



OFFICE OF THE REVISOR OF STATUTES

Minnesota Legislature

Cindy K. Maxwell, Senior Assistant Revisor

September 27, 2016

Kevin Molloy
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155

RE: File No. 4237

Dear Kevin:

I am enclosing four copies of your rules, approved as to form. Submit the revisor file number from the upper right corner of this document to the State Register for publication. Copies of the rules approved as to form do not need to be submitted to the State Register.

If you have any questions, please call me.

Please use the revisor file number on all rulemaking documents and all communications with the governor's office.

Sincerely,

Cindy K. Maxwell
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1.1 **Pollution Control Agency**1.2 **Proposed Permanent Rule Relating to Water Quality Standards and Tiered Aquatic**
1.3 **Life Use**1.4 **7050.0140 USE CLASSIFICATIONS FOR WATERS OF THE STATE.**

1.5 [For text of subps 1 and 2, see M.R.]

1.6 Subp. 3. **Class 2 waters, aquatic life and recreation.** Aquatic life and recreation
1.7 includes all waters of the state that support or may support fish, ~~other aquatic life~~ aquatic
1.8 biota, bathing, boating, or other recreational purposes and for which quality control is or
1.9 may be necessary to protect aquatic or terrestrial life or their habitats or the public health,
1.10 safety, or welfare.

1.11 [For text of subps 4 to 8, see M.R.]

1.12 **7050.0150 DETERMINATION OF WATER QUALITY, BIOLOGICAL AND**
1.13 **PHYSICAL CONDITIONS, AND COMPLIANCE WITH STANDARDS.**

1.14 [For text of subps 1 and 2, see M.R.]

1.15 Subp. 3. **Narrative standards.** For all Class 2 waters, the aquatic habitat, which
1.16 includes the waters of the state and stream bed, shall not be degraded in any material
1.17 manner, there shall be no material increase in undesirable slime growths or aquatic plants,
1.18 including algae, nor shall there be any significant increase in harmful pesticide or other
1.19 residues in the waters, sediments, and aquatic flora and fauna; the normal ~~fishery~~ and lower
1.20 aquatic biota ~~upon which it is dependent~~ and the use thereof shall not be seriously impaired
1.21 or endangered, the species composition shall not be altered materially, and the propagation
1.22 or migration of the ~~fish and other~~ aquatic biota normally present shall not be prevented or
1.23 hindered by the discharge of any sewage, industrial waste, or other wastes to the waters.1.24 **Subp. 3a. Assessment criteria.** The criteria by which water bodies are assessed to
1.25 determine if beneficial uses are supported, and definitions of the data and information
1.26 required for that assessment, is in Guidance Manual for Assessing the Quality of Minnesota

2.1 Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List (2014
2.2 and as subsequently amended), which is incorporated by reference. The guidance manual
2.3 is not subject to frequent change and is available at <http://www.pca.state.mn.us/lupg1125>.

2.4 **Subp. 4. Definitions.** For the purposes of this chapter and chapter 7053, the
2.5 following terms have the meanings given them.

2.6 A. "122-day ten-year low flow" or "122Q₁₀" means the lowest average 122-day
2.7 flow with a once in ten-year recurrence interval. A 122Q₁₀ is derived using the same
2.8 methods used to derive a 7Q₁₀, and the guidelines regarding period of record for flow
2.9 data and estimating a 7Q₁₀ apply equally to determining a 122Q₁₀, as described in part
2.10 7050.0130, subpart 3.

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

2.16 C. "Aquatic biota" means the aquatic community composed of game and
2.17 nongame fish, minnows and other small fish, mollusks, insects, crustaceans and other
2.18 invertebrates, submerged or emergent rooted vegetation, suspended or floating algae,
2.19 substrate-attached algae, microscopic organisms, and other aquatic-dependent organisms
2.20 that require aquatic systems for food or to fulfill any part of their life cycle, such as
2.21 amphibians and certain wildlife species.

2.22 D. "Assemblage" means a taxonomic subset of a biological community such
2.23 as fish in a stream community.

2.24 E. "Biological condition gradient" means a concept describing how aquatic
2.25 communities change in response to increasing levels of stressors. In application, the

3.1 biological condition gradient is an empirical, descriptive model that rates biological
3.2 communities on a scale from natural to highly degraded.

3.3 F. "Biological criteria, narrative" or "biocriteria, narrative" means written
3.4 statements describing the attributes of the structure and function of aquatic assemblages in
3.5 a water body necessary to protect the designated aquatic life beneficial use. The singular
3.6 form "biological criterion, narrative" or "biocriterion, narrative" may also be used.

3.7 G. "Biological criteria, numeric" or "biocriteria, numeric" means specific
3.8 quantitative measures of the attributes of the structure and function of aquatic communities
3.9 in a water body necessary to protect the designated aquatic life beneficial use. The singular
3.10 form "biological criterion, numeric" or "biocriterion, numeric" may also be used.

3.11 C. H. "BOD₅" or "five-day biochemical oxygen demand" means the amount of
3.12 dissolved oxygen needed by aerobic biological organisms to break down organic material
3.13 present in a given water sample at a certain temperature over a five-day period.

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

3.17 E. J. "Diel flux" means the daily change in a constituent, such as dissolved
3.18 oxygen or pH, when there is a distinct daily cycle in the measurement. Diel dissolved
3.19 oxygen flux means the difference between the maximum daily dissolved oxygen
3.20 concentration and the minimum daily dissolved oxygen concentration.

3.21 F. K. "Ecoregion" means an area of relative homogeneity in ecological systems
3.22 based on similar soils, land use, land surface form, and potential natural vegetation.
3.23 Minnesota ecoregions are shown on the map in part 7050.0468.

3.24 G. L. "Eutrophication" means the increased productivity of the biological
3.25 community in water bodies in response to increased nutrient loading. Eutrophication

4.1 is characterized by increased growth and abundance of algae and other aquatic plants,
4.2 reduced water transparency, reduction or loss of dissolved oxygen, and other chemical and
4.3 biological changes. The acceleration of eutrophication due to excess nutrient loading from
4.4 human sources and activities, called cultural eutrophication, causes a degradation of water
4.5 quality and possible loss of beneficial uses.

4.6 H. M. "Eutrophication standard" means the combination of indicators of
4.7 enrichment and indicators of response as described in subpart 5. The indicators upon
4.8 which the eutrophication standard for specific water bodies are based are as provided
4.9 under subparts 5a to 5c.

4.10 I. ~~"Fish and other biota"~~ and ~~"lower aquatic biota"~~ mean the aquatic community
4.11 including, but not limited to, game and nongame fish, minnows and other small fish,
4.12 mollusks, insects, crustaceans and other invertebrates, submerged or emergent rooted
4.13 vegetation, suspended or floating algae, substrate-attached algae, and microscopic
4.14 organisms. ~~"Other biota"~~ includes aquatic or semiaquatic organisms that depend on
4.15 aquatic systems for food or habitat such as amphibians and certain wildlife species.

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

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

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

5.1 M. Q. "Lake" means an enclosed basin filled or partially filled with standing
5.2 fresh water with a maximum depth greater than 15 feet. Lakes may have no inlet or outlet,
5.3 an inlet or outlet, or both an inlet and outlet.

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

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

5.10 P. T. "Measurable increase" or "measurable impact" means a change in
5.11 trophic status that can be discerned above the normal variability in water quality data
5.12 using a weight of evidence approach. The change in trophic status does not require a
5.13 demonstration of statistical significance to be considered measurable. Mathematical
5.14 models may be used as a tool in the data analysis to help predict changes in trophic status.

5.15 Q. U. "Natural causes" means the multiplicity of factors that determine the
5.16 physical, chemical, or biological conditions that would exist in a water body in the absence
5.17 of measurable impacts from human activity or influence.

5.18 R. V. "Normal fishery aquatic biota" and "normally present" mean the fishery
5.19 and other a healthy aquatic biota community expected to be present in the water body
5.20 in the absence of pollution of the water, consistent with any variability due to natural
5.21 hydrological, substrate, habitat, or other physical and chemical characteristics. Expected
5.22 presence is based on comparing the aquatic community in the water body of interest to the
5.23 aquatic community in representative reference water bodies.

5.24 S. W. "Nuisance algae bloom" means an excessive population of algae that
5.25 is characterized by obvious green or blue-green pigmentation in the water, floating mats
5.26 of algae, reduced light transparency, aesthetic degradation, loss of recreational use,

6.1 possible harm to the aquatic community, or possible toxicity to animals and humans.
6.2 Algae blooms are measured through tests for chlorophyll-a, observations of Secchi disk
6.3 transparency, and observations of impaired recreational and aesthetic conditions by the
6.4 users of the water body, or any other reliable data that identifies the population of algae
6.5 in an aquatic community.

6.6 T. X. "Periphyton" means algae on the bottom of a water body. In rivers or
6.7 streams, these forms are typically found attached to logs, rocks, or other substrates, but
6.8 when dislodged the algae will become part of the seston.

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

6.15 V. Z. "Reference water body" means a water body minimally or least impacted
6.16 by point or nonpoint sources of pollution that is representative of water bodies in the same
6.17 ecoregion or watershed of a similar surface water body type and within a geographic region
6.18 such as an ecoregion or watershed. Reference water bodies are used as a base for comparing
6.19 the quality of similar water bodies in the same ecoregion or watershed geographic region.

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

6.25 X. BB. "River nutrient region" means the geographic basis for regionalizing the
6.26 river eutrophication criteria as described in Heiskary, S. and K. Parson, Regionalization

7.1 of Minnesota's Rivers for Application of River Nutrient Criteria, Minnesota Pollution
7.2 Control Agency (2013), which is incorporated by reference. The document is not subject
7.3 to frequent change and is available through the Minitex interlibrary loan system.

7.4 Y. CC. "Secchi disk" means a tool that is used to measure the transparency of
7.5 lake water. A Secchi disk is an eight-inch weighted disk on a calibrated rope, either white
7.6 or with quadrants of black and white. To measure water transparency with a Secchi disk,
7.7 the disk is viewed from the shaded side of a boat. The depth of the water at the point where
7.8 the disk reappears upon raising it after it has been lowered beyond visibility is recorded.

7.9 Z. DD. "Secchi disk transparency" means the transparency of water as measured
7.10 by either a Secchi disk, a Secchi tube, or a transparency tube.

7.11 AA. EE. "Secchi tube" means a tool that is used to measure the transparency of
7.12 stream or river water. A Secchi tube is a clear plastic tube, one meter in length and 1-3/4
7.13 inch in diameter, with a mini-Secchi disk on a string. To measure water transparency, the
7.14 tube is filled with water collected from a stream or river and, looking into the tube from
7.15 the top, the weighted Secchi disk is lowered into the tube by a string until it disappears
7.16 and then raised until it reappears, allowing the user to raise and lower the disk within the
7.17 same water sample numerous times. The depth of the water at the midpoint between
7.18 disappearance and reappearance of the disk is recorded in centimeters, which are marked
7.19 on the side of the tube. If the Secchi disk is visible when it is lowered to the bottom of the
7.20 tube, the transparency reading is recorded as "greater than 100 centimeters."

7.21 BB. FF. "Seston" means particulate matter suspended in water bodies and
7.22 includes plankton and organic and inorganic matter.

7.23 CC. GG. "Shallow lake" means an enclosed basin filled or partially filled
7.24 with standing fresh water with a maximum depth of 15 feet or less or with 80 percent or
7.25 more of the lake area shallow enough to support emergent and submerged rooted aquatic
7.26 plants (the littoral zone). It is uncommon for shallow lakes to thermally stratify during the

8.1 summer. The quality of shallow lakes will permit the propagation and maintenance of
8.2 a healthy indigenous aquatic community and they will be suitable for boating and other
8.3 forms of aquatic recreation for which they may be usable. Shallow lakes are differentiated
8.4 from wetlands and lakes on a case-by-case basis. Wetlands are defined in part 7050.0186,
8.5 subpart 1a.

8.6 **DD. HH.** "Summer-average" means a representative average of concentrations
8.7 or measurements of nutrient enrichment factors, taken over one summer season.

8.8 **EE. II.** "Summer season" means a period annually from June 1 through
8.9 September 30.

8.10 **FF. JJ.** "Transparency tube" means a tool that is used to measure the
8.11 transparency of stream or river water. A transparency tube is a graduated clear plastic
8.12 tube, 24 inches or more in length by 1-1/2 inches in diameter, with a stopper at the
8.13 bottom end. The inside surface of the stopper is painted black and white. To measure
8.14 water transparency, the tube is filled with water from a surface water; the water is
8.15 released through a valve at the bottom end until the painted surface of the stopper is just
8.16 visible through the water column when viewed from the top of the tube. The depth, in
8.17 centimeters, is noted. More water is released until the screw in the middle of the painted
8.18 symbol on the stopper is clearly visible; this depth is noted. The two observed depths are
8.19 averaged to obtain a transparency measurement.

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

8.22 **LL.** "Use attainability analysis" means a structured scientific assessment of the
8.23 physical, chemical, biological, and economic factors affecting attainment of the uses of
8.24 water bodies. A use attainability analysis is required to remove a designated use specified
8.25 in section 101(a)(2) of the Clean Water Act that is not an existing use. The allowable

9.1 reasons for removing a designated use are described in Code of Federal Regulations,
9.2 title 40, section 131.10(g).

9.3 HH. MM. "Water body" means a lake, reservoir, wetland, or a geographically
9.4 defined portion of a river or stream.

9.5 NN. "Water body type" means a group of water bodies with similar natural
9.6 physical, chemical, and biological attributes, where the characteristics are similar among
9.7 water bodies within each type and distinct from water bodies of other types.

9.8 [For text of subps 5 to 5c, see M.R.]

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

9.16 [For text of items A to D, see M.R.]

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

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

9.24 [For text of subps 7 and 8, see M.R.]

10.1 **7050.0217 OBJECTIVES FOR PROTECTION OF SURFACE WATERS FROM**
10.2 **TOXIC POLLUTANTS.**

10.3 **Subpart 1. Purpose and applicability.** The purpose of this part is to establish the
10.4 objectives for developing numeric water quality standards listed in parts 7050.0220,
10.5 7050.0222, 7050.0227, and 7052.0100 and site-specific water quality criteria for toxic
10.6 pollutants or chemicals developed in the absence of numeric standards. The listed numeric
10.7 standards for toxics and site-specific numeric criteria established by methods in parts
10.8 7050.0218 and 7050.0219 protect Class 2 waters for the propagation and maintenance of
10.9 fish and aquatic life biota, the consumption of fish and edible aquatic life by humans, the use
10.10 of surface waters for public and private domestic consumption where applicable, and the
10.11 consumption of aquatic organisms by wildlife. These criteria also protect the uses assigned
10.12 to Class 7, limited resource value, waters as described in parts 7050.0140 and 7050.0227.

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

10.14 **7050.0218 FOR TOXIC POLLUTANTS: DEFINITIONS AND METHODS FOR**
10.15 **DETERMINATION OF HUMAN HEALTH-BASED NUMERIC STANDARDS**
10.16 **AND SITE-SPECIFIC NUMERIC CRITERIA FOR AQUATIC LIFE, HUMAN**
10.17 **HEALTH, AND FISH-EATING WILDLIFE.**

10.18 [For text of subps 1 and 2, see M.R.]

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

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

10.22 S. "Cold water fisheries" means a community of fish including species of
10.23 trout and salmon from the Salmonidae family that inhabit trout waters as defined in part
10.24 7050.0420.

11.1 T. S. "Criterion" means a number or numbers established for a pollutant derived
11.2 under this part or part 7050.0219 or 7052.0110, or issued by the USEPA, to protect aquatic
11.3 life, humans, or wildlife.

11.4 U. T. "Developmental health endpoint" or "developmental toxicity" means an
11.5 adverse effect on the developing organism that may result from parental exposure prior to
11.6 conception, maternal exposure during prenatal development, or direct exposure postnatally
11.7 until the time of sexual maturation. Developmental toxicity may be detected at any point in
11.8 the lifespan of the organism. The major manifestations of developmental toxicity include:

- 11.9 (1) death of the developing organism;
- 11.10 (2) structural abnormality;
- 11.11 (3) altered growth; or
- 11.12 (4) functional deficiency.

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

11.15 W. V. "Durations for human health-based algorithms" or "D" means the length
11.16 of the exposure period under consideration for noncancer and linear cancer algorithms.

11.17 (1) The four default D used in developing reference doses and
11.18 corresponding intake rates are:

- 11.19 (a) acute: a period of 24 hours or less;
- 11.20 (b) short-term: a period of more than 24 hours, up to 30 days;
- 11.21 (c) subchronic: a period of more than 30 days, up to eight years
11.22 based on application of the less than ten percent standard life expectancy of 70 years
11.23 for humans; or
- 11.24 (d) chronic: a period of more than eight years.

12.1 (2) The default durations for use in the linear cancer algorithms with age
12.2 dependent adjustment factors are:

12.3 (a) two years for the birth up to two-year age group;

12.4 (b) 14 years for the two- up to 16-year age group; and

12.5 (c) 54 years for the 16- up to 70-year age group.

12.6 For any algorithm, use of chemical-specific data to define durations for noncancer or linear
12.7 cancer algorithms are preferred when acceptable data are available.

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

12.11 Y. X. "Endocrine" or "E" means a change in circulating hormone levels or
12.12 interactions with hormone receptors, regardless of the organ or organ system affected.
12.13 Health endpoints with or without the E designation are deemed equivalent, for example,
12.14 thyroid (E) = thyroid, and must be included in the same health risk index equation.

12.15 Z. Y. "Final acute value" or "FAV" means an estimate of the concentration of
12.16 a pollutant corresponding to the cumulative probability of 0.05 in the distribution of all
12.17 the acute toxicity values for the genera or species from the acceptable acute toxicity tests
12.18 conducted on a pollutant. The FAV is the acute toxicity limitation applied to mixing zones
12.19 in part 7050.0210, subpart 5; and to dischargers in parts 7053.0215, subpart 1; 7053.0225,
12.20 subpart 6; and 7053.0245, subpart 1.

12.21 AA: Z. "Food chain multiplier" or "FCM" means the ratio of a bioaccumulation
12.22 factor by trophic level to an appropriate bioconcentration factor. FCM refers to values
12.23 developed using USEPA models or from available and reliable field studies.

13.1 BB. AA. "Frequency" means the number of times a standard can be exceeded in
13.2 a specified period of time without causing acute or chronic toxic effects on the aquatic
13.3 community, human health, or fish-eating wildlife.

13.4 CC. BB. "Genus mean acute value" or "GMAV" means the geometric mean of
13.5 the SMAVs available for the genus.

13.6 DD. CC. "Health risk index" means the sum of the quotients calculated by
13.7 identifying all chemicals that share a common health endpoint or are based on linear
13.8 carcinogenicity and dividing the water or fish tissue concentration for each chemical
13.9 (measured or statistically derived) by its applicable chronic standard or chronic criterion. To
13.10 meet the objectives in part 7050.0217, the health risk index must not exceed a value of one.
13.11 The equations for the risk indices are found in part 7050.0222, subpart 7, items D and E.

13.12 EE. DD. "Health risk index endpoint" or "health endpoint" means the general
13.13 description of toxic effects used to group chemicals for the purpose of calculating a health
13.14 risk index.

13.15 FF. EE. "Intake rate" or "IR" means rate of ingestion, inhalation, or dermal
13.16 contact, depending on the route of exposure, expressed as the amount of a media taken in,
13.17 on a per body weight and daily basis, for a specified duration.

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

13.20 HH. GG. "Lowest observable adverse effect level" or "LOAEL" means the
13.21 lowest exposure level that caused a statistically or biologically significant increase in the
13.22 frequency or severity of adverse effects observed between the exposed population and its
13.23 appropriate control group.

13.24 II. HH. "Magnitude" means the acceptable amount of a toxic pollutant in water
13.25 or fish tissue expressed as a concentration.

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

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

14.8 KK. "MDH" means the Minnesota Department of Health.

14.9 LL. "Mode of action" or "MOA" means the sequence of key events
14.10 following pollutant or chemical exposure upon which the toxic outcome depends.

14.11 NN. "National methods" means the methods the USEPA uses to develop
14.12 aquatic life criteria as described in Stephan, C.E., D.J. Mount, D.J. Hansen, J.H. Gentile,
14.13 G.A. Chapman, and W.A. Brungs, 1985, "Guidelines for Deriving Numerical National
14.14 Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses," USEPA,
14.15 Office of Research and Development, Environmental Research Laboratories, Duluth
14.16 MN; Narragansett, RI, Corvallis, OR. 98 p; available through the National Technical
14.17 Information Service, Springfield, VA. (Publication PB85-227049)

14.18 OO. "No observable adverse effect level" or "NOAEL" means the highest
14.19 exposure level at which there is no statistically or biologically significant increase in
14.20 the frequency or severity of adverse effects between the exposed population and its
14.21 appropriate control group.

14.22 PP. "Octanol to water partition coefficient" or " K_{ow} " means the ratio of the
14.23 concentration of a chemical in the octanol phase to its concentration in the aqueous phase
14.24 of a two-phase octanol to water system after equilibrium of the chemical between the two
14.25 phases has been achieved. The base 10 logarithm of the K_{ow} or $\log K_{ow}$ is used in the

15.1 calculation of bioaccumulation factors. The $\log K_{ow}$ has been shown to be proportional to
15.2 the bioconcentration potential of lipophilic organic chemicals.

15.3 **QQ. PP.** "Percent effluent" means the representation of acute or chronic toxicity
15.4 of an effluent as a percent of whole effluent mixed in dilution water, where acute toxicity
15.5 is expressed by LC50s or EC50s and chronic toxicity is expressed by NOAEL.

15.6 **RR. QQ.** "Reference dose" or "RfD" means an estimate of a dose for a given
15.7 duration to the human population, including susceptible subgroups such as infants, that is
15.8 likely to be without an appreciable risk of adverse effects during a lifetime. It is derived
15.9 from a suitable dose level at which there are few or no statistically or biologically
15.10 significant increases in the frequency or severity of an adverse effect between the dosed
15.11 population and its associated control group. The RfD includes one or more divisors,
15.12 applied to the suitable dose level, accounting for:

15.13 (1) uncertainty in extrapolating from mammalian laboratory animal data to
15.14 humans;

15.15 (2) variation in toxicological sensitivity among individuals in the human
15.16 population;

15.17 (3) uncertainty in extrapolating from effects observed in a short-term study
15.18 to effects of long-term exposure;

15.19 (4) uncertainty in using a study in which health effects were found at
15.20 all doses tested; and

15.21 (5) uncertainty associated with deficiencies in the available data.

15.22 The product of the divisors is not to exceed 3,000 in an RfD used for a chronic standard.
15.23 The RfD is expressed in units of daily dose as milligrams of chemical per kilogram of
15.24 body weight-day or mg/kg-day.

16.1 SS. RR. "Relative source contribution factor" or "RSC" means the percentage or
16.2 apportioned amount (subtraction method) of the reference dose for a pollutant allocated to
16.3 surface water exposures from drinking or incidental water ingestion and fish consumption.
16.4 In the absence of sufficient data to establish a pollutant- or chemical-specific RSC value,
16.5 the default RSC is 0.2 or 0.5 as described in part 7050.0219, subpart 5.

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

16.8 UU. TT. "Standard" means a number or numbers established for a pollutant
16.9 or water quality characteristic to protect a specified beneficial use as listed in parts
16.10 7050.0221 to 7050.0227. The standard for a toxic pollutant includes the CS, MS, and
16.11 FAV. Some pollutants do not have an MS or an FAV due to insufficient data. For these
16.12 pollutants, the CS alone is the standard.

16.13 VV. UU. "Toxic effect" means an observable or measurable adverse biological
16.14 event in an organ, tissue, or system. The designation of health endpoints does not exclude
16.15 other possible observable or measurable biological events. For the purpose of grouping
16.16 chemicals and creating a health risk index when multiple chemicals are present, toxic
16.17 effects may be ascribed to more general health risk index endpoints or health endpoints.

16.18 WW. VV. "Toxic pollutant" has the meaning given it in part 7050.0185, subpart 2,
16.19 item F. Toxic pollutant is used interchangeably in this part and parts 7050.0217, 7050.0219,
16.20 and 7050.0222, subpart 7, items B to G, with the terms "pollutant" and "chemical."

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

17.1 YY. XX. "Trophic level" or "TL" means the food web level in an ecosystem
17.2 that is occupied by an organism or group of organisms because of what they eat and how
17.3 they are related to the rest of the food web. For example, trophic level 3 in an aquatic
17.4 ecosystem consists of small fish such as bluegills, crappies, and smelt and trophic level 4
17.5 consists of larger carnivorous fish such as walleye, northern pike, and most trout species.

17.6 ZZ. YY. "USEPA" means the United States Environmental Protection Agency.

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

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

17.14 **Subp. 4. Adoption of USEPA national criteria.** The USEPA establishes aquatic
17.15 life and human health-based criteria under section 304(a)(1) of the Clean Water Act,
17.16 United States Code, title 33, section 1314. The USEPA criteria, subject to modification
17.17 as described in this subpart, are applicable to Class 2 waters of the state. The USEPA
17.18 has described the national methods for developing aquatic life criteria in "Guidelines
17.19 for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic
17.20 Organisms and Their Uses."

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

18.1 A. The USEPA aquatic life criteria are adopted unchanged by the agency,
18.2 unless modified under item C, as the criteria applicable to designated Class 2A waters in
18.3 parts 7050.0420 and 7050.0470.

18.4 B. The USEPA criteria are adopted, subject to modification as described in this
18.5 item or item C, for application to cool and warm water ~~fisheries~~ habitats and wetlands.
18.6 Cool and warm water ~~fisheries~~ habitats (Class 2Bd; ~~and~~ 2B, ~~and~~ 2C) waters are defined in
18.7 part 7050.0430 or listed in part 7050.0470. Wetlands (Class 2D) waters are defined in
18.8 part 7050.0425 or listed in part 7050.0470.

18.9 (1) Acute data, in the form of the ranked genus mean acute values used
18.10 by the USEPA to determine the national criteria, are the data used to determine the Class
18.11 2Bd, 2B, 2C, and 2D criteria.

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

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

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

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

18.20 [For text of subps 5 to 8, see M.R.]

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

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

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

19.4 [For text of subitem (1), see M.R.]

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

19.7 [For text of subitem (3), see M.R.]

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

19.11 [For text of subitem (5), see M.R.]

19.12 **Subp. 10. Applicable criteria or human health-based standard.** The final criteria
19.13 or chronic standard for human health for toxic pollutants for surface waters must be the
19.14 lowest of the applicable criteria or standards for human health derived under this part
19.15 and part 7050.0219.

19.16 A. Applicable criteria or standards for human health by use for Class 2A, 2Bd,
19.17 2B, 2C, and 2D surface waters are listed for each applicable population protected (aquatic
19.18 life, humans, and fish-eating wildlife). The applicable criteria or standards for human
19.19 health must be the lowest of the CC or CS as described in subitems (1) to (3):

19.20 [For text of subitems (1) to (3), see M.R.]

19.21 [For text of items B to D, see M.R.]

19.22 **7050.0219 HUMAN HEALTH-BASED CRITERIA AND STANDARDS.**

19.23 [For text of subps 1 to 10, see M.R.]

20.1 **Subp. 11. Final baseline BAF by trophic level.** Determine the final baseline BAF
20.2 by trophic level (TL):

20.3 A. Calculate geometric mean baseline BAF for TL₃ and TL₄ using available
20.4 species-means for each baseline BAF method. For Class 2A water, preference is given
20.5 for *Salmonidae* data and developed as a single representative TL₄ baseline BAF for
20.6 cold-water aquatic communities.

20.7 [For text of items B and C, see M.R.]

20.8 [For text of subps 12 to 15, see M.R.]

20.9 **7050.0220 SPECIFIC WATER QUALITY STANDARDS BY ASSOCIATED USE
20.10 CLASSES.**

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

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

20.21 A. cold water ~~sport fish (trout waters)~~ aquatic life and habitat, also protected for
20.22 drinking water: Classes 1B; ~~2A~~; 2Ae or 2Ag; 3A or 3B; ~~4A~~ and ~~4B~~; and 5 (subpart 3a);

20.23 B. cool and warm water ~~sport fish~~ aquatic life and habitat, also protected for
20.24 drinking water: Classes 1B or 1C; ~~2Bd~~; 2Bde, 2Bdg, or 2Bdm; 3A or 3B; ~~4A~~ and ~~4B~~;
20.25 and 5 (subpart 4a);

21.1 C. cool and warm water sport fish, indigenous aquatic life, and wetlands aquatic
21.2 life and habitat and wetlands: Classes 2B, 2C, 2Be, 2Bg, 2Bm, or 2D; 3A, 3B, 3C, or 3D;
21.3 4A and 4B or 4C; and 5 (subpart 5a); and
21.4 D. limited resource value waters: Classes 3C; 4A and 4B; 5; and 7 (subpart 6a).

21.5 **Subp. 2. Explanation of tables.**

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

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

21.9 AN	means aesthetic enjoyment and navigation, Class 5 waters
21.10 *	an asterisk following the FAV and MS values or double dashes (--) means part 7050.0222, subpart 7, item G, applies
21.12 (c)	means the chemical is assumed to be a human <u>carcinogen</u>
21.13 CS	means chronic standard, defined in part 7050.0218, subpart 3
21.14 DC	means domestic consumption (drinking water), Class 1 waters
21.15 -	double dashes means there is no standard
21.16 exp. ()	means the natural antilogarithm (base e) of the expression in parenthesis
21.17 FAV	means final acute value, defined in part 7050.0218, subpart 3
21.18 IC	means industrial consumption, Class 3 waters
21.19 IR	means agriculture irrigation use, Class 4A waters
21.20 LS	means agriculture livestock and wildlife use, Class 4B waters
21.21 MS	means maximum standard, defined in part 7050.0218, subpart 3
21.22 NA	means not applicable
21.23 (S)	means the associated value is a secondary drinking water standard
21.24 su	means standard unit. It is the reporting unit for pH
21.25 TH	means total hardness in mg/L, which is the sum of the calcium and magnesium concentrations expressed as CaCO ₃
21.27 TON	means threshold odor number

21.28 [For text of items E and F, see M.R.]

22.1 Subp. 3. [Repealed, 24 SR 1105]

22.2 Subp. 3a. **Cold water sport fish aquatic life and habitat, drinking water, and associated use classes.** Water quality standards applicable to use Classes 1B, ~~2A~~, ~~2Ae~~ or ~~2Ag~~; 3A or 3B; 4A and 4B; and 5 surface waters.

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

22.6 Subp. 4. [Repealed, 24 SR 1105]

22.7 Subp. 4a. **Cool and warm water sport fish aquatic life and habitat, drinking water, and associated use classes.** Water quality standards applicable to use Classes 1B or 1C, ~~2Bd~~; ~~2Bde~~, ~~2Bdg~~, or ~~2Bdm~~; 3A or 3B; 4A and 4B; and 5 surface waters.

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

22.11 Subp. 5. [Repealed, 24 SR 1105]

22.12 Subp. 5a. **Cool and warm water sport fish aquatic life and habitat and associated use classes.** Water quality standards applicable to use Classes 2B, ~~2Be~~, ~~2Bg~~, ~~2Bm~~, ~~2C~~, or 2D; 3A, 3B, or 3C; 4A and 4B; and 5 surface waters. See parts 7050.0223, subpart 5; 7050.0224, subpart 4; and 7050.0225, subpart 2, for Class 3D, 4C, and 5 standards applicable to wetlands, respectively.

22.17 A. MISCELLANEOUS SUBSTANCE, CHARACTERISTIC, OR POLLUTANT

22.18	2B, C&D	2B, C&D	2B, C&D	3A/3B/3C	4A	4B	5
22.19	CS	MS	FAV	IC	IR	LS	AN

22.20

22.21 [For text of subitems (1) to (5), see M.R.]

22.22	2B, C&D	2B, C&D	2B, C&D	3A/3B/3C	4A	4B	5
22.23	CS	MS	FAV	IC	IR	LS	AN

22.24

22.25 [For text of subitem (6), see M.R.]

23.1 (7) Eutrophication standards for lakes, shallow lakes, and reservoirs (phosphorus, total,
23.2 $\mu\text{g/L}$; chlorophyll-a, $\mu\text{g/L}$; Secchi disk transparency, meters)

23.3 See part — — — — —
23.4 7050.0222,
23.5 subparts
23.6 4, and 4a;
23.7 and 5

23.8 [For text of subitems (8) to (11), see M.R.]

23.9	2B;C&D	2B;C&D	2B;C&D	3A/3B/3C	4A	4B	5
23.10	CS	MS	FAV	IC	IR	LS	AN

23.11 ——————

23.12 (12) Oxygen, dissolved, mg/L

23.13 See part — — — — —
23.14 7050.0222,
23.15 subparts
23.16 4 to and 6

23.17 [For text of subitems (13) to (16), see M.R.]

23.18	2B;C&D	2B;C&D	2B;C&D	3A/3B/3C	4A	4B	5
23.19	CS	MS	FAV	IC	IR	LS	AN

23.20 ——————

23.21 [For text of subitems (17) to (22), see M.R.]

23.22 B. METALS AND ELEMENTS

23.23	2B;C&D	2B;C&D	2B;C&D	3A/3B/3C	4A	4B	5
23.24	CS	MS	FAV	IC	IR	LS	AN

23.25 ——————

23.26 [For text of subitems (1) to (4), see M.R.]

23.27 (5) Cadmium, total, $\mu\text{g/L}$

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24.1 1.1 33 67 - - -
24.2 Class 2B, 2C, and 2D cadmium standards are hardness dependent. Cadmium values
24.3 shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for
24.4 examples at other hardness values and equations to calculate cadmium standards for any
24.5 hardness value not to exceed 400 mg/L.

24.6 2B,C&D 2B,C&D 2B,C&D 3A/3B/3C 4A 4B 5
24.7 CS MS FAV IC IR LS AN

24.8

24.9 (6) Chromium +3, total, $\mu\text{g/L}$

24.10 207 1,737 3,469 - - -

24.11 Class 2B, 2C, and 2D trivalent chromium standards are hardness dependent. Chromium
24.12 +3 values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart
24.13 4, for examples at other hardness values and equations to calculate trivalent chromium
24.14 standards for any hardness value not to exceed 400 mg/L.

24.15 [For text of subitems (7) and (8), see M.R.]

24.16 (9) Copper, total, $\mu\text{g/L}$

24.17 9.8 18 35 - - -

24.18 Class 2B, 2C, and 2D copper standards are hardness dependent. Copper values shown
24.19 are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples
24.20 at other hardness values and equations to calculate copper standards for any hardness
24.21 value not to exceed 400 mg/L.

24.22 (10) Lead, total, $\mu\text{g/L}$

24.23 3.2 82 164 - - -

24.24 Class 2B, 2C, and 2D lead standards are hardness dependent. Lead values shown are for a
24.25 total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at other
24.26 hardness values and equations to calculate lead standards for any hardness value not to
24.27 exceed 400 mg/L.

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25.1	2B,C&D	2B,C&D	2B,C&D	3A/3B/3C	4A	4B	5
25.2	CS	MS	FAV	IC	IR	LS	AN

25.3

25.4 [For text of subitems (11) and (12), see M.R.]

25.5 (13) Nickel, total, $\mu\text{g/L}$

25.6 158 1,418 2,836 - - -

25.7 Class 2B, 2C, and 2D nickel standards are hardness dependent. Nickel values shown
25.8 are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples
25.9 at other hardness values and equations to calculate nickel standards for any hardness
25.10 value not to exceed 400 mg/L.

25.11 [For text of subitem (14), see M.R.]

25.12 (15) Silver, total, $\mu\text{g/L}$

25.13 1.0 2.0 4.1 - - -

25.14 Class 2B, 2C, and 2D silver MS and FAV are hardness dependent. Silver values shown
25.15 are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples
25.16 at other hardness values and equations to calculate silver standards for any hardness
25.17 value not to exceed 400 mg/L.

25.18	2B,C&D	2B,C&D	2B,C&D	3A/3B/3C	4A	4B	5
25.19	CS	MS	FAV	IC	IR	LS	AN

25.20

25.21 [For text of subitem (16), see M.R.]

25.22 (17) Zinc, total, $\mu\text{g/L}$

25.23 106 117 234 - - -

25.24 Class 2B, 2C, and 2D zinc standards are hardness dependent. Zinc values shown are for a
25.25 total hardness of 100 mg/L only. See part 7050.0222, subpart 4, for examples at other
25.26 hardness values and equations to calculate zinc standards for any hardness value not to
25.27 exceed 400 mg/L.

26.1 C. ORGANIC POLLUTANTS OR CHARACTERISTICS

26.2	2B,€&D	2B,€&D	2B,€&D	3A/3B/3C	4A	4B	5
26.3	CS	MS	FAV	IC	IR	LS	AN

26.4

26.5 [For text of subitems (1) to (5), see M.R.]

26.6	2B,€&D	2B,€&D	2B,€&D	3A/3B/3C	4A	4B	5
26.7	CS	MS	FAV	IC	IR	LS	AN

26.8

26.9 [For text of subitems (6) to (10), see M.R.]

26.10	2B,€&D	2B,€&D	2B,€&D	3A/3B/3C	4A	4B	5
26.11	CS	MS	FAV	IC	IR	LS	AN

26.1

26.13 [For text of subitems (11) to (15), see M.R.]

26.14	2B,€&D	2B,€&D	2B,€&D	3A/3B/3C	4A	4B	5
26.15	CS	MS	FAV	IC	IR	LS	AN

26.1

26.17 [For text of subitems (16) to (20), see M.R.]

26.18	2B,€&D	2B,€&D	2B,€&D	3A/3B/3C	4A	4B	5
26.19	CS	MS	FAV	IC	IR	LS	AN

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26.21 [For text of subitems (21) to (25), see M.R.]

26.22	2B,€&D	2B,€&D	2B,€&D	3A/3B/3C	4A	4B	5
26.23	CS	MS	FAV	IC	IR	LS	AN

26.2

[For text of subitems (26) to (30), see M.R.]

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27.1	2B,C&D	2B,C&D	2B,C&D	3A/3B/3C	4A	4B	5
27.2	CS	MS	FAV	IC	IR	LS	AN

27.3

27.4 (31) Pentachlorophenol, $\mu\text{g/L}$

27.5 5.5 15 30 - - -

27.6 Class 2B, 2C, and 2D standards are pH dependent, except that the CS will not exceed 5.5 $\mu\text{g/L}$. Pentachlorophenol values shown are for a pH of 7.5 only. See part 7050.0222, subpart 4, for examples at other pH values and equations to calculate pentachlorophenol standards for any pH value.

27.10 [For text of subitems (32) to (35), see M.R.]

27.11	2B,C&D	2B,C&D	2B,C&D	3A/3B/3C	4A	4B	5
27.12	CS	MS	FAV	IC	IR	LS	AN

27.13

27.14 [For text of subitems (36) to (40), see M.R.]

27.15	2B,C&D	2B,C&D	2B,C&D	3A/3B/3C	4A	4B	5
27.16	CS	MS	FAV	IC	IR	LS	AN

27.17

27.18 [For text of subitems (41) to (43), see M.R.]

27.19 [For text of items D to F, see M.R.]

27.20 G. Temperature must not exceed:

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

28.1 (2) Class 2C standard: five degrees Fahrenheit above natural in streams and
28.2 three degrees Fahrenheit above natural in lakes, based on monthly average of maximum
28.3 daily temperature, except in no case shall it exceed the daily average temperature of 90
28.4 degrees Fahrenheit, and

28.5 (3) (2) Class 2D standard: maintain background as defined in part
28.6 7050.0222, subpart 6.

28.7 Subp. 6. [Repealed, 24 SR 1105]

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

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

28.10 C. The level of dissolved oxygen shall must be maintained at concentrations:

28.11 (1) that will avoid odors or putrid conditions in the receiving water;

28.12 (2) or at concentrations at not less than one milligram per liter (daily
28.13 average); and

28.16 [For text of items D and E, see M.R.]

28.17 [For text of subp 7, see M.R.]

**28.18 7050.0222 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 2 WATERS
28.19 OF THE STATE; AQUATIC LIFE AND RECREATION.**

28.20 [For text of subp 1, see M.R.]

28.21 Subp. 2. **Class 2A waters; aquatic life and recreation.** The quality of Class 2A
28.22 surface waters shall be such as to permit the propagation and maintenance of a healthy
28.23 community of cold water ~~sport or commercial fish and associated aquatic life~~ biota, and
28.24 their habitats according to the definitions in subpart 2c. These waters shall be suitable for

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29.1 aquatic recreation of all kinds, including bathing, for which the waters may be usable.
 29.2 This class of surface waters is also protected as a source of drinking water. Abbreviations,
 29.3 acronyms, and symbols are explained in subpart 1.

29.4	Substance, 29.5 Characteristic, 29.6 or Pollutant 29.7 (Class 2A)	29.8	Units	CS	Basis for CS	MS	FAV	Basis for 29.9 MS, 29.10 FAV
29.9	Acenaphthene		µg/L	20	HH	56	112	Tox
29.10	Acetochlor		µg/L	3.6	Tox	86	173	Tox
29.11	Acrylonitrile (c)		µg/L	0.38	HH	1,140*	2,281*	Tox
29.12	Alachlor (c)		µg/L	3.8	HH	800*	1,600*	Tox
29.13	Aluminum, total		µg/L	87	Tox	748	1,496	Tox
29.14	Ammonia un-ionized as N		µg/L	16	Tox	-	-	NA

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

$$29.19 \quad 1 \\ 29.20 \quad f = \frac{1}{(pK_a - pH)} \times 100 \\ 29.21$$

$$29.22 \quad 10 \quad + 1$$

29.23 where: f = the percent of total ammonia in the un-ionized state
 29.24 $pK_a = 0.09 + (2730/T)$ (dissociation constant for ammonia)
 29.25 T = temperature in degrees Kelvin (273.16° Kelvin = 0° Celsius)

29.26	Substance, 29.27 Characteristic, 29.28 or Pollutant 29.29 (Class 2A)	29.30	Units	CS	Basis for CS	MS	FAV	Basis for 29.30 MS, FAV
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30.1	Anthracene	µg/L	0.035	Tox	0.32	0.63	Tox
30.2	Antimony, total	µg/L	5.5	HH	90	180	Tox
30.3	Arsenic, total	µg/L	2.0	HH	360	720	Tox
30.4	Atrazine (c)	µg/L	3.4	HH	323	645	Tox
30.5	Benzene (c)	µg/L	5.1	HH	4,487*	8,974*	Tox
30.6	Bromoform	µg/L	33	HH	2,900	5,800	Tox
30.7	Cadmium, total	µg/L	equation	Tox	equation	equation	Tox

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

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

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

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

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

30.14 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
 30.15 the standard.

