

1.1 **Pollution Control Agency**

1.2 **Adopted Permanent Rules Relating to Water Quality**

1.3 **7001.1080 ESTABLISHMENT OF SPECIAL CONDITIONS FOR NATIONAL**
1.4 **POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMITS.**

1.5 [For text of subpart 1, see M.R.]

1.6 Subp. 2. **Effluent limitations, standards, or prohibitions.** Except as provided in
1.7 subpart 3, the commissioner shall establish effluent limitations, standards, or prohibitions
1.8 for each pollutant to be discharged from each outfall or discharge point of the permitted
1.9 facility; except that if the commissioner finds that as a result of exceptional circumstances
1.10 it is not feasible to establish effluent limitations, standards, or prohibitions which are
1.11 applicable at the point of discharge, the commissioner shall establish effluent limitations,
1.12 standards, or prohibitions for pollutants in internal waste streams at the point prior to
1.13 mixing with other waste streams or cooling water streams. In determining the appropriate
1.14 effluent limitations, standards, or prohibitions the commissioner shall comply with the
1.15 following requirements:

1.16 [For text of item A, see M.R.]

1.17 B. In establishing effluent limitations, standards, or prohibitions the
1.18 commissioner shall consider the following:

1.19 [For text of subitems (1) and (2), see M.R.]

1.20 (3) the applicable water quality standards in parts 7050.0100 to 7050.0220,
1.21 7050.0300 to 7050.0380, 7055.0010 to 7055.0120, and 7055.0250 to 7055.0310.

1.22 [For text of subitems (4) and (5), see M.R.]

1.23 [For text of items C and D, see M.R.]

1.24 [For text of subps 3 to 9, see M.R.]

WATER QUALITY STANDARDS FOR PROTECTION OF

WATERS OF THE STATE

7050.0110 SCOPE.

Parts 7050.0130 to 7050.0227 apply to all waters of the state, both surface and underground. This chapter includes a classification system of beneficial uses applicable to waters of the state, narrative and numeric water quality standards that protect specific beneficial uses, nondegradation provisions, and other provisions to protect the physical, chemical, and biological integrity of waters of the state. Parts 7050.0400 to 7050.0470 classify all surface waters within or bordering Minnesota and designate the beneficial uses for which these waters are protected. This chapter applies to point source and nonpoint source discharges and to the physical alterations of wetlands. Other water quality rules of general or specific application that include any more stringent water quality standards or prohibitions are preserved.

Effluent limits and treatment requirements for discharges of sewage, industrial wastes, and other wastes are located in chapter 7053.

7050.0130 GENERAL DEFINITIONS.

Subpart 1. **Scope.**For purposes of this chapter, the following terms have the meanings given them.

Subp. 2. **Terms defined in statute.**The terms "waters of the state," "groundwater," "water pollution," and "toxic pollutants," as well as any other terms for which definitions are given in the pollution control statutes, as used herein have the meanings given 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 are not "waters of the state."

Subp. 3. **Seven-day ten-year low flow or 7Q₁₀.**

3.1 A. "Seven-day ten-year low flow" or " $7Q_{10}$ " means the lowest average
3.2 seven-day flow with a once in ten-year recurrence interval. A $7Q_{10}$ is derived by
3.3 identifying the lowest average flow for a seven-consecutive-day period from daily flow
3.4 records for each year of record, from a continuous flow gauging station. The seven-day
3.5 average low flow values for each year are arrayed in order of magnitude and fitted to a
3.6 probability distribution. The $7Q_{10}$ is the stream or river flow that is equal to or exceeded
3.7 by 90 percent of the values in the distribution.

3.8 B. The period of record for determining the specific flow for the stated
3.9 recurrence interval, where records are available, shall include at least the most recent ten
3.10 years of record, including flow records obtained after establishment of flow regulation
3.11 devices, if any. Where stream flow records are not available, the flow may be estimated
3.12 on the basis of available information on the watershed characteristics, precipitation,
3.13 runoff, and other relevant data. The calculations shall not be applied to lakes and their
3.14 embayments which have no comparable flow recurrence interval.

3.15 Subp. 4. **Commissioner.**"Commissioner" means the commissioner of the
3.16 Minnesota Pollution Control Agency or the commissioner's designee.

3.17 Subp. 5. **Nonpoint source.**"Nonpoint source" means a land management or land
3.18 use activity that contributes or may contribute to ground and surface water pollution as a
3.19 result of runoff, seepage, or percolation and that is not defined as a point source under
3.20 Minnesota Statutes, section 115.01, subdivision 11.

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

3.23 Subp. 7. **Other terms.**Other terms and abbreviations used in this chapter are
3.24 defined in the part in which they are used. Terms and abbreviations used in this chapter
3.25 that 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, and current professional usage.

7050.0140 USE CLASSIFICATIONS FOR WATERS OF THE STATE.

Subpart 1. **Introduction.**Based on considerations of best usage and the need for water quality protection in the interest of the public, and in conformance with the requirements of Minnesota Statutes, section 115.44, the waters of the state are grouped into one or more of the classes in subparts 2 to 8. The classifications are listed in parts 7050.0400 to 7050.0470. The classifications should not be construed to be in order of priority, nor considered to be exclusive or prohibitory of other beneficial uses.

Subp. 2. **Class 1 waters, domestic consumption.**Domestic consumption includes all waters of the state that 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 that support or may support fish, other aquatic life, bathing, boating, or other recreational purposes and for which 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 that 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 that are or may be used for any agricultural 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.

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

5.5 Subp. 7. **Class 6 waters, other uses and protection of border waters.**Other uses
5.6 includes all waters of the state that serve or may serve the uses in subparts 2 to 6 or any
5.7 other beneficial uses not listed in this part, including without limitation any such uses in
5.8 this or any other state, province, or nation of any waters flowing through or originating in
5.9 this state, and for which quality control is or may be necessary for the declared purposes
5.10 in this part, to conform with the requirements of the legally constituted state or national
5.11 agencies having jurisdiction over such waters, or for any other considerations the agency
5.12 may deem proper.

5.13 Subp. 8. **Class 7 waters, limited resource value waters.**Limited resource value
5.14 waters include surface waters of the state that have been subject to a use attainability
5.15 analysis and have been found to have limited value as a water resource. Water quantities
5.16 in these waters are intermittent or less than one cubic foot per second at the $7Q_{10}$ flow
5.17 as defined in part 7050.0130, subpart 3. These waters shall be protected so as to allow
5.18 secondary body contact use, to preserve the groundwater for use as a potable water supply,
5.19 and to protect aesthetic qualities of the water. It is the intent of the agency that very
5.20 few waters be classified as limited resource value waters. The use attainability analysis
5.21 must take into consideration those factors listed in Minnesota Statutes, section 115.44,
5.22 subdivisions 2 and 3. The agency, in cooperation and agreement with the Department of
5.23 Natural Resources with respect to determination of fisheries values and potential, shall use
5.24 this information to determine the extent to which the waters of the state demonstrate that:

6.1 A. the existing and potential faunal and floral communities are severely limited
6.2 by natural conditions as exhibited by poor water quality characteristics, lack of habitat, or
6.3 lack of water;

6.4 B. the quality of the resource has been significantly altered by human activity
6.5 and the effect is essentially irreversible; or

6.6 C. there are limited recreational opportunities, such as fishing, swimming,
6.7 wading, or boating, in and on the water resource.

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

6.10 **7050.0150 DETERMINATION OF WATER QUALITY, BIOLOGICAL AND**
6.11 **PHYSICAL CONDITIONS, AND COMPLIANCE WITH STANDARDS.**

6.12 Subpart 1. **Policy and scope.**The intent of the state is to protect and maintain
6.13 surface waters in a condition which allows for the maintenance of all existing beneficial
6.14 uses. The condition of a surface water body is determined by its physical, chemical, and
6.15 biological qualities. The agency shall determine an exceedance of water quality standards
6.16 or an impaired condition based on pollution of the waters of the state from point and
6.17 nonpoint sources that has resulted in degradation of the physical, chemical, or biological
6.18 qualities of the water body to the extent that attainable or previously existing beneficial
6.19 uses are actually or potentially lost.

6.20 The narrative water quality standards in subpart 3 prescribe the qualities or properties
6.21 of surface waters that are necessary for the protection of designated public uses and
6.22 benefits. If the narrative standards in this part are exceeded, it is considered indicative of a
6.23 polluted condition which is actually or potentially deleterious, harmful, detrimental, or
6.24 injurious with respect to the designated uses of the waters of the state.

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

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

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

7.7 [For text of subp 3, see M.R.]

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

7.10 A. "122-day ten-year low flow" or " $122Q_{10}$ " means the lowest average 122-day
7.11 flow with a once in ten-year recurrence interval. A $122Q_{10}$ is derived using the same
7.12 methods used to derive a $7Q_{10}$, and the guidelines regarding period of record for flow
7.13 data and estimating a $7Q_{10}$ apply equally to determining a $122Q_{10}$, as described in part
7.14 7050.0130, subpart 3.

7.15 B. "Altered materially," "material increase," "material manner," "seriously
7.16 impaired," and "significant increase," as used in subparts 3, 5, and 6, mean that pollution of
7.17 the waters of the state has resulted in degradation of the physical, chemical, or biological
7.18 qualities of the water body to the extent that attainable or previously existing beneficial
7.19 uses are actually or potentially lost.

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

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

8.1 E. "Eutrophication" means the increased productivity of the biological
8.2 community in water bodies in response to increased nutrient loading. Eutrophication
8.3 is characterized by increased growth and abundance of algae and other aquatic plants,
8.4 reduced water clarity, reduction or loss of dissolved oxygen, and other chemical and
8.5 biological changes. The acceleration of eutrophication due to excess nutrient loading from
8.6 human sources and activities, called cultural eutrophication, causes a degradation of lake
8.7 quality and possible loss of beneficial uses.

8.8 F. "Fish and other biota" and "lower aquatic biota" mean the aquatic community
8.9 including, but not limited to, game and nongame fish, minnows and other small fish,
8.10 mollusks, insects, crustaceans and other invertebrates, submerged or emergent rooted
8.11 vegetation, suspended or floating algae, substrate-attached algae, and microscopic
8.12 organisms. "Other biota" includes aquatic or semiaquatic organisms that depend on
8.13 aquatic systems for food or habitat such as amphibians and certain wildlife species.

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

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

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

8.23 J. "Lake" means an enclosed basin filled or partially filled with standing fresh
8.24 water with a maximum depth greater than 15 feet. Lakes may have no inlet or outlet, an
8.25 inlet or outlet, or both an inlet and outlet.

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

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

9.7 M. "Measurable increase" or "measurable impact" means a change in trophic
9.8 status that can be discerned above the normal variability in water quality data using
9.9 a weight of evidence approach. The change in trophic status does not require a
9.10 demonstration of statistical significance to be considered measurable. Mathematical
9.11 models may be used as a tool in the data analysis to help predict changes in trophic status.

9.12 N. "Natural causes" means the multiplicity of factors that determine the physical,
9.13 chemical, or biological conditions that would exist in a water body in the absence of
9.14 measurable impacts from human activity or influence.

9.15 O. "Normal fishery" and "normally present" mean the fishery and other aquatic
9.16 biota expected to be present in the water body in the absence of pollution of the water,
9.17 consistent with any variability due to natural hydrological, substrate, habitat, or other
9.18 physical and chemical characteristics. Expected presence is based on comparing the
9.19 aquatic community in the water body of interest to the aquatic community in representative
9.20 reference water bodies.

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

10.1 the water body, or any other reliable data that identifies the population of algae in an
10.2 aquatic community.

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

10.9 R. "Reference water body" means a water body least impacted by point or
10.10 nonpoint sources of pollution that is representative of water bodies in the same ecoregion
10.11 or watershed. Reference water bodies are used as a base for comparing the quality of
10.12 similar water bodies in the same ecoregion or watershed.

10.13 S. "Reservoir" means a body of water in a natural or artificial basin or
10.14 watercourse where the outlet or flow is artificially controlled by a structure such as a dam.
10.15 Reservoirs are distinguished from river systems by having a hydraulic residence time of at
10.16 least 14 days. For purposes of this item, residence time is determined using a flow equal to
10.17 the $122Q_{10}$ for the months of June through September, a $122Q_{10}$ for the summer months.

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

10.22 U. "Shallow lake" means an enclosed basin filled or partially filled with standing
10.23 fresh water with a maximum depth of 15 feet or less or with 80 percent or more of the
10.24 lake area shallow enough to support emergent and submerged rooted aquatic plants (the
10.25 littoral zone). It is uncommon for shallow lakes to thermally stratify during the summer.
10.26 The quality of shallow lakes will permit the propagation and maintenance of a healthy

11.1 indigenous aquatic community and they will be suitable for boating and other forms of
11.2 aquatic recreation for which they may be usable. For purposes of this chapter, shallow
11.3 lakes are differentiated from wetlands and lakes on a case-by-case basis. Wetlands are
11.4 defined in part 7050.0186, subpart 1a.

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

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

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

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

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

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

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

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

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

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

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

12.21 [For text of subps 6 to 8, see M.R.]

12.22 **7050.0185 NONDEGRADATION FOR ALL WATERS.**

12.23 Subpart 1. **Policy.** The beneficial uses inherent in water resources are valuable public
12.24 resources. It is the policy of the state to protect all waters from significant degradation
12.25 from point and nonpoint sources and wetland alterations and to maintain existing water
12.26 uses and aquatic and wetland habitats. Existing beneficial uses and the water quality

13.1 necessary to protect the existing uses must be maintained and protected from point and
13.2 nonpoint sources of pollution.

13.3 It is the policy of the agency that water quality conditions that are better than
13.4 applicable water quality standards and are better than levels necessary to support existing
13.5 beneficial uses must be maintained and protected unless the commissioner finds that,
13.6 after full satisfaction of this part, a lowering of water quality is acceptable. In allowing
13.7 a lowering of water quality, the existing beneficial uses must be fully maintained and
13.8 protected and the provisions in subpart 3 must be applied.

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

13.11 [For text of items A to F, see M.R.]

13.12 G. "Significant discharge" means:

13.13 [For text of subitems (1) and (2), see M.R.]

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

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

13.19 (b) the entire $7Q_{10}$ flow of the receiving water as defined in part
13.20 7050.0130, subpart 3; and

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

13.23 Subp. 3. **Minimum treatment.**Any person authorized to maintain a new or
13.24 expanded discharge of sewage, industrial waste, or other waste, whether or not the
13.25 discharge is significant, shall comply with applicable water quality standards of this

14.1 chapter and effluent limits in chapter 7053 and other applicable federal and state point
14.2 source treatment requirements. Nonpoint sources of pollution shall be controlled as
14.3 required by this chapter, chapters 7020 and 7080, and any other applicable federal or state
14.4 requirements. All existing beneficial uses shall be maintained in the receiving waters.

14.5 [For text of subps 4 to 9, see M.R.]

14.6 **7050.0186 WETLAND STANDARDS AND MITIGATION.**

14.7 Subpart 1. **Policy and wetland beneficial uses.** It is the policy of the state to protect
14.8 wetlands and prevent significant adverse impacts on wetland beneficial uses caused by
14.9 chemical, physical, biological, or radiological changes. The quality of wetlands shall
14.10 be maintained to permit the propagation and maintenance of a healthy community of
14.11 aquatic and terrestrial species indigenous to wetlands, preserve wildlife habitat, and
14.12 support biological diversity of the landscape. In addition, these waters shall be suitable
14.13 for boating and other forms of aquatic recreation as specified in part 7050.0222, subpart
14.14 6; general industrial use as specified in part 7050.0223, subpart 5; irrigation, use by
14.15 wildlife and livestock, erosion control, groundwater recharge, low flow augmentation,
14.16 stormwater retention, and stream sedimentation as specified in part 7050.0224, subpart 4;
14.17 and aesthetic enjoyment as specified in part 7050.0225, subpart 2.

14.18 Subp. 1a. **Definitions.**

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

14.22 B. "Wetlands" are those areas that are inundated or saturated by surface water
14.23 or groundwater at a frequency and duration sufficient to support, and that under normal
14.24 circumstances do support, a prevalence of vegetation typically adapted for life in saturated
14.25 soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

15.1 Constructed wetlands designed for wastewater treatment are not waters of the state.

15.2 Wetlands must have the following attributes:

15.3 (1) a predominance of hydric soils;

15.4 (2) inundated or saturated by surface water or groundwater at a frequency

15.5 and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted

15.6 for life in a saturated soil condition; and

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

15.8 Subp. 1b. **Wetland pollution prohibited.**Wetland conditions shall be protected

15.9 from chemical, physical, biological, or radiological changes to prevent significant

15.10 adverse impacts to the designated beneficial uses listed in subpart 1. The nondegradation

15.11 provisions in this chapter are applicable to wetlands.

15.12 Subp. 2. **Wetland mitigation principles.**The wetland mitigative sequence

15.13 incorporates the principles in items A to C in descending order of priority. Wetland

15.14 mitigation maintains nondegradation of wetland designated uses:

15.15 [For text of items A to C, see M.R.]

15.16 [For text of subps 3 to 6, see M.R.]

15.17 **7050.0190 VARIANCE FROM STANDARDS.**

15.18 Subpart 1. **Variance.**In any case where, upon application of the responsible person

15.19 or persons, the agency finds that by reason of exceptional circumstances the strict

15.20 enforcement of any provision of these standards would cause undue hardship, that disposal

15.21 of the sewage, industrial waste, or other waste is necessary for the public health, safety, or

15.22 welfare; and that strict conformity with the standards would be unreasonable, impractical,

15.23 or not feasible under the circumstances; the agency in its discretion may grant a variance

15.24 therefrom upon such conditions as it may prescribe for prevention, control, or abatement

15.25 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 shall be advised of any variances that may be issued under this part 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. The list must be available for public inspection and must be provided to the United States Environmental Protection Agency. The list must 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 from water quality standards granted by the agency under this part shall be subject to agency and public review at least every three years. Variances from discharge effluent limits and treatment requirements are granted by the agency under parts 7000.7000 and 7053.0195. Variances may be modified or suspended under the procedures in part 7000.7000.

7050.0210 GENERAL STANDARDS FOR WATERS OF THE STATE.

Subpart 1. [See repealer.]

[For text of subp 2, see M.R.]

Subp. 3. [See repealer.]

Subp. 4. **Highest levels of water quality.** The highest levels of water quality, including, but not limited to, dissolved oxygen, that are attainable in the waters of the state by continuous operation at the maximum capability of all primary and secondary units of treatment works or their equivalent, discharging effluents into the waters of the state, must 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 this chapter and chapter 7053, as applicable,

17.1 following discharge into waters of the state. The agency, by allowing dilution, will
17.2 consider the effect on all uses of the waters of the state into which the effluents are
17.3 discharged. The extent of dilution allowed regarding any specific discharge as specified
17.4 in part 7053.0205, subpart 7, shall not violate the applicable water quality standards in
17.5 this chapter and chapter 7052, including the nondegradation requirements contained
17.6 in those chapters. This subpart also applies in cases where a Class 7 water is tributary
17.7 to a Class 2 water.

17.8 Mixing zones must be established by the agency on an individual basis, with primary
17.9 consideration being given to the following guidelines:

17.10 [For text of items A to E, see M.R.]

17.11 F. overlapping of mixing zones should be minimized and measures taken to
17.12 prevent adverse synergistic effects.

17.13 Subp. 6c. **Other requirements preserved.** The requirements of this chapter are
17.14 in addition to any requirement imposed by the Clean Water Act, United States Code,
17.15 title 33, sections 1251 et seq., and its implementing regulations. In the case of a conflict
17.16 between the requirements of this chapter and the requirements of the Clean Water Act or
17.17 its implementing regulations, the more stringent requirement controls.

17.18 Subp. 7. **Minimum stream flow.** Point and nonpoint sources of water pollution shall
17.19 be controlled so that the water quality standards will be maintained at all stream flows that
17.20 are equal to or greater than the $7Q_{10}$ for the critical month or months, unless another flow
17.21 condition is specifically stated as applicable in this chapter.

17.22 Subp. 9. [See repealer.]

17.23 Subp. 10. [See repealer.]

17.24 Subp. 12. [See repealer.]

17.25 [For text of subp 13, see M.R.]

18.1 Subp. 13a. [See repealer.]

18.2 Subp. 15. [See repealer.]

18.3 Subp. 17. [See repealer.]

18.4 Subp. 18. [See repealer.]

18.5 **7050.0217 OBJECTIVES FOR PROTECTION OF SURFACE WATERS FROM**
18.6 **TOXIC POLLUTANTS.**

18.7 Subpart 1. **Purpose and applicability.** The purpose of this part and part 7050.0218
18.8 is to establish methods for developing site-specific water quality criteria for toxic
18.9 pollutants in the absence of numeric standards listed in parts 7050.0220, 7050.0222, and
18.10 7050.0227. The site-specific numeric criteria established by these methods protect Class 2
18.11 waters for the propagation and maintenance of fish and aquatic life, the consumption of
18.12 fish and edible aquatic life by humans, the use of surface waters for public and private
18.13 domestic consumption where applicable, and the consumption of aquatic organisms by
18.14 wildlife. These criteria also protect the uses assigned to Class 7, limited resource value,
18.15 waters as described in parts 7050.0140 and 7050.0227.

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

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

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

19.6 **7050.0218 METHODS FOR DETERMINATION OF CRITERIA FOR TOXIC**
19.7 **POLLUTANTS, FOR WHICH NUMERIC STANDARDS NOT PROMULGATED.**

19.8 Subpart 1. **Purpose.** The Class 2 and Class 7 numeric water quality standards
19.9 for toxic pollutants in parts 7050.0220, 7050.0222, and 7050.0227 do not address all
19.10 pollutants which may be discharged to surface waters and cause toxic effects. Therefore,
19.11 methods are established in this part to address on a site-by-site and case-by-case basis the
19.12 discharge into surface waters of toxic pollutants not listed in parts 7050.0220, 7050.0222,
19.13 and 7050.0227.

19.14 The agency may also adopt new standards according to Minnesota Statutes, chapter
19.15 14, to replace those listed in parts 7050.0220 to 7050.0227 that are more stringent or less
19.16 stringent if new scientific evidence shows that a change in the standard is justified.

19.17 Subp. 2. **Site-specific criteria.** Class 2 and Class 7 site-specific criteria for toxic
19.18 pollutants shall be derived by the commissioner using the procedures in this part.

19.19 [For text of items A and B, see M.R.]

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

19.22 [For text of items A to C, see M.R.]

19.23 D. "Bioaccumulation factor" or "BAF" means the concentration of a pollutant
19.24 in one or more tissues of an aquatic organism, exposed from any source of the pollutant
19.25 but primarily from the water column, diet, and bottom sediments, divided by the average

20.1 concentration in the solution in which the organism had been living, under steady state
20.2 conditions.

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

20.7 [For text of items F and G, see M.R.]

20.8 H. "Chronic criterion" or "CC" means the highest water concentration of a
20.9 toxicant or effluent to which organisms, including humans or wildlife, can be exposed
20.10 indefinitely without causing chronic toxicity. "CC_{df}" means a chronic criterion based on
20.11 protecting humans from exposure to the pollutant from both drinking water and eating
20.12 sport-caught fish. "CC_f" means a chronic criterion based on protecting humans from
20.13 exposure to the pollutant from eating sport-caught fish only. "CC_w" means a chronic
20.14 criterion based on protecting wildlife from exposure to the pollutant from eating aquatic
20.15 organisms.

20.16 I. "Chronic standard" or "CS" means the highest water concentration of a
20.17 toxicant to which organisms can be exposed indefinitely without causing chronic toxicity.
20.18 Chronic standards are listed in parts 7050.0220 and 7050.0222.

20.19 [For text of items J to N, see M.R.]

20.20 O. "Final acute value" or "FAV" means an estimate of the concentration of a
20.21 pollutant corresponding to the cumulative probability of 0.05 in the distribution of all the
20.22 acute toxicity values for the genera or species from the acceptable acute toxicity tests
20.23 conducted on a pollutant. The FAV is the acute toxicity limitation applied to mixing zones
20.24 in part 7050.0210, subpart 5; and to dischargers in parts 7053.0215, subpart 1; 7053.0225,
20.25 subpart 6; and 7053.0245, subpart 1.

21.1 [For text of item P, see M.R.]

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

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

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

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

21.14 U. "National methods" means the methods the USEPA uses to develop aquatic
21.15 life criteria as described in Stephan, C.E., D.J. Mount, D.J. Hansen, J.H. Gentile, G.A.
21.16 Chapman, and W.A. Brungs, 1985, "Guidelines for Deriving Numerical National Water
21.17 Quality Criteria for the Protection of Aquatic Organisms and Their Uses," USEPA,
21.18 Office of Research and Development, Environmental Research Laboratories, Duluth
21.19 MN; Narragansett, RI, Corvallis, OR. 98 p; available through the National Technical
21.20 Information Service, Springfield, VA.

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

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

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

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

22.15 Z. "Reference dose" or "RfD" means an estimate of a daily exposure to the
22.16 human population, including sensitive subpopulations, that is likely to be without
22.17 appreciable risk or deleterious effects over a lifetime. The RfD is expressed in units
22.18 of daily dose, mg/kg/day.

22.19 AA. "Relative source contribution factor" or "RSC" means the fraction of the
22.20 total allowable daily dose of a toxic pollutant that is attributed to drinking water and fish
22.21 consumption relative to other sources of the pollutant to humans, such as air or food, in
22.22 the calculation of criteria. In the absence of sufficient data to establish a chemical-specific
22.23 RSC value, the RSC is 0.2.

22.24 [For text of items BB to HH, see M.R.]

22.25 Subp. 4. **Adoption of USEPA national criteria.** The USEPA establishes aquatic
22.26 life criteria under section 304(a)(1) of the Clean Water Act, United States Code, title 33,

23.1 section 1314. The USEPA criteria, subject to modification as described in this subpart, are
23.2 applicable to Class 2 waters of the state. The USEPA has described the national methods
23.3 for developing aquatic life criteria in "Guidelines for Deriving Numerical National Water
23.4 Quality Criteria for the Protection of Aquatic Organisms and Their Uses."

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

23.11 [For text of item A, see M.R.]

23.12 B. The USEPA criteria are adopted, subject to modification as described in this
23.13 item or item C, for application to cool and warm water fisheries habitats and wetlands.
23.14 Cool and warm water fisheries (Class 2Bd, 2B, and 2C) waters are defined in part
23.15 7050.0430 or listed in part 7050.0470. Wetlands (Class 2D) waters are defined in part
23.16 7050.0425 or listed in part 7050.0470.

23.17 (1) Acute data, in the form of the ranked genus mean acute values used by
23.18 the USEPA to determine the national criteria, are the data used to determine the Class 2Bd,
23.19 2B, 2C, and 2D criteria.

23.20 [For text of subitems (2) and (3), see M.R.]

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

23.22 [For text of units (a) to (f), see M.R.]

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

23.25
$$\Sigma((\ln \text{GMAV})^2) - ((\Sigma(\ln \text{GMAV}))^2 / 4)$$

$$24.1 \quad S^2 = \underline{\hspace{10em}}$$

$$24.2 \quad \Sigma(P) - ((\Sigma(\text{square root of } P))^2 / 4)$$

$$24.3 \quad \Sigma(\ln \text{ GMAV}) - S(\Sigma(\text{square root of } P))$$

$$24.4 \quad L = \underline{\hspace{10em}}$$

$$24.5 \quad 4$$

$$24.6 \quad A = S(\text{square root of } 0.05) + L$$

$$24.7 \quad \text{FAV} = e^A$$

24.8 where: FAV = final acute value

24.9 N = number of GMAVs

24.10 P = rank/N+1

24.11 ln = natural logarithm to base e S, L, and A are intermediate steps

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

24.17 [For text of subitems (6) and (7), see M.R.]

24.18 [For text of item C, see M.R.]

24.19 [For text of subp 5, see M.R.]

24.20 Subp. 6. **Human health-based criteria.** Human health-based aquatic life criteria
 24.21 protect humans from potential adverse effects of eating fish and edible aquatic organisms
 24.22 from Class 2 waters and from the consumption of drinking water from Class 1 surface
 24.23 waters (includes Class 2A and 2Bd waters).

25.1 The RfDs used to calculate criteria for noncarcinogenic chemicals and the ql*s used
25.2 to calculate criteria for carcinogenic chemicals are obtained from the Integrated Risk
25.3 Information System (IRIS), online, maintained, and made available by the USEPA.

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

25.6
$$\text{RfD mg/kg/day} \times 70 \text{ kg} \times \text{RSC}$$

25.7
$$\text{CC}_{\text{df}} \text{ mg/L} = \frac{\text{RfD mg/kg/day} \times 70 \text{ kg} \times \text{RSC}}{2 \text{ L/day} + [0.030 \text{ kg/day} \times \text{BAF}]}$$

25.8
$$2 \text{ L/day} + [0.030 \text{ kg/day} \times \text{BAF}]$$

25.9 where: CC_{df} = drinking water plus fish consumption chronic criterion in mg/L

25.10 RfD = reference dose in mg/kg/day

25.11 70 kg = standard weight of an adult

25.12 RSC = relative source contribution factor (see item E)

25.13 2 L/day = two liters of water consumed per day

25.14 0.030 kg/day = amount of fish assumed to be consumed per day

25.15 BAF = final BAF in L/kg

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

25.18
$$\text{RfD mg/kg/day} \times 70 \text{ kg} \times \text{RSC}$$

25.19
$$\text{CC}_{\text{f}} \text{ mg/L} = \frac{\text{RfD mg/kg/day} \times 70 \text{ kg} \times \text{RSC}}{0.01 \text{ L/day} + [0.030 \text{ kg/day} \times \text{BAF}]}$$

25.20
$$0.01 \text{ L/day} + [0.030 \text{ kg/day} \times \text{BAF}]$$

25.21 where: CC_{f} = fish consumption chronic criterion in mg/L

25.22 0.01 L/day = assumed incidental ingestion of water other variables as
25.23 previously identified

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

26.1 $70 \text{ kg} \times 10^{-5}$

26.2 $CC_{df} \text{ mg/L} = \underline{\hspace{10em}}$

26.3 $q1^* \times [2 \text{ L/day} + (0.030 \text{ kg/day} \times \text{BAF})]$

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

26.5 $q1^*$ = the cancer potency factor in days times kg/mg other variables as
26.6 previously identified

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

26.9 $70 \text{ kg} \times 10^{-5}$

26.10 $CC_f \text{ mg/L} = \underline{\hspace{10em}}$

26.11 $q1^* \times [0.01 \text{ L/day} + (0.030 \text{ kg/day} \times \text{BAF})]$

26.12 where: variables as previously identified

26.13 E. A default relative source contribution factor (RSC) of 0.2 must be used unless
26.14 the Minnesota Department of Health uses a different exposure value in the calculation of a
26.15 drinking water criterion, or sufficient exposure data is available to support an alternative
26.16 value.

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

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

27.1 [For text of items A to C, see M.R.]

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

27.4 (1) A BCF can be estimated based on the relationship between BCFs and
27.5 the $\log K_{ow}$. A value of six is used to calculate the BCF for chemicals with $\log K_{ow}$ values
27.6 greater than six. The equation is:

27.7
$$\log_{10} BCF = 0.79 \log_{10} K_{ow} - 0.40$$

27.8 where: $\log_{10} K_{ow}$ = the log of the octanol to water partition coefficient

27.9 If measured $\log K_{ow}$ values are not available in the scientific literature, they may be
27.10 estimated using quantitative structure activity relationships. The average percent lipid
27.11 of the organisms used to establish this relationship is 7.6.

27.12 [For text of subitems (2) to (4), see M.R.]

27.13 [For text of subp 8, see M.R.]

27.14 Subp. 9. **Wildlife-based criteria.** The agency shall use the procedures in this
27.15 subpart to establish wildlife-based criteria. Wildlife criteria shall protect wildlife
27.16 consumers of freshwater aquatic organisms from adverse effects of toxic pollutants.
27.17 Wildlife criteria are applicable to all surface waters, subject to the exceptions in subpart
27.18 10, item B, subitem (1).

27.19 [For text of item A, see M.R.]

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

27.21
$$NOAEL \times BWt \times SSF$$

27.22
$$CC_w \text{ mg/L} = \frac{NOAEL \times BWt \times SSF}{DW + (F \times BAF)}$$

27.23

28.1 where: CC_w = wildlife chronic criterion in mg/L
28.2 NOAEL = no observable adverse effect level in mg of substance per kg of
28.3 body weight per day (mg/kg BWt/day) as derived from mammalian or avian
28.4 toxicity studies. If the NOAEL is in mg/L, the NOAEL will be multiplied
28.5 by the average daily volume of water consumed by the test animals in liters
28.6 per day and divided by the average weight of the test animals in kg. If the
28.7 NOAEL is in mg/kg of food consumed, the NOAEL will be multiplied by
28.8 the average amount of food consumed daily by the test animals and divided
28.9 by the average weight of the test animals in kg
28.10 BWt = average body weight of test organisms in kg
28.11 SSF = species sensitivity factor to account for difference in the sensitivity in
28.12 test species. This factor will vary between 1 and 0.1. The appropriate factor
28.13 will be determined by the commissioner based on available scientific data on
28.14 the relative sensitivity of the test organism compared to other wildlife species
28.15 DW = average volume of water consumed per day by the test animals
28.16 in liters
28.17 F = average amount of food consumed per day by test animals in kg
28.18 BAF = BAF in liters per kg

28.19 [For text of item C, see M.R.]

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

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

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

28.27 [For text of subitems (3) to (5), see M.R.]

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

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

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

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

29.9 (3) a CC_{df} or CC_f from subparts 6 and 7;

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

29.12 (5) a CC_w from subpart 9.

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

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

29.16 (2) other drinking water or aquatic life standards for toxic pollutants,
29.17 consistent with the uses Class 7 waters are protected for under part 7050.0140.

29.18 C. If the site-specific application of criteria developed in this subpart is used
29.19 to establish an effluent limitation for national pollutant discharge elimination system
29.20 and state disposal system permits or to establish the degree of remedial action cleanup
29.21 activities, the provisions of part 7050.0222, subpart 7, items B to E, apply.

29.22 **7050.0220 SPECIFIC WATER QUALITY STANDARDS BY ASSOCIATED USE**
29.23 **CLASSES.**

30.1 Subpart 1. **Purpose and scope.** The numeric and narrative water quality standards
30.2 in this chapter prescribe the qualities or properties of the waters of the state that are
30.3 necessary for the designated public uses and benefits. If the standards in this chapter
30.4 are exceeded, it is considered indicative of a polluted condition which is actually or
30.5 potentially deleterious, harmful, detrimental, or injurious with respect to designated uses
30.6 or established classes of the waters of the state.

30.7 All surface waters are protected for multiple beneficial uses. Numeric water quality
30.8 standards are tabulated in this part for all uses applicable to four common categories of
30.9 surface waters, so that all applicable standards for each category are listed together in
30.10 subparts 3a to 6a. The four categories are:

30.11 A. cold water sport fish (trout waters), also protected for drinking water:
30.12 Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5 (subpart 3a);

30.13 B. cool and warm water sport fish, also protected for drinking water: Classes
30.14 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5 (subpart 4a);

30.15 C. cool and warm water sport fish, indigenous aquatic life, and wetlands:
30.16 Classes 2B, 2C, or 2D; 3A, 3B, 3C, or 3D; 4A and 4B or 4C; and 5 (subpart 5a); and

30.17 D. limited resource value waters: Classes 3C, 4A and 4B, 5, and 7 (subpart 6a).

30.18 Subp. 2. **Explanation of tables.**

30.19 A. Class 1 domestic consumption (DC) standards are the United States
30.20 Environmental Protection Agency primary (maximum contaminant levels) and secondary
30.21 drinking water standards, as contained in Code of Federal Regulations, title 40, parts
30.22 141 and 143, as amended through July 1, ~~2004~~ 2006. The DC standards are listed in
30.23 subparts 3a and 4a, except that individual pollutants, substances, or organisms in the
30.24 treatment technological, disinfectants, microbiological, and radiological categories are not

30.25 listed unless they are listed because a secondary drinking water standard or a standard for
30.26 another use class exists.

31.1 B. Certain drinking water standards are not applicable to Class 1 waters.

31.2 The following are not applicable to Class 1 surface waters: the primary drinking water
31.3 standards for acrylamide, epichlorohydrin, copper, lead, and turbidity (treatment technique
31.4 standards) and the standards in the disinfectants and microbiological organisms categories.
31.5 The drinking water standards not applicable to Class 1 ground waters are listed in part
31.6 7050.0221.

31.7 C. Class 2 standards for metals are expressed as total metal in subparts 3a to
31.8 5a, but must be converted to dissolved metal standards for application to surface waters.
31.9 Conversion factors for converting total metal standards to dissolved metal standards
31.10 are listed in part 7050.0222, subpart 9. The conversion factor for metals not listed in
31.11 part 7050.0222, subpart 9, is one. The dissolved metal standard equals the total metal
31.12 standard times the conversion factor. Water quality-based effluent limits for metals are
31.13 expressed as total metal.

31.14 D. The tables of standards in subparts 3a to 6a include the following
31.15 abbreviations and acronyms:

31.16	AN	means aesthetic enjoyment and navigation, Class 5 waters
31.17	*	an asterisk following the FAV and MS values or double dashes (—) means
31.18		part 7050.0222, subpart 7, item E, applies
31.19	(c)	means the chemical is assumed to be a human carcinogen
31.20	CS	means chronic standard, defined in part 7050.0218, subpart 3
31.21	DC	means domestic consumption (drinking water), Class 1 waters
31.22	—	double dashes means there is no standard
31.23	exp. ()	means the natural antilogarithm (base e) of the expression in parenthesis
31.24	FAV	means final acute value, defined in part 7050.0218, subpart 3
31.25	IC	means industrial consumption, Class 3 waters
31.26	IR	means agriculture irrigation use, Class 4A waters

31.27	LS	means agriculture livestock and wildlife use, Class 4B waters
31.28	MS	means maximum standard, defined in part 7050.0218, subpart 3
32.1	NA	means not applicable
32.2	(S)	means the associated value is a secondary drinking water standard
32.3	su	means standard unit. It is the reporting unit for pH
32.4	TH	means total hardness in mg/L, which is the sum of the calcium and
32.5		magnesium concentrations expressed as CaCO_3
32.6	TON	means threshold odor number

32.7 E. Important synonyms or acronyms for some chemicals are listed in
 32.8 parentheses below the primary name.

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

32.12 Subp. 3a. **Cold water sport fish, drinking water, and associated use**
 32.13 **classes.** Water quality standards applicable to use Classes 1B, 2A, 3A or 3B, 4A and
 32.14 4B, and 5 surface waters.

32.15 A. MISCELLANEOUS SUBSTANCE, CHARACTERISTIC, OR POLLUTANT

32.16	2A	2A	2A	1B	3A/3B	4A	4B	5
32.17	CS	MS	FAV	DC	IC	IR	IR	AN
32.18							
32.19	(1) Ammonia, un-ionized as N, $\mu\text{g/L}$							
32.20	16	—	—	—	—	—	—	—
32.21	(2) Asbestos, $>10\ \mu\text{m}$ (c), fibers/L							
32.22	—	—	—	7.0e+06	—	—	—	—
32.23	(3) Bicarbonates (HCO_3), meq/L							
32.24	—	—	—	—	—	5	—	—

32.25	(4) Bromate, µg/L							
33.1	—	—	—	10	—	—	—	—
33.2	(5) Chloride, mg/L							
33.3	230	860	1,720	250(S)	50/100	—	—	—
33.4	(6) Chlorine, total residual, µg/L							
33.5	11	19	38	—	—	—	—	—
33.6	(7) Chlorite, µg/L							
33.7	—	—	—	1,000	—	—	—	—
33.8	(8) Color, Pt-Co							
33.9	30	—	—	15(S)	—	—	—	—
33.10	(9) Cyanide, free, µg/L							
33.11	5.2	22	45	200	—	—	—	—
33.12	(10) <i>Escherichia (E.) coli</i> bacteria, organisms/100 mL							
33.13	See							
33.14	item D	—	—	—	—	—	—	—
33.15	(11) Eutrophication standards for lakes and reservoirs (phosphorus, total, µg/L;							
33.16	chlorophyll-a, µg/L; Secchi depth transparency, meters)							
33.17	See part							
33.18	7050.0222,							
33.19	subparts							
33.20	2 and 2a	—	—	—	—	—	—	—
33.21	(12) Fluoride, mg/L							
33.22	—	—	—	4	—	—	—	—
33.23	(13) Fluoride, mg/L							
33.24	—	—	—	2(S)	—	—	—	—
33.25	(14) Foaming agents, µg/L							

34.1	—	—	—	500(S)	—	—	—	—
34.2	(15) Hardness, Ca+Mg as CaCO ₃ , mg/L							
34.3	—	—	—	—	50/250	—	—	—
34.4	(16) Hydrogen sulfide, mg/L							
34.5	—	—	—	—	—	—	—	0.02
34.6	(17) Nitrate as N, mg/L							
34.7	—	—	—	10	—	—	—	—
34.8	(18) Nitrite as N, mg/L							
34.9	—	—	—	1	—	—	—	—
34.10	(19) Nitrate + Nitrite as N, mg/L							
34.11	—	—	—	10	—	—	—	—
34.12	(20) Odor, TON							
34.13	—	—	—	3(S)	—	—	—	—
34.14	(21) Oil, µg/L							
34.15	500	5,000	10,000	—	—	—	—	—
34.16	(22) Oxygen, dissolved, mg/L							
34.17	7, as a	—	—	—	—	—	—	—
34.18	daily							
34.19	minimum							
34.20	(23) pH minimum, su							
34.21	6.5	—	—	6.5(S)	6.5/6.0	6.0	6.0	6.0
34.22	(24) pH maximum, su							
34.23	8.5	—	—	8.5(S)	8.5/9.0	8.5	9.0	9.0
34.24	(25) Radioactive materials							

35.1	See	—	—	See	—	See	See	—
35.2	item E			item E		item E	item E	
35.3	(26) Salinity, total, mg/L							
35.4	—	—	—	—	—	—	1,000	—
35.5	(27) Sodium, meq/L							
35.6	—	—	—	—	—	60% of total cations	—	—
35.7								
35.8								
35.9	(28) Specific conductance at 25°C, µmhos/cm							
35.10	—	—	—	—	—	1,000	—	—
35.11	(29) Sulfate, mg/L							
35.12	—	—	—	250(S)	—	—	—	—
35.13	(30) Sulfates, wild rice present, mg/L							
35.14	—	—	—	—	—	10	—	—
35.15	(31) Temperature, °F							
35.16	No	—	—	—	—	—	—	—
35.17	material							
35.18	increase							
35.19	(32) Total dissolved salts, mg/L							
35.20	—	—	—	—	—	700	—	—
35.21	(33) Total dissolved solids, mg/L							
35.22	—	—	—	500(S)	—	—	—	—
35.23	(34) Turbidity, NTU							
35.24	10	—	—	NA	—	—	—	—
35.25	B. METALS AND ELEMENTS							

36.1	2A	2A	2A	1B	3A/3B	4A	4B	5
36.2	CS	MS	FAV	DC	IC	IR	LS	AN

36.3

36.4 (1) Aluminum, total, µg/L

36.5	87	748	1,496	50-	—	—	—	—
36.6				200(S)				

36.7 (2) Antimony, total, µg/L

36.8	5.5	90	180	6	—	—	—	—
------	-----	----	-----	---	---	---	---	---

36.9 (3) Arsenic, total, µg/L

36.10	2.0	360	720	10	—	—	—	—
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36.11 (4) Barium, total, µg/L

36.12	—	—	—	2,000	—	—	—	—
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36.13 (5) Beryllium, total, µg/L

36.14	—	—	—	4.0	—	—	—	—
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36.15 (6) Boron, total, µg/L

36.16	—	—	—	—	—	500	—	—
-------	---	---	---	---	---	-----	---	---

36.17 (7) Cadmium, total, µg/L

36.18	1.1	3.9	7.8	5	—	—	—	—
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36.19 Class 2A cadmium standards are hardness dependent. Cadmium values shown are for a
 36.20 total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other
 36.21 hardness values and equations to calculate cadmium standards for any hardness value
 36.22 ~~between 10 and~~ not to exceed 400 mg/L.

36.23 (8) Chromium +3, total, µg/L

36.24	207	1,737	3,469	—	—	—	—	—
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36.25 Class 2A trivalent chromium standards are hardness dependent. Chromium +3 values
 36.26 shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for

37.1 examples at other hardness values and equations to calculate trivalent chromium standards
 37.2 for any hardness value ~~between 10 and~~ not to exceed 400 mg/L.

37.3 (9) Chromium +6, total, µg/L

37.4	11	16	32	—	—	—	—	—
------	----	----	----	---	---	---	---	---

37.5 (10) Chromium, total, µg/L

37.6	—	—	—	100	—	—	—	—
------	---	---	---	-----	---	---	---	---

37.7 (11) Cobalt, total, µg/L

37.8	2.8	436	872	—	—	—	—	—
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37.9 (12) Copper, total, µg/L

37.10	9.8	18	35	1,000	—	—	—	—
37.11				(S)				

37.12 Class 2A copper standards are hardness dependent. Copper values shown are for a total
 37.13 hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness
 37.14 values and equations to calculate copper standards for any hardness value ~~between 10 and~~
 37.15 not to exceed 400 mg/L.

37.16 (13) Iron, total, µg/L

37.17	—	—	—	300(S)	—	—	—	—
-------	---	---	---	--------	---	---	---	---

37.18 (14) Lead, total, µg/L

37.19	3.2	82	164	NA	—	—	—	—
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37.20 Class 2A lead standards are hardness dependent. Lead values shown are for a total
 37.21 hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness
 37.22 values and equations to calculate lead standards for any hardness value ~~between 10 and~~
 37.23 not to exceed 400 mg/L.

37.24 (15) Manganese, total, µg/L

37.25	—	—	—	50(S)	—	—	—	—
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37.26 (16) Mercury, total, in water, ng/L

37.27	6.9	2,400*	4,900*	2,000	—	—	—	—
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38.1 (17) Mercury, total in edible fish tissue, mg/kg or parts per million

38.2	0.2	—	—	—	—	—	—	—
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38.3 (18) Nickel, total, µg/L

38.4	158	1,418	2,836	—	—	—	—	—	—
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Class 2A nickel standards are hardness dependent. Nickel values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate nickel standards for any hardness value between 10 and not to exceed 400 mg/L.

38.9 (19) Selenium, total, µg/L

38.10	5.0	20	40	50	—	—	—	—
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38.11 (20) Silver, total, µg/L

38.12	0.12	2.0	4.1	100(S)	–	–	–	–
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38.13 Class 2A silver MS and FAV are hardness dependent. Silver values shown are for a total
38.14 hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness
38.15 values and equations to calculate silver standards for any hardness value between 10 and
38.16 not to exceed 400 mg/L.

38.17 (21) Thallium, total, µg/L

38.18	0.28	64	128	2	—	—	—	—
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38.19 (22) Zinc, total, µg/L

38.20	106	117	234	5,000	—	—	—	—
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38.21 (S)

38.22 Class 2A zinc standards are hardness dependent. Zinc values shown are for a total
38.23 hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness
38.24 values and equations to calculate zinc standards for any hardness value between 10 and
38.25 not to exceed 400 mg/L.

38.26 C. ORGANIC POLLUTANTS OR CHARACTERISTICS

39.1	2A	2A	2A	1B	3A/3B	4A	4B	5
39.2	CS	MS	FAV	DC	IC	IR	LS	AN

39.3

39.4 (1) Acenaphthene, $\mu\text{g/L}$

39.5	20	56	112	—	—	—	—	—
39.6	(2) Acetochlor, µg/L							
39.7	1.7 <u>3.6</u>	86	173	—	—	—	—	—
39.8	(3) Acrylonitrile (c), µg/L							
39.9	0.38	1,140*	2,281*	—	—	—	—	—
39.10	(4) Alachlor (c), µg/L							
39.11	3.8	800*	1,600*	2	—	—	—	—
39.12	(5) Aldicarb, µg/L							
39.13	—	—	—	3	—	—	—	—
39.14	(6) Aldicarb sulfone, µg/L							
39.15	—	—	—	2	—	—	—	—
39.16	(7) Aldicarb sulfoxide, µg/L							
39.17	—	—	—	4	—	—	—	—
39.18	(8) Anthracene, µg/L							
39.19	0.035	0.32	0.63	—	—	—	—	—
39.20	(9) Atrazine (c), µg/L							
39.21	3.4	323	645	3	—	—	—	—
39.22	(10) Benzene (c), µg/L							
39.23	5.4 <u>5.1</u>	4,487*	8,974*	5	—	—	—	—
40.1	(11) Benzo(a)pyrene, µg/L							
40.2	—	—	—	0.2	—	—	—	—
40.3	(12) Bromoform, µg/L							

40.4	33	2,900	5,800	See sub-	—	—	—	—
40.5				item				
40.6				(73)				
40.7	(13) Carbofuran, µg/L							
40.8	—	—	—	40	—	—	—	—
40.9	(14) Carbon tetrachloride (c), µg/L							
40.10	1.9	1,750*	3,500*	5	—	—	—	—
40.11	(15) Chlordane (c), ng/L							
40.12	0.073	1,200*	2,400*	2,000	—	—	—	—
40.13	(16) Chlorobenzene, µg/L (Monochlorobenzene)							
40.14	20	423	846	100	—	—	—	—
40.15	(17) Chloroform (c), µg/L							
40.16	53	1,392	2,784	See sub-	—	—	—	—
40.17				item				
40.18				(73)				
40.19	(18) Chlorpyrifos, µg/L							
40.20	0.041	0.083	0.17	—	—	—	—	—
40.21	(19) Dalapon, µg/L							
40.22	—	—	—	200	—	—	—	—
40.23	(20) DDT (c), ng/L							
40.24	0.11	550*	1,100*	—	—	—	—	—
40.25	(21) 1,2-Dibromo-3-chloropropane (c), µg/L							
41.1	—	—	—	0.2	—	—	—	—
41.2	(22) Dichlorobenzene (ortho), µg/L							
41.3	—	—	—	600	—	—	—	—

41.4	(23) 1,4-Dichlorobenzene (para) (c), µg/L							
41.5	—	—	—	75	—	—	—	—
41.6	(24) 1,2-Dichloroethane (c), µg/L							
41.7	3.5	45,050*	90,100*	5	—	—	—	—
41.8	(25) 1,1-Dichloroethylene, µg/L							
41.9	—	—	—	7	—	—	—	—
41.10	(26) 1,2-Dichloroethylene (cis), µg/L							
41.11	—	—	—	70	—	—	—	—
41.12	(27) 1,2-Dichloroethylene (trans), µg/L							
41.13	—	—	—	100	—	—	—	—
41.14	(28) 2,4-Dichlorophenoxyacetic acid (2,4-D), µg/L							
41.15	—	—	—	70	—	—	—	—
41.16	(29) 1,2-Dichloropropane (c), µg/L							
41.17	—	—	—	5	—	—	—	—
41.18	(30) Dieldrin (c), ng/L							
41.19	0.0065	1,300*	2,500*	—	—	—	—	—
41.20	(31) Di-2-ethylhexyl adipate, µg/L							
41.21	—	—	—	400	—	—	—	—
41.22	(32) Di-2-ethylhexyl phthalate (c), µg/L							
41.23	1.9	—*	—*	6	—	—	—	—
42.1	(33) Di-n-Octyl phthalate, µg/L							
42.2	30	825	1,650	—	—	—	—	—
42.3	(34) Dinoseb, µg/L							
42.4	—	—	—	7	—	—	—	—

42.5	(35) Diquat, µg/L							
42.6	—	—	—	20	—	—	—	—
42.7	(36) Endosulfan, µg/L							
42.8	0.0076	0.084	0.17	—	—	—	—	—
42.9	(37) Endothall, µg/L							
42.10	—	—	—	100	—	—	—	—
42.11	(38) Endrin, µg/L							
42.12	0.0039	0.090	0.18	2	—	—	—	—
42.13	(39) Ethylbenzene (c), µg/L							
42.14	68	1,859	3,717	700	—	—	—	—
42.15	(40) Ethylene dibromide, µg/L							
42.16	—	—	—	0.05	—	—	—	—
42.17	(41) Fluoranthene, µg/L							
42.18	1.9	3.5	6.9	—	—	—	—	—
42.19	(42) Glyphosate, µg/L							
42.20	—	—	—	700	—	—	—	—
42.21	(43) Haloacetic acids (c), µg/L (Bromoacetic acid, Dibromoacetic acid, Dichloroacetic							
42.22	acid, Monochloroacetic acid, and Trichloroacetic acid)							
42.23	—	—	—	60	—	—	—	—
43.1	(44) Heptachlor (c), ng/L							
43.2	0.10	260*	520*	400	—	—	—	—
43.3	(45) Heptachlor epoxide (c), ng/L							
43.4	0.12	270*	530*	200	—	—	—	—
43.5	(46) Hexachlorobenzene (c), ng/L							

43.6	0.061	—*	—*	1,000	—	—	—	—
43.7	(47) Hexachlorocyclopentadiene, µg/L							
43.8	—	—	—	50	—	—	—	—
43.9	(48) Lindane (c), µg/L (Hexachlorocyclohexane, gamma-)							
43.10	0.0087	1.0*	2.0*	0.2	—	—	—	—
43.11	(49) Methoxychlor, µg/L							
43.12	—	—	—	40	—	—	—	—
43.13	(50) Methylene chloride (c), µg/L (Dichloromethane)							
43.14	45	13,875*	27,749*	5	—	—	—	—
43.15	(51) Metolachlor							
43.16	23	271	543	—	—	—	—	—
43.17	(52) Naphthalene, µg/L							
43.18	65	409	818	—	—	—	—	—
43.19	(53) Oxamyl, µg/L (Vydate)							
43.20	—	—	—	200	—	—	—	—
43.21	(54) Parathion, µg/L							
43.22	0.013	0.07	0.13	—	—	—	—	—
43.23	(55) Pentachlorophenol, µg/L							
44.1	0.93	15	30	1	—	—	—	—
44.2	Class 2A MS and FAV are pH dependent. Pentachlorophenol values shown are for a pH of 7.5 only. See part 7050.0222, subpart 2, for examples at other pH values and equations to calculate pentachlorophenol standards for any pH value.							
44.3								
44.4								
44.5	(56) Phenanthrene, µg/L							
44.6	3.6	32	64	—	—	—	—	—
44.7	(57) Phenol, µg/L							

44.8	123	2,214	4,428	—	—	—	—	—
44.9	(58) Picloram, µg/L							
44.10	—	—	—	500	—	—	—	—
44.11	(59) Polychlorinated biphenyls (c), ng/L (PCBs, total)							
44.12	0.014	1,000*	2,000*	500	—	—	—	—
44.13	(60) Simazine, µg/L							
44.14	—	—	—	4	—	—	—	—
44.15	(61) Styrene (c), µg/L							
44.16	—	—	—	100	—	—	—	—
44.17	(62) 2,3,7,8-Tetrachlorodibenzo-p-dioxin, ng/L (TCDD-dioxin)							
44.18	—	—	—	0.03	—	—	—	—
44.19	(63) 1,1,2,2-Tetrachloroethane (c), µg/L							
44.20	1.1	1,127*	2,253*	—	—	—	—	—
44.21	(64) Tetrachloroethylene (c), µg/L							
44.22	3.8	428*	857*	5	—	—	—	—
44.23	(65) Toluene, µg/L							
44.24	253	1,352	2,703	1,000	—	—	—	—
45.1	(66) Toxaphene (c), ng/L							
45.2	0.31	730*	1,500*	3,000	—	—	—	—
45.3	(67) 2,4,5-TP, µg/L (Silvex)							
45.4	—	—	—	50	—	—	—	—
45.5	(68) 1,2,4-Trichlorobenzene, µg/L							
45.6	—	—	—	70	—	—	—	—
45.7	(69) 1,1,1-Trichloroethane, µg/L							

45.8	329	2,957	5,913	200	—	—	—	—
45.9	(70) 1,1,2-Trichloroethane, µg/L							
45.10	—	—	—	5	—	—	—	—
45.11	(71) 1,1,2-Trichloroethylene (c), µg/L							
45.12	25	6,988*	13,976*	5	—	—	—	—
45.13	(72) 2,4,6-Trichlorophenol, µg/L							
45.14	2.0	102	203	—	—	—	—	—
45.15	(73) Trihalomethanes, total (c), µg/L (Bromodichloromethane, Bromoform,							
45.16	Chlorodibromomethane, and Chloroform)							
45.17	—	—	—	80	—	—	—	—
45.18	(74) Vinyl chloride (c), µg/L							
45.19	0.17	—*	—*	2	—	—	—	—
45.20	(75) Xylenes, total, µg/L							
45.21	166	1,407	2,814	10,000	—	—	—	—

45.22 D. *Escherichia (E.) coli* bacteria shall not exceed 126 organisms per 100
 45.23 milliliters as a geometric mean of not less than five samples representative of conditions
 46.1 within any calendar month, nor shall more than ten percent of all samples taken during
 46.2 any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard
 46.3 applies only between April 1 and October 31.

46.4 E. For radioactive materials, see parts 7050.0221, subpart 2; 7050.0222, subpart
 46.5 2; and 7050.0224, subparts 2 and 3.

46.6 Subp. 4a. **Cool and warm water sport fish, drinking water, and associated use**
 46.7 **classes.** Water quality standards applicable to use Classes 1B or 1C, 2Bd, 3A or 3B,
 46.8 4A and 4B, and 5 surface waters.

