R.23, S.35): 2D;
(17) *Sioux Nation WMA NHR fen, 29, Yellow Medicine [3/7/88R] (T.114, R.46, S.17): 2D;
(18) *Swedes Forest fen, 8, Redwood [4/18/94R] (T.114, R.37, S.19, 20): 2D;
(19) *Swedes Forest fen, 9, Redwood [4/18/94R] (T.114, R.37, S.22, 27): 2D; and
(20) *Yellow Medicine fen, 30, Yellow Medicine [4/18/94R] (T.115, R.46, S.18): 2D.

D. Scientific and Natural Areas: *Blackdog Preserve, [3/7/88P] Waters within the Blackdog Preserve Scientific and Natural Area, Dakota County (T.27, R.24, S.27, 34): 2B, 3B, except wetlands which are 2D.

Subp. 6. **Saint Croix River Basin.** The water use for the listed waters in the Saint Croix River Basin are as identified in items A, B, and D.

A. Streams:

(1) Bang's Brook, (T.41, R.17, S.15, 20, 21, 22, 29): 1B, 2A, 3B;

(2) Barnes Spring, (T.41, R.18, S.1, 12): 1B, 2A, 3B;

(3) Bear Creek, (T.43, R.23, 24): 2C;

(4) Beaver Creek, (T.35, R.20, S.7, 8, 17; T.35, R.21, S.3, 4, 10, 12, 13, 14, 15; T.36, R.21, S.33, 34): 1B, 2A, 3B;

(5) Bergman Brook, (T.42, 43, R.23, 24): 2C;

(6) Bjork Creek, (T.42, R.16, S.2, 9, 10, 11): 1B, 2A, 3B;

(7) Brown's Creek, (T.30, R.20, S.12, 13, 18, 19, 20, 21): 1B, 2A, 3B;

(8) Cons Creek, (T.41, R.17, S.15, 16, 22): 1B, 2A, 3B;

(9) Crooked Creek, (T.41, R.17, S.6, 7, 18, 19, 20, 29, 30; T.41, R.18, S.11, 12, 13; T.42, R.17, S.31): 1B, 2A, 3B;

(10) Crooked Creek, West Fork, (T.41, R.18, S.11, 12; T.42, R.18, S.3, 4, 9, 10, 16; T.43, R.18, S.27, 34): 1B, 2A, 3B;

(11) Crystal Creek, (T.41, R.16, S.9, 10, 15): 1B, 2A, 3B;

(12) Grindstone River, (T.42, R.21, S.20, 21, 28, 29): 1B, 2A, 3B;

(13) Groundhouse River, West Fork, (T.39, 40, R.26): 2C;

(14) Hay Creek, (T.40, R.18, S.6, 7, 8, 18, 19; T.41, R.18, S.10, 15, 20, 21, 22, 29, 32, 33): 1B, 2A, 3B;

(15) Hay Creek, (T.42, 43, 44, R.15, 16): 1B, 2Bd, 3B;

(16) Hay Creek, Little, (T.40, R.18, S.8, 9): 1B, 2A, 3B;

(17) *Kettle River, [11/5/84R] (From the north Pine County line to the site of the former dam at Sandstone, at quarter section line between the NW 1/4 and SW 1/4, S.22, T.42, R.20): 2B, 3B;

(18) *Kettle River, [11/5/84P] (From the site of the former dam at Sandstone, at quarter section line between the NW 1/4 and SW 1/4, S.22, T.42, R.20 to its confluence with the Saint Croix River): 2B, 3B;

(19) King Creek, (T.47, R.18, S.18, 19; T.47, R.19, S.1, 12, 13): 1B, 2A, 3B;

(20) Larson Creek, (T.44, R.17, S.4, 5; T.45, R.17, S.29, 32): 1B, 2A, 3B;

(21) Lawrence Creek, (T.33, R.19, S.2, 3, 10): 1B, 2A, 3B;

(22) Lost Creek, (T.40, R.19, S.9, 10, 15): 1B, 2A, 3B;

(23) McCullen Creek, (T.42, R.16, S.28, 33): 1B, 2A, 3B;

(24) Mission Creek, (T.40, R.21, S.1, 2; T.41, R.20, S.31; T.41, R.21, S.36): 1B, 2A, 3B;

(25) Mission Creek (excluding trout waters), (T.39, 40, 41, R.20, 21): 1B, 2Bd, 3B;

(26) Moosehorn River, (T.48, R.18, S.3, 9, 10, 14, 15, 16, 23, 26, 34, 35): 1B, 2A, 3B;

(27) Old Mill Stream, (T.31, R.19, S.6; T.31, R.20, S.1; T.32, R.20, S.36): 1B, 2A, 3B;

(28) Pelkey Creek, (T.41, R.20, S.33, 34, 35): 1B, 2A, 3B;

(29) Rock Creek, (T.37, 38, R.20, 21): 1B, 2Bd, 3B;

(30) Rush Creek, (T.37, R.20, 21): 1B, 2Bd, 3B;

(31) *Saint Croix River, [11/5/84R] (Wisconsin border crossing to Taylors Falls): 1B, 2Bd, 3B;

(32) *Saint Croix River, [11/5/84R] (Taylors Falls to mouth): 1C, 2Bd, 3B;

(33) Sand River, (T.43, R.18, S.4, 5, 7, 8, 18, 19, 24; T.44, R.18, S.33, 34): 1B, 2A, 3B;

(34) Spring Brook, (T.41, R.20, S.16, 17, 18, 21): 1B, 2A, 3B;

