CR 10-035

ORDER OF THE STATE OF WISCONSIN
NATURAL RESOURCES BOARD
AMENDING, REPEALING AND RECREATING AND CREATING RULES

The Wisconsin Natural Resources Board proposes an order to **amend** ch. NR 217 (title), NR 217.01, 217.02 and 217.03; to **repeal and recreate** NR 102.06; and to **create** NR 217 subchs. I (title), II (title), and III (title), NR 217.10, 217.11, 217.12, 217.13, 217.14, 217.15, 217.16, 217.17, 217.18 and 217.19 relating to phosphorus water quality standards criteria and limitations and effluent standards.

WT-25-08

Analysis Prepared by Department of Natural Resources

1. Statutes Interpreted: Sections 281.15, 283.11, 283.13 (5), 283.15, 283.31, 283.55, 283.84

2. Statutory Authority: Sections 227.11 (2) (a), 281.15, 283.001 (2), 283.13 (5), 283.15, 283.31, 283.35, 283.37

3. Explanation of agency authority: Section 227.11 (2) (a), Stats., expressly confers rulemaking authority on the department to promulgate rules interpreting any statute enforced or administered by it, if the agency considers it necessary to effectuate the purpose of the statute. The department considers the proposed rules necessary to implement the pollution abatement permit program established in ch. 283, Stats. The phosphorus water quality standard included in the proposed rules is required pursuant to s. 281.15, Stats., which directs the department to promulgate water quality standards for state waters. Section 283.13 (5), Stats., gives the department the authority to establish water quality based effluent limitations based on applicable water quality standards and to require compliance with those limitations consistent with a schedule of compliance or state or federal law. Section 283.15, Stats., provides authority to establish rules for variances to water quality standards, s. 283.31, Stats., provides authority to establish permit terms and conditions for water pollutant discharge elimination system permits, and s. 283.37, Stats., gives the department authority to require the submittal of information as part of a permit application.

4. Related statute or rule: Section 283.11 (3) (am), Stats., and chs. NR 106 and 200

5. Plain language analysis:

The proposed rule has two parts. The first is a set of phosphorus water quality standards criteria for rivers, streams, various types of lakes, reservoirs and Great Lakes. The second is procedures for determining and incorporating phosphorus water quality based effluent limitations into Wisconsin Discharge Pollutant Elimination System (WPDES) permits under ch. 283, Stats. Pursuant to 40 CFR 131.11, states are required to adopt water quality standards criteria that are protective of the designated uses of surface waters. Pursuant to section 303 (c) (4) of the Clean Water Act, US EPA may step in and promulgate the criteria for the state, if the state does not. Development of point source permit procedures is required as part of the state's point source permit delegation agreement. US EPA approval of state water quality criteria is required under 40 CFR ss. 131.5, 131.6 and 131.21.

Phosphorus Water Quality Standards Criteria

The proposed rule establishes phosphorus water quality criteria of 100 ug/L (parts per billion) for rivers specifically identified in the rule and of 75 ug/L for smaller streams and rivers. No criteria are proposed at this time for ephemeral streams or streams identified in ch. NR 104, as limited aquatic life waters. Both of the criteria are intended to prevent in-stream algae and other plant growth to the extent that is detrimental to fish and aquatic life. For example, extensive algae or macrophyte (large plants growing on the beds of streams) consume oxygen during the night to the extent that may leave too little oxygen for certain fish species and for certain aquatic insects. About half of Wisconsin's rivers and streams meet the proposed criteria.

For lakes and reservoirs, the proposed rule has a suite of criteria for five different types of lake ranging from 15 ug/L for lakes supporting a coldwater fishery, such as lake trout or cisco in its bottom waters, to 40 ug/L for shallow drainage lakes and reservoirs. The criteria are intended to prevent or minimize nuisance algal blooms; prevent shifts in plant species in shallow lakes; maintain adequate dissolved oxygen in the bottom of "two-story" lakes with a warmwater fishery in top waters and coldwater fisheries in bottom waters; and to maintain fisheries. "Toxic" algae concerns may also be addressed. For millponds and similar impoundments, the upstream river or stream criteria would apply. More than half of Wisconsin's lakes meet the proposed criteria with the percent varying by lake type. No criteria are proposed at this time for marsh lakes and other wetlands since they will be part of future wetlands nutrient criteria adoption.

For the Great Lakes, phosphorus criteria are proposed for the open waters of Lake Superior (5 ug/L), the open waters of Lake Michigan (7 ug/L) and the nearshore waters of Lake Michigan (7 ug/L). Presently, for the open waters both Lake Michigan and Lake Superior are meeting the criteria. For the nearshore waters of Lake Michigan, the zone from the beaches to a depth of 10 meters, where there are concerns with the Cladophora algal mats forming on beaches, the criteria may be exceeded in some locations.

Below is a table showing the proposed phosphorus water quality standards criteria by type of water body. The specific water body types are defined in the proposed rules, and there are some exclusions based on size or flow conditions.

Proposed Phosphorus Criteria by Type of Water Body	**Total Phosphorus in ug/L**
Listed rivers	100
All other streams	75
Stratified reservoirs	30
Non-stratified reservoirs	40
Stratified "two-story" fishery lakes	15
Stratified drainage lakes	30
Non-stratified (shallow) drainage lakes	40
Stratified seepage lakes	20
Non-stratified (shallow) lakes	40
Impoundments	Same as inflowing river or stream

Lake Michigan open and nearshore waters	7
Lake Superior open and nearshore waters	5

WPDES Effluent Standards and Limitations

The current regulations for phosphorus establish specific procedures for including technology based limitations and standards in WPDES permits (existing ch. NR 217). There is also an existing rule (s. NR 102.06) that generally states the department may establish water quality based limits for phosphorus in permits on a case-by-case basis using an evaluation of phosphorus sources in a watershed, but this rule is being repealed and replaced with a proposed new subchapter in ch. NR 217 that includes detailed procedures for establishing water quality effluent limitations for phosphorus.

Specifically, there are provisions for determining when a water quality based effluent limitation is needed in a WPDES permit; equations and procedures for calculating effluent limits based on different types of waters and stream flow assumptions; and provisions for expressing permit compliance averaging periods, such as a monthly average. The rule requires concentration limits, as commonly used in permits. However, it also specifies where and how mass limits are required, such as for discharges to impaired waters, where there is a downstream lake and where there is a downstream outstanding or exceptional resource water. The rule also addresses the relationship and procedures for including various types of phosphorus limits in permits such as a phosphorus limit based on a total maximum daily load, a technology based phosphorus limit and a water quality based phosphorus limit calculated under the new procedures in ch. NR 217.