46.9 A. MISCELLANEOUS SUBSTANCE, CHARACTERISTIC, OR POLLUTANT

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

46.12							
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46.13 (1) Ammonia, un-ionized as N, µg/L

46.14	40	—	—	—	—	—	—	—
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46.15 (2) Asbestos, >10 µm (c), fibers/L

46.16	—	—	—	7.0e+06	—	—	—	—
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46.17 (3) Bicarbonates (HCO₃), meq/L

46.18	—	—	—	—	—	5	—	—
-------	---	---	---	---	---	---	---	---

46.19 (4) Bromate, µg/L

46.20	—	—	—	10	—	—	—	—
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46.21 (5) Chloride, mg/L

46.22	230	860	1,720	250(S)	50/100	—	—	—
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46.23 (6) Chlorine, total residual, µg/L

46.24	11	19	38	—	—	—	—	—
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47.1 (7) Chlorite, µg/L

47.2	—	—	—	1,000	—	—	—	—
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47.3 (8) Color, Pt-Co

47.4	—	—	—	15(S)	—	—	—	—
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47.5 (9) Cyanide, free, µg/L

47.6	5.2	22	45	200	—	—	—	—
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47.7 (10) *Escherichia (E.) coli* bacteria, organisms/100 mL

47.8	See	—	—	—	—	—	—	—
47.9	item D							

47.10 (11) Eutrophication standards for lakes, shallow lakes, and reservoirs (phosphorus, total,
47.11 µg/L; chlorophyll-a, µg/L; Secchi depth transparency, meters).

47.12 See part — — — — — — —
47.13 7050.0222,
47.14 subparts
47.15 3 and 3a

47.16 (12) Fluoride, mg/L

47.17 — — — 4 — — — —

47.18 (13) Fluoride, mg/L

47.19 — — — 2(S) — — — —

47.20 (14) Foaming agents, µg/L

47.21 — — — 500(S) — — — —

47.22 (15) Hardness, Ca+Mg as CaCO₃, mg/L

47.23 — — — — 50/250 — — —

47.24 (16) Hydrogen sulfide, mg/L

47.25 — — — — — — — 0.02

48.1 (17) Nitrate as N, mg/L

48.2 — — — 10 — — — —

48.3 (18) Nitrite as N, mg/L

48.4 — — — 1 — — — —

48.5 (19) Nitrate + Nitrite as N, mg/L

48.6 — — — 10 — — — —

48.7 (20) Odor, TON

48.8 — — — 3(S) — — — —

48.9 (21) Oil, µg/L

48.10	500	5,000	10,000	—	—	—	—	—
48.11	(22) Oxygen, dissolved, mg/L							
48.12	See part	—	—	—	—	—	—	—
48.13	7050.0222,							
48.14	subpart							
48.15	3							
48.16	(23) pH minimum, su							
48.17	6.5	—	—	6.5(S)	6.5/6.0	6.0	6.0	6.0
48.18	(24) pH maximum, su							
48.19	9.0	—	—	8.5(S)	8.5/9.0	8.5	9.0	9.0
48.20	(25) Radioactive materials							
48.21	See	—	—	See	—	See	See	—
48.22	item E			item E		item E	item E	
48.23	(26) Salinity, total, mg/L							
48.24	—	—	—	—	—	—	1,000	—
48.25	(27) Sodium, meq/L							
49.1	—	—	—	—	—	60% of	—	—
49.2						total		
49.3						cations		
49.4	(28) Specific conductance at 25°C, µmhos/cm							
49.5	—	—	—	—	—	1,000	—	—
49.6	(29) Sulfate, mg/L							
49.7	—	—	—	250(S)	—	—	—	—
49.8	(30) Sulfates, wild rice present, mg/L							
49.9	—	—	—	—	—	10	—	—
49.10	(31) Temperature, °F							

49.11	See	—	—	—	—	—	—	—
49.12	item F							
49.13	(32) Total dissolved salts, mg/L							
49.14	—	—	—	—	—	700	—	—
49.15	(33) Total dissolved solids, mg/L							
49.16	—	—	—	500(S)	—	—	—	—
49.17	(34) Turbidity, NTU							
49.18				—				
49.19	25	—	—	NA	—	—	—	—
49.20	B. METALS AND ELEMENTS							
49.21	2Bd	2Bd	2Bd	1B/1C	3A/3B	4A	4B	5
49.22	CS	MS	FAV	DC	IC	IR	LS	AN
49.23							
49.24	(1) Aluminum, total, µg/L							
50.1	125	1,072	2,145	50-	—	—	—	—
50.2				200(S)				
50.3	(2) Antimony, total, µg/L							
50.4	5.5	90	180	6	—	—	—	—
50.5	(3) Arsenic, total, µg/L							
50.6	2.0	360	720	10	—	—	—	—
50.7	(4) Barium, total, µg/L							
50.8	—	—	—	2,000	—	—	—	—
50.9	(5) Beryllium, total, µg/L							
50.10	—	—	—	4.0	—	—	—	—
50.11	(6) Boron, total, µg/L							

51.14 (14) Lead, total, µg/L

51.15	3.2	82	164	NA	—	—	—	—
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51.16 Class 2Bd lead standards are hardness dependent. Lead values shown are for a total
 51.17 hardness of 100 mg/L only. See part 7050.0222, subpart 3, for examples at other hardness
 51.18 values and equations to calculate lead standards for any hardness value ~~between 10 and~~
 51.19 not to exceed 400 mg/L.

51.20 (15) Manganese, total, µg/L

51.21	—	—	—	50(S)	—	—	—	—
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51.22 (16) Mercury, total in water, ng/L

51.23	6.9	2,400*	4,900*	2,000
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51.24 (17) Mercury, total in edible fish tissue, mg/kg or parts per million

51.25	0.2	—	—	—	—	—	—	—
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51.26 (18) Nickel, total, µg/L

52.1	158	1,418	2,836	—	—	—	—	—
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52.2 Class 2Bd nickel standards are hardness dependent. Nickel values shown are for a total
 52.3 hardness of 100 mg/L only. See part 7050.0222, subpart 3, for examples at other hardness
 52.4 values and equations to calculate nickel standards for any hardness value ~~between 10 and~~
 52.5 not to exceed 400 mg/L.

52.6 (19) Selenium, total, µg/L

52.7	5.0	20	40	50	—	—	—	—
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52.8 (20) Silver, total, µg/L

52.9	1.0	2.0	4.1	100(S)	—	—	—	—
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52.10 Class 2Bd silver MS and FAV are hardness dependent. Silver values shown are for a total
 52.11 hardness of 100 mg/L only. See part 7050.0222, subpart 3, for examples at other hardness
 52.12 values and equations to calculate silver standards for any hardness value ~~between 10 and~~
 52.13 not to exceed 400 mg/L.

52.14 (21) Thallium, total, µg/L

52.15	0.28	64	128	2	—	—	—	—
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52.16 (22) Zinc, total, µg/L

52.17	106	117	234	5,000	—	—	—	—
52.18				(S)				

52.19 Class 2Bd zinc standards are hardness dependent. Zinc values shown are for a total
 52.20 hardness of 100 mg/L only. See part 7050.0222, subpart 3, for examples at other hardness
 52.21 values and equations to calculate zinc standards for any hardness value ~~between 10 and~~
 52.22 not to exceed 400 mg/L.

52.23 C. ORGANIC POLLUTANTS OR CHARACTERISTICS

52.24	2Bd	2Bd	2Bd	1B/1C	3A/3B	4A	4B	5
52.25	CS	MS	FAV	DC	ICIC	IR	LS	AN
52.26							

52.27 (1) Acenaphthene, µg/L

52.28	20	56	112	—	—	—	—	—
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53.1 (2) Acetochlor, µg/L

53.2	1.7 <u>3.6</u>	86	173	—	—	—	—	—
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53.3 (3) Acrylonitrile (c), µg/L

53.4	0.38	1,140*	2,281*	—	—	—	—	—
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53.5 (4) Alachlor (c), µg/L

53.6	4.2	800*	1,600*	2	—	—	—	—
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53.7 (5) Aldicarb, µg/L

53.8	—	—	—	3	—	—	—	—
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53.9 (6) Aldicarb sulfone, µg/L

53.10	—	—	—	2	—	—	—	—
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53.11 (7) Aldicarb sulfoxide, µg/L

53.12	—	—	—	4	—	—	—	—
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53.13 (8) Anthracene, µg/L

53.14	0.035	0.32	0.63	—	—	—	—	—
53.15	(9) Atrazine (c), µg/L							
53.16	3.4	323	645	3	—	—	—	—
53.17	(10) Benzene (c), µg/L							
53.18	6.0	4,487*	8,974*	5	—	—	—	—
53.19	(11) Benzo(a)pyrene, µg/L							
53.20	—	—	—	0.2	—	—	—	—
53.21	(12) Bromoform, µg/L							
53.22	41	2,900	5,800	See subitem (73)	—	—	—	—
53.23								
53.24								
54.1	(13) Carbofuran, µg/L							
54.2	—	—	—	40	—	—	—	—
54.3	(14) Carbon tetrachloride (c), µg/L							
54.4	1.9	1,750*	3,500*	5	—	—	—	—
54.5	(15) Chlordane (c), ng/L							
54.6	0.29	1,200*	2,400*	2,000	—	—	—	—
54.7	(16) Chlorobenzene, µg/L (Monochlorobenzene)							
54.8	20	423	846	100	—	—	—	—
54.9	(17) Chloroform (c), µg/L							
54.10	53	1,392	2,784	See subitem (73)	—	—	—	—
54.11								
54.12								
54.13	(18) Chlorpyrifos, µg/L							
54.14	0.041	0.083	0.17	—	—	—	—	—

54.15	(19) Dalapon, µg/L							
54.16	—	—	—	200	—	—	—	—
54.17	(20) DDT (c), ng/L							
54.18	1.7	550*	1,100*	—	—	—	—	—
54.19	(21) 1,2-Dibromo-3-chloropropane (c), µg/L							
54.20	—	—	—	0.2	—	—	—	—
54.21	(22) Dichlorobenzene (ortho), µg/L							
54.22	—	—	—	600	—	—	—	—
54.23	(23) 1,4-Dichlorobenzene (para) (c), µg/L							
54.24	—	—	—	75	—	—	—	—
55.1	(24) 1,2-Dichloroethane (c), µg/L							
55.2	3.8	45,050*	90,100*	5	—	—	—	—
55.3	(25) 1,1-Dichloroethylene, µg/L							
55.4	—	—	—	7	—	—	—	—
55.5	(26) 1,2-Dichloroethylene (cis), µg/L							
55.6	—	—	—	70	—	—	—	—
55.7	(27) 1,2-Dichloroethylene (trans), µg/L							
55.8	—	—	—	100	—	—	—	—
55.9	(28) 2,4-Dichlorophenoxyacetic acid (2,4-D), µg/L							
55.10	—	—	—	70	—	—	—	—
55.11	(29) 1,2-Dichloropropane (c), µg/L							
55.12	—	—	—	5	—	—	—	—
55.13	(30) Dieldrin (c), ng/L							
55.14	0.026	1,300*	2,500*	—	—	—	—	—

55.15	(31) Di-2-ethylhexyl adipate, µg/L							
55.16	—	—	—	400	—	—	—	—
55.17	(32) Di-2-ethylhexyl phthalate (c), µg/L							
55.18	1.9	—*	—*	6	—	—	—	—
55.19	(33) Di-n-Octyl phthalate, µg/L							
55.20	30	825	1,650	—	—	—	—	—
55.21	(34) Dinoseb, µg/L							
55.22	—	—	—	7	—	—	—	—
55.23	(35) Diquat, µg/L							
56.1	—	—	—	20	—	—	—	—
56.2	(36) Endosulfan, µg/L							
56.3	0.029	0.28	0.56	—	—	—	—	—
56.4	(37) Endothall, µg/L							
56.5	—	—	—	100	—	—	—	—
56.6	(38) Endrin, µg/L							
56.7	0.016	0.090	0.18	2	—	—	—	—
56.8	(39) Ethylbenzene (c), µg/L							
56.9	68	1,859	3,717	700	—	—	—	—
56.10	(40) Ethylene dibromide, µg/L							
56.11	—	—	—	0.05	—	—	—	—
56.12	(41) Fluoranthene, µg/L							
56.13	1.9	3.5	6.9	—	—	—	—	—
56.14	(42) Glyphosate, µg/L							
56.15	—	—	—	700	—	—	—	—

56.16	(43) Haloacetic acids (c), µg/L (Bromoacetic acid, Dibromoacetic acid, Dichloroacetic acid, Monochloroacetic acid, and Trichloroacetic acid)							
56.17								
56.18	—	—	—	60	—	—	—	—
56.19	(44) Heptachlor (c), ng/L							
56.20	0.39	260*	520*	400	—	—	—	—
56.21	(45) Heptachlor epoxide (c), ng/L							
56.22	0.48	270*	530*	200	—	—	—	—
56.23	(46) Hexachlorobenzene (c), ng/L							
57.1	0.24	—*	—*	1,000	—	—	—	—
57.2	(47) Hexachlorocyclopentadiene, µg/L							
57.3	—	—	—	50	—	—	—	—
57.4	(48) Lindane (c), µg/L (Hexachlorocyclohexane, gamma-)							
57.5	0.032	4.4*	8.8*	0.2	—	—	—	—
57.6	(49) Methoxychlor, µg/L							
57.7	—	—	—	40	—	—	—	—
57.8	(50) Methylene chloride (c), µg/L (Dichloromethane)							
57.9	46	13,875*	27,749*	5	—	—	—	—
57.10	(51) Metolachlor							
57.11	23	271	543	—	—	—	—	—
57.12	(52) Naphthalene, µg/L							
57.13	81	409	818	—	—	—	—	—
57.14	(53) Oxamyl, µg/L (Vydate)							
57.15	—	—	—	200	—	—	—	—
57.16	(54) Parathion, µg/L							

57.17	0.013	0.07	0.13	—	—	—	—	—
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57.18	(55) Pentachlorophenol, µg/L							
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57.19	1.9	15	30	1	—	—	—	—
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57.20	Class 2Bd MS and FAV are pH dependent. Pentachlorophenol values shown are for a pH							
57.21	of 7.5 only. See part 7050.0222, subpart 3, for examples at other pH values and equations							
57.22	to calculate pentachlorophenol standards for any pH value.							

57.23	(56) Phenanthrene, µg/L							
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57.24	3.6	32	64	—	—	—	—	—
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58.1	(57) Phenol, µg/L							
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58.2	123	2,214	4,428	—	—	—	—	—
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58.3	(58) Picloram, µg/L							
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58.4	—	—	—	500	—	—	—	—
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58.5	(59) Polychlorinated biphenyls (c), ng/L (PCBs, total)							
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58.6	0.029	1,000*	2,000*	500	—	—	—	—
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58.7	(60) Simazine, µg/L							
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58.8	—	—	—	4	—	—	—	—
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58.9	(61) Styrene (c), µg/L							
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58.10	—	—	—	100	—	—	—	—
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58.11	(62) 2,3,7,8-Tetrachlorodibenzo-p-dioxin, ng/L (TCDD-dioxin)							
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58.12	—	—	—	0.03	—	—	—	—
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58.13	(63) 1,1,2,2-Tetrachloroethane (c), µg/L							
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58.14	1.5	1,127*	2,253*	—	—	—	—	—
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58.15	(64) Tetrachloroethylene (c), µg/L							
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58.16	3.8	428*	857*	5	—	—	—	—
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58.17	(65) Toluene, µg/L							
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58.18	253	1,352	2,703	1,000	—	—	—	—
58.19	(66) Toxaphene (c), ng/L							
58.20	1.3	730*	1,500*	3,000	—	—	—	—
58.21	(67) 2,4,5-TP, µg/L (Silvex)							
58.22	—	—	—	50	—	—	—	—
58.23	(68) 1,2,4-Trichlorobenzene, µg/L							
59.1	—	—	—	70	—	—	—	—
59.2	(69) 1,1,1-Trichloroethane, µg/L							
59.3	329	2,957	5,913	200	—	—	—	—
59.4	(70) 1,1,2-Trichloroethane, µg/L							
59.5	—	—	—	5	—	—	—	—
59.6	(71) 1,1,2-Trichloroethylene (c), µg/L							
59.7	25	6,988*	13,976*	5	—	—	—	—
59.8	(72) 2,4,6-Trichlorophenol, µg/L							
59.9	2.0	102	203	—	—	—	—	—
59.10	(73) Trihalomethanes, total (c), µg/L (Bromodichloromethane, Bromoform, Chlorodibromomethane, and Chloroform)							
59.11								
59.12	—	—	—	80	—	—	—	—
59.13	(74) Vinyl chloride (c), µg/L							
59.14	0.18	—*	—*	2	—	—	—	—
59.15	(75) Xylenes, total, µg/L							
59.16	166	1,407	2,814	10,000	—	—	—	—
59.17	D. <i>Escherichia (E.) coli</i> bacteria shall not exceed 126 organisms per 100							
59.18	milliliters as a geometric mean of not less than five samples representative of conditions							

59.19 within any calendar month, nor shall more than ten percent of all samples taken during
 59.20 any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard
 59.21 applies only between April 1 and October 31.

59.22 E. For radioactive materials, see parts 7050.0221, subpart 3; 7050.0222, subpart
 59.23 3; and 7050.0224, subparts 2 and 3.

60.1 F. Temperature must not exceed five degrees Fahrenheit above natural in
 60.2 streams and three degrees Fahrenheit above natural in lakes, based on monthly average
 60.3 of maximum daily temperature, except in no case shall it exceed the daily average
 60.4 temperature of 86 degrees Fahrenheit.

60.5 Subp. 5a. **Cool and warm water sport fish and associated use classes.** Water
 60.6 quality standards applicable to use Classes 2B, 2C, or 2D; 3A, 3B, or 3C; 4A and 4B; and
 60.7 5 surface waters. See parts 7050.0223, subpart 5; 7050.0224, subpart 4; and 7050.0225,
 60.8 subpart 2, for Class 3D, 4C, and 5 standards applicable to wetlands, respectively.

60.9 A. MISCELLANEOUS SUBSTANCE, CHARACTERISTIC, OR POLLUTANT

	2B,C&D	2B,C&D	2B,C&D	3A/3B/3C	4A	4B	5
	CS	MS	FAV	IC	IR	LS	AN
60.10							
60.11							
60.12						
60.13	(1) Ammonia, un-ionized as N, µg/L						
60.14	40	—	—	—	—	—	—
60.15	(2) Bicarbonates (HCO ₃), meq/L						
60.16	—	—	—	—	5	—	—
60.17	(3) Chloride, mg/L						
60.18	230	860	1,720	50/100/250	—	—	—
60.19	(4) Chlorine, total residual, µg/L						
60.20	11	19	38	—	—	—	—

60.21	(5) Cyanide, free, µg/L						
60.22	5.2	22	45	—	—	—	—
60.23	(6) <i>Escherichia (E.) coli</i> bacteria, organisms/100 mL						
60.24	See	—	—	—	—	—	—
60.25	item D						
61.1	(7) Eutrophication standards for lakes, shallow lakes, and reservoirs (phosphorus, total,						
61.2	µg/L; chlorophyll-a, µg/L; Secchi depth transparency, meters)						
61.3	See part	—	—	—	—	—	—
61.4	7050.0222,						
61.5	subparts						
61.6	4, 41, and						
61.7	5						
61.8	(8) Hardness, Ca+Mg as CaCO ₃ , mg/L						
61.9	—	—	—	50/250/500	—	—	—
61.10	(9) Hydrogen sulfide, mg/L						
61.11	—	—	—	—	—	—	0.02
61.12	(10) Oil, µg/L						
61.13	500	5,000	10,000	—	—	—	—
61.14	(11) Oxygen, dissolved, mg/L						
61.15	See part	—	—	—	—	—	—
61.16	7050.0222,						
61.17	subparts						
61.18	4 to 6						
61.19	(12) pH minimum, su						
61.20	6.5	—	—	6.5/6.0/6.0	6.0	6.0	6.0
61.21	See						
61.22	item E						
61.23	(13) pH maximum, su						

61.24	9.0	—	—	8.5/9.0/9.0	8.5	9.0	9.0
61.25	See						
61.26	item E						

61.27 (14) Radioactive materials

62.1	See	—	—	—	See	See	—
62.2	item F				item F	item F	

62.3 (15) Salinity, total, mg/L

62.4	—	—	—	—	—	1,000	—
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62.5 (16) Sodium, meq/L

62.6	—	—	—	—	60% of	—	—
62.7					total		
62.8					cations		

62.9 (17) Specific conductance at 25°C, μ mhos/cm

62.10	—	—	—	—	1,000	—	—
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62.11 (18) Sulfates, wild rice present, mg/L

62.12	—	—	—	—	10	—	—
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62.13 (19) Temperature, °F

62.14	See	—	—	—	—	—	—
62.15	item G						

62.16 (20) Total dissolved salts, mg/L

62.17	—	—	—	—	700	—	—
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62.18 (21) Turbidity, NTU

62.19	25	—	—	—	—	—	—
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62.20 B. METALS AND ELEMENTS

62.21	2B,C&D	2B,C&D	2B,C&D	3A/3B/3C	4A	4B	5
62.22	CS	MS	FAV	IC	IR	LS	AN

62.23

62.24 (1) Aluminum, total, µg/L

62.25	125	1,072	2,145	—	—	—	—
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63.1 (2) Antimony, total, µg/L

63.2	31	90	180	—	—	—	—
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63.3 (3) Arsenic, total, µg/L

63.4	53	360	720	—	—	—	—
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63.5 (4) Boron, total, µg/L

63.6	—	—	—	—	500	—	—
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63.7 (5) Cadmium, total, µg/L

63.8	1.1	33	67	—	—	—	—
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63.9 Class 2B, 2C, and 2D cadmium standards are hardness dependent. Cadmium values
 63.10 shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for
 63.11 examples at other hardness values and equations to calculate cadmium standards for any
 63.12 hardness value ~~between 10 and~~ not to exceed 400 mg/L.

63.13 (6) Chromium +3, total, µg/L

63.14	207	1,737	3,469	—	—	—	—
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63.15 Class 2B, 2C, and 2D trivalent chromium standards are hardness dependent. Chromium
 63.16 +3 values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart
 63.17 4, for examples at other hardness values and equations to calculate trivalent chromium
 63.18 standards for any hardness value ~~between 10 and~~ not to exceed 400 mg/L.

63.19 (7) Chromium +6, total, µg/L

63.20	11	16	32	—	—	—	—
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63.21 (8) Cobalt, total, µg/L

63.22	5.0	436	872	—	—	—	—
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63.23 (9) Copper, total, µg/L

63.24	9.8	18	35	—	—	—	—
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63.25 Class 2B, 2C, and 2D copper standards are hardness dependent. Copper values shown
 63.26 are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at
 64.1 other hardness values and equations to calculate copper standards for any hardness value
 64.2 ~~between 10 and~~ not to exceed 400 mg/L.

64.3 (10) Lead, total, µg/L

64.4	3.2	82	164	—	—	—	—
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64.5 Class 2B, 2C, and 2D lead standards are hardness dependent. Lead values shown are for a
 64.6 total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at other
 64.7 hardness values and equations to calculate lead standards for any hardness value ~~between~~
 64.8 ~~10 and~~ not to exceed 400 mg/L.

64.9 (11) Mercury, total in water, ng/L

64.10	6.9	2,400*	4,900*	—	—	—	—
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64.11 (12) Mercury, total in edible fish tissue, mg/kg or parts per million

64.12	0.2	—	—	—	—	—	—
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64.13 (13) Nickel, total, µg/L

64.14	158	1,418	2,836	—	—	—	—
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64.15 Class 2B, 2C, and 2D nickel standards are hardness dependent. Nickel values shown are
 64.16 for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at
 64.17 other hardness values and equations to calculate nickel standards for any hardness value
 64.18 ~~between 10 and~~ not to exceed 400 mg/L.

64.19 (14) Selenium, total, µg/L

64.20	5.0	20	40	—	—	—	—
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64.21 (15) Silver, total, µg/L

64.22	1.0	2.0	4.1	—	—	—	—
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64.23 Class 2B, 2C, and 2D silver MS and FAV are hardness dependent. Silver values shown
 64.24 are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at
 64.25 other hardness values and equations to calculate silver standards for any hardness value
 64.26 ~~between 10 and~~ not to exceed 400 mg/L.

64.27 (16) Thallium, total, µg/L

64.28	0.56	64	128	—	—	—	—
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65.1 (17) Zinc, total, µg/L

65.2	106	117	234	—	—	—	—
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65.3 Class 2B, 2C, and 2D zinc standards are hardness dependent. Zinc values shown are for a
 65.4 total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at other
 65.5 hardness values and equations to calculate zinc standards for any hardness value between
 65.6 ~~10 and~~ not to exceed 400 mg/L.

65.7 C. ORGANIC POLLUTANTS OR CHARACTERISTICS

65.8	2B,C&D	2B,C&D	2B,C&D	3A/3B/3C	4A	4B	5
65.9	CS	MS	FAV	IC	IR	LS	AN

65.10

65.11 (1) Acenaphthene, µg/L

65.12	20	56	112	—	—	—	—
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65.13 (2) Acetochlor, µg/L

65.14	1.7 <u>3.6</u>	86	173	—	—	—	—
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65.15 (3) Acrylonitrile (c), µg/L

65.16	0.89	1,140*	2,281*	—	—	—	—
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65.17 (4) Alachlor (c), µg/L

65.18	59	800	1,600	—	—	—	—
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65.19 (5) Anthracene, µg/L

65.20	0.035	0.32	0.63	—	—	—	—
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65.21 (6) Atrazine (c), µg/L

65.22	10	323	645	—	—	—	—
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65.23 (7) Benzene (c), µg/L

65.24	98	4,487	8,974	—	—	—	—
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65.25 (8) Bromoform, µg/L

66.1	466	2,900	5,800	—	—	—	—
66.2	(9) Carbon tetrachloride (c), µg/L						
66.3	5.9	1,750*	3,500*	—	—	—	—
66.4	(10) Chlordane (c), ng/L						
66.5	0.29	1,200*	2,400*	—	—	—	—
66.6	(11) Chlorobenzene, µg/L (Monochlorobenzene)						
66.7	20	423	846	—	—	—	—
66.8	(12) Chloroform (c), µg/L						
66.9	155	1,392	2,784	—	—	—	—
66.10	(13) Chlorpyrifos, µg/L						
66.11	0.041	0.083	0.17	—	—	—	—
66.12	(14) DDT (c), ng/L						
66.13	1.7	550*	1,100*	—	—	—	—
66.14	(15) 1,2-Dichloroethane (c), µg/L						
66.15	190	45,050*	90,100*	—	—	—	—
66.16	(16) Dieldrin (c), ng/L						
66.17	0.026	1,300*	2,500*	—	—	—	—
66.18	(17) Di-2-ethylhexyl phthalate (c), µg/L						
66.19	2.1	—*	—*	—	—	—	—
66.20	(18) Di-n-Octyl phthalate, µg/L						
66.21	30	825	1,650	—	—	—	—
66.22	(19) Endosulfan, µg/L						
66.23	0.031	0.28	0.56	—	—	—	—
67.1	(20) Endrin, µg/L						

67.2	0.016	0.090	0.18	—	—	—	—
67.3	(21) Ethylbenzene (c), µg/L						
67.4	68	1,859	3,717	—	—	—	—
67.5	(22) Fluoranthene, µg/L						
67.6	1.9	3.5	6.9	—	—	—	—
67.7	(23) Heptachlor (c), ng/L						
67.8	0.39	260*	520*	—	—	—	—
67.9	(24) Heptachlor epoxide (c), ng/L						
67.10	0.48	270*	530*	—	—	—	—
67.11	(25) Hexachlorobenzene (c), ng/L						
67.12	0.24	—*	—*	—	—	—	—
67.13	(26) Lindane (c), µg/L (Hexachlorocyclohexane, gamma-)						
67.14	0.036	4.4*	8.8*	—	—	—	—
67.15	(27) Methylene chloride (c), µg/L (Dichloromethane)						
67.16	1,940	13,875	27,749	—	—	—	—
67.17	(28) Metolachlor						
67.18	23	271	543	—	—	—	—
67.19	(29) Naphthalene, µg/L						
67.20	81	409	818	—	—	—	—
67.21	(30) Parathion, µg/L						
67.22	0.013	0.07	0.13	—	—	—	—
67.23	(31) Pentachlorophenol, µg/L						
68.1	5.5	15	30	—	—	—	—

68.2 Class 2B, 2C, and 2D standards are pH dependent, except that the CS will not exceed 5.5
 68.3 µg/L. Pentachlorophenol values shown are for a pH of 7.5 only. See part 7050.0222,
 68.4 subpart 4, for examples at other pH values and equations to calculate pentachlorophenol
 68.5 standards for any pH value.

68.6 (32) Phenanthrene, µg/L

68.7	3.6	32	64	—	—	—	—
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68.8 (33) Phenol, µg/L

68.9	123	2,214	4,428	—	—	—	—
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68.10 (34) Polychlorinated biphenyls (c), ng/L (PCBs, total)

68.11	0.029	1,000*	2,000*	—	—	—	—
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68.12 (35) 1,1,2,2-Tetrachloroethane (c), µg/L

68.13	13	1,127	2,253	—	—	—	—
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68.14 (36) Tetrachloroethylene (c), µg/L

68.15	8.9	428	857	—	—	—	—
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68.16 (37) Toluene, µg/L

68.17	253	1,352	2,703	—	—	—	—
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68.18 (38) Toxaphene (c), ng/L

68.19	1.3	730*	1,500*	—	—	—	—
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68.20 (39) 1,1,1-Trichloroethane, µg/L

68.21	329	2,957	5,913	—	—	—	—
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68.22 (40) 1,1,2-Trichloroethylene (c), µg/L

68.23	120	6,988	13,976	—	—	—	—
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68.24 (41) 2,4,6-Trichlorophenol, µg/L

69.1	2.0	102	203	—	—	—	—
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69.2 (42) Vinyl chloride (c), µg/L

69.3 9.2 —* —* — — — —

69.4 (43) Xylenes, total, µg/L

69.5 166 1,407 2,814 — — — —

69.6 D. *Escherichia (E.) coli* bacteria shall not exceed 126 organisms per 100
69.7 milliliters as a geometric mean of not less than five samples representative of conditions
69.8 within any calendar month, nor shall more than ten percent of all samples taken during
69.9 any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard
69.10 applies only between April 1 and October 31.

69.11 E. For pH, maintain background. See part 7050.0222, subpart 6.

69.12 F. For radioactive materials, see parts 7050.0222, subpart 4; and 7050.0224,
69.13 subparts 2 and 3.

69.14 G. Temperature must not exceed:

69.15 (1) Class 2B standard: five degrees Fahrenheit above natural in streams and
69.16 three degrees Fahrenheit above natural in lakes, based on monthly average of maximum
69.17 daily temperature, except in no case shall it exceed the daily average temperature of 86
69.18 degrees Fahrenheit;

69.19 (2) Class 2C standard: five degrees Fahrenheit above natural in streams and
69.20 three degrees Fahrenheit above natural in lakes, based on monthly average of maximum
69.21 daily temperature, except in no case shall it exceed the daily average temperature of 90
69.22 degrees Fahrenheit; and

69.23 (3) Class 2D standard: maintain background as defined in part 7050.0222,
69.24 subpart 6.

70.1 Subp. 6a. **Limited resource value waters and associated use classes.**

70.2 A. WATER QUALITY STANDARDS APPLICABLE TO USE CLASSES 3C, 4A, 4B,
70.3 5, AND 7 SURFACE WATERS

70.4	7LIMITED				
70.5	RESOURCE				
70.6	VALUE	3C	4A	4B	5
70.7					
70.8	(1) Bicarbonates (HCO_3), meq/L				
70.9	—	—	5	—	—
70.10	(2) Boron, $\mu\text{g/L}$				
70.11	—	—	500	—	—
70.12	(3) Chloride, mg/L				
70.13	—	250	—	—	—
70.14	(4) <i>Escherichia (E.) coli</i> bacteria, organisms/100 mL				
70.15	See item C	—	—	—	—
70.16	(5) Hardness, Ca+Mg as CaCO_3 , mg/L				
70.17	—	500	—	—	—
70.18	(6) Hydrogen sulfide, mg/L				
70.19	—	—	—	—	0.02
70.20	(7) Oxygen, dissolved, mg/L				
70.21	See	—	—	—	—
70.22	item C				
70.23	(8) pH minimum, su				
70.24	6.0	6.0	6.0	6.0	6.0
70.25	(9) pH maximum, su				
71.1	9.0	9.0	8.5	9.0	9.0
71.2	(10) Radioactive materials				

71.3	—	—	See	See	—
71.4			item D	item D	
71.5	(11) Salinity, total, mg/L				
71.6	—	—	—	1,000	—
71.7	(12) Sodium, meq/L				
71.8	—	—	60% of	—	—
71.9			total		
71.10			cations		
71.11	(13) Specific conductance at 25°C, µmhos/cm				
71.12	—	—	1,000	—	—
71.13	(14) Sulfates, wild rice present, mg/L				
71.14	—	—	10	—	—
71.15	(15) Total dissolved salts, mg/L				
71.16	—	—	700	—	—
71.17	(16) Toxic pollutants				
71.18	See item E	—	—	—	—

71.19 B. *Escherichia (E.) coli* bacteria shall not exceed 630 organisms per 100
71.20 milliliters as a geometric mean of not less than five samples representative of conditions
71.21 within any calendar month, nor shall more than ten percent of all samples taken during
71.22 any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard
71.23 applies only between May 1 and October 31.

71.24 C. The level of dissolved oxygen shall be maintained at concentrations that will
71.25 avoid odors or putrid conditions in the receiving water or at concentrations at not less
72.1 than one milligram per liter (daily average) provided that measurable concentrations
72.2 are present at all times.

72.3 D. For radioactive materials, see part 7050.0224, subparts 2 and 3.

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

72.6 Subp. 7. **Site-specific modifications of standards.**

72.7 A. The standards in this part and in parts 7050.0221 to 7050.0227 are subject to
72.8 review and modification as applied to a specific surface water body, reach, or segment. If
72.9 site-specific information is available that shows that a site-specific modification is more
72.10 appropriate than the statewide or ecoregion standard for a particular water body, reach,
72.11 or segment, the site-specific information shall be applied.

72.12 B. The information supporting a site-specific modification can be provided by
72.13 the commissioner or by any person outside the agency. The commissioner shall evaluate
72.14 all relevant data in support of a modified standard and determine whether a change in the
72.15 standard for a specific water body or reach is justified.

72.16 C. Any effluent limit determined to be necessary based on a modified standard
72.17 shall only be required after the discharger has been given notice of the specific proposed
72.18 effluent limits and an opportunity to request a hearing as provided in part 7000.1800.

72.19 **7050.0221 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 1 WATERS**
72.20 **OF THE STATE; DOMESTIC CONSUMPTION.**

72.21 Subpart 1. **General.**

72.22 A. The numeric and narrative water quality standards in this part prescribe
72.23 the qualities or properties of the waters of the state that are necessary for the domestic
72.24 consumption designated public uses and benefits. If the standards in this part are exceeded
72.25 in waters of the state that have the Class 1 designation, it is considered indicative of a
73.1 polluted condition which is actually or potentially deleterious, harmful, detrimental, or
73.2 injurious with respect to the designated uses.

73.3 B. The Class 1 standards in this part are the United States Environmental
73.4 Protection Agency primary (maximum contaminant levels) and secondary drinking water
73.5 standards, as contained in Code of Federal Regulations, title 40, parts 141 and 143, as
73.6 amended through July 1, ~~2004~~ 2006. These Environmental Protection Agency drinking
73.7 water standards are adopted and incorporated by reference with the exceptions in this item.
73.8 The following standards are not applicable to Class 1 ground waters: the primary drinking
73.9 water standards for acrylamide, epichlorohydrin, copper, and lead (treatment technique
73.10 standards) and standards in the disinfectants and disinfection by-products categories. The
73.11 following standards are not applicable to Class 1 surface waters: the primary drinking
73.12 water standards for acrylamide, epichlorohydrin, copper, lead, and turbidity (treatment
73.13 technique standards) and the standards in the disinfectants and microbiological organisms
73.14 categories.

73.15 Subp. 2. **Class 1A waters; domestic consumption.** The quality of Class 1A waters
73.16 of the state shall be such that without treatment of any kind the raw waters will meet in all
73.17 respects both the primary (maximum contaminant levels) and secondary drinking water
73.18 standards issued by the United States Environmental Protection Agency as referenced in
73.19 subpart 1. The Environmental Protection Agency drinking water standards are adopted
73.20 and incorporated by reference, except as noted in subpart 1.

73.21 These standards will ordinarily be restricted to underground waters with a high
73.22 degree of natural protection.

73.23 Subp. 3. **Class 1B waters.** The quality of Class 1B waters of the state shall be
73.24 such that with approved disinfection, such as simple chlorination or its equivalent, the
73.25 treated water will meet both the primary (maximum contaminant levels) and secondary
73.26 drinking water standards issued by the United States Environmental Protection Agency as
74.1 referenced in subpart 1. The Environmental Protection Agency drinking water standards
74.2 are adopted and incorporated by reference, except as noted in subpart 1.

74.3 These standards will ordinarily be restricted to surface and underground waters with a
74.4 moderately high degree of natural protection and apply to these waters in the untreated
74.5 state.

74.6 Subp. 4. **Class 1C waters.** The quality of Class 1C waters of the state shall be
74.7 such that with treatment consisting of coagulation, sedimentation, filtration, storage, and
74.8 chlorination, or other equivalent treatment processes, the treated water will meet both the
74.9 primary (maximum contaminant levels) and secondary drinking water standards issued
74.10 by the United States Environmental Protection Agency as referenced in subpart 1. The
74.11 Environmental Protection Agency drinking water standards are adopted and incorporated
74.12 by reference, except as noted in subpart 1.

74.13 These standards will ordinarily be restricted to surface waters, and groundwaters in
74.14 aquifers not considered to afford adequate protection against contamination from surface or
74.15 other sources of pollution. Such aquifers normally would include fractured and channeled
74.16 limestone, unprotected impervious hard rock where water is obtained from mechanical
74.17 fractures or joints with surface connections, and coarse gravels subjected to surface water
74.18 infiltration. These standards shall also apply to these waters in the untreated state.

74.19 Subp. 5. [See repealer.]

74.20 [For text of subp 6, see M.R.]

74.21 **7050.0222 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 2 WATERS**
74.22 **OF THE STATE; AQUATIC LIFE AND RECREATION.**

74.23 Subpart 1. **General.**

74.24 A. The numeric and narrative water quality standards in this part prescribe the
74.25 qualities or properties of the waters of the state that are necessary for the aquatic life and
74.26 recreation designated public uses and benefits. If the standards in this part are exceeded
75.1 in waters of the state that have the Class 2 designation, it is considered indicative of a

75.2 polluted condition which is actually or potentially deleterious, harmful, detrimental, or
75.3 injurious with respect to the designated uses.

75.4 B. Standards for metals are expressed as total metal in this part, but must be
75.5 converted to dissolved metal standards for application to surface waters. Conversion
75.6 factors for converting total to dissolved metal standards are listed in subpart 9. The
75.7 conversion factor for metals not listed in subpart 9 is one. The dissolved metal standard
75.8 equals the total metal standard times the conversion factor. Water quality-based effluent
75.9 limits for metals are expressed as total metal.

75.10 C. The tables of standards in this part include the following abbreviations
75.11 and acronyms:

75.12 * an asterisk following the FAV and MS values or double dashes (–) means
75.13 subpart 7, item E, applies

75.14 (c) means the chemical is assumed to be a human carcinogen

75.15 °C means degrees Celsius

75.16 CS means chronic standard, defined in part 7050.0218, subpart 3

75.17 – double dashes means there is no standard

75.18 °F means degrees Fahrenheit

75.19 FAV means final acute value, defined in part 7050.0218, subpart 3

75.20 HH in the "basis" column means the standard is human health-based

75.21 MS means maximum standard, defined in part 7050.0218, subpart 3

75.22 NA means not applicable

75.23 su means standard unit. It is the reporting unit for pH

75.24 TH means total hardness in milligrams per liter, which is the sum of the calcium
75.25 and magnesium concentrations expressed as CaCO_3

75.26 Tox in the "basis" column means the standard is toxicity-based

75.27 D. Important synonyms or acronyms for some chemicals are listed in
75.28 parentheses below the primary name.

76.1 Subp. 2. **Class 2A waters; aquatic life and recreation.** The quality of Class 2A
 76.2 surface waters shall be such as to permit the propagation and maintenance of a healthy
 76.3 community of cold water sport or commercial fish and associated aquatic life, and their
 76.4 habitats. These waters shall be suitable for aquatic recreation of all kinds, including
 76.5 bathing, for which the waters may be usable. This class of surface waters is also protected
 76.6 as a source of drinking water. Abbreviations, acronyms, and symbols are explained in
 76.7 subpart 1.

76.8	Substance,						Basis
76.9	Characteristic,						for
76.10	or Pollutant			Basis			MS,
76.11	(Class 2A)	Units	CS	for CS	MS	FAV	FAV
76.12						
76.13	Acenaphthene	µg/L	20	HH	56	112	Tox
76.14	Acetochlor	µg/L	1.7 <u>3.6</u>	Tox	86	173	Tox
76.15	Acrylonitrile (c)	µg/L	0.38	HH	1,140*	2,281*	Tox
76.16	Alachlor (c)	µg/L	3.8	HH	800*	1,600*	Tox
76.17	Aluminum, total	µg/L	87	Tox	748	1,496	Tox
76.18	Ammonia un-ionized as N	µg/L	16	Tox	—	—	NA

76.19 The percent un-ionized ammonia can be calculated for any temperature and pH
 76.20 by using the following equation taken from Emerson, K., R.C. Russo, R.E. Lund,
 76.21 and R.V. Thurston, Aqueous ammonia equilibrium calculations; effect of pH and
 76.22 temperature. Journal of the Fisheries Research Board of Canada 32: 2379-2383
 76.23 (1975):

$$\begin{aligned}
 &1 \\
 &f = \frac{1}{10^{(\text{pk}_a - \text{pH})} + 1} \times 100
 \end{aligned}$$

77.1 where: f = the percent of total ammonia in the un-ionized state
 77.2 $pK_a = 0.09 + (2730/T)$ (dissociation constant for ammonia
 77.3 T = temperature in degrees Kelvin (273.16° Kelvin = 0° Celsius)

77.4	Anthracene	µg/L	0.035	Tox	0.32	0.63	Tox
77.5	Antimony, total	µg/L	5.5	HH	90	180	Tox
77.6	Arsenic, total	µg/L	2.0	HH	360	720	Tox
77.7	Atrazine (c)	µg/L	3.4	HH	323	645	Tox
77.8	Benzene (c)	µg/L	5.4 <u>5.1</u>	HH	4,487*	8,974*	Tox
77.9	Bromoform	µg/L	33	HH	2,900	5,800	Tox
77.10	Cadmium, total	µg/L	equation	Tox	equation	equation	Tox

77.11 The CS, MS, and FAV vary with total hardness and are calculated using the following
 77.12 equations:

77.13 The CS in µg/L shall not exceed: $\exp.(0.7852[\ln(\text{total hardness mg/L})]-3.490)$

77.14 The MS in µg/L shall not exceed: $\exp.(1.128[\ln(\text{total hardness mg/L})]-3.828)$

77.15 The FAV in µg/L shall not exceed: $\exp.(1.128[\ln(\text{total hardness mg/L})]-3.1349)$

77.16 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

77.17 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
 77.18 ~~standard and for hardness values greater than 400 mg/L, 400 mg/L shall be used to~~
 77.19 ~~calculate the standard.~~

77.20 Example of total cadmium standards for five hardness values:

77.21	TH in mg/L	50	100	200	300	400
77.22	<hr/>					
77.23	Cadmium, total					
77.24	CS µg/L	0.66	1.1	2.0	2.7	3.4
77.25	MS µg/L	1.8	3.9	8.6	14	19
77.26	MS µg/L	1.8	3.9	8.6	14	19
77.27	FAV µg/L	3.6	7.8	17	27	37

78.1	Carbon tetrachloride (c)	µg/L	1.9	HH	1750*	3500*	Tox
78.2	Chlordane (c)	ng/L	0.073	HH	1200*	2400*	Tox
78.3	Chloride	mg/L	230	Tox	860	1720	Tox
78.4	Chlorine, total residual	µg/L	11	Tox	19	38	Tox
78.5	Chlorine standard applies to conditions of continuous exposure, where continuous						
78.6	exposure refers to chlorinated effluents that are discharged for more than a total of						
78.7	two hours in any 24-hour period.						
78.8	Chlorobenzene	µg/L	20	HH	423	846	Tox
78.9	(Monochlorobenzene)						
78.10	Chloroform (c)	µg/L	53	HH	1,392	2,784	Tox
78.11	Chlorpyrifos	µg/L	0.041	Tox	0.083	0.17	Tox
78.12	Chromium +3, total	µg/L	equation	Tox	equation	equation	Tox

78.13 The CS, MS, and FAV vary with total hardness and are calculated using the following
78.14 equations:

78.15 The CS in µg/L shall not exceed: $\exp.(0.819[\ln(\text{total hardness mg/L})]+1.561)$

78.16 The MS in µg/L shall not exceed: $\exp.(0.819[\ln(\text{total hardness mg/L})]+3.688)$

78.17 The FAV in µg/L shall not exceed: $\exp.(0.819[\ln(\text{total hardness mg/L})]+4.380)$

78.18 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

78.19 For hardness values less than 10 mg/L, 10 mg/L shall be used to calculate the
78.20 standard and for hardness values greater than 400 mg/L, 400 mg/L shall be used to
78.21 calculate the standard.

78.22 Example of total chromium +3 standards for five total hardness values:

78.23	TH in mg/L	50	100	200	300	400
78.24	<hr/>					
78.25	Chromium +3,					
78.26	total					
78.27	CS µg/L	117	207	365	509	644
78.28	MS µg/L	984	1,737	3,064	4,270	5,405
78.29	FAV µg/L	1,966	3,469	6,120	8,530	10,797

79.1	Chromium +6, total	µg/L	11	Tox	16	32	Tox
79.2	Cobalt, total	µg/L	2.8	HH	436	872	Tox
79.3	Color value	Pt/Co	30	NA	—	—	NA
79.4	Copper, total	µg/L	equation	Tox	equation	equation	Tox

79.5 The CS, MS, and FAV vary with total hardness and are calculated using the following
79.6 equations:

79.7 The CS in µg/L shall not exceed: $\exp.(0.620[\ln(\text{total hardness mg/L})]-0.570)$

79.8 The MS in µg/L shall not exceed: $\exp.(0.9422[\ln(\text{total hardness mg/L})]-1.464)$

79.9 The FAV in µg/L shall not exceed: $\exp.(0.9422[\ln(\text{total hardness mg/L})]-0.7703)$

79.10 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

79.11 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
79.12 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
79.13 calculate the standard.

79.14 Example of total copper standards for five total hardness values:

79.15	TH in mg/L	50	100	200	300	400
79.16					
79.17	Copper, total					
79.18	CS µg/L	6.4	9.8	15	19	23
79.19	MS µg/L	9.2	18	34	50	65
79.20	FAV µg/L	18	35	68	100	131

79.21	Cyanide, free	µg/L	5.2	Tox	22	45	Tox
79.22	DDT (c)	ng/L	0.11	HH	550*	1100*	Tox
79.23	1,2-Dichloroethane (c)	µg/L	3.5	HH	45,050*	90,100*	Tox
79.24	Dieldrin (c)	ng/L	0.0065	HH	1,300*	2,500*	Tox
79.25	Di-2-ethylhexyl phthalate						
79.26	(c)	µg/L	1.9	HH	—*	—*	NA
79.27	Di-n-octylphthalate	µg/L	30	Tox	825	1,650	Tox

80.1	Endosulfan	µg/L	0.0076	HH	0.084	0.17	Tox
80.2	Endrin	µg/L	0.0039	HH	0.090	0.18	Tox
80.3		See	See		See	See	
80.4	<i>Escherichia (E.) coli</i>	below	below	HH	below	below	NA
80.5	Not to exceed 126 organisms per 100 milliliters as a geometric mean of not less						
80.6	than five samples representative of conditions within any calendar month, nor shall						
80.7	more than ten percent of all samples taken during any calendar month individually						
80.8	exceed 1,260 organisms per 100 milliliters. The standard applies only between April						
80.9	1 and October 31.						
80.10	Ethylbenzene	µg/L	68	Tox	1,859	3,717	Tox
80.11	Eutrophication standards for Class 2A lakes and reservoirs. See definitions in part						
80.12	7050.0150, subpart 4, and ecoregion map in part 7050.0467.						
80.13	Designated lake trout lakes in all ecoregions (lake trout lakes support natural populations						
80.14	of lake trout, <i>Salvelinus namaycush</i>):						
80.15	Phosphorus, total	µg/L	12	NA	—	—	NA
80.16	Chlorophyll-a	µg/L	3	NA	—	—	NA
80.17	Secchi disk transparency	meters	No less	NA	—	—	NA
80.18			than 4.8				
80.19	Designated trout lakes in all ecoregions, except lake trout lakes:						
80.20	Phosphorus, total	µg/L	20	NA	—	—	NA
80.21	Chlorophyll-a	µg/L	6	NA	—	—	NA
80.22	Secchi disk transparency	meters	No less	NA	—	—	NA
80.23			than 2.5				
80.24	Additional narrative eutrophication standards for Class 2A lakes and reservoirs are						
80.25	found under subpart 2a.						
80.26	Fluoranthene	µg/L	1.9	Tox	3.5	6.9	Tox
80.27	Heptachlor (c)	ng/L	0.10	HH	260*	520*	Tox
80.28	Heptachlor epoxide (c)	ng/L	0.12	HH	270*	530*	Tox
80.29	Hexachlorobenzene (c)	ng/L	0.061	HH	—*	—*	Tox
81.1	Lead, total	µg/L	equation	Tox	equation	equation	Tox

81.2 The CS, MS, and FAV vary with total hardness and are calculated using the following
81.3 equations:

81.4 The CS in µg/L shall not exceed: $\exp.(1.273[\ln(\text{total hardness mg/L})]-4.705)$

81.5 The MS in µg/L shall not exceed: $\exp.(1.273[\ln(\text{total hardness mg/L})]-1.460)$

81.6 The FAV in µg/L shall not exceed: $\exp.(1.273[\ln(\text{total hardness mg/L})]-0.7643)$

81.7 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

81.8 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
81.9 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
81.10 calculate the standard.

81.11 Example of total lead standards for five total hardness values:

81.12	TH in mg/L	50	100	200	300	400	
81.13						
81.14	Lead, total						
81.15	CS µg/L	1.3	3.2	7.7	13	19	
81.16	MS µg/L	34	82	197	331	477	
81.17	FAV µg/L	68	164	396	663	956	
81.18	Lindane (c)	µg/L	0.0087	HH	1.0*	2.0*	Tox
81.19	(Hexachlorocyclo-						
81.20	hexane, gamma-)						
81.21	Mercury, total in water	ng/L	6.9	HH	2,400*	4,900*	Tox
81.22	Mercury, total	mg/kg	0.2	HH	NA	NA	NA
81.23	in edible fish tissue	ppm					
81.24	Methylene chloride (c)	µg/L	45	HH	13,875*	27,749*	Tox
81.25	(Dichloromethane)						
81.26	Metolachlor	µg/L	23	Tox	271	543	Tox
81.27	Naphthalene	µg/L	65	HH	409	818	Tox
81.28	Nickel, total	µg/L	equation	Tox/HH	equation	equation	Tox

82.1 The CS, MS, and FAV vary with total hardness and are calculated using the following
82.2 equations:

82.3 The CS shall not exceed the human health-based standard of 297 µg/L. For waters
 82.4 with total hardness values less than 212 mg/L, the CS in µg/L is toxicity-based and
 82.5 shall not exceed: $\exp.(0.846[\ln(\text{total hardness mg/L})]+1.1645)$

82.6 The MS in µg/L shall not exceed: $\exp.(0.846[\ln(\text{total hardness mg/L})]+3.3612)$

82.7 The FAV in µg/L shall not exceed: $\exp.(0.846[\ln(\text{total hardness mg/L})]+4.0543)$

82.8 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

82.9 For hardness values less than 10 mg/L, 10 mg/L shall be used to calculate the
 82.10 standard and for hardness values greater than 400 mg/L, 400 mg/L shall be used to
 82.11 calculate the standard.

82.12 Example of total nickel standards for five total hardness values:

82.13	TH in mg/L	50	100	200	300	400
82.14	<hr/>					
82.15	Nickel, total					
82.16	CS µg/L	88	158	283	297	297
82.17	MS µg/L	789	1,418	2,549	3,592	4,582
82.18	FAV µg/L	1,578	2,836	5,098	7,185	9,164

82.19	Oil	µg/L	500	NA	5,000	10,000	NA
82.20	Oxygen, dissolved	mg/L	See	NA	—	—	NA
82.21			below				

82.22 7.0 mg/L as a daily minimum. This dissolved oxygen standard requires compliance
 82.23 with the standard 50 percent of the days at which the flow of the receiving water is
 82.24 equal to the $7Q_{10}$.

82.25	Parathion	µg/L	0.013	Tox	0.07	0.13	Tox
82.26	Pentachlorophenol	µg/L	0.93	HH	equation	equation	Tox

82.27 The MS and FAV vary with pH and are calculated using the following equations:

82.28 The MS in µg/L shall not exceed: $\exp.(1.005[\text{pH}]-4.830)$

82.29 The FAV in µg/L shall not exceed: $\exp.(1.005[\text{pH}]-4.1373)$

82.30 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

83.1 For pH values less than 6.0, 6.0 shall be used to calculate the standard and for pH
 83.2 values greater than 9.0, 9.0 shall be used to calculate the standard.

83.3 Example of pentachlorophenol standards for five pH values:

83.4	pH su	6.5	7.0	7.5	8.0	8.5	
83.5							
83.6	Pentachlorophenol						
83.7	CS µg/L	0.93	0.93	0.93	0.93	0.93	
83.8	MS µg/L	5.5	9.1	15	25	41	
83.9	FAV µg/L	11	18	30	50	82	
83.10	pH, minimum	su	6.5	NA	—	—	NA
83.11	pH, maximum	su	8.5	NA	—	—	NA
83.12	Phenanthrene	µg/L	3.6	Tox	32	64	Tox
83.13	Phenol	µg/L	123	Tox	2,214	4,428	Tox
83.14	Polychlorinated	ng/L	0.014	HH	1,000*	2,000*	Tox
83.15	biphenyls, total (c)						
83.16	Radioactive materials	NA	See	NA	See	See	NA
83.17			below		below	below	
83.18	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled						
83.19	environment as permitted by the appropriate authority having control over their use.						
83.20	Selenium, total	µg/L	5.0	Tox	20	40	Tox
83.21	Silver, total	µg/L	0.12	Tox	equation	equation	Tox
83.22	The MS and FAV vary with total hardness and are calculated using the following						
83.23	equations:						
83.24	The MS in µg/L shall not exceed: $\exp.(1.720[\ln(\text{total hardness mg/L})]-7.2156)$						
83.25	The FAV in µg/L shall not exceed: $\exp.(1.720[\ln(\text{total hardness mg/L})]-6.520)$						
83.26	Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.						
83.27	For hardness values less than 10 mg/L, 10 mg/L shall be used to calculate the						
83.28	standard and for hardness values greater than 400 mg/L, 400 mg/L shall be used to						
83.29	calculate the standard.						
83.30	Example of silver standards for five total hardness values:						
84.1	TH in mg/L	50	100	200	300	400	
84.2							

84.3	Silver, total						
84.4	CS µg/L	0.12	0.12	0.12	0.12	0.12	
84.5	MS µg/L	1.0	2.0	6.7	13	22	
84.6	FAV µg/L	1.2	4.1	13	27	44	
84.7	Temperature	°C or	No	NA	—	—	NA
84.8		°F	material				
84.9			increase				
84.10	1,1,2,2-Tetrachloroethane						
84.11	(c)	µg/L	1.1	HH	1,127*	2,253*	Tox
84.12	Tetrachloroethylene (c)	µg/L	3.8	HH	428*	857*	Tox
84.13	Thallium, total	µg/L	0.28	HH	64	128	Tox
84.14	Toluene	µg/L	253	Tox	1,352	2,703	Tox
84.15	Toxaphene (c)	ng/L	0.31	HH	730*	1,500*	Tox
84.16	1,1,1-Trichloroethane	µg/L	329	Tox	2,957	5,913	Tox
84.17	1,1,2-Trichloroethylene (c)	µg/L	25	HH	6,988*	13,976*	Tox
84.18	2,4,6-Trichlorophenol	µg/L	2.0	HH	102	203	Tox
84.19	Turbidity value	NTU	10	NA	—	—	NA
84.20	Vinyl chloride (c)	µg/L	0.17	HH	—*	—*	NA
84.21	Xylene, total m,p,o	µg/L	166	Tox	1,407	2,814	Tox
84.22	Zinc, total	µg/L	equation	Tox	equation	equation	Tox

84.23 The CS, MS, and FAV vary with total hardness and are calculated using the following
84.24 equations:

84.25 The CS in µg/L shall not exceed: $\exp.(0.8473[\ln(\text{total hardness mg/L})]+0.7615)$

84.26 The MS in µg/L shall not exceed: $\exp.(0.8473[\ln(\text{total hardness mg/L})]+0.8604)$

84.27 The FAV in µg/L shall not exceed: $\exp.(0.8473[\ln(\text{total hardness mg/L})]+1.5536)$

84.28 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

85.1 For hardness values less than 10 mg/L, 10 mg/L shall be used to calculate the
85.2 standard and for hardness values greater than 400 mg/L, 400 mg/L shall be used to
85.3 calculate the standard.