(35) Sunrise River, West Branch, (T.34, R.21, 22): 1B, 2Bd, 3B;

(36) Tamarack River, Lower, (Hay Creek to mouth): 1B, 2Bd, 3B;

(37) Tamarack River, Upper (Spruce River), (T.42, R.15, 16): 1B, 2Bd, 3B;

(38) Unnamed Ditch, Chisago City, (T.34, R.20, S.19, 29, 30, 31, 32): 7;

(39) Unnamed Ditch, Almelund, Almelund Coop Cry., (T.35, R.20, S.25): 7;

(40) Unnamed Ditch, Moose Lake, (T.46, R.19, S.30): 7;

(41) Unnamed Dry Run, Wahkon, (T.41, R.25, S.3; T.42, R.25, S.29, 32, 33, 34): 7;

(42) Unnamed Stream (Falls Creek), (T.32, R.19, S.6, 7; T.32, R.20, S.1, 12): 1B, 2A, 3B;

(43) Unnamed Stream (Gilbertson), (T.32, R.19, S.19): 1B, 2A, 3B;

(44) Unnamed Stream, Shafer, (T.34, R.19, S.32, 33, 34): 7;

(45) Unnamed Stream (Willow Brook), (T.31, R.19, S.19): 1B, 2A, 3B;

(46) Valley Creek, (T.28, R.20, S.9, 10, 14, 15, 16, 17): 1B, 2A, 3B;

(47) Wilbur Brook, (T.41, R.17, S.29, 30; T.41, R.18, S.23, 25, 26): 1B, 2A, 3B; and

(48) Wolf Creek, (T.42, R.18, S.4, 9, 16; T.43, R.18, S.32, 33): 1B, 2A, 3B.

B. Lakes:

(1) *Grindstone Lake, [3/7/88R] (T.42, R.21): 1B, 2A, 3B; and

(2) Unnamed Swamp, Shafer, (T.34, R.19, S.31, 32): 7.

C. Calcareous Fens: None currently listed.

D. Scientific and Natural Areas:

(1) *Boot Lake, [11/5/84P] Waters within the Boot Lake Scientific and Natural Area, Anoka County, (T.33, R.22): 2B, 3B, except wetlands which are 2D;

(2) *Falls Creek, [4/18/94P] (trout designated waters within Washington County), (T.32, R.19, S.7; T.32, R.20, S.12): 1B, 2A, 3B;

(3) *Falls Creek, [4/18/94P] Waters within the Falls Creek Scientific and Natural Area, Washington County, (T.32, R.19, S.7; T.32, R.20, S.12): 2B, 3B, except wetlands which are 2D; and

(4) *Kettle River, [11/5/84P] Waters within the Kettle River Scientific and Natural Area, Pine County, (T.41, R.20): 2B, 3B.

Subp. 7. **Lower Mississippi River Basin.** The water use classifications for the listed waters in the Lower Mississippi River Basin are as identified in items A, B, and C.

A. Streams:

(1) Ahrensfeld Creek, (T.105, R.8, S.8, 9, 16, 17, 19, 20): 1B, 2A, 3B;

(2) Albany Creek, West, (T.110, 111, R.12, 13): 2C;

(3) Badger Creek, (T.103, R.6, S.16, 21, 22, 27, 28, 34): 1B, 2A, 3B;

(4) Ballpark Creek, (T.102, R.4, S.19, 30; T.102, R.5, S.24): 1B, 2A, 3B;

(5) Bear Creek, (T.107, R.9, S.13, 14, 15, 16, 22): 1B, 2A, 3B;

(6) Bear Creek, North, Spring Grove (T.101, R.7, S.26, 27, 35): 7;

(7) Bear Creek (excluding trout waters), (T.107, R.9): 2C;

(8) Beaver Creek, (T.102, R.6, S.5, 18, 19, 29, 30; T.103, R.6, S.31, 32): 1B, 2A, 3B;

(9) Beaver Creek, East, (T.102, R.6, S.5, 6, 8, 17): 1B, 2A, 3B;

(10) Beaver Creek, West, (T.102, R.6, S.5, 6, 7, 18, 19, 30; T.102, R.7, S.12, 13, 24, 25, 26): 1B, 2A, 3B;

(11) Beaver Creek, (T.108, R.10, S.15, 16, 19, 20, 21; T.108, R.11, S.24): 1B, 2A, 3B;

(12) Bee Creek, (T.101, R.6, S.29, 32, 33): 1B, 2A, 3B;

(13) Big Springs Creek, (T.104, R.9, S.21, 22, 26, 27): 1B, 2A, 3B;

(14) Borson Spring, (T.105, R.8, R.29, 32, 33): 1B, 2A, 3B;

(15) Brush Valley Creek (excluding trout waters), (T.104, R.5): 2C;

(16) Brush Valley Creek, (T.104, R.5, S.23, 24, 26): 1B, 2A, 3B;

(17) Bullard Creek, (T.112, R.14, S.1, 2, 3, 10; T.113, R.14, S.36): 1B, 2A, 3B;

(18) Burns Valley Creek, East Branch, (T.106, R.7, S.3, 10, 15): 1B, 2A, 3B;

(19) Burns Valley Creek, West Branch, (T.106, R.7, S.3, 4, 9, 16; T.107, R.7, S.34): 1B, 2A, 3B;

(20) Burns Valley Creek, Main Branch, (T.106, R.7, S.2; T.107, R.7, S.35): 1B, 2A, 3B;