30.16 Example of total cadmium standards for five hardness values:

30.17 TH in mg/L 50 100 200 300 400

30.18 _____

30.19 Cadmium, total

30.20 CS µg/L 0.66 1.1 2.0 2.7 3.4

30.21 MS µg/L 1.8 3.9 8.6 14 19

30.22 FAV µg/L 3.6 7.8 17 27 37

30.23	Substance, Characteristic, or Pollutant (Class 2A)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
30.27	_____	_____	_____	_____	_____	_____	_____

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31.1	Carbon tetrachloride (c)	µg/L	1.9	HH	1750*	3500*	Tox
31.2	Chlordane (c)	ng/L	0.073	HH	1200*	2400*	Tox
31.3	Chloride	mg/L	230	Tox	860	1720	Tox
31.4	Chlorine, total residual	µg/L	11	Tox	19	38	Tox

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

31.8	Chlorobenzene	µg/L	20	HH	423	846	Tox
31.9	(Monochlorobenzene)						
31.10	Chloroform (c)	µg/L	53	HH	1,392	2,784	Tox
31.11	Chlorpyrifos	µg/L	0.041	Tox	0.083	0.17	Tox
31.12	Chromium +3, total	µg/L	equation	Tox	equation	equation	Tox

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

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

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

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

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

31.19 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
31.20 the standard.

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

31.22	TH in mg/L	50	100	200	300	400
31.23						

31.24 Chromium +3, total

31.25	CS µg/L	117	207	365	509	644
31.26	MS µg/L	984	1,737	3,064	4,270	5,405
31.27	FAV µg/L	1,966	3,469	6,120	8,530	10,797

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32.1	Substance, Characteristic, or Pollutant (Class 2A)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
32.5							
32.6	Chromium +6, total	µg/L	11	Tox	16	32	Tox
32.7	Cobalt, total	µg/L	2.8	HH	436	872	Tox
32.8	Color value	Pt/Co	30	NA	—	—	NA
32.9	Copper, total	µg/L	equation	Tox	equation	equation	Tox

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

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

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

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

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

32.16 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
 32.17 the standard.

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

32.19	TH in mg/L	50	100	200	300	400
32.20						
32.21	Copper, total					
32.22	CS µg/L	6.4	9.8	15	19	23
32.23	MS µg/L	9.2	18	34	50	65
32.24	FAV µg/L	18	35	68	100	131

32.25	Substance, Characteristic, or Pollutant (Class 2A)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
32.29							

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33.1	Cyanide, free	µg/L	5.2	Tox	22	45	Tox
33.2	DDT (c)	ng/L	0.11	HH	550*	1100*	Tox
33.3	1,2-Dichloroethane (c)	µg/L	3.5	HH	45,050*	90,100*	Tox
33.4	Dieldrin (c)	ng/L	0.0065	HH	1,300*	2,500*	Tox
33.5	Di-2-ethylhexyl phthalate (c)	µg/L	1.9	HH	—*	—*	NA
33.6	Di-n-octyl phthalate	µg/L	30	Tox	825	1,650	Tox
33.7	Endosulfan	µg/L	0.0076	HH	0.084	0.17	Tox
33.8	Endrin	µg/L	0.0039	HH	0.090	0.18	Tox
33.9	<i>Escherichia (E.) coli</i>	See below	See below	HH	See below	See below	NA
33.10							

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

33.16	Ethylbenzene	µg/L	68	Tox	1,859	3,717	Tox
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33.17	Substance, Characteristic, or Pollutant (Class 2A)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
33.21							

33.22 Eutrophication standards for Class 2A lakes and reservoirs.

33.23 Designated lake trout lakes in all ecoregions (lake trout lakes support natural populations of lake trout, *Salvelinus namaycush*):

33.25	Phosphorus, total	µg/L	12	NA	—	—	NA
33.26	Chlorophyll-a	µg/L	3	NA	—	—	NA
33.27	Secchi disk transparency	meters	No less than 4.8	NA	—	—	NA
33.28							

33.29 Designated trout lakes in all ecoregions, except lake trout lakes:

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34.1	Phosphorus, total	µg/L	20	NA	—	—	NA
34.2	Chlorophyll-a	µg/L	6	NA	—	—	NA
34.3	Secchi disk transparency	meters	No less than 2.5	NA	—	—	NA
34.4							
34.5	Additional narrative eutrophication standards for Class 2A lakes and reservoirs are found under subpart 2a.						
34.6							
34.7	Eutrophication standards for Class 2A rivers and streams.						
34.8	North River Nutrient Region:						
34.9	Phosphorus, total	µg/L			less than or equal to 50		
34.10	Chlorophyll-a (seston)	µg/L			less than or equal to 7		
34.11	Diel dissolved oxygen flux	mg/L			less than or equal to 3.0		
34.12	Biochemical oxygen demand (BOD ₅)	mg/L			less than or equal to 1.5		
34.13	Central River Nutrient Region:						
34.14	Phosphorus, total	µg/L			less than or equal to 100		
34.15	Chlorophyll-a (seston)	µg/L			less than or equal to 18		
34.16	Diel dissolved oxygen flux	mg/L			less than or equal to 3.5		
34.17	Biochemical oxygen demand (BOD ₅)	mg/L			less than or equal to 2.0		
34.18	South River Nutrient Region:						
34.19	Phosphorus, total	µg/L			less than or equal to 150		
34.20	Chlorophyll-a (seston)	µg/L			less than or equal to 35		
34.21	Diel dissolved oxygen flux	mg/L			less than or equal to 4.5		
34.22	Biochemical oxygen demand (BOD ₅)	mg/L			less than or equal to 3.0		
34.23	Additional narrative eutrophication standards for Class 2A rivers and streams are found under subpart 2b.						
34.24							

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35.1	Substance, Characteristic, or Pollutant (Class 2A)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
35.5							
35.6	Fluoranthene	µg/L	1.9	Tox	3.5	6.9	Tox
35.7	Heptachlor (c)	ng/L	0.10	HH	260*	520*	Tox
35.8	Heptachlor epoxide (c)	ng/L	0.12	HH	270*	530*	Tox
35.9	Hexachlorobenzene (c)	ng/L	0.061	HH	—*	—*	Tox
35.10	Lead, total	µg/L	equation	Tox	equation	equation	Tox

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

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

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

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

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

35.17 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
 35.18 the standard.

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

35.20	TH in mg/L	50	100	200	300	400
35.21						
35.22	Lead, total					
35.23	CS µg/L	1.3	3.2	7.7	13	19
35.24	MS µg/L	34	82	197	331	477
35.25	FAV µg/L	68	164	396	663	956

35.26	Substance, Characteristic, or Pollutant (Class 2A)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
35.30							

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36.1	Lindane (c) (Hexachlorocyclohexane, gamma-)	µg/L	0.0087	HH	1.0*	2.0*	Tox
36.2							
36.3							
36.4	Mercury, total in water	ng/L	6.9	HH	2,400*	4,900*	Tox
36.5	Mercury, total in edible fish	mg/kg ppm	0.2	HH	NA	NA	NA
36.6							
36.7	Methylene chloride (c) Dichloromethane)	µg/L	45	HH	13,875*	27,749*	Tox
36.8							
36.9	Metolachlor	µg/L	23	Tox	271	543	Tox
36.10	Naphthalene	µg/L	65	HH	409	818	Tox
36.11	Nickel, total	µg/L	equation	Tox/HH	equation	equation	Tox

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

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

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

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

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

36.20 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
36.21 the standard.

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

36.23	TH in mg/L	50	100	200	300	400
36.24						
36.25	Nickel, total					
36.26	CS µg/L	88	158	283	297	297
36.27	MS µg/L	789	1,418	2,549	3,592	4,582
36.28	FAV µg/L	1,578	2,836	5,098	7,185	9,164

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37.1	Substance, Characteristic, or Pollutant (Class 2A)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
37.5							

37.6	Oil	µg/L	500	NA	5,000	10,000	NA
37.7	Oxygen, dissolved	mg/L	See below	NA	—	—	NA

37.9 7.0 mg/L as a daily minimum. This dissolved oxygen standard requires compliance
 37.10 with the standard 50 percent of the days at which the flow of the receiving water is
 37.11 equal to the $7Q_{10}$.

37.12	Parathion	µg/L	0.013	Tox	0.07	0.13	Tox
37.13	Pentachlorophenol	µg/L	0.93	HH	equation	equation	Tox

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

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

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

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

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

37.20 Example of pentachlorophenol standards for five pH values:

37.21	pH su	6.5	7.0	7.5	8.0	8.5
37.22						
37.23	Pentachlorophenol					
37.24	CS µg/L	0.93	0.93	0.93	0.93	0.93
37.25	MS µg/L	5.5	9.1	15	25	41
37.26	FAV µg/L	11	18	30	50	82

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38.1	Substance, Characteristic, or Pollutant (Class 2A)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
38.5							
38.6	pH, minimum	su	6.5	NA	—	—	NA
38.7	pH, maximum	su	8.5	NA	—	—	NA
38.8	Phenanthrene	µg/L	3.6	Tox	32	64	Tox
38.9	Phenol	µg/L	123	Tox	2,214	4,428	Tox
38.10	Polychlorinated biphenyls, total (c)	ng/L	0.014	HH	1,000*	2,000*	Tox
38.12	Radioactive materials	NA	See below	NA	See below	See below	NA
38.13							
38.14	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as permitted by the appropriate authority having control over their use.						
38.15							
38.16	Selenium, total	µg/L	5.0	Tox	20	40	Tox
38.17	Silver, total	µg/L	0.12	Tox	equation	equation	Tox
38.18	The MS and FAV vary with total hardness and are calculated using the following equations:						
38.19							
38.20	The MS in µg/L shall not exceed: $\exp(1.720[\ln(\text{total hardness mg/L})] - 7.2156)$						
38.21	The FAV in µg/L shall not exceed: $\exp(1.720[\ln(\text{total hardness mg/L})] - 6.520)$						
38.22	Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.						
38.23	For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard.						
38.24							
38.25	Example of silver standards for five total hardness values:						
38.26	TH in mg/L	50	100	200	300	400	
38.27							
38.28	Silver, total						
38.29	CS µg/L	0.12	0.12	0.12	0.12	0.12	

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39.1	MS $\mu\text{g}/\text{L}$	1.0	2.0	6.7	13	22
39.2	FAV $\mu\text{g}/\text{L}$	1.2	4.1	13	27	44

39.3 39.4 39.5 39.6 39.7	Substance, Characteristic, or Pollutant (Class 2A)	Units	CS	Basis			Basis for MS, FAV
				for CS	MS	FAV	

39.8	Temperature	$^{\circ}\text{C}$ or $^{\circ}\text{F}$	No material increase	NA	—	—	NA
39.9							

39.10							
39.11	1,1,2,2-Tetrachloroethane (c)	$\mu\text{g}/\text{L}$	1.1	HH	1,127*	2,253*	Tox
39.12	Tetrachloroethylene (c)	$\mu\text{g}/\text{L}$	3.8	HH	428*	857*	Tox
39.13	Thallium, total	$\mu\text{g}/\text{L}$	0.28	HH	64	128	Tox
39.14	Toluene	$\mu\text{g}/\text{L}$	253	Tox	1,352	2,703	Tox
39.15	Toxaphene (c)	ng/L	0.31	HH	730*	1,500*	Tox
39.16	1,1,1-Trichloroethane	$\mu\text{g}/\text{L}$	329	Tox	2,957	5,913	Tox
39.17	1,1,2-Trichloroethylene (c)	$\mu\text{g}/\text{L}$	25	HH	6,988*	13,976*	Tox
39.18	2,4,6-Trichlorophenol	$\mu\text{g}/\text{L}$	2.0	HH	102	203	Tox
39.19	Total suspended solids (TSS)	mg/L	10	NA	—	—	NA

39.20 TSS standards for Class 2A
39.21 may be exceeded for no more
39.22 than ten percent of the time.
39.23 This standard applies April 1
39.24 through September 30

39.25	Vinyl chloride (c)	$\mu\text{g}/\text{L}$	0.17	HH	—*	—*	NA
39.26	Xylene, total m,p,o	$\mu\text{g}/\text{L}$	166	Tox	1,407	2,814	Tox
39.27	Zinc, total	$\mu\text{g}/\text{L}$	equation	Tox	equation	equation	Tox

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

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

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

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

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

40.2 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
40.3 the standard.

40.4 Example of zinc standards for five total hardness values:

40.5 TH in mg/L	50	100	200	300	400
<hr/>					
40.7 Zinc, total					
40.8 CS μ g/L	59	106	191	269	343
40.9 MS μ g/L	65	117	211	297	379
40.10 FAV μ g/L	130	234	421	594	758

40.11 [For text of subps 2a and 2b, see M.R.]

40.12 **Subp. 2c. Beneficial use definitions for cold water stream and river habitats**

40.13 **(Class 2A).**

40.14 A. Subitems (1) to (4) apply to the beneficial uses in items B and C:

40.15 (1) The designation and attainment of beneficial uses are based on the
40.16 biological criteria in subpart 2d.

40.17 (2) The attributes of species composition, diversity, and functional
40.18 organization are measured using:

40.19 (a) the fish-based IBI as defined in Development of a Fish-based
40.20 Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution
40.21 Control Agency (2014); or

40.22 (b) the macroinvertebrate IBI as defined in Development of a
40.23 Macroinvertebrate-based Index of Biological Integrity for Minnesota's Rivers and
40.24 Streams, Minnesota Pollution Control Agency (2014).

40.25 (3) Water body types for streams and rivers are defined in the documents
40.26 referenced in subitem (2).

41.1 (4) The following documents are incorporated by reference and are not
41.2 subject to frequent change:

41.3 (a) Calibration of the Biological Condition Gradient for Streams of
41.4 Minnesota, Gerritsen et al. (2012). The document is available on the agency's Web site
41.5 at www.pca.state.mn.us;

41.6 (b) Development of a Fish-based Index of Biological Integrity for
41.7 Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014). The
41.8 document is available on the agency's Web site at www.pca.state.mn.us:

41.9 (c) Development of a Macroinvertebrate-based Index of Biological
41.10 Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency
41.11 (2014). The document is available on the agency's Web site at www.pca.state.mn.us; and

41.12 (d) Development of Biological Criteria for Tiered Aquatic Life Uses,
41.13 Minnesota Pollution Control Agency (2016). The document is available on the agency's
41.14 Web site at www.pca.state.mn.us.

41.15 B. "Exceptional cold water aquatic life and habitat" or "Class 2Ae" is a
41.16 beneficial use that means waters capable of supporting and maintaining an exceptional
41.17 and balanced, integrated, adaptive community of cold water aquatic organisms having
41.18 a species composition, diversity, and functional organization comparable to the 75th
41.19 percentile of biological condition gradient level 3 as established in Calibration of the
41.20 Biological Condition Gradient for Streams of Minnesota, Gerritsen et al. (2012).

41.21 C. "General cold water aquatic life and habitat" or "Class 2Ag" is a beneficial
41.22 use that means waters capable of supporting and maintaining a balanced, integrated,
41.23 adaptive community of cold water aquatic organisms having a species composition,
41.24 diversity, and functional organization comparable to the median of biological condition
41.25 gradient level 4 as established in Calibration of the Biological Condition Gradient for
41.26 Streams of Minnesota, Gerritsen et al. (2012).

42.1 Subp. 2d. Biological criteria for cold water stream and river habitats (Class 2A).

42.2	<u>Water Body Type</u>	<u>Tier</u>	<u>Class</u>	<u>Assemblage</u>	<u>Biocriterion</u>
42.3					
42.4	<u>Southern cold water streams</u>	<u>Exceptional</u>	<u>2Ae</u>	<u>Fish</u>	<u>82</u>
42.5		<u>General</u>	<u>2Ag</u>	<u>Fish</u>	<u>50</u>
42.6	<u>Northern cold water streams</u>	<u>Exceptional</u>	<u>2Ae</u>	<u>Fish</u>	<u>60</u>
42.7		<u>General</u>	<u>2Ag</u>	<u>Fish</u>	<u>35</u>
42.8	<u>Northern cold water streams</u>	<u>Exceptional</u>	<u>2Ae</u>	<u>Macroinvertebrates</u>	<u>52</u>
42.9		<u>General</u>	<u>2Ag</u>	<u>Macroinvertebrates</u>	<u>32</u>
42.10	<u>Southern cold water streams</u>	<u>Exceptional</u>	<u>2Ae</u>	<u>Macroinvertebrates</u>	<u>72</u>
42.11		<u>General</u>	<u>2Ag</u>	<u>Macroinvertebrates</u>	<u>43</u>

42.12 Subp. 3. **Class 2Bd waters.** The quality of Class 2Bd surface waters shall be such as
 42.13 to permit the propagation and maintenance of a healthy community of cool or warm water
 42.14 sport or commercial fish and associated aquatic life biota and their habitats according to
 42.15 the definitions in subpart 3c. These waters shall be suitable for aquatic recreation of all
 42.16 kinds, including bathing, for which the waters may be usable. This class of surface waters
 42.17 is also protected as a source of drinking water. The applicable standards are given below.
 42.18 Abbreviations, acronyms, and symbols are explained in subpart 1.

42.19	<u>Substance, Characteristic, or Pollutant (Class 2Bd)</u>	<u>Units</u>	<u>CS</u>	<u>Basis for CS</u>	<u>MS</u>	<u>FAV</u>	<u>Basis for MS, FAV</u>
42.20							
42.21							
42.22							
42.23							
42.24	Acenaphthene	µg/L	20	HH	56	112	Tox
42.25	Acetochlor	µg/L	3.6	Tox	86	173	Tox
42.26	Acrylonitrile (c)	µg/L	0.38	HH	1,140*	2,281*	Tox
42.27	Alachlor (c)	µg/L	4.2	HH	800*	1,600*	Tox
42.28	Aluminum, total	µg/L	125	Tox	1,072	2,145	Tox
42.29	Ammonia un-ionized as N	µg/L	40	Tox	—	—	NA

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

$$43.5 \quad f = 1/(10^{(pK_a - pH)} + 1) \times 100$$

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

$$43.7 \quad pK_a = 0.09 + (2730/T) \quad (\text{dissociation constant for ammonia})$$

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

43.9 Substance,	43.10 Characteristic,	43.11 or Pollutant	43.12 (Class 2Bd)	43.13 Units	43.14 CS	43.15 Basis for CS	43.16 MS	43.17 FAV	43.18 Basis for FAV
43.14 Anthracene				43.14 $\mu\text{g/L}$	0.035	Tox	0.32	0.63	Tox
43.15 Antimony, total				43.15 $\mu\text{g/L}$	5.5	HH	90	180	Tox
43.16 Arsenic, total				43.16 $\mu\text{g/L}$	2.0	HH	360	720	Tox
43.17 Atrazine (c)				43.17 $\mu\text{g/L}$	3.4	HH	323	645	Tox
43.18 Benzene (c)				43.18 $\mu\text{g/L}$	6.0	HH	4,487*	8,974*	Tox
43.19 Bromoform				43.19 $\mu\text{g/L}$	41	HH	2,900	5,800	Tox
43.20 Cadmium, total				43.20 $\mu\text{g/L}$	equation	Tox	equation	equation	Tox

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

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

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

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

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

43.27 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
 43.28 the standard.

43.29 Example of total cadmium standards for five hardness values:

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44.1	TH in mg/L	50	100	200	300	400	
44.2							
44.3	Cadmium, total						
44.4	CS $\mu\text{g/L}$	0.66	1.1	2.0	2.7	3.4	
44.5	MS $\mu\text{g/L}$	15	33	73	116	160	
44.6	FAV $\mu\text{g/L}$	31	67	146	231	319	
44.7	Substance,						Basis
44.8	Characteristic,						for
44.9	or Pollutant						MS,
44.10	(Class 2Bd)	Units	CS	Basis for CS	MS	FAV	FAV
44.11							
44.12	Carbon tetrachloride (c)	$\mu\text{g/L}$	1.9	HH	1,750*	3,500*	Tox
44.13	Chlordane (c)	ng/L	0.29	HH	1,200*	2,400*	Tox
44.14	Chloride	mg/L	230	Tox	860	1,720	Tox
44.15	Chlorine, total residual	$\mu\text{g/L}$	11	Tox	19	38	Tox
44.16	Chlorine standard applies to conditions of continuous exposure, where continuous exposure refers to chlorinated effluents that are discharged for more than a total of two hours in any 24-hour period.						
44.17							
44.18							
44.19	Chlorobenzene	$\mu\text{g/L}$	20	HH	423	846	Tox
44.20	(Monochlorobenzene)						
44.21	Chloroform (c)	$\mu\text{g/L}$	53	HH	1,392	2,784	Tox
44.22	Chlorpyrifos	$\mu\text{g/L}$	0.041	Tox	0.083	0.17	Tox
44.23	Chromium +3, total	$\mu\text{g/L}$	equation	Tox	equation	equation	Tox
44.24	The CS, MS, and FAV vary with total hardness and are calculated using the following equations:						
44.25							
44.26	The CS in $\mu\text{g/L}$ shall not exceed: $\text{exp.}(0.819[\ln(\text{total hardness mg/L})]+1.561)$						
44.27	The MS in $\mu\text{g/L}$ shall not exceed: $\text{exp.}(0.819[\ln(\text{total hardness mg/L})]+3.688)$						
44.28	The FAV in $\mu\text{g/L}$ shall not exceed: $\text{exp.}(0.819[\ln(\text{total hardness mg/L})]+4.380)$						
44.29	Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.						

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45.1 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
45.2 the standard.

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

45.4 TH in mg/L 50 100 200 300 400

45.5

45.6 Chromium +3, total

45.7 CS $\mu\text{g/L}$ 117 207 365 509 644

45.8 MS $\mu\text{g/L}$ 984 1,737 3,064 4,270 5,405

45.9 FAV $\mu\text{g/L}$ 1,966 3,469 6,120 8,530 10,797

45.10	45.11	45.12	45.13	45.14	45.15	45.16	45.17	45.18	45.19	45.20	45.21	45.22	45.23	45.24	45.25	45.26	45.27	45.28	45.29	45.30	45.31	45.32	45.33	45.34	45.35	45.36	45.37	45.38	45.39	45.40	45.41	45.42	45.43	45.44	45.45	45.46	45.47	45.48	45.49	45.50	45.51	45.52	45.53	45.54	45.55	45.56	45.57	45.58	45.59	45.60	45.61	45.62	45.63	45.64	45.65	45.66	45.67	45.68	45.69	45.70	45.71	45.72	45.73	45.74	45.75	45.76	45.77	45.78	45.79	45.80	45.81	45.82	45.83	45.84	45.85	45.86	45.87	45.88	45.89	45.90	45.91	45.92	45.93	45.94	45.95	45.96	45.97	45.98	45.99	45.100	45.101	45.102	45.103	45.104	45.105	45.106	45.107	45.108	45.109	45.110	45.111	45.112	45.113	45.114	45.115	45.116	45.117	45.118	45.119	45.120	45.121	45.122	45.123	45.124	45.125	45.126	45.127	45.128	45.129	45.130	45.131	45.132	45.133	45.134	45.135	45.136	45.137	45.138	45.139	45.140	45.141	45.142	45.143	45.144	45.145	45.146	45.147	45.148	45.149	45.150	45.151	45.152	45.153	45.154	45.155	45.156	45.157	45.158	45.159	45.160	45.161	45.162	45.163	45.164	45.165	45.166	45.167	45.168	45.169	45.170	45.171	45.172	45.173	45.174	45.175	45.176	45.177	45.178	45.179	45.180	45.181	45.182	45.183	45.184	45.185	45.186	45.187	45.188	45.189	45.190	45.191	45.192	45.193	45.194	45.195	45.196	45.197	45.198	45.199	45.200	45.201	45.202	45.203	45.204	45.205	45.206	45.207	45.208	45.209	45.210	45.211	45.212	45.213	45.214	45.215	45.216	45.217	45.218	45.219	45.220	45.221	45.222	45.223	45.224	45.225	45.226	45.227	45.228	45.229	45.230	45.231	45.232	45.233	45.234	45.235	45.236	45.237	45.238	45.239	45.240	45.241	45.242	45.243	45.244	45.245	45.246	45.247	45.248	45.249	45.250	45.251	45.252	45.253	45.254	45.255	45.256	45.257	45.258	45.259	45.260	45.261	45.262	45.263	45.264	45.265	45.266	45.267	45.268	45.269	45.270	45.271	45.272	45.273	45.274	45.275	45.276	45.277	45.278	45.279	45.280	45.281	45.282	45.283	45.284	45.285	45.286	45.287	45.288	45.289	45.290	45.291	45.292	45.293	45.294	45.295	45.296	45.297	45.298	45.299	45.300	45.301	45.302	45.303	45.304	45.305	45.306	45.307	45.308	45.309	45.310	45.311	45.312	45.313	45.314	45.315	45.316	45.317	45.318	45.319	45.320	45.321	45.322	45.323	45.324	45.325	45.326	45.327	45.328	45.329	45.330	45.331	45.332	45.333	45.334	45.335	45.336	45.337	45.338	45.339	45.340	45.341	45.342	45.343	45.344	45.345	45.346	45.347	45.348	45.349	45.350	45.351	45.352	45.353	45.354	45.355	45.356	45.357	45.358	45.359	45.360	45.361	45.362	45.363	45.364	45.365	45.366	45.367	45.368	45.369	45.370	45.371	45.372	45.373	45.374	45.375	45.376	45.377	45.378	45.379	45.380	45.381	45.382	45.383	45.384	45.385	45.386	45.387	45.388	45.389	45.390	45.391	45.392	45.393	45.394	45.395	45.396	45.397	45.398	45.399	45.400	45.401	45.402	45.403	45.404	45.405	45.406	45.407	45.408	45.409	45.410	45.411	45.412	45.413	45.414	45.415	45.416	45.417	45.418	45.419	45.420	45.421	45.422	45.423	45.424	45.425	45.426	45.427	45.428	45.429	45.430	45.431	45.432	45.433	45.434	45.435	45.436	45.437	45.438	45.439	45.440	45.441	45.442	45.443	45.444	45.445	45.446	45.447	45.448	45.449	45.450	45.451	45.452	45.453	45.454	45.455	45.456	45.457	45.458	45.459	45.460	45.461	45.462	45.463	45.464	45.465	45.466	45.467	45.468	45.469	45.470	45.471	45.472	45.473	45.474	45.475	45.476	45.477	45.478	45.479	45.480	45.481	45.482	45.483	45.484	45.485	45.486	45.487	45.488	45.489	45.490	45.491	45.492	45.493	45.494	45.495	45.496	45.497	45.498	45.499	45.500	45.501	45.502	45.503	45.504	45.505	45.506	45.507	45.508	45.509	45.510	45.511	45.512	45.513	45.514	45.515	45.516	45.517	45.518	45.519	45.520	45.521	45.522	45.523	45.524	45.525	45.526	45.527	45.528	45.529	45.530	45.531	45.532	45.533	45.534	45.535	45.536	45.537	45.538	45.539	45.540	45.541	45.542	45.543	45.544	45.545	45.546	45.547	45.548	45.549	45.550	45.551	45.552	45.553	45.554	45.555	45.556	45.557	45.558	45.559	45.560	45.561	45.562	45.563	45.564	45.565	45.566	45.567	45.568	45.569	45.570	45.571	45.572	45.573	45.574	45.575	45.576	45.577	45.578	45.579	45.580	45.581	45.582	45.583	45.584	45.585	45.586	45.587	45.588	45.589	45.590	45.591	45.592	45.593	45.594	45.595	45.596	45.597	45.598	45.599	45.600	45.601	45.602	45.603	45.604	45.605	45.606	45.607	45.608	45.609	45.610	45.611	45.612	45.613	45.614	45.615	45.616	45.617	45.618	45.619	45.620	45.621	45.622	45.623	45.624	45.625	45.626	45.627	45.628	45.629	45.630	45.631	45.632	45.633	45.634	45.635	45.636	45.637	45.638	45.639	45.640	45.641	45.642	45.643	45.644	45.645	45.646	45.647	45.648	45.649	45.650	45.651	45.652	45.653	45.654	45.655	45.656	45.657	45.658	45.659	45.660	45.661	45.662	45.663	45.664	45.665	45.666	45.667	45.668	45.669	45.670	45.671	45.672	45.673	45.674	45.675	45.676	45.677	45.678	45.679	45.680	45.681	45.682	45.683	45.684	45.685	45.686	45.687	45.688	45.689	45.690	45.691	45.692	45.693	45.694	45.695	45.696	45.697	45.698	45.699	45.700	45.701	45.702	45.703	45.704	45.705	45.706	45.707	45.708	45.709	45.710	45.711	45.712	45.713	45.714	45.715	45.716	45.717	45.718	45.719	45.720	45.721	45.722	45.723	45.724	45.725	45.726	45.727	45.728	45.729	45.730	45.731	45.732	45.733	45.734	45.735	45.736	45.737	45.738	45.739	45.740	45.741	45.742	45.743	45.744	45.745	45.746	45.747	45.748	45.749	45.750	45.751	45.752	45.753	45.754	45.755	45.756	45.757	45.758	45.759	45.760	45.761	45.762	45.763	45.764	45.765	45.766	45.767	45.768	45.769	45.770	45.771	45.772	45.773	45.774	45.775	45.776	45.777	45.778	45.779	45.780	45.781	45.782	45.783	45.784	45.785	45.786	45.787	45.788	45.789	45.790	45.791	45.792	45.793	45.794	45.795	45.796	45.797	45.798	45.799	45.800	45.801	45.802	45.803	45.804	45.805	45.806	45.807	45.808	45.809	45.810	45.811	45.812	45.813	45.814	45.815	45.816	45.817	45.818	45.819	45.820	45.821	45.822	45.823	45.824	45.825	45.826	45.827	45.828	45.829	45.830	45.831	45.832	45.833	45.834	45.835	45.836	45.837	45.838	45.839	45.840	45.841	45.842	45.843	45.844	45.845	45.846	45.847	45.848	45.849	45.850	45.851	45.852	45.853	45.854	45.855	45.856	45.857	45.858	45.859	45.860	45.861	45.862	45.863	45.864	45.865	45.866	45.867	45.868	45.869	45.870	45.871	45.872	45.873	45.874	45.875	45.876	45.877	45.878	45.879	45.880	45.881	45.882	45.883	45.884	45.885	45.886	45.887	45.888	45.889	45.890	45.891	45.892	45.893	45.894	45.895	45.896	45.897	45.898	45.899	45.900	45.901	45.902	45.903	45.904	45.905	45.906	45.907	45.908	45.909	45.910	45.911	45.912	45.913	45.914	45.915	45.916	45.917	45.918	45.919	45.920	45.921	45.922	45.923	45.924	45.925	45.926	45.927	45.928	45.929	45.930	45.931	45.932	45.933	45.934	45.935	45.936	45.937	45.938	45.939	45.940	45.941	45.942	45.943	45.944	45.945	45.946	45.947	45.948	45.949	45.950	45.951	45.952	45.953	45.954	45.955	45.956	45.957	45.958	45.959	45.960	45.961	45.962	45.963	45.964	45.965	45.966	45.967	45.968	45.969	45.970	45.971	45.972	45.973	45.974	45.975	45.976	45.977	45.978	45.979	45.980	45.981	45.982	45.983	45.984	45.985	45.986	45.987	45.988	45.989	45.990	45.991	45.9

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46.1	MS $\mu\text{g/L}$	9.2	18	34	50	65
46.2	FAV $\mu\text{g/L}$	18	35	68	100	131

46.3 46.4 46.5 46.6 46.7	Substance, Characteristic, or Pollutant (Class 2Bd)	Units	Basis for CS		MS	FAV	Basis for MS, FAV
			CS	MS			

46.8	Cyanide, free	$\mu\text{g/L}$	5.2	Tox	22	45	Tox
46.9	DDT (c)	ng/L	1.7	HH	550*	1,100*	Tox
46.10	1,2-Dichloroethane (c)	$\mu\text{g/L}$	3.8	HH	45,050*	90,100*	Tox
46.11	Dieldrin (c)	ng/L	0.026	HH	1,300*	2,500*	Tox
46.12	Di-2-ethylhexyl phthalate (c)	$\mu\text{g/L}$	1.9	HH	—*	—*	NA
46.13	Di-n-octyl phthalate	$\mu\text{g/L}$	30	Tox	825	1,650	Tox
46.14	Endosulfan	$\mu\text{g/L}$	0.029	HH	0.28	0.56	Tox
46.15	Endrin	$\mu\text{g/L}$	0.016	HH	0.090	0.18	Tox
46.16	<i>Escherichia (E.) coli</i>	See below	See below	HH	See below	See below	NA
46.17							

46.18	Not to exceed 126 organisms per 100 milliliters as a geometric mean of not less than five samples representative of conditions within any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard applies only between April 1 and October 31.
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46.23	Ethylbenzene	$\mu\text{g/L}$	68	Tox	1,859	3,717	Tox
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46.24 46.25 46.26 46.27 46.28	Substance, Characteristic, or Pollutant (Class 2Bd)	Units	Basis for CS		MS	FAV	Basis for MS, FAV
			CS	MS			

46.29	Eutrophication standards for Class 2Bd lakes, shallow lakes, and reservoirs.
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46.30	Lakes, Shallow Lakes, and Reservoirs in Northern Lakes and Forest Ecoregion
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47.1	Phosphorus, total	µg/L	30	NA	—	—	NA
47.2	Chlorophyll-a	µg/L	9	NA	—	—	NA
47.3	Secchi disk transparency	meters	Not less than 2.0	NA	—	—	NA
47.4							
47.5	Lakes and Reservoirs in North Central Hardwood Forest Ecoregion						
47.6	Phosphorus, total	µg/L	40	NA	—	—	NA
47.7	Chlorophyll-a	µg/L	14	NA	—	—	NA
47.8	Secchi disk transparency	meters	Not less than 1.4	NA	—	—	NA
47.9							
47.10	Lakes and Reservoirs in Western Corn Belt Plains and Northern Glaciated Plains Ecoregions						
47.12	Phosphorus, total	µg/L	65	NA	—	—	NA
47.13	Chlorophyll-a	µg/L	22	NA	—	—	NA
47.14	Secchi disk transparency	meters	Not less than 0.9	NA	—	—	NA
47.15							
47.16	Shallow Lakes in North Central Hardwood Forest Ecoregion						
47.17	Phosphorus, total	µg/L	60	NA	—	—	NA
47.18	Chlorophyll-a	µg/L	20	NA	—	—	NA
47.19	Secchi disk transparency	meters	Not less than 1.0	NA	—	—	NA
47.20							
47.21	Shallow Lakes in Western Corn Belt Plains and Northern Glaciated Plains Ecoregions						
47.22	Phosphorus, total	µg/L	90	NA	—	—	NA
47.23	Chlorophyll-a	µg/L	30	NA	—	—	NA
47.24	Secchi disk transparency	meters	Not less than 0.7	NA	—	—	NA
47.25							
47.26	Additional narrative eutrophication standards for Class 2Bd lakes, shallow lakes, and reservoirs are found under subpart 3a.						
47.28	Eutrophication standards for Class 2Bd rivers and streams.						

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48.1	North River Nutrient Region					
48.2	Phosphorus, total	µg/L			less than or equal to 50	
48.3	Chlorophyll-a (seston)	µg/L			less than or equal to 7	
48.4	Diel dissolved oxygen flux	mg/L			less than or equal to 3.0	
48.5	Biochemical oxygen demand (BOD ₅)	mg/L			less than or equal to 1.5	
48.6	Central River Nutrient Region					
48.7	Phosphorus, total	µg/L			less than or equal to 100	
48.8	Chlorophyll-a (seston)	µg/L			less than or equal to 18	
48.9	Diel dissolved oxygen flux	mg/L			less than or equal to 3.5	
48.10	Biochemical oxygen demand (BOD ₅)	mg/L			less than or equal to 2.0	
48.11	South River Nutrient Region					
48.12	Phosphorus, total	µg/L			less than or equal to 150	
48.13	Chlorophyll-a (seston)	µg/L			less than or equal to 35	
48.14	Diel dissolved oxygen flux	mg/L			less than or equal to 4.5	
48.15	Biochemical oxygen demand (BOD ₅)	mg/L			less than or equal to 3.0	
48.16	Additional narrative eutrophication standards for Class 2Bd rivers and streams are found					
48.17	under subpart 3b.					

48.18	Substance, Characteristic, or Pollutant (Class 2Bd)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
48.22							
48.23	Fluoranthene	µg/L	1.9	Tox	3.5	6.9	Tox
48.24	Heptachlor (c)	ng/L	0.39	HH	260*	520*	Tox
48.25	Heptachlor epoxide (c)	ng/L	0.48	HH	270*	530*	Tox
48.26	Hexachlorobenzene (c)	ng/L	0.24	HH	—*	—*	Tox
48.27	Lead, total	µg/L	equation	Tox	equation	equation	Tox

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

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

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

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

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

49.7 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
49.8 the standard.

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

49.10 TH in mg/L 50 100 200 300 400

49.11

49.12 Lead, total

49.13 CS $\mu\text{g/L}$ 1.3 3.2 7.7 13 19

49.14 MS $\mu\text{g/L}$ 34 82 197 331 477

49.15 FAV $\mu\text{g/L}$ 68 164 396 663 956

49.16 Substance,	49.17 Characteristic,	49.18 or Pollutant	49.19 (Class 2Bd)	49.20 Units	49.21 CS	49.22 Basis for CS	49.23 MS	49.24 FAV	49.25 Basis for MS, FAV
49.21 Lindane (c)				$\mu\text{g/L}$	0.032	HH	4.4*	8.8*	Tox
49.22 (Hexachlorocyclohexane,									
49.23 gamma-)									
49.24 Mercury, total in water				ng/L	6.9	HH	2,400*	4,900*	Tox
49.25 Mercury, total				mg/kg	0.2	HH	NA	NA	NA
49.26 in edible fish tissue				ppm					
49.27 Methylene chloride (c)				$\mu\text{g/L}$	46	HH	13,875*	27,749*	Tox
49.28 (Dichloromethane)									
49.29 Metolachlor				$\mu\text{g/L}$	23	Tox	271	543	Tox
49.30 Naphthalene				$\mu\text{g/L}$	81	Tox	409	818	Tox
49.31 Nickel, total				$\mu\text{g/L}$	equation	Tox/HH	equation	equation	Tox

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

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

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

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

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

50.9 For hardness values greater than 400 mg/L , 400 mg/L shall be used to calculate
 50.10 the standard.

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

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

50.18	Substance, Characteristic, or Pollutant (Class 2Bd)	Units	CS	Basis for CS	MS	Basis for MS, FAV
<hr/>						
50.23	Oil	$\mu\text{g}/\text{L}$	500	NA	5,000	10,000
50.24	Oxygen, dissolved	mg/L	See below	NA	—	NA

50.26 5.0 mg/L as a daily minimum. This dissolved oxygen standard may be modified on a
 50.27 site-specific basis according to part 7050.0220, subpart 7, except that no site-specific
 50.28 standard shall be less than 5 mg/L as a daily average and 4 mg/L as a daily minimum.
 50.29 Compliance with this standard is required 50 percent of the days at which the flow of
 50.30 the receiving water is equal to the $7Q_{10}$.

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51.1	Parathion	µg/L	0.013	Tox	0.07	0.13	Tox
51.2	Pentachlorophenol	µg/L	1.9	HH	equation	equation	Tox

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

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

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

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

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

Example of pentachlorophenol standards for five pH values:

51.10 pH su 6.5 7.0 7.5 8.0 8.5

51.11

Pentachlorophenol

51.13	CS $\mu\text{g/L}$	1.9	1.9	1.9	1.9	1.9
51.14	MS $\mu\text{g/L}$	5.5	9.1	15	25	41
51.15	FAV $\mu\text{g/L}$	11	18	30	50	82

51.29 Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled
51.30 environment as permitted by the appropriate authority having control over their use.

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52.1	Selenium, total	µg/L	5.0	Tox	20	40	Tox
52.2	Silver, total	µg/L	1.0	Tox	equation	equation	Tox

52.3 The MS and FAV vary with total hardness and are calculated using the following
 52.4 equations:

52.5 The MS in µg/L shall not exceed: $\exp(1.720[\ln(\text{total hardness mg/L})] - 7.2156)$

52.6 The FAV in µg/L shall not exceed: $\exp(1.720[\ln(\text{total hardness mg/L})] - 6.520)$

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

52.8 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
 52.9 the standard.

52.10 Example of total silver standards for five total hardness values:

52.11	TH in mg/L	50	100	200	300	400
<hr/>						
52.13	Silver, total					
52.14	CS µg/L	1.0	1.0	1.0	1.0	1.0
52.15	MS µg/L	1.0	2.0	6.7	13	22
52.16	FAV µg/L	1.2	4.1	13	27	44

52.17	Substance, Characteristic, or Pollutant (Class 2Bd)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
<hr/>							

52.22	Temperature	°F	See below	NA	—	—	NA
-------	-------------	----	--------------	----	---	---	----

52.24 5°F above natural in streams and 3°F above natural in lakes, based on monthly
 52.25 average of the maximum daily temperatures, except in no case shall it exceed the
 52.26 daily average temperature of 86°F.