85.4 Example of zinc standards for five total hardness values:

85.5	TH in mg/L	50	100	200	300	400
85.6						
85.7	Zinc, total					
85.8	CS µg/L	59	106	191	269	343
85.9	MS µg/L	65	117	211	297	379
85.10	FAV µg/L	130	234	421	594	758

85.11 Subp. 2a. **Narrative eutrophication standards for Class 2A lakes and reservoirs.**

85.12 A. Eutrophication standards are compared to data averaged over the summer
 85.13 season (June through September). Exceedance of the total phosphorus and either the
 85.14 chlorophyll-a or Secchi disk standard is required to indicate a polluted condition.

85.15 B. It is the policy of the agency to protect all lakes and reservoirs from the
 85.16 undesirable effects of cultural eutrophication. Lakes and reservoirs with a baseline quality
 85.17 better than the numeric eutrophication standards in subpart 2 must be maintained in that
 85.18 condition through the strict application of all relevant federal, state, and local requirements
 85.19 governing nondegradation, the discharge of nutrients from point and nonpoint sources,
 85.20 and the protection of lake or reservoir resources, including, but not limited to:

85.21 (1) the nondegradation requirements in parts 7050.0180 and 7050.0185;

85.22 (2) the phosphorus effluent limits for point sources, where applicable in
 85.23 chapter 7053;

85.24 (3) the requirements for feedlots in chapter 7020;

85.25 (4) the requirements for individual sewage treatment systems in chapter
 85.26 7080;

86.1 (5) the requirements for control of stormwater in chapter 7090;

86.2 (6) county shoreland ordinances; and

86.3 (7) implementation of mandatory and voluntary best management practices
86.4 to minimize point and nonpoint sources of nutrients.

86.5 C. Lakes and reservoirs with a baseline quality that is poorer than the numeric
86.6 eutrophication standards in subpart 2 must be considered to be in compliance with the
86.7 standards if the baseline quality is the result of natural causes. The commissioner shall
86.8 determine baseline quality and compliance with these standards using summer-average
86.9 data and the procedures in part 7050.0150, subpart 5. "Natural causes" is defined in part
86.10 7050.0150, subpart 4, item N.

86.11 D. When applied to reservoirs, the eutrophication standards in this subpart and
86.12 subpart 2 may be modified on a site-specific basis to account for characteristics unique to
86.13 reservoirs that can affect trophic status, such as water temperature, variations in hydraulic
86.14 residence time, watershed size, and the fact that reservoirs may receive drainage from
86.15 more than one ecoregion. Information supporting a site-specific standard can be provided
86.16 by the commissioner or by any person outside the agency. The commissioner shall
86.17 evaluate all data in support of a modified standard and determine whether a change in the
86.18 standard for a specific reservoir is justified. Any total phosphorus effluent limit determined
86.19 to be necessary based on a modified standard shall only be required after the discharger
86.20 has been given notice of the specific proposed effluent limits and an opportunity to request
86.21 a hearing as provided in part 7000.1800.

86.22 Subp. 3. **Class 2Bd waters.** The quality of Class 2Bd surface waters shall be such
86.23 as to permit the propagation and maintenance of a healthy community of cool or warm
86.24 water sport or commercial fish and associated aquatic life and their habitats. These waters
86.25 shall be suitable for aquatic recreation of all kinds, including bathing, for which the waters
86.26 may be usable. This class of surface waters is also protected as a source of drinking
87.1 water. The applicable standards are given below. Abbreviations, acronyms, and symbols
87.2 are explained in subpart 1.

87.3	Substance,						Basis
87.4	Characteristic,			Basis			for
87.5	or Pollutant			for			MS,
87.6	(Class 2Bd)	Units	CS	CS	MS	FAV	FAV
87.7						
87.8	Acenaphthene	µg/L	20	HH	56	112	Tox
87.9	Acetochlor	µg/L	4.7 <u>3.6</u>	Tox	86	173	Tox
87.10	Acrylonitrile (c)	µg/L	0.38	HH	1,140*	2,281*	Tox
87.11	Alachlor (c)	µg/L	4.2	HH	800*	1,600*	Tox
87.12	Aluminum, total	µg/L	125	Tox	1,072	2,145	Tox
87.13	Ammonia un-ionized as N	µg/L	40	Tox	—	—	NA
87.14	The percent un-ionized ammonia can be calculated for any temperature and pH						
87.15	by using the following equation taken from Emerson, K., R.C. Russo, R.E. Lund,						
87.16	and R.V. Thurston, Aqueous ammonia equilibrium calculations; effect of pH and						
87.17	temperature. Journal of the Fisheries Research Board of Canada 32: 2379-2383						
87.18	(1975):						
87.19	$f = 1/(10^{(pK_a - pH)} + 1) \times 100$						
87.20	where: f = the percent of total ammonia in the un-ionized state						
87.21	$pK_a = 0.09 + (2730/T)$ (dissociation constant for ammonia)						
87.22	T = temperature in degrees Kelvin (273.16° Kelvin = 0° Celsius)						
87.23	Anthracene	µg/L	0.035	Tox	0.32	0.63	Tox
87.24	Antimony, total	µg/L	5.5	HH	90	180	Tox
87.25	Arsenic, total	µg/L	2.0	HH	360	720	Tox
87.26	Atrazine (c)	µg/L	3.4	HH	323	645	Tox
87.27	Benzene (c)	µg/L	6.0	HH	4,487*	8,974*	Tox
87.28	Bromoform	µg/L	41	HH	2,900	5,800	Tox
87.29	Cadmium, total	µg/L	equation	Tox	equation	equation	Tox
88.1	The CS, MS, and FAV vary with total hardness and are calculated using the following						
88.2	equations:						
88.3	The CS in µg/L shall not exceed: $\exp.(0.7852[\ln(\text{total hardness mg/L})]-3.490)$						

88.4 The MS in $\mu\text{g/L}$ shall not exceed: $\exp.(1.128[\ln(\text{total hardness mg/L})]-1.685)$

88.5 The FAV in $\mu\text{g/L}$ shall not exceed: $\exp.(1.128[\ln(\text{total hardness mg/L})]-0.9919)$

88.6 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

88.7 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
 88.8 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
 88.9 calculate the standard.

88.10 Example of total cadmium standards for five hardness values:

88.11	TH in mg/L	50	100	200	300	400
88.12	<hr/>					
88.13	Cadmium, total					
88.14	CS $\mu\text{g/L}$	0.66	1.1	2.0	2.7	3.4
88.15	MS $\mu\text{g/L}$	15	33	73	116	160
88.16	FAV $\mu\text{g/L}$	31	67	146	231	319

88.17	Carbon tetrachloride (c)	$\mu\text{g/L}$	1.9	HH	1,750*	3,500*	Tox
88.18	Chlordane (c)	ng/L	0.29	HH	1,200*	2,400*	Tox
88.19	Chloride	mg/L	230	Tox	860	1,720	Tox
88.20	Chlorine, total residual	$\mu\text{g/L}$	11	Tox	19	38	Tox

88.21 Chlorine standard applies to conditions of continuous exposure, where continuous
 88.22 exposure refers to chlorinated effluents that are discharged for more than a total of
 88.23 two hours in any 24-hour period.

88.24	Chlorobenzene	$\mu\text{g/L}$	20	HH	423	846	Tox
88.25	(Monochlorobenzene)						
88.26	Chloroform (c)	$\mu\text{g/L}$	53	HH	1,392	2,784	Tox
88.27	Chlorpyrifos	$\mu\text{g/L}$	0.041	Tox	0.083	0.17	Tox
88.28	Chromium +3 total,	$\mu\text{g/L}$	equation	Tox	equation	equation	Tox

88.29 The CS, MS, and FAV vary with total hardness and are calculated using the following
 88.30 equations:

89.1 The CS in $\mu\text{g/L}$ shall not exceed: $\exp.(0.819[\ln(\text{total hardness mg/L})]+1.561)$

89.2 The MS in $\mu\text{g/L}$ shall not exceed: $\exp.(0.819[\ln(\text{total hardness mg/L})]+3.688)$

89.3 The FAV in $\mu\text{g/L}$ shall not exceed: $\exp.(0.819[\ln(\text{total hardness mg/L})]+4.380)$

89.4 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

89.5 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
 89.6 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
 89.7 calculate the standard.

89.8 Example of total chromium +3 standards for five total hardness values:

89.9	TH in mg/L	50	100	200	300	400	
89.10	<hr/>						
89.11	Chromium +3, total						
89.12	CS µg/L	117	207	365	509	644	
89.13	MS µg/L	984	1,737	3,064	4,270	5,405	
89.14	FAV µg/L	1,966	3,469	6,120	8,530	10,797	
89.15	Chromium +6, total	µg/L	11	Tox	16	32	Tox
89.16	Cobalt, total	µg/L	2.8	HH	436	872	Tox
89.17	Copper, total	µg/L	equation	Tox	equation	equation	Tox

89.18 The CS, MS, and FAV vary with total hardness and are calculated using the following
 89.19 equations:

89.20 The CS in µg/L shall not exceed: $\exp.(0.620[\ln(\text{total hardness mg/L})]-0.570)$

89.21 The MS in µg/L shall not exceed: $\exp.(0.9422[\ln(\text{total hardness mg/L})]-1.464)$

89.22 The FAV in µg/L shall not exceed: $\exp.(0.9422[\ln(\text{total hardness mg/L})]-0.7703)$

89.23 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

89.24 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
 89.25 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
 89.26 calculate the standard.

89.27 Example of total copper standards for five total hardness values:

89.28	TH in mg/L	50	100	200	300	400	
89.29	<hr/>						
89.30	Copper, total						
90.1	CS µg/L	6.4	9.8	15	19	23	
90.2	MS µg/L	9.2	18	34	50	65	
90.3	FAV µg/L	18	35	68	100	131	

90.4	Cyanide, free	µg/L	5.2	Tox	22	45	Tox
90.5	DDT (c)	ng/L	1.7	HH	550*	1,100*	Tox
90.6	1,2-Dichloroethane (c)	µg/L	3.8	HH	45,050*	90,100*	Tox
90.7	Dieldrin (c)	ng/L	0.026	HH	1,300*	2,500*	Tox
90.8	Di-2-ethylhexyl phthalate						
90.9	(c)	µg/L	1.9	HH	—*	—*	NA
90.10	Di-n-octyl phthalate	µg/L	30	Tox	825	1,650	Tox
90.11	Endosulfan	µg/L	0.029	HH	0.28	0.56	Tox
90.12	Endrin	µg/L	0.016	HH	0.090	0.18	Tox
90.13	<i>Escherichia (E.) coli</i>	See	See	HH	See	See	NA
90.14		below	below		below	below	

90.15 Not to exceed 126 organisms per 100 milliliters as a geometric mean of not less
 90.16 than five samples representative of conditions within any calendar month, nor shall
 90.17 more than ten percent of all samples taken during any calendar month individually
 90.18 exceed 1,260 organisms per 100 milliliters. The standard applies only between April
 90.19 1 and October 31.

90.20	Ethylbenzene	µg/L	68	Tox	1,859	3,717	Tox
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90.21 Eutrophication standards for Class 2Bd lakes, shallow lakes, and reservoirs. See
 90.22 definitions in part 7050.0150, subpart 4, and ecoregion map in part 7050.0467.

90.23 Lakes, Shallow Lakes, and Reservoirs in Northern Lakes and Forest Ecoregion

90.24	Phosphorus, total	µg/L	30	NA	—	—	NA
90.25	Chlorophyll-a	µg/L	9	NA	—	—	NA
90.26	Secchi disk transparency	meters	Not less	NA	—	—	NA
90.27			than 2.0				

90.28 Lakes and Reservoirs in North Central Hardwood Forest Ecoregion

91.1	Phosphorus, total	µg/L	40	NA	—	—	NA
91.2	Chlorophyll-a	µg/L	14	NA	—	—	NA
91.3	Secchi disk transparency	meters	Not less	NA	—	—	NA
91.4			than 1.4				

91.5 Lakes and Reservoirs in Western Corn Belt Plains and Northern Glaciated Plains
91.6 Ecoregions

91.7	Phosphorus, total	µg/L	65	NA	—	—	NA
91.8	Chlorophyll-a	µg/L	22	NA	—	—	NA
91.9			Not less				
91.10	Secchi disk transparency	meters	than 0.9	NA	—	—	NA

91.11 Shallow Lakes in North Central Hardwood Forest Ecoregion

91.12	Phosphorus, total	µg/L	60	NA	—	—	NA
91.13	Chlorophyll-a	µg/L	20	NA	—	—	NA
91.14	Secchi disk transparency	meters	Not less	NA	—	—	NA
91.15			than 1.0				

91.16 Shallow Lakes in Western Corn Belt Plains and Northern Glaciated Plains Ecoregions

91.17	Phosphorus, total	µg/L	90	NA	—	—	NA
91.18	Chlorophyll-a	µg/L	30	NA	—	—	NA
91.19	Secchi disk transparency	meters	Not less	NA	—	—	NA
91.20			than 0.7				

91.21 Additional narrative eutrophication standards for Class 2Bd lakes, shallow lakes,
91.22 and reservoirs are found under subpart 3a.

91.23	Substance,						Basis
91.24	Characteristic,			Basis			MS, for
91.25	or Pollutant			for			MS,
91.26	(Class 2Bd)	Units	CS	CS	MS	FAV	FAV

91.27							
91.28	Fluoranthene	µg/L	1.9	Tox	3.5	6.9	Tox
91.29	Heptachlor (c)	ng/L	0.39	HH	260*	520*	Tox
92.1	Heptachlor epoxide (c)	ng/L	0.48	HH	270*	530*	Tox
92.2	Hexachlorobenzene (c)	ng/L	0.24	HH	—*	—*	Tox
92.3	Lead, total	µg/L	equation	Tox	equation	equation	Tox

92.4 The CS, MS, and FAV vary with total hardness and are calculated using the following
92.5 equations:

92.6 The CS in µg/L shall not exceed: $\exp.(1.273[\ln(\text{total hardness mg/L})]-4.705)$

92.7 The MS in µg/L shall not exceed: $\exp.(1.273[\ln(\text{total hardness mg/L})]-1.460)$

92.8 The FAV in µg/L shall not exceed: $\exp.(1.273[\ln(\text{total hardness mg/L})]-0.7643)$

92.9 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

92.10 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
 92.11 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
 92.12 calculate the standard.

92.13 Example of total lead standards for five total hardness values:

92.14	TH in mg/L	50	100	200	300	400	
92.15	<hr/>						
92.16	Lead, total						
92.17	CS µg/L	1.3	3.2	7.7	13	19	
92.18	MS µg/L	34	82	197	331	477	
92.19	FAV µg/L	68	164	396	663	956	
92.20	Lindane (c)	µg/L	0.032	HH	4.4*	8.8*	Tox
92.21	(Hexachlorocyclo-						
92.22	hexane, gamma-)						
92.23	Mercury, total in water	ng/L	6.9	HH	2,400*	4,900*	Tox
92.24	Mercury, total	mg/kg	0.2	HH	NA	NA	NA
92.25	in edible fish tissue	ppm					
92.26	Methylene chloride (c)						
92.27	(Dichloromethane)	µg/L	46	HH	13,875*	27,749*	Tox
92.28	Metolachlor	µg/L	23	Tox	271	543	Tox
93.1	Naphthalene	µg/L	81	Tox	409	818	Tox
93.2	Nickel, total	µg/L	equation	Tox/HH	equation	equation	Tox

93.3 The CS, MS, and FAV vary with total hardness and are calculated using the following
 93.4 equations:

93.5 The CS shall not exceed the human health-based standard of 297 µg/L. For waters
 93.6 with total hardness values less than 212 mg/L, the CS in µg/L is toxicity-based and
 93.7 shall not exceed: $\exp.(0.846[\ln(\text{total hardness mg/L})]+1.1645)$

93.8 The MS in $\mu\text{g/L}$ shall not exceed: $\exp.(0.846[\ln(\text{total hardness mg/L})]+3.3612)$

93.9 The FAV in $\mu\text{g/L}$ shall not exceed: $\exp.(0.846[\ln(\text{total hardness mg/L})]+4.0543)$

93.10 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

93.11 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
 93.12 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
 93.13 calculate the standard.

93.14 Example of total nickel standards for five total hardness values:

93.15	TH in mg/L	50	100	200	300	400
93.16	<hr/>					
93.17	Nickel, total					
93.18	CS $\mu\text{g/L}$	88	158	283	297	297
93.19	MS $\mu\text{g/L}$	789	1,418	2,549	3,592	4,582
93.20	FAV $\mu\text{g/L}$	1,578	2,836	5,098	7,185	9,164

93.21	Oil	$\mu\text{g/L}$	500	NA	5,000	10,000	NA
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93.22			See				
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93.23	Oxygen, dissolved	mg/L	below	NA	—	—	NA
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93.24 5.0 mg/L as a daily minimum. This dissolved oxygen standard may be modified on a
 93.25 site-specific basis according to part 7050.0220, subpart 7, except that no site-specific
 93.26 standard shall be less than 5 mg/L as a daily average and 4 mg/L as a daily minimum.
 93.27 Compliance with this standard is required 50 percent of the days at which the flow of
 93.28 the receiving water is equal to the $7Q_{10}$.

93.29	Parathion	$\mu\text{g/L}$	0.013	Tox	0.07	0.13	Tox
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93.30	Pentachlorophenol	$\mu\text{g/L}$	1.9	HH	equation	equation	Tox
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94.1 The MS and FAV vary with pH and are calculated using the following equations:

94.2 The MS in $\mu\text{g/L}$ shall not exceed: $\exp.(1.005[\text{pH}]-4.830)$

94.3 The FAV in $\mu\text{g/L}$ shall not exceed: $\exp.(1.005[\text{pH}]-4.1373)$

94.4 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

94.5 For pH values less than 6.0, 6.0 shall be used to calculate the standard and for pH
 94.6 values greater than 9.0, 9.0 shall be used to calculate the standard.

94.7 Example of pentachlorophenol standards for five pH values:

94.8	pH su	6.5	7.0	7.5	8.0	8.5	
94.9	<hr/>						
94.10	Pentachlorophenol						
94.11	CS µg/L	1.9	1.9	1.9	1.9	1.9	
94.12	MS µg/L	5.5	9.1	15	25	41	
94.13	FAV µg/L	11	18	30	50	82	
94.14	pH, minimum	su	6.5	NA	—	—	NA
94.15	pH, maximum	su	9.0	NA	—	—	NA
94.16	Phenanthrene	µg/L	3.6	Tox	32	64	Tox
94.17	Phenol	µg/L	123	Tox	2,214	4,428	Tox
94.18	Polychlorinated	ng/L	0.029	HH	1,000*	2,000*	Tox
94.19	biphenyls, total (c)						
94.20	Radioactive materials	NA	See	NA	See	See	NA
94.21			below		below	below	
94.22	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled						
94.23	environment as permitted by the appropriate authority having control over their use.						
94.24	Selenium, total	µg/L	5.0	Tox	20	40	Tox
94.25	Silver, total	µg/L	1.0	Tox	equation	equation	Tox
94.26	The MS and FAV vary with total hardness and are calculated using the following						
94.27	equations:						
94.28	The MS in µg/L shall not exceed: $\exp.(1.720[\ln(\text{total hardness mg/L})]-7.2156)$						
94.29	The FAV in µg/L shall not exceed: $\exp.(1.720[\ln(\text{total hardness mg/L})]-6.520)$						
95.1	Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.						
95.2	For hardness values less than 10 mg/L, 10 mg/L shall be used to calculate the						
95.3	standard and for hardness values greater than 400 mg/L, 400 mg/L shall be used to						
95.4	calculate the standard.						
95.5	Example of total silver standards for five total hardness values:						
95.6	TH in mg/L	50	100	200	300	400	
95.7	<hr/>						

95.8	Silver, total						
95.9	CS µg/L	1.0	1.0	1.0	1.0	1.0	
95.10	MS µg/L	1.0	2.0	6.7	13	22	
95.11	FAV µg/L	1.2	4.1	13	27	44	
95.12			See				
95.13	Temperature	°F	below	NA	—	—	NA
95.14	5°F above natural in streams and 3°F above natural in lakes, based on monthly						
95.15	average of the maximum daily temperatures, except in no case shall it exceed the						
95.16	daily average temperature of 86°F.						
95.17	1,1,2,2-Tetrachloro-						
95.18	ethane (c)	µg/L	1.5	HH	1,127*	2,253*	Tox
95.19	Tetrachloroethylene (c)	µg/L	3.8	HH	428*	857*	Tox
95.20	Thallium, total	µg/L	0.28	HH	64	128	Tox
95.21	Toluene	µg/L	253	Tox	1,352	2,703	Tox
95.22	Toxaphene (c)	ng/L	1.3	HH	730*	1,500*	Tox
95.23	1,1,1-Trichloroethane	µg/L	329	Tox	2,957	5,913	Tox
95.24	1,1,2-Trichloroethylene						
95.25	(c)	µg/L	25	HH	6,988*	13,976*	Tox
95.26	2,4,6-Trichlorophenol	µg/L	2.0	HH	102	203	Tox
95.27	Turbidity value	NTU	25	NA	—	—	NA
95.28	Vinyl chloride (c)	µg/L	0.18	HH	—*	—*	NA
95.29	Xylene, total m,p,o	µg/L	166	Tox	1,407	2,814	Tox
96.1	Zinc, total	µg/L	equation	Tox	equation	equation	Tox

96.2 The CS, MS, and FAV vary with total hardness and are calculated using the following
 96.3 equations:

96.4 The CS in µg/L shall not exceed: $\exp.(0.8473[\ln(\text{total hardness mg/L})]+0.7615)$

96.5 The MS in µg/L shall not exceed: $\exp.(0.8473[\ln(\text{total hardness mg/L})]+0.8604)$

96.6 The FAV in µg/L shall not exceed: $\exp.(0.8473[\ln(\text{total hardness mg/L})]+1.5536)$

96.7 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

96.8 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
 96.9 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
 96.10 calculate the standard.

96.11 Example of total zinc standards for five total hardness values:

96.12	TH in mg/L	50	100	200	300	400
96.13	<hr/>					
96.14	Zinc, total					
96.15	CS µg/L	59	106	191	269	343
96.16	MS µg/L	65	117	211	297	379
96.17	FAV µg/L	130	234	421	594	758

96.18 Subp. 3a. **Narrative eutrophication standards for Class 2Bd lakes, shallow**
 96.19 **lakes, and reservoirs.**

96.20 A. Eutrophication standards applicable to lakes, shallow lakes, and reservoirs
 96.21 that lie on the border between two ecoregions or that are in the Red River Valley, Northern
 96.22 Minnesota Wetlands, or Driftless Area Ecoregions must be applied on a case-by-case basis.
 96.23 The commissioner shall use the standards applicable to adjacent ecoregions as a guide.

96.24 B. Eutrophication standards are compared to data averaged over the summer
 96.25 season (June through September). Exceedance of the total phosphorus and either the
 96.26 chlorophyll-a or Secchi disk standard is required to indicate a polluted condition.

97.1 C. It is the policy of the agency to protect all lakes, shallow lakes, and
 97.2 reservoirs from the undesirable effects of cultural eutrophication. Lakes, shallow lakes,
 97.3 and reservoirs with a baseline quality better than the numeric eutrophication standards in
 97.4 subpart 3 must be maintained in that condition through the strict application of all relevant
 97.5 federal, state, and local requirements governing nondegradation, the discharge of nutrients
 97.6 from point and nonpoint sources, and the protection of lake, shallow lake, and reservoir
 97.7 resources, including, but not limited to:

97.8 (1) the nondegradation requirements in parts 7050.0180 and 7050.0185;

97.9 (2) the phosphorus effluent limits for point sources, where applicable in
97.10 chapter 7053;

97.11 (3) the requirements for feedlots in chapter 7020;

97.12 (4) the requirements for individual sewage treatment systems in chapter
97.13 7080;

97.14 (5) the requirements for control of stormwater in chapter 7090;

97.15 (6) county shoreland ordinances; and

97.16 (7) implementation of mandatory and voluntary best management practices
97.17 to minimize point and nonpoint sources of nutrients.

97.18 D. Lakes, shallow lakes, and reservoirs with a baseline quality that is poorer
97.19 than the numeric eutrophication standards in subpart 3 must be considered to be in
97.20 compliance with the standards if the baseline quality is the result of natural causes. The
97.21 commissioner shall determine baseline quality and compliance with these standards using
97.22 summer-average data and the procedures in part 7050.0150, subpart 5. "Natural causes" is
97.23 defined in part 7050.0150, subpart 4, item N.

97.24 E. When applied to reservoirs, the eutrophication standards in this subpart
97.25 and subpart 3 may be modified on a site-specific basis to account for characteristics of
98.1 reservoirs that can affect trophic status, such as water temperature, variations in hydraulic
98.2 residence time, watershed size, and the fact that reservoirs may receive drainage from
98.3 more than one ecoregion. Information supporting a site-specific standard can be provided
98.4 by the commissioner or by any person outside the agency. The commissioner shall
98.5 evaluate all data in support of a modified standard and determine whether a change in the
98.6 standard for a specific reservoir is justified. Any total phosphorus effluent limit determined
98.7 to be necessary based on a modified standard shall only be required after the discharger

98.8 has been given notice of the specific proposed effluent limits and an opportunity to request
 98.9 a hearing as provided in part 7000.1800.

98.10 Subp. 4. **Class 2B waters.** The quality of Class 2B surface waters shall be such
 98.11 as to permit the propagation and maintenance of a healthy community of cool or warm
 98.12 water sport or commercial fish and associated aquatic life, and their habitats. These
 98.13 waters shall be suitable for aquatic recreation of all kinds, including bathing, for which
 98.14 the waters may be usable. This class of surface water is not protected as a source of
 98.15 drinking water. The applicable standards are given below. Abbreviations, acronyms,
 98.16 and symbols are explained in subpart 1.

98.17	Substance,						
98.18	Characteristic,			Basis			Basis
98.19	or Pollutant			for			for MS,
98.20	(Class 2B)	Units	CS	CS	MS	FAV	FAV
98.21							
98.22	Acenaphthene	µg/l	20	HH	56	112	Tox
98.23	Acetochlor	µg/L	1.7 3.6	Tox	86	173	Tox
98.24	Acrylonitrile (c)	µg/l	0.89	HH	1,140*	2,281*	Tox
98.25	Alachlor (c)	µg/L	59	Tox	800	1,600	Tox
98.26	Aluminum, total	µg/L	125	Tox	1,072	2,145	Tox
98.27	Ammonia un-ionized as N	µg/L	40	Tox	—	—	NA

99.1 The percent un-ionized ammonia can be calculated for any temperature and pH
 99.2 by using the following equation taken from Emerson, K., R.C. Russo, R.E. Lund,
 99.3 and R.V. Thurston, Aqueous ammonia equilibrium calculations; effect of pH and
 99.4 temperature. Journal of the Fisheries Research Board of Canada 32: 2379-2383
 99.5 (1975):

$$99.6 \quad f = 1 / (10^{(pK_a - pH)} + 1) \times 100$$

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

99.8 $pK_a = 0.09 + (2730/T)$ (dissociation constant for ammonia)

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

99.10	Anthracene	µg/L	0.035	Tox	0.32	0.63	Tox
99.11	Antimony, total	µg/L	31	Tox	90	180	Tox
99.12	Arsenic, total	µg/L	53	HH	360	720	Tox
99.13	Atrazine (c)	µg/L	10	Tox	323	645	Tox
99.14	Benzene (c)	µg/L	98	HH	4,487	8,974	Tox
99.15	Bromoform	µg/L	466	HH	2,900	5,800	Tox

99.16	Cadmium, total	µg/L	equation	Tox	equation	equation	Tox
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99.17 The CS, MS, and FAV vary with total hardness and are calculated using the following
 99.18 equations:

99.19 The CS in µg/L shall not exceed: $\exp.(0.7852[\ln(\text{total hardness mg/L})]-3.490)$

99.20 The MS in µg/L shall not exceed: $\exp.(1.128[\ln(\text{total hardness mg/L})]-1.685)$

99.21 The FAV in µg/L shall not exceed: $\exp.(1.128[\ln(\text{total hardness mg/L})]-0.9919)$

99.22 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

99.23 For hardness values less than 10 mg/L, 10 mg/L shall be used to calculate the
 99.24 standard and for hardness values greater than 400 mg/L, 400 mg/L shall be used to
 99.25 calculate the standard.

99.26 Example of total cadmium standards for five hardness values:

99.27	TH in mg/L	50	100	200	300	400
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99.28

99.29	Cadmium, total					
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99.30	CS µg/L	0.66	1.1	2.0	2.7	3.4
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100.1	MS µg/L	15	33	73	116	160
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100.2	FAV µg/L	31	67	146	231	319
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100.3	Carbon tetrachloride (c)	µg/L	5.9	HH	1,750*	3,500*	Tox
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100.4	Chlordane (c)	ng/L	0.29	HH	1,200*	2,400*	Tox
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100.5	Chloride	mg/L	230	Tox	860	1,720	Tox
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100.6	Chlorine, total residual	µg/L	11	Tox	19	38	Tox
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100.7 Chlorine standard applies to conditions of continuous exposure, where continuous
 100.8 exposure refers to chlorinated effluents that are discharged for more than a total of
 100.9 two hours in any 24-hour period.

100.10	Chlorobenzene	µg/L	20	HH	423	846	Tox
100.11	(Monochlorobenzene)						
100.12	Chloroform (c)	µg/L	155	Tox	1,392	2,784	Tox
100.13	Chlorpyrifos	µg/L	0.041	Tox	0.083	0.17	Tox
100.14	Chromium +3, total	µg/L	equation	Tox	equation	equation	Tox

100.15 The CS, MS, and FAV vary with total hardness and are calculated using the following
 100.16 equations:

100.17 The CS in µg/L shall not exceed: $\exp.(0.819[\ln(\text{total hardness mg/L})]+1.561)$

100.18 The MS in µg/L shall not exceed: $\exp.(0.819[\ln(\text{total hardness mg/L})]+3.688)$

100.19 The FAV in µg/L shall not exceed: $\exp.(0.819[\ln(\text{total hardness mg/L})]+4.380)$

100.20 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

100.21 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
 100.22 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
 100.23 calculate the standard.

100.24 Example of total chromium +3 standards for five total hardness values:

100.25	TH in mg/L	50	100	200	300	400
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100.26

100.27 Chromium +3, total

100.28	CS µg/L	117	207	365	509	644
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101.1	MS µg/L	984	1,737	3,064	4,270	5,405
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101.2	FAV µg/L	1,966	3,469	6,120	8,530	10,797
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101.3	Chromium +6, total	µg/L	11	Tox	16	32	Tox
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101.4	Cobalt, total	µg/L	5.0	Tox	436	872	Tox
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101.5	Copper, total	µg/L	equation	Tox	equation	equation	Tox
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101.6 The CS, MS, and FAV vary with total hardness and are calculated using the following
 101.7 equations:

101.8 The CS in µg/L shall not exceed: $\exp.(0.6200[\ln(\text{total hardness mg/L})]-0.570)$

101.9 The MS in µg/L shall not exceed: $\exp.(0.9422[\ln(\text{total hardness mg/L})]-1.464)$

101.10 The FAV in µg/L shall not exceed: $\exp.(0.9422[\ln(\text{total hardness mg/L})]-0.7703)$

101.11 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

101.12 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
 101.13 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
 101.14 calculate the standard.

101.15 Example of total copper standards for five total hardness values:

101.16	TH in mg/L	50	100	200	300	400	
101.17	<hr/>						
101.18	Copper, total						
101.19	CS µg/L	6.4	9.8	15	19	23	
101.20	MS µg/L	9.2	18	34	50	65	
101.21	FAV µg/L	18	35	68	100	131	

101.22	Cyanide, free	µg/L	5.2	Tox	22	45	Tox
101.23	DDT (c) 1,2-	ng/L	1.7	HH	550*	1,100*	Tox
101.24	Dichloroethane (c)	µg/L	190	HH	45,050*	90,100*	Tox
101.25	Dieldrin (c)	ng/L	0.026	HH	1,300*	2,500*	Tox
101.26	Di-2-ethylhexyl phthalate	µg/L	2.1	HH	—*	—*	NA
101.27	(c)						
101.28	Di-n-octyl phthalate	µg/L	30	Tox	825	1,650	Tox
102.1	Endosulfan	µg/L	0.031	HH	0.28	0.56	Tox
102.2	Endrin	µg/L	0.016	HH	0.090	0.18	Tox
102.3	<i>Escherichia (E.) coli</i>	See	See	HH	See	See	NA
102.4		below	below		below	below	

102.5 Not to exceed 126 organisms per 100 milliliters as a geometric mean of not less
 102.6 than five samples representative of conditions within any calendar month, nor shall
 102.7 more than ten percent of all samples taken during any calendar month individually
 102.8 exceed 1,260 organisms per 100 milliliters. The standard applies only between April
 102.9 1 and October 31.

102.10	Ethylbenzene	µg/L	68	Tox	1,859	3,717	Tox
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102.11 Eutrophication standards for Class 2B lakes, shallow lakes, and reservoirs. See definitions
 102.12 in part 7050.0150, subpart 4, and ecoregion map in part 7050.0467.

102.13 Lakes, Shallow Lakes, and Reservoirs in Northern Lakes and Forest Ecoregions

102.14	Phosphorus, total	µg/L	30	NA	—	—	NA
102.15	Chlorophyll-a	µg/L	9	NA	—	—	NA
102.16	Secchi disk transparency	meters	Not less	NA	—	—	NA
102.17			than 2.0				

102.18 Lakes and Reservoirs in North Central Hardwood Forest Ecoregion

102.19	Phosphorus, total	µg/L	40	NA	—	—	NA
102.20	Chlorophyll-a	µg/L	14	NA	—	—	NA
102.21	Secchi disk transparency	meters	Not less	NA	—	—	NA
102.22			than 1.4				

102.23 Lakes and Reservoirs in Western Corn Belt Plains and Northern Glaciated Plains
 102.24 Ecoregions

102.25	Phosphorus, total	µg/L	65	NA	—	—	NA
102.26	Chlorophyll-a	µg/L	22	NA	—	—	NA
102.27	Secchi disk transparency	meters	Not less	NA	—	—	NA
102.28			than 0.9				

102.29 Shallow Lakes in North Central Hardwood Forest Ecoregion

103.1	Phosphorus, total	µg/L	60	NA	—	—	NA
103.2	Chlorophyll-a	µg/L	20	NA	—	—	NA
103.3	Secchi disk transparency	meters	Not less	NA	—	—	NA
103.4			than 1.0				

103.5 Shallow Lakes in Western Corn Belt Plains and Northern Glaciated Plains Ecoregions

103.6	Phosphorus, total	µg/L	90	NA	—	—	NA
103.7	Chlorophyll-a	µg/L	30	NA	—	—	NA
103.8	Secchi disk transparency	meters	Not less	NA	—	—	NA
103.9			than 1.0				

103.10 Additional narrative eutrophication standards for Class 2B lakes, shallow lakes, and
 103.11 reservoirs are found in subpart 4a.

103.12	Fluoranthene	µg/L	1.9		Tox	3.5	6.9	Tox
103.13	Heptachlor (c)	ng/L	0.39	HH	260*	520*		Tox
103.14	Heptachlor	ng/L	0.48	HH	270*	530*		Tox
103.15	epoxide (c)							
103.16	Hexachloro-	ng/L	0.24	HH	—*	—*		Tox
103.17	benzene (c)							
103.18	Lead, total	µg/L	equation	Tox	equation	equation		Tox

103.19 The CS, MS, and FAV vary with total hardness and are calculated using the following
 103.20 equations:

103.21 The CS in µg/L shall not exceed: $\exp.(1.273[\ln(\text{total hardness mg/L})]-4.705)$

103.22 The MS in µg/L shall not exceed: $\exp.(1.273[\ln(\text{total hardness mg/L})]-1.460)$

103.23 The FAV in µg/L shall not exceed: $\exp.(1.273[\ln(\text{total hardness mg/L})]-0.7643)$

103.24 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

103.25 For hardness values less than 10 mg/L, 10 mg/L shall be used to calculate the
 103.26 standard and for hardness values greater than 400 mg/L, 400 mg/L shall be used to
 103.27 calculate the standard.

103.28 Example of total lead standards for five total hardness values:

104.1	TH in mg/L	50	100	200	300	400
104.2	<hr/>					
104.3	Lead, total					
104.4	CS µg/L	1.3	3.2	7.7	13	19
104.5	MS µg/L	34	82	197	331	477
104.6	FAV µg/L	68	164	396	663	956

104.7	Lindane (c)	µg/L	0.036	HH	4.4*	8.8*	Tox
104.8	(Hexachlorocyclo-						
104.9	hexane, gamma-)						

104.10	Mercury, total in water	ng/L	6.9	HH	2,400*	4,900*	Tox
104.11	Mercury, total tissue	mg/kg	0.2	HH	NA	NA	NA

104.12	in edible fish tissue	ppm					
104.13	Methylene chloride (c)						
104.14	(Dichloromethane)	µg/L	1,940	HH	13,875	27,749	Tox
104.15	Metolachlor	µg/L	23	Tox	271	543	Tox
104.16	Naphthalene	µg/L	81	Tox	409	818	Tox
104.17	Nickel, total	µg/L	equation	Tox	equation	equation	Tox

104.18 The CS, MS, and FAV vary with total hardness and are calculated using the following
 104.19 equations:

104.20 The CS in µg/L shall not exceed: $\exp.(0.846[\ln(\text{total hardness mg/L})]+1.1645)$

104.21 The MS in µg/L shall not exceed: $\exp.(0.846[\ln(\text{total hardness mg/L})]+3.3612)$

104.22 The FAV in µg/L shall not exceed: $\exp.(0.846[\ln(\text{total hardness mg/l})]+4.0543)$

104.23 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

104.24 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
 104.25 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
 104.26 calculate the standard.

104.27 Example of total nickel standards for five total hardness values:

105.1	TH in mg/L	50	100	200	300	400	
105.2							
105.3	Nickel, total						
105.4	CS µg/L	88	158	283	399	509	
105.5	MS µg/L	789	1,418	2,549	3,592	4,582	
105.6	FAV µg/L	1,578	2,836	5,098	7,185	9,164	

105.7	Oil	µg/l	500	NA	5,000	10,000	NA
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105.8	Oxygen, dissolved	mg/L	See	NA	—	—	NA
105.9			below				

105.10 5.0 mg/L as a daily minimum. This dissolved oxygen standard may be modified on a
 105.11 site-specific basis according to part 7050.0220, subpart 7, except that no site-specific
 105.12 standard shall be less than 5 mg/L as a daily average and 4 mg/L as a daily minimum.
 105.13 Compliance with this standard is required 50 percent of the days at which the flow
 105.14 of the receiving water is equal to the $7Q_{10}$. This standard applies to all Class 2B
 105.15 waters except for those portions of the Mississippi River from the outlet of the Metro
 105.16 Wastewater Treatment Works in Saint Paul (River Mile 835) to Lock and Dam No. 2

105.17 at Hastings (River Mile 815). For this reach of the Mississippi River, the standard is
 105.18 not less than 5 mg/L as a daily average from April 1 through November 30, and not
 105.19 less than 4 mg/L at other times.

105.20	Parathion	µg/L	0.013	Tox	0.07	0.13	Tox
105.21	Pentachloro- phenol	µg/L	equation	Tox/	equation	equation	Tox
105.22				HH			

105.23 The CS, MS, and FAV vary with pH and are calculated using the following equations:

105.24 For waters with pH values greater than 6.95, the CS shall not exceed the human
 105.25 health-based standard of 5.5 µg/L.

105.26 For waters with pH values less than 6.96, the CS in µg/L shall not exceed the
 105.27 toxicity-based standard of $\exp.(1.005[\text{pH}]-5.290)$

105.28 The MS in µg/L shall not exceed: $\exp.(1.005[\text{pH}]-4.830)$

105.29 The FAV in µg/L shall not exceed: $\exp.(1.005[\text{pH}]-4.1373)$

105.30 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

105.31 For pH values less than 6.0, 6.0 shall be used to calculate the standard and for pH
 105.32 values greater than 9.0, 9.0 shall be used to calculate the standard.

106.1 Example of pentachlorophenol standards for five pH values:

106.2	pH su	6.5	7.0	7.5	8.0	8.5
106.3						
106.4	Pentachlorophenol					
106.5	CS µg/L	3.5	5.5	5.5	5.5	5.5
106.6	MS µg/L	5.5	9.1	15	25	41
106.7	FAV µg/L	11	18	30	50	82

106.8	pH, minimum	su	6.5	NA	—	—	NA
106.9	pH, maximum	su	9.0	NA	—	—	NA
106.10	Phenanthrene	µg/L	3.6	Tox	32	64	Tox
106.11	Phenol	µg/L	123	Tox	2,214	4,428	Tox
106.12	Polychlorinated	ng/L	0.029	HH	1,000*	2,000*	Tox
106.13	biphenyls, total (c)						

106.14	Radioactive materials	NA	See	NA	See	See	NA
106.15			below		below	below	
106.16	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled						
106.17	environment as permitted by the appropriate authority having control over their use.						
106.18	Selenium, total	µg/L	5.0	Tox	20	40	Tox
106.19	Silver, total	µg/L	1.0	Tox	equation	equation	Tox
106.20	The MS and FAV vary with total hardness and are calculated using the following						
106.21	equations:						
106.22	The MS in µg/L shall not exceed: $\exp.(1.720[\ln(\text{total hardness mg/L})]-7.2156)$						
106.23	The FAV in µg/L shall not exceed: $\exp.(1.720[\ln(\text{total hardness mg/L})]-6.520)$						
106.24	Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.						
106.25	For hardness values less than 10 mg/L, 10 mg/L shall be used to calculate the						
106.26	standard and for hardness values greater than 400 mg/L, 400 mg/L shall be used to						
106.27	calculate the standard.						
106.28	Example of total silver standards for five total hardness values:						
107.1	TH in mg/L	50	100	200	300	400	
107.2	<hr/>						
107.3	Silver, total						
107.4	CS µg/L	1.0	1.0	1.0	1.0	1.0	
107.5	MS µg/L	1.0	2.0	6.7	13	22	
107.6	FAV µg/L	1.2	4.1	13	27	44	
107.7	Temperature	°F	See	NA	—	—	NA
107.8			below				
107.9	5°F above natural in streams and 3°F above natural in lakes, based on monthly						
107.10	average of the maximum daily temperatures, except in no case shall it exceed the						
107.11	daily average temperature of 86°F.						
107.12	1,1,2,2-Tetrachloroethane						
107.13	(c)	µg/L	13	HH	1,127	2,253	Tox
107.14	Tetrachloroethylene (c)	µg/L	8.9	HH	428	857	Tox

107.15	Thallium, total	µg/L	0.56	HH	64	128	Tox
107.16	Toluene	µg/L	253	Tox	1,352	2,703	Tox
107.17	Toxaphene (c)	ng/L	1.3	HH	730*	1,500*	Tox
107.18	1,1,1-Trichloroethane	µg/L	329	Tox	2,957	5,913	Tox
107.19	1,1,2-Trichloroethylene						
107.20	(c)	µg/L	120	HH	6,988	13,976	Tox
107.21	2,4,6-Trichlorophenol	µg/L	2.0	HH	102	203	Tox
107.22	Turbidity value	NTU	25	NA	—	—	NA
107.23	Vinyl chloride (c)	µg/L	9.2	HH	—*	—*	NA
107.24	Xylene, total m,p,o	µg/L	166	Tox	1,407	2,814	Tox
107.25	Zinc, total	µg/L	equation	Tox	equation	equation	Tox

107.26 The CS, MS, and FAV vary with total hardness and are calculated using the following
 107.27 equations:

107.28 The CS in µg/L shall not exceed: $\exp.(0.8473[\ln(\text{total hardness mg/L})]+0.7615)$

108.1 The MS in µg/L shall not exceed: $\exp.(0.8473[\ln(\text{total hardness mg/L})]+0.8604)$

108.2 The FAV in µg/L shall not exceed: $\exp.(0.8473[\ln(\text{total hardness mg/L})]+1.5536)$

108.3 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.

108.4 For hardness values ~~less than 10 mg/L, 10 mg/L shall be used to calculate the~~
 108.5 ~~standard and for hardness values~~ greater than 400 mg/L, 400 mg/L shall be used to
 108.6 calculate the standard.

108.7 Example of total zinc standards for five total hardness values:

108.8	TH in mg/L	50	100	200	300	400
108.9	<hr/>					
108.10	Zinc, total					
108.11	CS µg/L	59	106	191	269	343
108.12	MS µg/L	65	117	211	297	379
108.13	FAV µg/L	130	234	421	594	758

108.14 Subp. 4a. **Narrative eutrophication standards for Class 2B lakes, shallow lakes,**
 108.15 **and reservoirs.**

108.16 A. Eutrophication standards applicable to lakes, shallow lakes, and reservoirs
108.17 that lie on the border between two ecoregions or that are in the Red River Valley, Northern
108.18 Minnesota Wetlands, or Driftless Area Ecoregions must be applied on a case-by-case basis.
108.19 The commissioner shall use the standards applicable to adjacent ecoregions as a guide.

108.20 B. Eutrophication standards are compared to data averaged over the summer
108.21 season (June through September). Exceedance of the total phosphorus and either the
108.22 chlorophyll-a or Secchi disk standard is required to indicate a polluted condition.

108.23 C. It is the policy of the agency to protect all lakes, shallow lakes, and reservoirs
108.24 from the undesirable effects of cultural eutrophication. Lakes, shallow lakes, and
108.25 reservoirs with a baseline quality better than the numeric eutrophication standards in
108.26 subpart 4 must be maintained in that condition through the strict application of all relevant
108.27 federal, state, and local requirements governing nondegradation, the discharge of nutrients
109.1 from point and nonpoint sources, and the protection of lake, shallow lake, and reservoir
109.2 resources, including, but not limited to:

109.3 (1) the nondegradation requirements in parts 7050.0180 and 7050.0185;

109.4 (2) the phosphorus effluent limits for point sources, where applicable in
109.5 chapter 7053;

109.6 (3) the requirements for feedlots in chapter 7020;

109.7 (4) the requirements for individual sewage treatment systems in chapter
109.8 7080;

109.9 (5) the requirements for control of stormwater in chapter 7090;

109.10 (6) county shoreland ordinances; and

109.11 (7) implementation of mandatory and voluntary best management practices
109.12 to minimize point and nonpoint sources of nutrients.

109.13 D. Lakes, shallow lakes, and reservoirs with a baseline quality that is poorer
109.14 than the numeric eutrophication standards in subpart 4 must be considered to be in
109.15 compliance with the standards if the baseline quality is the result of natural causes. The
109.16 commissioner shall determine baseline quality and compliance with these standards using
109.17 summer-average data and the procedures in part 7050.0150, subpart 5. "Natural causes" is
109.18 defined in part 7050.0150, subpart 4, item N.

109.19 E. When applied to reservoirs, the eutrophication standards in this subpart
109.20 and subpart 4 may be modified on a site-specific basis to account for characteristics of
109.21 reservoirs that can affect trophic status, such as water temperature, variations in hydraulic
109.22 residence time, watershed size, and the fact that reservoirs may receive drainage from
109.23 more than one ecoregion. Information supporting a site-specific standard can be provided
109.24 by the commissioner or by any person outside the agency. The commissioner shall
109.25 evaluate all data in support of a modified standard and determine whether a change in the
110.1 standard for a specific reservoir is justified. Any total phosphorus effluent limit determined
110.2 to be necessary based on a modified standard shall only be required after the discharger
110.3 has been given notice of the specific proposed effluent limits and an opportunity to request
110.4 a hearing as provided in part 7000.1800.

110.5 Subp. 5. **Class 2C waters.** The quality of Class 2C surface waters shall be such
110.6 as to permit the propagation and maintenance of a healthy community of indigenous
110.7 fish and associated aquatic life, and their habitats. These waters shall be suitable for
110.8 boating and other forms of aquatic recreation for which the waters may be usable. The
110.9 standards for Class 2B waters listed in subparts 4 and 4a shall apply to these waters except
110.10 as listed below:

110.11 Substance, Characteristic, or Pollutant

110.12 *Escherichia (E.) coli.* Not to exceed 126 organisms per 100 milliliters as a geometric
110.13 mean of not less than five samples representative of conditions within any calendar
110.14 month, nor shall more than ten percent of all samples taken during any calendar

110.15 month individually exceed 1,260 organisms per 100 milliliters. The standard applies
110.16 only between April 1 and October 31.

110.17 Oxygen, dissolved. 5 mg/L as a daily minimum. This dissolved oxygen standard may
110.18 be modified on a site-specific basis according to part 7050.0220, subpart 7, except
110.19 that no site-specific standard shall be less than 5 mg/L as a daily average and 4 mg/L
110.20 as a daily minimum. Compliance with this standard is required 50 percent of the days
110.21 at which the flow of the receiving water is equal to the $7Q_{10}$.

110.22 This dissolved oxygen standard applies to all Class 2C waters except for those
110.23 portions of the Mississippi River from the outlet of the metro wastewater treatment
110.24 works in Saint Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile
110.25 815) and except for the reach of the Minnesota River from the outlet of the Blue Lake
110.26 wastewater treatment works (River Mile 21) to the mouth at Fort Snelling. For this
110.27 reach of the Mississippi River the standard is not less than 5 mg/L as a daily average
110.28 from April 1 through November 30, and not less than 4 mg/L at other times. For the
110.29 specified reach of the Minnesota River the standard shall be not less than 5 mg/L
110.30 as a daily average year-round.

110.31 Temperature. 5°F above natural in streams and 3°F above natural in lakes, based on
110.32 monthly average of the maximum daily temperature, except in no case shall it exceed
110.33 the daily average temperature of 90°F.

111.1 Subp. 6. **Class 2D waters; wetlands.**

111.2 A. The quality of Class 2D wetlands shall be such as to permit the propagation
111.3 and maintenance of a healthy community of aquatic and terrestrial species indigenous to
111.4 wetlands, and their habitats. Wetlands also add to the biological diversity of the landscape.
111.5 These waters shall be suitable for boating and other forms of aquatic recreation for which
111.6 the wetland may be usable. The standards for Class 2B waters listed under subpart 4 shall
111.7 apply to these waters except as listed below:

111.8	Substance, Characteristic, or Pollutant	Class 2D Standard
111.9	Oxygen, dissolved	If background is less than 5.0 mg/L as a daily minimum, maintain background
111.10		
111.11	pH	Maintain background
111.12	Temperature	Maintain background

111.13 B. "Maintain background," as used in this subpart, means the concentration of
111.14 the water quality substances, characteristics, or pollutants shall not deviate from the range
111.15 of natural background concentrations or conditions such that there is a potential significant
111.16 adverse impact to the designated uses.

111.17 C. Activities in wetlands which involve the normal farm practices of planting
111.18 with annually seeded crops or the utilization of a crop rotation seeding of pasture grasses
111.19 or legumes, including the recommended applications of fertilizer and pesticides, are
111.20 excluded from the standards in this subpart and the wetland standards in parts 7050.0224,
111.21 subpart 4; 7050.0225, subpart 2; and 7050.0227. All other activities in these wetlands
111.22 must meet water quality standards.

111.23 Subp. 7. **Additional standards; Class 2 waters.** The following additional
111.24 standards and requirements apply to all Class 2 waters.

111.25 A. No sewage, industrial waste, or other wastes from point or nonpoint sources
111.26 shall be discharged into any of the waters of this category so as to cause any material
112.1 change in any other substances, characteristics, or pollutants which may impair the
112.2 quality of the waters of the state or the aquatic biota of any of the classes in subparts 2 to
112.3 6 or in any manner render them unsuitable or objectionable for fishing, fish culture, or
112.4 recreational uses. Additional selective limits or changes in the discharge bases may be
112.5 imposed on the basis of local needs.

112.6 B. To prevent acutely toxic conditions, concentrations of toxic pollutants from
112.7 point or nonpoint sources must not exceed the FAV as a one-day average at the point of
112.8 discharge or in the surface water consistent with parts 7050.0210, subpart 5, item D;
112.9 7053.0215, subpart 1; 7053.0225, subpart 6; and 7053.0245, subpart 1.

112.10 If a discharge is composed of a mixture of more than one chemical, and the chemicals
112.11 have the same mode of toxic action, the commissioner has the option to apply an additive
112.12 model to determine the toxicity of the mixture using the following equation:

$$\begin{array}{lcl}
 112.13 & C_1 & C_2 \qquad \qquad C_n \\
 112.14 & & \text{equals a value of one or more, an acutely toxic} \\
 112.15 & \text{---} & + \text{---} + \dots + \text{---} \text{ condition if indicated} \\
 112.16 & FAV_1 & FAV_2 \qquad \qquad FAV_n
 \end{array}$$

112.17 where: $C_1 \dots C_n$ is the concentration of the first to the n^{th} toxicant.
 112.18 $FAV_1 \dots FAV_n$ is the FAV for the first to the n^{th} toxicant.

112.19 [For text of item C, see M.R.]

112.20 D. Concentrations of carcinogenic chemicals from point or nonpoint sources,
 112.21 singly or in mixtures, should not exceed a risk level of one chance in 100,000 in surface
 112.22 waters. Carcinogenic chemicals will be considered additive in their effect according to
 112.23 the following equation unless an alternative model is supported by available scientific
 112.24 evidence. The additive equation applies to chemicals that have a human health-based
 112.25 standard calculated with a cancer potency factor.

$$\begin{array}{lcl}
 113.1 & C_1 & C_2 \qquad \qquad C_n \\
 113.2 & & \text{equals a value of one or more, a risk level} \\
 113.3 & \text{---} & + \text{---} + \dots + \text{---} \text{ greater than } 10^{-5} \text{ is indicated} \\
 113.4 & CC_1 & CC_2 \qquad \qquad CC_n
 \end{array}$$

113.5 where: $C_1 \dots C_n$ is the concentration of the first to the n^{th} carcinogen.
 113.6 $CC_1 \dots CC_n$ is the drinking water plus fish consumption
 113.7 criterion (CC_{df}) or fish consumption criterion (CC_f) for the first to
 113.8 n^{th} carcinogenic chemical.

113.9 E. The provisions of this item apply to maximum standards (MS), final acute
 113.10 values (FAV), and double dashes (–) in this part and part 7050.0220 marked with an
 113.11 asterisk (*). For carcinogenic or highly bioaccumulative chemicals with BCFs greater
 113.12 than 5,000 or $\log K_{ow}$ values greater than 5.19, the human health-based chronic standard
 113.13 (CS) may be two or more orders of magnitude smaller than the acute toxicity-based MS. If
 113.14 the commissioner finds that a very large MS and FAV, relative to the CS for such pollutants

113.15 is not protective of the public health, the MS and FAV shall be reduced according to
113.16 the following guidelines:

113.17 If the ratio of the MS to the CS is greater than 100, the CS times 100 should be
113.18 substituted for the applicable MS, and the CS times 200 should be substituted for the
113.19 applicable FAV. Any effluent limit derived using the procedures of this item shall only be
113.20 required after the discharger has been given notice of the specific proposed effluent limits
113.21 and an opportunity to request a hearing as provided in part 7000.1800.

113.22 Subp. 8. [See repealer.]

113.23 Subp. 9. **Conversion factors for dissolved metal standards.**

113.24			Conversion Factor for MS and
113.25	Metal	Conversion Factor for CS	FAV
113.26		0.909 1.1017-[(ln TH, mg/L)	0.946 1.1367-[(ln TH, mg/L)
113.27	Cadmium	(0.0418)]	(0.0418)]
114.1	Chromium +3	0.860	0.316
114.2	Chromium +6	0.962	0.982
114.3	Copper	0.960	0.960
114.4		0.791 1.4620-[(ln TH, mg/L)	0.791 1.4620-[(ln TH, mg/L)
114.5	Lead	(0.1457)]	(0.1457)]
114.6	Mercury	1.0	0.850
114.7	Nickel	0.997	0.998
114.8	Silver	0.850	0.850
114.9	Zinc	0.986	0.978

114.10 Conversion factors for cadmium and lead are hardness (TH) dependent. The factors
114.11 shown in the table above are for a total hardness of 100 mg/L only. Conversion
114.12 factors for cadmium and lead for other hardness values shall be calculated using the
114.13 equations included in the table. The dissolved standard is the total standard times the
114.14 conversion factor.

114.15 **7050.0223 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 3 WATERS**
114.16 **OF THE STATE; INDUSTRIAL CONSUMPTION.**

114.17 Subpart 1. **General.** The numeric and narrative water quality standards in this part
114.18 prescribe the qualities or properties of the waters of the state that are necessary for the
114.19 industrial consumption designated public uses and benefits. If the standards in this part
114.20 are exceeded in waters of the state that have the Class 3 designation, it is considered
114.21 indicative of a polluted condition which is actually or potentially deleterious, harmful,
114.22 detrimental, or injurious with respect to the designated uses.