The proposed rule allows the department to include compliance schedules in permits. The compliance schedule provisions specify factors the department may consider when establishing the length of a compliance schedule. In addition to compliance schedules, the rule includes a watershed adaptive management option where interim limits may be phased in, if phosphorus concentrations improve in the receiving water.

The proposed rule also includes provisions for processing variances to phosphorus water quality based effluent limitations for stabilization pond and lagoon systems. The inclusion of these procedures for stabilization pond and lagoon systems should not be interpreted to mean that these are the only types of systems that may obtain a variance. There are standard procedures for variances in statutory language and other administrative codes.

6. Summary of, and comparison with, existing or proposed federal regulation:

The proposed phosphorus criteria for streams of 75 ug/L and rivers of 100 ug/L are similar to US EPA's guidance values for the southern half of Wisconsin. US EPA recommended 70 ug/L of phosphorus for both rivers and streams in the southwestern driftless area of the state and 80 ug/L of phosphorus for both rivers and streams in the remainder of the southern half of the state. US EPA, did however, recommend a criterion of 29 ug/L for a band or area stretching west to east though the middle of the state and 10 ug/L for the forested northern part of the state. All of the US EPA guidance numbers are based on the 25th percentile of available data from a number of states and do not represent a cause-effect situation. We could not find concentrations as low at 10 ug/L even for pristine conditions in most of the forested northern portion of Wisconsin.

For lakes, the proposed criteria that range from 15 to 40 ug/L based on the type of lake are different than US EPA's guidance values that range from 9.7 ug/L for northern lakes to 36 ug/L for driftless area lakes. US EPA's guidance values are based on data from multiple states and represent the 25th percentile of available data. They do not differentiate based on the type of lake.

The proposed criteria for Lake Michigan and Lake Superior are the same as the values derived for the federal Great Lakes Water Quality Agreement.

The proposed WPDES permit procedures, including water quality based effluent limitations, are based on general US EPA regulations and guidelines.

7. Comparison with similar rules in adjacent states:

All states, including adjacent states, are required by US EPA to promulgate nutrient water quality standards criteria under US EPA's Clean Water Act authority. In addition, all states delegated National Pollutant Discharge Elimination System permit authority by US EPA, including all adjacent states, are required to issue point source permits that will meet water quality standards.

To date, Minnesota has promulgated phosphorus criteria for lakes which are very similar to what is proposed in this rule. Minnesota is now in the process of developing proposed criteria for rivers and streams. Illinois has had phosphorus criteria in its water quality standards for some years for lakes and Lake Michigan; and it is in the process of developing phosphorus criteria for streams and rivers. Michigan and Iowa are developing criteria, but to date have not publicly proposed criteria. None of the adjacent states or Wisconsin has proposed criteria for nitrogen, except for ammonia.

All adjacent states have provisions for developing water quality based effluent limits, but none to date have proposed rules that specifically deal with the issues uniquely related to phosphorus.

8. Summary of factual data and analytical methodologies used and how any related findings support the regulatory approach chosen:

The proposed water quality standards phosphorus criteria for streams and rivers are based on results of a number of Wisconsin studies aimed at determining when biotic effects occur and how these effects relate to protection of designated uses. The primary studies were jointly conducted by department and US Geological Survey (USGS) staff and their results are reported in "Nutrient Concentrations and Their Relations to the Biotic Integrity of Wadeable Streams in Wisconsin", USGS Professional Paper 1722, by Robertson, Graczyk, Garrison, Wang, LaLiberte and Bannerman, 2006; and "Nutrient Concentrations and Their Relations to the Biotic Integrity of Nonwadeable Rivers in Wisconsin", USGS Professional Paper 1754, by Robertson, Weigel and Graczyk, 2008. These studies identified a suite of breakpoints or thresholds for effects of phosphorus on algae, aquatic insects and fish. Based on discussions involving a number of experts in the scientific field, the department used an averaging method of the suite of breakpoints to derive the proposed criteria. These proposed criteria were compared to department's studies of trout streams in southwestern Wisconsin, the early 1980's department's study of phosphorus in streams

and studies cited in US EPA's "Nutrient Criteria Technical Guidance Manual: Rivers and Streams", EPA-822-B-00-002, 2000.

The proposed water quality standards phosphorus criteria for lakes and reservoirs are based on methods commonly used for decades in lake management in Wisconsin and adjacent states. Specifically, for most types of lakes, the proposed criteria are based on limiting the risk of nuisance algae conditions (20 ug/L chlorophyll a) to no more than 5 percent of the time (e.g. less than one week per year from June though September) using work by Walmsley (Journal of Environmental Quality, 13:97-104, 1988) and Heiskary and Wilson ("Minnesota Lake Water Quality Assessment Report: Developing Nutrient Criteria", Minnesota Pollution Control Agency, September 2005). These concentrations were also determined to be sufficient to protect sport fisheries in lakes again using information from Heiskary and Wilson ("Minnesota Lake Water Quality Assessment Report: Developing Nutrient Criteria", Minnesota Pollution Control Agency, September 2005). For the relatively few lakes that support a cold water fishery in the lower waters, the department's objective was to maintain 6 mg/L for dissolved oxygen in the lower waters. To determine the appropriate phosphorus concentrations, the department examined sediment cores and current water concentrations to determine undisturbed conditions. The proposed criteria were compared to literature information summarized in US EPA's "Nutrient Criteria Technical Guidance Manual: Lakes and Reservoirs", EPA-822-B-00-001, 2000.

For development of the water quality based effluent limitation procedures for permits, the department reviewed existing state and federal regulations and guidance for the point source discharge permit programs, consulted with US EPA representatives, and received input from a technical advisory committee that met several times in 2008 through 2009. The technical advisory committee was comprised of representatives of municipal and industrial wastewater dischargers, municipal storm water dischargers, agricultural interests, water user groups and environmental groups. Staff from US EPA and USGS also attended committee meetings as advisories to the committee and the department.