52.27	1,1,2,2-Tetrachloroethane (c)	µg/L	1.5	HH	1,127*	2,253*	Tox
52.29	Tetrachloroethylene (c)	µg/L	3.8	HH	428*	857*	Tox
52.30	Thallium, total	µg/L	0.28	HH	64	128	Tox

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53.1	Toluene	µg/L	253	Tox	1,352	2,703	Tox
53.2	Toxaphene (c)	ng/L	1.3	HH	730*	1,500*	Tox
53.3	1,1,1-Trichloroethane	µg/L	329	Tox	2,957	5,913	Tox
53.4	1,1,2-Trichloroethylene (c)	µg/L	25	HH	6,988*	13,976*	Tox
53.5	2,4,6-Trichlorophenol	µg/L	2.0	HH	102	203	Tox
53.6	Total suspended solids						
53.7	(TSS)						
53.8	North River Nutrient						
53.9	Region	mg/L	15	NA	-	-	NA
53.10	Central River Nutrient						
53.11	Region	mg/L	30	NA	-	-	NA
53.12	South River Nutrient						
53.13	Region	mg/L	65	NA	-	-	NA
53.14	Red River mainstem -						
53.15	headwaters to border	mg/L	100	NA	-	-	NA
53.16	TSS standards for the						
53.17	Class 2Bd North, Central,						
53.18	and South River Nutrient						
53.19	Regions and the Red						
53.20	River mainstem may be						
53.21	exceeded for no more than						
53.22	ten percent of the time.						
53.23	This standard applies April						
53.24	1 through September 30						
53.25	Total suspended solids						
53.26	(TSS), summer average						
53.27	Lower Mississippi River						
53.28	mainstem - Pools 2 through						
53.29	4	mg/L	32	NA	-	-	NA
53.30	Lower Mississippi River						
53.31	mainstem below Lake						
53.32	Pepin	mg/L	30	NA	-	-	NA

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54.1 TSS standards for the Class
54.2 2Bd Lower Mississippi
54.3 River may be exceeded for
54.4 no more than 50 percent
54.5 of the time. This standard
54.6 applies June 1 through
54.7 September 30

54.8	Substance, 54.9 Characteristic, 54.10 or Pollutant 54.11 (Class 2Bd)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
54.12							
54.13	Vinyl chloride (c)	µg/L	0.18	HH	-*	-*	NA
54.14	Xylene, total m,p,o	µg/L	166	Tox	1,407	2,814	Tox
54.15	Zinc, total	µg/L	equation	Tox	equation	equation	Tox

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

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

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

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

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

54.22 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
54.23 the standard.

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

54.25	TH in mg/L	50	100	200	300	400
54.26						
54.27	Zinc, total					
54.28	CS µg/L	59	106	191	269	343
54.29	MS µg/L	65	117	211	297	379
54.30	FAV µg/L	130	234	421	594	758

55.1 [For text of subps 3a and 3b, see M.R.]

55.2 Subp. 3c. Beneficial use definitions for warm or cool water stream and river
55.3 habitats (Class 2Bd).

55.4 A. Subitems (1) to (4) apply to the beneficial uses in items B to D:

55.5 (1) The designation and attainment of beneficial uses are based on the
55.6 biological criteria in subpart 3d.

55.7 (2) The attributes of species composition, diversity, and functional
55.8 organization are measured using:

55.9 (a) the fish-based IBI as defined in Development of a Fish-based
55.10 Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution
55.11 Control Agency (2014); or

55.12 (b) the macroinvertebrate IBI as defined in Development of a
55.13 Macroinvertebrate-based Index of Biological Integrity for Minnesota's Rivers and
55.14 Streams, Minnesota Pollution Control Agency (2014).

55.15 (3) Water body types for streams and rivers are defined in the documents
55.16 referenced in subitem (2).

55.17 (4) The following documents are incorporated by reference and are not
55.18 subject to frequent change:

55.19 (a) Calibration of the Biological Condition Gradient for Streams of
55.20 Minnesota, Gerritsen et al. (2012). The document is available on the agency's Web site
55.21 at www.pca.state.mn.us;

55.22 (b) Development of a Fish-based Index of Biological Integrity for
55.23 Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014). The
55.24 document is available on the agency's Web site at www.pca.state.mn.us;

(c) Development of a Macroinvertebrate-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014). The document is available on the agency's Web site at www.pca.state.mn.us; and

(d) Development of Biological Criteria for Tiered Aquatic Life Uses, Minnesota Pollution Control Agency (2016). The document is available on the agency's Web site at www.pca.state.mn.us.

B. "Exceptional cool and warm water aquatic life and habitat, also protected as a source for drinking water" or "Class 2Bde" is a beneficial use that means waters capable of supporting and maintaining an exceptional and balanced, integrated, adaptive community of warm or cool water aquatic organisms having a species composition, diversity, and functional organization comparable to the 75th percentile of biological condition gradient level 3 as established in Calibration of the Biological Condition Gradient for Streams of Minnesota, Gerritsen et al. (2012).

C. "General cool and warm water aquatic life and habitat, also protected as a source for drinking water" or "Class 2Bdg" is a beneficial use that means waters capable of supporting and maintaining a balanced, integrated, adaptive community of warm or cool water aquatic organisms having a species composition, diversity, and functional organization comparable to the median of biological condition gradient level 4 as established in Calibration of the Biological Condition Gradient for Streams of Minnesota, Gerritsen et al. (2012).

D. "Modified cool and warm water aquatic life and habitat, also protected as a source for drinking water" or "Class 2Bdm" is a beneficial use that means waters capable of supporting and maintaining a balanced, integrated, adaptive community of warm or cool water aquatic organisms having a species composition, diversity, and functional organization comparable to the median of biological condition gradient level 5 as

57.1 established in Calibration of the Biological Condition Gradient for Streams of Minnesota,
 57.2 Gerritsen et al. (2012).

57.3 (1) To meet the definition in this item, waters must have been the subject of
 57.4 a use attainability analysis and must have been found to be incapable of supporting and
 57.5 maintaining the Class 2Bdg beneficial use because of human-induced modifications of the
 57.6 physical habitat that preclude the potential for recovery of the fauna. These modifications
 57.7 must be the result of direct alteration to the channel, such as drainageway maintenance,
 57.8 bank stabilization, and impoundments.

57.9 (2) Examples of Class 2Bdm waters are the stream channel modification
 57.10 activities regulated under:

57.11 (a) sections 401 and 404 of the Clean Water Act; or
 57.12 (b) Minnesota Statutes, chapter 103E.

57.13 Subp. 3d. Biological criteria for warm or cool water stream and river habitats
 57.14 (Class 2Bd).

<u>Water Body Type</u>	<u>Tier</u>	<u>Class</u>	<u>Assemblage</u>	<u>Biocriterion</u>
<u>Southern rivers</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Fish</u>	<u>71</u>
	<u>General</u>	<u>2Bdg</u>	<u>Fish</u>	<u>49</u>
<u>Southern streams</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Fish</u>	<u>66</u>
	<u>General</u>	<u>2Bdg</u>	<u>Fish</u>	<u>50</u>
	<u>Modified</u>	<u>2Bdm</u>	<u>Fish</u>	<u>35</u>
<u>Southern headwaters</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Fish</u>	<u>74</u>
	<u>General</u>	<u>2Bdg</u>	<u>Fish</u>	<u>55</u>
	<u>Modified</u>	<u>2Bdm</u>	<u>Fish</u>	<u>33</u>
<u>Northern rivers</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Fish</u>	<u>67</u>
	<u>General</u>	<u>2Bdg</u>	<u>Fish</u>	<u>38</u>
<u>Northern streams</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Fish</u>	<u>61</u>

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58.1		<u>General</u>	<u>2Bdg</u>	<u>Fish</u>	<u>47</u>
58.2		<u>Modified</u>	<u>2Bdm</u>	<u>Fish</u>	<u>35</u>
58.3	<u>Northern headwaters</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Fish</u>	<u>68</u>
58.4		<u>General</u>	<u>2Bdg</u>	<u>Fish</u>	<u>42</u>
58.5		<u>Modified</u>	<u>2Bdm</u>	<u>Fish</u>	<u>23</u>
58.6	<u>Low gradient</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Fish</u>	<u>70</u>
58.7		<u>General</u>	<u>2Bdg</u>	<u>Fish</u>	<u>42</u>
58.8		<u>Modified</u>	<u>2Bdm</u>	<u>Fish</u>	<u>15</u>
58.9	<u>Northern forest rivers</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Macroinvertebrates</u>	<u>77</u>
58.10		<u>General</u>	<u>2Bdg</u>	<u>Macroinvertebrates</u>	<u>49</u>
58.11	<u>Prairie and southern forest</u>				
58.12	<u>rivers</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Macroinvertebrates</u>	<u>63</u>
58.13		<u>General</u>	<u>2Bdg</u>	<u>Macroinvertebrates</u>	<u>31</u>
58.14	<u>High-gradient northern</u>				
58.15	<u>forest streams</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Macroinvertebrates</u>	<u>82</u>
58.16		<u>General</u>	<u>2Bdg</u>	<u>Macroinvertebrates</u>	<u>53</u>
58.17	<u>Low-gradient northern</u>				
58.18	<u>forest streams</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Macroinvertebrates</u>	<u>76</u>
58.19		<u>General</u>	<u>2Bdg</u>	<u>Macroinvertebrates</u>	<u>51</u>
58.20		<u>Modified</u>	<u>2Bdm</u>	<u>Macroinvertebrates</u>	<u>37</u>
58.21	<u>High-gradient southern</u>				
58.22	<u>streams</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Macroinvertebrates</u>	<u>62</u>
58.23		<u>General</u>	<u>2Bdg</u>	<u>Macroinvertebrates</u>	<u>37</u>
58.24		<u>Modified</u>	<u>2Bdm</u>	<u>Macroinvertebrates</u>	<u>24</u>
58.25	<u>Low-gradient southern</u>				
58.26	<u>forest streams</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Macroinvertebrates</u>	<u>66</u>
58.27		<u>General</u>	<u>2Bdg</u>	<u>Macroinvertebrates</u>	<u>43</u>
58.28		<u>Modified</u>	<u>2Bdm</u>	<u>Macroinvertebrates</u>	<u>30</u>
58.29	<u>Low-gradient prairie</u>				
58.30	<u>streams</u>	<u>Exceptional</u>	<u>2Bde</u>	<u>Macroinvertebrates</u>	<u>69</u>
58.31		<u>General</u>	<u>2Bdg</u>	<u>Macroinvertebrates</u>	<u>41</u>
58.32		<u>Modified</u>	<u>2Bdm</u>	<u>Macroinvertebrates</u>	<u>22</u>

59.1 **Subp. 4. Class 2B waters.** The quality of Class 2B surface waters shall be such as to
 59.2 permit the propagation and maintenance of a healthy community of cool or warm water
 59.3 ~~sport or commercial fish and associated aquatic life biota, and their habitats according to~~
 59.4 the definitions in subpart 4c. These waters shall be suitable for aquatic recreation of all
 59.5 kinds, including bathing, for which the waters may be usable. This class of surface water
 59.6 is not protected as a source of drinking water. The applicable standards are given below.
 59.7 Abbreviations, acronyms, and symbols are explained in subpart 1.

59.8 Substance,	59.9 Characteristic,	59.10 or Pollutant	59.11 (Class 2B)	59.12 Units	59.13 CS	59.14 Basis for CS	59.15 MS	59.16 FAV	59.17 Basis for MS,	59.18 FAV
59.13 Acenaphthene				µg/l	20	HH	56	112	Tox	
59.14 Acetochlor				µg/L	3.6	Tox	86	173	Tox	
59.15 Acrylonitrile (c)				µg/l	0.89	HH	1,140*	2,281*	Tox	
59.16 Alachlor (c)				µg/L	59	Tox	800	1,600	Tox	
59.17 Aluminum, total				µg/L	125	Tox	1,072	2,145	Tox	
59.18 Ammonia un-ionized as N				µg/L	40	Tox	—	—	NA	

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

$$59.23 \quad f = 1/(10^{(pK_a - pH)} + 1) \times 100$$

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

$$59.25 \quad pK_a = 0.09 + (2730/T) \quad (\text{dissociation constant for ammonia})$$

$$59.26 \quad T = \text{temperature in degrees Kelvin} \quad (273.16^\circ \text{ Kelvin} = 0^\circ \text{ Celsius})$$

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60.1	60.2	60.3	60.4	60.5	Substance, Characteristic, or Pollutant (Class 2B)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
60.6	Anthracene				μg/L	0.035	Tox	0.32	0.63	Tox	
60.7	Antimony, total				μg/L	31	Tox	90	180	Tox	
60.8	Arsenic, total				μg/L	53	HH	360	720	Tox	
60.9	Atrazine (c)				μg/L	10	Tox	323	645	Tox	
60.10	Benzene (c)				μg/L	98	HH	4,487	8,974	Tox	
60.11	Bromoform				μg/L	466	HH	2,900	5,800	Tox	
60.12	Cadmium, total				μg/L	equation	Tox	equation	equation	Tox	

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

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

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

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

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

60.19 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
60.20 the standard.

60.21 Example of total cadmium standards for five hardness values:

60.22	TH in mg/L	50	100	200	300	400
60.23	Cadmium, total					
60.24	CS μg/L	0.66	1.1	2.0	2.7	3.4
60.25	MS μg/L	15	33	73	116	160
60.26	FAV μg/L	31	67	146	231	319

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61.1	Substance,	Basis for CS	Basis for MS, FAV				
61.2	Characteristic,						
61.3	or Pollutant						
61.4	(Class 2B)						
61.5		Units	CS	MS	FAV	FAV	
61.6	Carbon tetrachloride (c)	µg/L	5.9	HH	1,750*	3,500*	Tox
61.7	Chlordane (c)	ng/L	0.29	HH	1,200*	2,400*	Tox
61.8	Chloride	mg/L	230	Tox	860	1,720	Tox
61.9	Chlorine, total residual	µg/L	11	Tox	19	38	Tox
61.10	Chlorine standard applies to conditions of continuous exposure, where continuous exposure refers to chlorinated effluents that are discharged for more than a total of two hours in any 24-hour period.						
61.11							
61.12							
61.13	Chlorobenzene	µg/L	20	HH	423	846	Tox
61.14	(Monochlorobenzene)						
61.15	Chloroform (c)	µg/L	155	Tox	1,392	2,784	Tox
61.16	Chlorpyrifos	µg/L	0.041	Tox	0.083	0.17	Tox
61.17	Chromium +3, total	µg/L	equation	Tox	equation	equation	Tox
61.18	The CS, MS, and FAV vary with total hardness and are calculated using the following equations						
61.19							
61.20	The CS in µg/L shall not exceed: $\exp(0.819[\ln(\text{total hardness mg/L})] + 1.561)$						
61.21	The MS in µg/L shall not exceed: $\exp(0.819[\ln(\text{total hardness mg/L})] + 3.688)$						
61.22	The FAV in µg/L shall not exceed: $\exp(0.819[\ln(\text{total hardness mg/L})] + 4.380)$						
61.23	Where: \exp . is the natural antilogarithm (base e) of the expression in parenthesis.						
61.24	For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard.						
61.25							
61.26	Example of total chromium +3 standards for five total hardness values:						
61.27	TH in mg/L	50	100	200	300	400	
61.28							
61.29	Chromium +3, total						

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62.1	CS $\mu\text{g/L}$	117	207	365	509	644
62.2	MS $\mu\text{g/L}$	984	1,737	3,064	4,270	5,405
62.3	FAV $\mu\text{g/L}$	1,966	3,469	6,120	8,530	10,797

62.4	Substance, Characteristic, or Pollutant (Class 2B)	62.5	62.6	62.7	Basis for CS	62.8	Basis for MS, FAV
		Units		CS	MS	FAV	

62.9	Chromium +6, total	$\mu\text{g/L}$	11	Tox	16	32	Tox
62.10	Cobalt, total	$\mu\text{g/L}$	5.0	Tox	436	872	Tox
62.11	Copper, total	$\mu\text{g/L}$	equation	Tox	equation	equation	Tox

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

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

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

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

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

62.18 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
62.19 the standard.

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

62.21	TH in mg/L	50	100	200	300	400
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62.22	Copper, total					
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62.23	Copper, total					
62.24	CS $\mu\text{g/L}$	6.4	9.8	15	19	23
62.25	MS $\mu\text{g/L}$	9.2	18	34	50	65
62.26	FAV $\mu\text{g/L}$	18	35	68	100	131

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63.1	Substance, Characteristic, or Pollutant (Class 2B)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
63.5							
63.6	Cyanide, free	µg/L	5.2	Tox	22	45	Tox
63.7	DDT (c)	ng/L	1.7	HH	550*	1,100*	Tox
63.8	1,2-Dichloroethane (c)	µg/L	190	HH	45,050*	90,100*	Tox
63.9	Dieldrin (c)	ng/L	0.026	HH	1,300*	2,500*	Tox
63.10	Di-2-ethylhexyl phthalate	µg/L	2.1	HH	—*	—*	NA
63.11	(c)						
63.12	Di-n-octyl phthalate	µg/L	30	Tox	825	1,650	Tox
63.13	Endosulfan	µg/L	0.031	HH	0.28	0.56	Tox
63.14	Endrin	µg/L	0.016	HH	0.090	0.18	Tox
63.15	<i>Escherichia (E.) coli</i>	See below	See below	HH	See below	See below	NA
63.16							
63.17	Not to exceed 126 organisms per 100 milliliters as a geometric mean of not less than five samples representative of conditions within any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard applies only between April 1 and October 31.						
63.22	Ethylbenzene	µg/L	68	Tox	1,859	3,717	Tox
63.23	Substance, Characteristic, or Pollutant (Class 2B)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
63.24							
63.25							
63.26							
63.27							
63.28	Eutrophication standards for Class 2B lakes, shallow lakes, and reservoirs.						
63.29	Lakes, Shallow Lakes, and Reservoirs in Northern Lakes and Forest Ecoregions						

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64.1	Phosphorus, total	µg/L	30	NA	—	—	NA
64.2	Chlorophyll-a	µg/L	9	NA	—	—	NA
64.3	Secchi disk transparency	meters	Not less than 2.0	NA	—	—	NA
64.4							
64.5 Lakes and Reservoirs in North Central Hardwood Forest Ecoregion							
64.6	Phosphorus, total	µg/L	40	NA	—	—	NA
64.7	Chlorophyll-a	µg/L	14	NA	—	—	NA
64.8	Secchi disk transparency	meters	Not less than 1.4	NA	—	—	NA
64.9							
64.10	64.11 Lakes and Reservoirs in Western Corn Belt Plains and Northern Glaciated Plains Ecoregions						
64.12	Phosphorus, total	µg/L	65	NA	—	—	NA
64.13	Chlorophyll-a	µg/L	22	NA	—	—	NA
64.14	Secchi disk transparency	meters	Not less than 0.9	NA	—	—	NA
64.15							
64.16	Shallow Lakes in North Central Hardwood Forest Ecoregion						
64.17	Phosphorus, total	µg/L	60	NA	—	—	NA
64.18	Chlorophyll-a	µg/L	20	NA	—	—	NA
64.19	Secchi disk transparency	meters	Not less than 1.0	NA	—	—	NA
64.20							
64.21	Shallow Lakes in Western Corn Belt Plains and Northern Glaciated Plains Ecoregions						
64.22	Phosphorus, total	µg/L	90	NA	—	—	NA
64.23	Chlorophyll-a	µg/L	30	NA	—	—	NA
64.24	Secchi disk transparency	meters	Not less than 0.7	NA	—	—	NA
64.25							
64.26	Additional narrative eutrophication standards for Class 2B lakes, shallow lakes, and reservoirs are found in subpart 4a.						
64.27							

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65.1	Substance, Characteristic, or Pollutant (Class 2B)	Units	CS	CS	MS	FAV	Basis for MS, FAV
65.5							
65.6	Eutrophication standards for Class 2B rivers and streams.						
65.7	North River Nutrient Region						
65.8	Phosphorus, total			µg/L			less than or equal to 50
65.9	Chlorophyll-a (seston)			µg/L			less than or equal to 7
65.10	Diel dissolved oxygen flux			mg/L			less than or equal to 3.0
65.11	Biochemical oxygen demand (BOD ₅)			mg/L			less than or equal to 1.5
65.12	Central River Nutrient Region						
65.13	Phosphorus, total			µg/L			less than or equal to 100
65.14	Chlorophyll-a (seston)			µg/L			less than or equal to 18
65.15	Diel dissolved oxygen flux			mg/L			less than or equal to 3.5
65.16	Biochemical oxygen demand (BOD ₅)			mg/L			less than or equal to 2.0
65.17	South River Nutrient Region						
65.18	Phosphorus, total			µg/L			less than or equal to 150
65.19	Chlorophyll-a (seston)			µg/L			less than or equal to 40
65.20	Diel dissolved oxygen flux			mg/L			less than or equal to 5.0
65.21	Biochemical oxygen demand (BOD ₅)			mg/L			less than or equal to 3.5
65.22	Site-specific standards for specified river reaches or other waters are:						
65.23	Mississippi River Navigational Pool 1 (river miles 854.1 to 847.7 reach from Fridley to Ford Dam in St. Paul)						
65.25	Phosphorus, total			µg/L			less than or equal to 100
65.26	Chlorophyll-a (seston)			µg/L			less than or equal to 35

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66.1	Mississippi River Navigational Pool 2 (river miles 847.7 to 815.2 reach from Ford Dam to Hastings Dam)		
66.3	Phosphorus, total	µg/L	less than or equal to 125
66.4	Chlorophyll-a (seston)	µg/L	less than or equal to 35
66.5	Mississippi River Navigational Pool 3 (river miles 815.2 to 796.9 reach from Hastings Dam to Red Wing Dam)		
66.7	Phosphorus, total	µg/L	less than or equal to 100
66.8	Chlorophyll-a (seston)	µg/L	less than or equal to 35
66.9	Mississippi River Navigational Pool 4 (river miles 796.9 to 752.8 reach from Red Wing Dam to Alma Dam). Lake Pepin occupies majority of Pool 4 and Lake Pepin site-specific standards are used for this pool.		
66.12	Mississippi River Navigational Pools 5 to 8 (river miles 752.8 to 679.1 Alma Dam to Genoa Dam)		
66.14	Phosphorus, total	µg/L	less than or equal to 100
66.15	Chlorophyll-a (seston)	µg/L	less than or equal to 35
66.16	Lake Pepin		
66.17	Phosphorus, total	µg/L	less than or equal to 100
66.18	Chlorophyll-a (seston)	µg/L	less than or equal to 28
66.19	Crow Wing River from confluence of Long Prairie River to the mouth of the Crow Wing River at the Mississippi River		
66.21	Phosphorus, total	µg/L	less than or equal to 75
66.22	Chlorophyll-a (seston)	µg/L	less than or equal to 13
66.23	Diel dissolved oxygen flux	mg/L	less than or equal to 3.5
66.24	Biochemical oxygen demand (BOD ₅)	mg/L	less than or equal to 1.7
66.25	Crow River from the confluence of the North Fork of the Crow River and South Fork of the Crow River to the mouth of the Crow River at the Mississippi River		
66.26			

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67.1	Phosphorus, total	µg/L	less than or equal to 125
67.2	Chlorophyll-a (seston)	µg/L	less than or equal to 27
67.3	Diel dissolved oxygen flux	mg/L	less than or equal to 4.0
67.4	Biochemical oxygen demand (BOD ₅)	mg/L	less than or equal to 2.5
67.5	Additional narrative eutrophication standards for Class 2B rivers and streams are found		
67.6	in subpart 4b.		

67.7	Substance, Characteristic, or Pollutant (Class 2B)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
67.11							
67.12	Fluoranthene	µg/L	1.9	Tox	3.5	6.9	Tox
67.13	Heptachlor (c)	ng/L	0.39	HH	260*	520*	Tox
67.14	Heptachlor epoxide (c)	ng/L	0.48	HH	270*	530*	Tox
67.15	Hexachlorobenzene (c)	ng/L	0.24	HH	—*	—*	Tox
67.16	Lead, total	µg/L	equation	Tox	equation	equation	Tox

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

67.19 The CS in µg/L shall not exceed: exp.(1.273[ln(total hardness mg/L)]-4.705)

67.20 The MS in µg/L shall not exceed: exp.(1.273[ln(total hardness mg/L)]-1.460)

67.21 The FAV in µg/L shall not exceed: exp.(1.273[ln(total hardness mg/L)]-0.7643)

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

67.23 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
67.24 the standard.

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

67.26	TH in mg/L	50	100	200	300	400
67.27						
67.28	Lead, total					
67.29	CS µg/L	1.3	3.2	7.7	13	19

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68.1	MS $\mu\text{g/L}$	34	82	197	331	477	
68.2	FAV $\mu\text{g/L}$	68	164	396	663	956	
68.3	Substance,						
68.4	Characteristic,						
68.5	or Pollutant						
68.6	(Class 2B)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
68.7							
68.8	Lindane (c)	$\mu\text{g/L}$	0.036	HH	4.4*	8.8*	Tox
68.9	(Hexachlorocyclohexene,						
68.10	gamma-)						
68.11	Mercury, total in water	ng/L	6.9	HH	2,400*	4,900*	Tox
68.12	Mercury, total	mg/kg	0.2	HH	NA	NA	NA
68.13	in edible fish tissue	ppm					
68.14	Methylene chloride (c)	$\mu\text{g/L}$	1,940	HH	13,875	27,749	Tox
68.15	(Dichloromethane)						
68.16	Metolachlor	$\mu\text{g/L}$	23	Tox	271	543	Tox
68.17	Naphthalene	$\mu\text{g/L}$	81	Tox	409	818	Tox
68.18	Nickel, total	$\mu\text{g/L}$	equation	Tox	equation	equation	Tox

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

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

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

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

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

68.25 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
 68.26 the standard.

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

68.28	TH in mg/L	50	100	200	300	400	
68.29							
68.30	Nickel, total						
68.31	CS $\mu\text{g/L}$	88	158	283	399	509	

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69.1	MS $\mu\text{g}/\text{L}$	789	1,418	2,549	3,592	4,582
69.2	FAV $\mu\text{g}/\text{L}$	1,578	2,836	5,098	7,185	9,164

69.3	Substance, Characteristic, or Pollutant (Class 2B)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
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69.7

69.8	Oil	$\mu\text{g}/\text{l}$	500	NA	5,000	10,000	NA
69.9	Oxygen, dissolved	mg/L	See below	NA	—	—	NA
69.10							

69.11 5.0 mg/L as a daily minimum. This dissolved oxygen standard may be modified on a
 69.12 site-specific basis according to part 7050.0220, subpart 7, except that no site-specific
 69.13 standard shall be less than 5 mg/L as a daily average and 4 mg/L as a daily minimum.
 69.14 Compliance with this standard is required 50 percent of the days at which the flow
 69.15 of the receiving water is equal to the $7Q_{10}$. This standard applies to all Class 2B
 69.16 waters except for:

69.17 (1) those portions of the Mississippi River from the outlet of the Metro
 69.18 Wastewater Treatment Works in Saint Paul (River Mile 835) to Lock and Dam
 69.19 No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River,
 69.20 the standard is not less than 5 mg/L as a daily average from April 1 through
 69.21 November 30, and not less than 4 mg/L at other times; and

69.22 (2) the portion of the Minnesota River from the outlet of the Blue Lake
 69.23 wastewater treatment works (River Mile 21) to the mouth at Fort Snelling. For
 69.24 the specified reach of the Minnesota River, the standard is not less than 5 mg/L
 69.25 as a daily average year round.

69.26	Parathion	$\mu\text{g}/\text{L}$	0.013	Tox	0.07	0.13	Tox
69.27	Pentachlorophenol	$\mu\text{g}/\text{L}$	equation	Tox/HH equation	equation	equation	Tox

69.28 The CS, MS, and FAV vary with pH and are calculated using the following equations:
 69.29 For waters with pH values greater than 6.95, the CS shall not exceed the human
 69.30 health-based standard of 5.5 $\mu\text{g}/\text{L}$.

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

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

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

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

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

70.8 Example of pentachlorophenol standards for five pH values:

70.9	pH su	6.5	7.0	7.5	8.0	8.5
70.10						
70.11	Pentachlorophenol					
70.12	CS $\mu\text{g}/\text{L}$	3.5	5.5	5.5	5.5	5.5
70.13	MS $\mu\text{g}/\text{L}$	5.5	9.1	15	25	41
70.14	FAV $\mu\text{g}/\text{L}$	11	18	30	50	82

70.15	Substance, 70.16 Characteristic, 70.17 or Pollutant 70.18 (Class 2B)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
70.20	pH, minimum	su	6.5	NA	—	—	NA
70.21	pH, maximum	su	9.0	NA	—	—	NA
70.22	Phenanthrene	$\mu\text{g}/\text{L}$	3.6	Tox	32	64	Tox
70.23	Phenol	$\mu\text{g}/\text{L}$	123	Tox	2,214	4,428	Tox
70.24	Polychlorinated 70.25 biphenyls, total (c)	ng/L	0.029	HH	1,000*	2,000*	Tox
70.26	Radioactive materials	NA	See below	NA	See below	See below	NA
70.27							

70.28 Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled
70.29 environment as permitted by the appropriate authority having control over their use.

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71.1	Selenium, total	µg/L	5.0	Tox	20	40	Tox
71.2	Silver, total	µg/L	1.0	Tox	equation	equation	Tox

71.3 The MS and FAV vary with total hardness and are calculated using the following
 71.4 equations:

71.5 The MS in µg/L shall not exceed: $\exp(1.720[\ln(\text{total hardness mg/L})] - 7.2156)$

71.6 The FAV in µg/L shall not exceed: $\exp(1.720[\ln(\text{total hardness mg/L})] - 6.520)$

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

71.8 For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate
 71.9 the standard.

71.10 Example of total silver standards for five total hardness values:

71.11	TH in mg/L	50	100	200	300	400
71.12	Silver, total					
71.13	CS µg/L	1.0	1.0	1.0	1.0	1.0
71.14	MS µg/L	1.0	2.0	6.7	13	22
71.15	FAV µg/L	1.2	4.1	13	27	44

71.17	Substance, Characteristic, or Pollutant (Class 2B)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV
71.21							

71.22	Temperature	°F	See below	NA	—	—	NA
71.23							

71.24 5°F above natural in streams and 3°F above natural in lakes, based on monthly
 71.25 average of the maximum daily temperatures, except in no case shall it exceed the
 71.26 daily average temperature of 86°F.

71.27	1,1,2,2-Tetrachloroethane (c)	µg/L	13	HH	1,127	2,253	Tox
71.28	Tetrachloroethylene (c)	µg/L	8.9	HH	428	857	Tox
71.29	Thallium, total	µg/L	0.56	HH	64	128	Tox
71.30	Toluene	µg/L	253	Tox	1,352	2,703	Tox

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72.1	Toxaphene (c)	ng/L	1.3	HH	730*	1,500*	Tox
72.2	1,1,1-Trichloroethane	µg/L	329	Tox	2,957	5,913	Tox
72.3	1,1,2-Trichloroethylene (c)	µg/L	120	HH	6,988	13,976	Tox
72.4	2,4,6-Trichlorophenol	µg/L	2.0	HH	102	203	Tox
72.5	Total suspended solids (TSS)						
72.6	North River Nutrient Region	mg/L	15	NA	—	—	NA
72.7	Central River Nutrient						
72.8	Region	mg/L	30	NA	—	—	NA
72.9	South River Nutrient Region	mg/L	65	NA	—	—	NA
72.10	Red River mainstem -						
72.11	headwaters to border	mg/L	100	NA	—	—	NA
72.12	TSS standards for the Class						
72.13	2B North, Central, and South						
72.14	River Nutrient Regions and						
72.15	the Red River mainstem may						
72.16	be exceeded for no more						
72.17	than ten percent of the time.						
72.18	This standard applies April 1						
72.19	through September 30						
72.20	Total suspended solids (TSS),						
72.21	summer average						
72.22	Lower Mississippi River						
72.23	mainstem - Pools 2 through 4	mg/L	32	NA	—	—	NA
72.24	Lower Mississippi River						
72.25	mainstem below Lake Pepin	mg/L	30	NA	—	—	NA
72.26	TSS standards for the Class						
72.27	2B Lower Mississippi River						
72.28	may be exceeded for no more						
72.29	than 50 percent of the time.						
72.30	This standard applies June 1						
72.31	through September 30						

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73.1	Substance, Characteristic, or Pollutant (Class 2B)	73.2	73.3	73.4	73.5	Basis for CS	73.6	73.7	73.8	73.9	73.10	Basis for MS, FAV
				Units		CS	73.11	73.12	73.13	73.14	73.15	FAV
73.6	Vinyl chloride (c)	73.7	73.8	73.9	73.10	73.11	73.12	73.13	73.14	73.15	73.16	73.17
	μg/L					HH	Tox	Tox	Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis.			
	9.2					—*	1,407	equation	exp.(0.8473[ln(total hardness mg/L)]+0.7615)			
							2,814	equation	exp.(0.8473[ln(total hardness mg/L)]+0.8604)			
									exp.(0.8473[ln(total hardness mg/L)]+1.5536)			
										For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard.		
											73.18	Example of total zinc standards for five total hardness values:
73.18	TH in mg/L	50	100	200	300	400						
73.19												
73.20	Zinc, total											
73.21	CS μg/L	59	106	191	269	343						
73.22	MS μg/L	65	117	211	297	379						
73.23	FAV μg/L	130	234	421	594	758						

[For text of subps 4a and 4b, see M.R.]

73.25 Subp. 4c. Beneficial use definitions for warm or cool water stream and river habitats (Class 2B).

73.27 A. Subitems (1) to (4) apply to the beneficial uses in items B to D:

74.1 (1) The designation and attainment of beneficial uses are based on the
74.2 criteria in subpart 4d.

74.3 (2) The attributes of species composition, diversity, and functional
74.4 organization are measured using:

74.5 (a) the fish-based IBI as defined in Development of a Fish-based
74.6 Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution
74.7 Control Agency (2014); or

74.8 (b) the macroinvertebrate IBI as defined in Development of a
74.9 Macroinvertebrate-based Index of Biological Integrity for Minnesota's Rivers and
74.10 Streams, Minnesota Pollution Control Agency (2014).

74.11 (3) Water body types for streams and rivers are defined in the documents
74.12 referenced in subitem (2).

74.13 (4) The following documents are incorporated by reference and are not
74.14 subject to frequent change:

74.15 (a) Calibration of the Biological Condition Gradient for Streams of
74.16 Minnesota, Gerritsen et al. (2012). The document is available on the agency's Web site
74.17 at www.pca.state.mn.us:

74.18 (b) Development of a Fish-based Index of Biological Integrity for
74.19 Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014). The
74.20 document is available on the agency's Web site at www.pca.state.mn.us:

74.21 (c) Development of a Macroinvertebrate-based Index of Biological
74.22 Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency
74.23 (2014). The document is available on the agency's Web site at www.pca.state.mn.us; and

75.1 (d) Development of Biological Criteria for Tiered Aquatic Life Uses,
75.2 Minnesota Pollution Control Agency (2016). The document is available on the agency's
75.3 Web site at www.pca.state.mn.us.

75.4 B. "Exceptional cool and warm water aquatic life and habitat" or "Class 2Be" is
75.5 a beneficial use that means waters capable of supporting and maintaining an exceptional
75.6 and balanced, integrated, adaptive community of warm or cool water aquatic organisms
75.7 having a species composition, diversity, and functional organization comparable to the
75.8 75th percentile of biological condition gradient level 3 as established in Calibration of the
75.9 Biological Condition Gradient for Streams of Minnesota, Gerritsen et al. (2012).

75.10 C. "General cool and warm water aquatic life and habitat" or "Class 2Bg" is
75.11 a beneficial use that means waters capable of supporting and maintaining a balanced,
75.12 integrated, adaptive community of warm or cool water aquatic organisms having a species
75.13 composition, diversity, and functional organization comparable to the median of biological
75.14 condition gradient level 4 as established in Calibration of the Biological Condition
75.15 Gradient for Streams of Minnesota, Gerritsen et al. (2012).

75.16 D. "Modified cool and warm water aquatic life and habitat" or "Class 2Bm"
75.17 is a beneficial use that means waters capable of supporting and maintaining a balanced,
75.18 integrated, adaptive community of warm or cool water aquatic organisms having a species
75.19 composition, diversity, and functional organization comparable to the median of biological
75.20 condition gradient level 5 as established in Calibration of the Biological Condition
75.21 Gradient for Streams of Minnesota, Gerritsen et al. (2012).

75.22 (1) To meet the definition in this item, waters must have been the subject of
75.23 a use attainability analysis and must have been found to be incapable of supporting and
75.24 maintaining the Class 2Bg beneficial use because of human-induced modifications of the
75.25 physical habitat that preclude the potential for recovery of the fauna. These modifications

76.1 must be the result of direct alteration to the channel, such as drainageway maintenance,
 76.2 bank stabilization, and impoundments.

76.3 (2) Examples of Class 2Bm waters are the stream channel modification
 76.4 activities regulated under:

76.5 (a) sections 401 and 404 of the Clean Water Act; or
 76.6 (b) Minnesota Statutes, chapter 103E.

76.7 Subp. 4d. Biological criteria for warm or cool water stream and river habitats
 76.8 (Class 2B).

76.9	<u>Water Body Type</u>	<u>Tier</u>	<u>Class</u>	<u>Assemblage</u>	<u>Biocriterion</u>
76.10					
76.11	<u>Southern rivers</u>	<u>Exceptional</u>	<u>2Be</u>	<u>Fish</u>	<u>71</u>
76.12		<u>General</u>	<u>2Bg</u>	<u>Fish</u>	<u>49</u>
76.13	<u>Southern streams</u>	<u>Exceptional</u>	<u>2Be</u>	<u>Fish</u>	<u>66</u>
76.14		<u>General</u>	<u>2Bg</u>	<u>Fish</u>	<u>50</u>
76.15		<u>Modified</u>	<u>2Bm</u>	<u>Fish</u>	<u>35</u>
76.16	<u>Southern headwaters</u>	<u>Exceptional</u>	<u>2Be</u>	<u>Fish</u>	<u>74</u>
76.17		<u>General</u>	<u>2Bg</u>	<u>Fish</u>	<u>55</u>
76.18		<u>Modified</u>	<u>2Bm</u>	<u>Fish</u>	<u>33</u>
76.19	<u>Northern rivers</u>	<u>Exceptional</u>	<u>2Be</u>	<u>Fish</u>	<u>67</u>
76.20		<u>General</u>	<u>2Bg</u>	<u>Fish</u>	<u>38</u>
76.21	<u>Northern streams</u>	<u>Exceptional</u>	<u>2Be</u>	<u>Fish</u>	<u>61</u>
76.22		<u>General</u>	<u>2Bg</u>	<u>Fish</u>	<u>47</u>
76.23		<u>Modified</u>	<u>2Bm</u>	<u>Fish</u>	<u>35</u>
76.24	<u>Northern headwaters</u>	<u>Exceptional</u>	<u>2Be</u>	<u>Fish</u>	<u>68</u>
76.25		<u>General</u>	<u>2Bg</u>	<u>Fish</u>	<u>42</u>
76.26		<u>Modified</u>	<u>2Bm</u>	<u>Fish</u>	<u>23</u>
76.27	<u>Low gradient</u>	<u>Exceptional</u>	<u>2Be</u>	<u>Fish</u>	<u>70</u>
76.28		<u>General</u>	<u>2Bg</u>	<u>Fish</u>	<u>42</u>

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77.1		Modified	<u>2Bm</u>	Fish	<u>15</u>
77.2	<u>Northern forest rivers</u>	Exceptional	<u>2Be</u>	<u>Macroinvertebrates</u>	<u>77</u>
77.3		General	<u>2Bg</u>	<u>Macroinvertebrates</u>	<u>49</u>
77.4	<u>Prairie and southern forest rivers</u>	Exceptional	<u>2Be</u>	<u>Macroinvertebrates</u>	<u>63</u>
77.5		General	<u>2Bg</u>	<u>Macroinvertebrates</u>	<u>31</u>
77.7	<u>High-gradient northern forest streams</u>	Exceptional	<u>2Be</u>	<u>Macroinvertebrates</u>	<u>82</u>
77.9		General	<u>2Bg</u>	<u>Macroinvertebrates</u>	<u>53</u>
77.10	<u>Low-gradient northern forest streams</u>	Exceptional	<u>2Be</u>	<u>Macroinvertebrates</u>	<u>76</u>
77.11		General	<u>2Bg</u>	<u>Macroinvertebrates</u>	<u>51</u>
77.13		Modified	<u>2Bm</u>	<u>Macroinvertebrates</u>	<u>37</u>
77.14	<u>High-gradient southern streams</u>	Exceptional	<u>2Be</u>	<u>Macroinvertebrates</u>	<u>62</u>
77.16		General	<u>2Bg</u>	<u>Macroinvertebrates</u>	<u>37</u>
77.17		Modified	<u>2Bm</u>	<u>Macroinvertebrates</u>	<u>24</u>
77.18	<u>Low-gradient southern forest streams</u>	Exceptional	<u>2Be</u>	<u>Macroinvertebrates</u>	<u>66</u>
77.19		General	<u>2Bg</u>	<u>Macroinvertebrates</u>	<u>43</u>
77.21		Modified	<u>2Bm</u>	<u>Macroinvertebrates</u>	<u>30</u>
77.22	<u>Low-gradient prairie streams</u>	Exceptional	<u>2Be</u>	<u>Macroinvertebrates</u>	<u>69</u>
77.24		General	<u>2Bg</u>	<u>Macroinvertebrates</u>	<u>41</u>
77.25		Modified	<u>2Bm</u>	<u>Macroinvertebrates</u>	<u>22</u>

77.26 Subp. 5. [See repealer.]

77.27 [For text of subps 6 to 9, see M.R.]

77.28 **7050.0227 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 7 WATERS OF THE STATE; LIMITED RESOURCE VALUE WATERS.**

77.30 [For text of subp 1, see M.R.]

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

78.5 Substance, Characteristic, or 78.6 Pollutant	78.7 Class 7 Standard
78.7 <i>Escherichia (E.) coli</i>	Not to exceed 630 organisms per 100 milliliters 78.8 as a geometric mean of not less than five samples 78.9 representative of conditions within any calendar 78.10 month, nor shall more than ten percent of all samples 78.11 taken during any calendar month individually exceed 78.12 1,260 organisms per 100 milliliters. The standard 78.13 applies only between May 1 and October 31.
78.14 Oxygen, dissolved	<u>The level of dissolved oxygen must be maintained at</u> 78.15 concentrations: 78.16 i. <u>which</u> <u>that</u> will avoid odors or putrid conditions in 78.17 the receiving water; 78.18 or at concentrations ii. at not less than 1 mg/L (daily 78.19 average); and 78.20 provided that measurable concentrations are present 78.21 iii. <u>above 0 mg/L</u> at all times.
78.22 pH, minimum value	6.0
78.23 pH, maximum value	9.0
78.24 Toxic pollutants	Toxic pollutants shall not be allowed in such quantities 78.25 or concentrations that will impair the specified uses.

78.26 **7050.0430 UNLISTED WATERS.**

78.27 Subpart 1. Statewide surface waters. Except as provided in subparts 2 and 3, all
78.28 surface waters of the state that are not listed in part 7050.0470 and that are not wetlands
78.29 as defined in part 7050.0186, subpart 1a, are hereby classified as Class 2B 2Bg, 3C, 4A,
78.30 4B, 5, and 6 waters.

78.31 Subp. 2. Boundary Waters Canoe Area Wilderness.

79.1 A. All streams in the Boundary Waters Canoe Area Wilderness [11/5/84P] not
79.2 listed in part 7050.0470 are classified as Class 1B, 2Bdg, 3B.