(21) Butterfield Creek, (T.103, R.4, S.6, 7, 8, 18): 1B, 2A, 3B;

(22) Camp Creek, (T.101, R.10, S.5, 8, 9; T.102, R.10, S.5, 8, 16, 17, 20, 29, 32): 1B, 2A, 3B;

(23) Camp Hayward Creek, (T.104, R.8, S.31, 32): 1B, 2A, 3B;

(24) Campbell Creek, (T.104, R.6, S. 5, 7, 8, 18): 1B, 2A, 3B;

(25) Campbell Creek, (T.105, R.6, S.21, 28, 29, 32): 1B, 2A, 3B;

(26) *Cannon River, [11/5/84R] (From the northern city limits of Faribault to its confluence with the Mississippi River): 2B, 3B;

(27) Cannon River, Little, (T.110, R.18, S.1, 10, 11, 12, 15; T.111, R.18, S.13, 24, 25, 36): 1B, 2A, 3B;

(28) Carters Creek, Wykoff, (T.103, R.12, S.4, 9, 15, 16, 22): 7;

(29) Cedar Valley Creek, (T.105, R.6, S.6; T.106, R.6, S.1, 11, 12, 14, 15, 21, 22, 28, 29, 31, 32): 1B, 2A, 3B;

(30) Chub Creek, North Branch, (T.112, 113, R.19): 2C;

(31) Clear Creek, (T.111, R.14, S.3, 10, 15): 1B, 2A, 3B;

(32) Cold Creek (Cold Spring Brook) (excluding trout waters), (T.110, 111, R.14): 2C;

(33) Cold Spring Brook, (T.110, R.13, S.30, 31; T.110, R.14, S.25, 36): 1B, 2A, 3B;

(34) Coolridge Creek, (T.105, R.9, S.23, 26): 1B, 2A, 3B;

(35) Corey Creek, (T.105, R.6, S.18, 19; T.105, R.7, S.24, 25, 26, 27, 34): 1B, 2A, 3B;

(36) County Ditch No. 15, Kilkenny, (T.110, R.23, S.22, 23): 7;

(37) Crane Creek, (T.107, 108, R.20, 21, 22): 2C;

(38) Crooked Creek, Main Branch, (T.102, R.4, S.18, 19, 20, 28, 29, 30; T.102, R.5, S.25, 26, 36): 1B, 2A, 3B;

(39) Crooked Creek, North Fork, (T.102, R.5, S.17, 20, 21, 22, 23, 26): 1B, 2A, 3B;

(40) Crooked Creek, South Fork, (T.102, R.5, S.26, 27, 28): 1B, 2A, 3B;

(41) Crystal Creek, (T.102, R.11, S.35, 36): 1B, 2A, 3B;

(42) Crystal Creek, (T.103, R.5, S.6, 7, 18, 19; T.103, R.6, S.1, 12): 1B, 2A, 3B;

(43) Dakota Creek (excluding trout waters), (T.105, R.5): 2C;

(44) Dakota Creek, (T.105, R.4, S.7; T.105, R.5, S.1, 2, 3, 11, 12): 1B, 2A, 3B;

(45) Daley Creek, (T.103, R.7, S.4, 5, 8; T.104, R.7, S.33): 1B, 2A, 3B;

(46) Diamond Creek, (T.103, R.8, S.18, 19; T.103, R.9, S.11, 13, 14, 24): 1B, 2A, 3B;

(47) Dry Creek, (T.108, R.12, 13): 2C;

(48) Duschee Creek, (T.102, R.10, S.1; T.103, R.10, S.23, 24, 25, 26, 36): 1B, 2A, 3B;

(49) Dutch Creek, (T.112, R.20, 21): 2C;

(50) Eitzen Creek, (T.101, R.5, S.22, 23): 1B, 2A, 3B;

(51) Etna Creek, (T.102, R.13, S.25, 36): 1B, 2A, 3B;

(52) Ferguson Creek, (T.105, R.8, S.18; T.105, R.9, S.12, 13): 1B, 2A, 3B;

(53) Ferndale Creek, (T.104, R.7, S.29, 30, 31): 1B, 2A, 3B;

(54) Forestville Creek, North Branch, (T.102, R.12, S.13, 14, 15): 1B, 2A, 3B;

(55) Forestville Creek, South Branch, (T.102, R.12, S.24, 25): 1B, 2A, 3B;

(56) Frego Creek, (T.101, R.9, S.14, 15, 22, 23): 1B, 2A, 3B;

(57) Garvin Brook, (T.106, R.8, S.4, 5, 8, 17; T.107, R.8, S.10, 11, 14, 15, 23, 26, 27, 33, 34, 35): 1B, 2A, 3B;

(58) Gilbert Creek, (T.111, R.12, S.6; T.111, R.13, S.1, 2, 3, 4, 10, 11, 12; T.112, R.12, S.31): 1B, 2A, 3B;

(59) Gilmore Creek, (T.106, R.7, S.6; T.107, R.7, S.20, 29, 30, 31, 32): 1B, 2A, 3B;

(60) Girl Scout Camp Creek, (T.103, R.7, S.29, 30): 1B, 2A, 3B;

(61) Gorman Creek, (T.109, R.11, S.1; T.110, R.10, S.29, 30, 31; T.110, R.11, S.36): 1B, 2A, 3B;

(62) Gribben Creek, (T.103, R.9, S.9, 16, 21, 27, 28): 1B, 2A, 3B;