9. Analysis and supporting documents used to determine fiscal estimate and effect on small business

The department's cost estimate for municipal and industrial wastewater treatment plant compliance contains a range of costs based on projected implementation of the requirements of subchapter III of ch. NR 217. The range is appropriate given the number of flexibility elements in the rule, such as the watershed adaptive management option, use of total maximum daily load allocations, economic variances and pollutant trading. The upper end of the range estimate of $1.6 billion anticipates that 163 municipal and 43 wastewater treatment plants will require filtration or other tertiary treatment at a substantial capital expenditure and increased operation and maintenance costs. Not every facility in the state will have stringent water quality based effluent limits and many will not see any change in their current phosphorus limits. The number of facilities anticipates that small communities and industries with lagoon or stabilization pond systems or mechanical systems will receive variances due to widespread adverse social and economic impacts. The number of industrial facilities includes only those that discharge to surface waters and does not include those that discharge phosphorus to municipal wastewater treatment plants, such as some food processing plants. The cost estimates for municipalities are based on cost estimating charts in

the US EPA's "Municipal Nutrient Removal Technology Reference Document, September 2008; adjusted upward about 40 percent for current construction costs, northern climate conditions and other factors. The cost estimates for industries are based on information from various sources. The upper end of the range estimate does not include site-specific costs, such as land purchase to enlarge the facility, which could substantially increase the costs for an individual facility. Also, the upper end of the range estimate does not take into account the subsidy value (about 20%) to municipalities receiving loans from the state's Clean Water Fund which would lower the statewide cost estimate.

Costs may be less than those estimated for the upper end of the range through implementation of total maximum daily load allocations, the watershed adaptive management option and/or pollutant trading. Each of these flexibility approaches has the potential to bring about control of phosphorus from nonpoint sources and urban storm water sources and lessen the need for stringent wastewater treatment plant effluent limits. Emerging technology, starting to be used in eastern states, may also reduce costs for tertiary treatment for phosphorus. These reduced costs were not quantified or factored into the upper end of the range cost estimates.

The lower end of the range anticipates that no wastewater treatment plant will need to go beyond phosphorus removal technology that is commonly used in Wisconsin. Many Wisconsin wastewater treatment plants are discharging phosphorus at concentrations far below their effluent limit with some discharging at concentrations less than half of their limit.

There could be both direct and indirect economic impacts on small businesses. To assess the direct impacts, the department initially identified cheese and other dairy operations that discharge wastewater containing phosphorus to lakes and streams as small businesses potentially impacted by the proposed rules. With the assistance of the Wisconsin Cheese Makers, 11 businesses were identified for analysis. All 11 are likely to have more than $5 million in annual revenue, but may have less than 25 employees. Of the 11, six apply wastes to the land through a variety of methods. The other six discharge their wastes to municipal wastewater treatment plants. Some, however, may discharge non-contact cooling water which may or may not have phosphorus added to the water by the industry or a municipality. Those small businesses that discharge their wastes to municipal wastewater treatment plants or farmers that sell their products to food processing industries may have an indirect economic impact that cannot be quantified at this time since the costs are specific to the facility.

Based on this analysis, the department concluded that there are few small businesses that directly discharge of wastewater containing phosphorus to lakes or streams. If there is an impact, it would likely be an indirect fiscal impact on those small businesses that discharge their wastes to a municipal wastewater treatment facility. If the municipal wastewater treatment plant is required to further remove phosphorus, it is possible that the service fee may increase or the municipality may require some level of pretreatment.

10. Effect on small business:

The department has determined the rule may have an indirect impact on limited number of small businesses, and that impact may be lessened through existing variance procedures. Most of the

fiscal impacts from the proposed rules will affect municipalities and industries (with phosphorus discharges to surface waters) that aren't considered small businesses. However, there may be an effect on small businesses that discharge to municipal wastewater treatment plants; but this impact is very difficult to estimate. Secondary indirect impacts on farmers and other suppliers to small industries are even more difficult to estimate.

As mentioned above, small cheese factories may be the best example of a small business. For those meeting the definition of a small business, many of the facilities land apply all or the majority of their wastewater, and therefore will not be impacted by these rules. If there are any businesses that discharge wastes directly to surface waters that meet the definition of a small business, they may apply for a variance if compliance with water quality based effluent limits for phosphorus would cause significant economic hardship. The proposed rules do not provide for less stringent reporting, longer compliance schedules or completed exemptions for small businesses with phosphorus discharges to surface waters because it would not be allowed under federal regulations or state statutes. There is, however, a variance procedure that is allowed under both state and federal law for all point sources that qualify. Reporting and record keeping requirements are established through permit terms and conditions.

11. Agency contact person:

Jim Baumann, P.O. Box 7921, Madison, WI 53707; telephone number 608/266-9277; e-mail address: james.baumann@wisconsin.gov.

SECTION 1. NR 102.06 is repealed and recreated to read:

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.

(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:

$$\frac{\text{Maximum Depth (meters)} - 0.1}{\text{Log}_{10}\text{Lake Area (hectares)}}$$

$$\frac{\text{Maximum Depth (feet)} * 0.305 - 0.1}{\text{Log}_{10}\text{Lake Area (acres)} * 0.405}$$

(h) "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.

(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 River 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 River 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) *General*. 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."

SECTION 2. Chapter NR 217 (title) is amended to read:

CHAPTER NR 217 (title) EFFLUENT STANDARDS AND LIMITATIONS FOR PHOSPHORUS

SECTION 3. NR 217 Subchapter I (title) to precede s. NR 217.01 is created to read:

SUBCHAPTER I (title) - GENERAL

SECTION 4. NR 217.01 is amended to read:

NR 217.01 Purpose. The purpose of this chapter is to reduce the amount of ~~pollutants~~ phosphorus discharged to surface waters by establishing effluent standards and limitations ~~for pollutants~~, including water quality based effluent limitations, for phosphorus in effluent discharged to surface waters of the state. Effluent standards and limitations are ~~adopted~~ developed pursuant to ch. 283, Stats.

SECTION 5. NR 217 Subchapter II (title) to follow s. NR 217.01 is created to read:

SUBCHAPTER II (title) - PHOSPHORUS EFFLUENT STANDARD AND LIMITATIONS

SECTION 6. NR 217.02 is amended to read:

NR 217.02 Applicability. This ~~chapter~~ subchapter is applicable to point sources which discharge ~~wastewater~~ phosphorus to the surface waters of the state.

SECTION 7. NR 217.03 is amended to read:

NR 217.03 Definitions. Definitions of terms and the meaning of abbreviations used in this ~~chapter~~ subchapter are as defined in ~~chs. NR 102, 106, 205, 210 and 243~~ ss. NR 102.03, 106.03, 205.03, 210.03 and 243.03. In addition: "effluent standard" means any requirement for ~~a specific pollutant applicable to a category or class of point sources which are more stringent than the requirements under s. 283.13 (1) to (4), Stats.~~ phosphorus established pursuant to s. 283.11 (3), Stats., and this subchapter.