79.3 B. All lakes in the Boundary Waters Canoe Area Wilderness [11/5/84P] not
79.4 listed in part 7050.0470 are classified as Class 1B, 2Bd, 3B.

79.5 C. All wetlands in the Boundary Waters Canoe Area Wilderness [11/5/84P]
79.6 are classified as Class 2D.

79.7 **Subp. 3. Voyageurs National Park.**

79.8 A. All streams in Voyageurs National Park [11/5/84P] not listed in part
79.9 7050.0470 are classified as Class 2Bg, 3B.

79.10 B. All lakes in Voyageurs National Park [11/5/84P] not listed in part 7050.0470
79.11 are classified as Class 2B, 3B.

79.12 C. All wetlands in Voyageurs National Park [11/5/84P] are classified as Class 2D.

79.13 **7050.0460 WATERS SPECIFICALLY CLASSIFIED; EXPLANATION OF**
79.14 **LISTINGS IN PART 7050.0470.**

79.15 Subpart 1. **Explanation of listings.** The waters of the state listed in part 7050.0470
79.16 are classified as specified. The ~~specieifc stretch of watercourse or the location of a water~~
79.17 ~~body is~~ lakes, wetlands, calcareous fens, and scientific and natural areas are described
79.18 by township, range, and section. Specific stream stretches are described by township,
79.19 range, and section; stream confluence; geographic coordinates; road crossing; some
79.20 other recognizable landmark; or a combination of these descriptors. Streams and rivers
79.21 are listed by the eight-digit hydrologic unit code (HUC) of the major watersheds in
79.22 part 7050.0469 in which the streams and rivers are located. The tables that specify the
79.23 applicable beneficial uses for the stream and river reaches are incorporated by reference in
79.24 part 7050.0470. Any community listed in part 7050.0470 is the community nearest the
79.25 water classified, and is included solely to assist in identifying the water. Most waters of

80.1 the state are not specifically listed in part 7050.0470. See parts 7050.0425 and 7050.0430
80.2 for the classifications of waters not listed.

80.3 [For text of subps 2 and 3, see M.R.]

80.4 **7050.0469 MAP: MINNESOTA'S MAJOR WATERSHEDS.**

Major Watersheds in Minnesota



81.1 **7050.0470 CLASSIFICATIONS FOR SURFACE WATERS IN MAJOR**
81.2 **DRAINAGE BASINS.**

81.3 Subpart 1. **Lake Superior Basin.** The water use classifications for the stream
81.4 reaches within each of the major watersheds in the Lake Superior Basin listed
81.5 in item A are found in tables entitled "Beneficial Use Designations for Stream
81.6 Reaches" published on the Web site of the Minnesota Pollution Control Agency at
81.7 www.pca.state.mn.us. The tables are incorporated by reference and are not subject
81.8 to frequent change. The date after each watershed listed in item A is the publication
81.9 date of the applicable table. The water use classifications for the other listed waters in
81.10 the Lake Superior Basin are as identified in items A B to D. See parts 7050.0425 and
81.11 7050.0430 for the classifications of waters not listed. Designated use information for
81.12 water bodies can also be accessed through the agency's Environmental Data Access
81.13 (<http://www.pca.state.mn.us/quick-links/eda-surface-water-data>).

81.14 A. Streams (by eight-digit hydrologic unit code):

81.15 (1) 04010101 Lake Superior - North (August 9, 2016);
81.16 (2) 04010102 Lake Superior - South (August 9, 2016);
81.17 (3) 04010201 St. Louis River (August 9, 2016);
81.18 (4) 04010202 Cloquet River (August 9, 2016); and
81.19 (5) 04010301 Nemadji River (August 9, 2016).
81.20 (1) ~~Ahlenius Creek, (T.53, R.14, S.9, 10): 1B, 2A, 3B;~~
81.21 (2) ~~Amenda Creek, (T.59, R.5, S.19, 20, 29, 30, 31; T.59, R.6, S.36):~~
81.22 ~~1B, 2A, 3B;~~
81.23 (3) ~~Amity Creek, (T.50, R.13, S.5, 6; T.50, R.14, S.1; T.51, R.13, S.31, 32,~~
81.24 ~~T.51, R.14, S.26, 27, 28, 35, 36): 1B, 2A, 3B;~~

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82.1 (4) Amity Creek, East Branch (T.51, R.13, S.30, 31; T.51, R.14, S.13, 14, 15, 22, 24, 25, 36): 1B, 2A, 3B;

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

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

82.7 (7) Artichoke Creek, (T.52, R.17, S.7, 17, 18): 1B, 2A, 3B;

82.8 (8) Assinika Creek, (T.63, R.1E, S.1; T.63, R.2E, S.7, 8, 16, 17, 21; T.64, R.1E, S.36; T.64, R.2E, S.31): 1B, 2A, 3B;

82.10 (9) Bally Creek, (T.61, R.1W, S.3, 4, 5, 6, 7, 8, 9, 10, 11; T.61, R.2W, S.12): 1B, 2A, 3B;

82.12 (10) Baptism River, East Branch, (T.57, R.6, S.6; T.57, R.7, S.1, 2, 3, 9, 10, 11, 12, 16, 17, 20; T.58, R.6, S.30, 31; T.58, R.7, S.13, 17, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30, 36; T.58, R.8, S.22, 23, 24, 25, 26): 1B, 2A, 3B;

82.15 (11) Baptism River, Main Branch, (T.56, R.7, S.3, 4, 5, 9, 10, 14, 15; T.57, R.7, S.20, 27, 28, 29, 33, 34): 1B, 2A, 3B;

82.17 (12) Baptism River, West Branch, (T.57, R.7, S.7, 17, 18, 20; T.57, R.8, S.1, 2, 12; T.58, R.8, S.2, 3, 4, 9, 10, 11, 15, 16, 20, 21, 22, 28, 33, 34, 35, 36; T.59, R.8, S.34, 35): 1B, 2A, 3B;

82.20 (13) Barber Creek (East Swan River) (Chisholm Creek) Chisholm, (T.58, R.20, S.21, 22, 26, 27, 34, 35): 7;

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

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

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

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

83.5 (18) ~~Beaver River (includes Kit Creek), (T.55, R.8, S.2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 16, 17; T.55, R.9, S.1, 2; T.56, R.8, S.31; T.56, R.9, S.4, 5, 6, 8, 9, 16, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 32, 33, 34, 35, 36; T.57, R.9, S.28, 32, 33): 1B, 2A, 3B;~~

83.8 (19) ~~Beaver River, East Branch (includes Hen Creek), (T.55, R.8, S.2; T.56, R.8, S.4, 5, 6, 8, 9, 15, 16, 21, 22, 25, 26, 27, 35, 36; T.57, R.8, S.7, 18, 19, 30, 31, 32; T.57, R.9, S.2, 3, 11, 12, 13, 14, 15, 23, 24, 25, 26, 36): 1B, 2A, 3B;~~

83.11 (20) ~~Beaver River, West Branch, (T.55, R.8, S.7, 17, 18; T.55, R.9, S.2, 3, 4, 10, 11, 12, 13, 14): 1B, 2A, 3B;~~

83.13 (21) ~~Berry Creek (Breda), (T.55, R.12, S.6, 7; T.55, R.13, S.12, 13; T.56, R.11, S.6; T.56, R.12, S.1, 11, 12, 14, 15, 16, 21, 28, 29, 31, 32; T.57, R.11, S.10, 15, 16, 21, 28, 29, 31, 32): 1B, 2A, 3B;~~

83.16 (22) ~~Blackhoof River, (T.47, R.16, S.29, 30; T.47, R.17, S.6, 7, 9, 10, 14, 15, 16, 17, 18, 19, 20, 22, 25, 26, 27, 28; T.48, R.17, S.30, 31): 1B, 2A, 3B;~~

83.18 (23) ~~Blesner Creek, (T.58, R.6, S.20, 29, 30, 31): 1B, 2A, 3B;~~

83.19 (24) ~~Blind Temperance Creek, (T.60, R.4W, S.19, 29, 30, 32; T.60, R.5W, S.24, 25, 36): 1B, 2A, 3B;~~

83.21 (25) ~~Bluff Creek, (T.63, R.1W, S.13, 23, 24, 25): 1B, 2A, 3B;~~

83.22 (26) ~~Boulder Creek, (T.53, 54, R.14): 2C;~~

83.23 (27) ~~Breda Creek (see Berry Creek);~~

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84.1 (28) ~~Brule River, (T.62, R.2E, S.1, 2, T.62, R.3E, S.4, 5, 6, 9, 10, 15, 16, 22, 27, 34; T.63, R.2E, S.21, 22, 23, 25, 26, 27, 28, 33, 35, 36; T.63, R.3E, S.30, 31, 32): 1B, 2A, 3B;~~

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

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

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

84.8 (32) ~~Buhl Creek, Buhl, (T.58, R.19, S.20, 29): 7;~~

84.9 (33) ~~*Burnt Creek, [11/5/84P] (T.62, R.4W, S.8, 9): 1B, 2A, 3B;~~

84.10 (34) ~~Burnt Creek, (T.62, R.4W, S.16, 17, 20): 1B, 2A, 3B;~~

84.11 (35) ~~Cabin Creek, (T.59, R.6W, S.19, 20; T.59, R.7, S.24): 1B, 2A, 3B;~~

84.12 (36) ~~Captain Jacobson Creek, (T.52, R.12, S.1, 2, 3; T.53, R.12, S.33, 34, 35): 1B, 2A, 3B;~~

84.14 (37) ~~Carey Creek, (T.53, R.14, S.28, 33): 1B, 2A, 3B;~~

84.15 (38) ~~Caribou Creek, (T.60, R.3W, S.2, 3, 10): 1B, 2A, 3B;~~

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

84.18 (40) ~~Carlson Creek, (T.52, R.12, S.19; R.13, S.14, 15, 23, 24): 1B, 2A, 3B;~~

84.19 (41) ~~Carlson Creek (Stony Brook), (T.62, R.4E, S.3, 4, 9, 10; T.63, R.4E, S.31, 32, 33, 34): 1B, 2A, 3B;~~

84.21 (42) ~~Cascade River, (T.60, R.2W, S.1; T.61, R.1W, S.19, 20, 21, 30, 31; T.61, R.2W, S.1, 12, 13, 14, 24, 25, 26, 35, 36; T.62, R.2W, S.10, 11, 14, 15, 16, 22, 23, 24, 25, 36): 1B, 2A, 3B;~~

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85.1 (43) ~~*Cascade River, North Branch [11/5/84P] (T.62, R.2W, S.3, 10):~~
85.2 ~~1B, 2A, 3B;~~

85.3 (44) ~~Cascade River, North Branch (those waters outside the Boundary~~
85.4 ~~Waters Canoe Area Wilderness), (T.62, R.2W, S.10): 1B, 2A, 3B;~~

85.5 (45) ~~Castle Danger Creek (Campers), (T.54, R.9, S.30, 31, 32): 1B, 2A, 3B;~~

85.6 (46) ~~Cedar Creek, Lake County, (T.56, R.8, S.13, 14, 23, 24, 26): 1B,~~
85.7 ~~2A, 3B;~~

85.8 (47) ~~Cedar Creek, Cook County, (T.59, R.5W, S.2; T.60, R.5W, S.14, 22,~~
85.9 ~~23, 25, 26, 35, 36): 1B, 2A, 3B;~~

85.10 (48) ~~Cemetery Creek, (T.51, R.17, S.4, 5, 9): 1B, 2A, 3B;~~

85.11 (49) ~~Chellberg Creek (Chalberg Creek), (T.51, R.16, S.7; T.51, R.17, S.1,~~
85.12 ~~2, 3, 10, 12): 1B, 2A, 3B;~~

85.13 (50) ~~Chester Creek, (T.50, R.14, S.7, 8, 9, 14, 15, 16, 23): 1B, 2A, 3B;~~

85.14 (51) ~~Chester Creek, East Branch, (T.50, R.14, S.4, 5, 9, 15, 16): 1B, 2A, 3B;~~

85.15 (52) ~~Chicken Creek, (T.52, R.16, S.5, 7, 8, 18, 19; T.52, R.17, S.13, 24, 25,~~
85.16 ~~T.53, R.16, S.32): 1B, 2A, 3B;~~

85.17 (53) ~~Clear Creek, Carlton County, (T.46, R.17, S.9, 10, 11, 12, 16, 17,~~
85.18 ~~20, 29): 1B, 2A, 3B;~~

85.19 (54) ~~Clear Creek, Carlton County, (T.47, R.15, S.7; T.47, R.16, S.1, 2,~~
85.20 ~~3, 4, 12; T.48, R.16, S.33): 1B, 2A, 3B;~~

85.21 (55) ~~Cliff Creek, (T.61, R. 2E, S.3, 4, 5, 9, 10; T.62, R.2E, S.29, 30, 31,~~
85.22 ~~32): 1B, 2A, 3B;~~

85.23 (56) ~~Cloudy Spring Creek, (T.57, R.9, S.5, 6, 7, 18; T.57, R.10, S.12,~~
85.24 ~~13, 24): 1B, 2A, 3B;~~

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86.1 (57) ~~Colville Creek, East, (T.61, R.3E, S.5; T.62, R.2E, S.25; T.62, R.3E, S.30, 31, 32): 1B, 2A, 3B;~~

86.3 (58) ~~Coolidge Creek, (T.55, R.14, S.19, 29, 30; T.55, R.15, S.25, 26, 35, 36): 1B, 2A, 3B;~~

86.5 (59) ~~Cranberry Creek, (T.58, R.13): 2C;~~

86.6 (60) ~~Cross River, (T.58, R.4W, S.6; T.58, R.5W, S.1; T.59, R.4W, S.31, T.59, R.5W, S.4, 5, 8, 9, 15, 16, 21, 22, 23, 25, 26, 35, 36; T.60, R.5W, S.30, 31, 32; T.60, R.6, S.13, 24, 25, 36): 1B, 2A, 3B;~~

86.9 (61) ~~Crow Creek, (T.53, R.10, S.1, 2; T.54, R.10, S.15, 22, 23, 26, 35): 1B, 2A, 3B;~~

86.11 (62) ~~Crown Creek, (T.57, R.8, S.2, 3, 4, 5, 9, 10, 11; T.58, R.8, S.5, 6, 7, 18, 19, 20, 29, 30, 31, 32, 33; T.58, R.9, S.1, 12, 13, 14, 24, 36; T.59, R.8, S.32): 1B, 2A, 3B;~~

86.13 (63) ~~Crystal Creek, (T.48, R.16, S.6; T.48, R.17, S.1): 1B, 2A, 3B;~~

86.14 (64) ~~Cutface Creek (Good Harbor Creek), (T.61, R.1W, S.27, 28, 29, 34): 1B, 2A, 3B;~~

86.16 (65) ~~Dago Creek, (T.54, R.9, S.18, 19; T.54, R.10, S.2, 11, 12, 13; T.55, R.10, S.27, 34, 35): 1B, 2A, 3B;~~

86.18 (66) ~~Deer Creek, (T.47, R.16, S.19, 20, 28, 29; T.47, R.17, S.11, 12, 13, 24): 1B, 2A, 3B;~~

86.20 (67) ~~Deer Yard Creek (Spruce Creek), (T.60, R.2W, S.4, 5, 6, 7, 8, 9, 10, 15, 16, 17; T.61, R.2W, S.32): 1B, 2A, 3B;~~

86.22 (68) ~~Devil Track River, (T.61, R.1E, S.2, 3, 10, 11, 12, 13; T.62, R.1E, S.26, 31, 32, 33, 34, 35): 1B, 2A, 3B;~~

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87.1 (69) Devil Track River, Little, (T.61, R.1E, S.4, 5, 6, 7, 8, 9, 10; T.61,
87.2 R.1W, S.1, 2, 11, 12): 1B, 2A, 3B;

87.3 (70) Dragon Creek, (T.57, R.6, S.8, 9, 16, 17, 21): 1B, 2A, 3B;

87.4 (71) Durfee Creek, (T.61, R.2E, S.5, 6, 8; T.62, R.1E, S.25, 36; T.62,
87.5 R.2E, S.31): 1B, 2A, 3B;

87.6 (72) Dutchess Slough Creek (Dutch Slough), (T.50, R.17, S.4, 9, 10, 13,
87.7 14, 15, 24): 1B, 2A, 3B;

87.8 (73) Egge Creek, (T.57, R.7, S.2, 3, 4, 11): 1B, 2A, 3B;

87.9 (74) Elbow Creek, Cook County, (T.62, R.1E, S.3, 4, 9, 10, 15, 22, 27, 34,
87.10 T.63, R.1E, S.33, 34): 1B, 2A, 3B;

87.11 (75) Elbow Creek, Eveleth, (T.57, R.17, S.6; T.57, R.18, S.1): 7;

87.12 (76) Elm Creek, (T.49, R.16, S.1, 2; T.50, R.16, S.35): 1B, 2A, 3B;

87.13 (77) Encampment River, (T.53, R.10, S.3, 10, 11; T.54, R.10, S.8, 16,
87.14 17, 21, 27, 28, 34): 1B, 2A, 3B;

87.15 (78) Farquhar Creek, (T.62, R.4E, S.2, 11; T.63, R.4E, S.34, 35): 1B,
87.16 2A, 3B;

87.17 (79) *Fiddle Creek, [11/5/84P] (T.64, R.1W, S.34): 1B, 2A, 3B;

87.18 (80) Fiddle Creek, (T.63, R.1W, S.2, 3, 10, 15; T.64, R.1W, S.35): 1B,
87.19 2A, 3B;

87.20 (81) Flute Reed River, (T.62, R.3E, S.1, 2, 3, 10, 11, 12, 13, 14, 15; T.62,
87.21 R.4E, S.17, 18, 20; T.63, R.3E, S.26, 34, 35, 36): 1B, 2A, 3B;

87.22 (82) Fond du Lac Creek (Squaw), (T.49, R.17, S.9, 16, 17, 18, 19, 20,
87.23 21): 1B, 2A, 3B;

87.24 (83) Fox Farm Creek, (T.62, R.1E, S.19, 30): 1B, 2A, 3B;

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88.1 (84) French River, (T.51, R.12, S.7, 17, 18; T.51, R.13, S.1, 2, 3, 12; T.52, R.13, S.8, 9, 16, 17, 20, 21, 23, 26, 27, 28, 29, 34, 35): 1B, 2A, 3B;

88.3 (85) Fry Creek, (T.62, R.2W, S.25; T.62, 1W, S.30, 31): 1B, 2A, 3B;

88.4 (86) Gauthier Creek, (T.62, R.3E, S.16, 20, 21, 22, 27): 1B, 2A, 3B;

88.5 (87) Gill Creek, (T.48, R.16, S.2): 1B, 2A, 3B;

88.6 (88) Gooseberry River, (T.54, R.9, S.18, 19, 20, 21, 22, 27; T.54, R.10, S.4, 5, 6, 8, 9, 10, 11, 12, 13; T.55, R.10, S.4, 9, 16, 17, 20, 29, 30, 31, 32; T.56, R.10, S.33): 1B, 2A, 3B;

88.9 (89) Gooseberry River, Little, (T.54, R.10, S.6; T.54, R.11, S.1; T.55, R.10, S.31; T.55, R.11, S.34, 35, 36): 1B, 2A, 3B;

88.11 (90) Grand Portage Creek, (T.63, R.5E, S.1; T.63, R.6E, S.4, 5, 6; T.64, R.6E, S.31, 32, 33): 1B, 2A, 3B;

88.13 (91) Greenwood River, (T.63, R.2E, S.1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24; T.63, R.3E, S.6; T.64, R.2E, S.34; T.64, R.3E, S.31): 1B, 2A, 3B;

88.15 (92) Hay Creek, (T.49, R.16, S.3, 4, 9, 10, 15; T.50, R.16, S.20, 21, 28, 29, 32, 33): 1B, 2A, 3B;

88.17 (93) Heartbreak Creek, (T.59, R.4W, S.18, 19; T.59, R.5W, S.2, 11, 12, 13; T.60, R.5W, S.27, 28, 33, 34, 35): 1B, 2A, 3B;

88.19 (94) Hellwig Creek, (T.52, R.17, S.3, 10, 14, 15, 23, 26; T.53, R.16, S.16, 18, 19, 20, 30; T.53, R.17, S.13, 14, 23, 24, 25, 26, 34, 35): 1B, 2A, 3B;

88.21 (95) Hockamin Creek, (T.57, R.7, S.17, 18, 19; T.57, R.8, S.13, 16, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 32, 33): 1B, 2A, 3B;

88.23 (96) Hollow Rock Creek, (T.63, R.5E, S.9, 10, 11, 14, 15, 16, 23, 24, 25): 1B, 2A, 3B;

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89.1 (97) ~~Honeymoon Creek (Spring Creek)~~, (T.61, R.4W, S.28, 31, 32, 33):
89.2 ~~1B, 2A, 3B;~~

89.3 (98) ~~Hornby Junction Creek (Whiteface River, South Branch)~~, (T.55, R.13,
89.4 S.5,6, 7; T.56, R.13, S.28, 32, 33): ~~1B, 2A, 3B;~~

89.5 (99) ~~Horn Creek~~, (T.62, R.4W): ~~1B, 2Bd, 3C;~~

89.6 (100) ~~Houghtaling Creek~~, (T.59, R.6, S.2, 3, 4, 5, 6; T.60, R.6, S.25, 32,
89.7 33, 35, 36): ~~1B, 2A, 3B;~~

89.8 (101) ~~Humphrey Creek~~, (T.54, R.14, S.23, 26, 27, 33, 34): ~~1B, 2A, 3B;~~

89.9 (102) ~~Hunter Creek (Hunters Creek)~~, (T.46, R.18, S.2, 11, 12, 13; T.47,
89.10 R.18, S.34, 35): ~~1B, 2A, 3B;~~

89.11 (103) ~~Indian Camp Creek~~, (T.60, R.2W, S.3, 10, 11; T.61, R.2W, S.34):
89.12 ~~1B, 2A, 3B;~~

89.13 (104) ~~Indian Creek~~, (T.55, R.12, S.3; T.56, R.12, S.14, 22, 23, 27, 34):
89.14 ~~1B, 2A, 3B;~~

89.15 (105) ~~Irish Creek~~, (T.63, R.3E, S.8, 9, 10, 13, 14, 15, 23, 24, 25, 26; T.63,
89.16 R.4E, S.17, 18, 19): ~~1B, 2A, 3B;~~

89.17 (106) ~~Joe Martin Creek (Martin Branch)~~, (T.50, R.18, S.3, 4, 5, 7, 8; T.50,
89.18 R.19, S.12): ~~1B, 2A, 3B;~~

89.19 (107) ~~Johnson Creek~~, (T.50, R.17, S.3, 10, 11, 14; T.51, R.17, S.34): ~~1B,~~
89.20 ~~2A, 3B;~~

89.21 (108) ~~Johnson Creek~~, (T.55, R.12, S.35, 36): ~~1B, 2A, 3B;~~

89.22 (109) ~~Jenvick Creek~~, (T.60, R.2W, S.7, 19; T.60, R.3W, S.12, 13, 14,
89.23 24): ~~1B, 2A, 3B;~~

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90.1 (110) ~~Junco Creek, (T.62, R.1W, S.1, 2, 9, 10, 11, 12, 13, 14, 15, 16, 21, 28;~~
90.2 ~~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;~~
90.3 (111) ~~Kadunee Creek (Kadunee River), (T.61, R.2E, S.2; T.62, R.2E, S.9,~~
90.4 ~~10, 12, 13, 14, 15, 16, 22, 23, 24, 26, 35): 1B, 2A, 3B;~~
90.5 (112) ~~Keene Creek, (T.49, R.14, S.18; T.49, R.15, S.1, 12, 13; T.50, R.15,~~
90.6 ~~S.24, 25, 36): 1B, 2A, 3B;~~
90.7 (113) ~~Kehtel Creek, (T.51, R.15, S.8, 17, 18, 19, 20): 1B, 2A, 3B;~~
90.8 (114) ~~Kimball Creek, (T.61, R.2E, S.3, 4, 10; T.62, R.2E, S.7, 16, 17, 18,~~
90.9 ~~19, 20, 21, 28, 29, 33, 34): 1B, 2A, 3B;~~
90.10 (115) ~~Kingsbury Creek, (T.49, R.15, S.4, 9, 10, 11, 13, 14; T.50, R.15,~~
90.11 ~~S.33, 34): 1B, 2A, 3B;~~
90.12 (116) ~~Kinney Creek, (T.57, R.10, S.15, 21, 22, 28, 33): 1B, 2A, 3B;~~
90.13 (117) ~~Knife River, (T.52, R.11, S.4, 5, 8, 9, 17, 18, 19, 31; T.53, R.11, S.4, 5,~~
90.14 ~~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;~~
90.15 (118) ~~Knife River, Little, (T.52, R.12, S.16, 17, 21, 22, 23, 26, 27, 28,~~
90.16 ~~35, 36): 1B, 2A, 3B;~~
90.17 (119) ~~Knife River, Little, East Branch, (T.53, R.11, S.17, 20, 21, 22, 27,~~
90.18 ~~33, 34): 1B, 2A, 3B;~~
90.19 (120) ~~Knife River, Little, West Branch, (T.52, R.11, S.6; T.53, R.11, S.31;~~
90.20 ~~T.53, R.12, S.13, 14, 23, 24, 25, 26, 36): 1B, 2A, 3B;~~
90.21 (121) ~~Knife River, West Branch, (T.52, R.11, S.5, 6, 8; T.52, R.12, S.1;~~
90.22 ~~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;~~
90.23 (122) ~~Koski Creek, (T.61, R.4W, S.5, 8; T.62, R.4W, S.31, 32): 1B, 2A, 3B;~~
90.24 (123) ~~Lavi Creek, (T.52, R.15, S.21, 28): 1B, 2A, 3B;~~

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91.1 (124) ~~Leskinen Creek, (T.57, R.7, S.15, 21, 22, 28): 1B, 2A, 3B;~~

91.2 (125) ~~Lester River, (T.50, R.13, S.4, 5, 8; T.51, R.13, S.5, 6, 7, 8, 16, 17, 18, 19, 20, 21, 28, 32, 33; T.51, R.14, S.1, 2, 10, 11, 12, 13, 15, 16, 24; T.52, R.13, S.31, 32; T.52, R.14, S.21, 22, 23, 27, 28, 34, 35): 1B, 2A, 3B;~~

91.3 (126) ~~Lindstrom Creek, (T.56, R.7, S.4; T.57, R.7, S.19, 30, 31, 32, 33, T.57, R.8, S.25): 1B, 2A, 3B;~~

91.4 (127) ~~Lullaby Creek, (T.63, R.1E, S.4, 5, 8, 9): 1B, 2A, 3B;~~

91.5 (128) ~~Manganika Creek, Virginia, (T.58, R.17, S.19; T.58, R.18, S.24): 7;~~

91.6 (129) ~~Manitou River (Moose Creek), (T.57, R.6, S.3, 4, 10, 11; T.58, R.6, S.4, 5, 6, 7, 8, 16, 17, 18, 20, 21, 28, 29, 32, 33, 34): 1B, 2A, 3B;~~

91.7 (130) ~~Manitou River, Little, (T.57, R.6, S.2; T.58, R.6, S.34, 35): 1B, 2A, 3B;~~

91.8 (131) ~~Manitou River, North Branch (Balsam Creek), (T.58, R.6, S.6; T.58, R.7, S.1, 2; T.59, R.6, S.31; T.59, R.7, S.15, 16, 18, 19, 20, 21, 22, 25, 26, 27, 28, 33, 34, 35, 36; T.59, R.8, S.1, 2, 12, 13, 24, 25, 26): 1B, 2A, 3B;~~

91.9 (132) ~~Manitou River, South Branch (Junction Creek), (T.58, R.6, S.6; T.58, R.7, S.1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 17, 18; T.58, R.8, S.1; T.59, R.7, S.29, 30, 31, 32, 33): 1B, 2A, 3B;~~

91.10 (133) ~~Marais River, Little, (T.57, R.6, S.5, 8, 16, 17, 21): 1B, 2A, 3B;~~

91.11 (134) ~~Mark Creek, (T.61, R.2W, S.1, 2, 3, 4, 5, 6, 9): 1B, 2A, 3B;~~

91.12 (135) ~~Marshall Creek, (T.52, R.15, S.10, 15): 1B, 2A, 3B;~~

91.13 (136) ~~Martin Creek, (T.58, R.6, S.2, 3, 11): 1B, 2A, 3B;~~

91.14 (137) ~~McCarthy Creek, (T.53, R.11, S.18; T.53, R.12, S.12, 13): 1B, 2A, 3B;~~

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92.1 (138) ~~Midway River (Rock Run), (T.49, R.15, S.5, 6; T.49, R.16, S.1, 12, 13, 14, 15, 21, 22; T.50, R.15, S.7, 8, 14, 15, 16, 17, 20, 21, 22, 23, 28, 29, 32, 33): 1B, 2A, 3B;~~

92.2 (139) ~~Mile Post Forty-Three Creek (Fortythree Creek, East and West Branch), (T.56, R.8, S.2, 3, 10, 11, 13, 14, 15): 1B, 2A, 3B;~~

92.3 (140) ~~Miller Creek, (T.49, R.14, S.4; T.50, R.14, S.6, 18, 19, 29, 30, 32, 33; T.50, R.15, S.12, 13; T.51, R.14, S.31, 32): 1B, 2A, 3B;~~

92.4 (141) ~~Mink Creek, (T.54, R.9, S.4, 5, 9; T.55, R.9, S.30, 31, 32; T.55, R.10, S.25, 26, 36): 1B, 2A, 3B;~~

92.5 (142) ~~Mission Creek, (T.48, R.15, S.5, 6; T.49, R.15, S.31; T.49, R.16, S.25, 26, 36): 1B, 2A, 3B;~~

92.6 (143) ~~Mississippi Creek, (T.61, R.2W, S.1, 2, 3; T.61, R.3W, S.1; T.62, R.2W, S.31, 32, 33, 34, 35, 36; T.62, R.3W, S.24, 25, 35, 36): 1B, 2A, 3B;~~

92.7 (144) ~~Mississippi Creek, Little, (T.62, R.2W, S.20, 21, 26, 29, 32, 33, 34, 35): 1B, 2A, 3B;~~

92.8 (145) ~~Mistletoe Creek, (T.60, R.3W, S.3, 4; T.61, R.2W, S.7, 18; T.61, R.3W, S.11, 13, 14, 15, 23, 24, 25, 26, 34, 35): 1B, 2A, 3B;~~

92.9 (146) ~~Monker Creek, (T.61, R.1E, S.6, 7; T.62, R.1E, S.31; T.62, R.1W, S.36): 1B, 2A, 3B;~~

92.10 (147) ~~Mons Creek, (T.62, R.3E, S.4; T.63, R.3E, S.28, 29, 33): 1B, 2A, 3B;~~

92.11 (148) ~~Moose Creek, (T.59, R.6, S.31, 32, 33, 34): 1B, 2A, 3B;~~

92.12 (149) ~~Mud Creek, Carlton County, (T.47, R.15, S.18; T.47, R.16, S.5, 6, 8, 9, 10, 11, 13, 14, 15, 16): 1B, 2A, 3B;~~

92.13 (150) ~~Mud Creek, St. Louis County, (T.54, R.12, S.20, 21, 22, 29, 30): 1B, 2A, 3B;~~

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93.1 (151) ~~Mud Creek, Cook County, (T.62, R.1E, S.8, 9, 16, 17, 21, 22): 1B,~~
93.2 ~~2A, 3B;~~

93.3 (152) ~~Mud Creek, Little, (T.57, R.11, S.11, 12, 14, 22, 23): 1B, 2A, 3B;~~

93.4 (153) ~~Murmur Creek, (T.61, R.2W, S.15, 20, 21, 22, 29, 30): 1B, 2A, 3B;~~

93.5 (154) ~~Murphy Creek (Maki Creek), (T.56, R.11, S.4, 5, 8, 17, 18, 19; T.57,~~
93.6 ~~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;~~

93.7 (155) ~~Myhr Creek, (T.62, R.3E, S.23, 24, 26): 1B, 2A, 3B;~~

93.8 (156) ~~Nemadji Creek, (T.46, R.17, S.7, 8, 9, 18; T.46, R.18, S.13, 14,~~
93.9 ~~15, 16, 22): 1B, 2A, 3B;~~

93.10 (157) ~~Nemadji River, North Fork (Nemadji River), (T.46, R.17, S.1, 2, 3, 8,~~
93.11 ~~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,~~
93.12 ~~S.23, 24, 25, 26, 27, 28, 29, 31, 32; T.47, R.17, S.35, 36): 1B, 2A, 3B;~~

93.13 (158) ~~Nemadji River, South Fork, (T.46, R.16, S.4, 5, 6, 7; T.46, R.17, S.1,~~
93.14 ~~11, 12; T.47, R.15, S.30; T.47, R.16, S.25, 33, 34, 35, 36): 1B, 2A, 3B;~~

93.15 (159) ~~Nestor Creek (Nester Creek), (T.61, R.1W, S.4, 5, 6; T.61, R.2W,~~
93.16 ~~S.1; T.62, R.1W, S.31, 32, 33): 1B, 2A, 3B;~~

93.17 (160) ~~Net River, (T.45, R.16, S.6; T.45, R.17, S.1; T.46, R.16, S.3, 4, 8, 9,~~
93.18 ~~17, 20, 21, 29, 31, 32, 33; T.47, R.16, S.34): 1B, 2A, 3B;~~

93.19 (161) ~~Net River, Little, (T.46, R.16, S.3, 10, 15, 22, 26, 27, 34): 1B, 2A, 3B;~~

93.20 (162) ~~Nicadoo Creek (Nicado Creek), (T.56, R.7, S.7; T.56, R.8, S.1,~~
93.21 ~~12; T.57, R.8, S.27, 35, 36): 1B, 2A, 3B;~~

93.22 (163) ~~Nine Mile Creek (Ninemile Creek), (T.58, R.6, S.3, 4, 9, 16, 17;~~
93.23 ~~T.59, R.6, S.27, 28, 33, 34): 1B, 2A, 3B;~~

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94.1 (164) ~~Oliver Creek (Silver), (T.57, R.7, S.5, 6; T.57, R.8, S.1; T.58, R.7,~~
94.2 ~~S.31, 32): 1B, 2A, 3B;~~

94.3 (165) ~~Onion Creek (Onion River and West Branch Onion River), (T.59,~~
94.4 ~~R.4W, S.1, 2, 3, 4, 12; T.60, R.4W, S.24, 25, 26, 35, 36): 1B, 2A, 3B;~~

94.5 (166) ~~Otter Creek, Big (Otter Creek), (T.48, R.16, S.7; T.48, R.17, S.3,~~
94.6 ~~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,~~
94.7 ~~26): 1B, 2A, 3B;~~

94.8 (167) ~~Otter Creek, Little, (T.48, R.17, S.7, 10, 15, 16, 17, 18; T.48, R.18,~~
94.9 ~~S.11, 12, 13, 14): 1B, 2A, 3B;~~

94.10 (168) ~~Palisade Creek, (T.56, R.7, S.16, 17, 18, 19, 20, 21, 22; T.56, R.8,~~
94.11 ~~S.24): 1B, 2A, 3B;~~

94.12 (169) ~~Panakee Creek, (T.54, R.22, S.20, 28, 29, 33): 1B, 2A, 3B;~~

94.13 (170) ~~Panakee Creek, (T.60, R.4W, S.17, 18; T.60, R.5W, S.11, 13, 14):~~
94.14 ~~1B, 2A, 3B;~~

94.15 (171) ~~Peeore Creek, (T.61, R.4W, S.19, 20, 21): 1B, 2A, 3B;~~

94.16 (172) ~~Peters Creek, (T.54, R.22, S.22, 23, 27, 28): 1B, 2A, 3B;~~

94.17 (173) ~~Pigeon River (South Fowl Lake outlet to Pigeon Bay of Lake~~
94.18 ~~Superior): 1B, 2Bd, 3A;~~

94.19 (174) ~~Pike Lake Creek, (T.61, R.2W, S.10, 11, 15): 1B, 2A, 3B;~~

94.20 (175) ~~Pine Mountain Creek (Falls Creek), (T.63, R.1E, S.23, 26, 27, 28,~~
94.21 ~~33): 1B, 2A, 3B;~~

94.22 (176) ~~Pine River (White Pine River), (T.50, R.16, S.4, 8, 9, 15, 16, 17, 18,~~
94.23 ~~19, 20, 21, 29, 30, 32; T.50, R.17, S.23, 24, 26): 1B, 2A, 3B;~~

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95.1 (177) ~~Plouff Creek, (T.61, R.4W, S.17, 18; T.61, R.5W, S.2, 3, 11, 13, 14, 15, 23; T.62, R.5W, S.26, 34, 35): 1B, 2A, 3B;~~

95.2 (178) ~~*Plouff Creek [11/5/84P] (T.62, R.5W, S.23): 1B, 2A, 3B;~~

95.3 (179) ~~Poplar River (Missouri Creek), (T.60, R.3W, S.3, 4, 5, 6, 9, 10, 15, 16, 17, 19, 20, 21, 28, 33; T.61, R.3W, S.30, 31; T.61, R.4W, S.10, 13, 14, 15, 22, 23, 25, 26, 36): 1B, 2A, 3B;~~

95.4 (180) ~~Portage Brook, (T.64, R.3E, S.24, 25, 26, 27, 28, 29, 32, 33, 34; T.64, R.4E, S.19, 20): 1B, 2A, 3B;~~

95.5 (181) ~~Railroad Creek, (T.50, R.17, S.1, 11, 12, 14): 1B, 2A, 3B;~~

95.6 (182) ~~Red River, (T.48, R.15, S.30; T.48, R.16, S.25, 26): 1B, 2A, 3B;~~

95.7 (183) ~~Red Rock Creek, (T.63, R.5E, S.21, 22, 26, 27, 28, 35): 1B, 2A, 3B;~~

95.8 (184) ~~Reservation River, (T.62, R.5E, S.6; T.63, R.4E, S.23, 25, 26, 36; T.63, R.5E, S.16, 17, 18, 19, 20, 21, 29, 30, 31): 1B, 2A, 3B;~~

95.9 (185) ~~Rock Creek, (T.47, R.16, S.7, 17, 18, 20, 21, 22, 23, 24; T.47, R.17, S.12): 1B, 2A, 3B;~~

95.10 (186) ~~Rock Cut Creek, (T.58, R.6, S.18, 19, 20; T.58, R.7, S.13): 1B, 2A, 3B;~~

95.11 (187) ~~Rocky Run Creek, (T.49, R.15, S.6; T.50, R.15, S.30, 31; T.50, R.16, S.11, 12, 13, 24, 25): 1B, 2A, 3B;~~

95.12 (188) ~~Rollins Creek, (T.59, R.3W, S.6; T.60, R.3W, S.29, 30, 31; T.60, R.4W, S.36): 1B, 2A, 3B;~~

95.13 (189) ~~Rosebush Creek (Fall River), (T.61, R.1W, S.13, 23, 24, 25; T.61, R.1E, S.18): 1B, 2A, 3B;~~

95.14 (190) ~~Ross Creek, (T.52, R.13, S.1, 2, 3, 4, 5; T.53, R.13, S.33): 1B, 2A, 3B;~~

96.1 (191) ~~Ryan Creek, (T.55, R.14, S.14, 15, 22): 1B, 2A, 3B;~~

96.2 (192) ~~St. Louis River, [WR] (T.58, R.12, S.21, 22, 27, 28, 31, 32, 33;~~

96.3 ~~T.58, R.13, S.36): 2B, 3B;~~

96.4 (193) ~~Sargent Creek, (T.48, R.15, S.4, 5, 9, 10; T.49, R.15, S.28, 29, 32):~~

96.5 ~~1B, 2A, 3B;~~

96.6 (194) ~~Sawbill Creek, (T.62, R.4W, S.7, 18, 19, 20, 28, 29, 30; T.62, R.5W,~~

96.7 ~~S.25): 1B, 2A, 3B;~~

96.8 (195) ~~Sawmill Creek, (T.57, R.6, S.18; T.57, R.7, S.12, 13, 22, 23, 24,~~

96.9 ~~26, 27, 34): 1B, 2A, 3B;~~

96.10 (196) ~~Seanlon Creek, (T.49, R.16, S.30; T.49, R.17, S.25): 1B, 2A, 3B;~~

96.11 (197) ~~Schmidt Creek, (T.51, R.12, S.17): 1B, 2A, 3B;~~

96.12 (198) ~~Schoolhouse Creek, (T.58, R.7, S.35, 36): 1B, 2A, 3B;~~

96.13 (199) ~~Section 16 Creek, (T.58, R.5W, S.16): 1B, 2A, 3B;~~

96.14 (200) ~~Section 36 Creek, (T.46, R.16, S.1, 2, 11, 12, 13; T.47, R.16, S.36):~~

96.15 ~~1B, 2A, 3B;~~

96.16 (201) ~~Silver Creek, Carlton County, (T.48, R.16, S.15, 16, 17, 21, 28):~~

96.17 ~~1B, 2A, 3B;~~

96.18 (202) ~~Silver Creek, Lake County, (T.53, R.10, S.6, 7, 16, 17, 18, 21; T.53,~~

96.19 ~~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;~~

96.20 (203) ~~Silver Creek, Big (Silver Creek), Carlton County, (T.46, R.17, S.14,~~

96.21 ~~23, 24, 25, 36): 1B, 2A, 3B;~~

96.22 (204) ~~Silver Creek, East Branch, (T.53, R.10, S.5, 8, 9, 16, 21): 1B, 2A, 3B;~~

96.23 (205) ~~Sixmile Creek, (T.60, R.4W, S.13, 14, 15, 22, 23, 27, 28, 33): 1B,~~

96.24 ~~2A, 3B;~~

97.1 (206) ~~Skunk Creek, Lake County, (T.54, R.9, S.4, 9, 16, 17, 20; T.55, R.9,~~
97.2 ~~S.19, 29, 30, 32, 33; T.55, R.10, S.13, 14, 24): 1B, 2A, 3B;~~

97.3 (207) ~~Skunk Creek, Carlton County, (T.46, R.17, S.4, 5, 6; T.47, R.17,~~
97.4 ~~S.31, 33, 34, 35, 36; T.47, R.18, S.36): 1B, 2A, 3B;~~

97.5 (208) ~~Spider Creek, (T.52, R.18, S.19, 20, 21, 22, 27, 28, 29, 30; T.52,~~
97.6 ~~R.19, S.9, 10, 13, 14, 15, 24): 1B, 2A, 3B;~~

