

**(2) STREAMFLOW.** Water quality standards will not be maintained under all natural occurrences of flow, temperature, or other water quality characteristics. The determination of water quality based effluent limitations or other management practices shall be based upon the following conditions except as provided in ch. NR 106 for toxic and organoleptic substances and whole effluent toxicity:

(a) The average minimum 7-day low streamflow which occurs once in 10 years (7-day  $Q_{10}$ ); or,

(b) In the case of dissolved oxygen and wherever sufficient data on streamflow and temperature are available, by application of a 0.274% level of nonattainment. This is equivalent to an expected nonattainment of the dissolved oxygen criterion of one day per year.

**(3) MIXING ZONES.** Water quality standards shall be met at every point outside of a mixing zone. The size of the mixing zone shall be based on such factors as effluent quality and quantity, available dilution, temperature, current, type of outfall, channel configuration and restrictions to fish movement. For toxic and organoleptic substances with water quality criteria or secondary values specified in or developed pursuant to chs. NR 102 and 105, allowable dilution shall be determined as specified in ch. NR 106 in addition to the requirements specified in this subsection. As a guide to the delineation of a mixing zone, the following shall be taken into consideration:

(a) Limiting mixing zones to as small an area as practicable, and conforming to the time exposure responses of aquatic life.

(b) Providing passageways for fish and other mobile aquatic organisms.

(c) Where possible, mixing zones being no larger than 25% of the cross-sectional area or volume of flow of a flowing water body and not extending more than 50% of the width.

(d) Final acute criteria and secondary values specified in or developed pursuant to s. NR 105.05 for the fish and aquatic life subcategory for which the receiving water is classified not being exceeded at any point in the mixing zone.

(e) Mixing zones not exceeding 10% of an inland lake's total surface area.

(f) Mixing zones not adversely impacting spawning or nursery areas, migratory routes, nor mouths of tributary streams.

(g) Mixing zones not overlapping, but where they do, taking measures to prevent adverse synergistic effects.

(h) Restricting the pH to values greater than 4.0 s.u. and to values less than 11.0 s.u. at any point in the mixing zone for the protection of indigenous fish and fish food organisms.

**(5) RESOURCE MANAGEMENT EXEMPTIONS.** Application of chemicals for water resource management purposes in accordance with statutory provisions is not subject to the requirements of the standards except in case of water used for public water supply.

**(6) ANALYTICAL PROCEDURES.** (a) The criteria in the Radiation Protection Code, s. DHS 157.44, shall apply to the disposal and permissible concentrations of radioactive substances.

(b) Methods used for analysis of samples shall be as set forth in ch. NR 219 unless alternative methods are specified by the department.

**History:** Cr. Register, September, 1973, No. 213, eff. 10-1-73; renum. (5) and (6) to be (6) and (7), cr. (5), Register, July, 1975, No. 235, eff. 8-1-75; r. and recr. (3), Register, August, 1981, No. 308, eff. 9-1-81; correction in (7) made under s. 13.93 (2m) (b) 7., Stats., cr. (4) (h), Register, September, 1984, No. 345, eff. 10-1-84; renum. from NR 102.03, r. (1), cr. (1) (b), renum. (2) to (7) to be (1) (a) to (6) and am. (2), (3) (intro.) and (d) and (6), Register, February, 1989, No. 398, eff. 3-1-89; am. (1) (b) 3., (3) (intro.) and (d), Register, August, 1997, No. 500, eff. 9-1-97; correction in (6) (a) made under s. 13.93 (2m) (b) 7., Stats. Register July 2006 No. 607, eff. 8-1-06; correction in (6) (a) made under s. 13.92 (4) (b) 7., Stats., Register July 2010 No. 655; CR 07-111: am. (3) (intro.), (b), (c), (e) and (f), r. (4) Register September 2010 No. 657, eff. 10-1-10.

**History:** Cr. Register, July, 1975, No. 235, eff. 8-1-75; am. Register, October, 1986, No. 370, eff. 11-1-86; renum. from NR 102.04, Register, February, 1989, No. 398, eff. 3-1-89; am. Register, November, 1992, No. 443, eff. 12-1-92.

**NR 102.06 Phosphorus. (1) GENERAL.** This section identifies the water quality criteria for total phosphorus that shall be met in surface waters.