(63) Hamilton Creek, (T.103, R.13, NW 1/4 S.6; T.103, R.14, NE 1/4 S.1): 1B, 2A, 3B;

(64) Hemmingway Creek, (T.105, R.9, S.26, 28, 33, 34, 35): 1B, 2A, 3B;

(65) Hammond Creek, (T.109, R.13, S.28, 29): 1B, 2A, 3B;

(66) Harkcom Creek, (T.108, R.16): 2C;

(67) Hay Creek, (T.111, R.15, S.4; T.112, R.14, S.19; T.112, R.15, S.1, 12, 13, 23, 24, 26, 27, 33, 34; T.113, R.15, S.24, 25, 36): 1B, 2A, 3B;

(68) Homer Creek, (T.106, R.6): 2C;

(69) Indian Creek, East, (T.109, R.9, S.19; T.109, R.10, S.21, 22, 23, 24, 26, 27, 28, 29, 31, 32; T.109, R.11, S.36): 1B, 2A, 3B;

(70) Indian Creek, West, (T.109, R.11, S.6, 7, 8, 16, 17, 21): 1B, 2A, 3B;

(71) Indian Spring Creek (excluding trout waters), (T.103, R.5): 2C;

(72) Indian Springs Creek (Dexter), (T.103, R.5, S.12, 13, 14, 15, 21, 22, 28): 1B, 2A, 3B;

(73) Iowa River, Little, (T.101, 102, R.14): 2C;

(74) Jordan Creek, Little, (T.104, R.12, S.21, 22, 26, 27, 28): 1B, 2A, 3B;

(75) Judicial Ditch No. 1, Hayfield, (T.105, R.17, S.4, 5; T.106, R.17, S.31, 32; T.106, R.18, S.25, 26, 27, 36): 7;

(76) Kedron Creek, (T.104, R.13, S.36): 1B, 2A, 3B;

(77) King Creek, (T.111, R.11, 12): 2C;

(78) Kinney Creek, (T.105, R.13, S.1, 12, 13; T.106, R.13, S.36): 1B, 2A, 3B;

(79) Lanesboro Park Pond, (T.103, R.10, S.13): 1B, 2A, 3B;

(80) LeRoy Trout Pond, (T.101, R.14, S.36): 1B, 2A, 3B;

(81) Logan Creek, (T.107, R.11, S.3): 1B, 2A, 3B;

(82) Long Creek (excluding trout waters), (T.108, 109, R.12): 2C;

(83) Long Creek, (T.109, R.12, S.3, 10, 15, 22, 27, 28): 1B, 2A, 3B;

(84) Lost Creek, (T.104, R.11, S.18; T.104, R.12, S.9): 1B, 2A, 3B;

(85) Lynch Creek, (T.104, R.11, S.2, 11, 14): 1B, 2A, 3B;

(86) MacKenzie Creek, (T.108, 109, R.21): 2C;

(87) Mahoney Creek, (T.103, R.10): 2C;

(88) Mahoods Creek, (T.103, R.12, S.20): 1B, 2A, 3B;

(89) Maple Creek, (T.102, R.8, S.3, 4; T.103, R.8, S.27, 28, 33, 34): 1B, 2A, 3B;

(90) Mazeppa Creek, (T.109, R.14, S.4, 5, 9; T.110, R.14, S.19, 29, 30, 32; T.110, R.15, S.24, 25): 1B, 2A, 3B;

(91) Middle Creek, (T.109, R.11, S.18; T.109, R.12, S.2, 3, 11, 13, 14): 1B, 2A, 3B;

(92) Mill Creek, (T.104, R.11, S.5, 6; T.105, R.11, S.31; T.105, R.12, S.14, 23, 25, 26, 36): 1B, 2A, 3B;

(93) Miller Creek, (T.111, R.12, S.7, 8, 9, 18; T.111, R.13, S.13, 24): 1B, 2A, 3B;

(94) Money Creek, (T.105, R.7, S.3, 4, 6, 7, 8, 9, 16, 17): 1B, 2A, 3B;

(95) Mound Prairie Creek, (T.104, R.5): 2C;

(96) Mud Creek, (T.108, 109, R.20, 21): 2C;

(97) Nepstad Creek, (T.102, R.8, S.4, 5, 7, 8, 9; T.102, R.9, S.1, 2, 12): 1B, 2A, 3B;

(98) Newburg Creek (M-9-10-10-1), (T.101, R.8, S.5, 8): 1B, 2A, 3B;

(99) New York Hollow Creek, (T.101, R.5, S.25, 26): 1B, 2A, 3B;

(100) Partridge Creek, (T.101, R.10, S.4; T.102, R.10, S.33): 1B, 2A, 3B;

(101) Peterson Creek, (T.106, R.8, S.7, 8): 1B, 2A, 3B;

(102) Pickwick Creek, (T.106, R.5, S.7, 18; T.106, R.6, S.13, 23, 24, 26, 34, 35): 1B, 2A, 3B;

(103) Pickwick Creek, Little, (T.106, R.5, S.18, 19, 29, 30, 32; T.106, R.6, S.13): 1B, 2A, 3B;

(104) Pine Creek (excluding Class 7 segment), (T.101, R.10): 2C, 3B;

(105) Pine Creek, (T.105, R.5, S.18, 19, 20, 29, 30, 31, 32; T.105, R.6, S.13, 36): 1B, 2A, 3B;

(106) Pine Creek, Harmony, (T.101, R.9, S.31; T.101, R.10, S.24, 25, 36): 7;