SECTION 8. NR 217 Subchapter III (title) to follow s. NR 217.04 is created to read:

SUBCHAPTER III (title) - WATER QUALITY BASED EFFLUENT LIMITATIONS FOR PHOSPHORUS

SECTION 9. NR 217.10 is created to read:

NR 217.10 Applicability. This subchapter applies to discharges of phosphorus to surface waters of the state from the following point sources:

(1) Publicly and privately owned wastewater facilities or treatment works;

(2) Noncontact cooling water discharges which contain phosphorus unless 100 percent of the phosphorus in the discharge originates from the receiving water as intake water;

(3) Concentrated animal feeding operations that discharge manure or process wastewater from the production area through alternative treatment facilities under s. NR 243.13; and

(4) A facility or site that is regulated under ch. NR 216 only where the department has determined that compliance with the standards in chs. 151 and 216 are not sufficient to meet phosphorus criteria in s. NR 102.06.

Note: There may be other point sources that are not subject to the procedures in this subchapter, but which are be subject to s. 283.13 (5), Stats. or procedures in other rules (e.g. ch. NR 243 requirements for concentrated animal feeding operations).

SECTION 10. NR 217.11 is created to read:

NR 217.11 Definitions. Definitions of terms and the meaning of abbreviations used in this subchapter are as defined in ss. NR 102.03, 106.03, 205.03, 210.03 and 243.03. In addition, for purposes of this subchapter, the following definitions apply:

(1) "303 (d) list" means a list of waters established by the department and approved by US EPA pursuant to 33 USC 1313 (d) (1) (A) and 40 CFR 130.7.

(2) "Adaptive management" means the use of monitoring data and other information at the time of permit reissuance to reassess management decisions and permit requirements.

(3) "New discharger" means a point source which was not authorized by a WPDES permit as of the effective date of this rule . . . [legislative reference bureau inserts date]. A new discharger includes a relocation of an outfall to a different receiving water.

(4) "Phosphorus impaired water" means a surface water listed on the 303 (d) list that is impaired for phosphorus, nutrients or diurnal swings of dissolved oxygen.

Note: A surface water may be impaired and placed on the 303 (d) list for a reason other than phosphorus, nutrients or dissolved oxygen (e.g. mercury), however the procedures in this subchapter only apply to impairments related to phosphorus, nutrients or diurnal swings of dissolved oxygen.

(5) "Privately owned wastewater facilities or treatment works" means a facility or treatment works owned by a nongovernmental entity that discharges domestic wastewater, commercial wastewater or industrial wastewater or a combination thereof.

(6) "Technology based limitation" means an effluent limitation for phosphorus established pursuant to s. 283.11 (3), Stats., and subch. II or s. 283.13 (2) or (4), Stats.

(7) "Total maximum daily load" or "TMDL" means the amount of pollutants specified as a function of one or more water quality parameters that can be discharged into a water quality limited segment and still ensure attainment of the applicable water quality standard in a watershed.

(8) "US EPA" means the United States Environmental Protection Agency.

(9) "WQBEL" means a water quality based effluent limitation.

SECTION 11. NR 217.12 is created to read:

NR 217.12 General. (1) Water quality based effluent limitations for phosphorus shall be included in a permit whenever the department determines:

(a) The discharge from a point source contains phosphorus at concentrations or loadings which will cause, has the reasonable potential to cause or contribute to, an exceedance of the criteria in s. NR 102.06 in either the receiving water or downstream waters; and

(b) The technology based effluent limitation or the alternative treatment technology limitation calculated under s. NR 243.13 is less stringent than necessary to achieve the applicable water quality standard for phosphorus in s. NR 102.06.

(2) If the technology based limitation expressed as a concentration is more stringent than the water quality based effluent limitation expressed as a concentration under s. NR 217.13, then

the technology based limit shall be included in the permit, along with any mass limitations calculated under this subchapter as required under s. NR 217.14 (1) and (3).

SECTION 12. NR 217.13 is created to read:

NR 217.13 Calculation of water quality based effluent limitations for phosphorus. (1) BASIS FOR LIMITATIONS. (a) The department shall calculate potential water quality based effluent limitations for point source dischargers of phosphorus using the procedures in this section.

(b) Water quality based effluent limitations for phosphorus shall be calculated based on the applicable phosphorus criteria in s. NR 102.06 at the point of discharge, except the department may calculate the limitation to protect downstream waters.

(2) DISCHARGES TO STREAMS AND RIVERS. (a) *Limitation calculation*. For discharges of phosphorus to flowing streams and rivers, the water quality based effluent limitation shall be calculated using the following conservation of mass equation:

$$\text{Limitation} = [(WQC)\ (Qs+(1-f)Qe) - (Qs- fQ_e)\ (Cs)]/Qe$$

Where:

Limitation = Water quality based effluent limitation (in units of mass per unit of volume),

WQC = The water quality criterion concentration (in units of mass per unit volume) from s. NR 102.06,

Qs = Receiving water design flow (in units of volume per unit time) as specified in par. (b),

Qe = Effluent flow (in units of volume per unit time) as specified in par. (c),

f = Fraction of the effluent flow that is withdrawn from the receiving water, and

Cs = Upstream concentration (in units of mass per unit volume) as specified in par. (d).

(b) *Receiving water design flow (Qs).* Based on the availability of information and the professional judgment of the department, the value of Q_s to be used in calculating the effluent limitation for discharges to flowing waters shall be determined using one of the following:

1. The average minimum 7-day flow which occurs once every 2 years (7-day Q_2) based on information derived by the U. S. geological survey or other department approved information source, using data from a representative gauging station with a period of record of at least 10 years.

2. If provided by the permittee and approved by the department, the average low 30-day flow which occurs once every 3 years (30-day Q_3) based on information derived by the U. S. geological survey or other department approved information source, using data from a representative gauging station with a period of record of at least 10 years.

3. Other flow deemed more representative of flow conditions and approved by the department.

(c) *Effluent flows (Q_e).* 1. For dischargers subject to ch. NR 210 and which discharge for 24 hours per day on a year-round basis, Q_e shall equal the maximum effluent flow, expressed as a daily average, that is anticipated to occur for 12 continuous months during the design life of the treatment facility unless it is demonstrated to the department that this design flow rate is not representative of projected flows at the facility.

2. For other dischargers not subject to ch. NR 210, Q_e shall equal, based on the best professional judgment of the department, one of the following:

a. The maximum effluent flow, expressed as a 365 day rolling average of daily discharges that has occurred for 12 continuous months and represents normal operations.

b. The maximum effluent flow, expressed as a 30 day rolling average, which has occurred for 30 continuous days and represents normal operations.

3. For seasonal discharges, discharges proportional to stream flow, or other non-continuous discharge situations, Q_e shall be determined on a case by case basis.