114.23 Subp. 2. **Class 3A waters; industrial consumption.** The quality of Class 3A
114.24 waters of the state shall be such as to permit their use without chemical treatment, except
114.25 softening for groundwater, for most industrial purposes, except food processing and
114.26 related uses, for which a high quality of water is required. The following standards shall
114.27 not be exceeded in the waters of the state:

114.28	Substance, Characteristic, or Pollutant	Class 3A Standard
115.1	Chlorides (Cl)	50 mg/L
115.2	Hardness, Ca + Mg as CaCO ₃	50 mg/L
115.3	pH, minimum value	6.5
115.4	pH, maximum value	8.5

115.5 Subp. 3. **Class 3B waters.** The quality of Class 3B waters of the state shall be such
115.6 as to permit their use for general industrial purposes, except for food processing, with
115.7 only a moderate degree of treatment. The following standards shall not be exceeded
115.8 in the waters of the state:

115.9	Substance, Characteristic, or Pollutant	Class 3B Standard
115.10	Chlorides (Cl)	100 mg/L
115.11	Hardness, Ca + Mg as CaCO ₃	250 mg/L

115.12	pH, minimum value	6.0
115.13	pH, maximum value	9.0

115.14 Subp. 4. **Class 3C waters.** The quality of Class 3C waters of the state shall be
115.15 such as to permit their use for industrial cooling and materials transport without a high
115.16 degree of treatment being necessary to avoid severe fouling, corrosion, scaling, or other
115.17 unsatisfactory conditions. The following standards shall not be exceeded in the waters of
115.18 the state:

115.19	Substance, Characteristic, or Pollutant	Class 3C Standard
115.20	Chlorides (Cl)	250 mg/L
115.21	Hardness, Ca + Mg as CaCO ₃	500 mg/L
115.22	pH, minimum value	6.0
115.23	pH, maximum value	9.0

116.1 Subp. 5. **Class 3D waters; wetlands.** The quality of Class 3D wetlands shall be
116.2 such as to permit their use for general industrial purposes, except for food processing, with
116.3 only a moderate degree of treatment. The following standards apply:

116.4	Substance, Characteristic, or Pollutant	Class 3D Standard
116.5	Chlorides (Cl)	Maintain background
116.6	Hardness, Ca + Mg as CaCO ₃	Maintain background
116.7	pH	Maintain background

116.8 For the purposes of this subpart, "maintain background" means the concentration of
116.9 the water quality substance, characteristic, or pollutant shall not deviate from the range of
116.10 natural background concentrations or conditions such that there is a potential significant
116.11 adverse impact to the designated uses.

116.12 [For text of subp 6, see M.R.]

116.13 **7050.0224 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 4 WATERS**
116.14 **OF THE STATE; AGRICULTURE AND WILDLIFE.**

116.15 Subpart 1. **General.** The numeric and narrative water quality standards in this part
116.16 prescribe the qualities or properties of the waters of the state that are necessary for the
116.17 agriculture and wildlife designated public uses and benefits. Wild rice is an aquatic plant
116.18 resource found in certain waters within the state. The harvest and use of grains from this
116.19 plant serve as a food source for wildlife and humans. In recognition of the ecological
116.20 importance of this resource, and in conjunction with Minnesota Indian tribes, selected
116.21 wild rice waters have been specifically identified [WR] and listed in part 7050.0470,
116.22 subpart 1. The quality of these waters and the aquatic habitat necessary to support the
116.23 propagation and maintenance of wild rice plant species must not be materially impaired or
116.24 degraded. If the standards in this part are exceeded in waters of the state that have the
116.25 Class 4 designation, it is considered indicative of a polluted condition which is actually or
117.1 potentially deleterious, harmful, detrimental, or injurious with respect to the designated
117.2 uses.

117.3 Subp. 2. **Class 4A waters.** The quality of Class 4A waters of the state shall be such
117.4 as to permit their use for irrigation without significant damage or adverse effects upon any
117.5 crops or vegetation usually grown in the waters or area, including truck garden crops. The
117.6 following standards shall be used as a guide in determining the suitability of the waters for
117.7 such uses, together with the recommendations contained in Handbook 60 published by the
117.8 Salinity Laboratory of the United States Department of Agriculture, and any revisions,
117.9 amendments, or supplements to it:

117.10 Substance, Characteristic, or	
117.11 Pollutant	Class 4A Standard
117.12 Bicarbonates (HCO_3)	5 milliequivalents per liter
117.13 Boron (B)	0.5 mg/L
117.14 pH, minimum value	6.0

117.15	pH, maximum value	8.5
117.16	Specific conductance	1,000 micromhos per centimeter at 25°C
117.17	Total dissolved salts	700 mg/L
117.18	Sodium (Na)	60% of total cations as milliequivalents per liter
117.19	Sulfates (SO ₄)	10 mg/L, applicable to water used for production
117.20		of wild rice during periods when the rice may be
117.21		susceptible to damage by high sulfate levels.
117.22	Radioactive materials	Not to exceed the lowest concentrations permitted
117.23		to be discharged to an uncontrolled environment
117.24		as prescribed by the appropriate authority having
117.25		control over their use.

117.26 Subp. 3. **Class 4B waters.** The quality of Class 4B waters of the state shall be such
 117.27 as to permit their use by livestock and wildlife without inhibition or injurious effects. The
 117.28 standards for substances, characteristics, or pollutants given below shall not be exceeded
 117.29 in the waters of the state:

118.1	Substance, Characteristic, or Pollutant	Class 4B Standard
118.2	pH, minimum value	6.0
118.3	pH, maximum value	9.0
118.4	Total salinity	1,000 mg/L
118.5	Radioactive materials	Not to exceed the lowest concentrations
118.6		permitted to be discharged to an
118.7		uncontrolled environment as prescribed by
118.8		the appropriate authority having control
118.9		over their use.
118.10	Toxic substances	None at levels harmful either directly or
118.11		indirectly

118.12 Additional selective limits may be imposed for any specific waters of the state
 118.13 as needed.

118.14 Subp. 4. **Class 4C waters; wetlands.** The quality of Class 4C wetlands shall be
 118.15 such as to permit their use for irrigation and by wildlife and livestock without inhibition

118.16 or injurious effects and be suitable for erosion control, groundwater recharge, low flow
118.17 augmentation, stormwater retention, and stream sedimentation. The standards for Classes
118.18 4A and 4B waters shall apply to these waters except as listed below:

118.19	Substance, Characteristic, or Pollutant	Class 4C Standard
118.20	pH	Maintain background
118.21	Settleable solids	Shall not be allowed in concentrations
118.22		sufficient to create the potential for
118.23		significant adverse impacts on one or more
118.24		designated uses.

118.25 For the purposes of this subpart, "maintain background" means the concentration of
118.26 the water quality substance, characteristic, or pollutant shall not deviate from the range of
118.27 natural background concentrations or conditions such that there is a potential significant
118.28 adverse impact to the designated uses.

119.1 **7050.0225 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 5 WATERS**
119.2 **OF THE STATE; AESTHETIC ENJOYMENT AND NAVIGATION.**

119.3 Subpart 1. **General.** The numeric and narrative water quality standards in this part
119.4 prescribe the qualities or properties of the waters of the state that are necessary for the
119.5 aesthetic enjoyment and navigation designated public uses and benefits. If the standards
119.6 in this part are exceeded in waters of the state that have the Class 5 designation, it is
119.7 considered indicative of a polluted condition which is actually or potentially deleterious,
119.8 harmful, detrimental, or injurious with respect to the designated uses.

119.9 Subp. 2. **Class 5 waters; aesthetic enjoyment and navigation.** The quality of
119.10 Class 5 waters of the state shall be such as to be suitable for aesthetic enjoyment of
119.11 scenery, to avoid any interference with navigation or damaging effects on property. The
119.12 following standards shall not be exceeded in the waters of the state:

119.13	Substance, Characteristic,	Class 5 Standard
119.14	or Pollutant	

	For non-wetlands	For wetlands
119.15		
119.16	pH, minimum 6.0	Maintain background
119.17	pH, maximum 9.0	Maintain background
119.18	Hydrogen sulfide as S 0.02 mg/L	Maintain background
119.19	For the purposes of this subpart, "maintain background" means the concentration of	
119.20	the water quality substance, characteristic, or pollutant shall not deviate from the range of	
119.21	natural background concentrations or conditions such that there is a potential significant	
119.22	adverse impact to the designated uses.	
119.23	Additional selective limits may be imposed for any specific waters of the state	
119.24	as needed.	

119.25 **7050.0226 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 6 WATERS**
119.26 **OF THE STATE; OTHER USES.**

120.1 Subpart 1. **General.** The numeric and narrative water quality standards in this part
120.2 prescribe the qualities or properties of the waters of the state that are necessary for other
120.3 designated public uses and benefits. If the standards in this part are exceeded in waters
120.4 of the state that have the Class 6 designation, it is considered indicative of a polluted
120.5 condition which is actually or potentially deleterious, harmful, detrimental, or injurious
120.6 with respect to the designated uses.

120.7 [For text of subp. 2, see M.R.]

120.8 **7050.0227 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 7 WATERS**
120.9 **OF THE STATE; LIMITED RESOURCE VALUE WATERS.**

120.10 Subpart 1. **General.** The numeric and narrative water quality standards in this part
120.11 prescribe the qualities or properties of the waters of the state that have limited resource
120.12 value designated public uses and benefits. If the standards in this part are exceeded in
120.13 waters of the state that have the Class 7 designation, it is considered indicative of a

120.14 polluted condition which is actually or potentially deleterious, harmful, detrimental, or
 120.15 injurious with respect to the designated uses.

120.16 Subp. 2. **Class 7 waters; limited resource value waters.** The quality of Class 7
 120.17 waters of the state shall be such as to protect aesthetic qualities, secondary body contact
 120.18 use, and groundwater for use as a potable water supply. Standards for substances,
 120.19 characteristics, or pollutants given below shall not be exceeded in the waters:

120.20 Substance, Characteristic, or
 120.21 Pollutant

Class 7 Standard

121.1 *Escherichia (E.) coli*
 121.2
 121.3 Not to exceed 630 organisms per 100 milliliters
 121.4 as a geometric mean of not less than five samples
 121.5 representative of conditions within any calendar
 121.6 month, nor shall more than ten percent of all samples
 121.7 taken during any calendar month individually
 121.8 exceed 1,260 organisms per 100 milliliters. The
 standard applies only between May 1 and October
 31.

121.9 Oxygen, dissolved
 121.10
 121.11 At concentrations which will avoid orders or
 121.12 putrid conditions in the receiving water or at
 121.13 concentrations at not less than 1 mg/L (daily
 average) provided that measurable concentrations
 are present at all times.

121.14 pH, minimum value 6.0

121.15 pH, maximum value 9.0

121.16 Toxic pollutants
 121.17
 121.18 Toxic pollutants shall not be allowed in such
 quantities or concentrations that will impair the
 specified uses.

121.19 **7050.0400 BENEFICIAL USE CLASSIFICATIONS FOR SURFACE WATERS;**
 121.20 **SCOPE.**

121.21 Parts 7050.0405 to 7050.0470 classify all surface waters within or bordering
 121.22 Minnesota and designate appropriate beneficial uses for these waters. The use
 121.23 classifications are defined in part 7050.0140.

121.24 **7050.0420 TROUT WATERS.**

121.25 Trout lakes identified in part 6264.0050, subpart 2, as amended through June 14,
121.26 2004, are classified as trout waters and are listed under part 7050.0470. Trout streams
121.27 and their tributaries within the sections specified that are identified in part 6264.0050,
121.28 subpart 4, as amended through June 14, 2004, are classified as trout waters. Trout streams
121.29 are listed in part 7050.0470. Other lakes that are classified as trout waters are listed in
121.30 part 7050.0470. All waters listed in part 7050.0470 as Class 1B, 2A, and 3B are also
121.31 classified as Class 4A, 4B, 5, and 6 waters.

122.1 **7050.0425 UNLISTED WETLANDS.**

122.2 Those waters of the state that are wetlands as defined in part 7050.0186, subpart 1a,
122.3 and that are not listed in part 7050.0470 are classified as Class 2D, 3D, 4C, 5, and 6 waters.

122.4 **7050.0430 UNLISTED WATERS.**

122.5 All surface waters of the state that are not listed in part 7050.0470 and that are not
122.6 wetlands as defined in part 7050.0186, subpart 1a, are hereby classified as Class 2B, 3C,
122.7 4A, 4B, 5, and 6 waters.

122.8 **7050.0440 OTHER CLASSIFICATIONS SUPERSEDED.**

122.9 Parts 7050.0400 to 7050.0470 supersede any other previous classifications and any
122.10 classifications in other rules.

122.11 **7050.0450 MULTICLASSIFICATIONS.**

122.12 All surface waters of the state are classified in more than one class and all the water
122.13 quality standards for each of the classes apply. If the water quality standards for particular
122.14 parameters for the various classes are different, the more restrictive of the standards apply.

122.15 **7050.0460 WATERS SPECIFICALLY CLASSIFIED; EXPLANATION OF**
122.16 **LISTINGS IN PART 7050.0470.**

122.17 Subpart 1. **Explanation of listings.** The waters of the state listed in part 7050.0470
122.18 are classified as specified. The specific stretch of watercourse or the location of a water

body is described by township, range, and section. Any community listed in part 7050.0470 is the community nearest the water classified, and is included solely to assist in identifying the water. Most waters of the state are not specifically listed in part 7050.0470. See parts 7050.0425 and 7050.0430 for the classifications of waters not listed.

Subp. 2. **Outstanding international waters.** 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.

Subp. 3. **Abbreviations and symbols.** The listings in part 7050.0470 include the following abbreviations and symbols:

T., R., S. means township, range, and section, respectively.

An asterisk (*) preceding the name of the water body means the water body is an outstanding resource value water.

[month/day/year/letter code] following the name of the outstanding resource value water in brackets is the effective date the water resource was designated as an outstanding resource value water. The letter code (P or R) indicates 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.

[WR] following the name of the water body means the water body is designated as a wild rice water in part 7050.0470, subpart 1.

Class 2Bd waters are Class 2B waters also protected for domestic consumption purposes (Class 1). Applicable standards for Class 2Bd waters are listed in part 7050.0222, subparts 3 and 3a.

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124.1 **7050.0467 MAP: MINNESOTA ECOREGIONS.**

125.1 **7050.0470 CLASSIFICATIONS FOR SURFACE WATERS IN MAJOR**
125.2 **DRAINAGE BASINS.**

125.3 Subpart 1. **Lake Superior Basin.** The water use classifications for the listed waters
125.4 in the Lake Superior Basin are as identified in items A to D. See parts 7050.0425 and
125.5 7050.0430 for the classifications of waters not listed.

125.6 A. Streams:

125.7 (1) Ahlenius Creek, (T.53, R.14, S.9, 10): 1B, 2A, 3B;

125.8 (2) Amenda Creek, (T.59, R.5, S.19, 20, 29, 30, 31; T.59, R.6, S.36):
125.9 1B, 2A, 3B;

125.10 [For text of subitems (3) and (4), see M.R.]

125.11 (5) Anderson Creek, Carlton County, (T.46, R.17, S.11, 14, 15, 22, 26,
125.12 27): 1B, 2A, 3B;

125.13 (6) Anderson Creek, St. Louis County, (T.49, R.15, S.16, 17, 18; T.49,
125.14 R.16, S.12, 13): 1B, 2A, 3B;

125.15 [For text of subitems (7) to (13), see M.R.]

125.16 (14) Barker Creek, (T. 60, R.3W, S.5, 6, 7, 8; T.60, R.4W, S.3, 9, 10, 11,
125.17 12; T.61, R.4W, S.34, 35): 1B, 2A, 3B;

125.18 (15) Barrs Creek, (T.53, R.13, S.20, 27, 28, 29): 1B, 2A, 3B;

125.19 (16) Bear Trap Creek (Beartrap Creek), (T.51, R.16, S.30; T.51, R.17, S.16,
125.20 21, 22, 23, 25, 26, 27, 28): 1B, 2A, 3B;

125.21 (17) Beaver Dam Creek (Beaverdam Creek), (T.63, R.3E, S.2, 3, 4, 5;
125.22 T.64, R.3E, S.32, 33, 34, 35): 1B, 2A, 3B;

126.1 (18) Beaver River (includes Kit Creek), (T.55, R.8, S.2, 3, 5, 6, 7, 8, 9, 10,
126.2 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,
126.3 21, 22, 23, 25, 26, 27, 28, 32, 33, 34, 35, 36; T.57, R.9, S.28, 32, 33): 1B, 2A, 3B;

126.4 (19) Beaver River, East Branch (includes Hen Creek), (T.55, R.8, S.2; T.56,
126.5 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;
126.6 T.57, R.9, S.2, 3, 11, 12, 13, 14, 15, 23, 24, 25, 26, 36): 1B, 2A, 3B;

126.7 [For text of subitems (20) to (26), see M.R.]

126.8 (27) Breda Creek (see Berry Creek);

126.9 [For text of subitem (28), see M.R.]

126.10 (29) Brule River (excluding trout waters and waters within Boundary
126.11 Waters Canoe Area Wilderness), (T.63, 64, R.1W, 1E, 2E): 1B, 2Bd, 3C;

126.12 (30) Brule River, Little, (T.62, R.3E, S.19, 20, 29, 32, 33): 1B, 2A, 3B;

126.13 (31) Budd Creek (Bud Creek), (T.55, R.9, S.7, 17, 18, 20, 21): 1B, 2A, 3B;

126.14 [For text of subitems (32) to (38), see M.R.]

126.15 (39) Caribou River, (T.58, R.6, S.1, 2, 11, 13, 14, 15, 22, 23, 24, 25, 26, 36;
126.16 T.59, R.6, S.23, 24, 25, 26, 35, 36): 1B, 2A, 3B;

126.17 [For text of subitems (40) to (42), see M.R.]

126.18 (43) *Cascade River, North Branch [11/5/84P] (T.62, R.2W, S.3, 10):
126.19 1B, 2A, 3B;

126.20 (44) Cascade River, North Branch (those waters outside the Boundary
126.21 Waters Canoe Area Wilderness), (T.62, R.2W, S.10): 1B, 2A, 3B;

126.22 (45) Castle Danger Creek (Campers), (T.54, R.9, S.30, 31, 32): 1B, 2A, 3B;

126.23 (46) Cedar Creek, Lake County, (T.56, R.8, S.13, 14, 23, 24, 26): 1B,
126.24 2A, 3B;

- 127.1 (47) Cedar Creek, Cook County, (T.59, R.5W, S.2; T.60, R.5W, S.14, 22,
127.2 23, 25, 26, 35, 36): 1B, 2A, 3B;
- 127.3 (48) Cemetery Creek, (T.51, R.17, S.4, 5, 9): 1B, 2A, 3B;
- 127.4 (49) Chellberg Creek (Chalberg Creek), (T.51, R.16, S.7; T.51, R.17, S.1,
127.5 2, 3, 10, 12): 1B, 2A, 3B;
- 127.6 (50) Chester Creek, (T.50, R.14, S.7, 8, 9, 14, 15, 16, 23): 1B, 2A, 3B;
- 127.7 (51) Chester Creek, East Branch, (T.50, R.14, S.4, 5, 9, 15, 16): 1B, 2A, 3B;
- 127.8 (52) Chicken Creek, (T.52, R.16, S.5, 7, 8, 18, 19; T.52, R.17, S.13, 24, 25;
127.9 T.53, R.16, S.32): 1B, 2A, 3B;
- 127.10 (53) Clear Creek, Carlton County, (T.46, R.17, S.9, 10, 11, 12, 16, 17,
127.11 20, 29): 1B, 2A, 3B;
- 127.12 (54) Clear Creek, Carlton County, (T.47, R.15, S.7; T.47, R.16, S.1, 2,
127.13 3, 4, 12; T.48, R.16, S.33): 1B, 2A, 3B;
- 127.14 (55) Cliff Creek, (T.61, R. 2E, S.3, 4, 5, 9, 10; T.62, R.2E, S.29, 30, 31,
127.15 32): 1B, 2A, 3B;
- 127.16 (56) Cloudy Spring Creek, (T.57, R.9, S.5, 6, 7, 18; T.57, R.10, S.12,
127.17 13, 24): 1B, 2A, 3B;
- 127.18 (57) Colville Creek, East, (T.61, R.3E, S.5; T.62, R.2E, S.25; T.62, R.3E,
127.19 S.30, 31, 32): 1B, 2A, 3B;
- 127.20 (58) Coolidge Creek, (T.55, R.14, S.19, 29, 30; T.55, R.15, S.25, 26, 35,
127.21 36): 1B, 2A, 3B;
- 127.22 (59) Cranberry Creek, (T.58, R.13): 2C;

- 128.1 (60) Cross River, (T.58, R.4W, S.6; T.58, R.5W, S.1; T.59, R.4W, S.31;
128.2 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;
128.3 T.60, R.6, S.13, 24, 25, 36): 1B, 2A, 3B;
- 128.4 (61) Crow Creek, (T.53, R.10, S.1, 2; T.54, R.10, S.15, 22, 23, 26, 35):
128.5 1B, 2A, 3B;
- 128.6 (62) Crown Creek, (T.57, R.8, S.2, 3, 4, 5, 9, 10, 11; T.58, R.8, S.5, 6, 7, 18,
128.7 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;
- 128.8 (63) Crystal Creek, (T.48, R.16, S.6; T.48, R.17, S.1): 1B, 2A, 3B;
- 128.9 (64) Cutface Creek (Good Harbor Creek), (T.61, R.1W, S.27, 28, 29, 34):
128.10 1B, 2A, 3B;
- 128.11 (65) Dago Creek, (T.54, R.9, S.18, 19; T.54, R.10, S.2, 11, 12, 13; T.55,
128.12 R.10, S.27, 34, 35): 1B, 2A, 3B;
- 128.13 (66) Deer Creek, (T.47, R.16, S.19, 20, 28, 29; T.47, R.17, S.11, 12, 13,
128.14 24): 1B, 2A, 3B;
- 128.15 (67) Deer Yard Creek (Spruce Creek), (T.60, R.2W, S.4, 5, 6, 7, 8, 9, 10,
128.16 15, 16, 17; T.61, R.2W, S.32): 1B, 2A, 3B;
- 128.17 (68) Devil Track River, (T.61, R.1E, S.2, 3, 10, 11, 12, 13; T.62, R.1E,
128.18 S.26, 31, 32, 33, 34, 35): 1B, 2A, 3B;
- 128.19 (69) Devil Track River, Little, (T.61, R.1E, S.4, 5, 6, 7, 8, 9, 10; T.61,
128.20 R.1W, S.1, 2, 11, 12): 1B, 2A, 3B;
- 128.21 (70) Dragon Creek, (T.57, R.6, S.8, 9, 16, 17, 21): 1B, 2A, 3B;
- 128.22 (71) Durfee Creek, (T.61, R.2E, S.5, 6, 8; T.62, R.1E, S.25, 36; T.62,
128.23 R.2E, S.31): 1B, 2A, 3B;

- 129.1 (72) Dutchess Slough Creek (Dutch Slough), (T.50, R.17, S.4, 9, 10, 13,
129.2 14, 15, 24): 1B, 2A, 3B;
- 129.3 (73) Egge Creek, (T.57, R.7, S.2, 3, 4, 11): 1B, 2A, 3B;
- 129.4 (74) Elbow Creek, Cook County, (T.62, R.1E, S.3, 4, 9, 10, 15, 22, 27, 34;
129.5 T.63, R.1E, S.33, 34): 1B, 2A, 3B;
- 129.6 (75) Elbow Creek, Eveleth, (T.57, R.17, S.6; T.57, R.18, S.1): 7;
- 129.7 (76) Elm Creek, (T.49, R.16, S.1, 2; T.50, R.16, S.35): 1B, 2A, 3B;
- 129.8 (77) Encampment River, (T.53, R.10, S.3, 10, 11; T.54, R.10, S.8, 16,
129.9 17, 21, 27, 28, 34): 1B, 2A, 3B;
- 129.10 (78) Farquhar Creek, (T.62, R.4E, S.2, 11; T.63, R.4E, S.34, 35): 1B,
129.11 2A, 3B;
- 129.12 (79) *Fiddle Creek, [11/5/84P] (T.64, R.1W, S.34): 1B, 2A, 3B;
- 129.13 (80) Fiddle Creek, (T.63, R.1W, S.2, 3, 10, 15; T.64, R.1W, S.35): 1B,
129.14 2A, 3B;
- 129.15 (81) Flute Reed River, (T.62, R.3E, S.1, 2, 3, 10, 11, 12, 13, 14, 15; T.62,
129.16 R.4E, S.17, 18, 20; T.63, R.3E, S.26, 34, 35, 36): 1B, 2A, 3B;
- 129.17 (82) Fond du Lac Creek (Squaw), (T.49, R.17, S.9, 16, 17, 18, 19, 20,
129.18 21): 1B, 2A, 3B;
- 129.19 (83) Fox Farm Creek, (T.62, R.1E, S.19, 30): 1B, 2A, 3B;
- 129.20 (84) French River, (T.51, R.12, S.7, 17, 18; T.51, R.13, S.1, 2, 3, 12; T.52,
129.21 R.13, S.8, 9, 16, 17, 20, 21, 23, 26, 27, 28, 29, 34, 35): 1B, 2A, 3B;
- 129.22 (85) Fry Creek, (T.62, R.2W, S.25; T.62, 1W, S.30, 31): 1B, 2A, 3B;
- 129.23 (86) Gauthier Creek, (T.62, R.3E, S.16, 20, 21, 22, 27): 1B, 2A, 3B;

- 130.1 (87) Gill Creek, (T.48, R.16, S.2): 1B, 2A, 3B;
- 130.2 (88) Gooseberry River, (T.54, R.9, S.18, 19, 20, 21, 22, 27; T.54, R.10,
130.3 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,
130.4 S.33): 1B, 2A, 3B;
- 130.5 (89) Gooseberry River, Little, (T.54, R.10, S.6; T.54, R.11, S.1; T.55, R.10,
130.6 S.31; T.55, R.11, S.34, 35, 36): 1B, 2A, 3B;
- 130.7 (90) Grand Portage Creek, (T.63, R.5E, S.1; T.63, R.6E, S.4, 5, 6; T.64,;
130.8 R.6E, S.31, 32, 33): 1B, 2A, 3B;
- 130.9 (91) Greenwood River, (T.63, R.2E, S.1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23,
130.10 24; T.63, R.3E, S.6; T.64, R.2E, S.34; T.64, R.3E, S.31): 1B, 2A, 3B;
- 130.11 (92) Hay Creek, (T.49, R.16, S.3, 4, 9, 10, 15; T.50, R.16, S.20, 21, 28,
130.12 29, 32, 33): 1B, 2A, 3B;
- 130.13 (93) Heartbreak Creek, (T.59, R.4W, S.18, 19; T.59, R.5W, S.2, 11, 12, 13;
130.14 T.60, R.5W, S.27, 28, 33, 34, 35): 1B, 2A, 3B;
- 130.15 (94) Hellwig Creek, (T.52, R.17, S.3, 10, 14, 15, 23, 26; T.53, R.16, S.16,
130.16 18, 19, 20, 30; T.53, R.17, S.13, 14, 23, 24, 25, 26, 34, 35): 1B, 2A, 3B;
- 130.17 (95) Hockamin Creek, (T.57, R.7, S.17, 18, 19; T.57, R.8, S.13, 16, 20, 21,
130.18 22, 23, 24, 25, 26, 27, 28, 29, 32, 33): 1B, 2A, 3B;
- 130.19 (96) Hollow Rock Creek, (T.63, R.5E, S.9, 10, 11, 14, 15, 16, 23, 24,
130.20 25): 1B, 2A, 3B;
- 130.21 (97) Honeymoon Creek (Spring Creek), (T.61, R.4W, S.28, 31, 32, 33):
130.22 1B, 2A, 3B;
- 130.23 (98) Hornby Junction Creek (Whiteface River, South Branch), (T.55, R.13,
130.24 S.5,6, 7; T.56, R.13, S.28, 32, 33): 1B, 2A, 3B;

- 131.1 (99) Horn Creek, (T.62, R.4W): 1B, 2Bd, 3C;
- 131.2 (100) Houghtaling Creek, (T.59, R.6, S.2, 3, 4, 5, 6; T.60, R.6, S.25, 32,
131.3 33, 35, 36): 1B, 2A, 3B;
- 131.4 (101) Humphrey Creek, (T.54, R.14, S.23, 26, 27, 33, 34): 1B, 2A, 3B;
- 131.5 (102) Hunter Creek (Hunters Creek), (T.46, R.18, S.2, 11, 12, 13; T.47,
131.6 R.18, S.34, 35): 1B, 2A, 3B;
- 131.7 (103) Indian Camp Creek, (T.60, R.2W, S.3, 10, 11; T.61, R.2W, S.34):
131.8 1B, 2A, 3B;
- 131.9 (104) Indian Creek, (T.55, R.12, S.3; T.56, R.12, S.14, 22, 23, 27, 34):
131.10 1B, 2A, 3B;
- 131.11 (105) Irish Creek, (T.63, R.3E, S.8, 9, 10, 13, 14, 15, 23, 24, 25, 26; T.63,
131.12 R.4E, S.17, 18, 19): 1B, 2A, 3B;
- 131.13 (106) Joe Martin Creek (Martin Branch), (T.50, R.18, S.3, 4, 5, 7, 8; T.50,
131.14 R.19, S.12): 1B, 2A, 3B;
- 131.15 (107) Johnson Creek, (T.50, R.17, S.3, 10, 11, 14; T.51, R.17, S.34): 1B,
131.16 2A, 3B;
- 131.17 (108) Johnson Creek, (T.55, R.12, S.35, 36): 1B, 2A, 3B;
- 131.18 (109) Jonvick Creek, (T.60, R.2W, S.7, 19; T.60, R.3W, S.12, 13, 14,
131.19 24): 1B, 2A, 3B;
- 131.20 (110) Junco Creek, (T.62, R.1W, S.1, 2, 9, 10, 11, 12, 13, 14, 15, 16, 21, 28;
131.21 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;
- 131.22 (111) Kadunce Creek (Kadunce River), (T.61, R.2E, S.2; T.62, R.2E, S.9,
131.23 10, 12, 13, 14, 15, 16, 22, 23, 24, 26, 35): 1B, 2A, 3B;

- 132.1 (112) Keene Creek, (T.49, R.14, S.18; T.49, R.15, S.1, 12, 13; T.50, R.15,
132.2 S.24, 25, 36): 1B, 2A, 3B;
- 132.3 (113) Kehtel Creek, (T.51, R.15, S.8, 17, 18, 19, 20): 1B, 2A, 3B;
- 132.4 (114) Kimball Creek, (T.61, R.2E, S.3, 4, 10; T.62, R.2E, S.7, 16, 17, 18,
132.5 19, 20, 21, 28, 29, 33, 34): 1B, 2A, 3B;
- 132.6 (115) Kingsbury Creek, (T.49, R.15, S.4, 9, 10, 11, 13, 14; T.50, R.15,
132.7 S.33, 34): 1B, 2A, 3B;
- 132.8 (116) Kinney Creek, (T.57, R.10, S.15, 21, 22, 28, 33): 1B, 2A, 3B;
- 132.9 (117) Knife River, (T.52, R.11, S.4, 5, 8, 9, 17, 18, 19, 31; T.53, R.11, S.4, 5,
132.10 7, 8, 17, 18, 20, 29, 32, 33; T.54, R.11, S.20, 29, 32; T.52, R.12, S.24, 25, 36): 1B, 2A, 3B;
- 132.11 (118) Knife River, Little, (T.52, R.12, S.16, 17, 21, 22, 23, 26, 27, 28,
132.12 35, 36): 1B, 2A, 3B;
- 132.13 (119) Knife River, Little, East Branch, (T.53, R.11, S.17, 20, 21, 22, 27,
132.14 33, 34): 1B, 2A, 3B;
- 132.15 (120) Knife River, Little, West Branch, (T.52, R.11, S.6; T.53, R.11, S.31;
132.16 T.53, R.12, S.13, 14, 23, 24, 25, 26, 36): 1B, 2A, 3B;
- 132.17 (121) Knife River, West Branch, (T.52, R.11, S.5, 6, 8; T.52, R.12, S.1;
132.18 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;
- 132.19 (122) Koski Creek, (T.61, R.4W, S.5, 8; T.62, R.4W, S.31, 32): 1B, 2A, 3B;
- 132.20 (123) Lavi Creek, (T.52, R.15, S.21, 28): 1B, 2A, 3B;
- 132.21 (124) Leskinen Creek, (T.57, R.7, S.15, 21, 22, 28): 1B, 2A, 3B;
- 132.22 (125) Lester River, (T.50, R.13, S.4, 5, 8; T.51, R.13, S.5, 6, 7, 8, 16, 17,
132.23 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,
132.24 32; T.52, R.14, S.21, 22, 23, 27, 28, 34, 35): 1B, 2A, 3B;

- 133.1 (126) Lindstrom Creek, (T.56, R.7, S.4; T.57, R.7, S.19, 30, 31, 32, 33;
133.2 T.57, R.8, S.25): 1B, 2A, 3B;
- 133.3 (127) Lullaby Creek, (T.63, R.1E, S.4, 5, 8, 9): 1B, 2A, 3B;
- 133.4 (128) Manganika Creek, Virginia, (T.58, R.17, S.19; T.58, R.18, S.24): 7;
- 133.5 (129) Manitou River (Moose Creek), (T.57, R.6, S.3, 4, 10, 11; T.58, R.6,
133.6 S.4, 5, 6, 7, 8, 16, 17, 18, 20, 21, 28, 29, 32, 33, 34): 1B, 2A, 3B;
- 133.7 (130) Manitou River, Little, (T.57, R.6, S.2; T.58, R.6, S.34, 35): 1B,
133.8 2A, 3B;
- 133.9 (131) Manitou River, North Branch (Balsam Creek), (T.58, R.6, S.6; T.58,
133.10 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,
133.11 35, 36; T.59, R.8, S.1, 2, 12, 13, 24, 25, 26): 1B, 2A, 3B;
- 133.12 (132) Manitou River, South Branch (Junction Creek), (T.58, R.6, S.6;
133.13 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,
133.14 31, 32, 33): 1B, 2A, 3B;
- 133.15 (133) Marais River, Little, (T.57, R.6, S.5, 8, 16, 17, 21): 1B, 2A, 3B;
- 133.16 (134) Mark Creek, (T.61, R.2W, S.1, 2, 3, 4, 5, 6, 9): 1B, 2A, 3B;
- 133.17 (135) Marshall Creek, (T.52, R.15, S.10, 15): 1B, 2A, 3B;
- 133.18 (136) Martin Creek, (T.58, R.6, S.2, 3, 11): 1B, 2A, 3B;
- 133.19 (137) McCarthy Creek, (T.53, R.11, S.18; T.53, R.12, S.12, 13): 1B, 2A,
133.20 3B;
- 133.21 (138) Midway River (Rock Run), (T.49, R.15, S.5, 6; T.49, R.16, S.1, 12,
133.22 13, 14, 15, 21, 22; T.50, R.15, S.7, 8, 14, 15, 16, 17, 20, 21, 22, 23, 28, 29, 32, 33):
133.23 1B, 2A, 3B;

- 134.1 (139) Mile Post Forty-Three Creek (Fortythree Creek, East and West
134.2 Branch), (T.56, R.8, S.2, 3, 10, 11, 13, 14, 15): 1B, 2A, 3B;
- 134.3 (140) Miller Creek, (T.49, R.14, S.4; T.50, R.14, S.6, 18, 19, 29, 30, 32, 33;
134.4 T.50, R.15, S.12, 13; T.51, R.14, S.31, 32): 1B, 2A, 3B;
- 134.5 (141) Mink Creek, (T.54, R.9, S.4, 5, 9; T.55, R.9, S.30, 31, 32; T.55,
134.6 R.10, S.25, 26, 36): 1B, 2A, 3B;
- 134.7 (142) Mission Creek, (T.48, R.15, S.5, 6; T.49, R.15, S.31; T.49, R.16,
134.8 S.25, 26, 36): 1B, 2A, 3B;
- 134.9 (143) Mississippi Creek, (T.61, R.2W, S.1, 2, 3; T.61, R.3W, S.1; T.62,
134.10 R.2W, S.31, 32, 33, 34, 35, 36; T.62, R.3W, S.24, 25, 35, 36): 1B, 2A, 3B;
- 134.11 (144) Mississippi Creek, Little, (T.62, R.2W, S.20, 21, 26, 29, 32, 33,
134.12 34, 35): 1B, 2A, 3B;
- 134.13 (145) Mistletoe Creek, (T.60, R.3W, S.3, 4; T.61, R.2W, S.7, 18; T.61,
134.14 R.3W, S.11, 13, 14, 15, 23, 24, 25, 26, 34, 35): 1B, 2A, 3B;
- 134.15 (146) Monker Creek, (T.61, R.1E, S.6, 7; T.62, R.1E, S.31; T.62, R.1W,
134.16 S.36): 1B, 2A, 3B;
- 134.17 (147) Mons Creek, (T.62, R.3E, S.4; T.63, R.3E, S.28, 29, 33): 1B, 2A, 3B;
- 134.18 (148) Moose Creek, (T.59, R.6, S.31, 32, 33, 34): 1B, 2A, 3B;
- 134.19 (149) Mud Creek, Carlton County, (T.47, R.15, S.18; T.47, R.16, S.5, 6,
134.20 8, 9, 10, 11, 13, 14, 15, 16): 1B, 2A, 3B;
- 134.21 (150) Mud Creek, St. Louis County, (T.54, R.12, S.20, 21, 22, 29, 30):
134.22 1B, 2A, 3B;
- 134.23 (151) Mud Creek, Cook County, (T.62, R.1E, S.8, 9, 16, 17, 21, 22): 1B,
134.24 2A, 3B;

- 135.1 (152) Mud Creek, Little, (T.57, R.11, S.11, 12, 14, 22, 23): 1B, 2A, 3B;
- 135.2 (153) Murrur Creek, (T.61, R.2W, S.15, 20, 21, 22, 29, 30): 1B, 2A, 3B;
- 135.3 (154) Murphy Creek (Maki Creek), (T.56, R.11, S.4, 5, 8, 17, 18, 19; T.57,
135.4 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;
- 135.5 (155) Myhr Creek, (T.62, R.3E, S.23, 24, 26): 1B, 2A, 3B;
- 135.6 (156) Nemadji Creek, (T.46, R.17, S.7, 8, 9, 18; T.46, R.18, S.13, 14,
135.7 15, 16, 22): 1B, 2A, 3B;
- 135.8 (157) Nemadji River, North Fork (Nemadji River), (T.46, R.17, S.1, 2, 3, 8,
135.9 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,
135.10 S.23, 24, 25, 26, 27, 28, 29, 31, 32; T.47, R.17, S.35, 36): 1B, 2A, 3B;
- 135.11 (158) Nemadji River, South Fork, (T.46, R.16, S.4, 5, 6, 7; T.46, R.17, S.1,
135.12 11, 12; T.47, R.15, S.30; T.47, R.16, S.25, 33, 34, 35, 36): 1B, 2A, 3B;
- 135.13 (159) Nestor Creek (Nester Creek), (T.61, R.1W, S.4, 5, 6; T.61, R.2W,
135.14 S.1; T.62, R.1W, S.31, 32, 33): 1B, 2A, 3B;
- 135.15 (160) Net River, (T.45, R.16, S.6; T.45, R.17, S.1; T.46, R.16, S.3, 4, 8, 9,
135.16 17, 20, 21, 29, 31, 32, 33; T.47, R.16, S.34;): 1B, 2A, 3B;
- 135.17 (161) Net River, Little, (T.46, R.16, S.3, 10, 15, 22, 26, 27, 34): 1B, 2A, 3B;
- 135.18 (162) Nicadood Creek (Nicadood Creek), (T.56, R.7, S.7; T.56, R.8, S.1,
135.19 12; T.57, R.8, S.27, 35, 36): 1B, 2A, 3B;
- 135.20 (163) Nine Mile Creek (Ninemile Creek), (T.58, R.6, S.3, 4, 9, 16, 17;
135.21 T.59, R.6, S.27, 28, 33, 34): 1B, 2A, 3B;
- 135.22 (164) Oliver Creek (Silver), (T.57, R.7, S.5, 6; T.57, R.8, S.1; T.58, R.7,
135.23 S.31, 32): 1B, 2A, 3B;

- 136.1 (165) Onion Creek (Onion River and West Branch Onion River), (T.59,
136.2 R.4W, S.1, 2, 3, 4, 12; T.60, R.4W, S.24, 25, 26, 35, 36): 1B, 2A, 3B;
- 136.3 (166) Otter Creek, Big (Otter Creek), (T.48, R.16, S.7; T.48, R.17, S.3,
136.4 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,
136.5 26): 1B, 2A, 3B;
- 136.6 (167) Otter Creek, Little, (T.48, R.17, S.7, 10, 15, 16, 17, 18; T.48, R.18,
136.7 S.11, 12, 13, 14): 1B, 2A, 3B;
- 136.8 (168) Palisade Creek, (T.56, R.7, S.16, 17, 18, 19, 20, 21, 22; T.56, R.8,
136.9 S.24): 1B, 2A, 3B;
- 136.10 (169) Pancake Creek, (T.54, R.22, S.20, 28, 29, 33): 1B, 2A, 3B;
- 136.11 (170) Pancake Creek, (T.60, R.4W, S.17, 18; T.60, R.5W, S.11, 13, 14):
136.12 1B, 2A, 3B;
- 136.13 (171) Pecore Creek, (T.61, R.4W, S.19, 20, 21): 1B, 2A, 3B;
- 136.14 (172) Peters Creek, (T.54, R.22, S.22, 23, 27, 28): 1B, 2A, 3B;
- 136.15 (173) Pigeon River (South Fowl Lake outlet to Pigeon Bay of Lake
136.16 Superior): 1B, 2Bd, 3A;
- 136.17 (174) Pike Lake Creek, (T.61, R.2W, S.10, 11, 15): 1B, 2A, 3B;
- 136.18 (175) Pine Mountain Creek (Falls Creek), (T.63, R.1E, S.23, 26, 27, 28,
136.19 33): 1B, 2A, 3B;
- 136.20 (176) Pine River (White Pine River), (T.50, R.16, S.4, 8, 9, 15, 16, 17, 18,
136.21 19, 20, 21, 29, 30, 32; T.50, R.17, S.23, 24, 26): 1B, 2A, 3B;
- 136.22 (177) Plouff Creek, (T.61, R.4W, S.17, 18; T.61, R.5W, S.2, 3, 11, 13, 14,
136.23 15, 23; T.62, R.5W, S.26, 34, 35): 1B, 2A, 3B;
- 136.24 (178) *Plouff Creek [11/5/84P] (T.62, R.5W, S.23): 1B, 2A, 3B;

137.1 (179) Poplar River (Missouri Creek), (T.60, R.3W, S.3, 4, 5, 6, 9, 10, 15,
137.2 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,
137.3 25, 26, 36): 1B, 2A, 3B;

137.4 (180) Portage Brook, (T.64, R.3E, S.24, 25, 26, 27, 28, 29, 32, 33, 34;
137.5 T.64, R.4E, S.19, 20): 1B, 2A, 3B;

137.6 (181) Railroad Creek, (T.50, R.17, S.1, 11, 12, 14): 1B, 2A, 3B;

137.7 (182) Red River, (T.48, R.15, S.30; T.48, R.16, S.25, 26): 1B, 2A, 3B;

137.8 (183) Red Rock Creek, (T.63, R.5E, S.21, 22, 26, 27, 28, 35): 1B, 2A, 3B;

137.9 (184) Reservation River, (T.62, R.5E, S.6; T.63, R.4E, S.23, 25, 26, 36;
137.10 T.63, R.5E, S.16, 17, 18, 19, 20, 21, 29, 30, 31): 1B, 2A, 3B;

137.11 (185) Rock Creek, (T.47, R.16, S.7, 17, 18, 20, 21, 22, 23, 24; T.47, R.17,
137.12 S.12): 1B, 2A, 3B;

137.13 (186) Rock Cut Creek, (T.58, R.6, S.18, 19, 20; T.58, R.7, S.13): 1B,
137.14 2A, 3B;

137.15 (187) Rocky Run Creek, (T.49, R.15, S.6; T.50, R.15, S.30, 31; T.50,
137.16 R.16, S.11, 12, 13, 24, 25): 1B, 2A, 3B;

137.17 (188) Rollins Creek, (T.59, R.3W, S.6; T.60, R.3W, S.29, 30, 31; T.60,
137.18 R.4W, S.36): 1B, 2A, 3B;

137.19 (189) Rosebush Creek (Fall River), (T.61, R.1W, S.13, 23, 24, 25; T.61,
137.20 R.1E, S.18): 1B, 2A, 3B;

137.21 (190) Ross Creek, (T.52, R.13, S.1, 2, 3, 4, 5; T.53, R.13, S.33): 1B, 2A,
137.22 3B;

137.23 (191) Ryan Creek, (T.55, R.14, S.14, 15, 22): 1B, 2A, 3B;

- 138.1 (192) St. Louis River, [WR] (T.58, R.12, S.21, 22, 27, 28, 31, 32, 33;
138.2 T.58, R.13, S.36): 2B, 3B;
- 138.3 (193) Sargent Creek, (T.48, R.15, S.4, 5, 9, 10; T.49, R.15, S.28, 29, 32):
138.4 1B, 2A, 3B;
- 138.5 (194) Sawbill Creek, (T.62, R.4W, S.7, 18, 19, 20, 28, 29, 30; T.62, R.5W,
138.6 S.25): 1B, 2A, 3B;
- 138.7 (195) Sawmill Creek, (T.57, R.6, S.18; T.57, R.7, S.12, 13, 22, 23, 24,
138.8 26, 27, 34): 1B, 2A, 3B;
- 138.9 (196) Scanlon Creek, (T.49, R.16, S.30; T.49, R.17, S.25): 1B, 2A, 3B;
- 138.10 (197) Schmidt Creek, (T.51, R.12, S.17): 1B, 2A, 3B;
- 138.11 (198) Schoolhouse Creek, (T.58, R.7, S.35, 36): 1B, 2A, 3B;
- 138.12 (199) Section 16 Creek, (T.58, R.5W, S.16): 1B, 2A, 3B;
- 138.13 (200) Section 36 Creek, (T.46, R.16, S.1, 2, 11, 12, 13; T.47, R.16, S.36):
138.14 1B, 2A, 3B;
- 138.15 (201) Silver Creek, Carlton County, (T.48, R.16, S.15, 16, 17, 21, 28):
138.16 1B, 2A, 3B;
- 138.17 (202) Silver Creek, Lake County, (T.53, R.10, S.6, 7, 16, 17, 18, 21; T.53,
138.18 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;
- 138.19 (203) Silver Creek, Big (Silver Creek), Carlton County, (T.46, R.17, S.14,
138.20 23, 24, 25, 36): 1B, 2A, 3B;
- 138.21 (204) Silver Creek, East Branch, (T.53, R.10, S.5, 8, 9, 16, 21): 1B, 2A, 3B;
- 138.22 (205) Sixmile Creek, (T.60, R.4W, S.13, 14, 15, 22, 23, 27, 28, 33): 1B,
138.23 2A, 3B;

- 139.1 (206) Skunk Creek, Lake County, (T.54, R.9, S.4, 9, 16, 17, 20; T.55, R.9,
139.2 S.19, 29, 30, 32, 33; T.55, R.10, S.13, 14, 24): 1B, 2A, 3B;
- 139.3 (207) Skunk Creek, Carlton County, (T.46, R.17, S.4, 5, 6; T.47, R.17,
139.4 S.31, 33, 34, 35, 36; T.47, R.18, S.36): 1B, 2A, 3B;
- 139.5 (208) Spider Creek, (T.52, R.18, S.19, 20, 21, 22, 27, 28, 29, 30; T.52,
139.6 R.19, S.9, 10, 13, 14, 15, 24): 1B, 2A, 3B;
- 139.7 (209) Split Rock River, (T.54, R.8, S.6, 7; T.54, R.9, S.1, 2, 12; T.55, R.9,
139.8 S.26, 28, 34, 35, 36): 1B, 2A, 3B;
- 139.9 (210) Split Rock River, East Branch, (T.55, R.9, S.4, 5, 6, 9, 10, 14, 15, 22,
139.10 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;
- 139.11 (211) Split Rock River, West Branch, (T.55, R.9, S.6, 7, 8, 16, 17, 21, 22,
139.12 26, 27, 28; T.55, R.10, S.1; T.56, R.10, S.22, 26, 27, 33, 34, 35, 36): 1B, 2A, 3B;
- 139.13 (212) Spring Creek, Carlton County, (T.46, R.17, S.3, 4, 5, 6): 1B, 2A, 3B;
- 139.14 (213) Spring Creek, St. Louis County, (T.54, R.12, S.1, 2): 1B, 2A, 3B;
- 139.15 (214) Stanley Creek, (T.52, R.11, S.18, 19; T.52, R.12, S.4, 5, 8, 9, 10,
139.16 11, 12, 13): 1B, 2A, 3B;
- 139.17 (215) State Line Creek, (T.46, R.15, S.6, 7, 18, 19, 30, 31; T.46, R.16,
139.18 S.12, 13, 24, 25, 36; T.47, R.15, S.30, 31): 1B, 2A, 3B;
- 139.19 (216) Stewart Creek, (T.49, R.15, S.21, 22, 26, 27): 1B, 2A, 3B;
- 139.20 (217) Stewart River, (T.53, R.10, S.18, 19, 20, 29; T.53, R.11, S.2, 3, 10,
139.21 11, 13, 14, 15; T.54, R.11, S.3, 4, 10, 15, 22, 26, 27, 34, 35): 1B, 2A, 3B;
- 139.22 (218) Stewart River, (T.55, R.11, S.7; T.55, R.12, S.12, 13): 1B, 2A, 3B;
- 139.23 (219) Stewart River, Little, (T.53, R.10, S.19, 20, 29; T.53, R.11, S.9,
139.24 15, 16, 22, 23, 24): 1B, 2A, 3B;

- 140.1 (220) Stickle Creek, (T.63, R.1W, S.1, 2, 11, 12, 14): 1B, 2A, 3B;
- 140.2 (221) Stone Creek, (T.61, R.2E, S.2, 3; T.62, R.2E, S.21, 22, 27, 34, 35):
- 140.3 1B, 2A, 3B;
- 140.4 (222) Stoney Creek (Stony Creek or Rock Creek), Lake County, (T.55, R.9,
- 140.5 S.30; T.55, R.10, S.20, 23, 24, 25, 27): 1B, 2A, 3B;
- 140.6 (223) Stony Brook, Carlton County, (T.46, R.17, S.10, 11, 15, 16, 21):
- 140.7 1B, 2A, 3B;
- 140.8 (224) Stony Creek, Little, Cook County, (T.63, R.2E, S.4, 5, 9; T.64, R.2E,
- 140.9 S.31, 32, 33): 1B, 2A, 3B;
- 140.10 (225) Stream Number 30, (T.54, R.8, S.5, 6; T.55, R.8, S.19, 30, 31):
- 140.11 1B, 2A, 3B;
- 140.12 (226) Stumble Creek, (T.59, R.5W, S.16, 21, 22, 26, 27, 28): 1B, 2A, 3B;
- 140.13 (227) Stump River (Lower Stump River), (T.64 R.4E, S.18; T.64, R.3E,
- 140.14 S.8, 9, 13, 14, 15, 16, 17, 21, 22, 23, 24): 1B, 2A, 3B;
- 140.15 (228) Sucker River (Big Sucker Creek), (T.51, R.12, S.3, 4, 10; T.52, R.12,
- 140.16 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,
- 140.17 31; T.53, R.13, S.24, 25, 36): 1B, 2A, 3B;
- 140.18 (229) Sucker River, Little, (T.51, R.12, S.2, 3): 1B, 2A, 3B;
- 140.19 (230) Sugar Loaf Creek, (T.58, R.5W, S.17, 19, 20, 29): 1B, 2A, 3B;
- 140.20 (231) Sullivan Creek, (T.56, R.11, S.1, 2, 10, 11, 15; T.57, R.10, S.19,
- 140.21 30; T.57, R.11, S.24, 25, 36): 1B, 2A, 3B;
- 140.22 (232) Sundling Creek, (T.61, R.1W, S.10, 11, 14, 15, 16, 17, 18; T.61,
- 140.23 R.2W, S.13): 1B, 2A, 3B;

- 141.1 (233) Swamp River, (T.63, R.3E, S.25, 26, 36; T.63, R.4E, S.20, 29, 30;
141.2 T.64, R.4E, S.21, 27, 28): 1B, 2A, 3B;
- 141.3 (234) Swamper Creek, (T.64, R.1E, S.20, 29, 32): 1B, 2A, 3B;
- 141.4 (235) Swan Creek, East, (T.56, R.20, S.3, 4, 5, 10, 11): 1B, 2A, 3B;
- 141.5 (236) Swan Creek, Little, (T.56, R.19, S.17, 19, 20, 30; T.56, R.20, S.25,
141.6 26, 35): 1B, 2A, 3B;
- 141.7 (237) Swan River, East (Barber Creek), (T.55, R.19, S.18, 19, 30, 31;
141.8 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,
141.9 33, 34): 1B, 2A, 3B;
- 141.10 (238) Swan River, West (excluding trout waters), (T.55, 56, R.20, 21): 2C;
- 141.11 (239) Swanson Creek, (T.61, R.4W, S.6, 7, 8; T.61, R.5W, S.1): 1B, 2A, 3B;
- 141.12 (240) Tait River, (T.60, R.3W, S.4; T.61, R.3W, S.28, 33): 1B, 2A, 3B;
- 141.13 (241) Talmadge Creek (Talmadge River), (T.51, R.12, S.19; T.51, R.13,
141.14 S.9, 10, 13, 14, 15, 24): 1B, 2A, 3B;
- 141.15 (242) Temperance River, (T.59, R.4W, S.5, 6, 7, 8, 18, 19, 30, 31, 32;
141.16 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,
141.17 30, 31): 1B, 2A, 3B;
- 141.18 (243) Temperance River (excluding trout waters), (T.62, R.4W): 1B,
141.19 2Bd, 3C;
- 141.20 (244) Thirty-nine Creek, Big, (T.56, R.8, S.19, 30, 31; T.56, R.9, S.1, 2, 3,
141.21 11, 12, 13, 14, 15, 22, 23, 24, 25; T.57, R.9, S.22, 26, 27, 35, 36): 1B, 2A, 3B;
- 141.22 (245) Thirty-nine Creek, Little, (T.56, R.8, S.6, 7, 8, 17, 18, 19, 20, 29, 30;
141.23 T.56, R.9, S.1, 12): 1B, 2A, 3B;

- 142.1 (246) Thompson Creek, (T.62, R.1W, S.17, 19, 20; T.62, R.2W, S.24):
142.2 1B, 2A, 3B;
- 142.3 (247) Tikkanen Creek, (T.57, R.7, S.5, 6, 8, 16, 17): 1B, 2A, 3B;
- 142.4 (248) Timber Creek, (T.62, R.1E, S.1; T.63, R.1E, S.25, 36; T.63, R.2E,
142.5 S.31): 1B, 2A, 3B;
- 142.6 (249) Tischer Creek (Congdon Creek/Hartley), (T.50, R.14, S.2, 3, 4, 10,
142.7 11, 13, 14; T.51, R.14, S.29, 33, 34): 1B, 2A, 3B;
- 142.8 (250) Torgenson Creek, (T.61, R.4W, S.30; T.61, R.5W, S.24, 25): 1B,
142.9 2A, 3B;
- 142.10 (251) Tower Creek, St. Louis County, (T.55, R.14, S.8, 9, 17, 18, 19; T.55,
142.11 R.15, S.24, 25, 26): 1B, 2A, 3B;
- 142.12 (252) Tower Creek, Lake County, (T.57, R.7, S.9): 1B, 2A, 3B;
- 142.13 (253) Trappers Creek, (T.56, R.11, S.2, 3, 9, 10, 16, 17, 19, 20; T.57,
142.14 R.11, S.35): 1B, 2A, 3B;
- 142.15 (254) Trout Brook, (T.54, R.22, S.1): 1B, 2A, 3B;
- 142.16 (255) Twin Points Creek, (T.54, R.9, S.10, 11, 13, 14): 1B, 2A, 3B;
- 142.17 (256) Two Island River, (T.58, R.5W, S.2, 3, 4, 11; T.59, R.5W, S.7, 8, 17,
142.18 18, 20, 21, 27, 28, 29, 31, 32, 33, 34; T.59, R.6, S.11, 12): 1B, 2A, 3B;
- 142.19 (257) Ugstad Creek, (T.51, R.15, S.21, 22, 26, 27, 28): 1B, 2A, 3B;
- 142.20 (258) Unnamed (Deer) Creek, (T.47, R.16, S.19, 29, 30; T.47, R.17, S.13,
142.21 14, 24): 1B, 2A, 3B;
- 142.22 (259) Unnamed Creek, Carlton County, (T.47, R.17, S.28, 29, 33, 34,
142.23 35): 1B, 2A, 3B;

- 143.1 (260) Unnamed Creek, Carlton County, (T.47, R.17, S.31, 32, 33, 34):
143.2 1B, 2A, 3B;
- 143.3 (261) Unnamed Creek, (T.55, R.8, S.20, 21, 29, 32, 33): 1B, 2A, 3B;
- 143.4 (262) Unnamed Creek, Meadowlands, (T.53, R.19, S.22, 23): 7;
- 143.5 (263) Unnamed Creek, (S-17-6), (T.53, R.11, S.30, 31, 32; T.53, R.12,
143.6 S.25): 1B, 2A, 3B;
- 143.7 (264) Unnamed Creek, (S-17-9), (T.53, R.11, S.5; T.54, R.11, S.20, 29,
143.8 30, 32): 1B, 2A, 3B;
- 143.9 (265) Unnamed Ditch, Gilbert, (T.58, R.17, S.23, 24, 25, 36): 7;
- 143.10 (266) Us-kab-wan-ka (Rush), (T.52, R.16, S.2, 11, 14, 23; T.53, R.15,
143.11 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,
143.12 32, 33, 34): 1B, 2A, 3B;
- 143.13 (267) Wanless Creek, (T.60, R.6, S.27, 33, 34, 35, 36): 1B, 2A, 3B;
- 143.14 (268) Whiteface River, South Branch, (see Hornby Junction Creek);
- 143.15 (269) Whyte Creek, (T.57, R.10, S.1, 2, 11, 14, 23, 26, 27, 34): 1B, 2A, 3B;
- 143.16 (270) Woods Creek, (T.61, R.1E, S.1, 12, 13; T.62, R.1E, S.35, 36): 1B,
143.17 2A, 3B;
- 143.18 (271) Wyman Creek, (T.58, R.14, S.3, 4; T.59, R.14, S.11, 13, 14, 23, 24,
143.19 26, 27, 34, 35): 1B, 2A, 3B; and
- 143.20 (272) *All other streams in the Boundary Waters Canoe Area Wilderness
143.21 [11/5/84P]: 1B, 2Bd, 3B.
- 143.22 B. Lakes:
- 143.23 (1) *Alder Lake, 16-0114-00, [11/5/84P] (T.64, R.1E): 1B, 2A, 3B;