**(2) DEFINITIONS.** In this section:

(a) "Drainage lake" means a lake with an outlet stream that continually flows under average summer conditions based on the past 30 years.

(b) "Ephemeral stream" means a channel or stream that only carries water for a few days during and after a rainfall or snowmelt event and does not exhibit a flow during other periods, and includes, but is not limited to, grassed waterways, grassed swales, and areas of channelized flow as defined in s. NR 243.03 (7).

(c) "Mean water residence time" means the amount of time that a volume of water entering a waterbody will reside in that waterbody.

(d) "Nearshore waters" means all waters of Lake Michigan or Lake Superior within the jurisdiction of the State of Wisconsin in the zone extending from the shore to a depth of 10 meters, based on the long-term mean elevation for Lake Superior of 183.4 meters (601.7 feet) and for Lake Michigan of 176.5 meters (579.0 feet).

(e) "Open waters" mean all waters of Lake Michigan or Lake Superior within the jurisdiction of the State of Wisconsin with depths greater than nearshore waters.

(f) "Reservoir" means a waterbody with a constructed outlet structure intended to impound water and raise the depth of the water by more than two times relative to the conditions prior to construction of the dam, and that has a mean water residence time of 14 days or more under summer mean flow conditions using information collected over or derived for a 30 year period.

(fm) "Seepage lake" means a lake that does not have an outlet stream that continually flows under average summer conditions based on the past 30 years.

(g) "Stratified lake or reservoir" means a lake or reservoir where either of the following equations results in a value of greater than 3.8:

Maximum Depth (meters) — 0.1

$\text{Log}_{10}\text{Lake Area (hectares)}$

Maximum Depth (feet)\* 0.305 — 0.1

$\text{Log}_{10}\text{Lake Area (acres)} * 0.405$

(i) "Stratified two-story fishery lake" means a stratified lake which has supported a cold water fishery in its lower depths within the last 50 years.

(j) "Total phosphorus" means all of the phosphorus in a water sample analyzed using the methods identified under the provisions of s. NR 219.04 (1).

**(3) STREAMS AND RIVERS.** To protect the fish and aquatic life uses established in s. NR 102.04 (3) on rivers and streams that generally exhibit unidirectional flow, total phosphorus criteria are established as follows:

(a) A total phosphorus criterion of 100 ug/L is established for the following rivers or other unidirectional flowing waters:

1. Apple River from the outlet of the Apple River Flowage in Amery to the St. Croix River, excluding Black Brook Flowage.