(107) Pine Creek, South Fork, (T.105, R.5, S.19; T.105, R.6, S.24): 1B, 2A, 3B;

(108) Pine Creek, (T.104, R.9, S.2, 3, 4; T.105, R.9, S.25, 26, 33, 34, 35; T.105, R.8, S.30, 31, 32, 33): 1B, 2A, 3B;

(109) Pine Creek (excluding trout waters), (T.112, 113, R.17, 18): 2C;

(110) Pine Creek, (T.112, R.17, S.5, 6, 8, 9; T.113, R.17, S.31; T.113, R.18, S.25, 26, 35, 36): 1B, 2A, 3B;

(111) Pleasant Valley Creek (excluding trout waters), (T.106, 107, R.6, 7): 2C;

(112) Pleasant Valley Creek, (T.106, R.6, S.7, 18, 19; T.106, R.7, S.1, 12, 13, 24, 25): 1B, 2A, 3B;

(113) Plum Creek, (T.108, R.15): 2C;

(114) Prairie Creek, (T.110, 111, 112, R.18, 19, 20): 2C;

(115) Rice Creek, (T.103, R.11, S.3, 5, 7, 8, 9; T.104, R.11, S.14, 23, 33): 1B, 2A, 3B;

(116) Riceford Creek, (T.101, R.7, S.6, 7, 18, 19; T.101, R.8, S.1, 12, 13, 24; T.102, R.7, S.29, 30, 31, 32): 1B, 2A, 3B;

(117) Riceford Creek, Mabel, (T.101, R.8, S.24, 25, 26): 7;

(118) Rollingstone Creek, (T.107, R.8, S.2, 3, 4, 5, 6, 7, 9, 10, 11; T.107, R.9, S.12, 13): 1B, 2A, 3B;

(119) Rollingstone Creek, Middle Branch, (T.107, R.8, S.9, 16): 1B, 2A, 3B;

(120) Root River, South Branch, (T.102, R.10, S.5, 6; T.102, R.11, S.1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 18; T.102, R.12, S.13, 21, 22, 23, 24, 26, 27; T.103, R.9, S.7, 18; T.103, R.10, S.13, 14, 15, 16, 21, 22, 23, 24, 28, 29, 32, 33; T.103, R.11, S.36): 1B, 2A, 3B;

(121) Root River, South Fork, (T.102, R.8, S.2, 3, 4, 8, 9, 10, 11, 17, 18, 19; T.102, R.9, S.24, 25, 26): 1B, 2A, 3B;

(122) Rose Valley Creek, (T.105, R.5, S.22, 27, 34, 35): 1B, 2A, 3B;

(123) Rupprecht Creek, (T.107, R.9, S.13, 24, 25, 26, 35): 1B, 2A, 3B;

(124) Rush Creek, (T.104, R.8, S.2, 3, 4, 10, 11, 13, 14; T.105, R.8, S.6, 7, 18, 19, 20, 29, 32, 33; T.105, R.9, S.1, 2, 12; T.106, R.9, S.26, 34, 35, 36): 1B, 2A, 3B;

(125) Salem Creek, (T.106, R.15, 16): 2C;

(126) Schueler Creek, (T.104, R.8, S.1, 2, 3): 1B, 2A, 3B;

(127) Second Creek, (T.111, R.12, S.15): 1B, 2A, 3B;

(128) Shady Creek, (T.104, R.11, S.19, 30): 1B, 2A, 3B;

(129) Shingle Creek, (T.109, 110, R.17): 2C;

(130) Silver Creek (excluding trout waters), (T.104, 105, R.6): 2C;

(131) Silver Creek, (T.104, R.6, S.1, 2, 11, 12, 14; T.105, R.6, S.34, 35): 1B, 2A, 3B;

(132) Silver Spring Creek, (T.108, 109, R.13): 2C;

(133) Snake Creek (excluding trout waters), (T.109, R.10): 2C;

(134) Snake Creek, (T.109, R.10, S.10, 11, 14, 15, 16): 1B, 2A, 3B;

(135) Speltz Creek, (T.107, R.8, S.5, 6; T.108, R.8, S.31; T.108, R.9, S.36): 1B, 2A, 3B;

(136) Spring Brook, (T.111, R.20, S.2, 3, 4): 1B, 2A, 3B;

(137) Spring Creek, (T.110, R.12, S.7, 17, 18, 20, 21, 27, 28, 29): 1B, 2A, 3B;

(138) Spring Creek, (T.112, R.15, S.5, 6, 7, 18; T.113, R.15, S.29, 31, 32, 33, 34): 1B, 2A, 3B;

(139) Spring Valley Creek, (T.103, R.12, S.8, 17, 18, 19, 20, 30; T.103, R.13, S.23, 24, 25, 26, 27, 28, 29, 32, 33, 34): 1B, 2A, 3B;

(140) Stockton Valley Creek, (T.106, R.8, S.2, 3, 10, 11, 14, 23; T.107, R.8, S.34): 1B, 2A, 3B;

(141) Storer Creek, (T.104, R.5, S.17, 18, 19, 30): 1B, 2A, 3B;

(142) Straight Creek, (T.107, R.9, S.2, 11, 12): 1B, 2A, 3B;

(143) Sugar Creek (Sugarloaf Creek), (T.111, 112, R.12, 13): 2C;

(144) Sullivan Creek (excluding trout waters), (T.103, R.5): 2C;

(145) Sullivan Creek, (T.103, R.5, S.12, 13, 14, 23, 24, 25, 26): 1B, 2A, 3B;