- 144.1 (2) *Alton Lake, 16-0622-00, [11/5/84P] (T.62, 63, R.4, 5): 1B, 2A, 3B;
- 144.2 (3) Artichoke Lake, 69-0623-00, [WR] (T.52, R.17, S.17, 18, 19, 20):
- 144.3 2B, 3B;
- 144.4 (4) Bath Lake, 16-0164-00, (T.62, R.1W, S.5, 6; T.63, R.1W, S.31, 32):
- 144.5 1B, 2A, 3B;
- 144.6 (5) Bean Lake (Lower Twin), 38-0409-00, (T.56, R.8W, S.25, 26): 1B,
- 144.7 2A, 3B;
- 144.8 (6) Bear Lake (see Twin Lake, Upper);
- 144.9 (7) Bearskin Lake, East, 16-0146-00, (T.64, R.1E, 1W): 1B, 2A, 3B;
- 144.10 (8) *Bearskin Lake, West, 16-0228-00, [3/7/88R] (T.64, 65, R.1): 1B,
- 144.11 2A, 3B;
- 144.12 (9) *Bench Lake, 16-0063-00, [11/5/84P] (T.64, 2E, S.6): 1B, 2A, 3B;
- 144.13 (10) Benson Lake, 38-0018-00, (T.58, R.6W, S.29): 1B, 2A, 3B;
- 144.14 (11) *Birch Lake, 16-0247-00, [3/7/88R] (T.65, R.1, 2): 1B, 2A, 3B;
- 144.15 (12) *Black Lake, 58-0001-00, [3/7/88P] (T.45, R.15): 1B, 2Bd, 3B;
- 144.16 (13) Bluebill Lake, 38-0261-00, [WR] (T.59, R.7, S.15): 2B, 3B;
- 144.17 (14) Bogus Lake, 16-0050-00, (T.62, R.2E, S.12): 1B, 2A, 3B;
- 144.18 (15) Bone Lake, 38-0065-00, (T.61, R.6W, S.13, 14): 1B, 2A, 3B;
- 144.19 (16) Bow Lake, 16-0211-00, (T.64, R.1W, S.15): 1C, 2Bd, 3C;
- 144.20 (17) Boys Lake, 16-0044-00, (T.62, R.2E, S.5, 8): 1B, 2A, 3B;
- 144.21 (18) Breda Lake, 69-0037-00, [WR] (T.56, R.12, S.16): 2B, 3B;
- 144.22 (19) Briar Lake, 69-0128-00, (T.53, R.13W, S.14, 15, 23): 1B, 2A, 3B;
- 144.23 (20) *Brule Lake, 16-0348-00, [11/5/84P] (T.63, R.2, 3): 1B, 2A, 3B;

- 145.1 (21) Cabin Lake, 38-0260-00, [WR] (T.59, R.7, S.13, 14, 23, 24): 2B, 3B;
- 145.2 (22) Canton Mine Pit Lake, 69-1294-00, (T.58, R.16, S.2, 3): 1C, 2Bd, 3C;
- 145.3 (23) Caribou Lake, 16-0360-00, [WR] (T.60, R.3W, S.1, 2, 11, 12; T.61,
145.4 R.3W, S.35, 36): 2B, 3B;
- 145.5 (24) Carrot Lake, 16-0071-00, (T.64, R.2E, S.17): 1B, 2A, 3B;
- 145.6 (25) Cedar Lake, 69-0431-00, (T.58, R.15W, S.20): 1B, 2A, 3B;
- 145.7 (26) Chester Lake, 69-0033-00, (T.64, R.3E, S.32, 33): 1B, 2A, 3B;
- 145.8 (27) Christine Lake, 16-0373-00, [WR] (T.61, R.3W, S.28, 29, 32): 2B, 3B;
- 145.9 (28) Clearwater Lake (Clear Lake), 69-0397-00, (T.52, R.15W, S.23):
145.10 1B, 2A, 3B;
- 145.11 (29) *Clearwater Lake (Emby Lake), 16-0139-00, [11/5/84P] (T.65, R.1E):
145.12 1B, 2A, 3B;
- 145.13 (30) Colby Lake, 69-0249-00, (T.58, R.14): 1B, 2Bd, 3C;
- 145.14 (31) *Cone Lake, 16-0412-00, North, [11/5/84P] (T.63, 64, R.3): 1B,
145.15 2A, 3B;
- 145.16 (32) Corona Lake, 09-0048-00, (T.48, R.19W, S.11, 12): 1B, 2A, 3B;
- 145.17 (33) Corsica Mine Pit Lake, 69-1316-00, (T.58, R.16, S.18): 1C, 2Bd, 3C;
- 145.18 (34) Crosscut Lake, 38-0257-00, (T.59, R.7W, S.7, 18): 1B, 2A, 3B;
- 145.19 (35) *Crystal Lake, 16-0090-00, [11/5/84P] (T.64, R.1E, 2E): 1B, 2A, 3B;
- 145.20 (36) *Daniels Lake, 16-0150-00, [11/5/84P] (T.65, R.1E, 1W): 1B, 2A, 3B;
- 145.21 (37) *Davis Lake, 16-0435-00, [11/5/84P] (T.64, R.3): 1B, 2A, 3B;
- 145.22 (38) Devilfish Lake, 16-0029-00, (T.64, R.3E): 1B, 2A, 3B;
- 145.23 (39) Divide (Towhey) Lake, 38-0256-00, (T.59, R.7W, S.7, 8): 1B, 2A, 3B;

- 146.1 (40) Duke Lake, 16-0111-00, (T.63, R.1E, S.30): 1B, 2A, 3B;
- 146.2 (41) *Duncan Lake, 16-0232-00, [11/5/84P] (T.65, R.1): 1B, 2A, 3B;
- 146.3 (42) *Dunn Lake, 16-0245-00, [11/5/84P] (T.65, R.1, 2): 1B, 2A, 3B;
- 146.4 (43) East Lake, 38-0020-00, (T.59, R.6W, S.1, 2): 1B, 2A, 3B;
- 146.5 (44) *Echo Lake, 38-0028-00, [3/7/88R] (T.59, R.6, S.14, 15, 22, 23):
- 146.6 1B, 2A, 3B;
- 146.7 (45) Elbow Lake, Little, 69-1329-00, (T.57, R.18W, S.9, 10, 16): 1B,
- 146.8 2A, 3B;
- 146.9 (46) Embarrass Mine Pit (Sabin Lake or Lake Mine), 69-0429-00, (T.58,
- 146.10 R.15W, S.5, 6): 1B, 2A, 3B;
- 146.11 (47) Esther Lake, 16-0023-00, (T.63, R.3E, S.6; T.64, R.3E, S.31): 1B,
- 146.12 2A, 3B;
- 146.13 (48) *Fan Lake (West Lily), 16-0084-00, [11/5/84P] (T.65, R.2E): 1B,
- 146.14 2Bd, 3A;
- 146.15 (49) Feather Lake, 16-0905-00, (T.61, R.5W, S.35): 1B, 2A, 3B;
- 146.16 (50) Flour Lake, 16-0147-00, (T.64, R.1E, 1W): 1B, 2A, 3B;
- 146.17 (51) Fourmile Lake, 16-0639-00, [WR] (T.60, R.5W, S.4, 8, 9, 10, 16,
- 146.18 17): 2B, 3B;
- 146.19 (52) Fowl Lake, North, 16-0036-00, (T.64, 65, R.3E): 1B, 2Bd, 3A;
- 146.20 (53) Fowl Lake, South, 16-0034-00, (T.64, 65, R.3E): 1B, 2Bd, 3A;
- 146.21 (54) Fraser Mine Pit Lake, (T.58, R.20, S.23): 1C, 2Bd, 3C, until the city
- 146.22 of Chisholm no longer uses Fraser Mine Pit Lake as a water supply source for its public
- 146.23 water system, and then the classification is identified in part 7050.0430;

- 147.1 (55) *Gadwall Lake (Gadwell Lake), 16-0060-00, [11/5/84P] (T.64, R.2E,
147.2 S.3): 1B, 2A, 3B;
- 147.3 (56) *Gaskin Lake, 16-0319-00, [11/5/84P] (T.64, R.2): 1B, 2A, 3B;
- 147.4 (57) *Gogebic Lake, 16-0087-00, [11/5/84P] (T.65, R.2E, S.30, 31): 1B,
147.5 2A, 3B;
- 147.6 (58) Goldeneye (Duck) Lake, 38-0029-00, (T.59, R.6W, S.15): 1B, 2A, 3B;
- 147.7 (59) *Greenwood Lake, 16-0077-00, [3/7/88R] (T.64, R.2E): 1B, 2A, 3B;
- 147.8 (60) Hay Lake, 69-0435-00, [WR] (T.59, R.15, S.8): 2B, 3B;
- 147.9 (61) Hungry Jack Lake, 16-0227-00, (T.64, 65, R.1): 1B, 2A, 3B;
- 147.10 (62) Jim Lake (Jerry Lake), 16-0135-00, (T.64, R.1E): 1B, 2A, 3B;
- 147.11 (63) Judson Mine Pit, 69-1295-00, (T.58, R.19W, S.20, 29): 1B, 2A, 3B;
- 147.12 (64) Junco Lake, 16-0159-00, (T.62, R.1W, S.11, 12, 13): 1B, 2A, 3B;
- 147.13 (65) *Kemo Lake, 16-0188-00, [3/7/88R] (T.63, R.1): 1B, 2A, 3B;
- 147.14 (66) Kimball Lake, 16-0045-00, (T.62, R.2E, S.7, 8, 17): 1B, 2A, 3B;
- 147.15 (67) Leo Lake, 16-0198-00, (T.64, R.1W, S.4, 5): 1B, 2A, 3B;
- 147.16 (68) Lieung (Lieuna) Lake, 69-0123-00, [WR] (T.53, R.13, S.3, 4, 9, 10):
147.17 2B, 3B;
- 147.18 (69) *Lily Lakes (Vaseux Lake and Fan Lake), 16-0083-00 and
147.19 16-0084-00, [11/5/84P] (T.65, R.2E): 1B, 2Bd, 3A;
- 147.20 (70) Lima Lake, 16-0226-00, (T.64, R.1W, S.35): 1B, 2A, 3B;
- 147.21 (71) *Lizz Lake, 16-0199-00, [11/5/84P] (T.64, R.1W, S.7, 18): 1B, 2A,
147.22 3B;
- 147.23 (72) Loaine (Sand) Lake, 69-0016-00, (T.54, R.12W, S.16, 17): 1B, 2A, 3B;

- 148.1 (73) Loft Lake, 16-0031-00, (T.64, R.3E, S.21): 1B, 2A, 3B;
- 148.2 (74) Long Lake, 69-0044-00, [WR] (T.57, R.12, S.4, 5; T.58, R.12, S.32,
148.3 33): 2B, 3B;
- 148.4 (75) Margaret Lake, 16-0896-00, (T.64, R.3E, S.27, 28, 33, 34): 1B, 2A,
148.5 3B;
- 148.6 (76) Marsh Lake, 16-0488-00, [WR] (T.62, R.4W, S.22, 23, 27, 28): 2B,
148.7 3B;
- 148.8 (77) McFarland Lake, 16-0027-00, (T.64, R.3E): 1B, 2A, 3B;
- 148.9 (78) Mesabi (Missabe) Mountain Mine Pit Lake, 69-1292-00, (T.58, R.17,
148.10 S.8): 1C, 2Bd, 3C;
- 148.11 (79) Mink Lake, 16-0046-00, (T.62, R.2E, S.8): 1B, 2A, 3B;
- 148.12 (80) Mirror Lake, 69-0234-00, (T.52, R.14W, S.19, 30): 1B, 2A, 3B;
- 148.13 (81) *Misquah Lake, 16-0225-00, [11/5/84P] (T.64, R.1): 1B, 2A, 3B;
- 148.14 (82) Moore Lake, 16-0489-00, [WR] (T.62, R.4W, S.23, 24): 2B, 3B;
- 148.15 (83) Moosehorn Lake, 16-0015-00, (T.63, R.3E, S.36; T.63, R.4E, S.31):
148.16 1B, 2A, 3B;
- 148.17 (84) *Moose Lake, 16-0043-00, [11/5/84P] (T.65, R.2E, 3E): 1B, 2A, 3A;
- 148.18 (85) Morton Mine Pit Lake, 69-1310-00, (T.57, R.21, S.10, 11, 14): 1C,
148.19 2Bd, 3C;
- 148.20 (86) *Moss Lake, 16-0234-00, [3/7/88R] (T.65, R.1): 1B, 2A, 3B;
- 148.21 (87) *Mountain Lake, 16-0093-00, [11/5/84P] (T.65, R.1E, 2E): 1B, 2A,
148.22 3B;
- 148.23 (88) Muckwa Lake, 16-0105-00, (T.63, R.1E, S.21, 28): 1B, 2A, 3B;

- 149.1 (89) *Mulligan Lake, 16-0389-00, [11/5/84P] (T.63, R.3W, S.1, 12): 1B,
149.2 2A, 3B;
- 149.3 (90) Musquash Lake, 16-0104-00, (T.63, R.1E, S.20, 28, 29): 1B, 2A, 3B;
- 149.4 (91) Normanna Lake, 69-0122-00, (T.52, R.13W, S.7, 8): 1B, 2A, 3B;
- 149.5 (92) Northern Light Lake, 16-0089-00, [WR] (T.63, R.2E, S.29, 30, 31, 32,
149.6 33; T.63, R.1E, S.25): 2B, 3B;
- 149.7 (93) Olga Lake, 16-0024-00, (T.63, R.3E, S.6; T.64, R.3E, S.31): 1B,
149.8 2A, 3B;
- 149.9 (94) Olson Lake, 16-0158-00, (T.62, R.1W, S.9, 16): 1B, 2A, 3B;
- 149.10 (95) *Onega Lake (Omega Lake), 16-0353-00, [11/5/84P] (T.64, R.2,
149.11 3): 1B, 2A, 3B;
- 149.12 (96) *Otto Lake, Lower (South Otto), 16-0323-00, [11/5/84P] (T.64,
149.13 R.2): 1B, 2A, 3B;
- 149.14 (97) Pancore (Lost) Lake, 16-0475-00, (T.61, R.4W, S.22, 27): 1B, 2A, 3B;
- 149.15 (98) Papoose Lake, 69-0024-00, [WR] (T.55, R.12, S.9): 2B, 3B;
- 149.16 (99) *Partridge Lake, 16-0233-00, [11/5/84P] (T.65, R.1): 1B, 2A, 3B;
- 149.17 (100) *Pemmican Lake, 16-0085-00, [11/5/84P] (T.65, R.2E, S.22): 1B,
149.18 2A, 3B;
- 149.19 (101) *Pike Lake, West, 16-0086-00, [11/5/84P] (T.65, R.2E): 1B, 2A, 3B;
- 149.20 (102) Pine Lake, 16-0194-00, (T.63, R.1W, S.35, 36): 1B, 2A, 3B;
- 149.21 (103) *Pine Lake, 16-0041-00, [11/5/84P] (T.64, 65, R.1E, 2E, 3E): 1B,
149.22 2A, 3B;

- 150.1 (104) Pine Mountain Lake, 16-0108-00, (T.63, R.1E, S.26, 27, 34, 35):
150.2 1B, 2A, 3B;
- 150.3 (105) Poplar Lake, 16-0239-00, (T.64N, R.1, 2W): 1C, 2Bd, 3C;
- 150.4 (106) *Ptarmigan Lake, 16-0183-00, [11/5/84P] (T.63, R.1, S.20, 29): 1B
150.5 2Bd, 3B;
- 150.6 (107) *Ram Lake, 16-0174-00, [11/5/84P] (T.63, R.1W, S.9, 10): 1B,
150.7 2A, 3B;
- 150.8 (108) Rice Lake, 16-0453-00, [WR] (T.61 R.3W, S.7; T.61, R.4W, S.2,
150.9 11, 12): 2B, 3B;
- 150.10 (109) *Rose Lake, 16-0230-00, [11/5/84P] (T.65, R.1): 1B, 2A, 3B;
- 150.11 (110) Round Island Lake, 38-0417-00 [WR] (T.59, R.8, S.12): 2B, 3B;
- 150.12 (111) Round Lake, 69-0048-00, [WR] (T.58, R.12, S.25, 26): 2B, 3B;
- 150.13 (112) St. James Mine Pit, 69-0428-00, (T.58, R.15W, S.3, 4): 1C, 2Bd, 3C;
- 150.14 (113) Saint Mary's Lake, 69-0651-00, (T.57, R.17, S.9, 16, 17): 1C,
150.15 2Bd, 3C;
- 150.16 (114) *Sawbill Lake, 16-0496-00, [11/5/84P] (T.62, 63, R.4): 1B, 2Bd, 3B;
- 150.17 (115) Section 8 Lake, 38-0258-00, (T.59, R.7W, S.8): 1B, 2A, 3B;
- 150.18 (116) Seven Beaver Lake, 69-0002-00, [WR] (T.58, R.11, 12): 2B, 3A;
- 150.19 (117) Shady, North, Lake, 16-0076-00, (T.64, R.2E, S.21, 22): 1B, 2A, 3B;
- 150.20 (118) Shoe Lake, 16-0080-00, (T.64, 2E, S.30): 1B, 2A, 3B;
- 150.21 (119) Sled Lake, 16-0897-00, (T.63, R.1W, S.3): 1B, 2A, 3B;
- 150.22 (120) *Sock Lake, 16-0335-00, [11/5/84P] (T.65, R.2W, S.26): 1B, 2A, 3B;
- 150.23 (121) Sonju Lake, 38-0248-00, (T.58, R.7W, S.27, 28): 1B, 2A, 3B;

- 151.1 (122) *South Lake, 16-0244-00, [11/5/84P] (T.65, R.1, 2): 1B, 2A, 3B;
- 151.2 (123) Spring Hole Lake, 69-1372-00, (T.55, R.14W, S.14): 1B, 2A, 3B;
- 151.3 (124) *State Lake, 16-0293-00, [11/5/84P] (T.63, 64, R.2): 1B, 2A, 3B;
- 151.4 (125) Steer Lake, 38-0920-00, (T.60, R.6W, S.32): 1B, 2A, 3B;
- 151.5 (126) Stone Lake, 69-0686-00, [WR] (T.55, R.17, S.6; T.55, R.18, S.1;
- 151.6 T.56, R.17, S.31; T.56, R.18, S.36): 2B, 3B;
- 151.7 (127) Stone Lake (Skibo Lake), 69-0046-00, [WR] (T.58, R.12, S.17,
- 151.8 19, 20): 2B, 3B;
- 151.9 (128) Stone Lake (Murphy Lake or Tommila Lake), 69-0035-00, [WR]
- 151.10 (T.56, R.12, S.13, 24): 2B, 3B;
- 151.11 (129) *Superior, Lake, excluding the portions identified in subitem ~~(128)~~
- 151.12 (130) 16-0001-00, [11/5/84R] (T.49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62,
- 151.13 63, 64, R.14W-7E): 1B, 2A, 3A;
- 151.14 (130) *Superior, Lake, 16-0001-00, [3/9/98P] (those portions of Lake
- 151.15 Superior north of latitude 47 degrees, 57 minutes, 13 seconds, east of Hat Point, south
- 151.16 of the Minnesota-Ontario boundary, and west of the Minnesota-Michigan boundary):
- 151.17 1B, 2A, 3A;
- 151.18 (131) Swamp River (Reservoir), 16-0901-00, [WR] (T.63, R.4E, S.4;
- 151.19 T.64, R.4E, S.33): 2B, 3B;
- 151.20 (132) *Swan Lake, 16-0268-00, [11/5/84P] (T.63, R.2): 1B, 2A, 3B;
- 151.21 (133) Talus Lake, 16-0187-00, (T.63, R.1W, S.26, 27): 1B, 2A, 3B;
- 151.22 (134) Thompson Lake, 16-0160-00, (T.62, R.1W, S.19, 20, 29, 30): 1B,
- 151.23 2A, 3B;
- 151.24 (135) Thrasher Lake, 16-0192-00, (T.63, R.1W, S.31): 1B, 2A, 3B;

- 152.1 (136) Thrush Lake, 16-0191-00, (T.63, R.1W, S.31): 1B, 2A, 3B;
- 152.2 (137) *Topper Lake, 16-0336-00, [11/5/84P] (T.65, R.2W, S.27): 1B,
152.3 2A, 3B;
- 152.4 (138) *Trout Lake, 16-0049-00, [3/7/88R] (T.62, R.2E): 1B, 2A, 3B;
- 152.5 (139) *Trout Lake, Little, 16-0170-00, [11/5/84P] (T.63, R.1): 1B, 2A, 3B;
- 152.6 (140) Turnip Lake, 16-0132-00, (T.64, R.1E, S.24): 1B, 2A, 3B;
- 152.7 (141) Twin Lake, 69-1345-00, (T.50, R.14W, S.28, 33): 1B, 2A, 3B;
- 152.8 (142) *Twin Lake, Upper (Bear Lake), 38-0408-00, [3/7/88R] (T.56, R.8,
152.9 S.25): 1B, 2A, 3B;
- 152.10 (143) Unnamed Lake, 16-0903-00, (T.63, R.3E, S.20, 21, 28, 29): 1B,
152.11 2A, 3B;
- 152.12 (144) Unnamed Lake, 16-0908-00, (T.63, R.1W, S.31): 1B, 2A, 3B;
- 152.13 (145) *Unnamed Lake, 16-0237-00, [11/5/84P] (T.63, R.1, S.19, 30; T.63,
152.14 R.2, S.24, 25): 1B, 2Bd, 3B;
- 152.15 (146) *Vale Lake, 16-0061-00, [11/5/84P] (T.64, R.2E, S.3): 1B, 2A, 3B;
- 152.16 (147) Vaseux Lake (East Lily), see Lily Lakes;
- 152.17 (148) *Vista Lake, 16-0224-00, [11/5/84P] (T.64, R.1): 1B, 2A, 3B;
- 152.18 (149) *Wanihigan Lake (Trap Lake), 16-0349-00, [11/5/84P] (T.63, 64,
152.19 R.2, 3): 1B, 2A, 3B;
- 152.20 (150) *Wee Lake, 16-0183-00, [11/5/84P] (T.62, R.4W, S.13): 1B, 2A, 3B;
- 152.21 (151) *Wench Lake, 16-0398-00, [11/5/84P] (T.63, R.3W, S.7, 18): 1B,
152.22 2A, 3B;

153.1 (152) White Pine Lake, 16-0369-00, [WR] (T.61, R.3W, S.19, 20, 29,
153.2 30): 2B, 3B;

153.3 (153) *Winchell Lake, 16-0354-00, [11/5/84P] (T.64, R.2, 3): 1B, 2A, 3B;

153.4 (154) *All other lakes in the Boundary Waters Canoe Area Wilderness
153.5 [11/5/84P]: 1B, 2Bd, 3B; and

153.6 (155) *All wetlands in the Boundary Waters Canoe Area Wilderness
153.7 [11/5/84P]: 2D.

153.8 [For text of items C and D, see M.R.]

153.9 Subp. 2. **Lake of the Woods Basin.** The water use classifications for the listed
153.10 waters in Lake of the Woods Basin are as identified in items A to D. See parts 7050.0425
153.11 and 7050.0430 for the classifications of waters not listed.

153.12 A. Streams:

153.13 (1) Angora Creek, (T.61, R.18, S.9, 10, 15, 16, 21, 22): 1B, 2A, 3B;

153.14 (2) Arrowhead Creek (Trapper Creek), (T.60, R.8, S.3, 10, 11, 13, 14, 15,
153.15 22, 23, 26, 27, 28, 34; T.61, R.8, S.14, 15, 21, 22, 27, 28, 34): 1B, 2A, 3B;

153.16 (3) Ash River (Camp Ninety Creek), (T.66, R.20, S.4, 5, 9; T.67, R.20, S.5,
153.17 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,
153.18 23, 24, 28, 29, 31, 33; T.68, R.19, S.17, 18; T.68, R.21, S.36): 1B, 2A, 3B;

153.19 (4) Beaver Creek, (T.62, 63, R.20): 2C;

153.20 (5) Beauty Creek, (T.67, R.21, S.23, 24, 25, 26): 1B, 2A, 3B;

153.21 (6) Blackduck River (Black Duck River), (T.66, R.19, S.5, 6, 7, 8, 17; T.66,
153.22 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;
153.23 T.68, R.20, S.26, 27, 28, 33, 34): 1B, 2A, 3B;

- 154.1 (7) Camp Creek, (T.60, R.8, S.3, 4, 9, 10; T.61, R.8, S.27, 28, 33, 34):
154.2 1B, 2A, 3B;
- 154.3 (8) Camp Creek, West, (T.60, R.8, S.4, 5, 7, 8, 16, 17, 20, 21; T.61, R.8,
154.4 S.33): 1B, 2A, 3B;
- 154.5 (9) Camp E Creek, (T.60, R.9, S.7, 18; T.60, R.10, S.11, 12): 1B, 2A, 3B;
- 154.6 (10) Dark River, (T.60, R.19, S.19, 20, 30; T.60, R.20, 10, 11, 12, 13,
154.7 24): 1B, 2A, 3B;
- 154.8 (11) Dinner Creek, (T.153, R.26, S.4, 9, 10, 12, 13, 14, 15, 23, 24; T.154,
154.9 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,
154.10 R.27, S.25, 35, 36): 1B, 2A, 3B;
- 154.11 (12) Dumbbell River, (T.60, R.7, S.3, 4, 5, 7, 8, 9, 10, 16, 18, 19, 20, 28, 29, 31,
154.12 32; T.61, R.7, S.34): 1B, 2A, 3B;
- 154.13 (13) Fawn Creek, (T.66, R.20, S.1, 2, 3, 4, 12; T.67, R.20, S.15, 22, 23,
154.14 26, 34, 35): 1B, 2A, 3B;
- 154.15 (14) Folly Creek, (T.60, R.7, S.2, 3, 10, 11, 14, 15, 22, 23, 24, 27): 1B,
154.16 2A, 3B;
- 154.17 (15) Gardner Brook, (T.63, 64, R.23, 24): 2C;
- 154.18 (16) Grassy Creek, (T.61, R.13, S.6; T.61, R.14, S.1): 1B, 2A, 3B;
- 154.19 (17) Harrigan Creek, (T.62, R.23, S.10): 1B, 2A, 3B;
- 154.20 (18) Harris Lake Creek (Harris Creek), (T.60, R.10, S.6; T.61, R.10, S.19,
154.21 30, 31): 1B, 2A, 3B;
- 154.22 (19) Hay Creek, (T.153, R.26, S.4, 8, 9, 17, 20): 1B, 2A, 3B;
- 154.23 (20) Hill Creek, (T.60, R.8, S.19, 30; T.60, R.9, S.24, 25): 1B, 2A, 3B;
- 154.24 (21) Indian Sioux River, Little, (T.65, R.15): 1B, 2Bd, 3B;

- 155.1 (22) Inga Creek, (T.60, R.9, S.2, 3; T.61, R.9, S.14, 22, 23, 27, 34, 35):
155.2 1B, 2A, 3B;
- 155.3 (23) *Inga Creek [11/5/84P] (T.61, R.9, S.11, 12): 1B, 2A, 3B;
- 155.4 (24) Isabella River, Little, (T.59, R.8, S.3, 4, 5, 6, 9, 10, 15, 16, 22; T.60,
155.5 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,
155.6 17, 20, 21, 29, 32): 1B, 2A, 3B;
- 155.7 (25) *Isabella River, Little, [11/5/84P] (T.61, R.9, S.3, 4, 9, 10; T.62,
155.8 R.9, S.34): 1B, 2A, 3B;
- 155.9 (26) Island River, (T.61, R.7, 8): 1B, 2Bd, 3C;
- 155.10 (27) Jack Pine Creek, (T.60, R.8, S.5, 6, 7, 8, 18; T.61, R.8, S.19, 20, 29,
155.11 30, 31, 32): 1B, 2A, 3B;
- 155.12 (28) Johnson Creek, (T.60, R.18, S.6, 7, 8, 17, 20): 1B, 2A, 3B;
- 155.13 (29) Kawishiwi River, outside Boundary Waters Canoe Area Wilderness,
155.14 (Source to Fall Lake): 1B, 2Bd, 3C;
- 155.15 (30) Kinmount Creek, (T.67, R.20, S.19; T.67, R.21, S.13, 14, 15, 20, 21,
155.16 22, 23, 24): 1B, 2A, 3B;
- 155.17 (31) Longstorff Creek, (T.62, R.12, S.6, 7; T.63, R.12, S.31): 1B, 2A, 3B;
- 155.18 (32) Lost River, (T.65, R.19, S.6; T.65, R.20, S.1, 2, 3, 4, 5, 6, 7, 8, 12;
155.19 T.65, R.21, S.1; T.66, R.20, S.20, 25, 27, 29, 31, 32, 33, 34, 35, 36): 1B, 2A, 3B;
- 155.20 (33) Mary Ann Creek, (T.58, R.10, S.16, 21): 1B, 2A, 3B;
- 155.21 (34) Mike Kelly Creek (Kelly Creek), (T.60, R.11, S.14, 15, 23): 1B,
155.22 2A, 3B;
- 155.23 (35) Mitawan Creek, (T.60, R.9, S.1, 12; T.61, R.8, S.18, 19, 31; T.61, R.9,
155.24 S.12, 13, 24, 25, 36): 1B, 2A, 3B;

- 156.1 (36) *Mitawan Creek, [11/5/84P] (T.61, R.8, S.5, 6, 7; T.61, R.9, S.1, 2,
156.2 12; T.62, R.9, S.35): 1B, 2A, 3B;
- 156.3 (37) Moose River, St. Louis County, (T.68, R.18, 19): 1B, 2Bd, 3C;
- 156.4 (38) Moose River, outside Boundary Waters Canoe Area Wilderness,
156.5 (T.65, R.14): 1B, 2Bd, 3C;
- 156.6 (39) Nine Mile Creek (Ninemile Creek), (T.66, R.19, S.4; T.67, R.19, S.7,
156.7 8, 18, 19, 20, 21, 27, 28, 29, 33; T.67, R.20, S.12, 13, 14, 23): 1B, 2A, 3B;
- 156.8 (40) Nip Creek, (T.59, R.11, S.3, 4; T.60, R.11, S.21, 22, 27, 28, 34):
156.9 1B, 2A, 3B;
- 156.10 (41) Nira Creek, (T.61, R.11, S.22, 23, 27): 1B, 2A, 3B;
- 156.11 (42) Pitt Creek, (T.159, R.32, S.4, 9, 16; T.160, R.32, S.21, 28, 33): 1B,
156.12 2A, 3B;
- 156.13 (43) Portage Creek, (T.65, R.21): 2C;
- 156.14 (44) Portage River, (T.65, R.14, S.24; T.65, R.13, S.19, 20, 28, 29): 1B,
156.15 2Bd, 3C;
- 156.16 (45) Rainy River, (Outlet of Rainy Lake to Dam in International Falls):
156.17 1B, 2Bd, 3A;
- 156.18 (46) Rainy River, (Dam in International Falls to Railroad Bridge in
156.19 Baudette): 1C, 2Bd, 3A;
- 156.20 (47) Rainy River, (Railroad Bridge in Baudette to Lake of the Woods):
156.21 2B, 3A;
- 156.22 (48) Sand Creek, (T.60, R.21, S.3, 4, 5, 10, 11, 14; T.61, R.20, S.19; T.61,
156.23 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;

- 157.1 (49) Scott Creek, (T.59, R.7, S.4; T.60, R.7, S.9, 10, 15, 16, 21, 22, 27,
157.2 33, 34, 35): 1B, 2A, 3B;
- 157.3 (50) Section 30 Creek, (T.63, R.11, S.30; T.63, R.12, S.24, 25): 1B, 2A, 3B;
- 157.4 (51) Sea Gull River, (T.66N, R.4W, S.30, 31): 1C, 2Bd, 3C;
- 157.5 (52) Shine Brook (Swine Creek), (T.62, R.25, S.11, 14, 15, 16): 1B, 2A, 3B;
- 157.6 (53) Snake Creek, (T.60, R.10, S.1; T.61, R.9, S.19, 30, 31; T.61, R.10,
157.7 S.24, 25, 36): 1B, 2A, 3B;
- 157.8 (54) Snake River, (T.60, R.10, S.3; T.61, R.9, S.18, 19; T.61, R.10, S.23,
157.9 24, 26, 27, 34): 1B, 2A, 3B;
- 157.10 (55) *Snake River, [11/5/84P] (T.61, R.9, S.7; T.61, R.10, S.12): 1B,
157.11 2A, 3B;
- 157.12 (56) Sphagnum Creek, (T.60, R.9, S.4; T.61, R.9, S.28, 29, 33): 1B, 2A, 3B;
- 157.13 (57) Stoney Brook (Stony Brook), (T.60, R.22, S.3, 4; T.61, R.22, S.13, 24,
157.14 25, 35, 36; T.61, R.21, S.7, 18): 1B, 2A, 3B;
- 157.15 (58) Tomato Creek, (T.161, R.34, S.3, 9, 10; T.162, R.34, S.35): 1B, 2A,
157.16 3B;
- 157.17 (59) Tomlinson Creek, (T.60, R.7, S.18, 19, 31; T.60, R.8, S.24, 25, 36):
157.18 1B, 2A, 3B;
- 157.19 (60) Trout Brook, (T.66, R.26, S.19, 30; T.66, R.27, S.24, 25): 1B, 2A, 3B;
- 157.20 (61) Two Rivers, East, (T.61, R.14, S.7, 8; T.61, R.15, S.1, 2, 3, 4, 12; T.62,
157.21 R.14, S.29, 30, 31, 32; T.62, R.15, S.32, 33, 34, 35, 36): 1B, 2A, 3B;
- 157.22 (62) Two Rivers, West, (T.61, R.15, S.6, 7, 8, 9, 14, 15, 16, 17): 1B, 2A, 3B;
- 157.23 (63) Unnamed Creek, (T.65, R.19, S.4, 5; T.66, R.19, S.33): 1B, 2A, 3B;

158.1 (64) Valley River, (T.62, R.23, S.1, 2, 3, 4, 10, 11, 12, 13, 14, 24; T.63,
158.2 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,
158.3 2A, 3B;

158.4 (65) Venning Creek, (T.60, R.23, S.1, 2, 11, 12, 13, 14; T.61, R.23, S.35):
158.5 1B, 2A, 3B;

158.6 (66) Victor Creek, (T.60, R.9, S.12, 13): 1B, 2A, 3B;

158.7 (67) Weiss Creek, (T.59, R.9, S.2, 3, 11; T.60, R.9, S.27, 34): 1B, 2A, 3B;

158.8 (68) Wenhoe Creek, (T.58, R.10, S.17, 20, 21, 27, 28, 34): 1B, 2A, 3B;

158.9 (69) Zippel Creek, West Branch, (T.162, R.33, 34): 2C;

158.10 (70) *All other streams in the Boundary Waters Canoe Area Wilderness
158.11 [11/5/84P]: 1B, 2Bd, 3B; and

158.12 (71) *All other streams in the Voyageurs National Park [11/5/84P]: 2B, 3B.

158.13 B. Lakes:

158.14 (1) *Adams Lake, 38-0153-00, [11/5/84P] (T.64, R.6): 1B, 2A, 3B;

158.15 (2) *Agamok Lake, 38-0011-00, [11/5/84P] (T.65, R.5, 6): 1B, 2A, 3B;

158.16 (3) *Ahmakose Lake, 38-0365-00 [11/5/84P] (T.64, R.7): 1B, 2A, 3B;

158.17 (4) *Ahsuh Lake, 38-0516-00, [11/5/84P] (T.64, R.8W, S.27, 28): 1B,
158.18 2A, 3B;

158.19 (5) *Alpine Lake, 16-0759-00, [11/5/84P] (T.65, R.5): 1B, 2A, 3B;

158.20 (6) *Alruss Lake, 69-0005-00, [11/5/84P] (T.64, R.11W, S.7; T.64, R.12W,
158.21 S.12): 1B, 2A, 3B;

158.22 (7) *Amoeber Lake, 38-0227-00, [11/5/84P] (T.65, R.6, 7): 1B, 2A, 3B;

158.23 (8) *Arkose Lake, 38-0382-00, [11/5/84P] (T.64, 65, R.7): 1B, 2A, 3B;

- 159.1 (9) *Ashdick Lake (Caribou Lake), 38-0210-00, [11/5/84P] (T.66, R.6):
159.2 1B, 2A, 3B;
- 159.3 (10) *Basswood Lake, 38-0645-00, [11/5/84P] (T.64, 65, R.9, 10): 1B,
159.4 2A, 3B;
- 159.5 (11) *Bat Lake, 16-0752-00, [11/5/84P] (T.64, 65, R.5): 1B, 2A, 3B;
- 159.6 (12) *Beartrack Lake, 69-0480-00, [11/5/84P] (T.67, R.15): 1B, 2A, 3B;
- 159.7 (13) *Beaver Lake (Elbow Lake), 38-0223-00, [11/5/84P] (T.63, 64, R.6,
159.8 7): 1B, 2A, 3B;
- 159.9 (14) Beaver Hut Lake, 38-0737-00, (T.61, R.10W, S.30, 31; T.61, R.11,
159.10 S.25, 36): 1B, 2A, 3B;
- 159.11 (15) Beetle Lake, 38-0551-00, (T.60, R.9W, S.7): 1B, 2A, 3B;
- 159.12 (16) Big Lake, 69-0190-00, (T.64, 65, R.13): 1C, 2Bd, 3C;
- 159.13 (17) *Bingshick Lake, 16-0627-00, [11/5/84P] (T.65, R.4, 5): 1B, 2A, 3B;
- 159.14 (18) *Brandt Lake (Brant Lake), 16-0600-00, [11/5/84P] (T.65, R.4):
159.15 1B, 2A, 3B;
- 159.16 (19) *Burntside Lake, 69-0118-00, [3/7/88R] (T.63, 64, R.12, 13, 14):
159.17 1B, 2A, 3B;
- 159.18 (20) Camp Four (Wessman) Lake, 69-0788-00, (T.59, R.19W, S.4): 1B,
159.19 2A, 3B;
- 159.20 (21) *Camp Lake, 38-0789-00, [11/5/84P] (T.64, R.11): 1B, 2Bd, 3B;
- 159.21 (22) *Caribou Lake, 31-0620-00, [3/7/88R] (T.58, R.26): 1B, 2A, 3B;
- 159.22 (23) *Cash Lake, 16-0438-00, [11/5/84P] (T.64, R.3): 1B, 2A, 3B;
- 159.23 (24) Cedar Lake, 38-0810-00, (T.63, R.11, 12): 1C, 2Bd, 3C;

- 160.1 (25) Chant Lake, 69-0172-00, (T.63, R.13W, S.10): 1B, 2A, 3B;
- 160.2 (26) *Cherokee Lake, 16-0524-00, [11/5/84P] (T.63, 64, R.4): 1B, 2A, 3B;
- 160.3 (27) *Cherry Lake, 38-0166-00, [11/5/84P] (T.65, R.6): 1B, 2A, 3B;
- 160.4 (28) *Conchu Lake, 38-0720-00, [11/5/84P] (T.63, R.10W, S.21, 22):
- 160.5 1B, 2A, 3B;
- 160.6 (29) *Crab Lake (includes West Crab Lake, 69-0297-00), 69-0220-00,
- 160.7 [11/5/84P] (T.63, R.13, 14): 1B, 2A, 3B;
- 160.8 (30) Crab Lake, 16-0357-00, (T.65, R.2, 3): 1B, 2A, 3B;
- 160.9 (31) Crane Lake, 69-0616-00, (T.67, 68, R.16, 17): 1B, 2A, 3A;
- 160.10 (32) *Crooked Lake, 16-0723-00, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;
- 160.11 (33) *Crooked Lake, 38-0817-00, [11/5/84P] (T.66, R.11, 12): 1B, 2A, 3B;
- 160.12 (34) *Cruiser Lake (Trout Lake), 69-0832-00, [11/5/84P] (T.69, 70, R.19):
- 160.13 1B, 2A, 3B;
- 160.14 (35) Cub Lake, 69-1318-00, (T.61, R.14W, S.2): 1B, 2A, 3B;
- 160.15 (36) Dan Lake, 38-0853-00, (T.63, R.10W, S.17): 1B, 2A, 3B;
- 160.16 (37) Deepwater Lake, 69-0858-00, (T.59, R.20W, S.2): 1B, 2A, 3B;
- 160.17 (38) Dry Lake, 69-0064-00, (T.63, R.12W, S.9): 1B, 2A, 3B;
- 160.18 (39) Dry Lake, Little, 69-1040-00, (T.63, R.12W, S.9): 1B, 2A, 3B;
- 160.19 (40) *Eddy Lake, 38-0187-00, [11/5/84P] (T.65, R.6): 1B, 2A, 3B;
- 160.20 (41) Eikela Lake, 38-0677-00, (T.60, R.10W, S.22): 1B, 2A, 3B;
- 160.21 (42) Ennis Lake, 38-0634-00, (T.64, R.9W, S.33): 1B, 2A, 3B;
- 160.22 (43) Erskine Lake, 31-0311-00, (T.61, R.24W, S.2, 3): 1B, 2A, 3B;

- 161.1 (44) *Ester Lake (Gnig Lake), 38-0207-00, [11/5/84P] (T.65, 66, R.6):
161.2 1B, 2A, 3B;
- 161.3 (45) *Eugene Lake, 69-0473-00, [11/5/84P] (T.67, R.15): 1B, 2A, 3B;
- 161.4 (46) *Explorer Lake (South Three Lake), 38-0399-00, [11/5/84P] (T.64,
161.5 R.7, 8): 1B, 2A, 3B;
- 161.6 (47) Extortion Lake, 16-0450-00, (T.65, R.3W, S.31, 32): 1B, 2A, 3B;
- 161.7 (48) Fall Lake, 38-0811-00, (T.63, 64, R.11, 12): 1B, 2Bd, 3C;
- 161.8 (49) Farm Lake, 38-0779-00, (T.62, 63, R.11): 1C, 2Bd, 3C;
- 161.9 (50) *Fat Lake, 69-0481-00, [11/5/84P] (T.67, R.15): 1B, 2A, 3B;
- 161.10 (51) *Fay Lake, 16-0783-00, [11/5/84P] (T.65, R.5): 1B, 2A, 3B;
- 161.11 (52) Fenske Lake, 69-0085-00, (T.64, R.12, S.29, 30, 32): 1C, 2Bd, 3C;
- 161.12 (53) *Fern Lake, 16-0716-00, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;
- 161.13 (54) *Fern Lake, West, 16-0718-00, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;
- 161.14 (55) *Finger Lake, 69-0348-00, [11/5/84P] (T.67, R.14): 1B, 2A, 3B;
- 161.15 (56) *Fishdance Lake, 38-0343-00, [11/5/84P] (T.63, R.7): 1B, 2A, 3B;
- 161.16 (57) *Found Lake, 38-0620-00, [11/5/84P] (T.64, R.9W, S.10, 15): 1B,
161.17 2A, 3B;
- 161.18 (58) *Fraser Lake, 38-0372-00, [11/5/84P] (T.64, R.7): 1B, 2A, 3B;
- 161.19 (59) *French Lake, 16-0755-00, [11/5/84P] (T.64, 65, R.5): 1B, 2A, 3B;
- 161.20 (60) *Frost Lake, 16-0571-00, [11/5/84P] (T.64, R.4): 1B, 2A, 3B;
- 161.21 (61) *Gabimichigami Lake, 16-0811-00, [11/5/84P] (T.64, 65, R.5, 6):
161.22 1B, 2A, 3B;

- 162.1 (62) *Ge-Be-On-Equat Lake, 69-0350-00, [11/5/84P] (T.67, R.14): 1B,
162.2 2A, 3B;
- 162.3 (63) *Gijikiki Lake (Cedar Lake), 38-0209-00, [11/5/84P] (T.65, 66,
162.4 R.6): 1B, 2A, 3B;
- 162.5 (64) *Gillis Lake, 16-0753-00, [11/5/84P] (T.64, 65, R.5): 1B, 2A, 3B;
- 162.6 (65) Glacier Pond No. 1, 38-0712-00, (T.63, R. 10W, S.11): 1B, 2A, 3B;
- 162.7 (66) Glacier Pond No. 2, 38-0712-02, (T.63, R.10W, S.11): 1B, 2A, 3B;
- 162.8 (67) *Gordon Lake, 16-0569-00, [11/5/84P] (T.64, R.4): 1B, 2A, 3B;
- 162.9 (68) Gull Lake, 16-0632-00, (T.66, R.4, 5): 1C, 2Bd, 3C;
- 162.10 (69) *Gun Lake, 69-0487-00, [11/5/84P] (T.67, 68, R.15): 1B, 2A, 3B;
- 162.11 (70) *Gunflint Lake, 16-0356-00, [3/7/88R] (T.65, R.2, 3, 4): 1B, 2A, 3B;
- 162.12 (71) Gunflint Lake, Little, 16-0330-00, (T.65, R.2): 1B, 2Bd, 3C;
- 162.13 (72) Gypsy Lake, 38-0665-00, (T.60, R.10W, S.6, 7): 1B, 2A, 3B;
- 162.14 (73) Hanson Lake, 69-0189-00, (T.64, R.13W, S.36): 1B, 2A, 3B;
- 162.15 (74) *Hanson Lake, 38-0206-00, [11/5/84P] (T.65, 66, R.6): 1B, 2A, 3B;
- 162.16 (75) High Lake, 69-0071-00, (T.63, R.12W, S.3, 4, 5; T.64, R.12W, S.33,
162.17 34): 1B, 2A, 3B;
- 162.18 (76) Hogback (Twin or Canal) Lake, 38-0057-01 and 38-0057-02, (T.60,
162.19 R.6W, S.31): 1B, 2A, 3B;
- 162.20 (77) *Holt Lake, 38-0178-00, [11/5/84P] (T.65, R.6): 1B, 2A, 3B;
- 162.21 (78) *Howard Lake, 16-0789-00, [11/5/84P] (T.65, R.5): 1B, 2A, 3B;
- 162.22 (79) *Hustler Lake, 69-0343-00, [11/5/84P] (T.66, 67, R.14): 1B, 2A, 3B;

- 163.1 (80) *Ima Lake (Slate Lake), 38-0400-00, [11/5/84P] (T.64, R.7, 8): 1B,
163.2 2A, 3B;
- 163.3 (81) Indian Lake, 38-0440-00, (T.60, R.8W, S.35): 1B, 2A, 3B;
- 163.4 (82) *Jacob (Louis) Lake, 69-0077-00, [11/5/84P] (T.64, R.12W, S.11,
163.5 12): 1B, 2A, 3B;
- 163.6 (83) James (Jammer) Lake, 69-0734-00, (T.60, R.18W, S.27): 1B, 2A, 3B;
- 163.7 (84) Jasper Lake, 38-0641-00, (T.63, 64, R.9, 10): 1C, 2Bd, 3C;
- 163.8 (85) *Jasper Lake, 16-0768-00, [11/5/84P] (T.65, R.5): 1B, 2A, 3B;
- 163.9 (86) *Johnson Lake, 69-0691-00, [3/7/88R] (T.67, 68, R.17, 18): 1B,
163.10 2A, 3B;
- 163.11 (87) Jouppi Lake, 38-0909-00, (T.59, R.8W, S.14, 22, 23): 1B, 2A, 3B;
- 163.12 (88) Judd Lake, 38-0615-00, (T.63, R.9W, S.4, 5; T.64, R.9W, S.32, 33):
163.13 1B, 2A, 3B;
- 163.14 (89) *Kabetogama Lake, 69-0845-00, [11/5/84P] (T.69, 70, R.19, 20, 21,
163.15 22): 1B, 2Bd, 3A;
- 163.16 (90) *Karl Lake, 16-0461-00, [11/5/84P] (T.64, R.3, 4): 1B, 2A, 3B;
- 163.17 (91) *Kek Lake, Little, 38-0228-00, [11/5/84P] (T.65, R.6, 7): 1B, 2A, 3B;
- 163.18 (92) *Kekekabic Lake, 38-0226-00, [11/5/84P] (T.64, 65, R.6, 7): 1B,
163.19 2A, 3B;
- 163.20 (93) *Knife Lake, 38-0404-00, [11/5/84P] (T.65, R.6, 7, 8): 1B, 2A, 3B;
- 163.21 (94) *Lake of the Clouds Lake (Dutton Lake), 38-0169-00, [11/5/84P]
163.22 (T.65, R.6): 1B, 2A, 3B;

- 164.1 (95) Lake of the Woods, 39-0002-00, (T.161, 162, 163, 164, 165, 166, 167,
164.2 168, R.30, 31, 32, 33, 34, 35, 36): 1B, 2Bd, 3A;
- 164.3 (96) Lake Vermilion, 69-0378-00, (T.61, 62, 63, R.14, 15, 16, 17, 18):
164.4 1C, 2Bd, 3C;
- 164.5 (97) *Larson Lake, 31-0317-00, [3/7/88R] (T.61, R.24W, S.16, 21): 1B,
164.6 2A, 3B;
- 164.7 (98) Little Long Lake, 69-0066-00, (T.63, R.12): 1C, 2Bd, 3C;
- 164.8 (99) *Long Island Lake, 16-0460-00, [11/5/84P] (T.64, R.3, 4): 1B, 2A, 3B;
- 164.9 (100) *Loon Lake, 16-0448-00, [3/7/88R] (T.65, R.3): 1B, 2A, 3B;
- 164.10 (101) *Loon Lake, 69-0470-00, [11/5/84P] (T.66, 67, R.15): 1B, 2A, 3B;
- 164.11 (102) *Lunar Lake (Moon Lake), 38-0168-00, [11/5/84P] (T.65, R.6):
164.12 1B, 2A, 3B;
- 164.13 (103) *Lynx Lake, 69-0383-00, [11/5/84P] (T.66, R.14, 15): 1B, 2A, 3B;
- 164.14 (104) *Magnetic Lake, 16-0463-00, [3/7/88R] (T.65, R.3, 4): 1B, 2A, 3B;
- 164.15 (105) *Makwa Lake (Bear Lake), 38-0147-00, [11/5/84P] (T.64, R.6):
164.16 1B, 2A, 3B;
- 164.17 (106) *Marble Lake, 38-0109-00, [11/5/84P] (T.64, R.6): 1B, 2A, 3B;
- 164.18 (107) *Mavis Lake, 16-0528-00, [11/5/84P] (T.64, R.4W, S.4): 1B, 2A, 3B;
- 164.19 (108) *Mayhew Lake, 16-0337-00, [3/7/88R] (T.65, R.2): 1B, 2A, 3B;
- 164.20 (109) *Meditation Lake, 16-0583-00, [11/5/84P] (T.65, R.4W, S.7, 8):
164.21 1B, 2A, 3B;
- 164.22 (110) *Mesaba Lake, 16-0673-00, [11/5/84P] (T.63, R.5): 1B, 2A, 3B;

- 165.1 (111) Miner's Mine Pit, 69-1293-00, (T.63, R.12W, S.26, 27, 28): 1B,
165.2 2A, 3B;
- 165.3 (112) *Missing Link Lake, 16-0529-00, [11/5/84P] (T.64, R.4W, S.4):
165.4 1B, 2A, 3B;
- 165.5 (113) *Missionary Lake (East Three Lake), 38-0398-00, [11/5/84P] (T.64,
165.6 R.7, 8): 1B, 2A, 3B;
- 165.7 (114) *Moose Lake, 38-0644-00, [11/5/84P] (T.64, R.9, 10): 1B, 2Bd, 3B;
- 165.8 (115) *Mora Lake, 16-0732-00, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;
- 165.9 (116) *Mukooda Lake, 69-0684-00, [11/5/84P] (T.68, R.17): 1B, 2A, 3B;
- 165.10 (117) *Namakan Lake, 69-0693-00, [11/5/84P] (T.69, 70, R.17, 18, 19):
165.11 1B, 2Bd, 3A;
- 165.12 (118) *Neglige Lake, 38-0492-00, [11/5/84P] (T.64, R.8W, S.1, 2, 11,
165.13 12): 1B, 2A, 3B;
- 165.14 (119) Nickel (Nichols) Lake, 31-0470-00, (T.59, R.25W, S.12): 1B, 2A, 3B;
- 165.15 (120) Norberg Lake, 69-1312-00, (T.61, R.14W, S.1): 1B, 2A, 3B;
- 165.16 (121) *North Lake, 16-0331-00, [3/7/88R] (T.65, R.2): 1B, 2A, 3B;
- 165.17 (122) North Lake, Little, 16-0329-00, (T.65, R.2): 1B, 2Bd, 3C;
- 165.18 (123) Norway Lake, 38-0688-00, (T.61, R.10W, S.3): 1B, 2A, 3B;
- 165.19 (124) *Ogishkemuncie Lake, 38-0180-00, [11/5/84P] (T.65, R.6): 1B,
165.20 2A, 3B;
- 165.21 (125) *Ojibway Lake (Upper Twin), 38-0640-00, [3/7/88R] (T.63, R.9,
165.22 10): 1B, 2A, 3B;
- 165.23 (126) *Owl Lake, 16-0726-00, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;

- 166.1 (127) *Oyster Lake, 69-0330-00, [11/5/84P] (T.66, R.14): 1B, 2A, 3B;
- 166.2 (128) *Paulson Lake, 16-0626-00, [11/5/84P] (T.65, R.4W, S.19; T.65,
166.3 R.5W, S.24): 1B, 2A, 3B;
- 166.4 (129) Peanut Lake, 38-0662-00, (T.60, R.10W, S.5): 1B, 2A, 3B;
- 166.5 (130) Pelican Lake, 69-0841-00, (T.64, 65, R.19, 20, 21): 1C, 2Bd, 3C;
- 166.6 (131) *Pellet Lake, 16-0592-00, [11/5/84P] (T.65, R.4, S.19, 20): 1B,
166.7 2Bd, 3B;
- 166.8 (132) *Peter Lake, 16-0757-00, [11/5/84P] (T.64, 65, R.5): 1B, 2A, 3B;
- 166.9 (133) Pickerel Lake, 69-0934-00, (T.60, R.21W, S.17): 1B, 2A, 3B;
- 166.10 (134) Portage Lake, 16-0327-00, (T.64, R. 2W, S.3, 4, 5; T.65, R.2W,
166.11 S.33): 1B, 2A, 3B;
- 166.12 (135) *Portage Lake, 38-0524-00, [11/5/84P] (T.65, R.8): 1B, 2A, 3B;
- 166.13 (136) Portage Lake, Little, 16-0297-00, (T.64, R.2W, S.3): 1B, 2A, 3B;
- 166.14 (137) *Powell Lake, 16-0756-00, [11/5/84P] (T.64, 65, R.5): 1B, 2A, 3B;
- 166.15 (138) *Rabbit Lake, 38-0214-00, [11/5/84P] (T.66, R.6): 1B, 2A, 3B;
- 166.16 (139) *Rainy Lake, 69-0694-00, [11/5/84P] (T.70, 71, R.18, 19, 20, 21, 22,
166.17 23): 1B, 2Bd, 3A;
- 166.18 (140) *Raven Lake (Lynx Lake), 38-0113-00, [11/5/84P] (T.64, R.6):
166.19 1B, 2A, 3B;
- 166.20 (141) *Red Rock Lake, 16-0793-00, [11/5/84P] (T.65, 66, R.5): 1B, 2A,
166.21 3B;
- 166.22 (142) Regenbogan Lake, 69-0081-00, (T.64, R.12W, S.18): 1B, 2A, 3B;

- 167.1 (143) *Rog Lake, 16-0765-00, [11/5/84P] (T.65, R.5W, S.16, 17): 1B,
167.2 2A, 3B;
- 167.3 (144) *Ruby Lake, Big, 16-0333-00, [11/5/84P] (T.66, R.14): 1B, 2A, 3B;
- 167.4 (145) *Saganaga Lake, 16-0633-00, [11/5/84P] (T.66, 67, R.4, 5): 1B,
167.5 2A, 3B;
- 167.6 (146) *Saganaga Lake, Little, 16-0890-00, [11/5/84P] (T.64, R.5, 6): 1B,
167.7 2A, 3B;
- 167.8 (147) *Sand Point Lake, 69-0617-00, [11/5/84P] (T.67, 68, 69, R.16, 17):
167.9 1B, 2A, 3A;
- 167.10 (148) Scarp (Cliff) Lake, 38-0058-00, (T.60, R.6W, S.31, 32): 1B, 2A, 3B;
- 167.11 (149) *Sea Gull Lake, 16-0629-00, [11/5/84P] (T.65, 66, R.4, 5): 1B,
167.12 2A, 3B;
- 167.13 (150) *Sema Lake (Coon Lake), 38-0386-00, [11/5/84P] (T.65, R.7): 1B,
167.14 2A, 3B;
- 167.15 (151) Shoo-fly Lake, 38-0422-00, (T.59, R.8W, S.1; T.60, R.8W, S.36):
167.16 1B, 2A, 3B;
- 167.17 (152) *Skull Lake, 38-0624-00, [11/5/84P] (T.64, R.9W, S.14): 1B, 2A, 3B;
- 167.18 (153) *Snowbank Lake, 38-0529-00, [11/5/84P] (T.63, 64, R.8, 9): 1B,
167.19 2A, 3B;
- 167.20 (154) *Spoon Lake (Fames Lake), 38-0388-00, [11/5/84P] (T.65, R.7):
167.21 1B, 2A, 3B;
- 167.22 (155) *Spring Lake, 69-0761-00, [3/7/88R] (T.68, R.18): 1B, 2A, 3B;
- 167.23 (156) Steamhaul Lake, 38-0570-00, (T.60, R.9W, S.23): 1B, 2A, 3B;
- 167.24 (157) *Strup Lake, 38-0360-00, [11/5/84P] (T.64, R.7): 1B, 2A, 3B;

- 168.1 (158) *Sumpet Lake, 38-0283-00, [11/5/84P] (T.61, R.7): 1B, 2Bd, 3B;
- 168.2 (159) Surber Lake, 16-0343-00, (T.65, R.2W, S.34): 1B, 2A, 3B;
- 168.3 (160) *Takucmich Lake, 69-0369-00, [11/5/84P] (T.67, 68, R.14): 1B,
- 168.4 2A, 3B;
- 168.5 (161) *Tarry Lake, 16-0731-00, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;
- 168.6 (162) *Thomas Lake, 38-0351-00, [11/5/84P] (T.63, 64, R.7): 1B, 2A, 3B;
- 168.7 (163) *Thumb Lake, 69-0352-00, [11/5/84P] (T.67, R.14): 1B, 2A, 3B;
- 168.8 (164) Tofte Lake, 38-0724-00, (T.63, R.10W, S.2, 3, 10, 11; T.64, R.10W,
- 168.9 S.35): 1B, 2A, 3B;
- 168.10 (165) *Topaz Lake (Star Lake), 38-0172-00, [11/5/84P] (T.65, R.6): 1B,
- 168.11 2A, 3B;
- 168.12 (166) *Town Lake, 16-0458-00, [11/5/84P] (T.63, 64, R.3, 4): 1B, 2A, 3B;
- 168.13 (167) Trappers Lake, 38-0431-00, (T.60, R.8W, S.27, 34): 1B, 2A, 3B;
- 168.14 (168) Trip Lake, 16-0451-00, (T.65, R.3W, S.32): 1B, 2A, 3B;
- 168.15 (169) *Trout Lake, Big, 69-0498-00, [11/5/84P] (T.63, 64, R.15, 16):
- 168.16 1B, 2A, 3B;
- 168.17 (170) *Trout Lake, Little (Pocket Lake), 69-0682-00, [11/5/84P] (T.68,
- 168.18 R.17): 1B, 2A, 3B;
- 168.19 (171) *Trygg (Twigg) Lake, 69-0389-00, [11/5/84P] (T.68, R.14W, S.31;
- 168.20 T.68, R.15W, S.36): 1B, 2A, 3B;
- 168.21 (172) *Tucker Lake (Trucker Lake), 16-0417-00, [11/5/84P] (T.64, R.3):
- 168.22 1B, 2Bd, 3B;
- 168.23 (173) *Tuscarora Lake, 16-0623-00, [11/5/84P] (T.64, R.4, 5): 1B, 2A, 3B;

169.1 (174) Unnamed (Pear) Lake, 38-0769-00, (T.60, R.11W, S.4): 1B, 2A, 3B;

169.2 (175) *Unnamed Lake, 16-0598-00, [11/5/84P] (T.65, R.4, S.29, 30):

169.3 1B, 2Bd, 3B;

169.4 (176) Unnamed Swamp, Winton, (T.63, R.11, S.19; T.63, R.12, S.24): 7;

169.5 (177) *Vera Lake, 38-0491-00, [11/5/84P] (T.64, R.8): 1B, 2A, 3B;

169.6 (178) Vermilion, Lake, 69-0378-00, (see Lake Vermilion);

169.7 (179) *Virgin Lake, 16-0719-00, [11/5/84P] (T.64, R.5): 1B, 2A, 3B;

169.8 (180) West Crab Lake, 69-0220-00, (see Crab Lake);

169.9 (181) White Iron Lake, 69-0004-00, (T.62, 63, R.11, 12): 1C, 2Bd, 3C;

169.10 (182) *Wine Lake, 16-0686-00, [11/5/84P] (T.63, R.5): 1B, 2A, 3B;

169.11 (183) *Wisini Lake, 38-0361-00, [11/5/84P] (T.64, R.7): 1B, 2A, 3B;

169.12 (184) Woods, Lake of the, 39-0002-00, (see Lake of the Woods);

169.13 (185) *All other lakes in the Boundary Waters Canoe Area Wilderness

169.14 [11/5/84P]: 1B, 2Bd, 3B;

169.15 (186) *All wetlands in the Boundary Waters Canoe Area Wilderness

169.16 [11/5/84P]: 2D;

169.17 (187) *All other lakes in the Voyageurs National Park [11/5/84P]: 2B,

169.18 3B; and

169.19 (188) *All other wetlands in the Voyageurs National Park [11/5/84P]: 2D.