(d) *Upstream concentrations (C_s).* The representative upstream concentration of phosphorus shall be used in specific water quality based effluent limit calculations. At a minimum, the representative upstream concentration shall be either a concentration derived by the department based on data from the specific stream or from a similar location. Where data is collected on the upstream location, the concentration used shall equal the median of at least four samples collected throughout the period of May through October. All samples collected during a 28-day period shall be considered as a single sample and the average of the concentrations used. Where data is available from more than one year in the last five years, the department may use all of the years of data in the calculation of the upstream concentration. The department may also use data older than five years provided that it is representative of current conditions. Upstream concentrations may not be measured at a location within the direct influence of a point source discharge. The determination of upstream concentrations shall be evaluated at each permit reissuance.

Note: The department has guidance on collection methods for ambient water sampling and may develop guidance for the evaluation of representative data. The guidance may be obtained

from the offices of the department of natural resources, bureau of watershed management at 101 South Webster Street, P.O. Box 7921, Madison, Wisconsin 53707.

(3) DISCHARGES TO INLAND LAKES AND RESERVOIRS. For discharges of phosphorus directly to inland lakes, reservoirs and other receiving waters which do not exhibit a unidirectional flow at the point of discharge, the department shall set the effluent limit equal to the criterion for the receiving water or the downstream water.

Note: As described in s. NR 217.16, effluent limitations for discharges to lakes may also be based on the wasteload allocation of a total maximum daily load, where the total maximum daily load has been approved by US EPA.

(4) DISCHARGES DIRECTLY TO GREAT LAKES. For discharges directly to the Great Lakes, the department shall set effluent limits consistent with nearshore or whole lake model results approved by the department. The department may set an interim effluent limit based on the best readily available phosphorus removal technology commonly used in Wisconsin.

Note: At the time this rule was promulgated, . . .[legislative reference bureau inserts date], the best readily available phosphorus removal technology indicates a limit of 0.6 mg/L.

(5) OTHER METHODS OF LIMIT CALCULATION. The department may use other models and equations for calculating a water quality based effluent limitation if, in the best professional judgment of the department, the model provides a more accurate representation of the conditions.

(6) MULTIPLE DISCHARGES**.** (a) Except as provided in par. (b), whenever the department determines that more than one discharge may be affecting the water quality of the same receiving water, the resultant combined allowable load shall be divided among the various discharges using an allocation method based on site-specific considerations. Whenever the department makes a determination under this subsection, the department shall notify all permittees who may be

affecting the water quality of the same receiving water of the determination and any limitations developed under this subsection. Permittees shall be given the opportunity to comment to the department on any determination made under this subsection.

(b) This subsection does not apply if there is a US EPA approved TMDL for phosphorus for the receiving water. If there is a US EPA approved TMDL, the combined allowable load shall be divided in accordance with the approved TMDL.

(7) MINIMUM EFFLUENT LIMITATIONS. If the water quality based effluent limitation calculated pursuant to the procedures in this section is less than the phosphorus criterion specified in s. NR 102.06 for the water body, the effluent limit shall be set to be equal to the criterion.

(8) NEW DISCHARGERS. If a new discharger is proposing a discharge of phosphorus to a receiving or downstream water that is a phosphorus impaired water, the new discharger may not discharge phosphorus except as follows:

(a) The new discharge of phosphorus is allocated part of the reserve capacity or part of the wasteload allocation in a US EPA approved TMDL;

(b) The new discharger can demonstrate the new discharge of phosphorus will improve water quality in the phosphorus impaired segment; or

(c) The new discharger can demonstrate that the new phosphorus load will be offset through a phosphorus trade or other means with another discharge of phosphorus to the 303 (d) listed water. The offset must be approved by the department and must be implemented prior to discharge.

Note: S. 283.84, Stats., establishes requirements for pollutant trades.

SECTION 13. NR 217.14 is created to read:

NR 217.14 Expression of limitations. (1) GENERAL. (a) Water quality based effluent limitations, when required pursuant to s. NR 217.15, shall be expressed in a discharge permit as a concentration. A mass limit shall also be included in a permit for discharges of phosphorus to any of the following receiving or downstream waters:

1. A lake or reservoir;

2. An outstanding or exceptional resource water, as designated in ss. NR 102.10 and 102.11;

3. A phosphorus impaired water; or

4. A surface water that has an approved TMDL for phosphorus.

(b) The department may establish mass limitations in permits for any other discharges of phosphorus if a concentration limit for phosphorus is included in the permit, and where an increase in phosphorus load is likely to result in adverse effects on water quality in the receiving water or downstream water.

(c) For discharges to lakes, the department shall also include an annual mass limit for phosphorus in the permit.

(d) If there is a US EPA approved TMDL for the receiving water, the department shall include a mass limit expressed in the manner consistent with the requirements of the TMDL. As provided in s. NR 217.16, this TMDL based mass limit may be included in the permit in addition to, or in lieu of the mass limit established pursuant to this section.

Note: In accordance with s. 283.84, Stats., the department may approve the use of phosphorus trading as a means for a point source to achieve compliance with the water quality based effluent limitation, including a TMDL based limitation. The trade shall be incorporated into

the terms of the WPDES permit for the point source and must be approved by the department prior to implementation.

(2) CONCENTRATION BASED LIMITATIONS. Concentration effluent limitations calculated under s. NR 217.13 shall be expressed as a monthly average in permits, except for concentrations of less than or equal to 0.3 mg/L where limitations may be expressed as annual averages. If a concentration limitation expressed as an annual average is included in a permit, a monthly average concentration limitation equal to three times the water quality based effluent limitation calculated under s. NR 217.13 shall also be included in the permit.

(3) MASS BASED LIMITATIONS. Concentration effluent limitations as calculated under s. NR 217.13 shall be converted into mass effluent limitations using the effluent flow identified in s. NR 217.13 and an appropriate conversion factor, and expressed as a monthly average in the permit, except for concentration based limitations of less than or equal to 0.3 mg/L where mass limitations may be expressed as annual averages.

SECTION 14. NR 217.15 is created to read:

NR 217.15 Determination of necessity for water quality based effluent limitations for phosphorus. (1) (a) *General*. The department shall include a water quality based effluent limitation for phosphorus in a permit whenever the discharge or discharges from a point source or point sources contain phosphorus at concentrations or loadings which will cause, has the reasonable potential to cause or contribute to, an exceedance of the water quality standards in s. NR 102.06 in either the receiving water or downstream waters. The department shall use the procedures in this section to make this determination.