(146) Swede Bottom Creek, (T.103, R.6, S.10): 1B, 2A, 3B;

(147) Thompson Creek, (T.103, R.4, S.5, 6, 7; T.103, R.5, S.12; T.104, R.4, S.32): 1B, 2A, 3B;

(148) Torkelson Creek, (T.104, R.10, S.25, 36): 1B, 2A, 3B;

(149) Trout Brook, (T.110, R.11, S.5, 8): 1B, 2A, 3B;

(150) Trout Brook, (T.112, R.17, S.1; T.113, R.17, S.26, 27, 35, 36): 1B, 2A, 3B;

(151) Trout Brook (Hay Creek Tributary), (T.113, R.15, S.35, 36): 1B, 2A, 3B;

(152) Trout Brook (Mazeppa Creek), Goodhue, (T.110, R.15, S.3, 4; T.111, R.15, S.28, 33, 34): 7;

(153) Trout Creek, Little, (T.106, R.5, 6): 2C;

(154) Trout Run Creek, (T.104, R.10, S.4, 5, 8, 9, 16, 17, 20, 21; T.105, R.10, S.18, 19, 30, 31, 32): 1B, 2A, 3B;

(155) Trout Run Creek (Trout Creek) (excluding trout waters), (T.105, R.10): 2C;

(156) Trout Run-Whitewater Park, (T.107, R.10, S.29): 1B, 2A, 3B;

(157) Trout Valley Creek, (T.108, R.9, S.5, 8, 17, 20; T.109, R.9, S.31): 1B, 2A, 3B;

(158) Unnamed Creek, (T.101, R.4, S.21): 1B, 2A, 3B;

(159) Unnamed Creek, Spring Grove, (T.101, R.7, S.14, 22, 23, 27): 7;

(160) Unnamed Creek, (T.102, R.4, S.18, 19, 20, 29, 30): 1B, 2A, 3B;

(161) Unnamed Creek, (T.103, R.7, S.31): 1B, 2A, 3B;

(162) Unnamed Creek, Canton, (T.101, R.9, S.20): 7;

(163) Unnamed Creek, Byron, (T.107, R.15, S.17, 20, 29): 7;

(164) Unnamed Creek (Helbig), (T.110, R.11, S.28, 33): 1B, 2A, 3B;

(165) Unnamed Creek (M-9-10-5-3), (T.101, R.7, S.6; T.101, R.8, S.1, 2): 1B, 2A, 3B;

(166) Unnamed Creek (Whitewater Tributary), (T.108, R.10, S.35, 36): 1B, 2A, 3B;

(167) Unnamed Creek, (T.105, R.7, S.19, 29, 30; T.105, R.8, S.24): 1B, 2A, 3B;

(168) Unnamed Creek (Miller Valley), (T.106, R.5, S.21, 22, 27, 28): 1B, 2A, 3B;

(169) Unnamed Creek (Deering Valley), (T.108, R.8, S.20, 28, 29): 1B, 2A, 3B;

(170) Unnamed Creek (M-9-10-5-4), (T.101, R.8, S.12, 13): 1B, 2A, 3B;

(171) Unnamed Creek (M-9-10-10-5), (T.102, R.8, S.32, 33): 1B, 2A, 3B;

(172) Unnamed Creek (M-9-10-6), (T.103, R.8, S.36): 1B, 2A, 3B;

(173) Unnamed Creek (T.104, R.8, S.19, 30): 1B, 2A, 3B;

(174) Unnamed Creek, Plainview, (T.108, R.11, S.16, 17, 20, 21, 22, 27, 34): 7;

(175) Unnamed Creek, West Concord, (T.108, R.17, S.17, 20, 21): 7;

(176) Unnamed Creek, Hayfield, (T.105, R.17, S.3, 4): 7;

(177) Unnamed Creek (Wells Creek Trib. #9), (T.111, R.14, S.8, 17): 1B, 2A, 3B;

(178) Unnamed Ditch, Claremont, (T.107, R.18, S.27, 34): 7;

(179) Unnamed Ditch, Owatonna, (T.108, R.20, S.33): 7;

(180) Unnamed Ditch, Lonsdale, (T.112, R.22, S.25, 35, 36): 7;

(181) Unnamed Ditch, Hampton, (T.113, R.18, S.5, 6; T.114, R.18, S.31): 7;

(182) Unnamed Dry Run, Altura, (T.107, R.9, S.7, 18): 7;

(183) Unnamed Dry Run, Owatonna, Owatonna Canning Company, (T.107, R.20, S.6; T.107, R.21, S.1): 7;

(184) Unnamed Dry Run, Owatonna, Owatonna Canning Company, (T.107, R.20, S.6; T.107, R.21, S.1): 7;

(185) Unnamed Stream, Dodge Center, Owatonna Canning Company, (T.107, R.17, S.27, 34): 7;

(186) Vermillion River, (T.113, R.20, S.1, 2, 3, 4, 9; T.114, R.19, S.31; T.114, R.20, S.33, 34, 35, 36): 1B, 2A, 3B;

(187) Vesta Creek, (T.102, R.8, S.10, 11, 14, 15, 23): 1B, 2A, 3B;

(188) Wapsipinicon River, (T.101, R.15): 2C, 3B;

(189) Waterloo Creek, (T.101, R.6, 7): 1B, 2Bd, 3B;

(190) Watson Creek, (T.103, R.10, S.19, 20, 21, 29, 30; T.103, R.11, S.22, 23, 24, 25, 26, 27, 28, 29, 30): 1B, 2A, 3B;