169.20 [For text of items C and D, see M.R.]

169.21 Subp. 3. **Red River of the North Basin.** The water use classifications for the listed

169.22 waters in the Red River of the North Basin are as identified in items A to D. See parts

169.23 7050.0425 and 7050.0430 for the classifications of waters not listed.

170.1 A. Streams:

170.2 (1) Auganash Creek, (T.144, R.38, S.5; T.145, R.38, S.27, 28, 31, 32,
170.3 33): 1B, 2A, 3B;

170.4 (2) Bad Boy Creek, (T.144, R.39, S.13, 14, 22, 23, 27, 28, 34): 1B, 2A, 3B;

170.5 (3) Badger Creek (Lower Badger Creek or County Ditch No. 11), (T.149,
170.6 150, 151, R.42, 43, 44): 2C;

170.7 (4) Barnums Creek (Burnham Creek or County Ditch No. 72), (T.148, 149,
170.8 150, R.44, 45, 46, 47, 48): 2C;

170.9 (5) Battle River, South Branch, (T.151, R.30, S.2, 3, 4, 11): 1B, 2A, 3B;

170.10 (6) Bemis Hill Creek (County Ditch No. 9), (T.161, R.37, S.17, 20, 29):
170.11 1B, 2A, 3B;

170.12 (7) Bois de Sioux River, (Mud Lake outlet to Otter Tail River in
170.13 Breckenridge): 2C;

170.14 (8) Brandberg Creek (Brandborg Creek), (T.133, R.38, S.20, 21, 28, 29,
170.15 30): 1B, 2A, 3B;

170.16 [For text of subitems (9) to (17), see M.R.]

170.17 (18) Elbow Lake Creek (Solid Bottom Creek), (T.142, R.38, S.6; T.143,
170.18 R.38, S.31, 32): 1B, 2A, 3B;

170.19 [For text of subitems (19) to (22), see M.R.]

170.20 (23) Hay Creek (County Ditch No. 7 or County Ditch No. 9), (T.161,
170.21 162, R.37, 38, 39): 2C;

170.22 [For text of subitems (24) to (35), see M.R.]

170.23 (36) Marsh Creek (Judicial Ditch No. 91), (T.144, 145, 146, R.41, 42,
170.24 43): 2C;

- 171.1 [For text of subitems (37) to (39), see M.R.]
- 171.2 (40) Mustinka River, (Old Channel), (T.127, 128, R.45, 46, 47): 2C;
- 171.3 (41) Mustinka River, West Branch, (see Twelve Mile Creek, West Branch);
- 171.4 (42) Mustinka River Ditch, (T.128, R.45, S.19; T.128, R.46, S.13, 14, 23,
- 171.5 ~~24; T.129, R.46, S.13, 14~~): 2C;
- 171.6 (43) Nasset Creek, (T.148, R.38, S.20, 28, 29): 1B, 2A, 3B;
- 171.7 (44) O'Brien Creek, (T.149, R.32, S.2; T.150, R.32, S.23, 24, 26, 35):
- 171.8 1B, 2A, 3B;
- 171.9 (45) Otter Tail River, (Height of Land Lake to mouth): 1C, 2Bd, 3C;
- 171.10 (46) Otter Tail River Diversion, (T.133, R.42, S.19, 30; T.133, R.43, S.25):
- 171.11 1C, 2Bd, 3C;
- 171.12 (47) Rabbit River, (T.130, 131, R.45, 46, 47): 2C;
- 171.13 (48) Rabbit River, South Fork, (T.130, R.45, 46): 2C;
- 171.14 (49) Red Lake River, (Outlet of Lower Red Lake to mouth): 1C, 2Bd, 3C;
- 171.15 (50) Red River of the North, (T.132, R.47, S.8 in Breckenridge to Canadian
- 171.16 border): 1C, 2Bd, 3C;
- 171.17 (51) Roy Creek (Roy Lake Creek), (T.145, 146, R.39): 2C;
- 171.18 (52) Rush Lake Creek, (T.135, R.38, S.23, 26, 27, 28): 1B, 2A, 3B;
- 171.19 (53) Schermerhorn Creek (Shimmelhorn Creek), (T.144, R.39, S.6; T.145,
- 171.20 R.39, S.31; T.145, R.40, S.25, 26, 36): 1B, 2A, 3B;
- 171.21 (54) Spring Creek (State Ditch No. 68), (T.145, 146, R.45, 46, 47): 2C;
- 171.22 (55) Spring Creek, (T.142, R.41, 42): 2C;
- 171.23 (56) Spring Creek, (T.149, R.30, S.4, 5, 9, 10): 1B, 2A, 3B;

- 172.1 (57) Spring Lake Creek, (T.148, R.35, S.34, 35): 1B, 2A, 3B;
- 172.2 (58) Stony Creek, (T.137, 138, R.45, 46): 2C;
- 172.3 (59) Sucker Creek, (T.138, R.40, S.18; T.138, R.41, S.13): 1B, 2A, 3B;
- 172.4 (60) Sucker Creek, (T.160, 161, R.39): 2C;
- 172.5 (61) Tamarac River (Source to the dam in S.5, T.157, R.48 at Stephen),
172.6 (T.157, 158, R.45, 46, 47, 48): 1C, 2Bd, 3C;
- 172.7 (62) Toad River, (T.138, R.38, S.6, 7, 18, 19, 30; T.139, R.38, S.30, 31;
172.8 T.139, R.39, S.25, 36; T.138, R.39, S.25, 36): 1B, 2A, 3B;
- 172.9 (63) Twelve Mile Creek (excluding Class 7 segment), (T.126, 127, R.45):
172.10 2C;
- 172.11 (64) Twelve Mile Creek (County Ditch No. 1), Donnelly, (T.126, R.43,
172.12 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,
172.13 33; T.126, R.45, S.25, 26, 27, 28, 36): 7;
- 172.14 (65) Twelve Mile Creek, East Fork, (T.125, 126, R.44, 45): 2C;
- 172.15 (66) Twelve Mile Creek, West Branch (West Branch Twelvemile Creek),
172.16 (T.125, 126, 127, 128, R.45, 46): 2C;
- 172.17 (67) Twelve Mile Creek, West Fork, (T.125, 126, R.45): 2C;
- 172.18 (68) Twin Lake Creek, (T.144, 145, R.40): 2C;
- 172.19 (69) Two Rivers, Middle Branch, (Source to Hallock): 1C, 2Bd, 3C;
- 172.20 (70) Two Rivers, South Branch, (T.160, 161, R.41-49): 1C, 2Bd, 3C;
- 172.21 (71) Unnamed Creek, Rothsay, (T.135, R.45, S.21, 22, 23, 25, 26): 7
172.22 (see subitem (11));

173.1 (72) Unnamed Creek, Shevlin, (T.147, R.36, S.17, 18; T.147, R.37, S.11,
173.2 12, 13, 14): 7;

173.3 (73) Unnamed Ditch, Audubon, (T.139, R.42, S.4, 9): 7;

173.4 (74) Unnamed Ditch, Lake Park, (T.139, R.43, S.4; T.140, R.43, S.33): 7;

173.5 (75) Unnamed Ditch, Glyndon, (T.139, R.47, S.1, 2, 12; T.140, R.47,
173.6 S.35): 7;

173.7 (76) Unnamed Ditch, Callaway, (T.140, R.41, S.6; T.140, R.42, S.1,
173.8 2, 10, 11): 7;

173.9 (77) Unnamed Ditch, Gary, (T.145, R.44, S.22, 27, 34): 7;

173.10 (78) Unnamed Ditch, Erskine, (T.149, R.42, S.34, 35): 7;

173.11 (79) Unnamed Ditch, Thief River Falls, (T.154, R.43, S.31, 32, 33): 7;

173.12 (80) Unnamed Ditch, Warroad, (T.163, R.37, S.19, 20, 21, 22, 23; T.163,
173.13 R.38, S.19, 20, 21, 22, 23, 24, 30; T.163, R.39, S.25, 31, 32, 33, 34, 35, 36): 7;

173.14 (81) Whisky Creek, (T.136, 137, R.44, 45, 46): 2C;

173.15 (82) Whisky Creek, (T.133, 134, R.46, 47, 48): 2C;

173.16 (83) White Earth River, (T.142, 143, 144, R.40, 41, 42): 2C;

173.17 (84) Willow Creek, New York Mills, (T.135, R.38, S.13, 14, 15, 16, 17,
173.18 18): 7; and

173.19 (85) Wolverton Creek, (T.135, 136, 137, R.48): 2C.

173.20 B. Lakes:

173.21 (1) Bass Lake, 56-0722-00, (T.135, R.42W, S.10, 11): 1B, 2A, 3B;

173.22 (2) Hanson Lake, 03-0177-00, (T.139, R.39W, S.6): 1B, 2A, 3B;

173.23 (3) Hoot Lake, 56-0782-00, (T.133, R.42, 43): 1C, 2Bd, 3C;

- 174.1 (4) Lake Bronson, 35-0003-00, (T.160, 161, R.46): 1C, 2Bd, 3C;
- 174.2 (5) Twin Lake, East, 03-0362-00, (T.138, R.41): 1B, 2A, 3B;
- 174.3 (6) Unnamed Slough, Vergas, (T.137, R.40, S.18; T.137, R.41, S.13, 24): 7;
- 174.4 (7) Wapatus (Island) Lake, 15-0127-00, (T.144, R.38W, S.21, 28): 1B,
- 174.5 2A, 3B; and
- 174.6 (8) Wright Lake, 56-0783-00, (T.133, R.42, 43): 1C, 2Bd, 3C.

174.7 [For text of items C and D, see M.R.]

174.8 Subp. 4. **Upper Mississippi River Basin (headwaters to the confluence with**

174.9 **the St. Croix River).** The water use classifications for the listed waters in the Upper

174.10 Mississippi River Basin from the headwaters to the confluence with the St. Croix River

174.11 are as identified in items A to D. See parts 7050.0425 and 7050.0430 for the classifications

174.12 of waters not listed.

174.13 A. Streams:

174.14 [For text of subitems (1) to (3), see M.R.]

- 174.15 (4) Basswood Creek, (T.141, 142, R.36, 37): 2C;
- 174.16 (5) Battle Brook, (T.35, R.26, 27): 2C;
- 174.17 (6) Battle Creek, (T.120, R.31): 2C;
- 174.18 (7) Bear Brook, (T.144, 145, R.27): 2C;
- 174.19 (8) Bear Creek, (T.145, R.36): 2C;
- 174.20 (9) Beautiful Creek, (T.127, R.31): 2C;
- 174.21 (10) Beaver Creek, (T.136, 137, R.32, 33): 2C;
- 174.22 (11) Belle Creek (Judicial Ditch No. 18), (T.117, 118, R.32): 2C;
- 174.23 (12) Black Bear Brook, (T.44, R.28, S.7, 8): 1B, 2A, 3B;

- 175.1 (13) Birch Brook (Birch Branch), (T.141, R.25): 2C;
- 175.2 (14) Black Brook, Mille Lacs County, (T.41, R.26): 2C;
- 175.3 (15) Black Brook, (T.42, 43, R.30): 2C;
- 175.4 (16) Blackhoof Creek, (T.46, R.29, S.16): 1B, 2A, 3B;
- 175.5 (17) Blackwater Creek, (T.55, R.26, S.4): 2C;
- 175.6 (18) Blueberry River, (T.138, 139, R.35, 36): 2C;
- 175.7 (19) Bluff Creek, (T.135, 136, R.36, 37): 2C;
- 175.8 (20) Bogus Brook (excluding Class 7 segment), (T.37, 38, R.25, 26): 2C;
- 175.9 (21) Bogus Brook, Bock, (T.38, R.26, S.13, 14): 7;
- 175.10 (22) Borden Creek, (T.44, R.28, S.8, 9, 17, 20): 1B, 2A, 3B;
- 175.11 (23) Branch No. 3, Lateral 2, East Bethel/Ham Lake, (T.33, R.23, S.29, 32,
- 175.12 along the west side of Minnesota Highway 65): 7;
- 175.13 (24) Briggs Creek, (T.35, R.29, S.2, 11, 12, 14, 15, 22): 1B, 2A, 3B;
- 175.14 (25) Bruce Creek, (T.53, R.22, S.6, 7; T.53, R.23, S.26; T.54, R.22, S.18,
- 175.15 19, 30, 31; T.54, R.23, S.25): 1B, 2A, 3B;
- 175.16 (26) Buckman Creek (excluding Class 7 segment), (T.39, 40, R.30, 31): 2C;
- 175.17 (27) Buckman Creek, Buckman, Buckman Coop Cry., (T.39, R.30, S.4, 5,
- 175.18 6, 9; T.39, R.31, S.1, 2, 10, 11; T.40, R.30, S.31; T.40, R.31, S.36): 7;
- 175.19 (28) Bungo Creek, (T.137, R.30, S.6; T.137, R.31, S.1, 11, 12, 14, 21,
- 175.20 22, 23; T.138, R.30, S.31): 1B, 2A, 3B;
- 175.21 (29) Bungoshine Creek (Bungashing Creek), (T.145, R.32, S.28, 29, 30;
- 175.22 T.145, R.33, S.25, 26, 34, 35): 1B, 2A, 3B;

- 176.1 (30) Bunker Hill Brook (Bunker Hill Creek), (T.38, R.30, S.6; T.38, R.31,
176.2 S.1, 2, 10, 11): 1B, 2A, 3B;
- 176.3 (31) Camp Creek, (T.43, R.28, S.4, 5): 1B, 2A, 3B;
- 176.4 (32) Camp Ripley Brook, (T.132, R.29, S.18, 19; T.132, R.30, S.12, 13):
176.5 1B, 2A, 3B;
- 176.6 (33) Cat River (Cat Creek), (T.137, R.35, S.4, 9, 10, 11, 12, 13): 1B,
176.7 2A, 3B;
- 176.8 (34) Cat River (excluding trout waters), (T.136, 137, R.33, 34): 2C;
- 176.9 (35) Cedar Creek, (T.138, R.31, S.23, 26, 27, 28): 1B, 2A, 3B;
- 176.10 (36) Chase Brook, (T.38, 39, R.27): 2C;
- 176.11 (37) Clearwater Creek, (T.56, 57, R.25): 2C;
- 176.12 (38) Cold Creek, (T.145, R.33, S.19): 1B, 2A, 3B;
- 176.13 (39) Cold Spring Creek, (T.123, R.30, S.14, 15): 1B, 2A, 3B;
- 176.14 (40) Coon Creek, (T.43, R.29, 30): 2C;
- 176.15 (41) Corey Brook (Cory Brook), (T.135, R.30, S.9, 15, 16, 21, 22, 27):
176.16 1B, 2A, 3B;
- 176.17 (42) County Ditch No. 15 (Bear Creek), Bertha, (T.132, R.35, S.2; T.133,
176.18 R.34, S.7; T.133, R.35, S.12, 13, 24, 25, 26, 35): 7;
- 176.19 (43) County Ditch No. 17, St. Cloud, Bel Clare Estates, (T.124, R.29,
176.20 S.13, 24, 25): 7;
- 176.21 (44) County Ditch No. 23, Garfield, (T.129, R.38, S.26, 27): 7;
- 176.22 (45) County Ditch No. 23A, Willmar, (T.119, R.34, S.29, 30, 32; T.119,
176.23 R.35, S.23, 25, 26): 7;

- 177.1 (46) County Ditch No. 28, East Bethel/Ham Lake, (T.32, R.23, S.4, 5, 6;
177.2 T.33, R.23, S.29, 32 along the east side of Minnesota Highway 65): 7;
- 177.3 (47) County Ditch No. 42, McGregor, (T.47, R.23, S.6; T.47, R.24, S.1;
177.4 T.48, R.23, S.29, 31, 32): 7;
- 177.5 (48) County Ditch No. 63, Near Hutchinson, West Lynn Coop Cry., (T.116,
177.6 R.30, S.19, 20, 21, 28, 33): 7;
- 177.7 (49) County Ditch No. 132, Lakeside, Lakeside Coop Cry., (T.116, R.31,
177.8 S.16, 21): 7;
- 177.9 (50) Crane Creek (Judicial Ditch No. 1), (excluding Class 7 segment),
177.10 (T.116, 117, R.26, 27): 2C;
- 177.11 (51) Crane Creek, Winsted, (T.117, R.27, S.14, 20, 21, 22, 23, 24, 25): 7;
- 177.12 (52) *Crow River, North Fork, [11/5/84R] (From the Lake Koronis outlet
177.13 to the Meeker - Wright County line): 2B, 3C;
- 177.14 (53) Cullen Brook, (T.136, R.28, S.18, 19, 30; T.136, R.29, S.13): 1B,
177.15 2A, 3B;
- 177.16 (54) Dabill Brook, (T.137, R.31, S.1, 2, 10, 11; T.138, R.31, S.35, 36):
177.17 1B, 2A, 3B;
- 177.18 (55) Daggett Brook, (T.43, R.29, 30): 2C;
- 177.19 (56) Duel Creek, (T.129, R.32, S.20): 1B, 2A, 3B;
- 177.20 (57) Eagle Creek, (T.120, R.29): 2C;
- 177.21 (58) Elk River, Little, (T.130, 131, R.30, 31): 2C;
- 177.22 (59) Elk River, South Branch, Little, (T.130, R.30, 31, 32): 2C;
- 177.23 (60) Estes Brook, (T.36, 37, 38, R.27, 28): 2C;

- 178.1 (61) Everton Creek, (T.149, R.30): 2C;
- 178.2 (62) Fairhaven Creek, (T.121, R.28, S.5; T.122, R.28, S.29, 31, 32): 1B,
178.3 2A, 3B;
- 178.4 (63) Farley Creek, (T.147, R.28): 2C;
- 178.5 (64) Farnham Creek, (T.135, R.32, S.5, 6, 7; T.136, R.32, S.2, 3, 9, 10, 16,
178.6 19, 20, 21, 29, 30, 31, 32): 1B, 2A, 3B;
- 178.7 (65) Fawn Creek, (T.134, R.33, S.22, 27, 33, 34): 1B, 2A, 3B;
- 178.8 (66) Finn Creek, (T.135, R.37, S.27, 34): 1B, 2A, 3B;
- 178.9 (67) Fish Creek, (T.28, R.22): 2C;
- 178.10 (68) Fletcher Creek, (T.42, R.31): 2C;
- 178.11 (69) Foley Brook, (T.141, R.25): 2C;
- 178.12 (70) Frederick Creek, (T.119, R.25, 26): 2C;
- 178.13 (71) Frontenac Creek, (T.144, 145, R.34): 2C;
- 178.14 (72) Gould Creek (Sucker Creek), (T.144, R.36, S.32): 1B, 2A, 3B;
- 178.15 (73) Gould Creek (Sucker Creek), (T.143, R.36): 2C;
- 178.16 (74) Hanson Brook, (T.40, R.27): 2C;
- 178.17 (75) Hanson Brook (Threemile), (T.122, R.28, S.21, 22, 25, 26, 27, 36):
178.18 1B, 2A, 3B;
- 178.19 (76) Hasty Brook, (T.49, R.19, S.18; T.49, R.20, S.4, 5, 9, 10, 13, 14, 15,
178.20 23; T.50, R.20, S.28, 29, 32, 33): 1B, 2A, 3B;
- 178.21 (77) Hay Creek, Crow Wing County, (T.43, 44, R.30, 31): 2C;
- 178.22 (78) Hay Creek, Wadena County, (T.134, R.33, S.7, 8, 9, 10, 11, 17, 18):
178.23 1B, 2A, 3B;

- 179.1 (79) Hay Creek (Mosquito Creek), (T.135, R.31, S.8, 9, 16, 17): 1B, 2A,
179.2 3B;
- 179.3 (80) Hazel Creek, (T.127, R.29, 30): 2C;
- 179.4 (81) Hellcamp Creek (Hellkamp Creek), (T.140, R.33, S.19; T.140, R.34,
179.5 S.24): 1B, 2A, 3B;
- 179.6 (82) Hennepin Creek, (T.144, R.35, S.3, 10, 15, 16, 21; T.145, R.35,
179.7 S.34): 1B, 2A, 3B;
- 179.8 (83) Hennepin Creek (excluding trout waters), (T.144, 145, 146, R.34,
179.9 35): 2C;
- 179.10 (84) Hoblin Creek, (T.137, R.30, S.17, 18, 19): 1B, 2A, 3B;
- 179.11 (85) Indian Creek, (T.141, 142, R.36, 37): 2C;
- 179.12 (86) Irish Creek, (T.129, R.31): 2C;
- 179.13 (87) Iron Creek, (T.134, 135, R.31, 32): 2C;
- 179.14 (88) Jewett Creek (Jewitts Creek or County Ditch No. 17), (T.119, 120,
179.15 R.30, 31): 2C;
- 179.16 (89) Johnson Creek, (T.137, R.25): 2C;
- 179.17 (90) Judicial Ditch No. 1, Lakeside, Lakeside Coop Cry., (T.116, R.31,
179.18 S.28, 33): 7;
- 179.19 (91) Judicial Ditch No. 15, Buffalo Lake, Iowa Pork Industries, Hector,
179.20 (T.115, R.31, S.15, 16, 20, 21, 29, 30; T.115, R.32, S.22, 25, 26, 27, 28, 32, 33): 7;
- 179.21 (92) Kabekona River, (T.143, R.32, S.6, 7, 18, 19; T.143, R.33, S.2, 3, 4, 9,
179.22 11, 12, 24; T.144, R.33, S.29, 30, 32, 33; T.144, R.34, S.24, 25, 36): 1B, 2A, 3B;
- 179.23 (93) Kawishiwash Creek, (T.142, R.32, S.12): 1B, 2A, 3B;

- 180.1 (94) Kettle Creek (Kettle River), (T.138, R.35, 36, 37): 2C;
- 180.2 (95) Kinzer Creek, (T.123, R.30, S.27, 34): 1B, 2A, 3B;
- 180.3 (96) Kitchi Creek, (T.146, 147, R.29, 30): 2C;
- 180.4 (97) Kitten Creek, (T.137, R.34, 35): 2C;
- 180.5 (98) Larson Creek, (T.128, R.32, S.6): 1B, 2A, 3B;
- 180.6 (99) LaSalle Creek (excluding trout waters), (T.143, R.35): 2C;
- 180.7 (100) LaSalle Creek, (T.143, R.35, S.6; T.144, R.35, S.19, 30, 31): 1B,
- 180.8 2A, 3B;
- 180.9 (101) LaSalle River, (T.144, 145, R.35): 2C;
- 180.10 (102) Laura Brook, (T.141, R.26): 2C;
- 180.11 (103) Libby Brook, (T.50, R.23, S.5, 6; T.50, R.24, S.1, 2): 1B, 2A, 3B;
- 180.12 (104) Long Brook, Lower South, (T.44, R.30, S.12, 13): 1B, 2A, 3B;
- 180.13 (105) Long Brook, Upper South, (T.44, R.29, S.6, 7): 1B, 2A, 3B;
- 180.14 (106) Long Lake Creek, (T.46, R.25, S.10, 15): 1B, 2A, 3B;
- 180.15 (107) Luxemburg Creek, (T.123, R.28, S.16, 17, 18, 19, 20, 21, 22, 30):
- 180.16 1B, 2A, 3B;
- 180.17 (108) Matuska's Creek, (T.54, R.26, S.35, 36): 1B, 2A, 3B;
- 180.18 (109) Meadow Creek, (T.128, R.30): 2C;
- 180.19 (110) Meyers Creek (Johnson Creek), (T.122, R.28, S.4; T.123, R.28,
- 180.20 S.22, 27, 33, 34): 1B, 2A, 3B;
- 180.21 (111) Michaud Brook, (T.140, R.25, S.7, 17, 18): 1B, 2A, 3B;
- 180.22 (112) Mike Drew Brook, (T.38, 39, R.26, 27): 2C;

- 181.1 (113) Mink Creek, Big, (T.41, 42, R.29, 30): 2C;
- 181.2 (114) Mink Creek, Little, (T.40, 41, R.29, 30, 31): 2C;
- 181.3 (115) *Mississippi River, [11/5/84R] (From Lake Itasca to Fort Ripley, at
181.4 the common boundary of Crow Wing and Morrison Counties): 2B, 3C;
- 181.5 (116) *Mississippi River, [11/5/84R] (From Fort Ripley, at the common
181.6 boundary of Crow Wing and Morrison Counties, to the southerly boundary of Morrison
181.7 County): 1C, 2Bd, 3C;
- 181.8 (117) Mississippi River, (From the southerly boundary of Morrison County
181.9 to Stearns County State-Aid Highway 7 bridge in Saint Cloud in S.13, T.124, R.28):
181.10 1C, 2Bd, 3C;
- 181.11 (118) *Mississippi River, [11/5/84R] (Stearns County State-Aid Highway
181.12 7 bridge in Saint Cloud in S.13, T.124, R.28 to the northwestern city limits of Anoka,
181.13 river mile 873.5): 1C, 2Bd, 3C;
- 181.14 (119) Mississippi River, (From the northwestern city limits of Anoka,
181.15 river mile 873.5, to the Upper Lock and Dam at Saint Anthony Falls in Minneapolis):
181.16 1C, 2Bd, 3C;
- 181.17 (120) Mississippi River, (Outlet of Metro Wastewater Treatment Works in
181.18 Saint Paul, river mile 835.3, to river mile 830, Rock Island RR Bridge): 2C, 3C;
- 181.19 (121) Morrison Brook, (T.52, R.26, S.4, 9, 10, 14, 15; T.53, R.26, S.7, 8,
181.20 18, 19, 29, 30, 32, 33): 1B, 2A, 3B;
- 181.21 (122) Muckey Creek (Wallingford Creek), (T.139, R.33, S.1, 2, 10, 11,
181.22 12): 1B, 2A, 3B;
- 181.23 (123) Necktie River (T.145, R.32, S.6, 7, 8, 9, 16; T.145, R.33, S.1): 1B,
181.24 2A, 3B;

- 182.1 (124) Nelson Hay Creek, (T.130, R.31, S.1, 2): 1B, 2A, 3B;
- 182.2 (125) Northby Creek, (T.140, R.27): 2C;
- 182.3 (126) Norway Brook, (T.139, R.30): 2C;
- 182.4 (127) O'Brien Creek, (T.56, 57, R.22): 2C;
- 182.5 (128) O'Neill Brook, (T.38, R.26): 2C;
- 182.6 (129) Oak Ridge Creek (Oak Creek), (T.133, 134, R.36): 2C;
- 182.7 (130) Olson Brook, (T.136, R.30, S.12, 13, 14): 1B, 2A, 3B;
- 182.8 (131) Peterson Creek, (T.134, R.30, S.29 32): 1B, 2A, 3B;
- 182.9 (132) Pickerel Creek, (T.56, R.22, S.7, 18; T.56, R.23, S.13): 1B, 2A, 3B;
- 182.10 (133) Pigeon River, (T.147, R.27): 2C;
- 182.11 (134) Pike Creek (excluding Class 7 segment), (T.129, R.30): 2C;
- 182.12 (135) Pike Creek, Flensburg, (T.129, R.30, S.17, 18, 19, 20): 7;
- 182.13 (136) Pillager Creek, (T.133, 134, R.30): 2C;
- 182.14 (137) Pine River, South Fork, (T.138, R.31, S.14, 23): 1B, 2A, 3B;
- 182.15 (138) Pioneer Creek, (T.118, R.24): 2C;
- 182.16 (139) Pokegama Creek, (T.54, R.26, S.26, 27, 28): 1B, 2A, 3B;
- 182.17 (140) Pokegama Creek, Little, (T.54, R.26, S.26, 27, 34, 35): 1B, 2A, 3B;
- 182.18 (141) Pokety (Pickedee Creek), (T.144, R.32, S.29, 30; T.144, R.33, S.24,
- 182.19 25): 1B, 2A, 3B;
- 182.20 (142) Poplar Brook (Martin Creek), (T.135, R.32, S.5, 6; T.136, R.32,
- 182.21 S.22, 27, 28, 32, 33): 1B, 2A, 3B;
- 182.22 (143) Prairie Brook, (T.36, R.27): 2C;

- 183.1 (144) Rat Creek, (T.144, 145, R.34): 2C;
- 183.2 (145) Rice Creek, (T.30, 31, 32, R.22, 23, 24): 1C, 2Bd, 3C;
- 183.3 (146) Rice Creek, Sherburne County, (T.35, R.29): 2C;
- 183.4 (147) Robinson Hill Creek, (T.123, R.28, S.4, 9, 10, 15; T.124, R.28,
183.5 S.31, 32, 33): 1B, 2A, 3B;
- 183.6 (148) Rock Creek, Little, (T.38, R.31, S.3, 4, 10, 15, 21, 22, 28; T.39, R.30,
183.7 S.17, 18, 20, 21, 22; T.39, R.31, S.13, 14, 22, 23, 27, 33, 34): 1B, 2A, 3B;
- 183.8 (149) Rogers Brook, (T.134, R.30, S.29, 32): 1B, 2A, 3B;
- 183.9 (150) Rosholt Creek, (T.55, R.23, S.22, 23, 24): 1B, 2A, 3B;
- 183.10 (151) Round Creek, (T.43, R.31, S.14, 15): 1B, 2A, 3B;
- 183.11 (152) Round Prairie Creek (Trout Creek), (T.127, R.33, S.4; T.128, R.33,
183.12 S.20, 29, 32, 33): 1B, 2A, 3B;
- 183.13 (153) *Rum River, [11/5/84P] (From the Ogechie Lake spillway to the
183.14 northernmost confluence with Lake Onamia): 2B, 3B;
- 183.15 (154) *Rum River, [11/5/84R] (From the State Highway 27 bridge in
183.16 Onamia to Madison and Rice Streets in Anoka): 2B, 3C;
- 183.17 (155) Sand Creek, Crow Wing County, (T.45, R.30, S.2, 3, 11, 13, 14;
183.18 T.46, R.30, S.34): 1B, 2A, 3B;
- 183.19 (156) Sand Creek, (T.55, R.23, S.15, 22, 27, 28, 29, 32, 33): 1B, 2A, 3B;
- 183.20 (157) Sauk Creek, Little, (T.127, R.34, S.1; T.128, R.34, S.36): 1B, 2A, 3B;
- 183.21 (158) Schoolcraft Creek, (T.142, R.34, S.5, 7, 8, 17): 1B, 2A, 3B;
- 183.22 (159) Seven Mile Creek, (T.133, 134, R.30, 31): 2C;
- 183.23 (160) Sissebakwet Creek, (T.54, R.26, S.19, 29, 30): 1B, 2A, 3B;

- 184.1 (161) Six Mile Brook, (T.144, R.26, 27): 2C;
- 184.2 (162) Skimmerhorn Creek (Skimerhorn Creek), (T.149, R.30): 2C;
- 184.3 (163) Skunk Creek, (T.144, 145, R.34): 2C;
- 184.4 (164) Skunk River (Co. Dt. No. 37) (Co. Dt. No. 29), Brooten, (T.123,
184.5 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;
- 184.6 (165) Smart's Creek, (T.126, R.28, S.17, 18, 20): 1B, 2A, 3B;
- 184.7 (166) Smith Creek, (T.53, R.26, S.1, 9, 10, 11, 12, 13, 14, 15; T.54, R.26,
184.8 S.35, 36): 1B, 2A, 3B;
- 184.9 (167) Smith Creek, Unnamed Tributary, (T.53, R.26, S.11, 12): 1B, 2A, 3B;
- 184.10 (168) Smith Creek, Unnamed Tributary, (T.54, R.26, S.35, 36): 1B, 2A, 3B;
- 184.11 (169) Snake River, (T.33, R.28, S.1; T.34, R.28, S.2, 11, 14, 23, 26, 35, 36;
184.12 T.35, R.28, S.20, 28, 29, 33, 34, 35): 1B, 2A, 3B;
- 184.13 (170) Snowball Creek, (T.56, R.23): 2C;
- 184.14 (171) Split Hand Creek, (T.53, R.24, 25): 2C;
- 184.15 (172) Spring Brook, Stearns County, (T.121, R.28, S.7; T.121, R.29,
184.16 S.12): 1B, 2A, 3B;
- 184.17 (173) Spring Brook, Crow Wing County, (T.138, R.28, S.27, 34): 1B,
184.18 2A, 3B;
- 184.19 (174) Spring Brook (Spring Branch), Cass County, (T.139, R.26, S.3,
184.20 10, 11, 14): 1B, 2A, 3B;
- 184.21 (175) Spring Brook, Lower, (T.57, R.25, S.6; T.58, R.25, S.31): 1B, 2A,
184.22 3B;
- 184.23 (176) Spring Creek, (T.55, R.23, S.25, 26, 27): 1B, 2A, 3B;

- 185.1 (177) Spruce Creek, (T.130, R.36, S.3, 4, 9, 10; T.131, R.36, S.28, 29, 31,
185.2 32, 33, 34): 1B, 2A, 3B;
- 185.3 (178) Stag Brook, (T.121, 122, R.31): 2C;
- 185.4 (179) Stall Creek, (T.143, R.33, S.12, 13, 14): 1B, 2A, 3B;
- 185.5 (180) Stanchfield Branch, Lower, Braham, (T.37, R.23, S.3, 10, 15, 22): 7;
- 185.6 (181) Stocking Creek, (T.138, R.34, 35): 2C;
- 185.7 (182) Stoney Brook (Stony Brook), Cass County, (T.135, R.29, S.5, 8, 9;
185.8 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,
185.9 S.24, 25, 26): 1B, 2A, 3B;
- 185.10 (183) Stony Brook (Stoney Brook), Foley, (T.36, R.29, S.2, 9, 10, 11, 16;
185.11 T.37, R.29, S.35, 36): 7;
- 185.12 (184) Stony Creek (Wabedo Creek), (T.140, R.28): 2C;
- 185.13 (185) Stony Point Brook, (T.147, R.28, S.22, 27, 34): 2C;
- 185.14 (186) Straight Creek, Upper, (Straight River), (T.140, R.36, S.6; T.141,
185.15 R.36, S.30, 31; T.141, R.37, S.24, 25): 1B, 2A, 3B;
- 185.16 (187) Straight Lake Creek, (T.140, R.36, S.6; T.140, R.37, S.1, 2): 1B,
185.17 2A, 3B;
- 185.18 (188) Straight River, (T.139, R.34, S.7; T.139, R.35, S.4, 5, 6, 9, 10, 11, 12;
185.19 T.139, R.36, S.1; T.140, R.36, S.28, 29, 33, 34, 35, 36): 1B, 2A, 3B;
- 185.20 (189) Sucker Creek (Gould Creek), (T.144, R.36, S.27, 28, 29, 30, 32,
185.21 33): 1B, 2A, 3B;
- 185.22 (190) Sucker Creek, Meeker County, (T.118, R.30, S.4, 5, 6, 7): 1B, 2A,
185.23 3B;
- 185.24 (191) Swamp Creek, Big, (T.137, 138, 139, R.32, 33): 2C;

- 186.1 (192) Swamp Creek, Little, (T.136, 137, R.33): 2C;
- 186.2 (193) Swan Creek, (T.134, 135, R.32): 2C;
- 186.3 (194) Swan Creek, Little, (T.135, R.32): 2C;
- 186.4 (195) Swift River, (T.142, R.27): 2C;
- 186.5 (196) Taylor Creek, (T.128, R.31): 2C;
- 186.6 (197) Ted Brook Creek, (T.130, R.31): 2C;
- 186.7 (198) Thiel Creek (Teal), (T.121, R.28, S.5, 6, 8): 1B, 2A, 3B;
- 186.8 (199) Tibbits Brook, (T.33, 34, R.26, 27): 2C;
- 186.9 (200) Tibbetts Creek (Tibbetts Brook), (T.39, 40, R.27, 28): 2C;
- 186.10 (201) Trout Brook, St. Paul, (T.29, R.22, S.18, 19): 7;
- 186.11 (202) Tower Creek, (T.135, R.32): 2C;
- 186.12 (203) Two Rivers, South Branch, Albany, (T.125, R.31, S.21, 22, 23): 7;
- 186.13 (204) Two Rivers Springs, (T.51, R.23, S.19; T.51, R.24, S.24, 25, 26):
- 186.14 1B, 2A, 3B;
- 186.15 (205) Union Creek, (T.134, R.35, S.4, 5, 7, 8, 18, 19, 30, 31; T.135, R.35,
- 186.16 S.27, 28, 33, 34): 1B, 2A, 3B;
- 186.17 (206) Unnamed Creek, Cass County, (T.137, R.31, S.4, 5): 1B, 2A, 3B;
- 186.18 (207) Unnamed Creek, Cass County, (T.139, R.26, S.3, 10): 1B, 2A, 3B;
- 186.19 (208) Unnamed Creek, Calumet, (T.56, R.23, S.21): 7;
- 186.20 (209) Unnamed Creek, Montrose, Hiller Mobile Home Court, (T.119,
- 186.21 R.26, S.22, 26, 27, 35): 7;
- 186.22 (210) Unnamed Creek, Rogers, (T.120, R.23, S.15, 16, 22, 23): 7;

- 187.1 (211) Unnamed Creek, Grove City, (T.120, R.32, S.34, 35, 36): 7;
- 187.2 (212) Unnamed Creek, Albertville, (T.121, R.23, S.30; T.121, R.24, S.25,
187.3 36): 7;
- 187.4 (213) Unnamed Creek, Eden Valley, Ruhland Feeds, (T.121, R.31, S.2;
187.5 T.122, R.31, S.35): 7;
- 187.6 (214) Unnamed Creek, Lake Henry, (T.123, R.33, S.11, 14): 7;
- 187.7 (215) Unnamed Creek, Miltna, (T.129, R.36, S.6; T.130, R.36, S.30,
187.8 31): 7;
- 187.9 (216) Unnamed Ditch, Braham, (T.37, R.23, S.2, 3): 7;
- 187.10 (217) Unnamed Ditch, Ramey, Ramey Farmers Coop Cry., (T.38, R.28,
187.11 S.4, 5; T.39, R.28, S.29, 30, 32; T.39, R.29, S.25, 26, 27, 28): 7;
- 187.12 (218) Unnamed Ditch, McGregor, (T.48, R.23, S.31, 32): 7;
- 187.13 (219) Unnamed Ditch, Nashwauk, (T.56, R.22, S.4, 5; T.57, R.22, S.32): 7;
- 187.14 (220) Unnamed Ditch, Taconite, (T.56, R.24, S.22 SW1/4): 7;
- 187.15 (221) Unnamed Ditch, Glencoe, Green Giant, (T.115, R.28, S.21, 22,
187.16 27, 28): 7;
- 187.17 (222) Unnamed Ditch, Glencoe, Green Giant, (T.115, R.28, S.14, 23): 7;
- 187.18 (223) Unnamed Ditch, Winsted, Green Giant, (T.117, R.27, S.10, 11): 7;
- 187.19 (224) Unnamed Ditch, Montrose, Hiller Mobile Home Court, (T.119,
187.20 R.26, S.34, 35): 7;
- 187.21 (225) Unnamed Ditch, Kandiyohi, (T.119, R.34, S.10, 15, 21, 22, 28,
187.22 29): 7;
- 187.23 (226) Unnamed Ditch, Rogers, (T.120, R.23, S.15): 7;

- 188.1 (227) Unnamed Ditch, Belgrade, (T.123, R.34, S.19, 30): 7;
- 188.2 (228) Unnamed Ditch, Flensburg, (T.129, R.30, S.30; T.129, R.31, S.25): 7;
- 188.3 (229) Unnamed Ditch, Miltona, (T.130, R.36, S.30; T.130, R.37, S.25,
- 188.4 36): 7;
- 188.5 (230) Unnamed Stream, Winsted, (T.117, R.27, S.11, 12): 7;
- 188.6 (231) Unnamed Stream, Flensburg, (T.129, R.30, S.19, 30): 7;
- 188.7 (232) Vandell Brook (Vondell Brook), (T.37, 38, R.26): 2C;
- 188.8 (233) Van Sickle Brook, (T.138, R.26, S.14, 15, 23, 24): 1B, 2A, 3B;
- 188.9 (234) Wallingford Brook (Wallingford Creek), (T.139, R.33, S.1, 2, 11;
- 188.10 T.140, R.33, S.25, 36): 1B, 2A, 3B;
- 188.11 (235) Warba Creek, (T.54, R.23, S.13, 14, 15, 21, 22, 23, 24): 1B, 2A, 3B;
- 188.12 (236) Welcome Creek, (T.56, 57, R.22): 2C;
- 188.13 (237) Whitley's Creek (Whiteley Creek), (T.45, R.30, S.16, 17, 20, 21):
- 188.14 1B, 2A, 3B;
- 188.15 (238) Whitney Brook, (T.39, R.26, 27): 2C;
- 188.16 (239) Willow Creek, Otter Tail County, (T.133, R.38, S.2, 11; T.134, R.38,
- 188.17 S.26, 35): 1B, 2A, 3B;
- 188.18 (240) Willow Creek, Stearns and Meeker Counties, (T.121, R.29, S.10,
- 188.19 11, 14, 23): 1B, 2A, 3B;
- 188.20 (241) Willow River, North Fork, (T.142, R.25): 2C;
- 188.21 (242) Willow River, South Fork, (T.142, R.25): 2C;
- 188.22 (243) Wilson Creek, (T.137, R.30): 2C; and
- 188.23 (244) Wolf Creek, (T.42, R.30): 2C.

189.1 B. Lakes:

- 189.2 (1) Allen Lake, 18-0208-00, (T.138, R.26W, S.5): 1B, 2A, 3B;
- 189.3 (2) Bald Eagle Lake, 62-0002-00, (T.30, 31, R.21, 22): 1C, 2Bd, 3C;
- 189.4 (3) Bee Cee Lake, 31-0443-00, (T.58, R.25W, S.28, 33): 1B, 2A, 3B;
- 189.5 (4) Benedict Lake, 29-0048-00, (T.142, R.32): 1B, 2A, 3B;
- 189.6 (5) Benjamin Lake, 04-0033-00, (T.148, R.30W, S.7, 18; T.148, R.31W,
- 189.7 S.13): 1B, 2A, 3B;
- 189.8 (6) Blacksmith Lake, 29-0275-00, (T.142, R.35W, S.13): 1B, 2A, 3B;
- 189.9 (7) *Blue Lake, 01-0181-00, [3/7/88R] (T.46, 47, R.27): 1B, 2A, 3B;
- 189.10 (8) *Blue Lake, 29-0184-00, [3/7/88R] (T.141, R.34): 1B, 2A, 3B;
- 189.11 (9) *Bluewater Lake, 31-0395-00, [3/7/88R] (T.57, R.25): 1B, 2A, 3B;
- 189.12 (10) Cenaiko Lake (Unnamed), 02-0654-00, (T.31, R.24W, S.26): 1B,
- 189.13 2A, 3B;
- 189.14 (11) Centerville Lake, 02-0006-00, (T.31, R.22): 1C, 2Bd, 3C;
- 189.15 (12) Charley Lake, 62-0062-00, (T.30, R.23): 1C, 2Bd, 3C;
- 189.16 (13) Crappie Lake, 29-0127-00, (T.143, R.33W, S.31): 1B, 2A, 3B;
- 189.17 (14) Deep Lake, 62-0018-00, (T.30, R.22): 1C, 2Bd, 3C;
- 189.18 (15) Diamond Lake, 11-0396-00, (T.141, R.30W, S.26, 27, 34): 1B, 2A, 3B;
- 189.19 (16) Hazel Lake, 11-0295-00, (T.141, R.29W, S.25): 1B, 2A, 3B;
- 189.20 (17) Hay Lake, Lower, 18-0378-00, (T.137, R.28, 29): 1B, 2A, 3B;
- 189.21 (18) *Kabekona Lake, 29-0075-00, [3/7/88R] (T.142, 143, R.32, 33):
- 189.22 1B, 2A, 3B;

- 190.1 (19) Kennedy Lake, 31-0137-00, (T.58, R.23): 1B, 2A, 3B;
- 190.2 (20) Kremer Lake, 31-0645-00, (T.58, R.26W, S.33, 34): 1B, 2A, 3B;
- 190.3 (21) LaSalle Lake, Lower, 29-0309-00, (T.145, R.35): 1B, 2A, 3B;
- 190.4 (22) Loon (Townline) Lake, 01-0024-00, (T.50, R.22W, S.7; T.50, R.23W,
190.5 S.12, 13): 1B, 2A, 3B;
- 190.6 (23) Lucky Lake, 31-0603-00, (T.57, R.26W, S.14): 1B, 2A, 3B;
- 190.7 (24) Mallen Mine Pit, 18-0740-00, (T.46, R.29W, S.17): 1B, 2A, 3B;
- 190.8 (25) Manuel (South Yawkey) Mine Pit, 18-0435-00, (T.46, R.29W, S.1):
190.9 1B, 2A, 3B;
- 190.10 (26) Margaret Lake, 11-0045-00, (T.139, R.26W, S.16): 1B, 2A, 3B;
- 190.11 (27) Marion Lake, 11-0046-00, (T.139, R.26W, S.16, 17): 1B, 2A, 3B;
- 190.12 (28) Martin (Huntington, Feigh) Mine Pit, 18-0441-00, (T.46, R.29W,
190.13 S.9, 10, 16): 1B, 2A, 3B;
- 190.14 (29) Moonshine Lake, Little (Moonshine), 31-0444-00, (T.58, R.25W,
190.15 S.28, 33): 1B, 2A, 3B;
- 190.16 (30) Newman (Putnam) Lake, 29-0237-00, (T.145, R.34W, S.10, 11):
190.17 1B, 2A, 3B;
- 190.18 (31) Otter Lake, 02-0003-00, (T.30, 31, R.22): 1C, 2Bd, 3C;
- 190.19 (32) Pennington (Mahnomen, Alstead, Arco) Mine Pit, 18-0439-00, (T.46,
190.20 R.29W, S.3, 9, 10, 11): 1B, 2A, 3B;
- 190.21 (33) Perch Lake, 11-0826-00, (T.139, R.31W, S.33): 1B, 2A, 3B;
- 190.22 (34) Pleasant Lake, 62-0046-00, (T.30, R.22, 23): 1C, 2Bd, 3C;
- 190.23 (35) Pleasant Lake, 18-0278-00, (T.137, R.27W, S.19): 1B, 2A, 3B;

- 191.1 (36) *Pokegama Lake, 31-0532-01 and 31-0532-02, [3/7/88R] (T.54, 55,
191.2 R.25, 26): 1B, 2A, 3B;
- 191.3 (37) Portsmouth Mine Pit, 18-0437-00, (T.46, R.29W, S.1, 2, 11): 1B,
191.4 2A, 3B;
- 191.5 (38) *Roosevelt Lake, 11-0043-00, [3/7/88R] (T.138, 139, R.26): 1B,
191.6 2A, 3B;
- 191.7 (39) Sagamore Mine Pit, 18-0523-00, (T.46, R.29W, S.19; T.46, R.30W,
191.8 S.24): 1B, 2A, 3B;
- 191.9 (40) Section 6 Mine Pit, 18-0667-00, (T.46, R.29W, S.6): 1B, 2A, 3B;
- 191.10 (41) Snoshoe Mine Pit, 18-0524-00, (T.46, R.29W, S.17, 18): 1B, 2A, 3B;
- 191.11 (42) Snowshoe (Little Andrus) Lake, 11-0054-00, (T.139, R.26W, S.29,
191.12 30): 1B, 2A, 3B;
- 191.13 (43) Strawberry Lake, 18-0363-00, (T.137, R.28W, S.27, 34): 1B, 2A, 3B;
- 191.14 (44) Sucker Lake, 62-0028-00, (T.30, R.22): 1C, 2Bd, 3C;
- 191.15 (45) Taylor Lake, 01-0109-00, (T.52, R.25W, S.16): 1B, 2A, 3B;
- 191.16 (46) Teepee Lake, 11-0312-00, (T.141, R.29W, S.30; T.141, R.30W,
191.17 S.25): 1B, 2A, 3B;
- 191.18 (47) Tioga Mine Pit, 31-0946-00, (T.55, R.26W, S.26): 1B, 2A, 3B;
- 191.19 (48) Trout Lake, 31-0216-00, (T.55, 56, R.24): 1B, 2A, 3B;
- 191.20 (49) *Trout Lake, Big, 31-0410-00, [3/7/88R] (T.57, 58, R.25): 1B, 2A, 3B;
- 191.21 (50) *Trout Lake, Big, 18-0315-00, [3/7/88R] (T.137, 138, R.27, 28):
191.22 1B, 2A, 3B;
- 191.23 (51) *Trout Lake, Little, 31-0394-00, [3/7/88R] (T.57, R.25): 1B, 2A, 3B;

192.1 [For text of subitems (52) to (55), see M.R.]

192.2 (56) Vadnais Lake, 62-0038-00, (T.30, R.22): 1C, 2Bd, 3C;

192.3 (57) Wabana Lake, 31-0392-00, (T.57, R.25): 1B, 2A, 3B;

192.4 (58) Watab Lake, Big, 73-0102-00, (T.124, R.30): 1B, 2A, 3B;

192.5 (59) Wilkinson Lake, 62-0043-00, (T.30, R.22): 1C, 2Bd, 3C;

192.6 (60) Willard Lake, 11-0564-00, (T.139, R.30W, S.15): 1B, 2A, 3B; and

192.7 (61) Yawkey (North Yawkey) Mine Pit, 18-0434-00, (T.46, R.29W, S.1):

192.8 1B, 2A, 3B.

192.9 [For text of items C and D, see M.R.]

192.10 Subp. 5. **Minnesota River Basin.** The water use classifications for the listed
192.11 waters in the Minnesota River Basin are as identified in items A to D. See parts 7050.0425
192.12 and 7050.0430 for the classifications of waters not listed.

192.13 A. Streams:

192.14 [For text of subitems (1) to (4), see M.R.]

192.15 (5) Blue Earth River, East Fork, (Brush Creek to mouth): 2C, 3C;

192.16 (6) Blue Earth River, West Fork, (Iowa border to mouth): 2C, 3C;

192.17 [For text of subitems (7) to (11), see M.R.]

192.18 (12) Brush Creek, (Iowa border to mouth): 2C, 3C;

192.19 [For text of subitems (13) to (15), see M.R.]

192.20 (16) Canby Creek (excluding trout waters), (South Dakota border to
192.21 mouth): 2C, 3C;

192.22 [For text of subitems (17) to (20), see M.R.]