2. Bad River from confluence with the Marengo River within the Bad River Indian Reservation downstream to Lake Superior.

3. Baraboo River from highway 58 in La Valle to the Wisconsin River.

4. Bark River from confluence with Scuppernong River near Hebron to the Rock River.

5. Black River from confluence with Cunningham Creek near Neillsville to Mississippi River, excluding Lake Arbutus.

6. Brule River from state highway 55 in Forest County downstream to Menominee River.

7. Buffalo River from confluence with Harvey Creek near Mondovi to Mississippi River.

8. Chippewa River from Lake Chippewa in Sawyer County to Mississippi River, excluding Holcombe Flowage, Cornell Flowage, Old Abe Lake, Lake Wissota and Dells Pond.
  9. Crawfish River from confluence with Beaver Dam River to Rock River.
  10. East Branch Pecatonica River from confluence with Apple Branch Creek near Argyle to Pecatonica River.
  11. Eau Claire River from confluence with Bridge Creek near Augusta to Chippewa River, excluding Altoona Lake.
  12. Embarrass River from confluence with Pigeon River near Clintonville to Wolf River.
  13. Flambeau River from outlet of Turtle–Flambeau Flowage in Iron County to Chippewa River, excluding Pixley Flowage, Crowley Flowage and Dairyland Flowage.
  14. Fox River from outlet of Lake Puckaway near Princeton to Green Bay, excluding Lake Butte des Morts and Lake Winnebago.
  15. Fox River from confluence with Mukwonago River near Mukwonago to state line, excluding Tichigan Lake.
  16. Grant River from confluence with Rattlesnake Creek near Beetown to Mississippi River.
  17. Jump River from confluence with the North Fork and the South Fork of the Jump rivers in Price County to Holcombe Flowage.
  18. Kickapoo River from confluence with Weister Creek near La Farge to Wisconsin River.
  19. Kinnickinnic River from confluence with Wilson Park Creek in Milwaukee to Milwaukee River.
  20. La Crosse River from confluence with Fish Creek near Bangor to Mississippi River, excluding Neshonoc Lake.
  21. Lemonweir River from outlet of New Lisbon Lake in New Lisbon to Wisconsin River, excluding Decorah Lake.
  22. Little Wolf River from confluence with South Branch Little Wolf River near Royalton to Wolf River.
  23. Manitowoc River from confluence of North Branch and South Branch Manitowoc rivers to the opening at the end of the piers at Lake Michigan.
  24. Menominee River from confluence with Brule River to the opening at the end of the piers at Green Bay.
  25. Menomonee River from confluence with Little Menomonee River to Milwaukee River.
  26. Milwaukee River from confluence with Cedar Creek downstream to the openings of the breakwaters at Lake Michigan.
  27. Mississippi River main channels and side channels.
  28. Namekagon River from outlet of Trego Lake near Trego to St. Croix River.
  29. Oconto River from confluence with Peshtigo Brook to the opening at the end of the piers at Green Bay.
  30. Pecatonica River from confluence with Vinegar Branch near Darlington to state line.
  31. Pelican River from confluence with Slaughterhouse Creek near Rhinelander to Wisconsin River.
  32. Peshtigo River from confluence with Brandywine Creek downstream to Green Bay, excluding Cauldron Falls Flowage and High Falls Flowage.
  33. Pine River from confluence with Popple River in Florence County to Menominee River, excluding Pine River Flowage.
  34. Red Cedar River from confluence with Brill River to Chippewa River, excluding Rice Lake, Tainter Lake and Lake Menomin.
  35. Rock River from outlet of Sinissippi Lake downstream to the state line, excluding Lake Koshkonong.
  36. St. Croix River from confluence with Namekagon River downstream to Mississippi River, excluding Lake St. Croix near Hudson.
  37. St. Louis River from state line to the opening between Minnesota Point and Wisconsin Point at Lake Superior.
  38. Sheboygan River from outlet of Sheboygan Marsh to the opening at the end of the piers at Lake Michigan.
  39. South Fork of Flambeau River from state highway 13 near Fifield to Flambeau River.
  40. Sugar River from outlet of Albany Lake to state line, excluding Decatur Lake.
  41. Tomahawk River from outlet of Willow Reservoir to Lake Nokomis.
  42. Trempealeau River from confluence with Pigeon Creek near Whitehall to Mississippi River.
  43. White River from outlet of White River Flowage in Ashland County to Bad River.
  44. Wisconsin River from the Rhinelander Dam to Mississippi River, excluding Lake Alice, Lake Mohawksin, Alexander Lake, Lake Wausau, Mosinee Flowage, Lake Dubay, Wisconsin River Flowage, Biron Flowage, Petenwell Flowage, Castle Rock Flowage and Lake Wisconsin.
  45. Wolf River from confluence with Hunting Creek in Langlade County to Lake Poygan.
  46. Yahara River from outlet of Lake Kegonsa to Rock River.
- (b) Except as provided in subs. (6) and (7), all other surface waters generally exhibiting unidirectional flow that are not listed in par. (a) are considered streams and shall meet a total phosphorus criterion of 75 ug/L.
- (4) RESERVOIRS AND LAKES.** Except as provided in sub. (1), to protect fish and aquatic life uses established in s. NR 102.04 (3) and recreational uses established in s. NR 102.04 (5), total phosphorus criteria are established for reservoirs and lakes, as follows:
- (a) For stratified reservoirs, total phosphorus criterion is 30 ug/L. For reservoirs that are not stratified, total phosphorus criterion is 40 ug/L.
  - (b) For the following lakes that do not exhibit unidirectional flow, the following total phosphorus criteria are established:
    1. For stratified, two–story fishery lakes, 15 ug/L.
    2. For lakes that are both drainage and stratified lakes, 30 ug/L.
    3. For lakes that are drainage lakes, but are not stratified lakes, 40 ug/L.
    4. For lakes that are both seepage and stratified lakes, 20 ug/L.
    5. For lakes that are seepage lakes, but are not stratified lakes, 40 ug/L.
  - (c) Waters impounded on rivers or streams that don't meet the definition of reservoir in this section shall meet the river and stream criterion in sub. (3) that applies to the primary stream or river entering the impounded water.
- (5) GREAT LAKES.** To protect fish and aquatic life uses established in s. NR 102.04 (3) and recreational uses established in s. NR 102.04 (5) on the Great Lakes, total phosphorus criteria are established as follows:
- (a) For both open and nearshore waters of Lake Superior, 5 ug/L.
  - (b) For both open and nearshore waters of Lake Michigan, excluding waters identified in par. (c), 7 ug/L.
  - (c) For the portion of Green Bay from the mouth of the Fox River to a line from Long Tail Point to Point au Sable, the water clarity and other phosphorus–related conditions that are suitable for support of a diverse biological community, including a robust and sustainable area of submersed aquatic vegetation in shallow water areas.
- (6) EXCLUSIONS.** The following waters are excluded from subs. (3) (b), (4) and (5):
- (a) Ephemeral streams.
  - (b) Lakes and reservoirs of less than 5 acres in surface area.
  - (c) Wetlands, including bogs.