97.7 (209) ~~Split Rock River, (T.54, R.8, S.6, 7; T.54, R.9, S.1, 2, 12; T.55, R.9,~~
97.8 ~~S.26, 28, 34, 35, 36): 1B, 2A, 3B;~~

97.9 (210) ~~Split Rock River, East Branch, (T.55, R.9, S.4, 5, 6, 9, 10, 14, 15, 22,~~
97.10 ~~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;~~

97.11 (211) ~~Split Rock River, West Branch, (T.55, R.9, S.6, 7, 8, 16, 17, 21, 22,~~
97.12 ~~26, 27, 28; T.55, R.10, S.1; T.56, R.10, S.22, 26, 27, 33, 34, 35, 36): 1B, 2A, 3B;~~

97.13 (212) ~~Spring Creek, Carlton County, (T.46, R.17, S.3, 4, 5, 6): 1B, 2A, 3B;~~

97.14 (213) ~~Spring Creek, St. Louis County, (T.54, R.12, S.1, 2): 1B, 2A, 3B;~~

97.15 (214) ~~Stanley Creek, (T.52, R.11, S.18, 19; T.52, R.12, S.4, 5, 8, 9, 10,~~
97.16 ~~11, 12, 13): 1B, 2A, 3B;~~

97.17 (215) ~~State Line Creek, (T.46, R.15, S.6, 7, 18, 19, 30, 31; T.46, R.16,~~
97.18 ~~S.12, 13, 24, 25, 36; T.47, R.15, S.30, 31): 1B, 2A, 3B;~~

97.19 (216) ~~Stewart Creek, (T.49, R.15, S.21, 22, 26, 27): 1B, 2A, 3B;~~

97.20 (217) ~~Stewart River, (T.53, R.10, S.18, 19, 20, 29; T.53, R.11, S.2, 3, 10,~~
97.21 ~~11, 13, 14, 15; T.54, R.11, S.3, 4, 10, 15, 22, 26, 27, 34, 35): 1B, 2A, 3B;~~

97.22 (218) ~~Stewart River, (T.55, R.11, S.7; T.55, R.12, S.12, 13): 1B, 2A, 3B;~~

97.23 (219) ~~Stewart River, Little, (T.53, R.10, S.19, 20, 29; T.53, R.11, S.9,~~
97.24 ~~15, 16, 22, 23, 24): 1B, 2A, 3B;~~

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98.1 (220) ~~Stickle Creek, (T.63, R.1W, S.1, 2, 11, 12, 14): 1B, 2A, 3B;~~

98.2 (221) ~~Stone Creek, (T.61, R.2E, S.2, 3; T.62, R.2E, S.21, 22, 27, 34, 35): 1B, 2A, 3B;~~

98.3 (222) ~~Stoney Creek (Stony Creek or Rock Creek), Lake County, (T.55, R.9, S.30; T.55, R.10, S.20, 23, 24, 25, 27): 1B, 2A, 3B;~~

98.4 (223) ~~Stony Brook, Carlton County, (T.46, R.17, S.10, 11, 15, 16, 21): 1B, 2A, 3B;~~

98.5 (224) ~~Stony Creek, Little, Cook County, (T.63, R.2E, S.4, 5, 9; T.64, R.2E, S.31, 32, 33): 1B, 2A, 3B;~~

98.6 (225) ~~Stream Number 30, (T.54, R.8, S.5, 6; T.55, R.8, S.19, 30, 31): 1B, 2A, 3B;~~

98.7 (226) ~~Stumble Creek, (T.59, R.5W, S.16, 21, 22, 26, 27, 28): 1B, 2A, 3B;~~

98.8 (227) ~~Stump River (Lower Stump River), (T.64 R.4E, S.18; T.64, R.3E, S.8, 9, 13, 14, 15, 16, 17, 21, 22, 23, 24): 1B, 2A, 3B;~~

98.9 (228) ~~Sucker River (Big Sucker Creek), (T.51, R.12, S.3, 4, 10; T.52, R.12, S.18, 19, 29, 30, 31, 32, 33; T.52, R.13, S.1, 12, 13, 24, 25; T.53, R.12, S.19, 20, 30, 31; T.53, R.13, S.24, 25, 36): 1B, 2A, 3B;~~

98.10 (229) ~~Sucker River, Little, (T.51, R.12, S.2, 3): 1B, 2A, 3B;~~

98.11 (230) ~~Sugar Loaf Creek, (T.58, R.5W, S.17, 19, 20, 29): 1B, 2A, 3B;~~

98.12 (231) ~~Sullivan Creek, (T.56, R.11, S.1, 2, 10, 11, 15; T.57, R.10, S.19, 30; T.57, R.11, S.24, 25, 36): 1B, 2A, 3B;~~

98.13 (232) ~~Sundling Creek, (T.61, R.1W, S.10, 11, 14, 15, 16, 17, 18; T.61, R.2W, S.13): 1B, 2A, 3B;~~

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99.1 (233) ~~Swamp River, (T.63, R.3E, S.25, 26, 36; T.63, R.4E, S.20, 29, 30; T.64, R.4E, S.21, 27, 28): 1B, 2A, 3B;~~

99.2 (234) ~~Swamper Creek, (T.64, R.1E, S.20, 29, 32): 1B, 2A, 3B;~~

99.3 (235) ~~Swan Creek, East, (T.56, R.20, S.3, 4, 5, 10, 11): 1B, 2A, 3B;~~

99.4 (236) ~~Swan Creek, Little, (T.56, R.19, S.17, 19, 20, 30; T.56, R.20, S.25, 26, 35): 1B, 2A, 3B;~~

99.5 (237) ~~Swan River, East (Barber Creek), (T.55, R.19, S.18, 19, 30, 31; T.55, R.20, S.1, 2, 12, 13; T.56, R.20, S.2, 3, 11, 14, 23, 26, 27, 35; T.57, R.20, S.28, 33, 34): 1B, 2A, 3B;~~

99.6 (238) ~~Swan River, West (excluding trout waters), (T.55, 56, R.20, 21): 2C;~~

99.7 (239) ~~Swanson Creek, (T.61, R.4W, S.6, 7, 8; T.61, R.5W, S.1): 1B, 2A, 3B;~~

99.8 (240) ~~Tait River, (T.60, R.3W, S.4; T.61, R.3W, S.28, 33): 1B, 2A, 3B;~~

99.9 (241) ~~Talmadge Creek (Talmadge River), (T.51, R.12, S.19; T.51, R.13, S.9, 10, 13, 14, 15, 24): 1B, 2A, 3B;~~

99.10 (242) ~~Temperance River, (T.59, R.4W, S.5, 6, 7, 8, 18, 19, 30, 31, 32; T.60, R.4W, S.5, 6, 7, 8, 17, 20, 28, 29, 32, 33; T.61, R.4W, S.4, 8, 9, 16, 17, 19, 20, 30, 31): 1B, 2A, 3B;~~

99.11 (243) ~~Temperance River (excluding trout waters), (T.62, R.4W): 1B, 2Bd, 3C;~~

99.12 (244) ~~Thirty-nine Creek, Big, (T.56, R.8, S.19, 30, 31; T.56, R.9, S.1, 2, 3, 11, 12, 13, 14, 15, 22, 23, 24, 25; T.57, R.9, S.22, 26, 27, 35, 36): 1B, 2A, 3B;~~

99.13 (245) ~~Thirty-nine Creek, Little, (T.56, R.8, S.6, 7, 8, 17, 18, 19, 20, 29, 30; T.56, R.9, S.1, 12): 1B, 2A, 3B;~~

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100.1 (246) ~~Thompson Creek, (T.62, R.1W, S.17, 19, 20; T.62, R.2W, S.24):~~
100.2 ~~1B, 2A, 3B;~~

100.3 (247) ~~Tikkanen Creek, (T.57, R.7, S.5, 6, 8, 16, 17): 1B, 2A, 3B;~~

100.4 (248) ~~Timber Creek, (T.62, R.1E, S.1; T.63, R.1E, S.25, 36; T.63, R.2E,~~
100.5 ~~S.31): 1B, 2A, 3B;~~

100.6 (249) ~~Tischer Creek (Congdon Creek/Hartley), (T.50, R.14, S.2, 3, 4, 10,~~
100.7 ~~11, 13, 14; T.51, R.14, S.29, 33, 34): 1B, 2A, 3B;~~

100.8 (250) ~~Torgenson Creek, (T.61, R.4W, S.30; T.61, R.5W, S.24, 25): 1B,~~
100.9 ~~2A, 3B;~~

100.10 (251) ~~Tower Creek, St. Louis County, (T.55, R.14, S.8, 9, 17, 18, 19; T.55,~~
100.11 ~~R.15, S.24, 25, 26): 1B, 2A, 3B;~~

100.12 (252) ~~Tower Creek, Lake County, (T.57, R.7, S.9): 1B, 2A, 3B;~~

100.13 (253) ~~Trappers Creek, (T.56, R.11, S.2, 3, 9, 10, 16, 17, 19, 20; T.57,~~
100.14 ~~R.11, S.35): 1B, 2A, 3B;~~

100.15 (254) ~~Trout Brook, (T.54, R.22, S.1): 1B, 2A, 3B;~~

100.16 (255) ~~Twin Points Creek, (T.54, R.9, S.10, 11, 13, 14): 1B, 2A, 3B;~~

100.17 (256) ~~Two Island River, (T.58, R.5W, S.2, 3, 4, 11; T.59, R.5W, S.7, 8, 17,~~
100.18 ~~18, 20, 21, 27, 28, 29, 31, 32, 33, 34; T.59, R.6, S.11, 12): 1B, 2A, 3B;~~

100.19 (257) ~~Ugstad Creek, (T.51, R.15, S.21, 22, 26, 27, 28): 1B, 2A, 3B;~~

100.20 (258) ~~Unnamed (Deer) Creek, (T.47, R.16, S.19, 29, 30; T.47, R.17, S.13,~~
100.21 ~~14, 24): 1B, 2A, 3B;~~

100.22 (259) ~~Unnamed Creek, Carlton County, (T.47, R.17, S.28, 29, 33, 34,~~
100.23 ~~35): 1B, 2A, 3B;~~

101.1 (260) ~~Unnamed Creek, Carlton County, (T.47, R.17, S.31, 32, 33, 34):~~ 1B, 2A, 3B;

101.2 ~~1B, 2A, 3B;~~

101.3 (261) ~~Unnamed Creek, (T.55, R.8, S.20, 21, 29, 32, 33):~~ 1B, 2A, 3B;

101.4 (262) ~~Unnamed Creek, Meadowlands, (T.53, R.19, S.22, 23):~~ 7;

101.5 (263) ~~Unnamed Creek, (S-17-6), (T.53, R.11, S.30, 31, 32; T.53, R.12,~~

101.6 ~~S.25):~~ 1B, 2A, 3B;

101.7 (264) ~~Unnamed Creek, (S-17-9), (T.53, R.11, S.5; T.54, R.11, S.20, 29,~~

101.8 ~~30, 32):~~ 1B, 2A, 3B;

101.9 (265) ~~Unnamed Ditch, Gilbert, (T.58, R.17, S.23, 24, 25, 36):~~ 7;

101.10 (266) ~~Us-kab-wan-ka (Rush), (T.52, R.16, S.2, 11, 14, 23; T.53, R.15,~~

101.11 ~~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,~~

101.12 ~~32, 33, 34):~~ 1B, 2A, 3B;

101.13 (267) ~~Wanless Creek, (T.60, R.6, S.27, 33, 34, 35, 36):~~ 1B, 2A, 3B;

101.14 (268) ~~Whiteface River, South Branch, (see Hornby Junction Creek);~~

101.15 (269) ~~Whyte Creek, (T.57, R.10, S.1, 2, 11, 14, 23, 26, 27, 34):~~ 1B, 2A, 3B;

101.16 (270) ~~Woods Creek, (T.61, R.1E, S.1, 12, 13; T.62, R.1E, S.35, 36):~~ 1B,

101.17 ~~2A, 3B;~~

101.18 (271) ~~Wyman Creek, (T.58, R.14, S.3, 4; T.59, R.14, S.11, 13, 14, 23, 24,~~

101.19 ~~26, 27, 34, 35):~~ 1B, 2A, 3B, and

101.20 (272) ~~*All other streams in the Boundary Waters Canoe Area Wilderness~~

101.21 ~~{11/5/84P}: 1B, 2Bd, 3B.~~

101.22 B. Lakes:

101.23 [For text of subitems (1) to (151), see M.R.]

102.1 (152) White Pine Lake, 16-0369-00, [WR] (T.61, R.3W, S.19, 20, 29,
102.2 30): 2B, 3B; and

102.3 (153) *Winchell Lake, 16-0354-00, [11/5/84P] (T.64, R.2, 3): 1B, 2A, 3B;
102.4 (154) *All other lakes in the Boundary Waters Canoe Area Wilderness
102.5 [11/5/84P]: 1B, 2Bd, 3B; and

102.6 (155) *All wetlands in the Boundary Waters Canoe Area Wilderness
102.7 [11/5/84P]: 2D.

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

102.9 Subp. 2. Lake of the Woods Basin. The water use classifications for the
102.10 stream reaches within each of the major watersheds in the Lake of the Woods Basin
102.11 listed in item A are found in tables entitled "Beneficial Use Designations for Stream
102.12 Reaches" published on the Web site of the Minnesota Pollution Control Agency at
102.13 www.pca.state.mn.us. The tables are incorporated by reference and are not subject to
102.14 frequent change. The date after each watershed listed in item A is the publication date
102.15 of the applicable table. The water use classifications for the other listed waters in the
102.16 Lake of the Woods Basin are as identified in items A B to D. See parts 7050.0425 and
102.17 7050.0430 for the classifications of waters not listed. Designated use information for
102.18 water bodies can also be accessed through the agency's Environmental Data Access
102.19 (<http://www.pca.state.mn.us/quick-links/eda-surface-water-data>).

102.20 A. Streams (by eight-digit hydrologic unit code):

102.21 (1) 09030001 Rainy River - Headwaters (August 9, 2016);

102.22 (2) 09030002 Vermilion River (August 9, 2016);

102.23 (3) 09030003 Rainy River - Rainy Lake (August 9, 2016);

102.24 (4) 09030005 Little Fork River (August 9, 2016);

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103.1 (5) 09030006 Big Fork River (August 9, 2016);

103.2 (6) 09030007 Rapid River (August 9, 2016);

103.3 (7) 09030008 Rainy River - Lower (August 9, 2016); and

103.4 (8) 09030009 Lake of the Woods (August 9, 2016).

103.5 (1) ~~Angora Creek, (T.61, R.18, S.9, 10, 15, 16, 21, 22): 1B, 2A, 3B;~~

103.6 (2) ~~Arrowhead Creek (Trapper Creek), (T.60, R.8, S.3, 10, 11, 13, 14, 15,~~

103.7 ~~22, 23, 26, 27, 28, 34; T.61, R.8, S.14, 15, 21, 22, 27, 28, 34): 1B, 2A, 3B;~~

103.8 (3) ~~Ash River (Camp Ninety Creek), (T.66, R.20, S.4, 5, 9; T.67, R.20, S.5,~~

103.9 ~~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,~~

103.10 ~~23, 24, 28, 29, 31, 33; T.68, R.19, S.17, 18; T.68, R.21, S.36): 1B, 2A, 3B;~~

103.11 (4) ~~Beaver Creek, (T.62, 63, R.20): 2C;~~

103.12 (5) ~~Beauty Creek, (T.67, R.21, S.23, 24, 25, 26): 1B, 2A, 3B;~~

103.13 (6) ~~Blackduck River (Black Duck River), (T.66, R.19, S.5, 6, 7, 8, 17; T.66,~~

103.14 ~~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;~~

103.15 ~~T.68, R.20, S.26, 27, 28, 33, 34): 1B, 2A, 3B;~~

103.16 (7) ~~Camp Creek, (T.60, R.8, S.3, 4, 9, 10; T.61, R.8, S.27, 28, 33, 34):~~

103.17 ~~1B, 2A, 3B;~~

103.18 (8) ~~Camp Creek, West, (T.60, R.8, S.4, 5, 7, 8, 16, 17, 20, 21; T.61, R.8,~~

103.19 ~~S.33): 1B, 2A, 3B;~~

103.20 (9) ~~Camp E Creek, (T.60, R.9, S.7, 18; T.60, R.10, S.11, 12): 1B, 2A, 3B;~~

103.21 (10) ~~Dark River, (T.60, R.19, S.19, 20, 30; T.60, R.20, 10, 11, 12, 13,~~

103.22 ~~24): 1B, 2A, 3B;~~

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104.1 (11) ~~Dinner Creek, (T.153, R.26, S.4, 9, 10, 12, 13, 14, 15, 23, 24; T.154, R.26, S.7, 18, 19, 29, 30, 32, 33; T.154, R.27, S.1, 12; T.155, R.26, S.30, 31; T.155, R.27, S.25, 35, 36): 1B, 2A, 3B;~~

104.2 (12) ~~Dumbbell River, (T.60, R.7, S.3, 4, 5, 7, 8, 9, 10, 16, 18, 19, 20, 28, 29, 31, 32; T.61, R.7, S.34): 1B, 2A, 3B;~~

104.3 (13) ~~Fawn Creek, (T.66, R.20, S.1, 2, 3, 4, 12; T.67, R.20, S.15, 22, 23, 26, 34, 35): 1B, 2A, 3B;~~

104.4 (14) ~~Folly Creek, (T.60, R.7, S.2, 3, 10, 11, 14, 15, 22, 23, 24, 27): 1B, 2A, 3B;~~

104.5 (15) ~~Gardner Brook, (T.63, 64, R.23, 24): 2C;~~

104.6 (16) ~~Grassy Creek, (T.61, R.13, S.6; T.61, R.14, S.1): 1B, 2A, 3B;~~

104.7 (17) ~~Harrigan Creek, (T.62, R.23, S.10): 1B, 2A, 3B;~~

104.8 (18) ~~Harris Lake Creek (Harris Creek), (T.60, R.10, S.6; T.61, R.10, S.19, 30, 31): 1B, 2A, 3B;~~

104.9 (19) ~~Hay Creek, (T.153, R.26, S.4, 8, 9, 17, 20): 1B, 2A, 3B;~~

104.10 (20) ~~Hill Creek, (T.60, R.8, S.19, 30; T.60, R.9, S.24, 25): 1B, 2A, 3B;~~

104.11 (21) ~~Indian Sioux River, Little, (T.65, R.15): 1B, 2Bd, 3B;~~

104.12 (22) ~~Inga Creek, (T.60, R.9, S.2, 3; T.61, R.9, S.14, 22, 23, 27, 34, 35): 1B, 2A, 3B;~~

104.13 (23) ~~*Inga Creek [11/5/84P] (T.61, R.9, S.11, 12): 1B, 2A, 3B;~~

104.14 (24) ~~Isabella River, Little, (T.59, R.8, S.3, 4, 5, 6, 9, 10, 15, 16, 22; T.60, R.8, S.31, 32; T.60, R.9, S.5, 6, 8, 9, 10, 15, 16, 22, 25, 26, 27, 36; T.61, R.9, S.9, 16, 17, 20, 21, 29, 32): 1B, 2A, 3B;~~

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105.1 (25) *Isabella River, Little, [11/5/84P] (T.61, R.9, S.3, 4, 9, 10; T.62,
105.2 R.9, S.34): 1B, 2A, 3B;

105.3 (26) Island River, (T.61, R.7, 8): 1B, 2Bd, 3C;

105.4 (27) Jack Pine Creek, (T.60, R.8, S.5, 6, 7, 8, 18; T.61, R.8, S.19, 20, 29,
105.5 30, 31, 32): 1B, 2A, 3B;

105.6 (28) Johnson Creek, (T.60, R.18, S.6, 7, 8, 17, 20): 1B, 2A, 3B;

105.7 (29) Kawishiwi River, outside Boundary Waters Canoe Area Wilderness,
105.8 (Source to Fall Lake): 1B, 2Bd, 3C;

105.9 (30) Kinmount Creek, (T.67, R.20, S.19; T.67, R.21, S.13, 14, 15, 20, 21,
105.10 22, 23, 24): 1B, 2A, 3B;

105.11 (31) Longstorff Creek, (T.62, R.12, S.6, 7; T.63, R.12, S.31): 1B, 2A, 3B;

105.12 (32) Lost River, (T.65, R.19, S.6; T.65, R.20, S.1, 2, 3, 4, 5, 6, 7, 8, 12,
105.13 T.65, R.21, S.1; T.66, R.20, 25, 27, 29, 31, 32, 33, 34, 35, 36): 1B, 2A, 3B;

105.14 (33) Mary Ann Creek, (T.58, R.10, S.16, 21): 1B, 2A, 3B;

105.15 (34) Mike Kelly Creek (Kelly Creek), (T.60, R.11, S.14, 15, 23): 1B,
105.16 2A, 3B;

105.17 (35) Mitawan Creek, (T.60, R.9, S.1, 12; T.61, R.8, S.18, 19, 31; T.61, R.9,
105.18 S.12, 13, 24, 25, 36): 1B, 2A, 3B;

105.19 (36) *Mitawan Creek, [11/5/84P] (T.61, R.8, S.5, 6, 7; T.61, R.9, S.1, 2,
105.20 12; T.62, R.9, S.35): 1B, 2A, 3B;

105.21 (37) Moose River, St. Louis County, (T.68, R.18, 19): 1B, 2Bd, 3C;

105.22 (38) Moose River, outside Boundary Waters Canoe Area Wilderness,
105.23 (T.65, R.14): 1B, 2Bd, 3C;

106.1 (39) Nine Mile Creek (Ninemile Creek), (T.66, R.19, S.4; T.67, R.19, S.7, 8, 18, 19, 20, 21, 27, 28, 29, 33; T.67, R.20, S.12, 13, 14, 23): 1B, 2A, 3B;

106.3 (40) Nip Creek, (T.59, R.11, S.3, 4; T.60, R.11, S.21, 22, 27, 28, 34): 1B, 2A, 3B;

106.5 (41) Nira Creek, (T.61, R.11, S.22, 23, 27): 1B, 2A, 3B;

106.6 (42) Pitt Creek, (T.159, R.32, S.4, 9, 16; T.160, R.32, S.21, 28, 33): 1B, 2A, 3B;

106.8 (43) Portage Creek, (T.65, R.21): 2C;

106.9 (44) Portage River, (T.65, R.14, S.24; T.65, R.13, S.19, 20, 28, 29): 1B, 2Bd, 3C;

106.11 (45) Rainy River, (Outlet of Rainy Lake to Dam in International Falls): 1B, 2Bd, 3A;

106.13 (46) Rainy River, (Dam in International Falls to Railroad Bridge in Baudette): 1C, 2Bd, 3A;

106.15 (47) Rainy River, (Railroad Bridge in Baudette to Lake of the Woods): 2B, 3A;

106.17 (48) Sand Creek, (T.60, R.21, S.3, 4, 5, 10, 11, 14; T.61, R.20, S.19; T.61, R.21, S.3, 10, 11, 14, 15, 23, 24, 25, 26, 27, 33, 34, 35; T.62, R.21, S.34): 1B, 2A, 3B;

106.19 (49) Scott Creek, (T.59, R.7, S.4; T.60, R.7, S.9, 10, 15, 16, 21, 22, 27, 33, 34, 35): 1B, 2A, 3B;

106.21 (50) Section 30 Creek, (T.63, R.11, S.30; T.63, R.12, S.24, 25): 1B, 2A, 3B;

106.22 (51) Sea Gull River, (T.66N, R.4W, S.30, 31): 1C, 2Bd, 3C;

106.23 (52) Shine Brook (Swine Creek), (T.62, R.25, S.11, 14, 15, 16): 1B, 2A, 3B;

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107.1 (53) ~~Snake Creek, (T.60, R.10, S.1; T.61, R.9, S.19, 30, 31; T.61, R.10, S.24, 25, 36): 1B, 2A, 3B;~~

107.3 (54) ~~Snake River, (T.60, R.10, S.3; T.61, R.9, S.18, 19; T.61, R.10, S.23, 24, 26, 27, 34): 1B, 2A, 3B;~~

107.5 (55) ~~*Snake River, [11/5/84P] (T.61, R.9, S.7; T.61, R.10, S.12): 1B, 2A, 3B;~~

107.7 (56) ~~Sphagnum Creek, (T.60, R.9, S.4; T.61, R.9, S.28, 29, 33): 1B, 2A, 3B;~~

107.8 (57) ~~Stoney Brook (Stony Brook), (T.60, R.22, S.3, 4; T.61, R.22, S.13, 24, 25, 35, 36; T.61, R.21, S.7, 18): 1B, 2A, 3B;~~

107.10 (58) ~~Tomato Creek, (T.161, R.34, S.3, 9, 10; T.162, R.34, S.35): 1B, 2A, 3B;~~

107.11 (59) ~~Tomlinson Creek, (T.60, R.7, S.18, 19, 31; T.60, R.8, S.24, 25, 36): 1B, 2A, 3B;~~

107.13 (60) ~~Trout Brook, (T.66, R.26, S.19, 30; T.66, R.27, S.24, 25): 1B, 2A, 3B;~~

107.14 (61) ~~Two Rivers, East, (T.61, R.14, S.7, 8; T.61, R.15, S.1, 2, 3, 4, 12; T.62, R.14, S.29, 30, 31, 32; T.62, R.15, S.32, 33, 34, 35, 36): 1B, 2A, 3B;~~

107.16 (62) ~~Two Rivers, West, (T.61, R.15, S.6, 7, 8, 9, 14, 15, 16, 17): 1B, 2A, 3B;~~

107.17 (63) ~~Unnamed Creek, (T.65, R.19, S.4, 5; T.66, R.19, S.33): 1B, 2A, 3B;~~

107.18 (64) ~~Valley River, (T.62, R.23, S.1, 2, 3, 4, 10, 11, 12, 13, 14, 24; T.63, R.22, S.6, 7, 8, 9, 16, 17, 18, 19, 20, 21, 28, 29, 30; T.63, R.23, S.24, 25, 26, 35): 1B, 2A, 3B;~~

107.20 (65) ~~Venning Creek, (T.60, R.23, S.1, 2, 11, 12, 13, 14; T.61, R.23, S.35): 1B, 2A, 3B;~~

107.21 (66) ~~Victor Creek, (T.60, R.9, S.12, 13): 1B, 2A, 3B;~~

107.22 (67) ~~Weiss Creek, (T.59, R.9, S.2, 3, 11; T.60, R.9, S.27, 34): 1B, 2A, 3B;~~

108.1 (68) ~~Wenho Creek, (T.58, R.10, S.17, 20, 21, 27, 28, 34): 1B, 2A, 3B;~~

108.2 (69) ~~Zippel Creek, West Branch, (T.162, R.33, 34): 2C;~~

108.3 (70) ~~*All other streams in the Boundary Waters Canoe Area Wilderness~~

108.4 [~~11/5/84P~~]: 1B, 2Bd, 3B; and

108.5 (71) ~~*All other streams in the Voyageurs National Park [~~11/5/84P~~]: 2B, 3B.~~

108.6 B. Lakes:

108.7 [For text of subitems (1) to (182), see M.R.]

108.8 (183) *Wisini Lake, 38-0361-00, [~~11/5/84P~~] (T.64, R.7): 1B, 2A, 3B; and

108.9 (184) Woods, Lake of the, 39-0002-00, (see Lake of the Woods);

108.10 (185) ~~*All other lakes in the Boundary Waters Canoe Area Wilderness~~

108.11 [~~11/5/84P~~]: 1B, 2Bd, 3B;

108.12 (186) ~~*All wetlands in the Boundary Waters Canoe Area Wilderness~~

108.13 [~~11/5/84P~~]: 2D;

108.14 (187) ~~*All other lakes in the Voyageurs National Park [~~11/5/84P~~]: 2B,~~

108.15 3B; and

108.16 (188) ~~*All other wetlands in the Voyageurs National Park [~~11/5/84P~~]: 2D.~~

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

108.18 Subp. 3. **Red River of the North Basin.** The water use classifications for the
108.19 stream reaches within each of the major watersheds in the Red River of the North Basin
108.20 listed in item A are found in tables entitled "Beneficial Use Designations for Stream
108.21 Reaches" published on the Web site of the Minnesota Pollution Control Agency at
108.22 www.pca.state.mn.us. The tables are incorporated by reference and are not subject to
108.23 frequent change. The date after each watershed listed in item A is the publication date
108.24 of the applicable table. The water use classifications for the other listed waters in the

109.1 Red River of the North Basin are as identified in items AB to D. See parts 7050.0425
109.2 and 7050.0430 for the classifications of waters not listed. Designated use information
109.3 for water bodies can also be accessed through the agency's Environmental Data Access
109.4 (<http://www.pca.state.mn.us/quick-links/eda-surface-water-data>).

109.5 A. Streams (by eight-digit hydrologic unit code):

- 109.6 (1) 09020101 Bois de Sioux River (August 9, 2016);
- 109.7 (2) 09020102 Mustinka River (August 9, 2016);
- 109.8 (3) 09020103 Otter Tail River (August 9, 2016);
- 109.9 (4) 09020104 Upper Red River of the North (August 9, 2016);
- 109.10 (5) 09020106 Buffalo River (August 9, 2016);
- 109.11 (6) 09020107 Red River of the North - Marsh River (August 9, 2016);
- 109.12 (7) 09020108 Wild Rice River (August 9, 2016);
- 109.13 (8) 09020301 Red River of the North - Sandhill River (August 9, 2016);
- 109.14 (9) 09020302 Upper/Lower Red Lake (August 9, 2016);
- 109.15 (10) 09020303 Red Lake River (August 9, 2016);
- 109.16 (11) 09020304 Thief River (August 9, 2016);
- 109.17 (12) 09020305 Clearwater River (August 9, 2016);
- 109.18 (13) 09020306 Red River of the North - Grand Marais Creek (August
109.19 9, 2016);
- 109.20 (14) 09020309 Snake River (August 9, 2016);
- 109.21 (15) 09020311 Red River of the North - Tamarac River (August 9, 2016);
- 109.22 (16) 09020312 Two Rivers (August 9, 2016); and
- 109.23 (17) 09020314 Roseau River (August 9, 2016).

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110.1 (1) Auganash Creek, (T.144, R.38, S.5; T.145, R.38, S.27, 28, 31, 32, 33): 1B, 2A, 3B;

110.3 (2) Bad Boy Creek, (T.144, R.39, S.13, 14, 22, 23, 27, 28, 34): 1B, 2A, 3B;

110.4 (3) Badger Creek (Lower Badger Creek or County Ditch No. 11), (T.149, 150, 151, R.42, 43, 44): 2C;

110.6 (4) Barnums Creek (Burnham Creek or County Ditch No. 72), (T.148, 149, 150, R.44, 45, 46, 47, 48): 2C;

110.8 (5) Battle River, South Branch, (T.151, R.30, S.2, 3, 4, 11): 1B, 2A, 3B;

110.9 (6) Bemis Hill Creek (County Ditch No. 9), (T.161, R.37, S.17, 20, 29): 1B, 2A, 3B;

110.11 (7) Bois de Sioux River, (Mud Lake outlet to Otter Tail River in Breckenridge): 2C;

110.13 (8) Brandberg Creek (Brandberg Creek), (T.133, R.38, S.20, 21, 28, 29, 30): 1B, 2A, 3B;

110.15 (9) Buckboard Creek, (T.144, R.37, S.19, 30, 31; T.144, R.38, S.11, 12, 13, 24): 1B, 2A, 3B;

110.17 (10) Clearwater River, (T.148, R.35, S.5, 6, 8, 17, 20, 29, 31, 32; T.149, R.35, S.20, 29, 31, 32): 1B, 2A, 3B;

110.19 (11) County Ditch No. 6A-2, Rothsay, (T.135, R.45, S.21, 28, 33): 7 (see subitem (68));

110.21 (12) County Ditch No. 32, Sabin, (T.138, R.48, S.13, 14, 15, 16, 17, 18): 7;

110.22 (13) County Ditch No. 65, New York Mills, (T.135, R.37, S.18; T.135, R.38, S.13): 7;

110.24 (14) Dead Horse Creek, (T.138, R.38, S.3, 4, 7, 8, 9, 16): 1B, 2A, 3B;

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111.1 (15) ~~Deerhorn Creek, (T.136, R.44, 45, 46): 2C;~~

111.2 (16) ~~Doran Slough, (T.131, 132, R.46, 47): 2C;~~

111.3 (17) ~~Eighteen Mile Creek, (T.127, R.46, 47): 2C;~~

111.4 (18) ~~Elbow Lake Creek (Solid Bottom Creek), (T.142, R.38, S.6; T.143, R.38, S.31, 32): 1B, 2A, 3B;~~

111.5 (19) ~~Felton Creek, (T.141, R.44, S.7, 8, 17; T.141, R.45, S.7, 8, 12, 13, 14, 15, 16, 17, 18, 22; T.141, R.46, S.12, 13, 14): 1B, 2A, 3B;~~

111.6 (20) ~~Five Mile Creek, (T.127, 128, R.45): 2C;~~

111.7 (21) ~~Gentilly River, (T.149, 150, R.45): 2C;~~

111.8 (22) ~~Hay Creek, (T.137, 138, R.44, 45, 46): 2C;~~

111.9 (23) ~~Hay Creek (County Ditch No. 7 or County Ditch No. 9), (T.161, 162, R.37, 38, 39): 2C;~~

111.10 (24) ~~Hill River, (T.148, 149, 150, R.39, 40, 41, 42): 2C;~~

111.11 (25) ~~Holmstad Creek, (T.136, R.37, S.7; T.136, R.38, S.12, 13, 14): 1B, 2A, 3B;~~

111.12 (26) ~~Hoover Creek, (T.152, 153, 154, R.29, 30): 2C;~~

111.13 (27) ~~Joe River, (T.162, 163, 164, R.49, 50): 2C;~~

111.14 (28) ~~Joe River, Little, (T.163, R.47, 48): 2C;~~

111.15 (29) ~~Judicial Ditch No. 13, Goodridge, (T.154, R.40, S.16, 17, 18): 7;~~

111.16 (30) ~~Judicial Ditch No. 18, Goodridge, (T.154, R.40, S.18, 19, 27, 28, 29, 30; T.154, R.41, S.13, 14, 15, 16, 17, 18; T.154, R.42, S.7, 8, 13, 14, 15, 16; T.154, R.43, S.9, 10, 11, 12, 16): 7;~~

111.17 (31) ~~Lawndale Creek, (T.135, R.45, S.5, 6; T.135, R.46, S.1, 2): 1B, 2A, 3B;~~

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112.1 (32) ~~Lengby Creek, (T.147, R.39, S.33, 34): 1B, 2A, 3B;~~

112.2 (33) ~~Long Branch Creek, (T.134, R.42, S.7): 1B, 2A, 3B;~~

112.3 (34) ~~Lost River, (T.148, R.38, S.20, 21, 22, 27, 28): 1B, 2A, 3B;~~

112.4 (35) ~~Maple Creek, (T.147, 148, R.44, 45, 46): 2C;~~

112.5 (36) ~~Marsh Creek (Judicial Ditch No. 91), (T.144, 145, 146, R.41, 42,~~

112.6 ~~43): 2C;~~

112.7 (37) ~~Meadow Creek, (T.151, R.30, S.6; T.151, R.31, S.1, 2): 1B, 2A, 3B;~~

112.8 (38) ~~Mud Creek, (T.144, R.37, S.13, 14, 22, 23, 24): 1B, 2A, 3B;~~

112.9 (39) ~~Mud River, (T.150, R.33, S.21, 28): 1B, 2A, 3B;~~

112.10 (40) ~~Mustinka River, (Old Channel), (T.127, 128, R.45, 46, 47): 2C;~~

112.11 (41) ~~Mustinka River, West Branch, (see Twelve Mile Creek, West Branch);~~

112.12 (42) ~~Mustinka River Ditch, (T.128, R.45, S.19; T.128, R.46, S. 13, 14, 23,~~

112.13 ~~24): 2C;~~

112.14 (43) ~~Nassett Creek, (T.148, R.38, S.20, 28, 29): 1B, 2A, 3B;~~

112.15 (44) ~~O'Brien Creek, (T.149, R.32, S.2; T.150, R.32, S.23, 24, 26, 35):~~

112.16 ~~1B, 2A, 3B;~~

112.17 (45) ~~Otter Tail River, (Height of Land Lake to mouth): 1C, 2Bd, 3C;~~

112.18 (46) ~~Otter Tail River Diversion, (T.133, R.42, S.19, 30; T.133, R.43, S.25):~~

112.19 ~~1C, 2Bd, 3C;~~

112.20 (47) ~~Rabbit River, (T.130, 131, R.45, 46, 47): 2C;~~

112.21 (48) ~~Rabbit River, South Fork, (T.130, R.45, 46): 2C;~~

112.22 (49) ~~Red Lake River, (Outlet of Lower Red Lake to mouth): 1C, 2Bd, 3C;~~

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113.1 (50) ~~Red River of the North, (T.132, R.47, S.8 in Breckenridge to Canadian~~
113.2 ~~border): 1C, 2Bd, 3C;~~

113.3 (51) ~~Roy Creek (Roy Lake Creek), (T.145, 146, R.39): 2C;~~

113.4 (52) ~~Rush Lake Creek, (T.135, R.38, S.23, 26, 27, 28): 1B, 2A, 3B;~~

113.5 (53) ~~Schermerhorn Creek (Shimmelhorn Creek), (T.144, R.39, S.6; T.145,~~
113.6 ~~R.39, S.31; T.145, R.40, S.25, 26, 36): 1B, 2A, 3B;~~

113.7 (54) ~~Spring Creek (State Ditch No. 68), (T.145, 146, R.45, 46, 47): 2C;~~

113.8 (55) ~~Spring Creek, (T.142, R.41, 42): 2C;~~

113.9 (56) ~~Spring Creek, (T.149, R.30, S.4, 5, 9, 10): 1B, 2A, 3B;~~

113.10 (57) ~~Spring Lake Creek, (T.148, R.35, S.34, 35): 1B, 2A, 3B;~~

113.11 (58) ~~Stony Creek, (T.137, 138, R.45, 46): 2C;~~

113.12 (59) ~~Sucker Creek, (T.138, R.40, S.18; T.138, R.41, S.13): 1B, 2A, 3B;~~

113.13 (60) ~~Sucker Creek, (T.160, 161, R.39): 2C;~~

113.14 (61) ~~Tamarac River (Source to the dam in S.5, T.157, R.48 at Stephen),~~
113.15 ~~(T.157, 158, R.45, 46, 47, 48): 1C, 2Bd, 3C;~~

113.16 (62) ~~Toad River, (T.138, R.38, S.6, 7, 18, 19, 30; T.139, R.38, S.30, 31,~~
113.17 ~~T.139, R.39, S.25, 36; T.138, R.39, S.25, 36): 1B, 2A, 3B;~~

113.18 (63) ~~Twelve Mile Creek (excluding Class 7 segment), (T.126, 127, R.45):~~
113.19 ~~2C;~~

113.20 (64) ~~Twelve Mile Creek (County Ditch No. 1), Donnelly, (T.126, R.43,~~
113.21 ~~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,~~
113.22 ~~33; T.126, R.45, S.25, 26, 27, 28, 36): 7;~~

113.23 (65) ~~Twelve Mile Creek, East Fork, (T.125, 126, R.44, 45): 2C;~~

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114.1 (66) ~~Twelve Mile Creek, West Branch (West Branch Twelvemile Creek),~~
114.2 ~~(T.125, 126, 127, 128, R.45, 46): 2C;~~

114.3 (67) ~~Twelve Mile Creek, West Fork, (T.125, 126, R.45): 2C;~~

114.4 (68) ~~Twin Lake Creek, (T.144, 145, R.40): 2C;~~

114.5 (69) ~~Two Rivers, Middle Branch, (Source to Hallock): 1C, 2Bd, 3C;~~

114.6 (70) ~~Two Rivers, South Branch, (T.160, 161, R.41-49): 1C, 2Bd, 3C;~~

114.7 (71) ~~Unnamed Creek, Rothsay, (T.135, R.45, S.21, 22, 23, 25, 26): 7~~

114.8 (see subitem (11));

114.9 (72) ~~Unnamed Creek, Shevlin, (T.147, R.36, S.17, 18; T.147, R.37, S.11,~~
114.10 ~~12, 13, 14): 7;~~

114.11 (73) ~~Unnamed Ditch, Audubon, (T.139, R.42, S.4, 9): 7;~~

114.12 (74) ~~Unnamed Ditch, Lake Park, (T.139, R.43, S.4; T.140, R.43, S.33): 7;~~

114.13 (75) ~~Unnamed Ditch, Glyndon, (T.139, R.47, S.1, 2, 12; T.140, R.47,~~
114.14 ~~S.35): 7;~~

114.15 (76) ~~Unnamed Ditch, Callaway, (T.140, R.41, S.6; T.140, R.42, S.1,~~
114.16 ~~2, 10, 11): 7;~~

114.17 (77) ~~Unnamed Ditch, Gary, (T.145, R.44, S.22, 27, 34): 7;~~

114.18 (78) ~~Unnamed Ditch, Erskine, (T.149, R.42, S.34, 35): 7;~~

114.19 (79) ~~Unnamed Ditch, Thief River Falls, (T.154, R.43, S.31, 32, 33): 7;~~

114.20 (80) ~~Unnamed Ditch, Warroad, (T.163, R.37, S.19, 20, 21, 22, 23; T.163,~~
114.21 ~~R.38, S.19, 20, 21, 22, 23, 24, 30; T.163, R.39, S.25, 31, 32, 33, 34, 35, 36): 7;~~

114.22 (81) ~~Whisky Creek, (T.136, 137, R.44, 45, 46): 2C;~~

114.23 (82) ~~Whisky Creek, (T.133, 134, R.46, 47, 48): 2C;~~

115.1 (83) ~~White Earth River, (T.142, 143, 144, R.40, 41, 42): 2C;~~

115.2 (84) ~~Willow Creek, New York Mills, (T.135, R.38, S.13, 14, 15, 16, 17,~~

115.3 ~~18): 7; and~~

115.4 (85) ~~Wolverton Creek, (T.135, 136, 137, R.48): 2C.~~

115.5 [For text of items B to D, see M.R.]