(191) West Albany Creek, (T.110, R.12, S.28, 29, 30; T.110, R.13, S.23, 24, 25, 26): 1B, 2A, 3B;

(192) Whitewater River, Main Branch, (T.107, R.10, S.2, 3, 9, 10; T.108, R.10, S.1, 2, 10, 11, 14, 15, 22, 23, 26, 27, 35): 1B, 2A, 3B;

(193) Whitewater River, South Branch, (T.106, R.9, S.6; T.106, R.10, S.1; T.107, R.9, S.31; T.107, R.10, S.3, 10, 11, 13, 14, 24, 25, 36): 1B, 2A, 3B;

(194) Whitewater River, Middle Branch, (T.106, R.11, S.2, 3, 10; T.107, R.10, S.9, 10, 16, 17, 19, 20, 30; T.107, R.11, S.24, 25, 26, 35): 1B, 2A, 3B;

(195) Whitewater River, North Branch (Winona and Wabasha), (T.107, R.10, S.5, 6, 7, 8, 9; T.107, R.11, S.1, 2, 3; T.108, R.11, S.30, 31, 32, 33, 34): 1B, 2A, 3B;

(196) Whitewater River, North Fork, Elgin, (T.108, R.12, S.25, 26, 27): 7;

(197) Wildcat Creek (excluding trout waters), (T.103, R.4): 2C;

(198) Wildcat Creek, (T.103, R.4, S.26, 27, 28, 29, 32, 33, 34, 35): 1B, 2A, 3B;

(199) Willow Creek, (T.101, R.11, S.1, 12; T.102, R.11, S.1, 12, 13, 24, 25, 36): 1B, 2A, 3B;

(200) Winnebago Creek, (T.101, R.4, S.28, 29, 30; T.101, R.5, S.7, 8, 14, 15, 16, 17, 22, 23, 24, 25; T.101, R.6, S.12): 1B, 2A, 3B; and

(201) Wisel Creek, (T.101, R.8, S.5, 6, 8; T.102, R.8, S.19, 20, 29, 30, 31, 32): 1B, 2A, 3B.

B. Lakes:

(1) Unnamed Marsh, Kilkenny, (T.110, R.23, S.22, 23): 7; and

(2) Unnamed Swamp, Hampton, (T.113, R.18, S.8): 7.

C. Calcareous Fens:

(1) *Cannon River Wilderness Area fen, 18, Rice [3/7/88R] (T.111, R.20, S.34): 2D;

(2) *Cannon River Wilderness Area fen, 73, Rice [4/18/94R] (T.111, R.20, S.22): 2D;

(3) *High Forest fen, 12, Olmsted [4/18/94R] (T.105, R.14, S.14, 15): 2D;

(4) *Holden 1 West fen, 3, Goodhue [4/18/94R] (T.110, R.18, S.1): 2D;

(5) *Houston fen, 62, Houston [4/18/94R] (T.104, R.6, S.26): 2D;

(6) *Nelson WMA fen, 5, Olmsted [3/7/88R] (T.105, R.15, S.16): 2D;

(7) *Perched Valley Wetlands fen, 2, Goodhue [3/7/88R] (T.112, R.13, S.8): 2D;

(8) *Red Wing fen, 72, Goodhue [4/18/94R] (T.113, R.15, S.21): 2D; and

(9) *Wiscoy fen, 58, Winona [3/7/88R] (T.105, R.7, S.15): 2D.

D. Scientific and Natural Areas: None currently listed.

Subp. 8. **Cedar-Des Moines Rivers Basin.** The water use classifications for the listed waters in the Cedar-Des Moines Rivers Basin are as identified in items A, C, and D.

A. Streams:

(1) Bancroft Creek, (T.103, 104, R.21): 2C;

(2) Bear Creek (excluding Class 7 segment), (Source to Iowa border): 2C, 3B;

(3) Beaver Creek, (T.101, 102, R.13, 14): 2C, 3B;

(4) Cedar River, Little, (Source to Iowa border): 2C, 3B;

(5) Clear Creek, (T.102, R.4): 2C;

(6) County Ditch No. 11, Sherburne, (T.101, R.32, S.4, 9, 10; T.102, R.32, S.7, 8, 16, 17, 21, 27, 28, 33, 34): 7;

(7) County Ditch No. 48, Conger, (T.102, R.22, S.19, 20; T.102, R.23, S.24, 25, 26, 35): 7;

(8) County Ditch No. 53 (see Soldier Creek);

(9) Deer Creek, (T.101, R.19, 20): 2C, 3B;

(10) Dobbins Creek, (T.103, R.16, 17): 2C;

(11) Goose Creek, Twin Lakes, (T.101, R.20, S.31; T.101, R.21, S.16, 17, 18, 21, 22, 26, 27, 35, 36; T.101, R.22, S.12, 13): 7;

(12) Heron Lake Outlet, (T.104, 105, R.37): 2C;

(13) Jack Creek, Wilmont, (T.104, R.41, S.25, 26, 30, 31, 32, 33, 34, 35, 36): 7;

(14) Lime Creek, (T.101, R.22, 23): 2C, 3B;

(15) Murphy Creek, (T.103, R.18): 2C;

(16) Okabena Creek (excluding Class 7 segment), (T.102, 103, R.37, 38, 40): 2C;

(17) Okabena Creek, Worthington, Worthington Lagoons and Allied Mills, (T.102, R.38, S.6, 7; T.102, R.39, S.7, 8, 9, 10, 11, 12, 14, 15, 16, 18; T.102, R.40, S.13): 7;