(d) Waters identified as limited aquatic life waters in ch. NR 104. Limited aquatic life waters are those subject to the criteria in s. NR 104.02 (3) (b) (2).

(7) **SITE-SPECIFIC CRITERIA.** A criterion contained within this section may be modified by rule for a specific surface water segment or waterbody. A site-specific criterion may be adopted in place of the generally applicable criteria in this section where site-specific data and analysis using scientifically defensible methods and sound scientific rationale demonstrate a different criterion is protective of the designated use of the specific surface water segment or waterbody.

**Note:** Reservoirs, two-story fishery lakes and water bodies with high natural background phosphorus concentrations are the most appropriate water bodies for site-specific criteria.

**Note:** When placing a water body on the 303 (d) list as impaired for phosphorus, the department considers factors such as frequency and duration of criterion exceedances, the time of year of the exceedance and the magnitude of each exceedance above the applicable criterion. The department may also choose to consider other factors such as the concentration of suspended algae and floating plants; density of benthic algae; macrophyte density; minimum and daily change in dissolved oxygen levels due to diurnal swings; water clarity; and natural background phosphorus concentrations. The 303 (d) list is a list of impaired waters established by the department and approved by US EPA pursuant to 33 USC 1313 (d) (1) (A) and 40 CFR 130.7. Information on frequency and duration is contained in the department's impaired waters listing guidance, "Wisconsin Consolidated Assessment and Listing Methodology."

**History:** Cr. Register, July, 1975, No. 235, eff. 8-1-75; am. Register, October, 1986, No. 370, eff. 11-1-86; renum. from NR 102.04, Register, February, 1989, No. 398, eff. 3-1-89; am. Register, November, 1992, No. 443, eff. 12-1-92; **CR 10-035; r. and recr. Register November 2010 No. 659, eff. 12-1-10; renumbering of (2) (fm) made under s. 13.92 (4) (b) 1, Stats., Register November 2010 No. 659.**

**NR 102.07 Lake Michigan and Lake Superior thermal standards.** **History:** Cr. Register, September, 1973, No. 213, eff. 10-1-73; r. and recr. Register, July, 1975, No. 235, eff. 8-1-75; renum. from NR 102.05, Register, February, 1989, No. 398, eff. 3-1-89; CR 07-111; r. Register September 2010 No. 657, eff. 10-1-10.

**NR 102.08 Mississippi river thermal standards.** **History:** Cr. Register, July, 1975, No. 235, eff. 8-1-75; renum. from NR 102.06, Register, February, 1989, No. 398, eff. 3-1-89; CR 07-111; r. Register September 2010 No. 657, eff. 10-1-10.

**NR 102.09 Review of thermal standards.** **History:** Cr. Register, July, 1975, No. 235, eff. 8-1-75; am. Register, February, 1977, No. 254, eff. 3-1-77; renum. from NR 102.07, Register, February, 1989, No. 398, eff. 3-1-89; CR 07-111; r. Register September 2010 No. 657, eff. 10-1-10.

**NR 102.10 Outstanding resource waters.** (1) The following surface waters are designated as outstanding resource waters:

(a) *National wild and scenic rivers.* All rivers designated under the national wild and scenic rivers act, as amended, 16 USC 1271 to 1287, except those portions flowing through Indian reservations, including:

1. St. Croix river between the northern boundary of the Hudson city limits and the St. Croix flowage dam in Douglas county except that the portion of the St. Croix river from the northern boundary of the St. Croix Falls city limits to a distance one mile below the STH 243 bridge at Osceola shall be classified exceptional resource waters under s. NR 102.11.