115.6 Subp. 4. **Upper Mississippi River Basin (headwaters to the confluence with**

115.7 **the St. Croix River).** The water use classifications for the stream reaches within each

115.8 **of the major watersheds in the Upper Mississippi River Basin from the headwaters to**

115.9 **the confluence with the St. Croix River listed in item A are found in tables entitled**

115.10 **"Beneficial Use Designations for Stream Reaches" published on the Web site of the**

115.11 **Minnesota Pollution Control Agency at www.pca.state.mn.us. The tables are incorporated**

115.12 **by reference and are not subject to frequent change. The date after each watershed listed**

115.13 **in item A is the publication date of the applicable table. The water use classifications**

115.14 **for the other listed waters in the Upper Mississippi River Basin from the headwaters to**

115.15 **the confluence with the St. Croix River are as identified in items A B to D. See parts**

115.16 **7050.0425 and 7050.0430 for the classifications of waters not listed. Designated use**

115.17 **information for water bodies can also be accessed through the agency's Environmental**

115.18 **Data Access (<http://www.pca.state.mn.us/quick-links/eda-surface-water-data>).**

115.19 A. Streams (by eight-digit hydrologic unit code):

115.20 (1) 07010101 Mississippi River - Headwaters (August 9, 2016);

115.21 (2) 07010102 Leech Lake River (August 9, 2016);

115.22 (3) 07010103 Mississippi River - Grand Rapids (August 9, 2016);

115.23 (4) 07010104 Mississippi River - Brainerd (August 9, 2016);

115.24 (5) 07010105 Pine River (August 9, 2016);

116.1 (6) 07010106 Crow Wing River (August 9, 2016);

116.2 (7) 07010107 Redeye River (August 9, 2016);

116.3 (8) 07010108 Long Prairie River (August 9, 2016);

116.4 (9) 07010201 Mississippi River - Sartell (August 9, 2016);

116.5 (10) 07010202 Sauk River (August 9, 2016);

116.6 (11) 07010203 Mississippi River - St. Cloud (August 9, 2016);

116.7 (12) 07010204 North Fork Crow River (August 9, 2016);

116.8 (13) 07010205 South Fork Crow River (August 9, 2016);

116.9 (14) 07010206 Mississippi River - Twin Cities (August 9, 2016); and

116.10 (15) 07010207 Rum River (August 9, 2016).

116.11 (1) ~~Alcohol Creek, (T.143, 144, R.34): 2C;~~

116.12 (2) ~~Arramba Creek, (T.40, R.30): 2C;~~

116.13 (3) ~~Barbour Creek, (T.44, R.28, S.28): 1B, 2A, 3B;~~

116.14 (4) ~~Basswood Creek, (T.141, 142, R.36, 37): 2C;~~

116.15 (5) ~~Battle Brook, (T.35, R.26, 27): 2C;~~

116.16 (6) ~~Battle Creek, (T.120, R.31): 2C;~~

116.17 (7) ~~Bear Brook, (T.144, 145, R.27): 2C;~~

116.18 (8) ~~Bear Creek, (T.145, R.36): 2C;~~

116.19 (9) ~~Beautiful Creek, (T.127, R.31): 2C;~~

116.20 (10) ~~Beaver Creek, (T.136, 137, R.32, 33): 2C;~~

116.21 (11) ~~Belle Creek (Judicial Ditch No. 18), (T.117, 118, R.32): 2C;~~

116.22 (12) ~~Black Bear Brook, (T.44, R.28, S.7, 8): 1B, 2A, 3B;~~

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117.1 (13) ~~Birch Brook (Birch Branch)~~, (T.141, R.25): 2C;

117.2 (14) ~~Black Brook, Mille Laes County~~, (T.41, R.26): 2C;

117.3 (15) ~~Black Brook~~, (T.42, 43, R.30): 2C;

117.4 (16) ~~Blackhoof Creek~~, (T.46, R.29, S.16): 1B, 2A, 3B;

117.5 (17) ~~Blackwater Creek~~, (T.55, R.26, S.4): 2C;

117.6 (18) ~~Blueberry River~~, (T.138, 139, R.35, 36): 2C;

117.7 (19) ~~Bluff Creek~~, (T.135, 136, R.36, 37): 2C;

117.8 (20) ~~Bogus Brook (excluding Class 7 segment)~~, (T.37, 38, R.25, 26): 2C;

117.9 (21) ~~Bogus Brook, Beck~~, (T.38, R.26, S.13, 14): 7;

117.10 (22) ~~Borden Creek~~, (T.44, R.28, S.8, 9, 17, 20): 1B, 2A, 3B;

117.11 (23) ~~Branch No. 3, Lateral 2, East Bethel/Ham Lake~~, (T.33, R.23, S.29, 32,

117.12 ~~along the west side of Minnesota Highway 65~~: 7;

117.13 (24) ~~Briggs Creek~~, (T.35, R.29, S.2, 11, 12, 14, 15, 22): 1B, 2A, 3B;

117.14 (25) ~~Bruce Creek~~, (T.53, R.22, S.6, 7; T.53, R.23, S.26; T.54, R.22, S.18,

117.15 ~~19, 30, 31; T.54, R.23, S.25~~: 1B, 2A, 3B;

117.16 (26) ~~Buckman Creek (excluding Class 7 segment)~~, (T.39, 40, R.30, 31): 2C;

117.17 (27) ~~Buckman Creek, Buckman, Buckman Coop Cry.~~, (T.39, R.30, S.4, 5,

117.18 ~~6, 9; T.39, R.31, S.1, 2, 10, 11; T.40, R.30, S.31; T.40, R.31, S.36~~: 7;

117.19 (28) ~~Bungo Creek~~, (T.137, R.30, S.6; T.137, R.31, S.1, 11, 12, 14, 21,

117.20 ~~22, 23; T.138, R.30, S.31~~: 1B, 2A, 3B;

117.21 (29) ~~Bungoshine Creek (Bungashing Creek)~~, (T.145, R.32, S.28, 29, 30;

117.22 ~~T.145, R.33, S.25, 26, 34, 35~~: 1B, 2A, 3B;

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118.1 (30) ~~Bunker Hill Brook (Bunker Hill Creek), (T.38, R.30, S.6; T.38, R.31, S.1, 2, 10, 11): 1B, 2A, 3B;~~

118.2 (31) ~~Camp Creek, (T.43, R.28, S.4, 5): 1B, 2A, 3B;~~

118.3 (32) ~~Camp Ripley Brook, (T.132, R.29, S.18, 19; T.132, R.30, S.12, 13): 1B, 2A, 3B;~~

118.4 (33) ~~Cat River (Cat Creek), (T.137, R.35, S.4, 9, 10, 11, 12, 13): 1B, 2A, 3B;~~

118.5 (34) ~~Cat River (excluding trout waters), (T.136, 137, R.33, 34): 2C;~~

118.6 (35) ~~Cedar Creek, (T.138, R.31, S.23, 26, 27, 28): 1B, 2A, 3B;~~

118.7 (36) ~~Chase Brook, (T.38, 39, R.27): 2C;~~

118.8 (37) ~~Clearwater Creek, (T.56, 57, R.25): 2C;~~

118.9 (38) ~~Cold Creek, (T.145, R.33, S.19): 1B, 2A, 3B;~~

118.10 (39) ~~Cold Spring Creek, (T.123, R.30, S.14, 15): 1B, 2A, 3B;~~

118.11 (40) ~~Coon Creek, (T.43, R.29, 30): 2C;~~

118.12 (41) ~~Corey Brook (Cory Brook), (T.135, R.30, S.9, 15, 16, 21, 22, 27): 1B, 2A, 3B;~~

118.13 (42) ~~County Ditch No. 15 (Bear Creek), Bertha, (T.132, R.35, S.2; T.133, R.34, S.7; T.133, R.35, S.12, 13, 24, 25, 26, 35): 7;~~

118.14 (43) ~~County Ditch No. 17, St. Cloud, Bel Clare Estates, (T.124, R.29, S.13, 24, 25): 7;~~

118.15 (44) ~~County Ditch No. 23, Garfield, (T.129, R.38, S.26, 27): 7;~~

118.16 (45) ~~County Ditch No. 23A, Willmar, (T.119, R.34, S.29, 30, 32; T.119, R.25, S.23, 25, 26): 7;~~

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119.1 (46) ~~County Ditch No. 28, East Bethel/Ham Lake, (T.32, R.23, S.4, 5, 6, T.33, R.23, S.29, 32 along the east side of Minnesota Highway 65): 7;~~

119.2 (47) ~~County Ditch No. 42, McGregor, (T.47, R.23, S.6; T.47, R.24, S.1, T.48, R.23, S.29, 31, 32): 7;~~

119.3 (48) ~~County Ditch No. 63, Near Hutchinson, West Lynn Coop Cry., (T.116, R.30, S.19, 20, 21, 28, 33): 7;~~

119.4 (49) ~~County Ditch No. 132, Lakeside, Lakeside Coop Cry., (T.116, R.31, S.16, 21): 7;~~

119.5 (50) ~~Crane Creek (Judicial Ditch No. 1), (excluding Class 7 segment), (T.116, 117, R.26, 27): 2C;~~

119.6 (51) ~~Crane Creek, Winsted, (T.117, R.27, S.14, 20, 21, 22, 23, 24, 25): 7;~~

119.7 (52) ~~*Crow River, North Fork, [11/5/84R] (From the Lake Koronis outlet to the Meeker - Wright County line): 2B, 3C;~~

119.8 (53) ~~Cullen Brook, (T.136, R.28, S.18, 19, 30; T.136, R.29, S.13): 1B, 2A, 3B;~~

119.9 (54) ~~Dabill Brook, (T.137, R.31, S.1, 2, 10, 11; T.138, R.31, S.35, 36): 1B, 2A, 3B;~~

119.10 (55) ~~Daggett Brook, (T.43, R.29, 30): 2C;~~

119.11 (56) ~~Duel Creek, (T.129, R.32, S.20): 1B, 2A, 3B;~~

119.12 (57) ~~Eagle Creek, (T.120, R.29): 2C;~~

119.13 (58) ~~Elk River, Little, (T.130, 131, R.30, 31): 2C;~~

119.14 (59) ~~Elk River, South Branch, Little, (T.130, R.30, 31, 32): 2C;~~

119.15 (60) ~~Estes Brook, (T.36, 37, 38, R.27, 28): 2C;~~

120.1 (61) ~~Everton Creek, (T.149, R.30): 2C;~~

120.2 (62) ~~Fairhaven Creek, (T.121, R.28, S.5; T.122, R.28, S.29, 31, 32): 1B,~~

120.3 ~~2A, 3B;~~

120.4 (63) ~~Farley Creek, (T.147, R.28): 2C;~~

120.5 (64) ~~Farnham Creek, (T.135, R.32, S.5, 6, 7; T.136, R.32, S.2, 3, 9, 10, 16,~~

120.6 ~~19, 20, 21, 29, 30, 31, 32): 1B, 2A, 3B;~~

120.7 (65) ~~Fawn Creek, (T.134, R.33, S.22, 27, 33, 34): 1B, 2A, 3B;~~

120.8 (66) ~~Finn Creek, (T.135, R.37, S.27, 34): 1B, 2A, 3B;~~

120.9 (67) ~~Fish Creek, (T.28, R.22): 2C;~~

120.10 (68) ~~Fletcher Creek, (T.42, R.31): 2C;~~

120.11 (69) ~~Foley Brook, (T.141, R.25): 2C;~~

120.12 (70) ~~Frederick Creek, (T.119, R.25, 26): 2C;~~

120.13 (71) ~~Frontenac Creek, (T.144, 145, R.34): 2C;~~

120.14 (72) ~~Gould Creek (Sucker Creek), (T.144, R.36, S.32): 1B, 2A, 3B;~~

120.15 (73) ~~Gould Creek (Sucker Creek), (T.143, R.36): 2C;~~

120.16 (74) ~~Hanson Brook, (T.40, R.27): 2C;~~

120.17 (75) ~~Hanson Brook (Threemile), (T.122, R.28, S.21, 22, 25, 26, 27, 36):~~

120.18 ~~1B, 2A, 3B;~~

120.19 (76) ~~Hasty Brook, (T.49, R.19, S.18; T.49, R.20, S.4, 5, 9, 10, 13, 14, 15,~~

120.20 ~~23, T.50, R.20, S.28, 29, 32, 33): 1B, 2A, 3B;~~

120.21 (77) ~~Hay Creek, Crow Wing County, (T.43, 44, R.30, 31): 2C;~~

120.22 (78) ~~Hay Creek, Wadena County, (T.134, R.33, S.7, 8, 9, 10, 11, 17, 18):~~

120.23 ~~1B, 2A, 3B;~~

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121.1 (79) ~~Hay Creek (Mosquito Creek), (T.135, R.31, S.8, 9, 16, 17): 1B, 2A, 3B;~~

121.2 (80) ~~Hazel Creek, (T.127, R.29, 30): 2C;~~

121.3 (81) ~~Hellecamp Creek (Hellkamp Creek), (T.140, R.33, S.19; T.140, R.34,~~

121.4 ~~S.24): 1B, 2A, 3B;~~

121.5 (82) ~~Hennepin Creek, (T.144, R.35, S.3, 10, 15, 16, 21; T.145, R.35,~~

121.6 ~~S.34): 1B, 2A, 3B;~~

121.7 (83) ~~Hennepin Creek (excluding trout waters), (T.144, 145, 146, R.34,~~

121.8 ~~35): 2C;~~

121.9 (84) ~~Hoblin Creek, (T.137, R.30, S.17, 18, 19): 1B, 2A, 3B;~~

121.10 (85) ~~Indian Creek, (T.141, 142, R.36, 37): 2C;~~

121.11 (86) ~~Irish Creek, (T.129, R.31): 2C;~~

121.12 (87) ~~Iron Creek, (T.134, 135, R.31, 32): 2C;~~

121.13 (88) ~~Jewett Creek (Jewitts Creek or County Ditch No. 17), (T.119, 120,~~

121.14 ~~R.30, 31): 2C;~~

121.15 (89) ~~Johnson Creek, (T.137, R.25): 2C;~~

121.16 (90) ~~Judicial Ditch No. 1, Lakeside, Lakeside Coop Cry., (T.116, R.31,~~

121.17 ~~S.28, 33): 7;~~

121.18 (91) ~~Judicial Ditch No. 15, Buffalo Lake, Iowa Pork Industries, Hector,~~

121.19 ~~(T.115, R.31, S.15, 16, 20, 21, 29, 30; T.115, R.32, S.22, 25, 26, 27, 28, 32, 33): 7;~~

121.20 (92) ~~Kabekona River, (T.143, R.32, S.6, 7, 18, 19; T.143, R.33, S.2, 3, 4, 9,~~

121.21 ~~11, 12, 24; T.144, R.33, S.29, 30, 32, 33; T.144, R.34, S.24, 25, 36): 1B, 2A, 3B;~~

121.22 (93) ~~Kawishiwash Creek, (T.142, R.32, S.12): 1B, 2A, 3B;~~

121.23 (94) ~~Kettle Creek (Kettle River), (T.138, R.35, 36, 37): 2C;~~

122.1 (95) ~~Kinzer Creek, (T.123, R.30, S.27, 34): 1B, 2A, 3B;~~

122.2 (96) ~~Kitchi Creek, (T.146, 147, R.29, 30): 2C;~~

122.3 (97) ~~Kitten Creek, (T.137, R.34, 35): 2C;~~

122.4 (98) ~~Larson Creek, (T.128, R.32, S.6): 1B, 2A, 3B;~~

122.5 (99) ~~LaSalle Creek (excluding trout waters), (T.143, R.35): 2C;~~

122.6 (100) ~~LaSalle Creek, (T.143, R.35, S.6; T.144, R.35, S.19, 30, 31): 1B,~~

122.7 ~~2A, 3B;~~

122.8 (101) ~~LaSalle River, (T.144, 145, R.35): 2C;~~

122.9 (102) ~~Laura Brook, (T.141, R.26): 2C;~~

122.10 (103) ~~Libby Brook, (T.50, R.23, S.5, 6; T.50, R.24, S.1, 2): 1B, 2A, 3B;~~

122.11 (104) ~~Long Brook, Lower South, (T.44, R.30, S.12, 13): 1B, 2A, 3B;~~

122.12 (105) ~~Long Brook, Upper South, (T.44, R.29, S.6, 7): 1B, 2A, 3B;~~

122.13 (106) ~~Long Lake Creek, (T.46, R.25, S.10, 15): 1B, 2A, 3B;~~

122.14 (107) ~~Luxemburg Creek, (T.123, R.28, S.16, 17, 18, 19, 20, 21, 22, 30):~~

122.15 ~~4B, 2A, 3B;~~

122.16 (108) ~~Matuska's Creek, (T.54, R.26, S.35, 36): 1B, 2A, 3B;~~

122.17 (109) ~~Meadow Creek, (T.128, R.30): 2C;~~

122.18 (110) ~~Meyers Creek (Johnson Creek), (T.122, R.28, S.4; T.123, R.28,~~

122.19 ~~S.22, 27, 33, 34): 1B, 2A, 3B;~~

122.20 (111) ~~Michaud Brook, (T.140, R.25, S.7, 17, 18): 1B, 2A, 3B;~~

122.21 (112) ~~Mike Drew Brook, (T.38, 39, R.26, 27): 2C;~~

122.22 (113) ~~Mink Creek, Big, (T.41, 42, R.29, 30): 2C;~~

123.1 (114) ~~Mink Creek, Little, (T.40, 41, R.29, 30, 31): 2C;~~

123.2 (115) ~~*Mississippi River, [11/5/84R] (From Lake Itasca to Fort Ripley, at~~
123.3 ~~the common boundary of Crow Wing and Morrison Counties): 2B, 3C;~~

123.4 (116) ~~*Mississippi River, [11/5/84R] (From Fort Ripley, at the common~~
123.5 ~~boundary of Crow Wing and Morrison Counties, to the southerly boundary of Morrison~~
123.6 ~~County): 1C, 2Bd, 3C;~~

123.7 (117) ~~Mississippi River, (From the southerly boundary of Morrison County~~
123.8 ~~to Stearns County State-Aid Highway 7 bridge in Saint Cloud in S.13, T.124, R.28):~~
123.9 ~~1C, 2Bd, 3C;~~

123.10 (118) ~~*Mississippi River, [11/5/84R] (Stearns County State-Aid Highway~~
123.11 ~~7 bridge in Saint Cloud in S.13, T.124, R.28 to the northwestern city limits of Anoka,~~
123.12 ~~river mile 873.5): 1C, 2Bd, 3C;~~

123.13 (119) ~~Mississippi River, (From the northwestern city limits of Anoka,~~
123.14 ~~river mile 873.5, to the Upper Lock and Dam at Saint Anthony Falls in Minneapolis):~~
123.15 ~~1C, 2Bd, 3C;~~

123.16 (120) ~~Mississippi River, (Outlet of Metro Wastewater Treatment Works in~~
123.17 ~~Saint Paul, river mile 835.3, to river mile 830, Rock Island RR Bridge): 2C, 3C;~~

123.18 (121) ~~Morrison Brook, (T.52, R.26, S.4, 9, 10, 14, 15; T.53, R.26, S.7, 8,~~
123.19 ~~18, 19, 29, 30, 32, 33): 1B, 2A, 3B;~~

123.20 (122) ~~Muckey Creek (Wallingford Creek), (T.139, R.33, S.1, 2, 10, 11,~~
123.21 ~~12): 1B, 2A, 3B;~~

123.22 (123) ~~Neektie River (T.145, R.32, S.6, 7, 8, 9, 16; T.145, R.33, S.1): 1B,~~
123.23 ~~2A, 3B;~~

123.24 (124) ~~Nelson Hay Creek, (T.130, R.31, S.1, 2): 1B, 2A, 3B;~~

124.1 (125) ~~Northby Creek, (T.140, R.27): 2C;~~

124.2 (126) ~~Norway Brook, (T.139, R.30): 2C;~~

124.3 (127) ~~O'Brien Creek, (T.56, 57, R.22): 2C;~~

124.4 (128) ~~O'Neill Brook, (T.38, R.26): 2C;~~

124.5 (129) ~~Oak Ridge Creek (Oak Creek), (T.133, 134, R.36): 2C;~~

124.6 (130) ~~Olson Brook, (T.136, R.30, S.12, 13, 14): 1B, 2A, 3B;~~

124.7 (131) ~~Peterson Creek, (T.134, R.30, S.29-32): 1B, 2A, 3B;~~

124.8 (132) ~~Pickerel Creek, (T.56, R.22, S.7, 18; T.56, R.23, S.13): 1B, 2A, 3B;~~

124.9 (133) ~~Pigeon River, (T.147, R.27): 2C;~~

124.10 (134) ~~Pike Creek (excluding Class 7 segment), (T.129, R.30): 2C;~~

124.11 (135) ~~Pike Creek, Flensburg, (T.129, R.30, S.17, 18, 19, 20): 7;~~

124.12 (136) ~~Pillager Creek, (T.133, 134, R.30): 2C;~~

124.13 (137) ~~Pine River, South Fork, (T.138, R.31, S.14, 23): 1B, 2A, 3B;~~

124.14 (138) ~~Pioneer Creek, (T.118, R.24): 2C;~~

124.15 (139) ~~Pokegama Creek, (T.54, R.26, S.26, 27, 28): 1B, 2A, 3B;~~

124.16 (140) ~~Pokegama Creek, Little, (T.54, R.26, S.26, 27, 34, 35): 1B, 2A, 3B;~~

124.17 (141) ~~Pokety (Pickedee Creek), (T.144, R.32, S.29, 30; T.144, R.33, S.24,~~

124.18 ~~25): 1B, 2A, 3B;~~

124.19 (142) ~~Poplar Brook (Martin Creek), (T.135, R.32, S.5, 6; T.136, R.32,~~

124.20 ~~S.22, 27, 28, 32, 33): 1B, 2A, 3B;~~

124.21 (143) ~~Prairie Brook, (T.36, R.27): 2C;~~

124.22 (144) ~~Rat Creek, (T.144, 145, R.34): 2C;~~

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125.1 (145) ~~Rice Creek, (T.30, 31, 32, R.22, 23, 24): 1C, 2Bd, 3C;~~

125.2 (146) ~~Rice Creek, Sherburne County, (T.35, R.29): 2C;~~

125.3 (147) ~~Robinson Hill Creek, (T.123, R.28, S.4, 9, 10, 15; T.124, R.28,~~

125.4 ~~S.31, 32, 33): 1B, 2A, 3B;~~

125.5 (148) ~~Rock Creek, Little, (T.38, R.31, S.3, 4, 10, 15, 21, 22, 28; T.39, R.30,~~

125.6 ~~S.17, 18, 20, 21, 22; T.39, R.31, S.13, 14, 22, 23, 27, 33, 34): 1B, 2A, 3B;~~

125.7 (149) ~~Rogers Brook, (T.134, R.30, S.29, 32): 1B, 2A, 3B;~~

125.8 (150) ~~Rosholt Creek, (T.55, R.23, S.22, 23, 24): 1B, 2A, 3B;~~

125.9 (151) ~~Round Creek, (T.43, R.31, S.14, 15): 1B, 2A, 3B;~~

125.10 (152) ~~Round Prairie Creek (Trout Creek), (T.127, R.33, S.4; T.128, R.33,~~

125.11 ~~S.20, 29, 32, 33): 1B, 2A, 3B;~~

125.12 (153) ~~*Rum River, [11/5/84P] (From the Ogeechie Lake spillway to the~~

125.13 ~~northernmost confluence with Lake Onamia): 2B, 3B;~~

125.14 (154) ~~*Rum River, [11/5/84R] (From the State Highway 27 bridge in~~

125.15 ~~Onamia to Madison and Rice Streets in Anoka): 2B, 3C;~~

125.16 (155) ~~Sand Creek, Crow Wing County, (T.45, R.30, S.2, 3, 11, 13, 14;~~

125.17 ~~T.46, R.30, S.34): 1B, 2A, 3B;~~

125.18 (156) ~~Sand Creek, (T.55, R.23, S.15, 22, 27, 28, 29, 32, 33): 1B, 2A, 3B;~~

125.19 (157) ~~Sauk Creek, Little, (T.127, R.34, S.1; T.128, R.34, S.36): 1B, 2A, 3B;~~

125.20 (158) ~~Schoolcraft Creek, (T.142, R.34, S.5, 7, 8, 17): 1B, 2A, 3B;~~

125.21 (159) ~~Seven Mile Creek, (T.133, 134, R.30, 31): 2C;~~

125.22 (160) ~~Sisseebakwet Creek, (T.54, R.26, S.19, 29, 30): 1B, 2A, 3B;~~

125.23 (161) ~~Six Mile Brook, (T.144, R.26, 27): 2C;~~

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126.1 (162) ~~Skimmerhorn Creek (Skimerhorn Creek)~~, (T.149, R.30): 2C;

126.2 (163) ~~Skunk Creek~~, (T.144, 145, R.34): 2C;

126.3 (164) ~~Skunk River (Co. Dt. No. 37) (Co. Dt. No. 29)~~, ~~Brooten~~, (T.123, R.35, S.4, 5, 9; T.123, R.35, S.9, 10, 11, 12; T.123, R.34, S.3, 4, 5, 6, 7, 8): 7;

126.5 (165) ~~Smart's Creek~~, (T.126, R.28, S.17, 18, 20): 1B, 2A, 3B;

126.6 (166) ~~Smith Creek~~, (T.53, R.26, S.1, 9, 10, 11, 12, 13, 14, 15; T.54, R.26, S.35, 36): 1B, 2A, 3B;

126.8 (167) ~~Smith Creek, Unnamed Tributary~~, (T.53, R.26, S.11, 12): 1B, 2A, 3B;

126.9 (168) ~~Smith Creek, Unnamed Tributary~~, (T.54, R.26, S.35, 36): 1B, 2A, 3B;

126.10 (169) ~~Snake River~~, (T.33, R.28, S.1; T.34, R.28, S.2, 11, 14, 23, 26, 35, 36): 1B, 2A, 3B;

126.11 (T.35, R.28, S.20, 28, 29, 33, 34, 35): 1B, 2A, 3B;

126.12 (170) ~~Snowball Creek~~, (T.56, R.23): 2C;

126.13 (171) ~~Split Hand Creek~~, (T.53, R.24, 25): 2C;

126.14 (172) ~~Spring Brook, Stearns County~~, (T.121, R.28, S.7; T.121, R.29, S.12): 1B, 2A, 3B;

126.16 (173) ~~Spring Brook, Crow Wing County~~, (T.138, R.28, S.27, 34): 1B,

126.17 2A, 3B;

126.18 (174) ~~Spring Brook (Spring Branch), Cass County~~, (T.139, R.26, S.3, 10, 11, 14): 1B, 2A, 3B;

126.20 (175) ~~Spring Brook, Lower~~, (T.57, R.25, S.6; T.58, R.25, S.31): 1B, 2A, 3B;

126.21 (176) ~~Spring Creek~~, (T.55, R.23, S.25, 26, 27): 1B, 2A, 3B;

126.22 (177) ~~Spruce Creek~~, (T.130, R.36, S.3, 4, 9, 10; T.131, R.36, S.28, 29, 31, 32, 33, 34): 1B, 2A, 3B;

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127.1 (178) ~~Stag Brook, (T.121, 122, R.31): 2C;~~

127.2 (179) ~~Stall Creek, (T.143, R.33, S.12, 13, 14): 1B, 2A, 3B;~~

127.3 (180) ~~Stanchfield Branch, Lower, Braham, (T.37, R.23, S.3, 10, 15, 22): 7;~~

127.4 (181) ~~Stocking Creek, (T.138, R.34, 35): 2C;~~

127.5 (182) ~~Stoney Brook (Stony Brook), Cass County, (T.135, R.29, S.5, 8, 9;~~

127.6 ~~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,~~

127.7 ~~S.24, 25, 26): 1B, 2A, 3B;~~

127.8 (183) ~~Stony Brook (Stoney Brook), Foley, (T.36, R.29, S.2, 9, 10, 11, 16;~~

127.9 ~~T.37, R.29, S.35, 36): 7;~~

127.10 (184) ~~Stony Creek (Wabedo Creek), (T.140, R.28): 2C;~~

127.11 (185) ~~Stony Point Brook, (T.147, R.28, S.22, 27, 34): 2C;~~

127.12 (186) ~~Straight Creek, Upper, (Straight River), (T.140, R.36, S.6; T.141,~~

127.13 ~~R.36, S.30, 31; T.141, R.37, S.24, 25): 1B, 2A, 3B;~~

127.14 (187) ~~Straight Lake Creek, (T.140, R.36, S.6; T.140, R.37, S.1, 2): 1B,~~

127.15 ~~2A, 3B;~~

127.16 (188) ~~Straight River, (T.139, R.34, S.7; T.139, R.35, S.4, 5, 6, 9, 10, 11, 12;~~

127.17 ~~T.139, R.36, S.1; T.140, R.36, S.28, 29, 33, 34, 35, 36): 1B, 2A, 3B;~~

127.18 (189) ~~Sucker Creek (Gould Creek), (T.144, R.36, S.27, 28, 29, 30, 32,~~

127.19 ~~33): 1B, 2A, 3B;~~

127.20 (190) ~~Sucker Creek, Meeker County, (T.118, R.30, S.4, 5, 6, 7): 1B, 2A, 3B;~~

127.21 (191) ~~Swamp Creek, Big, (T.137, 138, 139, R.32, 33): 2C;~~

127.22 (192) ~~Swamp Creek, Little, (T.136, 137, R.33): 2C;~~

127.23 (193) ~~Swan Creek, (T.134, 135, R.32): 2C;~~

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128.1 (194) ~~Swan Creek, Little, (T.135, R.32): 2C;~~

128.2 (195) ~~Swift River, (T.142, R.27): 2C;~~

128.3 (196) ~~Taylor Creek, (T.128, R.31): 2C;~~

128.4 (197) ~~Ted Brook Creek, (T.130, R.31): 2C;~~

128.5 (198) ~~Thiel Creek (Teal), (T.121, R.28, S.5, 6, 8): 1B, 2A, 3B;~~

128.6 (199) ~~Tibbits Brook, (T.33, 34, R.26, 27): 2C;~~

128.7 (200) ~~Tibbetts Creek (Tibbetts Brook), (T.39, 40, R.27, 28): 2C;~~

128.8 (201) ~~Trout Brook, St. Paul, (T.29, R.22, S.18, 19): 7;~~

128.9 (202) ~~Tower Creek, (T.135, R.32): 2C;~~

128.10 (203) ~~Two Rivers, South Branch, Albany, (T.125, R.31, S.21, 22, 23): 7;~~

128.11 (204) ~~Two Rivers Springs, (T.51, R.23, S.19; T.51, R.24, S.24, 25, 26):~~

128.12 ~~1B, 2A, 3B;~~

128.13 (205) ~~Union Creek, (T.134, R.35, S.4, 5, 7, 8, 18, 19, 30, 31; T.135, R.35,~~

128.14 ~~S.27, 28, 33, 34): 1B, 2A, 3B;~~

128.15 (206) ~~Unnamed Creek, Cass County, (T.137, R.31, S.4, 5): 1B, 2A, 3B;~~

128.16 (207) ~~Unnamed Creek, Cass County, (T.139, R.26, S.3, 10): 1B, 2A, 3B;~~

128.17 (208) ~~Unnamed Creek, Calumet, (T.56, R.23, S.21): 7;~~

128.18 (209) ~~Unnamed Creek, Montrose, Hiller Mobile Home Court, (T.119,~~

128.19 ~~R.26, S.22, 26, 27, 35): 7;~~

128.20 (210) ~~Unnamed Creek, Rogers, (T.120, R.23, S.15, 16, 22, 23): 7;~~

128.21 (211) ~~Unnamed Creek, Grove City, (T.120, R.32, S.34, 35, 36): 7;~~

128.22 (212) ~~Unnamed Creek, Albertville, (T.121, R.23, S.30; T.121, R.24, S.25,~~

128.23 ~~36): 7;~~

129.1 (213) ~~Unnamed Creek, Eden Valley, Ruhland Feeds, (T.121, R.31, S.2;~~
129.2 ~~T.122, R.31, S.35): 7;~~

129.3 (214) ~~Unnamed Creek, Lake Henry, (T.123, R.33, S.11, 14): 7;~~

129.4 (215) ~~Unnamed Creek, Miltona, (T.129, R.36, S.6; T.130, R.36, S.30, 31): 7;~~

129.5 (216) ~~Unnamed Ditch, Braham, (T.37, R.23, S.2, 3): 7;~~

129.6 (217) ~~Unnamed Ditch, Ramey, Ramey Farmers Coop Cry., (T.38, R.28,~~
129.7 ~~S.4, 5; T.39, R.28, S.29, 30, 32; T.39, R.29, S.25, 26, 27, 28): 7;~~

129.8 (218) ~~Unnamed Ditch, McGregor, (T.48, R.23, S.31, 32): 7;~~

129.9 (219) ~~Unnamed Ditch, Nashwauk, (T.56, R.22, S.4, 5; T.57, R.22, S.32): 7;~~

129.10 (220) ~~Unnamed Ditch, Taconite, (T.56, R.24, S.22 SW1/4): 7;~~

129.11 (221) ~~Unnamed Ditch, Glenoe, Green Giant, (T.115, R.28, S.21, 22,~~
129.12 ~~27, 28): 7;~~

129.13 (222) ~~Unnamed Ditch, Glenoe, Green Giant, (T.115, R.28, S.14, 23): 7;~~

129.14 (223) ~~Unnamed Ditch, Winsted, Green Giant, (T.117, R.27, S.10, 11): 7;~~

129.15 (224) ~~Unnamed Ditch, Montrose, Hiller Mobile Home Court, (T.119,~~
129.16 ~~R.26, S.34, 35): 7;~~

129.17 (225) ~~Unnamed Ditch, Kandiyohi, (T.119, R.34, S.10, 15, 21, 22, 28, 29): 7;~~

129.18 (226) ~~Unnamed Ditch, Rogers, (T.120, R.23, S.15): 7;~~

129.19 (227) ~~Unnamed Ditch, Belgrade, (T.123, R.34, S.19, 30): 7;~~

129.20 (228) ~~Unnamed Ditch, Flensburg, (T.129, R.30, S.30; T.129, R.31, S.25): 7;~~

129.21 (229) ~~Unnamed Ditch, Miltona, (T.130, R.36, S.30; T.130, R.37, S.25,~~
129.22 ~~36): 7;~~

129.23 (230) ~~Unnamed Stream, Winsted, (T.117, R.27, S.11, 12): 7;~~

130.1 (231) ~~Unnamed Stream, Flensburg, (T.129, R.30, S.19, 30): 7;~~

130.2 (232) ~~Vandell Brook (Vondell Brook), (T.37, 38, R.26): 2C;~~

130.3 (233) ~~Van Sickle Brook, (T.138, R.26, S.14, 15, 23, 24): 1B, 2A, 3B;~~

130.4 (234) ~~Wallingford Brook (Wallingford Creek), (T.139, R.33, S.1, 2, 11,~~

130.5 ~~T.140, R.33, S.25, 36): 1B, 2A, 3B;~~

130.6 (235) ~~Warba Creek, (T.54, R.23, S.13, 14, 15, 21, 22, 23, 24): 1B, 2A, 3B;~~

130.7 (236) ~~Weleome Creek, (T.56, 57, R.22): 2C;~~

130.8 (237) ~~Whitley's Creek (Whiteley Creek), (T.45, R.30, S.16, 17, 20, 21):~~

130.9 ~~1B, 2A, 3B;~~

130.10 (238) ~~Whitney Brook, (T.39, R.26, 27): 2C;~~

130.11 (239) ~~Willow Creek, Otter Tail County, (T.133, R.38, S.2, 11; T.134, R.38,~~

130.12 ~~S.26, 35): 1B, 2A, 3B;~~

130.13 (240) ~~Willow Creek, Stearns and Meeker Counties, (T.121, R.29, S.10,~~

130.14 ~~11, 14, 23): 1B, 2A, 3B;~~

130.15 (241) ~~Willow River, North Fork, (T.142, R.25): 2C;~~

130.16 (242) ~~Willow River, South Fork, (T.142, R.25): 2C;~~

130.17 (243) ~~Wilson Creek, (T.137, R.30): 2C; and~~

130.18 (244) ~~Wolf Creek, (T.42, R.30): 2C.~~

130.19 [For text of items B to D, see M.R.]

130.20 Subp. 5. **Minnesota River Basin.** The water use classifications for the stream
130.21 reaches within each of the major watersheds in the Minnesota River Basin listed
130.22 in item A are found in tables entitled "Beneficial Use Designations for Stream
130.23 Reaches" published on the Web site of the Minnesota Pollution Control Agency at

131.1 www.pca.state.mn.us. The tables are incorporated by reference and are not subject to
131.2 frequent change. The date after each watershed listed in item A is the publication date
131.3 of the applicable table. The water use classifications for the other listed waters in the
131.4 Minnesota River Basin are as identified in items A B to D. See parts 7050.0425 and
131.5 7050.0430 for the classifications of waters not listed. Designated use information for
131.6 water bodies can also be accessed through the agency's Environmental Data Access
131.7 (<http://www.pca.state.mn.us/quick-links/eda-surface-water-data>).

131.8 A. Streams (by eight-digit hydrologic unit code):

131.9 (1) 07020001 Minnesota River - Headwaters (August 9, 2016);

131.10 (2) 07020002 Pomme de Terre River (August 9, 2016);

131.11 (3) 07020003 Lac qui Parle River (August 9, 2016);

131.12 (4) 07020004 Minnesota River - Yellow Medicine River (August 9, 2016);

131.13 (5) 07020005 Chippewa River (August 9, 2016);

131.14 (6) 07020006 Redwood River (August 9, 2016);

131.15 (7) 07020007 Minnesota River - Mankato (August 9, 2016);

131.16 (8) 07020008 Cottonwood River (August 9, 2016);

131.17 (9) 07020009 Blue Earth River (August 9, 2016);

131.18 (10) 07020010 Watonwan River (August 9, 2016);

131.19 (11) 07020011 Le Sueur River (August 9, 2016); and

131.20 (12) 07020012 Lower Minnesota River (August 9, 2016).