192.23 (21) Chippewa River (see also County Ditch No. 60);

- 193.1 (22) Cobb Creek, Freeborn, (T.104, R.23, S.7, 8, 17; T.104, R.24, S.11,
193.2 12): 7;
- 193.3 (23) Cobb Creek Ditch, Freeborn, (T.103, R.23, S.2; T.104, R.23, S.14, 15,
193.4 16, 23, 26, 35): 7;
- 193.5 (24) Cobb River (Cobb River, Big), (T.103, 104, 105, 106, 107, R.23,
193.6 24, 25, 26, 27): 2C;
- 193.7 (25) Cobb River, Little (County Ditch No. 8), (T.105, 106, R.23, 24, 25,
193.8 26): 2C;
- 193.9 (26) Cottonwood Creek (excluding trout waters), (T.120, 121, 122, R.41,
193.10 42): 2C;
- 193.11 (27) Cottonwood Creek, (T.119, R.41, S.4; T.120, R.41, S.21, 28, 33):
193.12 1B, 2A, 3B;
- 193.13 (28) County Ditch No. 1, Echo, (T.113, R.38, S.8, 9): 7;
- 193.14 (29) County Ditch No. 4, Arco, (T.110, R.44, S.5; T.111, R.44, S.32, 33): 7;
- 193.15 (30) County Ditch No. 4, Norwood, (T.115, R.25, S.30; T.115, R.26,
193.16 S.13, 14, 24, 25): 7;
- 193.17 (31) County Ditch No. 5, Marietta, (T.117, R.45, S.6, 7, 18; T.117, R.46,
193.18 S.1; T.118, R.46, S.23, 25, 26, 36): 7;
- 193.19 (32) County Ditch No. 6 (Judicial Ditch No. 11), Janesville, (T.107, R.24,
193.20 S.4, 8, 9, 17, 18; T.107, R.25, S.13): 7;
- 193.21 (33) County Ditch No. 7, Lowry, (T.126, R.39, S.25, 26): 7;
- 193.22 (34) County Ditch No. 8 (see Cobb River, Little);
- 193.23 (35) County Ditch No. 9 (see Hazel Creek);

- 194.1 (36) County Ditch No. 12 (County Ditch No. 45), Waseca, (T.107, R.23,
194.2 S.22, 23): 7;
- 194.3 (37) County Ditch No. 12 (Rice Creek), Belview, (T.113, R.36, S.7, 8, 18,
194.4 19; T.113, R.37, S.15, 21, 22, 23, 24): 7;
- 194.5 (38) County Ditch No. 14, Tyler, (T.109, R.43, S.18; T.109, R.44, S.2,
194.6 3, 11, 13, 14; T.110, R.44, S.33, 34): 7;
- 194.7 (39) County Ditch No. 15 (see Unnamed Ditch, Madison);
- 194.8 (40) County Ditch No. 22, Montgomery, Green Giant Company, (T.111,
194.9 R.23, S.4, 9, 10; T.112, R.23, S.33): 7;
- 194.10 (41) County Ditch No. 27, Madison, (T.117, R.43, S.3, 4, 5, 6; T.117, R.44,
194.11 S.1; T.118, R.43, S.34; T.118, R.44, S.35, 36): 7;
- 194.12 (42) County Ditch No. 28, Marietta, (T.118, R.46, S.22, 23, 26): 7;
- 194.13 (43) County Ditch No. 38, Storden, (T.107, R.37, S.28, 29): 7;
- 194.14 (44) County Ditch No. 40A, Lafayette, (T.111, R.29, S.8, 14, 15, 16,
194.15 17, 23, 24): 7;
- 194.16 (45) County Ditch No. 42, Winthrop, (T.112, R.29, S.6, 7): 7;
- 194.17 (46) County Ditch No. 44, Bricelyn, Owatonna Canning Company, (T.101,
194.18 R.25, S.7, 8, 16, 17; T.101, R.26, S.1, 12; T.102, R.26, S.36): 7;
- 194.19 (47) County Ditch No. 45, Renville, Southern Minnesota Beet Sugar Coop,
194.20 (T.114, R.36, S.5, 6; T.115, R.36, S.7, 8, 9, 10, 17, 18, 19, 29, 30, 32): 7;
- 194.21 (48) County Ditch No. 45, Branch Lateral 3, Renville, Golden Oval Eggs,
194.22 (T.115, R.36, S.4, 5, 8): 7;
- 194.23 (49) County Ditch No. 46, Willmar, (T.119, R.35, S.19, 20, 29): 7;

- 195.1 (50) County Ditch No. 51, Le Center, (T.110, R.24, S.5, 6; T.111, R.24,
195.2 S.31, 32; T.111, R.25, S.26, 35, 36): 7;
- 195.3 (51) County Ditch No. 54, Montgomery, (T.112, R.23, S.26, 33, 34, 35): 7;
- 195.4 (52) County Ditch No. 55 (see Rush River, North Branch);
- 195.5 (53) County Ditch No. 60 (Chippewa River), Millerville, Millerville Coop
195.6 Cry., (T.130, R.39, S.14, 22, 23, 27, 28, 32, 33): 7;
- 195.7 (54) County Ditch No. 61, Kerkhoven, (T.120, R.37, S.21, 22): 7;
- 195.8 (55) County Ditch No. 63, Hanska, (T.108, R.30, S.11, 12, 14, 17, 18, 19,
195.9 20, 21, 22, 23, 27, 28): 7;
- 195.10 (56) County Ditch No. 66, Bird Island, (T.115, R.34, S.15, 16, 17, 18,
195.11 22, 23): 7;
- 195.12 (57) County Ditch No. 87, Wells, (T.103, R.24, S.6; T.104, R.24, S.31;
195.13 T.104, R.25, S.36): 7;
- 195.14 (58) County Ditch No. 104, Sacred Heart, (T.114, R.38, S.1, 2; T.115,
195.15 R.37, S.7, 18; T.115, R.38, S.13, 24, 25, 26, 35, 36): 7;
- 195.16 (59) County Ditch No. 109, Morgan, (T.111, R.34, S.4, 5, 8, 17; T.112,
195.17 R.34, S.22, 23, 27, 28, 33): 7;
- 195.18 (60) Crow Creek, (T.112, R.35): 2C;
- 195.19 (61) Dry Creek, (T.108, 109, R.36): 2C;
- 195.20 (62) Dry Weather Creek, (T.117, 118, R.39, 40, 41): 2C;
- 195.21 (63) Dry Wood Creek, (T.122, 123, R.42, 43): 2C;
- 195.22 (64) Eagle Creek, East Branch, (T.115, R.21, S.18): 1B, 2A, 3B;

- 196.1 (65) Eagle Creek, Main Branch, (T.115, R.21, S.7, 18; T.115, R.22, S.13):
196.2 1B, 2A, 3B;
- 196.3 (66) Echo Creek, (T.114, R.37): 2C;
- 196.4 (67) Eight Mile Creek (Judicial Ditch No. 7 or Eightmile Creek), (T.111,
196.5 112, 113, R.31): 2C;
- 196.6 (68) Elm Creek, North Fork, (T.104, R.34): 2C;
- 196.7 (69) Elm Creek, South Fork, (T.103, R.34): 2C;
- 196.8 (70) Emily Creek, (T.118, 119, R.43): 2C;
- 196.9 (71) Fish Creek, (T.123, 124, R.47, 48, 49): 2C;
- 196.10 (72) Five Mile Creek, (T.120, R.44): 2C;
- 196.11 (73) Florida Creek, (South Dakota border to mouth): 2C, 3C;
- 196.12 (74) Foster Creek (County Ditch No. 1) (excluding Class 7 segment),
196.13 (T.102, 103, R.24): 2C;
- 196.14 (75) Foster Creek (County Ditch No. 1), Alden, (T.102, R.23, S.4, 5; T.103,
196.15 R.23, S.31, 32; T.103, R.24, S.25, 36): 7;
- 196.16 (76) Hassel Creek, (T.122, 123, R.38, 39): 2C;
- 196.17 (77) Hawk Creek (County Ditch No. 10), Willmar/Pennock, (T.118, R.36,
196.18 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,
196.19 31; T.119, R.35, S.19; T.119, R.36, S.24, 25, 26, 35): 7;
- 196.20 (78) Hazel Creek (County Ditch No. 9), (T.115, R.39, 40, 41, 42): 2C;
- 196.21 (79) High Island Ditch No. 5, Arlington, (T.113, R.27, S.16, 17, 21, 22,
196.22 27): 7;

- 197.1 (80) Hindeman Creek (Spring Creek), (T.111, R.32, S.19, 20; T.111, R.33,
197.2 S.24): 1B, 2A, 3B;
- 197.3 (81) Iosco Creek, (T.108, R.23): 2C;
- 197.4 (82) John's Creek, (T.110, R.32, S.1; T.111, R.31, S.31; T.111, R.32,
197.5 S.36): 1B, 2A, 3B;
- 197.6 (83) Judicial Ditch No. 1, Delavan, (T.104, R.27, S.23, 25, 26, 36): 7;
- 197.7 (84) Judicial Ditch No. 1A, Lafayette, (T.111, R.27, S.5, 6, 7; T.111, R.28,
197.8 S.10, 11, 12, 15, 16, 17, 18, 19; T.111, R.29, S.24): 7;
- 197.9 (85) Judicial Ditch No. 4, Dawson, Lac qui Parle Oil Coop, (T.117, R.43,
197.10 S.7, 17, 18, 20, 21 NW1/4; T.117, R.44, S.12): 7;
- 197.11 (86) Judicial Ditch No. 5, Murdock, (T.120, R.38, S.4, 5, 6, 9, 10, 11;
197.12 T.120, R.39, S.1, 4, 9, 10, 11, 12): 7;
- 197.13 (87) Judicial Ditch No. 6, Hanska, (T.107, R.30, S.4; T.108, R.30, S.28,
197.14 33): 7;
- 197.15 (88) Judicial Ditch No. 7 (see Eight Mile Creek);
- 197.16 (89) Judicial Ditch No. 10, (see Wood Lake Creek);
- 197.17 (90) Judicial Ditch No. 10 (Morgan Creek), Hanska, (T.108, R.30, S.1;
197.18 T.109, R.30, S.35 SE1/4, 36 SW1/4): 7;
- 197.19 (91) Judicial Ditch No. 12, Tyler, (T.109, R.43, S.9, 15, 16, 17, 18): 7;
- 197.20 (92) Judicial Ditch No. 29, Arco, (T.111, R.44, S.21, 28, 33): 7;
- 197.21 (93) Judicial Ditch No. 29 (Spring Creek), Evan, (T.110, R.33, S.6; T.111,
197.22 R.33, S.21, 22, 28, 31, 32, 33): 7;
- 197.23 (94) Judicial Ditch No. 29, Branch Lateral, Evan, (T.110, R.33, S.6,
197.24 7, 18): 7;

- 198.1 (95) Judicial Ditch No. 30, Sleepy Eye, Del Monte Corporation, (T.109,
198.2 R.32, S.4, 5, 6; T.110, R.32, S.31): 7;
- 198.3 (96) Judicial Ditch No. 49 (Providence Creek), Amboy, (T.105, R.27,
198.4 S.18, 19; T.105, R.28, S.13): 7;
- 198.5 (97) Kennaley's Creek, (T.27, R.23, S.18): 1B, 2A, 3B;
- 198.6 (98) Lac qui Parle River, (Lake Hendricks outlet to Minnesota River):
198.7 2C, 3C;
- 198.8 (99) Lac qui Parle River, West Fork, (South Dakota border to mouth):
198.9 2C, 3C;
- 198.10 (100) Lateral Ditch C of County Ditch No. 55, Gaylord, (T.112, R.28, S.2,
198.11 3; T.113, R.28, S.32, 33, 34): 7;
- 198.12 (101) Lazarus Creek, (South Dakota border to Canby Creek): 2C, 3C;
- 198.13 (102) Lazarus Creek (Canby Creek), (T.115, R.45, S.14 to mouth): 2B, 3C;
- 198.14 (103) Le Sueur River, Little, (T.106, R.22): 2C;
- 198.15 (104) Lone Tree Creek, Tracy, (T.109, R.39, S.2, 3, 4, 7, 8, 9; T.110, R.38,
198.16 S.19, 20, 30; T.110, R.39, S.25, 34, 35, 36): 7;
- 198.17 (105) Long Lake Creek, (T.132, R.41, S.9): 1B, 2A, 3B;
- 198.18 (106) Middle Creek (County Ditch No. 92), (T.113, 114, R.36): 2C;
- 198.19 (107) Mink Creek (Judicial Ditch No. 60), (T.104, R.30, 31): 2C;
- 198.20 (108) Minneopa Creek, Lake Crystal, (T.108, R.28, S.26, 27, 32, 33, 34): 7;
- 198.21 (109) Minnesota River, (Big Stone Lake outlet to the Lac qui Parle dam):
198.22 1C, 2Bd, 3C;

- 199.1 (110) *Minnesota River, [11/5/84R] (Lac qui Parle dam to the dam in
199.2 Granite Falls S.34, T.116, R.39): 1C, 2Bd, 3C;
- 199.3 (111) *Minnesota River, [11/5/84R] (from the dam in Granite Falls S.34,
199.4 T.116, R.39 to Redwood County State-Aid Highway 11 bridge): 2B, 3C;
- 199.5 (112) Minnesota River, (River Mile 22 to mouth): 2C, 3C;
- 199.6 (113) Minnesota River, Little, (South Dakota border crossing to Big Stone
199.7 Lake): 2C, 3C;
- 199.8 (114) Morgan Creek (Judicial Ditch No. 10) (excluding Class 7 segment),
199.9 (T.109, R.29, 30): 2C;
- 199.10 (115) Mud Creek, (T.114, R.43, 44, 45): 2C;
- 199.11 (116) Mud Creek, (T.123, R.36, S.28, 29): 1B, 2A, 3B;
- 199.12 (117) Mud Creek (Judicial Ditch No. 19), DeGraff/Murdock, (T.121, R.37,
199.13 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;
- 199.14 (118) Muddy Creek (Mud Creek) (County Ditch No. 2) (County Ditch No.
199.15 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;
199.16 T.124, R.44, S.1, 2, 3, 12; T.125, R.43, S.34, 35, 36): 7;
- 199.17 (119) Palmer Creek (County Ditch No. 68), (T.116, 117, 118, R.39): 2C;
- 199.18 (120) Paul's Creek, (T.110, R.26, S.14, 15): 1B, 2A, 3B;
- 199.19 (121) Pelican Creek, (T.130, R.41, 42): 2C;
- 199.20 (122) Pell Creek, Walnut Grove, (T.109, R.38, S.25, 26, 27, 28): 7;
- 199.21 (123) Perch Creek, (T.104, 105, 106, R.29, 30): 2C;
- 199.22 (124) Ramsey Creek, (T.112, R.36, S.1; T.113, R.36, S.35, 36): 1B, 2A, 3B;

- 200.1 (125) Redwood River, (T.110, R.42, S.5, 8, 17; T.111, R.42, S.32): 1B,
200.2 2A, 3B;
- 200.3 (126) Rice Creek, See County Ditch No. 12;
- 200.4 (127) Rush River, Middle Branch (County Ditch No. 23, County Ditch No.
200.5 42B, or County Ditch No. 54), Winthrop, (T.112, R.27, S.16, 19, 20, 21, 30; T.112, R.28,
200.6 S.18, 19, 20, 21, 22, 25, 26, 27; T.112, R.29, S.7, 8, 9, 13, 14, 15, 16, 17, 18): 7;
- 200.7 (128) Rush River, North Branch, (County Ditch No. 55), Gaylord (T.112,
200.8 R.27, S.7, 8, 17; T.112, R.28, S.1, 2, 12): 7;
- 200.9 (129) Saint James Creek (excluding Class 7 segment), (T.105, 106, R.31,
200.10 32, 33): 2C;
- 200.11 (130) Saint James Creek, Saint James, (T.106, R.31, S.5, 7, 8, 18; T.107,
200.12 R.31, S.21, 22, 28, 32, 33): 7;
- 200.13 (131) Seven Mile Creek, (T.109, R.27, S.2, 3, 4, 10, 11, 12): 1B, 2A, 3B;
- 200.14 (132) Shakopee Creek, (T.119, 120, R.36, 37, 38, 39, 40): 2C;
- 200.15 (133) Silver Creek (County Ditch No. 3), (T.108, R.23, 24): 2C;
- 200.16 (134) Smith Creek, (T.113, R.35, 36): 2C;
- 200.17 (135) South Creek, (T.102, 103, R.28, 29, 30): 2C, 3C;
- 200.18 (136) Spring Branch Creek, (T.106, R.29, 30): 2C;
- 200.19 (137) Spring Creek (Judicial Ditch No. 29) (excluding trout waters) (see
200.20 also Hindeman Creek and Judicial Ditch No. 29), (T.110, 111, R.33, 34): 2C;
- 200.21 (138) Spring Creek (County Ditch No. 10A), (T.117, 118, R.39, 40): 2C;
- 200.22 (139) Stony Run, (T.121, 122, R.45, 46): 2C;
- 200.23 (140) Stony Run Creek (Judicial Ditch No. 21), (T.116, R.40): 2C;

- 201.1 (141) Three Mile Creek (Threemile Creek), (T.112, R.33): 2C;
- 201.2 (142) Timms Creek (County Ditch No. 35A), (T.114, 115, R.36): 2C;
- 201.3 (143) Unnamed #1, (T.27, R.23, S.18; T.27, R.24, S.13): 1B, 2A, 3B;
- 201.4 (144) Unnamed #4, (T.27, R.24, S.24): 1B, 2A, 3B;
- 201.5 (145) Unnamed #7, (T.27, R.24, S.26): 1B, 2A, 3B;
- 201.6 (146) Unnamed Creek, (T.108, R.28, S.1, 2): 1B, 2A, 3B;
- 201.7 (147) Unnamed Creek, (T.108, R.28, S.5): 1B, 2A, 3B;
- 201.8 (148) Unnamed Creek, (T.110, R.26, S.10, 11): 1B, 2A, 3B;
- 201.9 (149) Unnamed Creek, (T.108, R.28, S.6; T.109, R.29, S.25, 36): 1B,
- 201.10 2A, 3B;
- 201.11 (150) Unnamed Creek, Green Isle, (T.114, R.26, S.2, 3, 4, 8, 9, 17): 7;
- 201.12 (151) Unnamed Creek, Lake Town Township, (T.115, R.24, S.3, 10, 11;
- 201.13 T.116, R.24, S.27, 34): 7;
- 201.14 (152) Unnamed Creek, Pennock, (T.118, R.37, S.2, 3, 4, 5; T.119, R.36,
- 201.15 S.4, 5, 6, 7, 18, 19; T.119, R.37, S.24, 25, 26, 35): 7;
- 201.16 (153) Unnamed Creek, Murdock, (T.120, R.38, S.1, 2; T.121, R.38, S.35):
- 201.17 7;
- 201.18 (154) Unnamed Ditch, Burnsville Freeway Sanitary Landfill, (T.27, R.24,
- 201.19 S.28, 33): 7;
- 201.20 (155) Unnamed Ditch, Bricelyn, Owatonna Canning Company, (T.101,
- 201.21 R.25, S.10): 7;
- 201.22 (156) Unnamed Ditch, Truman, (T.104, R.30, S.2, 11; T.105, R.30, S.25,
- 201.23 26, 35): 7;

- 202.1 (157) Unnamed Ditch (County Ditch No. 47), New Richland, (T.105,
202.2 R.22, S.17, 18, 19; T.105, R.23, S.24): 7;
- 202.3 (158) Unnamed Ditch, Lewisville, (T.105, R.30, S.3; T.106, R.30, S.14,
202.4 23, 26, 34, 35): 7;
- 202.5 (159) Unnamed Ditch, Waldorf, (T.106, R.24, S.34): 7;
- 202.6 (160) Unnamed Ditch (County Ditch No. 45), Waseca, (T.107, R.23,
202.7 S.14, 23): 7;
- 202.8 (161) Unnamed Ditch, Jeffers, (T.107, R.36, S.21): 7;
- 202.9 (162) Unnamed Ditch, Storden, (T.107, R.37, S.19, 30): 7;
- 202.10 (163) Unnamed Ditch, Eagle Lake, (T.108, R.25, S.18, 19; T.108, R.26,
202.11 S.13): 7;
- 202.12 (164) Unnamed Ditch, Walnut Grove, (T.109, R.38, S.28): 7;
- 202.13 (165) Unnamed Ditch, Tracy, (T.109, R.39, S. 7, 18; T.109, R.40, S.13): 7;
- 202.14 (166) Unnamed Ditch, Wabasso, (T.110, R.36, S.3; T.111, R.36, S.18, 19,
202.15 20, 28, 29, 33, 34; T.111, R.37, S.13): 7;
- 202.16 (167) Unnamed Ditch, Lafayette, (T.111, R.29, S.6, 7, 8; T.111, R.30,
202.17 S.12): 7;
- 202.18 (168) Unnamed Ditch, Wabasso, (T.111, R.37, S.13, 24): 7;
- 202.19 (169) Unnamed Ditch, Montgomery, (T.112, R.23, S.33): 7;
- 202.20 (170) Unnamed Ditch, Winthrop, (T.112, R.29, S.4, 5, 6): 7;
- 202.21 (171) Unnamed Ditch, Arlington, (T.113, R.27, S.21): 7;
- 202.22 (172) Unnamed Ditch, Near Fernando, Round Grove Coop Cry., (T.113,
202.23 R.30, S.5; T.114, R.29, S.19, 20, 30; T.114, R.30, S.25, 26, 27, 28, 29, 32): 7;

- 203.1 (173) Unnamed Ditch, Green Isle, (T.114, R.26, S. 19; T.114, R.27, S.11,
203.2 12, 13, 14, 24): 7;
- 203.3 (174) Unnamed Ditch, New Auburn, (T.114, R.28, S.20): 7;
- 203.4 (175) Unnamed Ditch, Porter, (T.114, R.44, S.21, 28): 7;
- 203.5 (176) Unnamed Ditch, Bongards, Bongards Creameries, (T.115, R.25,
203.6 S.9, 16): 7;
- 203.7 (177) Unnamed Ditch, Clarkfield, (T.115, R.41, S.16): 7;
- 203.8 (178) Unnamed Ditch, Clarkfield, (T.115, R.41, S.16, 21): 7;
- 203.9 (179) Unnamed Ditch (County Ditch No. 15), Madison, (T.118, R.44,
203.10 S.27, 28, 34, 35): 7;
- 203.11 (180) Unnamed Ditch, Pennock, (T.119, R.36, S.2, 3, 4, 9, 10): 7;
- 203.12 (181) Unnamed Ditch, DeGraff, (T.121, R.38, S.19, 29, 30): 7;
- 203.13 (182) Unnamed Ditch, Hancock, (T.122, R.40, S.6; T.122, R.41, S.1, 12;
203.14 T.123, R.40, S.18, 19, 30, 31; T.123, R.41, S.11, 12): 7;
- 203.15 (183) Unnamed Ditch, Alberta, (T.124, R.43, S.3, 4): 7;
- 203.16 (184) Unnamed Ditch, Farwell, Farwell Coop Cry. Assn., (T.126, R.39,
203.17 S.6): 7;
- 203.18 (185) Unnamed Ditch, Lowry, (T.126, R.39, S.26, 35): 7;
- 203.19 (186) Unnamed Ditch, Brandon, (T.129, R.39, S.21, 22): 7;
- 203.20 (187) Unnamed Ditch, Evansville, (T.129, R.40, S.10, 11): 7;
- 203.21 (188) Unnamed Dry Run, Near Minneopa, Blue Earth - Nicollet Electric,
203.22 (T.108, R.27, S.16): 7;

204.1 (189) Unnamed Dry Run, Mankato, Southview Heights Coop Association,
204.2 (T.108, R.26, S.19, 30; T.108, R.27, S.24): 7;

204.3 (190) Unnamed Stream, Mankato, Midwest Electric Products, (T.109,
204.4 R.26, S.20, 21, 28): 7;

204.5 (191) Unnamed Stream, Savage, (T.115, R.21, S.8, 9): 7;

204.6 (192) Wabasha Creek, (T.112, R.34): 2C;

204.7 (193) Whetstone River, (South Dakota border to mouth): 2C, 3C;

204.8 (194) Old Whetstone River Channel, Ortonville, Big Stone Canning
204.9 Company, (T.121, R.46, S.16, 21): 7;

204.10 (195) Willow Creek, (T.104, 105, R.31, 32): 2C;

204.11 (196) Wood Lake Creek, (Judicial Ditch No. 10), (T.113, 114, 115, R.38,
204.12 39): 2C;

204.13 (197) Yellow Bank River, North Fork, (South Dakota border to mouth):
204.14 2C, 3C;

204.15 (198) Yellow Bank River, South Fork, (South Dakota border to mouth):
204.16 2C, 3C; and

204.17 (199) Yellow Medicine River, North Fork, (South Dakota border to
204.18 mouth): 2C, 3C.

204.19 B. Lakes:

204.20 (1) Amber Lake, 46-0034-00, (T.102, R.30): 1C, 2Bd, 3C;

204.21 (2) Bardwell Lake, 46-0023-00, (T.102, R.30): 1C, 2Bd, 3C;

204.22 (3) Budd Lake, 46-0030-00, (T.102, R.30): 1C, 2Bd, 3C;

204.23 (4) Courthouse Lake, 10-0005-00, (T.115, R.23W, S.9): 1B, 2A, 3B;

- 205.1 (5) George Lake, 46-0024-00, (T.102, R.30): 1C, 2Bd, 3C;
- 205.2 (6) Hall Lake, 46-0031-00, (T.102, R.30): 1C, 2Bd, 3C;
- 205.3 (7) Mud Lake, 46-0035-00, (T.102, R.30): 1C, 2Bd, 3C;
- 205.4 (8) One Hundred Acre Slough, Saint James, (T.106, R.31, S.7): 7;
- 205.5 (9) Silver Lake, North, 46-0016-00, (T.101, R.30): 1C, 2Bd, 3C;
- 205.6 (10) Sisseton Lake, 46-0025-00, (T.102, R.30): 1C, 2Bd, 3C;
- 205.7 [For text of subitems (11) to (14), see M.R.]
- 205.8 (15) Unnamed Swamp (Skauby Lake), 17-0035-00, Storden, (T.107, R.37,
- 205.9 S.30): 7;
- 205.10 (16) Unnamed Swamp, Sunburg, Sunburg Coop Cry., (T.122, R.36, S.30):
- 205.11 7;
- 205.12 (17) Unnamed Swamp, Lowry, (T.126, R.39, S.35, 36): 7; and
- 205.13 (18) Wilmert Lake, 46-0014-00, (T.101, R.30): 1C, 2Bd, 3C.

205.14 [For text of items C and D, see M.R.]

205.15 Subp. 6. **Saint Croix River Basin.** The water use for the listed waters in the Saint

205.16 Croix River Basin are as identified in items A to D. See parts 7050.0425 and 7050.0430

205.17 for the classifications of waters not listed.

205.18 A. Streams:

205.19 [For text of subitems (1) to (6), see M.R.]

- 205.20 (7) Brown's Creek, (T.30, R.20, S.18, 19, 20, 21; T.30, R.21, S.12, 13):
- 205.21 1B, 2A, 3B;
- 205.22 (8) Cons Creek, (T.41, R.17, S.15, 16, 22): 1B, 2A, 3B;

206.1 (9) Crooked Creek (East Fork Crooked Creek), (T.41, R.17, S.6, 7, 18, 19,
206.2 20, 29, 30; T.41, R.18, S.11, 12, 13; T.42, R.17, S.31): 1B, 2A, 3B;

206.3 [For text of subitems (10) to (14), see M.R.]

206.4 (15) Hay Creek, (T.42, 43, 44, R.15, 16): 1B, 2Bd, 3C;

206.5 (16) Hay Creek, Little, (T.40, R.18, S.8, 9): 1B, 2A, 3B;

206.6 (17) *Kettle River, [11/5/84R] (From the north Pine County line to the site
206.7 of the former dam at Sandstone, at quarter section line between the NW 1/4 and SW
206.8 1/4, S.22, T.42, R.20): 2B, 3C;

206.9 [For text of subitems (18) and (19), see M.R.]

206.10 (20) Larson Creek, (T.44, R.17, S.5; T.45, R.17, S.29, 32): 1B, 2A, 3B;

206.11 (21) Lawrence Creek, (T.33, R.19, S.2, 3, 10): 1B, 2A, 3B;

206.12 (22) Lost Creek, (T.40, R.19, S.9, 10, 15): 1B, 2A, 3B;

206.13 (23) McCullen Creek (Albrechts Creek or Meekers Creek), (T.42, R.16,
206.14 S.28, 33): 1B, 2A, 3B;

206.15 (24) Mission Creek, (T.40, R.21, S.1, 2; T.41, R.20, S.31; T.41, R.21,
206.16 S.36): 1B, 2A, 3B;

206.17 (25) Mission Creek (excluding trout waters), (T.39, 40, 41, R.20, 21):
206.18 1B, 2Bd, 3C;

206.19 (26) Moosehorn River (Moose River), (T.48, R.18, S.3, 9, 10, 14, 15,
206.20 16, 23, 26, 34, 35): 1B, 2A, 3B;

206.21 [For text of subitems (27) and (28), see M.R.]

206.22 (29) Rock Creek, (T.37, 38, R.20, 21): 1B, 2Bd, 3C;

206.23 (30) Rush Creek, (T.37, R.20, 21): 1B, 2Bd, 3C;

- 207.1 (31) *Saint Croix River, [11/5/84R] (Wisconsin border crossing to Taylors
207.2 Falls): 1B, 2Bd, 3C;
- 207.3 (32) *Saint Croix River, [11/5/84R] (Taylors Falls to mouth): 1C, 2Bd, 3C;
- 207.4 (33) Sand River (Sand Creek), (T.43, R.18, S.4, 5, 7, 8, 18, 19; T.43, R.19,
207.5 S.24; T.44, R.18, S.33, 34): 1B, 2A, 3B;
- 207.6 (34) Spring Brook (Spring Creek), (T.41, R.20, S.16, 17, 18, 21): 1B,
207.7 2A, 3B;
- 207.8 (35) Sunrise River, West Branch (County Ditch No. 13), (T.34, R.21,
207.9 22): 1B, 2Bd, 3C;
- 207.10 (36) Tamarack River, Lower, (Hay Creek to mouth): 1B, 2Bd, 3C;
- 207.11 (37) Tamarack River, Upper (Spruce River), (T.41, 42, R.15, 16): 1B,
207.12 2Bd, 3C;
- 207.13 (38) Unnamed Creek, (T.33, R.19, S.16, 21, 22): 1B, 2A, 3B;
- 207.14 (39) Unnamed Creek, (T.33, R.19, S.31, 32): 1B, 2A, 3B;
- 207.15 (40) Unnamed Creek, (T.43, R.18, S.2, 3; T.44, R.18, S.35): 1B, 2A, 3B;
- 207.16 (41) Unnamed Ditch, Chisago City, (T.34, R.20, S.19, 29, 30, 32): 7;
- 207.17 (42) Unnamed Ditch, Almelund, Almelund Coop Cry., (T.35, R.20, S.25):
207.18 7;
- 207.19 (43) Unnamed Ditch, Moose Lake, (T.46, R.19, S.30): 7;
- 207.20 (44) Unnamed Dry Run, Wahkon, (T.41, R.25, S.3; T.42, R.25, S.29, 32,
207.21 33, 34): 7;
- 207.22 (45) Unnamed Stream (Falls Creek), (T.32, R.19, S.6, 7; T.32, R.20, S.1,
207.23 12): 1B, 2A, 3B;

- 208.1 (46) Unnamed Stream (Gilbertson), (T.32, R.19, S.19): 1B, 2A, 3B;
- 208.2 (47) Unnamed Stream, Shafer, (T.34, R.19, S.32, 33, 34): 7;
- 208.3 (48) Unnamed Stream (Willow Brook), (T.31, R.19, S.19): 1B, 2A, 3B;
- 208.4 (49) Valley Creek (Valley Branch), (T.28, R.20, S.9, 10, 14, 15, 16, 17):
- 208.5 1B, 2A, 3B;
- 208.6 (50) Wilbur Brook, (T.41, R.17, S.29, 30; T.41, R.18, S.23, 25, 26): 1B,
- 208.7 2A, 3B; and
- 208.8 (51) Wolf Creek, (T.42, R.18, S.4, 9, 16; T.43, R.18, S.32, 33): 1B, 2A, 3B.
- 208.9 B. Lakes:
- 208.10 (1) *Grindstone Lake, 58-0123-00, [3/7/88R] (T.42, R.21): 1B, 2A, 3B; and
- 208.11 (2) Unnamed Swamp, Shafer, (T.34, R.19, S.31, 32): 7.

208.12 [For text of items C and D, see M.R.]

208.13 Subp. 7. **Lower Mississippi River Basin (from the confluence with the St.**

208.14 **Croix River to the Iowa border).** The water use classifications for the listed waters in

208.15 the Lower Mississippi River Basin from the confluence with the St. Croix River to the

208.16 Iowa border are as identified in items A to D. See parts 7050.0425 and 7050.0430 for the

208.17 classifications of waters not listed.

208.18 A. Streams:

- 208.19 (1) Ahrensfield Creek, (T.105, R.8, S.8, 9, 16, 17, 19, 20): 1B, 2A, 3B;
- 208.20 (2) Albany Creek, West (excluding trout waters), (T.110, 111, R.12, 13):
- 208.21 2C;
- 208.22 (3) Albany Creek, West, (T.110, R.12, S.28, 29, 30; T.110, R.13, S.23,
- 208.23 24, 25, 26): 1B, 2A, 3B;

- 209.1 (4) Badger Creek, (T.103, R.6, S.9, 16, 21, 22, 27, 28, 34): 1B, 2A, 3B;
- 209.2 (5) Ballpark Creek, (T.102, R.4, S.19, 30; T.102, R.5, S.24): 1B, 2A, 3B;
- 209.3 (6) Bear Creek, (T.107, R.9, S.13, 14, 15, 16, 22): 1B, 2A, 3B;
- 209.4 (7) Bear Creek, North, Spring Grove (T.101, R.7, S.26, 27, 35): 7;
- 209.5 (8) Bear Creek (excluding trout waters), (T.107, R.9, S.17, 20): 2C;
- 209.6 (9) Bear Creek (North Bear Creek) (excluding Class 7 segment), (source to
209.7 Iowa border): 2C;
- 209.8 (10) Beaver Creek, (T.102, R.6, S.5; T.103, R.6, S.18, 19, 29, 30, 31,
209.9 32): 1B, 2A, 3B;
- 209.10 (11) Beaver Creek, East, (T.102, R.6, S.5, 6, 8, 17): 1B, 2A, 3B;
- 209.11 (12) Beaver Creek, West, (T.102, R.6, S.5, 6, 7, 18, 19, 30; T.102, R.7,
209.12 S.12, 13, 24, 25, 26): 1B, 2A, 3B;
- 209.13 (13) Beaver Creek, (T.108, R.10, S.15, 16, 19, 20, 21; T.108, R.11, S.24):
209.14 1B, 2A, 3B;
- 209.15 (14) Beaver Creek, (T.101, 102, R.13, 14): 2C, 3C;
- 209.16 (15) Bee Creek, (T.101, R.6, S.29, 32, 33): 1B, 2A, 3B;
- 209.17 (16) Big Springs Creek, (T.104, R.9, S.21, 22, 26, 27): 1B, 2A, 3B;
- 209.18 (17) Borson Spring, (T.105, R.8, R.29, 32, 33): 1B, 2A, 3B;
- 209.19 (18) Brush Valley Creek (excluding trout waters), (T.104, R.5): 2C;
- 209.20 (19) Brush Valley Creek, (T.104, R.5, S.23, 24, 26): 1B, 2A, 3B;
- 209.21 (20) Bullard Creek, (T.112, R.14, S.1, 2, 3, 10; T.113, R.14, S.36): 1B,
209.22 2A, 3B;

- 210.1 (21) Burns Valley Creek, East Branch, (T.106, R.7, S.3, 10, 15): 1B, 2A,
210.2 3B;
- 210.3 (22) Burns Valley Creek, West Branch, (T.106, R.7, S.3, 4, 9, 16; T.107,
210.4 R.7, S.34): 1B, 2A, 3B;
- 210.5 (23) Burns Valley Creek, Main Branch, (T.106, R.7, S.2; T.107, R.7,
210.6 S.35): 1B, 2A, 3B;
- 210.7 (24) Butterfield Creek, (T.103, R.4, S.6, 7, 8, 18): 1B, 2A, 3B;
- 210.8 (25) Camp Creek, (T.101, R.10, S.5, 8, 9; T.102, R.10, S.5, 8, 16, 17,
210.9 20, 29, 32): 1B, 2A, 3B;
- 210.10 (26) Camp Hayward Creek, (T.104, R.8, S.31, 32): 1B, 2A, 3B;
- 210.11 (27) Campbell Creek, (T.104, R.6, S.5, 7, 8, 18; T.105, R.6, S.21, 28,
210.12 29, 32): 1B, 2A, 3B;
- 210.13 (28) Canfield Creek (see South Branch Creek);
- 210.14 (29) *Cannon River, [11/5/84R] (from the northern city limits of Faribault
210.15 at the common border of the SE1/4 and the NE1/4 of S.19, T.110, R.20 to its confluence
210.16 with the Mississippi River): 2B, 3C;
- 210.17 (30) Cannon River, Little, (T.110, R.18, S.1, 10, 11, 12, 15; T.111, R.18,
210.18 S.13, 24, 25, 36): 1B, 2A, 3B;
- 210.19 (31) Carters Creek (Curtis Creek), Wykoff, (T.103, R.12, S.4, 9, 15, 16,
210.20 22): 7;
- 210.21 (32) Cedar Valley Creek (Cedar Creek), (T.105, R.6, S.6; T.106, R.6, S.1,
210.22 11, 12, 14, 15, 21, 22, 28, 29, 31, 32): 1B, 2A, 3B;
- 210.23 (33) Chickentown Creek (M-9-10-10-2), (T.102, R.8, S.32, 33): 1B, 2A,
210.24 3B;

- 211.1 (34) Chub Creek, North Branch, (T.112, 113, R.19): 2C;
- 211.2 (35) Clear Creek, (T.111, R.14, S.3, 10, 15): 1B, 2A, 3B;
- 211.3 (36) Clear Creek, (T.102, R.4): 2C;
- 211.4 (37) Cold Creek (Cold Spring Brook) (excluding trout waters), (T.110,
211.5 111, R.14): 2C;
- 211.6 (38) Cold Spring Brook (Cold Creek), (T.110, R.13, S.30, 31; T.110, R.14,
211.7 S.25, 36): 1B, 2A, 3B;
- 211.8 (39) Coolridge Creek, (T.105, R.9, S.23, 26): 1B, 2A, 3B;
- 211.9 (40) Corey Creek, (T.105, R.6, S.18, 19; T.105, R.7, S.24, 25, 26, 27,
211.10 34): 1B, 2A, 3B;
- 211.11 (41) County Ditch No. 15, Kilkenny, (T.110, R.23, S.22, 23): 7;
- 211.12 (42) Crane Creek, (T.107, 108, R.20, 21, 22): 2C;
- 211.13 (43) Crooked Creek, Main Branch, (T.102, R.4, S.18, 19, 20, 28, 29, 30;
211.14 T.102, R.5, S.25, 26, 36): 1B, 2A, 3B;
- 211.15 (44) Crooked Creek, North Fork, (T.102, R.5, S.17, 20, 21, 22, 23, 26):
211.16 1B, 2A, 3B;
- 211.17 (45) Crooked Creek, South Fork, (T.102, R.5, S.26, 28): 1B, 2A, 3B;
- 211.18 (46) Crystal Creek, (T.102, R.11, S.35, 36): 1B, 2A, 3B;
- 211.19 (47) Crystal Creek, (T.103, R.5, S.6, 7, 18, 19; T.103, R.6, S.1, 12): 1B,
211.20 2A, 3B;
- 211.21 (48) Dakota Creek (excluding trout waters), (T.105, R.5): 2C;
- 211.22 (49) Dakota Creek, (T.105, R.4, S.7; T.105, R.5, S.1, 2, 3, 11, 12): 1B,
211.23 2A, 3B;

- 212.1 (50) Daley Creek, (T.103, R.7, S.4, 5, 8; T.104, R.7, S.33): 1B, 2A, 3B;
- 212.2 (51) Diamond Creek, (T.103, R.8, S.18, 19; T.103, R.9, S.10, 11, 13, 14,
- 212.3 24): 1B, 2A, 3B;
- 212.4 (52) Dry Creek, (T.108, R.12, 13): 2C;
- 212.5 (53) Duschee Creek, (T.102, R.10, S.1; T.103, R.10, S.23, 24, 25, 26,
- 212.6 36): 1B, 2A, 3B;
- 212.7 (54) Dutch Creek, (T.112, R.20, 21): 2C;
- 212.8 (55) Eitzen Creek, (T.101, R.5, S.22, 23): 1B, 2A, 3B;
- 212.9 (56) Etna Creek, (T.102, R.13, S.25, 36): 1B, 2A, 3B;
- 212.10 (57) Ferguson Creek, (T.105, R.8, S.18; T.105, R.9, S.12, 13): 1B, 2A, 3B;
- 212.11 (58) Ferndale Creek, (T.104, R.7, S.29, 30, 31): 1B, 2A, 3B;
- 212.12 (59) Forestville Creek (see North Branch Creek);
- 212.13 (60) Frego Creek, (T.101, R.9, S.14, 15, 22, 23): 1B, 2A, 3B;
- 212.14 (61) Garvin Brook, (T.106, R.8, S.4, 5, 8, 17; T.107, R.8, S.10, 11, 14,
- 212.15 15, 23, 26, 27, 33, 34, 35): 1B, 2A, 3B;
- 212.16 (62) Gilbert Creek, (T.111, R.12, S.6; T.111, R.13, S.1, 2, 3, 4, 10, 11, 12;
- 212.17 T.112, R.12, S.31): 1B, 2A, 3B;
- 212.18 (63) Gilmore Creek, (T.106, R.7, S.6; T.107, R.7, S.20, 29, 30, 31, 32):
- 212.19 1B, 2A, 3B;
- 212.20 (64) Girl Scout Camp Creek, (T.103, R.7, S.29, 30): 1B, 2A, 3B;
- 212.21 (65) Gorman Creek, (T.109, R.11, S.1; T.110, R.10, S.29, 30, 31; T.110,
- 212.22 R.11, S.36): 1B, 2A, 3B;
- 212.23 (66) Gribben Creek, (T.103, R.9, S.9, 16, 21, 27, 28): 1B, 2A, 3B;

- 213.1 (67) Hallum Creek, (T.103, R.7, S.31; T.103, R.8, S.36): 1B, 2A, 3B;
- 213.2 (68) Hamilton Creek, (T.103, R.13, NW 1/4 S.6; T.103, R.14, NE 1/4
- 213.3 S.1): 1B, 2A, 3B;
- 213.4 (69) Hammond Creek, (T.109, R.13, S.28, 29): 1B, 2A, 3B;
- 213.5 (70) Harkcom Creek, (T.108, R.15, 16): 2C;
- 213.6 (71) Hay Creek, (T.111, R.15, S.4; T.112, R.14, S.19; T.112, R.15, S.1, 12,
- 213.7 13, 23, 24, 26, 27, 33, 34; T.113, R.15, S.24, 25, 36): 1B, 2A, 3B;
- 213.8 (72) Hemmingway Creek (Hemingway Creek), (T.105, R.9, S.26, 28,
- 213.9 33, 34, 35): 1B, 2A, 3B;
- 213.10 (73) Homer Creek, (T.106, 107, R.6): 2C;
- 213.11 (74) Indian Creek, East, (T.109, R.9, S.19; T.109, R.10, S.21, 22, 23, 24,
- 213.12 26, 27, 28, 29, 31, 32; T.109, R.11, S.36): 1B, 2A, 3B;
- 213.13 (75) Indian Creek, West, (T.109, R.11, S.6, 7, 8, 16, 17, 21): 1B, 2A, 3B;
- 213.14 (76) Indian Spring Creek, (T.103, R.5): 2C;
- 213.15 (77) Iowa River, Little, (T.101, 102, R.14): 2C;
- 213.16 (78) Jordan Creek, Little (Carson Creek), (T.104, R.12, S.21, 22, 26, 27,
- 213.17 28): 1B, 2A, 3B;
- 213.18 (79) Judicial Ditch No. 1, Hayfield, (T.105, R.17, S.4, 5; T.106, R.17,
- 213.19 S.31, 32; T.106, R.18, S.25, 26, 27, 36): 7;
- 213.20 (80) Kedron Creek, (T.104, R.13, S.36): 1B, 2A, 3B;
- 213.21 (81) King Creek, (T.111, R.11, 12): 2C;
- 213.22 (82) Kinney Creek, (T.105, R.13, S.1, 12, 13; T.106, R.13, S.36): 1B,
- 213.23 2A, 3B;

- 214.1 (83) Lanesboro Park Pond, (T.103, R.10, S.13): 1B, 2A, 3B;
- 214.2 (84) LeRoy Trout Pond, (T.101, R.14, S.36): 1B, 2A, 3B;
- 214.3 (85) Logan Creek (Logan Branch), (T.107, R.11, S.3): 1B, 2A, 3B;
- 214.4 (86) Long Creek (excluding trout waters), (T.108, 109, R.12): 2C;
- 214.5 (87) Long Creek, (T.109, R.12, S.3, 10, 15, 22, 27, 28): 1B, 2A, 3B;
- 214.6 (88) Lost Creek (Bear Creek), (T.104, R.11, S.18; T.104, R.12, S.8, 9,
- 214.7 10, 15, 16): 1B, 2A, 3B;
- 214.8 (89) Lynch Creek, (T.104, R.11, S.2, 11, 14): 1B, 2A, 3B;
- 214.9 (90) MacKenzie Creek, (T.108, 109, R.21): 2C;
- 214.10 (91) Mahoney Creek, (T.103, R.10): 2C;
- 214.11 (92) Mahoods Creek, (T.103, R.12, S.20): 1B, 2A, 3B;
- 214.12 (93) Maple Creek, (T.102, R.8, S.3, 4; T.103, R.8, S.27, 28, 33, 34): 1B,
- 214.13 2A, 3B;
- 214.14 (94) Mazeppa Creek (Trout Brook), (T.109, R.14, S.4, 5, 9; T.110, R.14,
- 214.15 S.19, 29, 30, 32; T.110, R.15, S.24, 25): 1B, 2A, 3B;
- 214.16 (95) Middle Creek, (T.109, R.11, S.18; T.109, R.12, S.2, 3, 11, 13, 14):
- 214.17 1B, 2A, 3B;
- 214.18 (96) Mill Creek, (T.104, R.11, S.5, 6; T.105, R.11, S.31; T.105, R.12,
- 214.19 S.14, 23, 25, 26, 36): 1B, 2A, 3B;
- 214.20 (97) Miller Creek, (T.111, R.12, S.7, 8, 9, 18; T.111, R.13, S.13, 24):
- 214.21 1B, 2A, 3B;
- 214.22 (98) Money Creek, (T.105, R.7, S.3, 4, 6, 7, 8, 9, 16, 17): 1B, 2A, 3B;
- 214.23 (99) Mound Prairie Creek, (T.104, R.5): 2C;

- 215.1 (100) Mud Creek (Judicial Ditch No. 6), (T.108, 109, R.20, 21): 2C;
- 215.2 (101) Nepstad Creek (Shattuck Creek), (T.102, R.8, S.4, 5, 7, 8, 9; T.102,
- 215.3 R.9, S.1, 2, 12): 1B, 2A, 3B;
- 215.4 (102) Newburg Creek (M-9-10-10-1), (T.101, R.8, S.5, 8): 1B, 2A, 3B;
- 215.5 (103) New Hartford Creek (see Pine Creek);
- 215.6 (104) New Yorker Hollow Creek, (T.101, R.5, S.25, 26): 1B, 2A, 3B;
- 215.7 (105) North Branch Creek (Forestville Creek), (T.102, R.12, S.13, 14,
- 215.8 15): 1B, 2A, 3B;
- 215.9 (106) Partridge Creek, (T.101, R.10, S.4; T.102, R.10, S.33): 1B, 2A, 3B;
- 215.10 (107) Peterson Creek, (T.106, R.8, S.7, 8): 1B, 2A, 3B;
- 215.11 (108) Pickwick Creek (Big Trout Creek), (T.106, R.5, S.7, 18; T.106,
- 215.12 R.6, S.13, 23, 24, 26, 34, 35): 1B, 2A, 3B;
- 215.13 (109) Pickwick Creek, Little (Little Trout Creek), (T.106, R.5, S.18, 19,
- 215.14 29, 30, 32; T.106, R.6, S.13): 1B, 2A, 3B;
- 215.15 (110) Pine Creek (excluding Class 7 segment), (T.101, R.10): 2C, 3C;
- 215.16 (111) Pine Creek (New Hartford Creek), (T.105, R.5, S.18, 19, 20, 29, 30,
- 215.17 31, 32; T.105, R.6, S.13, 36): 1B, 2A, 3B;
- 215.18 (112) Pine Creek, Harmony, (T.101, R.9, S.31; T.101, R.10, S.24, 25,
- 215.19 36): 7;
- 215.20 (113) Pine Creek, South Fork, (T.105, R.5, S.19; T.105, R.6, S.24): 1B,
- 215.21 2A, 3B;
- 215.22 (114) Pine Creek, Fillmore and Winona Counties, (T.104, R.9, S.2, 3, 4;
- 215.23 T.105, R.9, S.25, 26, 33, 34, 35; T.105, R.8, S.30, 31, 32, 33): 1B, 2A, 3B;

- 216.1 (115) Pine Creek, Dakota County, (excluding trout waters), (T.113, R.18):
216.2 2C;
- 216.3 (116) Pine Creek, Dakota and Goodhue Counties, (T.112, R.17, S.5, 6, 8, 9;
216.4 T.113, R.17, S.31; T.113, R.18, S.25, 26, 35, 36): 1B, 2A, 3B;
- 216.5 (117) Pleasant Valley Creek (excluding trout waters), (T.106, 107, R.6,
216.6 7): 2C;
- 216.7 (118) Pleasant Valley Creek, (T.106, R.6, S.7, 18, 19; T.106, R.7, S.1, 12,
216.8 13, 24, 25): 1B, 2A, 3B;
- 216.9 (119) Plum Creek, (T.108, R.15): 2C;
- 216.10 (120) Prairie Creek, (T.110, 111, 112, R.18, 19, 20): 2C;
- 216.11 (121) Rice Creek (Sugar Creek), (T.103, R.11, S.3, 4, 5, 7, 8, 9; T.104,
216.12 R.11, S.14, 23, 28, 33): 1B, 2A, 3B;
- 216.13 (122) Riceford Creek, (T.101, R.7, S.6, 7, 18, 19; T.101, R.8, S.1, 12, 13,
216.14 24; T.102, R.7, S.29, 30, 31, 32): 1B, 2A, 3B;
- 216.15 (123) Riceford Creek, Mabel, (T.101, R.8, S.24, 25, 26): 7;
- 216.16 (124) Rollingstone Creek, (T.107, R.8, S.2, 3, 4, 5, 6, 7, 9, 10, 11; T.107,
216.17 R.9, S.12, 13): 1B, 2A, 3B;
- 216.18 (125) Rollingstone Creek, Middle Branch, (T.107, R.8, S.9, 16): 1B, 2A,
216.19 3B;
- 216.20 (126) Root River, Middle Branch, (T.103, R.12, S.8, 9): 1B, 2A, 3B;
- 216.21 (127) Root River, South Branch, (T.102, R.10, S.5, 6; T.102, R.11, S.1,
216.22 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,
216.23 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):
216.24 1B, 2A, 3B;

- 217.1 (128) Root River, South Fork, (T.102, R.8, S.2, 3, 4, 8, 9, 10, 11, 17, 18,
217.2 19; T.102, R.9, S.24, 25, 26): 1B, 2A, 3B;
- 217.3 (129) Rose Valley Creek, (T.105, R.5, S.22, 27, 34, 35): 1B, 2A, 3B;
- 217.4 (130) Rupprecht Creek (Rollingstone Creek), (T.107, R.9, S.13, 24, 25,
217.5 26, 35): 1B, 2A, 3B;
- 217.6 (131) Rush Creek, (T.104, R.8, S.2, 3, 4, 10, 11, 13, 14; T.105, R.8, S.6, 7,
217.7 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;
- 217.8 (132) Salem Creek, (T.106, R.15, 16): 2C;
- 217.9 (133) Schueler Creek, (T.104, R.8, S.1, 2, 3): 1B, 2A, 3B;
- 217.10 (134) Second Creek (Handshaw Coulee), (T.111, R.12, S.15): 1B, 2A, 3B;
- 217.11 (135) Shady Creek, (T.104, R.11, S.19, 30): 1B, 2A, 3B;
- 217.12 (136) Shattuck Creek (See Nepstad Creek);
- 217.13 (137) Shingle Creek, (T.109, 110, R.17): 2C;
- 217.14 (138) Silver Creek (excluding trout waters), (T.104, 105, R.6): 2C;
- 217.15 (139) Silver Creek, (T.104, R.6, S.1, 2, 11, 12, 14; T.105, R.6, S.34, 35):
217.16 1B, 2A, 3B;
- 217.17 (140) Silver Spring Creek, (T.108, 109, R.13): 2C;
- 217.18 (141) Snake Creek (excluding trout waters), (T.109, R.10): 2C;
- 217.19 (142) Snake Creek, (T.109, R.10, S.10, 11, 14, 15, 16): 1B, 2A, 3B;
- 217.20 (143) South Branch Creek (Canfield Creek), (T.102, R.12, S.24, 25): 1B,
217.21 2A, 3B;
- 217.22 (144) Speltz Creek, (T.107, R.8, S.5, 6; T.108, R.8, S.31; T.108, R.9,
217.23 S.36): 1B, 2A, 3B;

- 218.1 (145) Spring Brook, (T.111, R.20, S.2, 3, 4): 1B, 2A, 3B;
- 218.2 (146) Spring Creek, (T.110, R.12, S.7, 17, 18, 20, 21, 27, 28, 29): 1B,
218.3 2A, 3B;
- 218.4 (147) Spring Creek, (T.112, R.15, S.5, 6, 7, 18; T.113, R.15, S.29, 31,
218.5 32, 33, 34): 1B, 2A, 3B;
- 218.6 (148) Spring Valley Creek, (T.103, R.12, S.8, 17, 18, 19, 20, 30; T.103,
218.7 R.13, S.23, 24, 25, 26, 27, 28, 29, 32, 33, 34): 1B, 2A, 3B;
- 218.8 (149) Stockton Valley Creek, (T.106, R.8, S.2, 3, 10, 11, 14, 23; T.107,
218.9 R.8, S.34): 1B, 2A, 3B;
- 218.10 (150) Storer Creek, (T.104, R.5, S.17, 18, 19, 30): 1B, 2A, 3B;
- 218.11 (151) Straight Creek, (T.107, R.9, S.2, 11, 12): 1B, 2A, 3B;
- 218.12 (152) Sugar Creek (Sugarloaf Creek), (T.112, R.13): 2C;
- 218.13 (153) Sullivan Creek (excluding trout waters), (T.103, R.5): 2C;
- 218.14 (154) Sullivan Creek, (T.103, R.5, S.12, 13, 14, 23, 24, 25, 26): 1B, 2A, 3B;
- 218.15 (155) Swede Bottom Creek, (T.103, R.6, S.10): 1B, 2A, 3B;
- 218.16 (156) Thompson Creek (Indian Springs Creek), (T.103, R.4, S.5, 6, 7;
218.17 T.103, R.5, S.12, 13, 14, 15, 21, 22, 28; T.104, R.4, S.32): 1B, 2A, 3B;
- 218.18 (157) Torkelson Creek, (T.104, R.10, S.25, 36): 1B, 2A, 3B;
- 218.19 (158) Trout Brook, Wabasha County, (T.110, R.11, S.5, 8): 1B, 2A, 3B;
- 218.20 (159) Trout Brook, Dakota County, (T.112, R.17, S.1; T.113, R.17, S.26,
218.21 27, 35, 36): 1B, 2A, 3B;
- 218.22 (160) Trout Brook (Hay Creek Tributary), (T.113, R.15, S.35, 36): 1B,
218.23 2A, 3B;

- 219.1 (161) Trout Brook (see also Mazeppa Creek);
- 219.2 (162) Trout Brook (Mazeppa Creek), Goodhue, (T.110, R.15, S.3, 4; T.111,
219.3 R.15, S.28, 33, 34): 7;
- 219.4 (163) Trout Creek, Little (see Pickwick Creek, Little);
- 219.5 (164) Trout Creek, Big (see Pickwick Creek);
- 219.6 (165) Trout Run Creek (Trout Run), (T.104, R.10, S.4, 5, 8, 9, 16, 17, 20,
219.7 21; T.105, R.10, S.18, 19, 30, 31, 32): 1B, 2A, 3B;
- 219.8 (166) Trout Run Creek (Trout Run) (excluding trout waters), (T.105,
219.9 R.10): 2C;
- 219.10 (167) Trout Run-Whitewater Park, (T.107, R.10, S.29): 1B, 2A, 3B;
- 219.11 (168) Trout Valley Creek (Trout Creek), Wabasha and Winona Counties,
219.12 (T.108, R.9, S.5, 8, 17, 20; T.109, R.9, S.31): 1B, 2A, 3B;
- 219.13 (169) Unnamed Creek, Houston County, (T.101, R.4, S.21): 1B, 2A, 3B;
- 219.14 (170) Unnamed Creek, Spring Grove, (T.101, R.7, S.14, 22, 23, 27): 7;
- 219.15 (171) Unnamed Creek, Houston County, (T.102, R.4, S.18, 19, 20, 29,
219.16 30): 1B, 2A, 3B;
- 219.17 (172) Unnamed Creek, Canton, (T.101, R.9, S.20): 7;
- 219.18 (173) Unnamed Creek, Byron, (T.107, R.15, S.17, 20, 29): 7;
- 219.19 (174) Unnamed Creek (Helbig), (T.110, R.11, S.28, 33): 1B, 2A, 3B;
- 219.20 (175) Unnamed Creek (M-9-10-5-3), (T.101, R.7, S.6; T.101, R.8, S.1,
219.21 2): 1B, 2A, 3B;
- 219.22 (176) Unnamed Creek (Whitewater Tributary), (T.108, R.10, S.35, 36):
219.23 1B, 2A, 3B;

- 220.1 (177) Unnamed Creek, (T.105, R.7, S.19, 29, 30; T.105, R.8, S.24): 1B,
220.2 2A, 3B;
- 220.3 (178) Unnamed Creek (Miller Valley), (T.106, R.5, S.21, 22, 27, 28):
220.4 1B, 2A, 3B;
- 220.5 (179) Unnamed Creek (Deering Valley), (T.108, R.8, S.20, 28, 29): 1B,
220.6 2A, 3B;
- 220.7 (180) Unnamed Creek (M-9-10-5-4), (T.101, R.8, S.12, 13): 1B, 2A, 3B;
- 220.8 (181) Unnamed Creek (T.104, R.8, S.19, 30): 1B, 2A, 3B;
- 220.9 (182) Unnamed Creek, Plainview, (T.108, R.11, S.16, 17, 20, 21, 22, 27,
220.10 34): 7;
- 220.11 (183) Unnamed Creek, West Concord, (T.108, R.17, S.17, 20, 21): 7;
- 220.12 (184) Unnamed Creek, Hayfield, (T.105, R.17, S.3, 4): 7;
- 220.13 (185) Unnamed Creek (Wells Creek Trib. #9), (T.111, R.14, S.8, 17):
220.14 1B, 2A, 3B;
- 220.15 (186) Unnamed Ditch, Claremont, (T.107, R.18, S.27, 34): 7;
- 220.16 (187) Unnamed Ditch, Owatonna, (T.108, R.20, S.33): 7;
- 220.17 (188) Unnamed Ditch, Lonsdale, (T.112, R.22, S.25, 35, 36): 7;
- 220.18 (189) Unnamed Ditch, Hampton, (T.113, R.18, S.5, 6; T.114, R.18, S.31):
220.19 7;
- 220.20 (190) Unnamed Dry Run, Altura, (T.107, R.9, S.7, 18): 7;
- 220.21 (191) Unnamed Dry Run, Owatonna, Owatonna Canning Company,
220.22 (T.107, R.20, S.6; T.107, R.21, S.1): 7;

- 221.1 (192) Unnamed Dry Run, Owatonna, Owatonna Canning Company,
221.2 (T.107, R.20, S.6; T.107, R.21, S.1): 7;
- 221.3 (193) Unnamed Stream, Dodge Center, Owatonna Canning Company,
221.4 (T.107, R.17, S.27, 34): 7;
- 221.5 (194) Vermillion River, (T.113, R.20, S.1, 2, 3, 4, 9; T.114, R.18, S.19, 20;
221.6 T.114, R.19, S.21, 22, 23, 24, 28, 29, 30, 31; T.114, R.20, S.33, 34, 35, 36): 1B, 2A, 3B;
- 221.7 (195) Vesta Creek, (T.102, R.8, S.10, 11, 14, 15, 23): 1B, 2A, 3B;
- 221.8 (196) Wapsipinicon River, (T.101, R.15): 2C, 3C;
- 221.9 (197) Waterloo Creek, (T.101, R.6, 7): 1B, 2Bd, 3C;
- 221.10 (198) Watson Creek, (T.103, R.10, S.19, 20, 21, 29, 30; T.103, R.11, S.22,
221.11 23, 24, 25, 26, 27, 28, 29, 30): 1B, 2A, 3B;
- 221.12 (199) West Albany Creek (see Albany Creek, West);
- 221.13 (200) Whitewater River, Main Branch, (T.107, R.10, S.2, 3, 9, 10; T.108,
221.14 R.10, S.1, 2, 10, 11, 14, 15, 22, 23, 26, 27, 35): 1B, 2A, 3B;
- 221.15 (201) Whitewater River, South Branch, (T.106, R.9, S.6; T.106, R.10, S.1;
221.16 T.107, R.9, S.31; T.107, R.10, S.3, 10, 11, 13, 14, 24, 25, 36): 1B, 2A, 3B;
- 221.17 (202) Whitewater River, Middle Branch, (T.106, R.11, S.2, 3, 10; T.107,
221.18 R.10, S.9, 10, 16, 17, 19, 20, 30; T.107, R.11, S.24, 25, 26, 35): 1B, 2A, 3B;
- 221.19 (203) Whitewater River, North Branch (Winona and Wabasha), (T.107,
221.20 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;
- 221.21 (204) Whitewater River, North Fork, Elgin, (T.108, R.12, S.25, 26, 27): 7;
- 221.22 (205) Wildcat Creek (excluding trout waters), (T.103, R.4): 2C;
- 221.23 (206) Wildcat Creek, (T.103, R.4, S.26, 27, 28, 29, 32, 33, 34, 35): 1B,
221.24 2A, 3B;

222.1 (207) Willow Creek, (T.101, R.11, S.1, 12; T.102, R.11, S.1, 12, 13, 24,
222.2 25, 36): 1B, 2A, 3B;

222.3 (208) Winnebago Creek, (T.101, R.4, S.28, 29, 30; T.101, R.5, S.7, 8, 14,
222.4 15, 16, 17, 22, 23, 24, 25; T.101, R.6, S.12): 1B, 2A, 3B; and

222.5 (209) Wisel Creek, (T.101, R.8, S.5, 6, 8; T.102, R.8, S.19, 20, 29, 30,
222.6 31, 32): 1B, 2A, 3B.