2. Namekagon river between its confluence with the St. Croix river and the outlet of Lake Namekagon in Bayfield county.

(b) *State wild and scenic rivers.* All state wild and scenic rivers designated under s. 30.26, Stats., including:

1. Pike river and its headwater branches in Marinette county.

2. Pine river and its headwater branches in Florence and Forest counties.

3. Popple River and its headwater branches in Florence and Forest counties.

4. The portion of the Brunsweler River (Martin Hanson Wild River) from the point in Ashland County at which it leaves T44N R4W S22 QSW QSW downstream to the point at which it crosses the boundary of the Chequamegon-Nicolet National Forest at T45N R4W S22 QNW.

5. Portions of the Totogatic River in Bayfield, Sawyer, Washburn, Douglas, and Burnett Counties as described in the following table:

SEG 1: From the outlet of Totogatic Lake located in Bayfield County to the upstream end of Nelson Lake at the southern edge of the walleye spawning refuge located in Sawyer County.

SEG 2: From a point 500 feet below the dam in the Totogatic Wildlife Area located in Washburn County to the upstream end of the Colton Flowage located in Washburn County.

SEG 3: From a point 500 feet below the dam that forms the Colton Flowage located in Washburn County to the point where the river crosses the Washburn-Douglas County line immediately above the upstream end of the Minong Flowage.

SEG 4: From the bridge on CTH "I" that crosses the river located in Washburn County to the confluence of the river with the Namekagon River located in Burnett County.

**Note:** Section NR 302.02 (1) contains a detailed description of the extent of the Pike, Pine, and Popple river systems designated as Wild Rivers.

(c) Wolf river upstream of the northern Menominee county line.

(d) The following Class I trout waters:

1. Adams county — Big Roche-a-Cri creek
2. Barron county — Yellow river
3. Bayfield county — Flag river, Sioux river
4. Burnett county — North Fork Clam river, South Fork Clam river
5. Chippewa county — Duncan creek, Elk creek, McCann creek
6. Dane county — Black Earth creek above the easternmost CTY KP crossing
7. Door county — Logan creek
8. Douglas county — Bois Brule river and its tributaries including the waters of Lake Superior within a ¼ mile semi-circular arc centered at the middle of the river mouth
9. Dunn county — Elk creek
10. Florence county — Brule river including Montagne creek and Riley creek tributaries; tributaries to the Pine-Popple rivers including Chipmunk, Cody, Haley, Haymarsh, Lamon Tangué, Lepage, Lunds, Martin, Olson, Patten, Pine, Riley, Rock, Simpson, Seven Mile, Wakefield and Woods creeks; Little Popple river (T38N R19E S3)
11. Forest county — Brule river
13. Kewaunee county — Little Scarboro creek
14. Langlade county — Clearwater creek, Drew creek, Evergreen river, South Branch Oconto river
15. Lincoln county — Center fork New Wood creek, Little Pine creek, Prairie river
16. Marathon county — Holt creek, Spranger creek, Plover river
17. Marinette county — Cedarville creek, Otter creek, Holmes creek, East Thunder creek, North fork Thunder river, Eagle creek, Little Eagle creek, Plumadore creek, Meadow brook, Upper Middle Inlet creek, Middle Inlet creek, Wausaukee river, Little Wausaukee creek, Coldwater brook, Medicine brook, South Branch Miskauno creek, Miskauno creek, Swede John creek, South Branch Pemebonwon river, Spikehorn creek, Silver creek, Little Silver creek, Sullivan creek; tributaries to the Pike river including Little South Branch Pike river, Camp D creek, Camp F creek, Camp 9 creek, Cole creek, Glen creek, Harvey creek, North Branch Harvey creek, South Branch Harvey creek, Hemlock creek, Holloway creek, K.C. creek, Little Harvey creek, Lost creek, MacIntire creek, Phillips creek, Sackerson creek, Shinn's branch, Sidney creek, Smeesters creek, Springdale brook, Whiskey creek
18. Marquette county — Chaffee creek, Lawrence creek, Tagatz creek
19. Monroe county — Rullands Coulee creek