131.21 (1) Altermatts Creek (County Ditch No. 39), Comfrey, (T.108, R.33, S.17,
131.22 19, 20, 30; T.108, R.34, S.24, 25, 35, 36); 7;

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132.1 (2) ~~Assumption Creek, (T.115, R.23, S.2; T.116, R.23, S.34, 35): 1B;~~

132.2 ~~2A, 3B;~~

132.3 (3) ~~Badger Creek, (T.101, 102, R.28): 2C;~~

132.4 (4) ~~Beaver Creek, East Fork (County Ditch No. 63), Olivia, Olivia Canning~~

132.5 ~~Company, (T.115, R.34, S.1, 2, 3, 4, 5, 6; T.115, R.35, S.1, 12, 13, 14, 23, 24, 25, 26,~~

132.6 ~~T.116, R.34, S.16, 20, 21, 28, 29, 30, 32, 33, 34, 35): 7;~~

132.7 (5) ~~Blue Earth River, East Fork, (Brush Creek to mouth): 2C, 3C;~~

132.8 (6) ~~Blue Earth River, West Fork, (Iowa border to mouth): 2C, 3C;~~

132.9 (7) ~~Boiling Spring Creek (excluding Class 7 segment), (T.113, 114, R.37,~~

132.10 ~~38): 2C;~~

132.11 (8) ~~Boiling Springs Creek (County Ditch No. 1B), Echo, (T.113, R.38, S.5,~~

132.12 ~~8; T.114, R.37, S.19, 30; T.114, R.38, S.25, 26, 27, 32, 33, 34): 7;~~

132.13 (9) ~~Boot Creek (excluding Class 7 segment), (T.105, 106, R.22, 23): 2C;~~

132.14 (10) ~~Boot Creek, New Richland, (T.105, R.22, S.6, 7; T.105, R.23, S.12,~~

132.15 ~~13, 24): 7;~~

132.16 (11) ~~Brafees Creek, (T.116, 117, R.40): 2C;~~

132.17 (12) ~~Brush Creek, (Iowa border to mouth): 2C, 3C;~~

132.18 (13) ~~Bull Run Creek, Little, (T.106, R.24, 25): 2C;~~

132.19 (14) ~~Butterfield Creek, (T.106, 107, R.31, 32, 33): 2C;~~

132.20 (15) ~~Canby Creek, (T.114, R.45, S.17, 18; T.114, R.46, S.13, 14, 21, 22,~~

132.21 ~~23): 1B, 2A, 3B;~~

132.22 (16) ~~Canby Creek (excluding trout waters), (South Dakota border to~~

132.23 ~~mouth): 2C, 3C;~~

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133.1 (17) ~~Cedar Run Creek, (T.103, 104, R.32, 33): 2C;~~

133.2 (18) ~~Cherry Creek, Cleveland, (T.110, R.25, S.7, 8, 16, 17; T.110, R.26,~~

133.3 ~~S.12): 7;~~

133.4 (19) ~~Chetomba Creek (excluding Class 7 segment), (T.116, 117, R.36, 37,~~

133.5 ~~38): 2C;~~

133.6 (20) ~~Chetomba Creek, Prinsburg, (T.116, R.36, S.6, 7, 18, 19; T.116, R.37,~~

133.7 ~~S.8, 9, 14, 15, 16, 23, 24; T.117, R.36, S.8, 9, 16, 17, 21, 28, 29, 30, 31, 32): 7;~~

133.8 (21) ~~Chippewa River (see also County Ditch No. 60);~~

133.9 (22) ~~Cobb Creek, Freeborn, (T.104, R.23, S.7, 8, 17; T.104, R.24, S.11,~~

133.10 ~~12): 7;~~

133.11 (23) ~~Cobb Creek Ditch, Freeborn, (T.103, R.23, S.2; T.104, R.23, S.14, 15,~~

133.12 ~~16, 23, 26, 35): 7;~~

133.13 (24) ~~Cobb River (Cobb River, Big), (T.103, 104, 105, 106, 107, R.23,~~

133.14 ~~24, 25, 26, 27): 2C;~~

133.15 (25) ~~Cobb River, Little (County Ditch No. 8), (T.105, 106, R.23, 24, 25,~~

133.16 ~~26): 2C;~~

133.17 (26) ~~Cottonwood Creek (excluding trout waters), (T.120, 121, 122, R.41,~~

133.18 ~~42): 2C;~~

133.19 (27) ~~Cottonwood Creek, (T.119, R.41, S.4; T.120, R.41, S.21, 28, 33):~~

133.20 ~~1B, 2A, 3B;~~

133.21 (28) ~~County Ditch No. 1, Echo, (T.113, R.38, S.8, 9): 7;~~

133.22 (29) ~~County Ditch No. 4, Aro, (T.110, R.44, S.5; T.111, R.44, S.32, 33): 7;~~

133.23 (30) ~~County Ditch No. 4, Norwood, (T.115, R.25, S.30; T.115, R.26,~~

133.24 ~~S.13, 14, 24, 25): 7;~~

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134.1 (31) ~~County Ditch No. 5, Marietta, (T.117, R.45, S.6, 7, 18; T.117, R.46, S.1; T.118, R.46, S.23, 25, 26, 36): 7;~~

134.3 (32) ~~County Ditch No. 6 (Judicial Ditch No. 11), Janesville, (T.107, R.24, S.4, 8, 9, 17, 18; T.107, R.25, S.13): 7;~~

134.5 (33) ~~County Ditch No. 7, Lowry, (T.126, R.39, S.25, 26): 7;~~

134.6 (34) ~~County Ditch No. 8 (see Cobb River, Little);~~

134.7 (35) ~~County Ditch No. 9 (see Hazel Creek);~~

134.8 (36) ~~County Ditch No. 12 (County Ditch No. 45), Waseca, (T.107, R.23, S.22, 23): 7;~~

134.10 (37) ~~County Ditch No. 12 (Rice Creek), Belview, (T.113, R.36, S.7, 8, 18, 19; T.113, R.37, S.15, 21, 22, 23, 24): 7;~~

134.12 (38) ~~County Ditch No. 14, Tyler, (T.109, R.43, S.18; T.109, R.44, S.2, 3, 11, 13, 14; T.110, R.44, S.33, 34): 7;~~

134.14 (39) ~~County Ditch No. 15 (see Unnamed Ditch, Madison);~~

134.15 (40) ~~County Ditch No. 22, Montgomery, Green Giant Company, (T.111, R.23, S.4, 9, 10; T.112, R.23, S.33): 7;~~

134.17 (41) ~~County Ditch No. 27, Madison, (T.117, R.43, S.3, 4, 5, 6; T.117, R.44, S.1; T.118, R.43, S.34; T.118, R.44, S.35, 36): 7;~~

134.19 (42) ~~County Ditch No. 28, Marietta, (T.118, R.46, S.22, 23, 26): 7;~~

134.20 (43) ~~County Ditch No. 38, Storden, (T.107, R.37, S.28, 29): 7;~~

134.21 (44) ~~County Ditch No. 40A, Lafayette, (T.111, R.29, S.8, 14, 15, 16, 17, 23, 24): 7;~~

134.23 (45) ~~County Ditch No. 42, Winthrop, (T.112, R.29, S.6, 7): 7;~~

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135.1 (46) ~~County Ditch No. 44, Bricelyn, Owatonna Canning Company, (T.101, R.25, S.7, 8, 16, 17; T.101, R.26, S.1, 12; T.102, R.26, S.36): 7;~~

135.3 (47) ~~County Ditch No. 45, Renville, Southern Minnesota Beet Sugar Coop, (T.114, R.36, S.5, 6; T.115, R.36, S.7, 8, 9, 10, 17, 18, 19, 29, 30, 32): 7;~~

135.5 (48) ~~County Ditch No. 45, Branch Lateral 3, Renville, Golden Oval Eggs, (T.115, R.36, S.4, 5, 8): 7;~~

135.7 (49) ~~County Ditch No. 46, Willmar, (T.119, R.35, S.19, 20, 29): 7;~~

135.8 (50) ~~County Ditch No. 51, Le Center, (T.110, R.24, S.5, 6; T.111, R.24, S.31, 32; T.111, R.25, S.26, 35, 36): 7;~~

135.10 (51) ~~County Ditch No. 54, Montgomery, (T.112, R.23, S.26, 33, 34, 35): 7;~~

135.11 (52) ~~County Ditch No. 55 (see Rush River, North Branch);~~

135.12 (53) ~~County Ditch No. 60 (Chippewa River), Millerville, Millerville Coop~~

135.13 ~~Ery., (T.130, R.39, S.14, 22, 23, 27, 28, 32, 33): 7;~~

135.14 (54) ~~County Ditch No. 61, Kerkhoven, (T.120, R.37, S.21, 22): 7;~~

135.15 (55) ~~County Ditch No. 63, Hanska, (T.108, R.30, S.11, 12, 14, 17, 18, 19, 20, 21, 22, 23, 27, 28): 7;~~

135.17 (56) ~~County Ditch No. 66, Bird Island, (T.115, R.34, S.15, 16, 17, 18, 22, 23): 7;~~

135.19 (57) ~~County Ditch No. 87, Wells, (T.103, R.24, S.6; T.104, R.24, S.31, T.104, R.25, S.36): 7;~~

135.21 (58) ~~County Ditch No. 104, Saered Heart, (T.114, R.38, S.1, 2; T.115, R.37, S.7, 18; T.115, R.38, S.13, 24, 25, 26, 35, 36): 7;~~

135.23 (59) ~~County Ditch No. 109, Morgan, (T.111, R.34, S.4, 5, 8, 17; T.112, R.34, S.22, 23, 27, 28, 33): 7;~~

136.1 (60) ~~Crow Creek, (T.112, R.35): 2C;~~

136.2 (61) ~~Dry Creek, (T.108, 109, R.36): 2C;~~

136.3 (62) ~~Dry Weather Creek, (T.117, 118, R.39, 40, 41): 2C;~~

136.4 (63) ~~Dry Wood Creek, (T.122, 123, R.42, 43): 2C;~~

136.5 (64) ~~Eagle Creek, East Branch, (T.115, R.21, S.18): 1B, 2A, 3B;~~

136.6 (65) ~~Eagle Creek, Main Branch, (T.115, R.21, S.7, 18, T.115, R.22, S.13):~~

136.7 ~~1B, 2A, 3B;~~

136.8 (66) ~~Echo Creek, (T.114, R.37): 2C;~~

136.9 (67) ~~Eight Mile Creek (Judicial Ditch No. 7 or Eightmile Creek), (T.111,~~

136.10 ~~112, 113, R.31): 2C;~~

136.11 (68) ~~Elm Creek, North Fork, (T.104, R.34): 2C;~~

136.12 (69) ~~Elm Creek, South Fork, (T.103, R.34): 2C;~~

136.13 (70) ~~Emily Creek, (T.118, 119, R.43): 2C;~~

136.14 (71) ~~Fish Creek, (T.123, 124, R.47, 48, 49): 2C;~~

136.15 (72) ~~Five Mile Creek, (T.120, R.44): 2C;~~

136.16 (73) ~~Florida Creek, (South Dakota border to mouth): 2C, 3C;~~

136.17 (74) ~~Foster Creek (County Ditch No. 1) (excluding Class 7 segment),~~

136.18 ~~(T.102, 103, R.24): 2C;~~

136.19 (75) ~~Foster Creek (County Ditch No. 1), Alden, (T.102, R.23, S.4, 5; T.103,~~

136.20 ~~R.23, S.31, 32; T.103, R.24, S.25, 36): 7;~~

136.21 (76) ~~Hassel Creek, (T.122, 123, R.38, 39): 2C;~~

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137.1 (77) Hawk Creek (County Ditch No. 10), Willmar/Pennock, (T.118, R.36,
137.2 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,
137.3 31; T.119, R.35, S.19; T.119, R.36, S.24, 25, 26, 35): 7;

137.4 (78) Hazel Creek (County Ditch No. 9), (T.115, R.39, 40, 41, 42): 2C;

137.5 (79) High Island Ditch No. 5, Arlington, (T.113, R.27, S.16, 17, 21, 22,
137.6 27): 7;

137.7 (80) Hindeman Creek (Spring Creek), (T.111, R.32, S.19, 20; T.111, R.33,
137.8 S.24): 1B, 2A, 3B;

137.9 (81) Ioseo Creek, (T.108, R.23): 2C;

137.10 (82) John's Creek, (T.110, R.32, S.1; T.111, R.31, S.31; T.111, R.32,
137.11 S.36): 1B, 2A, 3B;

137.12 (83) Judicial Ditch No. 1, Delavan, (T.104, R.27, S.23, 25, 26, 36): 7;

137.13 (84) Judicial Ditch No. 1A, Lafayette, (T.111, R.27, S.5, 6, 7; T.111, R.28,
137.14 S.10, 11, 12, 15, 16, 17, 18, 19; T.111, R.29, S.24): 7;

137.15 (85) Judicial Ditch No. 4, Dawson, Lac qui Parle Oil Coop, (T.117, R.43,
137.16 S.7, 17, 18, 20, 21 NW1/4; T.117, R.44, S.12): 7;

137.17 (86) Judicial Ditch No. 5, Murdock, (T.120, R.38, S.4, 5, 6, 9, 10, 11,
137.18 T.120, R.39, S.1, 4, 9, 10, 11, 12): 7;

137.19 (87) Judicial Ditch No. 6, Hanska, (T.107, R.30, S.4; T.108, R.30, S.28,
137.20 33): 7;

137.21 (88) Judicial Ditch No. 7 (see Eight Mile Creek);

137.22 (89) Judicial Ditch No. 10, (see Wood Lake Creek);

137.23 (90) Judicial Ditch No. 10 (Morgan Creek), Hanska, (T.108, R.30, S.1,
137.24 T.109, R.30, S.35 SE1/4, 36 SW1/4): 7;

138.1 (91) ~~Judicial Ditch No. 12, Tyler, (T.109, R.43, S.9, 15, 16, 17, 18): 7;~~

138.2 (92) ~~Judicial Ditch No. 29, Arcos, (T.111, R.44, S.21, 28, 33): 7;~~

138.3 (93) ~~Judicial Ditch No. 29 (Spring Creek), Evan, (T.110, R.33, S.6; T.111,~~

138.4 ~~R.33, S.21, 22, 28, 31, 32, 33): 7;~~

138.5 (94) ~~Judicial Ditch No. 29, Branch Lateral, Evan, (T.110, R.33, S.6,~~

138.6 ~~7, 18): 7;~~

138.7 (95) ~~Judicial Ditch No. 30, Sleepy Eye, Del Monte Corporation, (T.109,~~

138.8 ~~R.32, S.4, 5, 6; T.110, R.32, S.31): 7;~~

138.9 (96) ~~Judicial Ditch No. 49 (Providenee Creek), Amboy, (T.105, R.27,~~

138.10 ~~S.18, 19; T.105, R.28, S.13): 7;~~

138.11 (97) ~~Kennaley's Creek, (T.27, R.23, S.18): 1B, 2A, 3B;~~

138.12 (98) ~~Lac qui Parle River, (Lake Hendricks outlet to Minnesota River):~~

138.13 ~~2C, 3C;~~

138.14 (99) ~~Lac qui Parle River, West Fork, (South Dakota border to mouth):~~

138.15 ~~2C, 3C;~~

138.16 (100) ~~Lateral Ditch C of County Ditch No. 55, Gaylord, (T.112, R.28, S.2,~~

138.17 ~~3; T.113, R.28, S.32, 33, 34): 7;~~

138.18 (101) ~~Lazarus Creek, (South Dakota border to Canby Creek): 2C, 3C;~~

138.19 (102) ~~Lazarus Creek (Canby Creek), (T.115, R.45, S.14 to mouth): 2B, 3C;~~

138.20 (103) ~~Le Sueur River, Little, (T.106, R.22): 2C;~~

138.21 (104) ~~Lone Tree Creek, Tracy, (T.109, R.39, S.2, 3, 4, 7, 8, 9; T.110, R.38,~~

138.22 ~~S.19, 20, 30; T.110, R.39, S.25, 34, 35, 36): 7;~~

138.23 (105) ~~Long Lake Creek, (T.132, R.41, S.9): 1B, 2A, 3B;~~

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139.1 (106) ~~Middle Creek (County Ditch No. 92), (T.113, 114, R.36): 2C;~~

139.2 (107) ~~Mink Creek (Judicial Ditch No. 60), (T.104, R.30, 31): 2C;~~

139.3 (108) ~~Minneopa Creek, Lake Crystal, (T.108, R.28, S.26, 27, 32, 33, 34): 7;~~

139.4 (109) ~~Minnesota River, (Big Stone Lake outlet to the Lac qui Parle dam):~~

139.5 ~~1C, 2Bd, 3C;~~

139.6 (110) ~~*Minnesota River, [11/5/84R] (Lac qui Parle dam to the dam in~~

139.7 ~~Granite Falls S.34, T.116, R.39): 1C, 2Bd, 3C;~~

139.8 (111) ~~*Minnesota River, [11/5/84R] (from the dam in Granite Falls S.34,~~

139.9 ~~T.116, R.39 to Redwood County State Aid Highway 11 bridge): 2B, 3C;~~

139.10 (112) ~~Minnesota River, (River Mile 22 to mouth): 2C, 3C;~~

139.11 (113) ~~Minnesota River, Little, (South Dakota border crossing to Big Stone~~

139.12 ~~Lake): 2C, 3C;~~

139.13 (114) ~~Morgan Creek (Judicial Ditch No. 10) (excluding Class 7 segment),~~

139.14 ~~(T.109, R.29, 30): 2C;~~

139.15 (115) ~~Mud Creek, (T.114, R.43, 44, 45): 2C;~~

139.16 (116) ~~Mud Creek, (T.123, R.36, S.28, 29): 1B, 2A, 3B;~~

139.17 (117) ~~Mud Creek (Judicial Ditch No. 19), DeGraff/Murdock, (T.121, R.37,~~

139.18 ~~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;~~

139.19 (118) ~~Muddy Creek (Mud Creek) (County Ditch No. 2) (County Ditch No.~~

139.20 ~~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;~~

139.21 ~~T.124, R.44, S.1, 2, 3, 12; T.125, R.43, S.34, 35, 36): 7;~~

139.22 (119) ~~Palmer Creek (County Ditch No. 68), (T.116, 117, 118, R.39): 2C;~~

139.23 (120) ~~Paul's Creek, (T.110, R.26, S.14, 15): 1B, 2A, 3B;~~

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140.1 (121) ~~Pelican Creek, (T.130, R.41, 42): 2C;~~

140.2 (122) ~~Pell Creek, Walnut Grove, (T.109, R.38, S.25, 26, 27, 28): 7;~~

140.3 (123) ~~Perch Creek, (T.104, 105, 106, R.29, 30): 2C;~~

140.4 (124) ~~Ramsey Creek, (T.112, R.36, S.1; T.113, R.36, S.35, 36): 1B, 2A, 3B;~~

140.5 (125) ~~Redwood River, (T.110, R.42, S.5, 8, 17; T.111, R.42, S.32): 1B,~~

140.6 ~~2A, 3B;~~

140.7 (126) ~~Rice Creek, See County Ditch No. 12;~~

140.8 (127) ~~Rush River, Middle Branch (County Ditch No. 23, County Ditch No.~~

140.9 ~~42B, or County Ditch No. 54), Winthrop, (T.112, R.27, S.16, 19, 20, 21, 30; T.112, R.28,~~

140.10 ~~S.18, 19, 20, 21, 22, 25, 26, 27; T.112, R.29, S.7, 8, 9, 13, 14, 15, 16, 17, 18): 7;~~

140.11 (128) ~~Rush River, North Branch, (County Ditch No. 55), Gaylord (T.112,~~

140.12 ~~R.27, S.7, 8, 17; T.112, R.28, S.1, 2, 12): 7;~~

140.13 (129) ~~Saint James Creek (excluding Class 7 segment), (T.105, 106, R.31,~~

140.14 ~~32, 33): 2C;~~

140.15 (130) ~~Saint James Creek, Saint James, (T.106, R.31, S.5, 7, 8, 18; T.107,~~

140.16 ~~R.31, S.21, 22, 28, 32, 33): 7;~~

140.17 (131) ~~Seven Mile Creek, (T.109, R.27, S.2, 3, 4, 10, 11, 12): 1B, 2A, 3B;~~

140.18 (132) ~~Shakopee Creek, (T.119, 120, R.36, 37, 38, 39, 40): 2C;~~

140.19 (133) ~~Silver Creek (County Ditch No. 3), (T.108, R.23, 24): 2C;~~

140.20 (134) ~~Smith Creek, (T.113, R.35, 36): 2C;~~

140.21 (135) ~~South Creek, (T.102, 103, R.28, 29, 30): 2C, 3C;~~

140.22 (136) ~~Spring Branch Creek, (T.106, R.29, 30): 2C;~~

141.1 (137) ~~Spring Creek (Judicial Ditch No. 29) (excluding trout waters)~~ (see
141.2 also ~~Hindeman Creek and Judicial Ditch No. 29~~), (T.110, 111, R.33, 34): 2C;

141.3 (138) ~~Spring Creek (County Ditch No. 10A)~~, (T.117, 118, R.39, 40): 2C;

141.4 (139) ~~Stony Run~~, (T.121, 122, R.45, 46): 2C;

141.5 (140) ~~Stony Run Creek (Judicial Ditch No. 21)~~, (T.116, R.40): 2C;

141.6 (141) ~~Three Mile Creek (Threemile Creek)~~, (T.112, R.33): 2C;

141.7 (142) ~~Timms Creek (County Ditch No. 35A)~~, (T.114, 115, R.36): 2C;

141.8 (143) ~~Unnamed #1~~, (T.27, R.23, S.18; T.27, R.24, S.13): 1B, 2A, 3B;

141.9 (144) ~~Unnamed #4~~, (T.27, R.24, S.24): 1B, 2A, 3B;

141.10 (145) ~~Unnamed #7~~, (T.27, R.24, S.26): 1B, 2A, 3B;

141.11 (146) ~~Unnamed Creek~~, (T.108, R.28, S.1, 2): 1B, 2A, 3B;

141.12 (147) ~~Unnamed Creek~~, (T.108, R.28, S.5): 1B, 2A, 3B;

141.13 (148) ~~Unnamed Creek~~, (T.110, R.26, S.10, 11): 1B, 2A, 3B;

141.14 (149) ~~Unnamed Creek~~, (T.108, R.28, S.6; T.109, R.29, S.25, 36): 1B,

141.15 2A, 3B;

141.16 (150) ~~Unnamed Creek, Green Isle~~, (T.114, R.26, S.2, 3, 4, 8, 9, 17): 7;

141.17 (151) ~~Unnamed Creek, Lake Town Township~~, (T.115, R.24, S.3, 10, 11;

141.18 T.116, R.24, S.27, 34): 7;

141.19 (152) ~~Unnamed Creek, Pennock~~, (T.118, R.37, S.2, 3, 4, 5; T.119, R.36,

141.20 S.4, 5, 6, 7, 18, 19; T.119, R.37, S.24, 25, 26, 35): 7;

141.21 (153) ~~Unnamed Creek, Murdock~~, (T.120, R.38, S.1, 2; T.121, R.38, S.35): 7;

141.22 (154) ~~Unnamed Ditch, Burnsville Freeway Sanitary Landfill~~, (T.27, R.24,

141.23 S.28, 33): 7;

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142.1 (155) ~~Unnamed Ditch, Bricelyn, Owatonna Canning Company, (T.101,~~
142.2 ~~R.25, S.10): 7;~~

142.3 (156) ~~Unnamed Ditch, Truman, (T.104, R.30, S.2, 11; T.105, R.30, S.25,~~
142.4 ~~26, 35): 7;~~

142.5 (157) ~~Unnamed Ditch (County Ditch No. 47), New Richland, (T.105,~~
142.6 ~~R.22, S.17, 18, 19; T.105, R.23, S.24): 7;~~

142.7 (158) ~~Unnamed Ditch, Lewisville, (T.105, R.30, S.3; T.106, R.30, S.14,~~
142.8 ~~23, 26, 34, 35): 7;~~

142.9 (159) ~~Unnamed Ditch, Waldorf, (T.106, R.24, S.34): 7;~~

142.10 (160) ~~Unnamed Ditch (County Ditch No. 45), Waseca, (T.107, R.23,~~
142.11 ~~S.14, 23): 7;~~

142.12 (161) ~~Unnamed Ditch, Jeffers, (T.107, R.36, S.21): 7;~~

142.13 (162) ~~Unnamed Ditch, Storden, (T.107, R.37, S.19, 30): 7;~~

142.14 (163) ~~Unnamed Ditch, Eagle Lake, (T.108, R.25, S.18, 19; T.108, R.26,~~
142.15 ~~S.13): 7;~~

142.16 (164) ~~Unnamed Ditch, Walnut Grove, (T.109, R.38, S.28): 7;~~

142.17 (165) ~~Unnamed Ditch, Tracy, (T.109, R.39, S. 7, 18; T.109, R.40, S.13): 7;~~

142.18 (166) ~~Unnamed Ditch, Wabasso, (T.110, R.36, S.3; T.111, R.36, S.18, 19,~~
142.19 ~~20, 28, 29, 33, 34; T.111, R.37, S.13): 7;~~

142.20 (167) ~~Unnamed Ditch, Lafayette, (T.111, R.29, S.6, 7, 8; T.111, R.30,~~
142.21 ~~S.12): 7;~~

142.22 (168) ~~Unnamed Ditch, Wabasso, (T.111, R.37, S.13, 24): 7;~~

142.23 (169) ~~Unnamed Ditch, Montgomery, (T.112, R.23, S.33): 7;~~

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143.1 (170) ~~Unnamed Ditch, Winthrop, (T.112, R.29, S.4, 5, 6): 7;~~

143.2 (171) ~~Unnamed Ditch, Arlington, (T.113, R.27, S.21): 7;~~

143.3 (172) ~~Unnamed Ditch, Near Fernando, Round Grove Coop Cry., (T.113,~~

143.4 ~~R.30, S.5; T.114, R.29, S.19, 20, 30; T.114, R.30, S.25, 26, 27, 28, 29, 32): 7;~~

143.5 (173) ~~Unnamed Ditch, Green Isle, (T.114, R.26, S. 19; T.114, R.27, S.11,~~

143.6 ~~12, 13, 14, 24): 7;~~

143.7 (174) ~~Unnamed Ditch, New Auburn, (T.114, R.28, S.20): 7;~~

143.8 (175) ~~Unnamed Ditch, Porter, (T.114, R.44, S.21, 28): 7;~~

143.9 (176) ~~Unnamed Ditch, Bongards, Bongards Creameries, (T.115, R.25,~~

143.10 ~~S.9, 16): 7;~~

143.11 (177) ~~Unnamed Ditch, Clarkfield, (T.115, R.41, S.16): 7;~~

143.12 (178) ~~Unnamed Ditch, Clarkfield, (T.115, R.41, S.16, 21): 7;~~

143.13 (179) ~~Unnamed Ditch (County Ditch No. 15), Madison, (T.118, R.44,~~

143.14 ~~S.27, 28, 34, 35): 7;~~

143.15 (180) ~~Unnamed Ditch, Pennock, (T.119, R.36, S.2, 3, 4, 9, 10): 7;~~

143.16 (181) ~~Unnamed Ditch, DeGraff, (T.121, R.38, S.19, 29, 30): 7;~~

143.17 (182) ~~Unnamed Ditch, Hancock, (T.122, R.40, S.6; T.122, R.41, S.1, 12;~~

143.18 ~~T.123, R.40, S.18, 19, 30, 31; T.123, R.41, S.11, 12): 7;~~

143.19 (183) ~~Unnamed Ditch, Alberta, (T.124, R.43, S.3, 4): 7;~~

143.20 (184) ~~Unnamed Ditch, Farwell, Farwell Coop Cry. Assn., (T.126, R.39,~~

143.21 ~~S.6): 7;~~

143.22 (185) ~~Unnamed Ditch, Lowry, (T.126, R.39, S.26, 35): 7;~~

143.23 (186) ~~Unnamed Ditch, Brandon, (T.129, R.39, S.21, 22): 7;~~

144.1 (187) ~~Unnamed Ditch, Evansville, (T.129, R.40, S.10, 11): 7;~~

144.2 (188) ~~Unnamed Dry Run, Near Minneopa, Blue Earth - Nicollet Electric,~~

144.3 ~~(T.108, R.27, S.16): 7;~~

144.4 (189) ~~Unnamed Dry Run, Mankato, Southview Heights Coop Association,~~

144.5 ~~(T.108, R.26, S.19, 30; T.108, R.27, S.24): 7;~~

144.6 (190) ~~Unnamed Stream, Mankato, Midwest Electric Products, (T.109,~~

144.7 ~~R.26, S.20, 21, 28): 7;~~

144.8 (191) ~~Unnamed Stream, Savage, (T.115, R.21, S.8, 9): 7;~~

144.9 (192) ~~Wabasha Creek, (T.112, R.34): 2C;~~

144.10 (193) ~~Whetstone River, (South Dakota border to mouth): 2C, 3C;~~

144.11 (194) ~~Old Whetstone River Channel, Ortonville, Big Stone Canning~~

144.12 ~~Company, (T.121, R.46, S.16, 21): 7;~~

144.13 (195) ~~Willow Creek, (T.104, 105, R.31, 32): 2C;~~

144.14 (196) ~~Wood Lake Creek, (Judicial Ditch No. 10), (T.113, 114, 115, R.38,~~

144.15 ~~39): 2C;~~

144.16 (197) ~~Yellow Bank River, North Fork, (South Dakota border to mouth):~~

144.17 ~~2C, 3C;~~

144.18 (198) ~~Yellow Bank River, South Fork, (South Dakota border to mouth):~~

144.19 ~~2C, 3C; and~~

144.20 (199) ~~Yellow Medicine River, North Fork, (South Dakota border to~~

144.21 ~~mouth): 2C, 3C.~~

144.22 [For text of items B to D, see M.R.]

144.23 Subp. 6. Saint Croix River Basin. The water use classifications for the stream

144.24 reaches within each of the major watersheds in the Saint Croix River Basin listed

145.1 in item A are found in tables entitled "Beneficial Use Designations for Stream
145.2 Reaches" published on the Web site of the Minnesota Pollution Control Agency at
145.3 www.pca.state.mn.us. The tables are incorporated by reference and are not subject to
145.4 frequent change. The date after each watershed listed in item A is the publication date
145.5 of the applicable table. The water use classifications for the other listed waters in the
145.6 Saint Croix River Basin are as identified in items A B to D. See parts 7050.0425 and
145.7 7050.0430 for the classifications of waters not listed. Designated use information for
145.8 water bodies can also be accessed through the agency's Environmental Data Access
145.9 (<http://www.pca.state.mn.us/quick-links/eda-surface-water-data>).

145.10 A. Streams (by eight-digit hydrologic unit code):

- 145.11 (1) 07030001 Upper St. Croix River (August 9, 2016);
- 145.12 (2) 07030003 Kettle River (August 9, 2016);
- 145.13 (3) 07030004 Snake River (August 9, 2016); and
- 145.14 (4) 07030005 Lower St. Croix River (August 9, 2016).
 - 145.15 (1) Bang's Brook, (T.41, R.17, S.15, 20, 21, 22, 29): 1B, 2A, 3B;
 - 145.16 (2) Barnes Spring, (T.41, R.18, S.1, 12): 1B, 2A, 3B;
 - 145.17 (3) Bear Creek, (T.43, R.23, 24): 2C;
 - 145.18 (4) Beaver Creek, (T.35, R.20, S.7, 8, 17; T.35, R.21, S.3, 4, 10, 12, 13,
145.19 14, 15; T.36, R.21, S.33, 34): 1B, 2A, 3B;
 - 145.20 (5) Bergman Brook, (T.42, 43, R.23, 24): 2C;
 - 145.21 (6) Bjork Creek, (T.42, R.16, S.2, 9, 10, 11): 1B, 2A, 3B;
 - 145.22 (7) Brown's Creek, (T.30, R.20, S.18, 19, 20, 21; T.30, R.21, S.12, 13):
145.23 1B, 2A, 3B;
 - 145.24 (8) Cons Creek, (T.41, R.17, S.15, 16, 22): 1B, 2A, 3B;

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146.1 (9) ~~Crooked Creek (East Fork Crooked Creek), (T.41, R.17, S.6, 7, 18, 19, 20, 29, 30; T.41, R.18, S.11, 12, 13; T.42, R.17, S.31): 1B, 2A, 3B;~~

146.3 (10) ~~Crooked Creek, West Fork, (T.41, R.18, S.11, 12; T.42, R.18, S.3, 4, 9, 10, 16; T.43, R.18, S.27, 34): 1B, 2A, 3B;~~

146.5 (11) ~~Crystal Creek, (T.41, R.16, S.9, 10, 15): 1B, 2A, 3B;~~

146.6 (12) ~~Grindstone River, (T.42, R.21, S.20, 21, 28, 29): 1B, 2A, 3B;~~

146.7 (13) ~~Groundhouse River, West Fork, (T.39, 40, R.26): 2C;~~

146.8 (14) ~~Hay Creek, (T.40, R.18, S.6, 7, 8, 18, 19; T.41, R.18, S.10, 15, 20, 21, 22, 29, 32, 33): 1B, 2A, 3B;~~

146.10 (15) ~~Hay Creek, (T.42, 43, 44, R.15, 16): 1B, 2Bd, 3C;~~

146.11 (16) ~~Hay Creek, Little, (T.40, R.18, S.8, 9): 1B, 2A, 3B;~~

146.12 (17) ~~*Kettle River, [11/5/84R] (From the north Pine County line to the site of the former dam at Sandstone, at quarter section line between the NW 1/4 and SW 1/4, S.22, T.42, R.20): 2B, 3C;~~

146.15 (18) ~~*Kettle River, [11/5/84P] (From the site of the former dam at Sandstone, at quarter section line between the NW 1/4 and SW 1/4, S.22, T.42, R.20 to its confluence with the Saint Croix River): 2B, 3B;~~

146.18 (19) ~~King Creek, (T.47, R.18, S.18, 19; T.47, R.19, S.1, 12, 13): 1B, 2A, 3B;~~

146.19 (20) ~~Larson Creek, (T.44, R.17, S.5; T.45, R.17, S.29, 32): 1B, 2A, 3B;~~

146.20 (21) ~~Lawrencee Creek, (T.33, R.19, S.2, 3, 10): 1B, 2A, 3B;~~

146.21 (22) ~~Lost Creek, (T.40, R.19, S.9, 10, 15): 1B, 2A, 3B;~~

146.22 (23) ~~McCullen Creek (Albrechts Creek or Meekers Creek), (T.42, R.16, S.28, 33): 1B, 2A, 3B;~~

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147.1 (24) ~~Mission Creek, (T.40, R.21, S.1, 2; T.41, R.20, S.31; T.41, R.21, S.36): 1B, 2A, 3B;~~

147.2 (25) ~~Mission Creek (excluding trout waters), (T.39, 40, 41, R.20, 21): 1B, 2Bd, 3C;~~

147.3 (26) ~~Moosehorn River (Moose River), (T.48, R.18, S.3, 9, 10, 14, 15, 16, 23, 26, 34, 35): 1B, 2A, 3B;~~

147.4 (27) ~~Old Mill Stream, (T.31, R.19, S.6; T.31, R.20, S.1; T.32, R.20, S.36): 1B, 2A, 3B;~~

147.5 (28) ~~Pelkey Creek, (T.41, R.20, S.33, 34, 35): 1B, 2A, 3B;~~

147.6 (29) ~~Rock Creek, (T.37, 38, R.20, 21): 1B, 2Bd, 3C;~~

147.7 (30) ~~Rush Creek, (T.37, R.20, 21): 1B, 2Bd, 3C;~~

147.8 (31) ~~*Saint Croix River, [11/5/84R] (Wisconsin border crossing to Taylors Falls): 1B, 2Bd, 3C;~~

147.9 (32) ~~*Saint Croix River, [11/5/84R] (Taylors Falls to mouth): 1C, 2Bd, 3C;~~

147.10 (33) ~~Sand River (Sand Creek), (T.43, R.18, S.4, 5, 7, 8, 18, 19; T.43, R.19, S.24; T.44, R.18, S.33, 34): 1B, 2A, 3B;~~

147.11 (34) ~~Spring Brook (Spring Creek), (T.41, R.20, S.16, 17, 18, 21): 1B, 2A, 3B;~~

147.12 (35) ~~Sunrise River, West Branch (County Ditch No. 13), (T.34, R.21, 22): 1B, 2Bd, 3C;~~

147.13 (36) ~~Tamarack River, Lower, (Hay Creek to mouth): 1B, 2Bd, 3C;~~

147.14 (37) ~~Tamarack River, Upper (Spruce River), (T.41, 42, R.15, 16): 1B, 2Bd, 3C;~~

147.15 (38) ~~Unnamed Creek, (T.33, R.19, S.16, 21, 22): 1B, 2A, 3B;~~

148.1 (39) ~~Unnamed Creek, (T.33, R.19, S.31, 32): 1B, 2A, 3B;~~

148.2 (40) ~~Unnamed Creek, (T.43, R.18, S.2, 3; T.44, R.18, S.35): 1B, 2A, 3B;~~

148.3 (41) ~~Unnamed Ditch, Chisago City, (T.34, R.20, S.19, 29, 30, 32): 7;~~

148.4 (42) ~~Unnamed Ditch, Almelund, Almelund Coop Cry., (T.35, R.20, S.25): 7;~~

148.5 (43) ~~Unnamed Ditch, Moose Lake, (T.46, R.19, S.30): 7;~~

148.6 (44) ~~Unnamed Dry Run, Wahkon, (T.41, R.25, S.3; T.42, R.25, S.29, 32,~~

148.7 ~~33, 34): 7;~~

148.8 (45) ~~Unnamed Stream (Falls Creek), (T.32, R.19, S.6, 7; T.32, R.20, S.1,~~

148.9 ~~12): 1B, 2A, 3B;~~

148.10 (46) ~~Unnamed Stream (Gilbertson), (T.32, R.19, S.19): 1B, 2A, 3B;~~

148.11 (47) ~~Unnamed Stream, Shafer, (T.34, R.19, S.32, 33, 34): 7;~~

148.12 (48) ~~Unnamed Stream (Willow Brook), (T.31, R.19, S.19): 1B, 2A, 3B;~~

148.13 (49) ~~Valley Creek (Valley Branch), (T.28, R.20, S.9, 10, 14, 15, 16, 17):~~

148.14 ~~1B, 2A, 3B;~~

148.15 (50) ~~Wilbur Brook, (T.41, R.17, S.29, 30; T.41, R.18, S.23, 25, 26): 1B,~~

148.16 ~~2A, 3B; and~~

148.17 (51) ~~Wolf Creek, (T.42, R.18, S.4, 9, 16; T.43, R.18, S.32, 33): 1B, 2A, 3B.~~

148.18 [For text of items B to D, see M.R.]

148.19 Subp. 7. **Lower Mississippi River Basin (from the confluence with the St. Croix**

148.20 **River to the Iowa border).** The water use classifications for the stream reaches within

148.21 each of the major watersheds in the Lower Mississippi River Basin from the confluence

148.22 with the Saint Croix River to the Iowa border listed in item A are found in tables entitled

148.23 "Beneficial Use Designations for Stream Reaches" published on the Web site of the

148.24 Minnesota Pollution Control Agency at www.pca.state.mn.us. The tables are incorporated

149.1 by reference and are not subject to frequent change. The date after each watershed listed
149.2 in item A is the publication date of the applicable table. The water use classifications for
149.3 the other listed waters in the Lower Mississippi River Basin from the confluence with the
149.4 St. Croix River to the Iowa border are as identified in items AB to D. See parts 7050.0425
149.5 and 7050.0430 for the classifications of waters not listed. Designated use information
149.6 for water bodies can also be accessed through the agency's Environmental Data Access
149.7 (<http://www.pca.state.mn.us/quick-links/eda-surface-water-data>).

149.8 A. Streams (by eight-digit hydrologic unit code):

- 149.9 (1) 07040001 Mississippi River - Lake Pepin (August 9, 2016);
- 149.10 (2) 07040002 Cannon River (August 9, 2016);
- 149.11 (3) 07040003 Mississippi River - Winona (August 9, 2016);
- 149.12 (4) 07040004 Zumbro River (August 9, 2016);
- 149.13 (5) 07040006 Mississippi River - La Crescent (August 9, 2016);
- 149.14 (6) 07040008 Root River (August 9, 2016);
- 149.15 (7) 07060001 Mississippi River - Reno (August 9, 2016); and
- 149.16 (8) 07060002 Upper Iowa River (August 9, 2016).

149.17 (1) ~~Ahrensfeld Creek, (T.105, R.8, S.8, 9, 16, 17, 19, 20): 1B, 2A, 3B;~~

149.18 (2) ~~Albany Creek, West (excluding trout waters), (T.110, 111, R.12, 13): 2C;~~

149.19 (3) ~~Albany Creek, West, (T.110, R.12, S.28, 29, 30; T.110, R.13, S.23,~~

149.20 ~~24, 25, 26): 1B, 2A, 3B;~~

149.21 (4) ~~Badger Creek, (T.103, R.6, S.9, 16, 21, 22, 27, 28, 34): 1B, 2A, 3B;~~

149.22 (5) ~~Ballpark Creek, (T.102, R.4, S.19, 30; T.102, R.5, S.24): 1B, 2A, 3B;~~

149.23 (6) ~~Bear Creek, (T.107, R.9, S.13, 14, 15, 16, 22): 1B, 2A, 3B;~~

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150.1 (7) ~~Bear Creek, North, Spring Grove (T.101, R.7, S.26, 27, 35): 7;~~

150.2 (8) ~~Bear Creek (excluding trout waters), (T.107, R.9, S.17, 20): 2C;~~

150.3 (9) ~~Bear Creek (North Bear Creek) (excluding Class 7 segment), (source to~~

150.4 ~~Iowa border): 2C;~~

150.5 (10) ~~Beaver Creek, (T.102, R.6, S.5; T.103, R.6, S.18, 19, 29, 30, 31,~~

150.6 ~~32): 1B, 2A, 3B;~~

150.7 (11) ~~Beaver Creek, East, (T.102, R.6, S.5, 6, 8, 17): 1B, 2A, 3B;~~

150.8 (12) ~~Beaver Creek, West, (T.102, R.6, S.5, 6, 7, 18, 19, 30; T.102, R.7,~~

150.9 ~~S.12, 13, 24, 25, 26): 1B, 2A, 3B;~~

150.10 (13) ~~Beaver Creek, (T.108, R.10, S.15, 16, 19, 20, 21; T.108, R.11, S.24):~~

150.11 ~~1B, 2A, 3B;~~

150.12 (14) ~~Beaver Creek, (T.101, 102, R.13, 14): 2C, 3C;~~

150.13 (15) ~~Bee Creek, (T.101, R.6, S.29, 32, 33): 1B, 2A, 3B;~~

150.14 (16) ~~Big Springs Creek, (T.104, R.9, S.21, 22, 26, 27): 1B, 2A, 3B;~~

150.15 (17) ~~Berson Spring, (T.105, R.8, R.29, 32, 33): 1B, 2A, 3B;~~

150.16 (18) ~~Brush Valley Creek (excluding trout waters), (T.104, R.5): 2C;~~

150.17 (19) ~~Brush Valley Creek, (T.104, R.5, S.23, 24, 26): 1B, 2A, 3B;~~

150.18 (20) ~~Bullard Creek, (T.112, R.14, S.1, 2, 3, 10; T.113, R.14, S.36): 1B,~~

150.19 ~~2A, 3B;~~

150.20 (21) ~~Burns Valley Creek, East Branch, (T.106, R.7, S.3, 10, 15): 1B, 2A, 3B;~~

150.21 (22) ~~Burns Valley Creek, West Branch, (T.106, R.7, S.3, 4, 9, 16; T.107,~~

150.22 ~~R.7, S.34): 1B, 2A, 3B;~~

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151.1 (23) ~~Burns Valley Creek, Main Branch, (T.106, R.7, S.2; T.107, R.7, S.35): 1B, 2A, 3B;~~

151.3 (24) ~~Butterfield Creek, (T.103, R.4, S.6, 7, 8, 18): 1B, 2A, 3B;~~

151.4 (25) ~~Camp Creek, (T.101, R.10, S.5, 8, 9; T.102, R.10, S.5, 8, 16, 17, 20, 29, 32): 1B, 2A, 3B;~~

151.6 (26) ~~Camp Hayward Creek, (T.104, R.8, S.31, 32): 1B, 2A, 3B;~~

151.7 (27) ~~Campbell Creek, (T.104, R.6, S.5, 7, 8, 18; T.105, R.6, S.21, 28, 29, 32): 1B, 2A, 3B;~~

151.9 (28) ~~Canfield Creek (see South Branch Creek);~~

151.10 (29) ~~*Cannon River, [11/5/84R] (from the northern city limits of Faribault at the common border of the SE1/4 and the NE1/4 of S.19, T.110, R.20 to its confluence with the Mississippi River): 2B, 3C;~~

151.13 (30) ~~Cannon River, Little, (T.110, R.18, S.1, 10, 11, 12, 15; T.111, R.18, S.13, 24, 25, 36): 1B, 2A, 3B;~~

151.15 (31) ~~Carters Creek (Curtis Creek), Wykoff, (T.103, R.12, S.4, 9, 15, 16, 22): 7;~~

151.17 (32) ~~Cedar Valley Creek (Cedar Creek), (T.105, R.6, S.6; T.106, R.6, S.1, 11, 12, 14, 15, 21, 22, 28, 29, 31, 32): 1B, 2A, 3B;~~

151.19 (33) ~~Chickentown Creek (M-9-10-10-2), (T.102, R.8, S.32, 33): 1B, 2A, 3B;~~

151.20 (34) ~~Chub Creek, North Branch, (T.112, 113, R.19): 2C;~~

151.21 (35) ~~Clear Creek, (T.111, R.14, S.3, 10, 15): 1B, 2A, 3B;~~

151.22 (36) ~~Clear Creek, (T.102, R.4): 2C;~~

151.23 (37) ~~Cold Creek (Cold Spring Brook) (excluding trout waters), (T.110, R.14): 2C;~~

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152.1 (38) ~~Cold Spring Brook (Cold Creek), (T.110, R.13, S.30, 31; T.110, R.14, S.25, 36): 1B, 2A, 3B;~~

152.3 (39) ~~Coolidge Creek, (T.105, R.9, S.23, 26): 1B, 2A, 3B;~~

152.4 (40) ~~Corey Creek, (T.105, R.6, S.18, 19; T.105, R.7, S.24, 25, 26, 27, 34): 1B, 2A, 3B;~~

152.6 (41) ~~County Ditch No. 15, Kilkenny, (T.110, R.23, S.22, 23): 7;~~

152.7 (42) ~~Crane Creek, (T.107, 108, R.20, 21, 22): 2C;~~

152.8 (43) ~~Crooked Creek, Main Branch, (T.102, R.4, S.18, 19, 20, 28, 29, 30, T.102, R.5, S.25, 26, 36): 1B, 2A, 3B;~~