(18) Orchard Creek, (T.102, R.18, 19): 2C;

(19) Roberts Creek, (T.103, 104, R.16, 17, 18): 2C;

(20) Rose Creek, (T.102, 103, R.16, 17, 18): 2C;

(21) Scheldorf Creek, (T.106, R.36, S.19, 30, 31; T.106, R.37, S.13, 24, 25): 1B, 2A, 3B;

(22) Soldier Creek (Unnamed Stream and County Ditch No. 53), (T.101, R.32, 33): 2C, 3B;

(23) Turtle Creek, (T.103, R.18, 19, 20): 2C;

(24) Unnamed Creek, Emmons, (T.101, R.22, S.31): 7;

(25) Unnamed Creek, Brownsdale, (T.103, R.17, S.4, 9): 7;

(26) Unnamed Creek, Blooming Prairie, (T.104, R.18, S.5, 8, 9, 16; T.105, R.18, S.31): 7;

(27) Unnamed Creek, Blooming Prairie, (T.105, R.19, S.25): 7;

(28) Unnamed Creek, Iona, (T.105, R.41, S.3, 4, 9; T.106, R.40, S.19, 29, 30, 32; T.106, R.41, S.24, 25, 26, 34, 35): 7;

(29) Unnamed Ditch, Blooming Prairie, (T.105, R.19, S.25): 7;

(30) Unnamed Stream (see Soldier Creek);

(31) Wolf Creek, (T.103, R.16, 17, 18): 2C;

(32) Woodbury Creek, (T.101, 102, R.18, 19): 2C; and

(33) Woodson Creek, (T.102, R.18, S.14, 15): 1B, 2A, 3B.

B. Lakes: None currently listed.

C. Calcareous Fens:

(1) *Heron Lake fen, 45, Jackson [3/7/88R] (T.103, R.36, S.29): 2D; and

(2) *Thompson Prairie fen, 20, Jackson [3/7/88R] (T.103, R.35, S.7): 2D.

D. Scientific and Natural Areas: *Prairie Bush Clover, [3/7/88P] Waters within the Prairie Bush Clover Scientific and Natural Area, Jackson County, (T.103, R.35, S.17): 2B, 3B, except wetlands which are 2D.

Subp. 9. **Missouri River Basin.** The water use classifications for the listed waters in the Missouri River Basin are as identified in items A and C.

A. Streams:

(1) Ash Creek, (T.101, R.45): 2C;

(2) Beaver Creek, (T.102, 103, 104, R.45, 46, 47): 2C, 3B;

(3) Flandreau Creek (excluding Class 7 segment), (T.107, 108, R.46, 47): 2C, 3B;

(4) Flandreau Creek, Lake Benton, (T.108, R.46, S.1, 2, 11; T.109, R.45, S.30, 31; T.109, R.46, S.36): 7;

(5) Kanaranzi Creek, (Source to Iowa border): 2C, 3B;

(6) Medary Creek, (Source to South Dakota border): 2C, 3B;

(7) Mound Creek, (T.103, 104, R.45): 2C;

(8) Mud Creek, (T.101, 102, R.45, 46): 2C, 3B;

(9) Pipestone Creek, (Source to South Dakota border): 2C, 3B;

(10) Rock River (excluding Class 7 segment), (Source to Iowa border): 2C, 3B;

(11) Rock River, Holland, (T.107, R.44, S.18, 19, 20, 29; T.107, R.45, S.12, 13): 7;

(12) Rock River, Little, (Source to Iowa border): 2C, 3B;

(13) Sioux River, Little, (Source to Iowa border): 2C, 3B;

(14) Sioux River, West Fork Little, (Source to Iowa border): 2C, 3B;

(15) Skunk Creek, (T.101, 102, R.37, 38, 39): 2C;

(16) Split Rock Creek, (Split Rock Lake outlet to South Dakota border): 2C, 3B;

(17) Unnamed Creek, Jasper, (T.104, R.46, S.6): 7;

(18) Unnamed Creek, Hatfield, (T.105, R.44, S.6, 7, 8; T.105, R.45, S.1; T.106, R.45, S.36): 7;

(19) Unnamed Creek, Hatfield, (T.106, R.45, S.34, 35, 36): 7;

(20) Unnamed Ditch, Steen, (T.101, R.45, S.31, 32): 7;

(21) Unnamed Ditch, Hills, (T.101, R.46, S.28, 33): 7; and

(22) Unnamed Ditch, Lake Benton, (T.109, R.45, S.17, 19, 20): 7.

B. Lakes: None currently listed.

C. Calcareous Fens:

(1) *Burke WMA fen, 57, Pipestone [11/12/90R] (T.106, R.44, S.28): 2D;

(2) *Hole-in-the-Mountain Prairie fen, 6, Pipestone [11/12/90R] (T.108, R.46, S.1; T.109, R.45, S.31): 2D;

(3) *Lost Timber Prairie fen, 13, Murray [4/18/94R] (T.105, R.43, S.2): 2D; and

(4) *Westside fen, 59, Nobles [11/12/90R] (T.102, R.43, S.11): 2D.

D. Scientific and Natural Areas: None currently listed.

Statutory Authority: *MS s 115.03; 115.44*

History: *9 SR 914; 12 SR 1810; 15 SR 1057; 18 SR 2195; 22 SR 1466; 24 SR 1105; 24 SR 1133; 27 SR 1217*

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