(b) *Permittees with existing phosphorus limitations.* If a permittee has a technology based phosphorus limitation in a permit that is less restrictive than a water quality based effluent limitation for phosphorus calculated pursuant to s. NR 217.13, then the department shall include the water quality based effluent limitation in the permit.

(c) *Permittees without existing phosphorus limitations.* If a permittee discharges phosphorus, but does not have a technology based limitation for phosphorus in its permit, the department shall use the procedures in this paragraph to determine whether a discharge will cause, has the reasonable potential to cause or contribute to, an exceedance of the phosphorus water quality criterion in s. NR 102.06 in the receiving or downstream waters, and whether to include a water quality based effluent limit for phosphorus in the WPDES permit.

1. Using at least 11 daily discharge concentrations of phosphorus, if the upper 99th percentile of the 30 day average discharge concentration of phosphorus exceeds the potential phosphorus limitation calculated under s. NR 217.13, then the water quality based effluent limitation for phosphorus shall be included in the WPDES permit. If the upper 99th percentile of the 30 day average discharge concentration of phosphorus is less than the potential phosphorus limitation calculated under s. NR 217.13, then a water quality based effluent limitation for phosphorus is not required in the WPDES permit. The upper 99th percentile of available discharge concentrations shall be calculated pursuant to s. NR 106.04 (5).

2. If 11 daily discharge concentrations of phosphorus are not available for a permittee, then a water quality based effluent limitation for phosphorus shall be included in the permit when the mean of available effluent concentrations is greater than one-fifth of the limit.

3. If no phosphorus effluent data is available for an existing permittee, the department may require phosphorus sampling as part of a permit application for reissuance to determine whether a

water quality based effluent limit is necessary in the WPDES permit under par. (a), or the department may use effluent data information from similar point sources to make the determination under par. (a).

Note: The department will develop guidance regarding the administration of this section to ensure that permitted discharges with a reasonable potential to cause or contribute to exceedances of the applicable phosphorus water quality criterion in s. NR 102.06 are identified.

(d) *Sampling.* Prior to permit reissuance, a permittee discharging any phosphorus shall collect effluent samples of phosphorus at a frequency specified by the department in the permit application for reissuance.

(e) *New dischargers.* The department shall include a water quality based phosphorus limitation in a permit for a new discharger if the department determines the new discharger will discharge phosphorus at concentrations or loadings which may cause or contribute to exceedances of the water quality criteria in s. NR 102.06 in either the receiving water or downstream waters. To estimate the amount of phosphorus discharged by a new discharger, the department may consider projected discharge information from the permit applicant and phosphorus discharge information from similar sources.

(2) If the department determines a water quality based effluent limitation is not necessary in a permit based on the procedures in this section, the department may still require monitoring for phosphorus discharges.

SECTION 15. NR 217.16 is created to read:

NR 217.16 Relationship of WQBELs and TMDL based limitations.

(1) In addition to a water quality based effluent limitation calculated pursuant to s. NR 217.13, the department may derive a water quality based effluent limitation for phosphorus consistent with the wasteload allocation and assumptions of a US EPA approved TMDL that is designed to achieve water quality standards in ch. NR 102. This TMDL based limitation may be included in a permit in addition to, or in lieu of, the water quality based limitation calculated under s. NR 217.13. When deciding whether to use a TMDL based limit as a substitute for the limitation calculated under s. NR 217.13, the department shall consider the following factors:

(a) The degree to which nonpoint sources contribute phosphorus to the impaired water;

(b) Whether waters upstream of the impaired waters are meeting the phosphorus criteria; and

(c) Whether waters downstream of the impaired water are meeting the phosphorus criteria.

(2) If the phosphorus limitation based on an approved TMDL is less stringent than the water quality based effluent limitation calculated in s. NR 217.13, the department may include the TMDL based limit in lieu of the limit calculated in s. NR 217.13 if the limit calculated under s. NR 217.13 has not yet taken effect. If the department includes the TMDL based limitation for phosphorus in the WPDES permit in lieu of the limit calculated in s. NR 217.13, the TMDL based limit may remain in the permit for up to two permit terms to allow time for implementation of the TMDL, or the implementation period specified in the TMDL, whichever is less. The department may include a schedule of compliance to achieve a TMDL based limit if the department determines a schedule of compliance is necessary. If after two permit terms, the department determines the nonpoint source load allocation has not been substantially reduced, the department may impose the more stringent water quality based effluent limitation calculated under s. NR 217.13, or may include the TMDL based limitation for an additional permit term if the department determines there

will be significant nonpoint source load reductions within the upcoming permit term. If the department decides to remove a TMDL based phosphorus limit from a permit and instead include a more stringent water quality based phosphorus limit in the permit calculated under s. NR 217.13, the department may provide a schedule of compliance for the more stringent limit if the department determines additional time is needed for the permittee to comply with the revised limit. Such schedules shall require compliance as soon as possible, but in no case no more than five years from the date that the permit is reissued or modified to include the revised effluent limitations.

(3) If a phosphorus water quality based limit calculated under s. NR 217.13 has already taken effect in a permit, the department may replace the limit with a less stringent TMDL based limit, if allowed pursuant to antidegradation procedures in ch. NR 207.

Note: The TMDL based limitation may be less stringent than the water quality based effluent limitation calculated under s. NR 217.13 in cases where nonpoint sources are the significant phosphorus sources responsible for the impairment.

(4) If the phosphorus limitation based on an approved TMDL is more stringent than the water quality based effluent limitation calculated under s. NR 217.13, the department shall include the more stringent TMDL based limitation in the WPDES permit.

SECTION 16. NR 217.17 is created to read:

NR 217.17 Schedules of Compliance. (1) GENERAL. (a) Except as provided in sub. (4), the department may provide a schedule of compliance for a water quality based phosphorus limitation in a WPDES permit, where based on available information the department finds that:

1. The schedule of compliance will lead to compliance with the water quality based effluent limitation as soon as possible; and

2. The schedule of compliance is appropriate and necessary because the permittee cannot immediately achieve compliance with the water quality based effluent limitation based on existing operation of its treatment system.

Note: Before any compliance schedule is established in a permit pursuant to this subchapter, the department must make the finding in par (a).

(b) In determining whether a compliance schedule is appropriate and determining the length of the compliance schedule, the department shall consider all of the following factors:

1. Whether there is any need for modifications to the treatment facilities, operations or measures to meet the water quality based effluent limitation, and if so, how long it will take to implement the modifications. If the department determines that a permittee only needs to make operational changes to achieve compliance with a limitation, the compliance schedule shall be as brief as possible and only allow time for operational start-up adjustments.