222.7 [For text of items B to D, see M.R.]

222.8 Subp. 8. **Cedar-Des Moines Rivers Basin.** The water use classifications for the
222.9 listed waters in the Cedar-Des Moines Rivers Basin are as identified in items A to D. See
222.10 parts 7050.0425 and 7050.0430 for the classifications of waters not listed.

222.11 A. Streams:

222.12 (1) Bancroft Creek (County Ditch No. 63), (T.103, 104, R.21): 2C;

222.13 (2) Cedar River, Little, (Source to Iowa border): 2C, 3C;

222.14 (3) County Ditch No. 11, Sherburne, (T.101, R.32, S.4, 9, 10; T.102, R.32,
222.15 S.7, 8, 16, 17, 21, 27, 28, 33, 34): 7;

222.16 (4) County Ditch No. 11, Manchester, (T.103, R.22, S.11, 14, 23, 25, 26): 7;

222.17 (5) County Ditch No. 48, Conger, (T.102, R.22, S.19, 20; T.102, R.23,
222.18 S.24, 25, 26, 35): 7;

222.19 (6) County Ditch No. 53 (see Soldier Creek);

222.20 (7) Deer Creek (excluding Class 7 segment), (T.101, R.19, 20): 2C, 3C;

222.21 (8) Deer Creek (County Ditch No. 71), Myrtle, (T.101, R.19, S.18; T.101,
222.22 R.20, S.13): 7;

222.23 (9) Dobbins Creek, (T.103, R.16, 17): 2C;

- 223.1 (10) Goose Creek, Twin Lakes, (T.101, R.20, S.31; T.101, R.21, S.16, 17,
223.2 18, 21, 22, 26, 27, 35, 36; T.101, R.22, S.12, 13): 7;
- 223.3 (11) Heron Lake Outlet, (T.104, 105, R.37): 2C;
- 223.4 (12) Jack Creek, Wilmont, (T.104, R.41, S.25, 26, 30, 31, 32, 33, 34,
223.5 35, 36): 7;
- 223.6 (13) Lime Creek, (T.101, R.22, 23): 2C, 3C;
- 223.7 (14) Murphy Creek, (T.103, R.18): 2C;
- 223.8 (15) Okabena Creek (excluding Class 7 segment), (T.102, 103, R.37, 38,
223.9 40): 2C;
- 223.10 (16) Okabena Creek, Worthington, Worthington Lagoons and Allied Mills,
223.11 (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;
- 223.12 (17) Orchard Creek, (T.102, R.18, 19): 2C;
- 223.13 (18) Roberts Creek, (T.103, 104, R.16, 17, 18): 2C;
- 223.14 (19) Rose Creek, (T.102, 103, R.16, 17, 18): 2C;
- 223.15 (20) Scheldorf Creek, (T.106, R.36, S.19, 30, 31; T.106, R.37, S.13, 24,
223.16 25): 1B, 2A, 3B;
- 223.17 (21) Soldier Creek (Unnamed Stream and County Ditch No. 53), (T.101,
223.18 R.32, 33): 2C, 3C;
- 223.19 (22) Turtle Creek, (T.103, R.18, 19, 20): 2C;
- 223.20 (23) Unnamed Creek, Emmons, (T.101, R.22, S.31): 7;
- 223.21 (24) Unnamed Creek, Brownsdale, (T.103, R.17, S.4, 9): 7;
- 223.22 (25) Unnamed Creek, Blooming Prairie, (T.104, R.18, S.5, 8, 9, 16; T.105,
223.23 R.18, S.31): 7;

- 224.1 (26) Unnamed Creek, Blooming Prairie, (T.105, R.19, S.25): 7;
- 224.2 (27) Unnamed Creek, Iona, (T.105, R.41, S.3, 4, 9; T.106, R.40, S.19, 29,
- 224.3 30, 32; T.106, R.41, S.24, 25, 26, 34, 35): 7;
- 224.4 (28) Unnamed Ditch, Myrtle, (T.101, R.20, S.12): 7;
- 224.5 (29) Unnamed Ditch, Myrtle, (T.101, R.20, S.12, 13): 7;
- 224.6 (30) Unnamed Ditch, Blooming Prairie, (T.105, R.19, S.25): 7;
- 224.7 (31) Unnamed Stream (see Soldier Creek);
- 224.8 (32) Wolf Creek, (T.103, R.16, 17, 18): 2C;
- 224.9 (33) Woodbury Creek, (T.101, 102, R.18, 19): 2C; and
- 224.10 (34) Woodson Creek, (T.102, R.18, S.14, 15): 1B, 2A, 3B.

224.11 [For text of items B to D, see M.R.]

224.12 Subp. 9. **Missouri River Basin.** The water use classifications for the listed waters

224.13 in the Missouri River Basin are as identified in items A to D. See parts 7050.0425 and

224.14 7050.0430 for the classifications of waters not listed.

224.15 A. Streams:

- 224.16 (1) Ash Creek, (T.101, R.45): 2C;
- 224.17 (2) Beaver Creek, (T.102, 103, 104, R.45, 46, 47): 2C, 3C;
- 224.18 (3) Flandreau Creek (excluding Class 7 segment), (T.107, 108, R.46, 47):
- 224.19 2C, 3C;
- 224.20 (4) Flandreau Creek, Lake Benton, (T.108, R.46, S.1, 2, 11; T.109, R.45,
- 224.21 S.30, 31; T.109, R.46, S.36): 7;
- 224.22 (5) Judicial Ditch No. 13 (see Skunk Creek);
- 224.23 (6) Kanaranzi Creek, (Source to Iowa border): 2C, 3C;

- 225.1 (7) Medary Creek, (Source to South Dakota border): 2C, 3C;
- 225.2 (8) Mound Creek, (T.103, 104, R.45): 2C;
- 225.3 (9) Mud Creek, (T.101, 102, R.45, 46): 2C, 3C;
- 225.4 (10) Pipestone Creek, (Source to South Dakota border): 2C, 3C;
- 225.5 (11) Rock River (excluding Class 7 segment), (Source to Iowa border):
- 225.6 2C, 3C;
- 225.7 (12) Rock River, Holland, (T.107, R.44, S.18, 19, 20, 29; T.107, R.45,
- 225.8 S.12, 13): 7;
- 225.9 (13) Rock River, Little, (source to Iowa border): 2C, 3C;
- 225.10 (14) Sater's Creek (Unnamed Creek), Luverne, Agri-Energy, (T.102, R.45,
- 225.11 S.9, 14, 15, 16): 7;
- 225.12 (15) Sioux River, Little, (Source to Iowa border): 2C, 3C;
- 225.13 (16) Sioux River, West Fork Little, (Source to Iowa border): 2C, 3C;
- 225.14 (17) Skunk Creek (Judicial Ditch No. 13), (T.101, 102, R.37, 38, 39): 2C;
- 225.15 (18) Split Rock Creek, (Split Rock Lake outlet to South Dakota border):
- 225.16 2C, 3C;
- 225.17 (19) Unnamed Creek, Jasper, (T.104, R.46, S.6): 7;
- 225.18 (20) Unnamed Creek, Hatfield, (T.105, R.44, S.6, 7, 8; T.105, R.45, S.1;
- 225.19 T.106, R.45, S.36): 7;
- 225.20 (21) Unnamed Creek, Hatfield, (T.106, R.45, S.34, 35, 36): 7;
- 225.21 (22) Unnamed Ditch, Luverne, Agri-Energy, (T.102, R.45, S.10, 15): 7;
- 225.22 (23) Unnamed Ditch, Steen, (T.101, R.45, S.31, 32): 7;
- 225.23 (24) Unnamed Ditch, Hills, (T.101, R.46, S.28, 33): 7; and

226.1 (25) Unnamed Ditch, Lake Benton, (T.109, R.45, S.17, 19, 20): 7.

226.2 [For text of items B to D, see M.R.]

226.3 **EFFLUENT LIMITS AND TREATMENT REQUIREMENTS**

226.4 **FOR DISCHARGES TO WATERS OF THE STATE**

226.5 **7053.0115 SCOPE.**

226.6 Parts 7053.0135 to 7053.0405 apply to all discharges of sewage, industrial, and other
226.7 wastes to all waters of the state, both surface and underground. This chapter applies to
226.8 point source and nonpoint source discharges. Other regulations of general or specific
226.9 application that include any more stringent effluent limits or prohibitions are preserved.

226.10 Water quality standards applicable to waters of the state are in chapter 7050. Water
226.11 quality standards applicable to waters in the Lake Superior basin are in chapter 7052.

226.12 **7053.0135 GENERAL DEFINITIONS.**

226.13 Subpart 1. **Scope.** For purposes of this chapter, the following terms have the
226.14 meanings given them.

226.15 Subp. 2. **Terms defined in statute.** The terms "waters of the state," "point source,"
226.16 "sewage," "industrial wastes," and "other wastes," as well as any other terms for which
226.17 definitions are given in the pollution control statutes, have the meanings given them in
226.18 Minnesota Statutes, sections 115.01 and 115.41, with the exception that disposal systems
226.19 or treatment works operated under permit or certificate of compliance of the agency are
226.20 not "waters of the state."

226.21 Subp. 3. **Seven-day ten-year low flow or $7Q_{10}$.**

226.22 A. "Seven-day ten-year low flow" or " $7Q_{10}$ " means the lowest average
226.23 seven-day flow with a once in ten-year recurrence interval. A $7Q_{10}$ is derived by
226.24 identifying the lowest average flow for a seven-consecutive-day period from daily flow
227.1 records for each year of record, from a continuous flow gauging station. The seven-day

227.2 average low flow values for each year are arrayed in order of magnitude and fitted to a
227.3 probability distribution. The $7Q_{10}$ is the stream or river flow that is equal to or exceeded
227.4 by 90 percent of the values in the distribution.

227.5 B. The period of record for determining the specific flow for the stated
227.6 recurrence interval, where records are available, shall include at least the most recent ten
227.7 years of record, including flow records obtained after establishment of flow regulation
227.8 devices, if any. Where stream flow records are not available, the flow may be estimated
227.9 on the basis of available information on the watershed characteristics, precipitation,
227.10 runoff, and other relevant data. The calculations shall not be applied to lakes and their
227.11 embayments which have no comparable flow recurrence interval.

227.12 Subp. 4. **Thirty-day ten-year low flow or $30Q_{10}$.** "Thirty-day ten-year low flow"
227.13 or " $30Q_{10}$ " means the lowest average 30-day flow with a once in ten-year recurrence
227.14 interval. A $30Q_{10}$ is derived using the same methods used to derive a $7Q_{10}$, and the
227.15 guidelines regarding period of record for flow data and estimating a $7Q_{10}$ apply equally to
227.16 determining a $30Q_{10}$, as described in subpart 3. The calculations shall not be applied to
227.17 lakes and their embayments which have no comparable flow recurrence interval.

227.18 Subp. 5. **Commissioner.** "Commissioner" means the commissioner of the Pollution
227.19 Control Agency or the commissioner's designee.

227.20 Subp. 6. **Effluent limit.** The terms "effluent limit" (equals "effluent limitation"),
227.21 "point source," and "national pollutant discharge elimination system" have the meanings
227.22 given them in part 7001.1020.

227.23 Subp. 7. **Nonpoint source.** "Nonpoint source" means a land management or land
227.24 use activity that contributes or may contribute to ground and surface water pollution as a
227.25 result of runoff, seepage, or percolation and that is not defined as a point source under
227.26 Minnesota Statutes, section 115.01, subdivision 11.

228.1 Subp. 8. **Physical alteration.** "Physical alteration" means the dredging, filling,
228.2 draining, or permanent inundating of a wetland. Restoring a degraded wetland by
228.3 reestablishing its hydrology is not a physical alteration.

228.4 Subp. 9. **Surface waters.** "Surface waters" means waters of the state, excluding
228.5 groundwater as defined in Minnesota Statutes, section 115.01, subdivision 6.

228.6 Subp. 10. **Other terms.** Other terms and abbreviations used in this chapter
228.7 that are not specifically defined in applicable federal or state law must be construed
228.8 in conformance with the context, in relation to the applicable section of the statutes
228.9 pertaining to the matter, and current professional usage.

228.10 **7053.0155 DETERMINATION OF COMPLIANCE.**

228.11 In making tests or analyses of the waters of the state, sewage, industrial wastes, or
228.12 other wastes to determine water quality condition and compliance with effluent limits and
228.13 nonpoint source reduction measures, samples must be collected in a manner and place,
228.14 and of such type, number, and frequency, as may be considered necessary by the agency to
228.15 adequately reflect the condition of the waters, the composition of the effluents, and the
228.16 effects of the pollutants upon the uses specified in part 7050.0140. The samples must
228.17 be collected, preserved, and analyzed following accepted quality control and quality
228.18 assurance methods and according to the procedures in Code of Federal Regulations,
228.19 title 40, part 136. The agency may accept or may develop other methods, procedures,
228.20 guidelines, or criteria for collecting and analyzing effluent samples and measuring water
228.21 quality characteristics.

228.22 **7053.0195 VARIANCE FROM TREATMENT REQUIREMENTS.**

228.23 Subpart 1. **Variance.** In any case when, upon application of the responsible
228.24 person or persons, the agency finds that by reason of exceptional circumstances the strict
228.25 enforcement of any provision of this chapter would cause undue hardship; that disposal
228.26 of the sewage, industrial waste, or other waste is necessary for the public health, safety,

229.1 or welfare; and that strict conformity with the effluent limits would be unreasonable,
229.2 impractical, or not feasible under the circumstances, the agency in its discretion may grant
229.3 a variance upon conditions it prescribes for prevention, control, or abatement of pollution
229.4 in harmony with the general purposes of this chapter and the intent of the applicable
229.5 state and federal laws. The United States Environmental Protection Agency shall be
229.6 advised of any permits that may be issued under this subpart, together with information
229.7 as to the need for the variance.

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

229.14 Subp. 3. **Review.** Variances from discharge effluent limits or treatment
229.15 requirements granted by the agency under this part are subject to agency and public review
229.16 at least every five years. Variances from water quality standards are granted by the agency
229.17 under parts 7000.7000 and 7050.0190. Variances may be modified or suspended under
229.18 the procedures in part 7000.7000.

229.19 **7053.0205 GENERAL REQUIREMENTS FOR DISCHARGES TO WATERS**
229.20 **OF THE STATE.**

229.21 Subpart 1. **Untreated sewage.** No untreated sewage may be discharged into any
229.22 waters of the state. Effective disinfection of any discharges, including combined flows of
229.23 sewage and storm water, shall be required when necessary to protect the specified uses
229.24 of the waters of the state.

229.25 Subp. 2. **Nuisance conditions prohibited.** No sewage, industrial waste, or other
229.26 wastes may be discharged from either point or nonpoint sources into any waters of the

230.1 state so as to cause any nuisance conditions, such as the presence of significant amounts of
230.2 floating solids, scum, visible oil film, excessive suspended solids, material discoloration,
230.3 obnoxious odors, gas ebullition, deleterious sludge deposits, undesirable slimes or fungus
230.4 growths, aquatic habitat degradation, excessive growths of aquatic plants, or other
230.5 offensive or harmful effects.

230.6 Subp. 3. **Inadequate treatment.** Existing discharges of inadequately treated
230.7 sewage, industrial waste, or other wastes shall be abated, treated, or controlled so as to
230.8 comply with the applicable limits. Separation of sanitary sewage from natural runoff may
230.9 be required when necessary to ensure continuous effective treatment of sewage.

230.10 Subp. 4. **Highest levels of effluent quality.** The highest levels of effluent quality,
230.11 including, but not limited to, five-day carbonaceous biochemical oxygen demand, that
230.12 are attainable through continuous operation at the maximum capability of all primary and
230.13 secondary units of treatment works or their equivalent, discharging effluents into the waters
230.14 of the state, must be maintained in order to enhance conditions for the specified uses.

230.15 Subp. 5. **Mixing zones and compliance with water quality standards.**

230.16 A. Reasonable allowance must be made for dilution of the effluents that are in
230.17 compliance with this chapter, following discharge into waters of the state. The agency,
230.18 by allowing dilution, shall consider the effect on all uses of the waters of the state into
230.19 which the effluents are discharged. The extent of dilution allowed regarding any specific
230.20 discharge as specified in subpart 7 must not violate the applicable water quality standards
230.21 in chapters 7050 and 7052, including the nondegradation requirements contained in
230.22 those chapters. This subpart also applies in cases where a Class 7 water is tributary to a
230.23 Class 2 water.

230.24 B. Means for expediting mixing and dispersion of sewage, industrial waste, or
230.25 other waste effluents in the receiving waters must be provided so far as practicable when

231.1 deemed necessary by the agency to maintain the quality of the receiving waters according
231.2 to chapters 7050 and 7052.

231.3 C. Mixing zones must be established by the agency on an individual basis, with
231.4 primary consideration being given to the following guidelines:

231.5 (1) mixing zones in rivers shall permit an acceptable passageway for the
231.6 movement of fish;

231.7 (2) the total mixing zone or zones at any transect of the stream should
231.8 contain no more than 25 percent of the cross sectional area or volume of flow of the stream
231.9 and should not extend over more than 50 percent of the width;

231.10 (3) mixing zone characteristics shall not be lethal to aquatic organisms;

231.11 (4) for contaminants other than heat, the final acute value, as defined in part
231.12 7050.0218, subpart 3, item O, for toxic pollutants should not be exceeded as a one-day
231.13 mean concentration at any point in the mixing zone;

231.14 (5) mixing zones should be as small as possible and not intersect spawning
231.15 or nursery areas, migratory routes, water intakes, or mouths of rivers; and

231.16 (6) overlapping of mixing zones should be minimized and measures taken
231.17 to prevent adverse synergistic effects.

231.18 Subp. 6. **Other requirements preserved.** The requirements of this chapter, and
231.19 specifically the requirements in parts 7053.0215 and 7053.0225, are in addition to any
231.20 requirement imposed on a discharge by the Clean Water Act, United States Code, title 33,
231.21 sections 1251 et seq., and its implementing regulations. In the case of a conflict between
231.22 the requirements of this chapter, chapters 7050 and 7052, and the requirements of the
231.23 Clean Water Act or its implementing regulations, the more stringent requirement controls.

231.24 Subp. 7. **Minimum stream flow.**

232.1 A. Discharges of sewage, industrial waste, or other wastes must be controlled
232.2 so that the water quality standards are maintained at all stream flows that are equal to or
232.3 greater than the $7Q_{10}$ for the critical month or months, except for the purpose of setting
232.4 ammonia effluent limits. Discharges of ammonia in sewage, industrial waste, or other
232.5 wastes must be controlled so that the ammonia water quality standard is maintained at all
232.6 stream flows that are equal to or exceeded by the $30Q_{10}$ for the critical month or months.

232.7 B. Allowance must not be made in the design of treatment works for low stream
232.8 flow augmentation unless the flow augmentation of minimum flow is dependable and
232.9 controlled under applicable laws or regulations.

232.10 Subp. 8. **Water quality based effluent limits.** Notwithstanding parts 7053.0235
232.11 and 7053.0245, the agency may require a specific discharger to meet effluent limits for
232.12 specific pollutants or whole effluent toxicity that are necessary to maintain the water
232.13 quality of the receiving water at the standards established in chapters 7050 and 7052,
232.14 including the nondegradation requirements contained in those chapters. Any effluent limit
232.15 determined to be necessary under this subpart and part 7053.0235 may only be required of
232.16 a discharger after the discharger has been given notice of the specific effluent limits and an
232.17 opportunity for public hearing, provided that compliance with the requirements of chapter
232.18 7001 regarding notice of national pollutant discharge elimination system and state disposal
232.19 system permits satisfies the notice and opportunity for hearing requirements of this subpart.

232.20 Subp. 9. **Water quality standard-based ammonia effluent limits.** For the
232.21 purpose of establishing limits to meet the ammonia water quality standard, a statistic that
232.22 estimates the central value, such as the mean or median, for ambient pH and temperature
232.23 of the receiving water for the critical months must be used.

232.24 Subp. 10. **Alternative waste treatment.** After providing an opportunity for
232.25 public hearing, the agency shall accept effective loss prevention, water conservation
232.26 measures, or process changes or other waste control measures or arrangements if it

233.1 finds that the measures, changes, or arrangements are equivalent to the waste treatment
233.2 measures required for compliance with applicable effluent or water quality standards
233.3 or load allocations.

233.4 Subp. 11. **Liquid substances.** Liquid substances that are not commonly considered
233.5 to be sewage or industrial waste, but that could constitute a pollution hazard, must be
233.6 stored according to chapter 7151. Other wastes as defined by law or other substances that
233.7 could constitute a pollution hazard, including substances from nonpoint sources and
233.8 households, must not be deposited in any manner such that the same may be likely to gain
233.9 entry into any waters of the state in excess of or contrary to any of the standards in this
233.10 chapter and chapters 7050 and 7052 or cause pollution as defined by law.

233.11 Subp. 12. **Point source dischargers must report to agency.** All persons operating
233.12 or responsible for sewage, industrial waste, or other waste disposal systems that are
233.13 adjacent to or that discharge effluents to waters of the state shall submit a report to the
233.14 agency upon request on the operation of the disposal system, the effluent flow, and the
233.15 characteristics of the effluents and receiving waters. Sufficient data on measurements,
233.16 observations, sampling, and analyses, and other pertinent information must be furnished
233.17 as may be required by the agency to adequately evaluate the condition of the disposal
233.18 system, the effluent, and the waters receiving or affected by the effluent.

233.19 Subp. 13. **Compliance with permit conditions.** A person who is in compliance
233.20 with the terms and conditions of the person's permit issued under chapter 7001 must not
233.21 be deemed in violation of any water quality standard in chapters 7050 and 7052 for which
233.22 a corresponding effluent limit is established in the permit. However, exceedances of
233.23 the water quality standards in a receiving water constitutes grounds for modification of
233.24 a permit for any discharger to the receiving water who is causing or contributing to the
233.25 exceedances. Chapter 7001 governs the modification of any such permit.

234.1 **7053.0215 REQUIREMENTS FOR POINT SOURCE DISCHARGES OF**
234.2 **SEWAGE.**

234.3 Subpart 1. **Minimum secondary treatment for municipal point source and other**
234.4 **point source dischargers of sewage.**The agency shall require secondary treatment as a
234.5 minimum for all municipal point source dischargers and other point source dischargers of
234.6 sewage. For purposes of this part, "municipal" has the adjective meaning of municipality
234.7 as defined in part 7001.1020, subpart 18. "Secondary treatment facilities" means works
234.8 that will provide effective sedimentation, biochemical oxidation, and disinfection, or the
234.9 equivalent, including effluents conforming to the following:

234.10	Characteristic or Pollutant	Limiting Concentration or Range*
234.11	Five-day carbonaceous biochemical	25 mg/L
234.12	oxygen demand*	
234.13	Fecal coliform group organisms **	200 organisms per 100 milliliters
234.14	Total suspended solids*	30 mg/L
234.15	Oil	Essentially free of visible oil
234.16	Phosphorus	See part 7053.0255
234.17	pH range	6.0 - 9.0

235.1 Toxic or corrosive pollutants Concentrations of toxic or corrosive pollutants
235.2 shall not cause acute toxicity to humans or other
235.3 animals or plant life or directly damage real
235.4 property or exceed the final acute value unless the
235.5 effluent satisfies the whole effluent toxicity test.
235.6 If a whole effluent toxicity test performed on the
235.7 effluent results in less than 50 percent mortality
235.8 of the test organisms, the effluent must not be
235.9 considered acutely toxic unless the commissioner
235.10 finds that the test species do not represent sensitive
235.11 organisms in the affected surface water body or
235.12 the whole effluent test was performed on a sample
235.13 not representative of the effluent quality. The final
235.14 acute value and whole effluent toxicity test are
235.15 defined in part 7050.0218, subpart 3, items O and
235.16 HH, respectively

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

235.22 **Disinfection of wastewater effluents to reduce the levels of fecal coliform
235.23 organisms to the stated value is required from April 1 through October 31 for Class 2
235.24 waters and May 1 through October 31 for Class 7 waters, except that where the effluent is
235.25 discharged 25 miles or less upstream of a water intake supplying a potable water system,
235.26 the reduction to the stated value is required all year. The stated value is not to be exceeded
235.27 in any calendar month as determined by the geometric mean of all the samples collected
235.28 in a given calendar month. The application of the fecal coliform group organism limit is
235.29 limited to sewage or other effluents containing admixtures of sewage and do not apply
235.30 to industrial wastes, except when the presence of sewage, fecal coliform organisms, or
235.31 viable pathogenic organisms in such wastes is known or reasonably certain. Analysis of

236.1 samples for fecal coliform group organisms by either the multiple tube fermentation or the
236.2 membrane filter techniques is acceptable.

236.3 **Subp. 2. Exception for existing trickling filter facilities.**

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

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

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

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

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

236.18 Five-day carbonaceous biochemical

236.19 oxygen demand 40 mg/L*

236.20 Total suspended solids 45 mg/L**

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

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

236.25 C. The other effluent limits in subpart 1 apply to those municipal point source
236.26 dischargers and other point source dischargers of sewage whose limits for five-day

237.1 carbonaceous biochemical oxygen demand and total suspended solids are established
237.2 by this subpart.

237.3 Subp. 3. **Exception for pond facilities.**

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

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

237.10	Total suspended solids	45 mg/L* (arithmetic mean of all samples collected
237.11		during any calendar month)

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

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

237.17 **7053.0225 REQUIREMENTS FOR POINT SOURCE DISCHARGES OF**
237.18 **INDUSTRIAL OR OTHER WASTES.**

237.19 Subpart 1. **Applicable effluent limits.** Any person discharging industrial or other
237.20 wastes from a point source shall comply with the requirements in items A to C.

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

238.1 B. If effluent limits for five-day carbonaceous biochemical oxygen demand,
238.2 total suspended solids, pH, or oil are not established by the federal standards under item A
238.3 for any point source discharger of industrial or other wastes, the point source discharger
238.4 shall comply with the effluent limits for those substances established in part 7053.0215,
238.5 subpart 1, or with such other equivalent mass limits established under part 7053.0205,
238.6 subpart 8, if applicable.

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

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

238.13 Subp. 3. **Dredge disposal exemption.** The requirements for total suspended solids
238.14 and phosphorus under subpart 1, item B, and for phosphorus under subpart 4, do not
238.15 apply to waters discharged from a dredge disposal facility and returned to the water body
238.16 where the water was removed if:

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

238.19 B. the designated uses as established under parts 7050.0140 and 7050.0400 to
238.20 7050.0470 are maintained.

238.21 Subp. 4. **Nutrient control requirements.** In addition to the requirements of
238.22 subpart 1, a person discharging industrial or other wastes from a point source shall comply
238.23 with the nutrient control requirements of part 7053.0255.

238.24 Subp. 5. **Exception for total suspended solids limits for ponds.** A point source
238.25 discharger of industrial or other wastes that uses a stabilization pond or aerated pond

239.1 as the principal method of biologically treating the waste shall comply with subparts
239.2 1 to 4, except that the total suspended solids effluent limits applicable to a discharger
239.3 under subpart 1, item B, are the limits in part 7053.0215, subpart 3, rather than the total
239.4 suspended solids limits in part 7053.0215, subpart 1.

239.5 Subp. 6. **Toxic or corrosive pollutants.** In addition to the requirements of subpart
239.6 1, a person discharging industrial or other wastes from a point source shall comply with
239.7 the control requirements of part 7053.0215, subpart 1, for toxic or corrosive pollutants.

239.8 **7053.0235 ADVANCED WASTEWATER TREATMENT REQUIREMENTS.**

239.9 Subpart 1. **Inadequate dilution.** In any instance where it is evident that the minimal
239.10 treatment specified in part 7053.0215, subpart 1, or 7053.0225 and dispersion are not
239.11 effective in preventing pollution, or if at the applicable flows it is evident that the specified
239.12 stream flow is inadequate to protect the water quality standards specified in chapters
239.13 7050 and 7052, the specific standards may be interpreted as effluent limits for control
239.14 purposes. In addition, the following effluent limits may be applied without any allowance
239.15 for dilution where stream flow or other factors are such as to prevent adequate dilution or
239.16 where it is otherwise necessary to protect the waters of the state for the stated uses:

239.17	Pollutant	Limits
239.18	Five-day carbonaceous biochemical	5 mg/L (arithmetic mean of all samples
239.19	oxygen demand	taken during any calendar month)

239.20 The five milligrams per liter limit shall not apply to discharges to surface waters
239.21 classified as limited resource value waters, pursuant to parts 7050.0140, subpart 8, and
239.22 7050.0400 to 7050.0470, except as may be needed to comply with part 7053.0245,
239.23 subpart 3.

239.24 Subp. 2. **Limits for pond facilities.** The concentrations specified in part
239.25 7053.0215, subpart 1, or, if applicable, part 7053.0225, may be used in lieu of the limit in
239.26 this part if the discharge of effluent is restricted to the spring flush or other high runoff

240.1 periods when the stream flow rate above the discharge point is sufficiently greater than
240.2 the effluent flow rate to ensure that the applicable water quality standards are met during
240.3 the discharge period.

240.4 Subp. 3. **Variability of operation.** If treatment works are designed and constructed
240.5 to meet the specified limits given in this part for a continuous discharge, at the discretion
240.6 of the agency the operation of such works may allow for the effluent quality to vary
240.7 between the limits specified in this part and in part 7053.0215, subpart 1, or, if applicable,
240.8 part 7053.0225, provided the water quality standards and all other requirements of the
240.9 agency and the United States Environmental Protection Agency are being met. The
240.10 variability of operation must be based on adequate monitoring of the treatment works and
240.11 the effluent and receiving waters as specified by the agency.

240.12 **7053.0245 REQUIREMENTS FOR POINT SOURCE DISCHARGES TO**
240.13 **LIMITED RESOURCE VALUE WATERS.**

240.14 Subpart 1. **Effluent limits.** For point source discharges of sewage, industrial, or
240.15 other wastes to surface waters classified as limited resource value waters pursuant to parts
240.16 7050.0140, subpart 8, and 7050.0400 to 7050.0470, the agency shall require treatment
240.17 facilities that will provide effluents conforming to the following limits:

240.18	Pollutant	Limiting Concentration
240.19	Five-day carbonaceous biochemical	15 mg/L* (arithmetic mean of all samples
240.20	oxygen demand	taken during any calendar month)

240.21 *This 15 milligrams per liter limit does not apply to discharges to limited resource
240.22 value waters if the principal method of treatment is through stabilization ponds, in which
240.23 case the limits in parts 7053.0215, subpart 3, and 7053.0225, subpart 5, apply. All effluent
240.24 limits specified in part 7053.0215, subpart 1, are also applicable to dischargers of sewage
240.25 to limited resource value waters, provided that toxic or corrosive pollutants are limited
240.26 to the extent necessary to protect the designated uses of the receiving water or affected
240.27 downstream waters.

241.1 Subp. 2. **Alternative secondary treatment effluent limits.** The agency shall allow
241.2 treatment works to be constructed or operated to produce effluents to limited resource
241.3 value waters at levels up to those stated in part 7053.0215, provided that it is demonstrated
241.4 that the water quality standards for limited resource value waters will be maintained
241.5 during all periods of discharge from the treatment facilities.

241.6 Subp. 3. **Protection of downstream waters.** Notwithstanding the effluent limits
241.7 established by this part, the quality of limited resource value waters must not allow a
241.8 violation of applicable water quality standards in waters of the state that are connected to
241.9 or affected by water classified as limited resource value waters.

241.10 Subp. 4. **Public waters designation unaffected.** The classification of surface
241.11 waters as limited resource value waters pursuant to parts 7050.0140, subpart 8, and
241.12 7050.0400 to 7050.0470, does not supersede, alter, or replace the classification and
241.13 designation of such waters as public waters pursuant to Minnesota Statutes, chapter 103G.

241.14 **7053.0255 PHOSPHORUS EFFLUENT LIMITS FOR POINT SOURCE**
241.15 **DISCHARGES OF SEWAGE, INDUSTRIAL, AND OTHER WASTES.**

241.16 Subpart 1. **Scope.** The phosphorus effluent limits in this part are in addition to the
241.17 effluent limits specified elsewhere in this chapter. In the event of any conflict between this
241.18 part and other applicable regulations, the more stringent requirement applies.

241.19 Subp. 2. **Definitions.** For the purposes of this part, the following definitions apply.
241.20 Other relevant definitions are found in part 7050.0150, subpart 4.

241.21 A. "122-day ten-year low flow" or " $122Q_{10}$ " means the lowest average 122-day
241.22 flow with a once in ten-year recurrence interval. A $122Q_{10}$ is derived using the same
241.23 methods used to derive a $7Q_{10}$, and the guidelines regarding period of record for flow
241.24 data and estimating a $7Q_{10}$ apply equally to determining a $122Q_{10}$ as described in part
241.25 7053.0135, subpart 3.

242.1 B. "Affects" means a measurable increase in the adverse effects of phosphorus
242.2 loading as determined by monitoring or modeling, including, but not limited to, an increase
242.3 in chlorophyll-a concentrations, a decrease in water transparency, or an increase in the
242.4 frequency or duration of nuisance algae blooms, from an individual point source discharge.

242.5 C. "Expanded discharge" means a disposal system that after May 1, 2008,
242.6 discharges more than 1,800 pounds of total phosphorus per year to a surface water on an
242.7 annual average basis, and increases in wastewater treatment capacity as indicated by
242.8 an increase in the:

242.9 (1) design average wet weather flow for the wettest 30-day period for point
242.10 source dischargers of sewage with a continuous discharge, typically a mechanical facility;

242.11 (2) design average wet weather flow for the wettest 180-day period for
242.12 point source dischargers of sewage with a controlled discharge, typically a pond facility; or

242.13 (3) design average daily flow rate for dischargers of industrial or other
242.14 wastes.

242.15 D. "Lake" means an enclosed basin filled or partially filled with standing fresh
242.16 water with a maximum depth greater than 15 feet. Lakes may have no inlet or outlet, an
242.17 inlet or outlet, or both an inlet and outlet.

242.18 E. "Measurable increase" or "measurable impact" means a change in trophic
242.19 status that can be discerned above the normal variability in water quality data using
242.20 a weight of evidence approach. The change in trophic status does not require a
242.21 demonstration of statistical significance to be considered measurable. Mathematical
242.22 models may be used as a tool in the data analysis to help predict changes in trophic status.

242.23 F. "New discharge" means a discharge that was not in existence before May 1,
242.24 2008, and discharges more than 1,800 pounds of total phosphorus per year.

243.1 G. "Reservoir" means a body of water in a natural or artificial basin or water
243.2 course where the outlet or flow is artificially controlled by a structure such as a dam.
243.3 Reservoirs are distinguished from river systems by having a hydraulic residence time of at
243.4 least 14 days. For purposes of this item, residence time is determined using a flow equal to
243.5 the $122Q_{10}$ for the months of June through September, a $122Q_{10}$ for the summer months.

243.6 H. "Shallow lake" means an enclosed basin filled or partially filled with standing
243.7 fresh water with a maximum depth of 15 feet or less or with 80 percent or more of the
243.8 lake area shallow enough to support emergent and submerged rooted aquatic plants (the
243.9 littoral zone). It is uncommon for shallow lakes to thermally stratify during the summer.
243.10 The quality of shallow lakes will permit the propagation and maintenance of a healthy
243.11 indigenous aquatic community, and they will be suitable for boating and other forms of
243.12 aquatic recreation for which they may be usable. For purposes of this chapter, shallow
243.13 lakes will be differentiated from wetlands and lakes on a case-by-case basis. Wetlands
243.14 are defined in part 7050.0186, subpart 1a.

243.15 Subp. 3. **Total phosphorus effluent limits.**

243.16 A. Phosphorus removal to one milligram per liter is required when subitem (1),
243.17 (2), or (3) applies:

243.18 (1) the discharge of effluent is directly to or affects a lake, shallow lake, or
243.19 reservoir;

243.20 (2) the discharge is to the specific basins and water bodies designated
243.21 in subpart 5; or

243.22 (3) the discharge is new or expanded as defined in subpart 2, except when
243.23 the discharger can demonstrate to the commissioner that the discharger qualifies for an
243.24 alternative phosphorus limit as provided in subpart 4.

244.1 B. If a phosphorus effluent limit is required under item A, removal of nutrients
244.2 from all wastes must be provided to the fullest practicable extent wherever sources
244.3 of nutrients are considered to be actually or potentially detrimental to preservation or
244.4 enhancement of the designated water uses. Dischargers required to control nutrients under
244.5 this part are subject to the variance provisions of parts 7000.7000 and 7053.0195.

244.6 Subp. 4. **Alternative phosphorus effluent limits for new or expanded**
244.7 **discharges.** New or expanded discharges subject to a one milligram per liter phosphorus
244.8 effluent limit in subpart 3, item A, subitem (3), may request an alternative limit or no limit
244.9 if one or more of items A to C apply. New or expanded discharges are defined in subpart
244.10 2. The exemptions in this subpart do not apply to facilities that discharge directly to or
244.11 affect a lake, shallow lake, or reservoir or to discharges to the waters listed in subpart 5.
244.12 Dischargers seeking an alternative limit due to very high per capita treatment costs or
244.13 economic hardship must apply for a variance under parts 7000.7000 and 7053.0195.

244.14 The information submitted to the commissioner for consideration of an alternative
244.15 limit must include, at a minimum, a description of the treatment technology used, influent
244.16 and effluent total phosphorus concentrations, a phosphorus management plan for the
244.17 facility, descriptions of any measures already taken to reduce phosphorus sources to the
244.18 facility, and expected reductions in phosphorus concentrations following implementation
244.19 of the phosphorus management plan. The discharger may qualify for an alternative total
244.20 phosphorus limit or no limit if it can demonstrate:

244.21 A. the discharge is to or upstream of a water body listed on the applicable
244.22 impaired water list, section 303(d) of the Clean Water Act, and the subsequent total
244.23 maximum daily load study is complete and approved by the United States Environmental
244.24 Protection Agency, as required by Code of Federal Regulations, title 40, part 130, section
244.25 7, at the time the new or expanding facility is in the planning and design phase. The total
244.26 maximum daily load study must have considered impacts from phosphorus loading on

245.1 the impaired water body. In this case, the total maximum daily load study will determine
245.2 the applicable phosphorus effluent limit;

245.3 B. the environmental benefits to be achieved by meeting a phosphorus limit are
245.4 outweighed or negated by the environmental harm caused by meeting a limit; or

245.5 C. the treatment works, regardless of the type of treatment technology, ~~must use~~
245.6 uses chemical addition to achieve compliance with the one milligram per liter limit and
245.7 the discharge is to a receiving stream in a watershed listed in subitems (1) to (3). In this
245.8 case the discharger may be granted a seasonal one milligram per liter limit, applicable
245.9 from May 1 through September 30 and not applicable from October 1 through April 30:

245.10 (1) the lower Mississippi River and its tributaries from the mouth of the
245.11 Chippewa River in Wisconsin to the Minnesota border;

245.12 (2) the Bois de Sioux and Red Rivers and their tributaries from the southern
245.13 end of Lake Traverse at Browns Valley to the Canadian border; and

245.14 (3) the Missouri, Des Moines, and Cedar Rivers and their tributaries in
245.15 Minnesota.

245.16 Subp. 5. **Designated waters.** The one milligram per liter phosphorus limit
245.17 established in subpart 3 applies to the waters designated in items A to F.

245.18 A. All intrastate waters lying within the drainage basin of Lake Superior in
245.19 the counties of Aitkin, Carlton, Cook, Itasca, Lake, Pine, and St. Louis (Townships 45
245.20 to 65 North, Ranges 7 East to 23 West).

245.21 B. The interstate waters of Lake St. Croix in Washington County (Townships
245.22 26 to 30 North, Range 20 West).

245.23 C. The St. Louis River from its source at Seven Beaver Lake (Township 58
245.24 North, Range 12 West) to and including St. Louis Bay (Townships 49 and 50 North,

246.1 Ranges 14 and 15 West) and Superior Bay (Townships 49 and 50 North, Ranges 13 and
246.2 14 West).

246.3 D. The Mississippi River from its source to the Blandin Dam at the outlet of
246.4 Paper Mill Reservoir in the city of Grand Rapids approximately 400 feet upstream from
246.5 the bridge on U.S. Highway 169 including Lake Andrusia (Township 146 North, Range
246.6 31 West), Lake Bemidji (Townships 146 and 147 North, Range 33 West), Cass Lake
246.7 (Townships 145 and 146 North, Ranges 30 and 31 West), Lake Itasca (Township 143
246.8 North, Range 36 West), Pokegama Lake (Townships 54 and 55 North, Ranges 25 and 26
246.9 West), and Winnibigoshish Lake (Townships 145, 146, and 147 North, Ranges 27, 28,
246.10 and 29 West).

246.11 E. The Little Minnesota River and Big Stone Lake from the South Dakota
246.12 border crossing to the outlet of Big Stone Lake at the dam immediately upstream from
246.13 the U.S. Highway 12 bridge in Ortonville.

246.14 F. Albert Lea Lake (Township 102 North, Ranges 20 and 21 West) in Freeborn
246.15 County.

246.16 Subp. 6. **Averaging period for phosphorus limit.** The phosphorus limit required
246.17 under subpart 3 must be a calendar month arithmetic mean unless the commissioner
246.18 finds, after considering the criteria listed in items A and B, that a different averaging
246.19 period is acceptable. In no case shall the one milligram per liter limit exceed a moving
246.20 mean of 12 monthly values reported on a monthly basis or a simple mean for a specified
246.21 period, not to exceed 12 months. Calendar month effluent limits in effect as of February
246.22 7, 2000, must remain in effect unless an assessment of the criteria listed in items A and
246.23 B indicate a different averaging period is acceptable. An averaging period other than
246.24 monthly is acceptable when:

247.1 A. there is no measurable or predictable difference in the adverse effects of
247.2 the phosphorus loading from the facility on the receiving water or downstream water
247.3 resources compared to the loading that would result using a 30-day average limit; and

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

247.6 **7053.0265 DISCHARGE RESTRICTIONS APPLICABLE TO MISSISSIPPI**
247.7 **RIVER FROM RUM RIVER TO ST. ANTHONY FALLS.**

247.8 Subpart 1. **Scope and beneficial uses.** The restrictions on discharges specified in
247.9 this part are applicable to that portion of the Mississippi River from, but not including, the
247.10 mouth of the Rum River to the upper lock and dam at St. Anthony Falls, approximately
247.11 at the northeastward extension of Fifth Avenue South in the city of Minneapolis, and
247.12 tributary streams. The primary use of these waters is as a source of public water supply for
247.13 drinking, food processing, and related purposes. Other uses applicable to these waters are
247.14 defined in parts 7050.0410, 7050.0430, and 7050.0470, subpart 4.

247.15 Subp. 2. **Discharges prohibited.** Discharges listed in items A to C are prohibited
247.16 to the waters defined in subpart 1.

247.17 A. Raw sewage and industrial waste or other wastes, treated or untreated,
247.18 containing viable pathogenic organisms or any substances that may cause disease,
247.19 endanger the public health, or otherwise impair the quality of the receiving waters for
247.20 public water supply.

247.21 B. Treated sewage effluent from any source, including, without limitation,
247.22 discharges from watercraft.

247.23 C. Treated sewage, industrial waste, or other wastes so as to cause any material
247.24 increase in taste, odor, color, or turbidity above natural levels or otherwise to impair
247.25 the quality of the water so as to render it objectionable or unsuitable as a source of
247.26 water supply.

248.1 Subp. 3. **Variance.** The variance provisions of parts 7000.7000 and 7053.0195
248.2 are applicable to this part.

248.3 **7053.0275 ANTIBACKSLIDING.**

248.4 Subpart 1. **Antibacksliding applies.** Any point source discharger of sewage,
248.5 industrial, or other wastes for which a national pollutant discharge elimination system
248.6 permit has been issued by the agency that contains effluent limits more stringent than
248.7 those that would be established by parts 7053.0215 to 7053.0265 shall continue to meet
248.8 the effluent limits established by the permit, unless the permittee establishes that less
248.9 stringent effluent limits are allowable pursuant to federal law, under section 402(o) of the
248.10 Clean Water Act, United States Code, title 33, section 1342.

248.11 Subp. 2. **Less stringent effluent limits.** If a permittee establishes that it is entitled
248.12 to less stringent effluent limits under subpart 1, the agency shall establish new effluent
248.13 limits according to the criteria in items A to F.

248.14 A. If past treatment performance data are representative of future performance,
248.15 the new effluent limits must reflect the level of pollutant control that has been consistently
248.16 achieved by the permittee in the past.

248.17 B. If changes in the rate of production or in other operational aspects of the
248.18 facility make past treatment performance data unrepresentative of future performance, in
248.19 establishing new effluent limits, the agency shall consider: (1) the performance capabilities
248.20 of the existing treatment facility under the changed factors; and (2) the performance
248.21 capabilities of any additional treatment facilities that may be required by the agency as a
248.22 result of the changed factors. The new effluent limits must be as stringent as is reasonable,
248.23 applying good engineering design practices and operational and maintenance practices for
248.24 the existing treatment facilities and any additional treatment facilities that may be required.

248.25 C. The new effluent limits must reflect the performance capabilities of all
248.26 treatment facilities under proper operation and maintenance practices.

249.1 D. In no event may the new effluent limits be less stringent than the effluent
249.2 limits established under parts 7053.0215 to 7053.0265.

249.3 E. In all cases, the beneficial uses and the water quality standards in chapters
249.4 7050 and 7052 must be maintained in the receiving water.

249.5 F. If less stringent effluent limits are established in the permit, the agency may
249.6 also establish other reasonable and necessary conditions for the new permit.

249.7 A request for less stringent effluent limits in a permit shall be made according to part
249.8 7001.0190, subpart 1. The agency shall follow the procedures in part 7001.0190, subpart
249.9 1, in acting upon a request for new effluent limits.

249.10 **7053.0305 REQUIREMENTS FOR ANIMAL FEEDLOTS.**

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

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

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

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

249.16 D. "Treatment works" has the meaning given in Minnesota Statutes, section
249.17 115.01, subdivision 21, and includes a vegetated filter or buffer strip located between an
249.18 animal feedlot or a manure storage area and a receiving water.

249.19 Subp. 2. **Effluent limits for a discharge.**

249.20 A. Any person discharging pollutants to surface waters of the state from an
249.21 animal feedlot or manure storage area who is not regulated by federal requirements under
249.22 part 7053.0225, subpart 1, shall comply with the following limits after allowance for
249.23 pollutant removal by a treatment works:

250.1	Pollutant	Limiting Concentration
250.2	Five-day biochemical oxygen demand	25 mg/L (arithmetic mean of all samples
250.3		taken during any calendar month)

250.4 If the discharge is directly to or affects a lake, shallow lake, or reservoir, or to the
250.5 waters listed in part 7053.0255, subpart 5, the person discharging the pollutants shall
250.6 comply with the nutrient control requirements in part 7053.0255, subpart 3, items A and
250.7 B. Feedlots are not considered new or expanded discharges as defined in part 7053.0255,
250.8 subpart 2.

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

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

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

250.16 **7053.0405 REQUIREMENTS FOR AQUACULTURE FACILITIES.**

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

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

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

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

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

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

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

251.13 (2) Warm and cool water aquatic animal facilities that produce more than
251.14 45,454 harvest weight kilograms (approximately 100,000 pounds) of aquatic animals
251.15 per year.

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

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

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

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

251.24 A permit application is not required from a concentrated aquatic animal production
251.25 facility designated under this item until the commissioner has conducted an on-site

252.1 inspection of the facility and has determined that the facility is required to be regulated
252.2 under the permit program. A permit is required under this subitem only after the facility
252.3 has been given notice of the commissioner's determination and an opportunity to request
252.4 a hearing as provided in part 7000.1800.

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

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

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

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

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

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

253.1 Subp. 2. **Permit required.** No person may construct, operate, or maintain a
253.2 concentrated aquatic animal production facility until the agency has issued a national
253.3 pollutant discharge elimination system and state disposal system (NPDES/SDS) permit
253.4 for the facility according to chapter 7001. Production levels of multiple projects and
253.5 multiple stages of a single project that are connected actions or phased actions shall be
253.6 considered in total under subpart 1, item E.

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

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

253.10 B. All concentrated aquatic animal production facilities that discharge industrial
253.11 or other wastes to waters of the state shall comply with the requirements of parts
253.12 7053.0225, subparts 1, 3, 4, and 5, and 7053.0275.

253.13 C. The owner or operator of a recirculating flow facility may apply for a
253.14 variance from the requirements of item B according to parts 7000.7000 and 7053.0195.
253.15 The variance application must provide detailed information on:

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

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

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

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

254.1 Subp. 4. **Additional requirements.** Except as expressly excluded in this part, the
254.2 construction, operation, and maintenance of a concentrated aquatic animal production
254.3 facility shall comply with the requirements of this chapter and chapters 7050 and 7052.

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

254.5 A. Upon application of the responsible person or persons and according to parts
254.6 7000.7000 and 7053.0195, the agency shall grant a variance from subpart 3, item A or
254.7 B, if the agency also finds that:

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

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

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

254.15 (4) the baseline quality of the receiving waters has been established
254.16 according to item C;

254.17 (5) a closure plan for the facility has been submitted according to item E;

254.18 (6) financial assurance for the facility has been established and maintained
254.19 according to item F;

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

254.22 (8) the applicant has submitted a completed variance application according
254.23 to item B; and

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

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

255.5 B. In addition to the requirements of part 7000.7000, subpart 2, the written
255.6 application for a variance must contain:

255.7 (1) the baseline quality data of the receiving waters collected under
255.8 commissioner-approved protocol according to item C;

255.9 (2) the closure plan according to item E; and

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

255.12 C. Baseline quality must be established by no less than two consecutive years,
255.13 or equivalent, of preoperational data on the receiving waters. The equivalent testing
255.14 program must require 12 sampling events for the parameters in item E collected during
255.15 the months of May through October. Testing programs used to establish baseline quality
255.16 must be reviewed and approved by the commissioner before the start of testing. The
255.17 commissioner shall supply the specific intra-year and inter-year variables.

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

255.20 (1) aquatic animal production from the facility ceases;

255.21 (2) any of the limiting concentrations in item G are exceeded;

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

255.24 (4) the permit for the facility is revoked;

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

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

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

256.15 F. The applicant shall submit to the commissioner, for review and approval,
256.16 a closure, postclosure monitoring, and corrective action cost estimate and evidence of
256.17 financial assurance, prepared according to parts 7035.2685 to 7035.2805.

256.18 G. The following limiting concentrations are established to prevent irreversible
256.19 pollution and to protect the existing beneficial uses and apply to the receiving waters at
256.20 all times:

256.21	Characteristic or Pollutant	Limiting Concentration or Range
256.22	Total organic carbon	5 mg/L*
256.23	Nitrate nitrogen	10 mg/L instantaneous value**
257.1	Chlorophyll-a	30 µg/L***
257.2	Dissolved oxygen	Not less than 3 mg/L in the bottom half of the
257.3		hypolimnion and 5 mg/L in the upper half of the
257.4		hypolimnion, instantaneous value****

257.5 * Annual mean.

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

257.7 *** Monthly mean (May through September).

257.8 **** If the baseline monitoring shows that the preoperational oxygen concentration
257.9 for the same time of the year is less than three milligrams per liter for the bottom half
257.10 of the hypolimnion and five milligrams per liter for the upper half, there may be no
257.11 further reduction of the preoperational oxygen concentrations. If the baseline quality of a
257.12 pollutant is greater than the limiting concentration, or less in the case of dissolved oxygen,
257.13 the baseline quality of the pollutant must be used as the limiting concentration.

257.14 Subp. 6. **Special conditions.**

257.15 A. In addition to the requirements for monitoring, testing, and reporting under
257.16 part 7001.0150, subpart 2, item B, the permittee shall report the aquatic animal production
257.17 and amount of fish food used. The commissioner may require the permittee to monitor
257.18 receiving waters to determine natural background levels and baseline quality and to
257.19 determine compliance with state and federal antidegradation and water quality standard
257.20 requirements. The monitoring shall consider natural seasonal and year-to-year variations
257.21 in background levels and baseline quality.

257.22 B. The permittee shall transport aquatic animal mortalities for rendering or
257.23 disposal at a land-based facility. Aquatic animal mortalities shall not be disposed of
257.24 in waters of the state. The permittee shall prevent blood produced through harvest of
257.25 aquatic animals from entering waters of the state untreated. The blood generated shall be
257.26 transported to a land-based rendering or disposal facility approved by the commissioner
257.27 or discharged to a publicly owned treatment works according to the applicable publicly
258.1 owned treatment works national pollutant discharge elimination system or state disposal
258.2 system (NPDES/SDS) permit.

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

258.8 D. The permittee shall submit an annual report to the commissioner. The report
258.9 shall include:

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

258.12 (2) a summary of the monitoring data;

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

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

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

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

258.19 E. The discharge of water treatment and chemical additives must comply with
258.20 parts 7050.0218 and 7050.0221 to 7050.0227.

258.21 **REPEALER.** Minnesota Rules, parts 7050.0200; 7050.0210, subparts 1, 3, 9, 10,
258.22 12, 13a, 15, 17, and 18; 7050.0211; 7050.0212; 7050.0213; 7050.0214; 7050.0215;
258.23 7050.0216; 7050.0221, subpart 5; 7050.0222, subpart 8; 7056.0010; 7056.0020;
258.24 7056.0030; 7056.0040; 7065.0010; 7065.0020; 7065.0030; 7065.0040; 7065.0050;
258.25 7065.0060; 7065.0070; 7065.0100; 7065.0110; 7065.0120; 7065.0130; 7065.0140;
259.1 7065.0150; 7065.0160; 7065.0200; 7065.0210; 7065.0220; 7065.0230; 7065.0240;
259.2 7065.0250; and 7065.0260, are repealed.