152.10 (44) ~~Crooked Creek, North Fork, (T.102, R.5, S.17, 20, 21, 22, 23, 26): 1B, 2A, 3B;~~

152.12 (45) ~~Crooked Creek, South Fork, (T.102, R.5, S.26, 28): 1B, 2A, 3B;~~

152.13 (46) ~~Crystal Creek, (T.102, R.11, S.35, 36): 1B, 2A, 3B;~~

152.14 (47) ~~Crystal Creek, (T.103, R.5, S.6, 7, 18, 19; T.103, R.6, S.1, 12): 1B, 2A, 3B;~~

152.16 (48) ~~Dakota Creek (excluding trout waters), (T.105, R.5): 2C;~~

152.17 (49) ~~Dakota Creek, (T.105, R.4, S.7; T.105, R.5, S.1, 2, 3, 11, 12): 1B, 2A, 3B;~~

152.19 (50) ~~Daley Creek, (T.103, R.7, S.4, 5, 8; T.104, R.7, S.33): 1B, 2A, 3B;~~

152.20 (51) ~~Diamond Creek, (T.103, R.8, S.18, 19; T.103, R.9, S.10, 11, 13, 14, 24): 1B, 2A, 3B;~~

152.22 (52) ~~Dry Creek, (T.108, R.12, 13): 2C;~~

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153.1 (53) ~~Dusehee Creek, (T.102, R.10, S.1; T.103, R.10, S.23, 24, 25, 26, 36): 1B, 2A, 3B;~~

153.3 (54) ~~Dutch Creek, (T.112, R.20, 21): 2C;~~

153.4 (55) ~~Eitzen Creek, (T.101, R.5, S.22, 23): 1B, 2A, 3B;~~

153.5 (56) ~~Etna Creek, (T.102, R.13, S.25, 36): 1B, 2A, 3B;~~

153.6 (57) ~~Ferguson Creek, (T.105, R.8, S.18; T.105, R.9, S.12, 13): 1B, 2A, 3B;~~

153.7 (58) ~~Ferndale Creek, (T.104, R.7, S.29, 30, 31): 1B, 2A, 3B;~~

153.8 (59) ~~Forestville Creek (see North Branch Creek);~~

153.9 (60) ~~Frego Creek, (T.101, R.9, S.14, 15, 22, 23): 1B, 2A, 3B;~~

153.10 (61) ~~Garvin Brook, (T.106, R.8, S.4, 5, 8, 17; T.107, R.8, S.10, 11, 14, 15, 23, 26, 27, 33, 34, 35): 1B, 2A, 3B;~~

153.12 (62) ~~Gilbert Creek, (T.111, R.12, S.6; T.111, R.13, S.1, 2, 3, 4, 10, 11, 12, T.112, R.12, S.31): 1B, 2A, 3B;~~

153.14 (63) ~~Gilmore Creek, (T.106, R.7, S.6; T.107, R.7, S.20, 29, 30, 31, 32): 1B, 2A, 3B;~~

153.15 ~~1B, 2A, 3B;~~

153.16 (64) ~~Girl Scout Camp Creek, (T.103, R.7, S.29, 30): 1B, 2A, 3B;~~

153.17 (65) ~~Gorman Creek, (T.109, R.11, S.1; T.110, R.10, S.29, 30, 31; T.110, R.11, S.36): 1B, 2A, 3B;~~

153.19 (66) ~~Gribben Creek, (T.103, R.9, S.9, 16, 21, 27, 28): 1B, 2A, 3B;~~

153.20 (67) ~~Hallum Creek, (T.103, R.7, S.31; T.103, R.8, S.36): 1B, 2A, 3B;~~

153.21 (68) ~~Hamilton Creek, (T.103, R.13, NW 1/4 S.6; T.103, R.14, NE 1/4 S.1): 1B, 2A, 3B;~~

153.23 (69) ~~Hammond Creek, (T.109, R.13, S.28, 29): 1B, 2A, 3B;~~

154.1 (70) ~~Harkeom Creek, (T.108, R.15, 16): 2C;~~

154.2 (71) ~~Hay Creek, (T.111, R.15, S.4; T.112, R.14, S.19; T.112, R.15, S.1, 12,~~

154.3 ~~13, 23, 24, 26, 27, 33, 34; T.113, R.15, S.24, 25, 36): 1B, 2A, 3B;~~

154.4 (72) ~~Hemingway Creek (Hemingway Creek), (T.105, R.9, S.26, 28,~~

154.5 ~~33, 34, 35): 1B, 2A, 3B;~~

154.6 (73) ~~Homer Creek, (T.106, 107, R.6): 2C;~~

154.7 (74) ~~Indian Creek, East, (T.109, R.9, S.19; T.109, R.10, S.21, 22, 23, 24,~~

154.8 ~~26, 27, 28, 29, 31, 32; T.109, R.11, S.36): 1B, 2A, 3B;~~

154.9 (75) ~~Indian Creek, West, (T.109, R.11, S.6, 7, 8, 16, 17, 21): 1B, 2A, 3B;~~

154.10 (76) ~~Indian Spring Creek, (T.103, R.5): 2C;~~

154.11 (77) ~~Iowa River, Little, (T.101, 102, R.14): 2C;~~

154.12 (78) ~~Jordan Creek, Little (Carson Creek), (T.104, R.12, S.21, 22, 26, 27,~~

154.13 ~~28): 1B, 2A, 3B;~~

154.14 (79) ~~Judicjal Ditch No. 1, Hayfield, (T.105, R.17, S.4, 5; T.106, R.17,~~

154.15 ~~S.31, 32; T.106, R.18, S.25, 26, 27, 36): 7;~~

154.16 (80) ~~Kedron Creek, (T.104, R.13, S.36): 1B, 2A, 3B;~~

154.17 (81) ~~King Creek, (T.111, R.11, 12): 2C;~~

154.18 (82) ~~Kinney Creek, (T.105, R.13, S.1, 12, 13; T.106, R.13, S.36): 1B,~~

154.19 ~~2A, 3B;~~

154.20 (83) ~~Lanesboro Park Pond, (T.103, R.10, S.13): 1B, 2A, 3B;~~

154.21 (84) ~~LeRoy Trout Pond, (T.101, R.14, S.36): 1B, 2A, 3B;~~

154.22 (85) ~~Logan Creek (Logan Branch), (T.107, R.11, S.3): 1B, 2A, 3B;~~

154.23 (86) ~~Long Creek (excluding trout waters), (T.108, 109, R.12): 2C,~~

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155.1 (87) ~~Long Creek, (T.109, R.12, S.3, 10, 15, 22, 27, 28): 1B, 2A, 3B;~~

155.2 (88) ~~Lost Creek (Bear Creek), (T.104, R.11, S.18; T.104, R.12, S.8, 9,~~

155.3 ~~10, 15, 16): 1B, 2A, 3B;~~

155.4 (89) ~~Lynch Creek, (T.104, R.11, S.2, 11, 14): 1B, 2A, 3B;~~

155.5 (90) ~~MacKenzie Creek, (T.108, 109, R.21): 2C;~~

155.6 (91) ~~Mahoney Creek, (T.103, R.10): 2C;~~

155.7 (92) ~~Mahoods Creek, (T.103, R.12, S.20): 1B, 2A, 3B;~~

155.8 (93) ~~Maple Creek, (T.102, R.8, S.3, 4; T.103, R.8, S.27, 28, 33, 34): 1B,~~

155.9 ~~2A, 3B;~~

155.10 (94) ~~Mazeppa Creek (Trout Brook), (T.109, R.14, S.4, 5, 9; T.110, R.14,~~

155.11 ~~S.19, 29, 30, 32; T.110, R.15, S.24, 25): 1B, 2A, 3B;~~

155.12 (95) ~~Middle Creek, (T.109, R.11, S.18; T.109, R.12, S.2, 3, 11, 13, 14):~~

155.13 ~~1B, 2A, 3B;~~

155.14 (96) ~~Mill Creek, (T.104, R.11, S.5, 6; T.105, R.11, S.31; T.105, R.12,~~

155.15 ~~S.14, 23, 25, 26, 36): 1B, 2A, 3B;~~

155.16 (97) ~~Miller Creek, (T.111, R.12, S.7, 8, 9, 18; T.111, R.13, S.13, 24):~~

155.17 ~~1B, 2A, 3B;~~

155.18 (98) ~~Money Creek, (T.105, R.7, S.3, 4, 6, 7, 8, 9, 16, 17): 1B, 2A, 3B;~~

155.19 (99) ~~Mound Prairie Creek, (T.104, R.5): 2C;~~

155.20 (100) ~~Mud Creek (Judicial Ditch No. 6), (T.108, 109, R.20, 21): 2C;~~

155.21 (101) ~~Nepstad Creek (Shattuck Creek), (T.102, R.8, S.4, 5, 7, 8, 9; T.102,~~

155.22 ~~R.9, S.1, 2, 12): 1B, 2A, 3B;~~

155.23 (102) ~~Newburg Creek (M-9-10-10-1), (T.101, R.8, S.5, 8): 1B, 2A, 3B;~~

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156.1 (103) ~~New Hartford Creek (see Pine Creek);~~

156.2 (104) ~~New Yorker Hollow Creek, (T.101, R.5, S.25, 26): 1B, 2A, 3B;~~

156.3 (105) ~~North Branch Creek (Forestville Creek), (T.102, R.12, S.13, 14,~~

156.4 ~~15): 1B, 2A, 3B;~~

156.5 (106) ~~Partridge Creek, (T.101, R.10, S.4; T.102, R.10, S.33): 1B, 2A, 3B;~~

156.6 (107) ~~Peterson Creek, (T.106, R.8, S.7, 8): 1B, 2A, 3B;~~

156.7 (108) ~~Pickwick Creek (Big Trout Creek), (T.106, R.5, S.7, 18; T.106,~~

156.8 ~~R.6, S.13, 23, 24, 26, 34, 35): 1B, 2A, 3B;~~

156.9 (109) ~~Pickwick Creek, Little (Little Trout Creek), (T.106, R.5, S.18, 19,~~

156.10 ~~29, 30, 32; T.106, R.6, S.13): 1B, 2A, 3B;~~

156.11 (110) ~~Pine Creek (excluding Class 7 segment), (T.101, R.10): 2C, 3C;~~

156.12 (111) ~~Pine Creek (New Hartford Creek), (T.105, R.5, S.18, 19, 20, 29, 30,~~

156.13 ~~31, 32; T.105, R.6, S.13, 36): 1B, 2A, 3B;~~

156.14 (112) ~~Pine Creek, Harmony, (T.101, R.9, S.31; T.101, R.10, S.24, 25, 36): 7,~~

156.15 (113) ~~Pine Creek, South Fork, (T.105, R.5, S.19; T.105, R.6, S.24): 1B,~~

156.16 ~~2A, 3B;~~

156.17 (114) ~~Pine Creek, Fillmore and Winona Counties, (T.104, R.9, S.2, 3, 4;~~

156.18 ~~T.105, R.9, S.25, 26, 33, 34, 35; T.105, R.8, S.30, 31, 32, 33): 1B, 2A, 3B;~~

156.19 (115) ~~Pine Creek, Dakota County, (excluding trout waters), (T.113, R.18):~~

156.20 ~~2C;~~

156.21 (116) ~~Pine Creek, Dakota and Goodhue Counties, (T.112, R.17, S.5, 6, 8, 9;~~

156.22 ~~T.113, R.17, S.31; T.113, R.18, S.25, 26, 35, 36): 1B, 2A, 3B;~~

156.23 (117) ~~Pleasant Valley Creek (excluding trout waters), (T.106, 107, R.6,~~

156.24 ~~7): 2C;~~

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157.1 (118) Pleasant Valley Creek, (T.106, R.6, S.7, 18, 19; T.106, R.7, S.1, 12, 13, 24, 25): 1B, 2A, 3B;

157.3 (119) Plum Creek, (T.108, R.15): 2C;

157.4 (120) Prairie Creek, (T.110, 111, 112, R.18, 19, 20): 2C;

157.5 (121) Rice Creek (Sugar Creek), (T.103, R.11, S.3, 4, 5, 7, 8, 9; T.104, R.11, S.14, 23, 28, 33): 1B, 2A, 3B;

157.7 (122) Riceford Creek, (T.101, R.7, S.6, 7, 18, 19; T.101, R.8, S.1, 12, 13, 24; T.102, R.7, S.29, 30, 31, 32): 1B, 2A, 3B;

157.9 (123) Riceford Creek, Mabel, (T.101, R.8, S.24, 25, 26): 7;

157.10 (124) Rollingstone Creek, (T.107, R.8, S.2, 3, 4, 5, 6, 7, 9, 10, 11; T.107, R.9, S.12, 13): 1B, 2A, 3B;

157.12 (125) Rollingstone Creek, Middle Branch, (T.107, R.8, S.9, 16): 1B, 2A,

157.13 3B;

157.14 (126) Root River, Middle Branch, (T.103, R.12, S.8, 9): 1B, 2A, 3B;

157.15 (127) Root River, South Branch, (T.102, R.10, S.5, 6; T.102, R.11, S.1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 18; T.102, R.12, S.13, 21, 22, 23, 24, 26, 27; T.103, R.9, S.7, 18, T.103, R.10, S.13, 14, 15, 16, 21, 22, 23, 24, 28, 29, 32, 33; T.103, R.11, S.36): 1B, 2A, 3B;

157.18 (128) Root River, South Fork, (T.102, R.8, S.2, 3, 4, 8, 9, 10, 11, 17, 18, 19; T.102, R.9, S.24, 25, 26): 1B, 2A, 3B;

157.20 (129) Rose Valley Creek, (T.105, R.5, S.22, 27, 34, 35): 1B, 2A, 3B;

157.21 (130) Rupprecht Creek (Rollingstone Creek), (T.107, R.9, S.13, 24, 25, 26, 35): 1B, 2A, 3B;

157.23 (131) Rush Creek, (T.104, R.8, S.2, 3, 4, 10, 11, 13, 14; T.105, R.8, S.6, 7, 18, 19, 20, 29, 32, 33; T.105, R.9, S.1, 2, 12; T.106, R.9, S.26, 34, 35, 36): 1B, 2A, 3B;

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158.1 (132) ~~Salem Creek, (T.106, R.15, 16): 2C;~~

158.2 (133) ~~Schueler Creek, (T.104, R.8, S.1, 2, 3): 1B, 2A, 3B;~~

158.3 (134) ~~Second Creek (Handshaw Coulee), (T.111, R.12, S.15): 1B, 2A, 3B;~~

158.4 (135) ~~Shady Creek, (T.104, R.11, S.19, 30): 1B, 2A, 3B;~~

158.5 (136) ~~Shattuck Creek (See Nepstad Creek);~~

158.6 (137) ~~Shingle Creek, (T.109, 110, R.17): 2C;~~

158.7 (138) ~~Silver Creek (excluding trout waters), (T.104, 105, R.6): 2C;~~

158.8 (139) ~~Silver Creek, (T.104, R.6, S.1, 2, 11, 12, 14; T.105, R.6, S.34, 35):~~

158.9 ~~1B, 2A, 3B;~~

158.10 (140) ~~Silver Spring Creek, (T.108, 109, R.13): 2C;~~

158.11 (141) ~~Snake Creek (excluding trout waters), (T.109, R.10): 2C;~~

158.12 (142) ~~Snake Creek, (T.109, R.10, S.10, 11, 14, 15, 16): 1B, 2A, 3B;~~

158.13 (143) ~~South Branch Creek (Canfield Creek), (T.102, R.12, S.24, 25): 1B,~~

158.14 ~~2A, 3B;~~

158.15 (144) ~~Speltz Creek, (T.107, R.8, S.5, 6; T.108, R.8, S.31; T.108, R.9,~~

158.16 ~~S.36): 1B, 2A, 3B;~~

158.17 (145) ~~Spring Brook, (T.111, R.20, S.2, 3, 4): 1B, 2A, 3B;~~

158.18 (146) ~~Spring Creek, (T.110, R.12, S.7, 17, 18, 20, 21, 27, 28, 29): 1B,~~

158.19 ~~2A, 3B;~~

158.20 (147) ~~Spring Creek, (T.112, R.15, S.5, 6, 7, 18; T.113, R.15, S.29, 31,~~

158.21 ~~32, 33, 34): 1B, 2A, 3B;~~

158.22 (148) ~~Spring Valley Creek, (T.103, R.12, S.8, 17, 18, 19, 20, 30; T.103,~~

158.23 ~~R.13, S.23, 24, 25, 26, 27, 28, 29, 32, 33, 34): 1B, 2A, 3B;~~

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159.1 (149) ~~Stockton Valley Creek, (T.106, R.8, S.2, 3, 10, 11, 14, 23; T.107, R.8, S.34): 1B, 2A, 3B;~~

159.2 (150) ~~Storer Creek, (T.104, R.5, S.17, 18, 19, 30): 1B, 2A, 3B;~~

159.3 (151) ~~Straight Creek, (T.107, R.9, S.2, 11, 12): 1B, 2A, 3B;~~

159.4 (152) ~~Sugar Creek (Sugarloaf Creek), (T.112, R.13): 2C;~~

159.5 (153) ~~Sullivan Creek (excluding trout waters), (T.103, R.5): 2C;~~

159.6 (154) ~~Sullivan Creek, (T.103, R.5, S.12, 13, 14, 23, 24, 25, 26): 1B, 2A, 3B;~~

159.7 (155) ~~Swede Bottom Creek, (T.103, R.6, S.10): 1B, 2A, 3B;~~

159.8 (156) ~~Thompson Creek (Indian Springs Creek), (T.103, R.4, S.5, 6, 7, T.103, R.5, S.12, 13, 14, 15, 21, 22, 28; T.104, R.4, S.32): 1B, 2A, 3B;~~

159.9 (157) ~~Torkelson Creek, (T.104, R.10, S.25, 36): 1B, 2A, 3B;~~

159.10 (158) ~~Trout Brook, Wabasha County, (T.110, R.11, S.5, 8): 1B, 2A, 3B;~~

159.11 (159) ~~Trout Brook, Dakota County, (T.112, R.17, S.1; T.113, R.17, S.26, 27, 35, 36): 1B, 2A, 3B;~~

159.12 (160) ~~Trout Brook (Hay Creek Tributary), (T.113, R.15, S.35, 36): 1B, 2A, 3B;~~

159.13 (161) ~~Trout Brook (see also Mazeppa Creek);~~

159.14 (162) ~~Trout Brook (Mazeppa Creek), Goodhue, (T.110, R.15, S.3, 4; T.111, R.15, S.28, 33, 34): 7;~~

159.15 (163) ~~Trout Creek, Little (see Pickwick Creek, Little);~~

159.16 (164) ~~Trout Creek, Big (see Pickwick Creek);~~

159.17 (165) ~~Trout Run Creek (Trout Run), (T.104, R.10, S.4, 5, 8, 9, 16, 17, 20, 21; T.105, R.10, S.18, 19, 30, 31, 32): 1B, 2A, 3B;~~

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160.1 (166) ~~Trout Run Creek (Trout Run) (excluding trout waters), (T.105,~~
160.2 ~~R.10): 2C;~~

160.3 (167) ~~Trout Run Whitewater Park, (T.107, R.10, S.29): 1B, 2A, 3B;~~

160.4 (168) ~~Trout Valley Creek (Trout Creek), Wabasha and Winona Counties,~~
160.5 ~~(T.108, R.9, S.5, 8, 17, 20; T.109, R.9, S.31): 1B, 2A, 3B;~~

160.6 (169) ~~Unnamed Creek, Houston County, (T.101, R.4, S.21): 1B, 2A, 3B;~~

160.7 (170) ~~Unnamed Creek, Spring Grove, (T.101, R.7, S.14, 22, 23, 27): 7;~~

160.8 (171) ~~Unnamed Creek, Houston County, (T.102, R.4, S.18, 19, 20, 29,~~
160.9 ~~30): 1B, 2A, 3B;~~

160.10 (172) ~~Unnamed Creek, Canton, (T.101, R.9, S.20): 7;~~

160.11 (173) ~~Unnamed Creek, Byron, (T.107, R.15, S.17, 20, 29): 7;~~

160.12 (174) ~~Unnamed Creek (Helbig), (T.110, R.11, S.28, 33): 1B, 2A, 3B;~~

160.13 (175) ~~Unnamed Creek (M-9-10-5-3), (T.101, R.7, S.6; T.101, R.8, S.1,~~
160.14 ~~2): 1B, 2A, 3B;~~

160.15 (176) ~~Unnamed Creek (Whitewater Tributary), (T.108, R.10, S.35, 36):~~
160.16 ~~1B, 2A, 3B;~~

160.17 (177) ~~Unnamed Creek, (T.105, R.7, S.19, 29, 30; T.105, R.8, S.24): 1B,~~
160.18 ~~2A, 3B;~~

160.19 (178) ~~Unnamed Creek (Miller Valley), (T.106, R.5, S.21, 22, 27, 28):~~
160.20 ~~1B, 2A, 3B;~~

160.21 (179) ~~Unnamed Creek (Deering Valley), (T.108, R.8, S.20, 28, 29): 1B,~~
160.22 ~~2A, 3B;~~

160.23 (180) ~~Unnamed Creek (M-9-10-5-4), (T.101, R.8, S.12, 13): 1B, 2A, 3B;~~

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161.1 (181) ~~Unnamed Creek (T.104, R.8, S.19, 30): 1B, 2A, 3B;~~

161.2 (182) ~~Unnamed Creek, Plainview, (T.108, R.11, S.16, 17, 20, 21, 22, 27,~~

161.3 ~~34): 7;~~

161.4 (183) ~~Unnamed Creek, West Concord, (T.108, R.17, S.17, 20, 21): 7;~~

161.5 (184) ~~Unnamed Creek, Hayfield, (T.105, R.17, S.3, 4): 7;~~

161.6 (185) ~~Unnamed Creek (Wells Creek Trib. #9), (T.111, R.14, S.8, 17):~~

161.7 ~~1B, 2A, 3B;~~

161.8 (186) ~~Unnamed Ditch, Claremont, (T.107, R.18, S.27, 34): 7;~~

161.9 (187) ~~Unnamed Ditch, Owatonna, (T.108, R.20, S.33): 7;~~

161.10 (188) ~~Unnamed Ditch, Lonsdale, (T.112, R.22, S.25, 35, 36): 7;~~

161.11 (189) ~~Unnamed Ditch, Hampton, (T.113, R.18, S.5, 6; T.114, R.18, S.31): 7;~~

161.12 (190) ~~Unnamed Dry Run, Altura, (T.107, R.9, S.7, 18): 7;~~

161.13 (191) ~~Unnamed Dry Run, Owatonna, Owatonna Canning Company,~~

161.14 ~~(T.107, R.20, S.6; T.107, R.21, S.1): 7;~~

161.15 (192) ~~Unnamed Dry Run, Owatonna, Owatonna Canning Company,~~

161.16 ~~(T.107, R.20, S.6; T.107, R.21, S.1): 7;~~

161.17 (193) ~~Unnamed Stream, Dodge Center, Owatonna Canning Company,~~

161.18 ~~(T.107, R.17, S.27, 34): 7;~~

161.19 (194) ~~Vermillion River, (T.113, R.20, S.1, 2, 3, 4, 9; T.114, R.18, S.19, 20,~~

161.20 ~~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;~~

161.21 (195) ~~Vesta Creek, (T.102, R.8, S.10, 11, 14, 15, 23): 1B, 2A, 3B;~~

161.22 (196) ~~Wapsipinicon River, (T.101, R.15): 2C, 3C;~~

161.23 (197) ~~Waterloo Creek, (T.101, R.6, 7): 1B, 2Bd, 3C;~~

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162.1 (198) ~~Watson Creek, (T.103, R.10, S.19, 20, 21, 29, 30; T.103, R.11, S.22,~~
162.2 ~~23, 24, 25, 26, 27, 28, 29, 30): 1B, 2A, 3B;~~

162.3 (199) ~~West Albany Creek (see Albany Creek, West);~~

162.4 (200) ~~Whitewater River, Main Branch, (T.107, R.10, S.2, 3, 9, 10; T.108,~~
162.5 ~~R.10, S.1, 2, 10, 11, 14, 15, 22, 23, 26, 27, 35): 1B, 2A, 3B;~~

162.6 (201) ~~Whitewater River, South Branch, (T.106, R.9, S.6; T.106, R.10, S.1,~~
162.7 ~~T.107, R.9, S.31; T.107, R.10, S.3, 10, 11, 13, 14, 24, 25, 36): 1B, 2A, 3B;~~

162.8 (202) ~~Whitewater River, Middle Branch, (T.106, R.11, S.2, 3, 10; T.107,~~
162.9 ~~R.10, S.9, 10, 16, 17, 19, 20, 30; T.107, R.11, S.24, 25, 26, 35): 1B, 2A, 3B;~~

162.10 (203) ~~Whitewater River, North Branch (Winona and Wabasha), (T.107,~~
162.11 ~~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;~~

162.12 (204) ~~Whitewater River, North Fork, Elgin, (T.108, R.12, S.25, 26, 27): 7,~~

162.13 (205) ~~Wildeat Creek (excluding trout waters), (T.103, R.4): 2C;~~

162.14 (206) ~~Wildeat Creek, (T.103, R.4, S.26, 27, 28, 29, 32, 33, 34, 35): 1B,~~
162.15 ~~2A, 3B;~~

162.16 (207) ~~Willow Creek, (T.101, R.11, S.1, 12; T.102, R.11, S.1, 12, 13, 24,~~
162.17 ~~25, 36): 1B, 2A, 3B;~~

162.18 (208) ~~Winnebago Creek, (T.101, R.4, S.28, 29, 30; T.101, R.5, S.7, 8, 14,~~
162.19 ~~15, 16, 17, 22, 23, 24, 25; T.101, R.6, S.12): 1B, 2A, 3B; and~~

162.20 (209) ~~Wisel Creek, (T.101, R.8, S.5, 6, 8; T.102, R.8, S.19, 20, 29, 30,~~
162.21 ~~31, 32): 1B, 2A, 3B.~~

162.22 [For text of items B to D, see M.R.]

162.23 Subp. 8. **Cedar-Des Moines Rivers Basin.** The water use classifications for the
162.24 stream reaches within each of the major watersheds in the Cedar-Des Moines Rivers

163.1 Basin listed in item A are found in tables entitled "Beneficial Use Designations for
163.2 Stream Reaches" published on the Web site of the Minnesota Pollution Control Agency
163.3 at www.pca.state.mn.us. The tables are incorporated by reference and are not subject to
163.4 frequent change. The date after each watershed listed in item A is the publication date
163.5 of the applicable table. The water use classifications for the other listed waters in the
163.6 Cedar-Des Moines Rivers Basin are as identified in items A B to D. See parts 7050.0425
163.7 and 7050.0430 for the classifications of waters not listed. Designated use information
163.8 for water bodies can also be accessed through the agency's Environmental Data Access
163.9 (http://www.pca.state.mn.us/quick-links/eda-surface-water-data).

163.10 A. Streams (by eight-digit hydrologic unit code):

163.11 (1) 07080102 Upper Wapsipinicon River (August 9, 2016);

163.12 (2) 07080201 Cedar River (August 9, 2016);

163.13 (3) 07080202 Shell Rock River (August 9, 2016);

163.14 (4) 07080203 Winnebago River (August 9, 2016);

163.15 (5) 07100001 Des Moines River - Headwaters (August 9, 2016);

163.16 (6) 07100002 Lower Des Moines River (August 9, 2016); and

163.17 (7) 07100003 East Fork Des Moines River (August 9, 2016).

163.18 (1) ~~Bancroft Creek (County Ditch No. 63), (T.103, 104, R.21): 2C;~~

163.19 (2) ~~Cedar River, Little, (Source to Iowa border): 2C, 3C;~~

163.20 (3) ~~County Ditch No. 11, Sherburne, (T.101, R.32, S.4, 9, 10; T.102, R.32,~~

163.21 ~~S.7, 8, 16, 17, 21, 27, 28, 33, 34): 7;~~

163.22 (4) ~~County Ditch No. 11, Manchester, (T.103, R.22, S.11, 14, 23, 25, 26): 7;~~

163.23 (5) ~~County Ditch No. 48, Conger, (T.102, R.22, S.19, 20; T.102, R.23,~~

163.24 ~~S.24, 25, 26, 35): 7;~~

164.1 (6) ~~County Ditch No. 53 (see Soldier Creek);~~

164.2 (7) ~~Deer Creek (excluding Class 7 segment), (T.101, R.19, 20): 2C, 3C;~~

164.3 (8) ~~Deer Creek (County Ditch No. 71), Myrtle, (T.101, R.19, S.18; T.101,~~

164.4 ~~R.20, S.13): 7;~~

164.5 (9) ~~Dobbins Creek, (T.103, R.16, 17): 2C;~~

164.6 (10) ~~Goose Creek, Twin Lakes, (T.101, R.20, S.31; T.101, R.21, S.16, 17,~~

164.7 ~~18, 21, 22, 26, 27, 35, 36; T.101, R.22, S.12, 13): 7;~~

164.8 (11) ~~Heron Lake Outlet, (T.104, 105, R.37): 2C;~~

164.9 (12) ~~Jack Creek, Wilmont, (T.104, R.41, S.25, 26, 30, 31, 32, 33, 34,~~

164.10 ~~35, 36): 7;~~

164.11 (13) ~~Lime Creek, (T.101, R.22, 23): 2C, 3C;~~

164.12 (14) ~~Murphy Creek, (T.103, R.18): 2C;~~

164.13 (15) ~~Okabena Creek (excluding Class 7 segment), (T.102, 103, R.37, 38,~~

164.14 ~~40): 2C;~~

164.15 (16) ~~Okabena Creek, Worthington, Worthington Lagoons and Allied Mills,~~

164.16 ~~(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;~~

164.17 (17) ~~Orehard Creek, (T.102, R.18, 19): 2C;~~

164.18 (18) ~~Roberts Creek, (T.103, 104, R.16, 17, 18): 2C;~~

164.19 (19) ~~Rose Creek, (T.102, 103, R.16, 17, 18): 2C;~~

164.20 (20) ~~Scheldorf Creek, (T.106, R.36, S.19, 30, 31; T.106, R.37, S.13, 24,~~

164.21 ~~25): 1B, 2A, 3B;~~

164.22 (21) ~~Soldier Creek (Unnamed Stream and County Ditch No. 53), (T.101,~~

164.23 ~~R.32, 33): 2C, 3C;~~

165.1 (22) ~~Turtle Creek, (T.103, R.18, 19, 20): 2C;~~

165.2 (23) ~~Unnamed Creek, Emmons, (T.101, R.22, S.31): 7;~~

165.3 (24) ~~Unnamed Creek, Brownsdale, (T.103, R.17, S.4, 9): 7;~~

165.4 (25) ~~Unnamed Creek, Blooming Prairie, (T.104, R.18, S.5, 8, 9, 16; T.105,~~

165.5 ~~R.18, S.31): 7;~~

165.6 (26) ~~Unnamed Creek, Blooming Prairie, (T.105, R.19, S.25): 7;~~

165.7 (27) ~~Unnamed Creek, Iona, (T.105, R.41, S.3, 4, 9; T.106, R.40, S.19, 29,~~

165.8 ~~30, 32; T.106, R.41, S.24, 25, 26, 34, 35): 7;~~

165.9 (28) ~~Unnamed Ditch, Myrtle, (T.101, R.20, S.12): 7;~~

165.10 (29) ~~Unnamed Ditch, Myrtle, (T.101, R.20, S.12, 13): 7;~~

165.11 (30) ~~Unnamed Ditch, Blooming Prairie, (T.105, R.19, S.25): 7;~~

165.12 (31) ~~Unnamed Stream (see Soldier Creek);~~

165.13 (32) ~~Wolf Creek, (T.103, R.16, 17, 18): 2C;~~

165.14 (33) ~~Woodbury Creek, (T.101, 102, R.18, 19): 2C; and~~

165.15 (34) ~~Woodson Creek, (T.102, R.18, S.14, 15): 1B, 2A, 3B.~~

165.16 [For text of items B to D, see M.R.]

165.17 **Subp. 9. Missouri River Basin.** The water use classifications for the stream
165.18 reaches within each of the major watersheds in the Missouri River Basin listed
165.19 in item A are found in tables entitled "Beneficial Use Designations for Stream
165.20 Reaches" published on the Web site of the Minnesota Pollution Control Agency at
165.21 www.pca.state.mn.us. The tables are incorporated by reference and are not subject
165.22 to frequent change. The date after each watershed listed in item A is the publication
165.23 date of the applicable table. The water use classifications for the other listed waters in
165.24 the Missouri River Basin are as identified in items A B to D. See parts 7050.0425 and

166.1 7050.0430 for the classifications of waters not listed. Designated use information for
166.2 water bodies can also be accessed through the agency's Environmental Data Access
166.3 (http://www.pca.state.mn.us/quick-links/eda-surface-water-data).

166.4 A. Streams (by eight-digit hydrologic unit code):

166.5 (1) 10170202 Upper Big Sioux River (August 9, 2016);

166.6 (2) 10170203 Lower Big Sioux River (August 9, 2016);

166.7 (3) 10170204 Rock River (August 9, 2016); and

166.8 (4) 10230003 Little Sioux River (August 9, 2016).

166.9 (1) ~~Ash Creek, (T.101, R.45): 2C;~~

166.10 (2) ~~Beaver Creek, (T.102, 103, 104, R.45, 46, 47): 2C, 3C;~~

166.11 (3) ~~Flandreau Creek (excluding Class 7 segment), (T.107, 108, R.46, 47):~~

166.12 ~~2C, 3C;~~

166.13 (4) ~~Flandreau Creek, Lake Benton, (T.108, R.46, S.1, 2, 11; T.109, R.45,~~

166.14 ~~S.30, 31; T.109, R.46, S.36): 7;~~

166.15 (5) ~~Judicial Ditch No. 13 (see Skunk Creek);~~

166.16 (6) ~~Kanaranzi Creek, (Source to Iowa border): 2C, 3C;~~

166.17 (7) ~~Medary Creek, (Source to South Dakota border): 2C, 3C;~~

166.18 (8) ~~Mound Creek, (T.103, 104, R.45): 2C;~~

166.19 (9) ~~Mud Creek, (T.101, 102, R.45, 46): 2C, 3C;~~

166.20 (10) ~~Pipestone Creek, (Source to South Dakota border): 2C, 3C;~~

166.21 (11) ~~Rock River (excluding Class 7 segment), (Source to Iowa border):~~

166.22 ~~2C, 3C;~~

167.1 (12) ~~Rock River, Holland, (T.107, R.44, S.18, 19, 20, 29, T.107, R.45,~~
167.2 ~~S.12, 13): 7;~~

167.3 (13) ~~Rock River, Little, (source to Iowa border): 2C, 3C;~~

167.4 (14) ~~Sater's Creek (Unnamed Creek), Luverne, Agri-Energy, (T.102, R.45,~~
167.5 ~~S.9, 14, 15, 16): 7;~~

167.6 (15) ~~Sioux River, Little, (Source to Iowa border): 2C, 3C;~~

167.7 (16) ~~Sioux River, West Fork Little, (Source to Iowa border): 2C, 3C;~~

167.8 (17) ~~Skunk Creek (Judicial Ditch No. 13), (T.101, 102, R.37, 38, 39): 2C;~~

167.9 (18) ~~Split Rock Creek, (Split Rock Lake outlet to South Dakota border):~~
167.10 ~~2C, 3C;~~

167.11 (19) ~~Unnamed Creek, Jasper, (T.104, R.46, S.6): 7;~~

167.12 (20) ~~Unnamed Creek, Hatfield, (T.105, R.44, S.6, 7, 8; T.105, R.45, S.1,~~
167.13 ~~T.106, R.45, S.36): 7;~~

167.14 (21) ~~Unnamed Creek, Hatfield, (T.106, R.45, S.34, 35, 36): 7;~~

167.15 (22) ~~Unnamed Ditch, Luverne, Agri-Energy, (T.102, R.45, S.10, 15): 7;~~

167.16 (23) ~~Unnamed Ditch, Steen, (T.101, R.45, S.31, 32): 7;~~

167.17 (24) ~~Unnamed Ditch, Hills, (T.101, R.46, S.28, 33): 7; and~~

167.18 (25) ~~Unnamed Ditch, Lake Benton, (T.109, R.45, S.17, 19, 20): 7.~~

167.19 [For text of items B to D, see M.R.]

167.20 **7052.0100 WATER QUALITY STANDARDS.**

167.21 [For text of subps 1 to 4, see M.R.]

167.22 Subp. 5. Water quality standards applicable to Class 2B, 2C, and 2D waters.

Exhibit C

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168.1	Substance	Units	Aquatic Life	Aquatic Life	Aquatic Life	Human Health	Wildlife Chronic	Applicable Chronic Standard
168.2			Chronic	Maximum	Final	Chronic	Standard	
168.3			Standard	Standard	Acute	Standard		
168.4								
168.5								
168.6								
168.7	Arsenic, total	ug/l	148	340	680	53†		53
168.8	Benzene	ug/l	114†	4487†	8974†	237		114
168.9	Cadmium, total (TH)	ug/l	subp 6	subp 6	subp 6			subp 6
168.10								
168.11	Chlordane	pg/l				225		225
168.12	Chlorobenzene	ug/l	10†	423†	846†	2916		10
168.13	Chromium III, total (TH)	ug/l	subp 6	subp 6	subp 6			subp 6
168.14								
168.15	Chromium VI, total	ug/l	11	16	32			11
168.16	Copper, total (TH)	ug/l	subp 6	subp 6	subp 6			subp 6
168.17	Cyanide, free	ug/l	5.2	22	44	30240		5.2
168.18	DDT	pg/l				142	11	11
168.19	Dieldrin	pg/l	56000	240000	480000	6.5		6.5
168.20	2,4-Dimethylphenol	ug/l	21	137	274	7182		21
168.21	2,4-Dinitrophenol	ug/l	71	379	758	1982		71
168.22	Endrin	ug/l	0.036	0.086	0.17	0.016†		0.016
168.23	Hexachlorobenzene	pg/l				419		419
168.24	Hexachloroethane	ug/l				6.2		6.2

Exhibit C

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169.1	Lindane ug/l	0.95	1.9	0.46
169.2	Mercury, total ug/l	0.91	1.7	3.4 0.00153 0.0013 0.0013
169.3	Methylene Chloride ug/l	1561†	9600†	19200† 1994 1561
169.4	Nickel, total (TH) ug/l	subp 6	subp 6	subp 6
169.5	Parathion ug/l	0.013	0.065	0.13 .013
169.6	PCBs (class) pg/l			25.2 122 25.2
169.7	Pentachlorophenol ug/l	subp 6	subp 6	subp 6 5.5†
169.8	(pH)			
169.9	Selenium, total ug/l	5.0	20†	40† 5.0
169.10	2,3,7,8-TCDD pg/l			0.0080 0.0031 0.0031
169.11	Toluene ug/l	253†	1352†	2703† 45679 253
169.12	Toxaphene pg/l			62 62
169.13	Trichloroethylene ug/l			330 330
169.14	Zinc, total (TH) ug/l	subp 6	subp 6	subp 6
169.15	†this standard or FAV was derived under chapter 7050.			

169.16 Subp. 6. Water quality standards that vary with water quality characteristics.

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

169.18 C. Standards that vary with pH applicable to Class 2B, 2C, and 2D waters in the
169.19 Lake Superior Basin are listed in this subpart. Exp. is the base e exponential function.

169.20 Example standards at pH of:

169.21 Pentachlorophenol Formula, results in ug/l 6.5 7.0 7.5 8.0 8.5

169.22 _____

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170.1	Chronic standard	exp.(1.005[pH]-5.134) not to exceed 5.5 ug/l	4.0	5.5	5.5	5.5	5.5
170.2							
170.3	Maximum standard	exp.(1.005[pH]-4.869)	5.3	8.7	14	24	39
170.4	Final acute value	exp.(1.005[pH]-4.175)	11	17	29	48	79

170.5 **7052.0110 METHODOLOGIES FOR DEVELOPMENT OF STANDARDS AND**
170.6 **CRITERIA, AND BIOACCUMULATION FACTORS.**

170.7 [For text of subps 1 and 2, see M.R.]

170.8 Subp. 3. **Bioaccumulation factors.** Bioaccumulation factors (BAFs) for calculating
170.9 human health and wildlife standards were developed and BAFs for calculating criteria
170.10 must be developed using the methodology provided by Code of Federal Regulations, title
170.11 40, part 132, Appendix B, entitled "Great Lakes Water Quality Methodology for Deriving
170.12 Bioaccumulation Factors," as amended through March 12, 1997, which is adopted and
170.13 incorporated by reference in part 7052.0015, item B, except that for human health
170.14 standards and criteria, the baseline BAF is multiplied by the following lipid fractions
170.15 which apply to fish in both trophic levels 3 (TL₃) and 4 (TL₄), except as noted in item C:

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

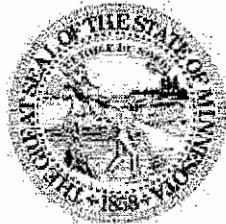
170.17 C. 0.015 for TL₄ and 0.020 for TL₃ for Class 2B, 2Bd, 2C, and 2D waters.

170.18 [For text of subps 4 and 5, see M.R.]

170.19 **REPEALER.** Minnesota Rules, part 7050.0222, subpart 5, is repealed.

Office of the Revisor of Statutes

Administrative Rules



TITLE: Proposed Permanent Rule Relating to Water Quality Standards and Tiered Aquatic Life Use

AGENCY: Pollution Control Agency

MINNESOTA RULES: Chapters 7050 and 7052

INCORPORATIONS BY REFERENCE: [See attached]

The attached rules are approved for publication in the State Register

Cindy K. Maxwell

Cindy K. Maxwell
Senior Assistant Revisor

INCORPORATIONS BY REFERENCE:

Part 7050.0150, subpart 3a: Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List (2014 and as subsequently amended), available at <http://www.pca.state.mn.us/lupg1125>.

Part 7050.0222, subparts 2c, 3c, and 4c: Calibration of the Biological Condition Gradient for Streams of Minnesota, Gerritsen et al. (2012);

Development of a Fish-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014);

Development of a Macroinvertebrate-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014); and

Development of Biological Criteria for Tiered Aquatic Life Uses, Minnesota Pollution Control Agency (2016)

Available on the agency's Web site at www.pca.state.mn.us.

Part 7050.0470, subparts 1 through 9: "Beneficial Use Designations for Stream Reaches" published on the Web site of the Minnesota Pollution Control Agency at www.pca.state.mn.us.