2. The amount of time the discharger has already had to meet the water quality based effluent limitation under prior permits.

3. The extent to which the discharger has made good faith efforts to comply with the water quality based effluent limitation and other requirements in prior permits, if applicable.

4. The extent to which the phosphorus removal process technologies have been developed and proven to be effective.

(c) In determining whether a compliance schedule is appropriate and determining the length of the compliance schedule, the department may also consider any of the following factors:

1. Whether there is a need to acquire a substantial amount of property to accommodate the needed modifications; and

2. Whether there is a need to develop an extensive financing plan and obtain financing for the proposed treatment plant upgrade.

Note: A compliance schedule may be provided for a water quality based effluent limit for phosphorus calculated under s. NR 217.13 and a TMDL based limit for phosphorus.

(2) MAXIMUM COMPLIANCE SCHEDULE PERIOD. Except for situations where filtration or a similar phosphorus removal process is required, any compliance schedule established by the department under sub. (1) may not exceed seven years from the date a permit was first modified or reissued to include a water quality based phosphorus limit calculated under s. NR 217.13. Where compliance with the water quality based phosphorus limit requires the construction of filtration or a similar phosphorus removal process, the department may grant a schedule of compliance not to exceed nine years from the date that the permit is first reissued or modified to include effluent limitations developed under provisions of this subchapter. In cases where a compliance schedule extends beyond five years, the department may revise the schedule at reissuance or pursuant to a permit modification.

(3) REQUIREMENTS, LIMITATIONS, DATES AND REPORTING. When granting a schedule of compliance, the department shall include, as conditions of the permit, the following:

(a) Dates for achievement of interim requirements. The time between interim dates may not exceed one year.

(b) A sequence of actions or operations that may include, as appropriate, but are not limited to:

1. Development and implementation of a phosphorus discharge optimization plan for the current operation.

2. Preparation of preliminary and final designs for new or modified treatment technology.

3. Initiation and completion of construction.

(c) Interim effluent limitations representing good management and operation for similar treatment processes based on performance of other wastewater treatment facilities that will lead to compliance with the final water quality based effluent limitation.

(d) A requirement that no later than 30 days following each interim date and the final date of compliance, the permittee shall notify the department in writing of its compliance or non-compliance with the interim or final requirements, including submittal of progress reports. If any interim requirement will take more than one year to complete, the permit shall also include a projected completion date for the interim requirement.

(e) The final water quality based effluent limit for phosphorus calculated pursuant to s. NR 217.13 shall be included in the permit even if the limit is not effective during the permit term. The department may revise the final limit at permit reissuance or pursuant to a permit modification.

(f) If the permittee chooses to engage in pollutant trading as a means to achieve compliance with interim limitation or final water quality based effluent limitations, then the terms and conditions related to the trade shall be incorporated into the permit.

(4) NEW DISCHARGERS. Any new discharger may not receive a compliance schedule to achieve compliance with a phosphorus water quality based effluent limitation.

SECTION 17. NR 217.18 is created to read:

NR 217.18 Watershed Adaptive Management Option. (1) GENERAL. The adaptive management option is a strategy to achieve the phosphorus water quality criteria in s. NR 102.06 in the most economically efficient manner, and as soon as possible, taking into consideration the contributions of phosphorus from point and nonpoint sources in a watershed.

(2) APPLICATION. If requested by the permittee in the permit application for reissuance and if approved by the department, the permittee may implement a watershed adaptive management approach under this section as a means to achieve compliance with the phosphorus water quality standards in s. NR 102.06. The department may approve and authorize the adaptive management option in this section only if the permittee demonstrates and the department concurs that all of the following conditions are met:

(a) The exceedance of the applicable phosphorus criterion in s. NR 102.06 is caused by phosphorus contributions from both point sources and nonpoint sources;

(b) Either the sum of the nonpoint sources and the permitted municipal separate storm sewer system contribution of phosphorus to the receiving water is at least 50 percent of a total contribution within the watershed of the receiving water where the applicable phosphorus criterion in s. NR 102.06 is exceeded; or the permittee demonstrates that the applicable phosphorus criterion cannot be met in the watershed without the control of phosphorus from nonpoint sources.

(c) Documentation that the proposed water quality based effluent limit in the applicant's permit will require filtration or other equivalent treatment technology to achieve compliance.

(d) The permittee has submitted an adaptive management plan that identifies specific actions to be implemented that will achieve compliance with the applicable phosphorus criterion in s. NR 102.06 through verifiable reductions of phosphorus from point and nonpoint sources in the watershed. At a minimum, the plan shall include the following:

1. An analysis of the levels of phosphorus in the permittee's effluent and significant sources of point and nonpoint phosphorus loadings in the watershed.

2. Goals and measures for determining whether the actions identified in the plan are effective in achieving compliance with the applicable phosphorus criterion in s. NR 102.06.

3. Identification of any anticipated partners that will assist in implementing the phosphorus reductions to achieve compliance with the applicable phosphorus criterion in s. NR 102.06, including the partner's level of support for the plan.

4. A demonstration that the permittee has the ability to fund and implement the plan either individually, or in conjunction with other permittees and nonpoint sources, or other partners, including municipal and county governments, in the watershed. Plans should include any contracts reflecting commitments by partners to implement applicable actions.

(3) PERMIT TERMS AND CONDITIONS. If the department determines that the permittee has provided all necessary information and the conditions in sub. (2) have been met, it may issue a permit that includes watershed adaptive management actions to achieve compliance with the applicable phosphorus criterion in s. NR 102.06 on a schedule approved by the department. At a minimum, the permit shall include the following:

(a) Monitoring in the receiving water at locations and times established in the permit to assess phosphorus loading and to document progress toward achieving the applicable phosphorus criterion in s. NR 102.06. The department shall also require permittees to monitor, record and report the mass and concentration of phosphorus in the effluent at an appropriate frequency specified by the department in the permit.

(b) Requirements to design and implement the actions identified in the permittee's approved adaptive management plan in accordance with the goals and measures identified in the plan and any compliance schedule included in the permit.

(c) Requirements to optimize the permittee's treatment system to control phosphorus.

(d) Reporting procedures and deadlines for all monitoring, assessment and data gathering requirements in the plan. Permittees shall be required to file and the department will review an

annual report that identifies implementation of actions in the plan that were completed the previous year, and that documents any progress in achieving the goals and measures in the adaptive management plan. Adjustment or corrections, to the extent that they are needed, will be incorporated into the permit via permit modification procedures.

(e) Numerical effluent limitations as follows:

1. All permits issued under the adaptive management option in this section shall include water quality based effluent limitations calculated consistent with the federal water pollution control act, s. 33 USC 1251 to 1387, that are established according to s. NR 217.13 or a US EPA approved TMDL. These limitations shall take effect in accordance with the timeframe established in this paragraph, or pursuant to par. (g) if the adaptive management option is terminated.

2. In the first permit reissuance term following approval by the department under sub. (2), the initial interim effluent limitation shall be no higher than 0.6 mg/L of total phosphorus expressed as a six-month average. An effluent limit not to exceed 1.0 mg/L of total phosphorus expressed as a monthly average shall also be included in the permit. The department may allow the permittee a compliance schedule that may not exceed five years if necessary to meet this interim limitation.

3. If the permittee has met all of the requirements of its previous permit, but the monitoring data of the receiving water indicate that the applicable phosphorus water quality criterion in s. NR 102.06 has not been met by the time the first permit issued under the adaptive management option expires, the department may issue a subsequent adaptive management permit. The subsequent permit shall include an interim effluent limitation of no higher than 0.5 mg/L expressed as a six-month average. An effluent limit not to exceed 1.0 mg/L of total phosphorus expressed as a monthly average shall also be included in the permit. The subsequent permit shall also include an updated adaptive management plan to achieve the phosphorus water quality criterion in s. NR

102.06. The department may allow the permittee a compliance schedule that may not exceed five years if necessary to meet this interim limitation.

4. If by the expiration of the second permit issued under the adaptive management option, monitoring data collected for the receiving water indicate that the applicable phosphorus criterion under s. NR 102.06 has not been met, the department shall require compliance with a water quality based effluent limitation for phosphorus calculated under s. NR 217.13 or a US EPA approved TMDL. The department may allow the permittee a compliance schedule that may not exceed five years if necessary to meet this limitation.

(f) A statement that failure to implement any of the terms or conditions established under subparagraphs (a) through (e) above, is a violation of the permit.

(g) Provisions that the department may terminate the adaptive management option for a permittee and require compliance with a phosphorus effluent limitation calculated under s. NR 217.13 or a US EPA approved TMDL based on any of the following reasons:

1. Failure to implement the adaptive management actions in accordance with the approved adaptive management plan and compliance schedule established in the permit.

2. New information becomes available that changes the department's determinations made under sub. (2).

3. Circumstances beyond the permittee's control have made compliance with the applicable phosphorus criterion in s. NR 102.06 pursuant to the plan's goals and measures infeasible.

4. A determination by the department that sufficient reductions have not been achieved to timely reduce the amount total phosphorus to meet the criteria in s. NR 102.06.

SECTION 18. NR 217.19 is created to read:

NR 217.19 Variances for stabilization ponds and lagoon systems. (1) GENERAL.

(a) An owner or operator of a permitted wastewater treatment system that consists primarily of a stabilization pond system or a lagoon system may apply for a variance to the phosphorus water quality based effluent limitations pursuant to s. 283.15 (4) (a) 1. f., Stats., using the procedures in this section.

Note: Stabilization ponds and lagoons are operated primarily by communities serving a population of 2000 or less and small industries. With currently available technology that could be used in conjunction with stabilization ponds or lagoons, it is unlikely that phosphorus water quality based effluent limits less than 1 mg/L can be consistently met. To meet phosphorus water quality based effluent limits of less than 1 mg/L, it will be necessary for owners of the systems to construct new wastewater treatment plants which could result in substantial and widespread adverse social and economic impacts.

(b) A new discharger may not receive approval for a variance under this section or pursuant to any other variance procedure.

(2) APPLICATION FOR A VARIANCE. (a) The application for a variance under this section shall be submitted with the WPDES permit application for reissuance, or within 30 days after the permittee receives written notification of the proposed phosphorus limits, if the notification occurs later. The application shall be submitted on the phosphorus lagoon and stabilization pond variance form made available from the department or on a form containing equivalent information.

Note: Owners or operators of stabilization ponds or lagoon systems may obtain the variance application form from the offices of the department of natural resources, bureau of watershed management at 101 South Webster Street, P.O. Box 7921, Madison, Wisconsin 53707.

The form will provide guidance on the type of information needed to demonstrate widespread social and economic impacts.

(b) The application shall, at a minimum, include the following information:

1. Information required by s. NR 200.22, except for the information in s. NR 200.22 (1) (e) 6.

2. A statement that the permittee is seeking a variance pursuant to this section and s. 283.15 (4) (a) 1. f., Stats.

3. Information on the number and volume of lagoon or pond treatment cells, treatment processes, discharge periods, retention times, population served, influent flow, and available capacity for holding wastewater.

4. Other information requested by the department that is relevant to the review conducted under sub. (3).

Note: It is recommended that the permittee ask for calculation of potential phosphorus water quality based limits at least 12 months prior to permit expiration. This information will help the permittee complete their variance request portion of the permit application which is due 180 days prior to permit expiration.

(3) DEPARTMENT REVIEW. (a) The department shall review the submitted application for the variance and determine whether the permittee can achieve the phosphorus effluent limitations calculated pursuant to s. NR 217.13 without widespread adverse social and economic impacts. In making this determination, the department shall:

1. Compare the calculated phosphorus effluent limitations to the phosphorus effluent data submitted under sub. (2). If the permittee does not have sufficient phosphorus discharge data for its system, the department may augment the data set with effluent data from a similar lagoon or pond

system in the state to make the comparison. The department may apply statistical methodologies to make its determination on the ability of the current lagoon or stabilization pond system to meet phosphorus limitations.

2. Evaluate the financial affordability analysis submitted by the permittee in response to the variance application requirement in s. NR 200.22 (p).

Note: The department may use a US EPA publication titled, Interim Economic Guidance for Water Quality Standards – Workbook, EPA-823-B-95-002, March 1995, which provides information on evaluating economic and social impacts.

(b) The department's decision to approve or deny a variance under this section shall be made on or before the date of the s. 283.53 (3) (d), Stats., public notice for the proposed permit reissuance and shall be made in accordance with the following:

1. If the department determines that the permittee cannot meet the phosphorus water quality based effluent limitation without widespread adverse social and economic impacts, the department shall approve the variance. If the variance is approved, the department shall specify in the permit that the variance has been granted for phosphorus, and the requirements in sub. (4) shall also be included in the permit.

2. If the department determines that the permittee can meet the phosphorus effluent limitations without widespread adverse social and economic impacts or that effluent limitations are not necessary as determined by s. NR 217.15, the department shall deny the variance and notify the applicant of this determination in writing.

(c) If the department denies a variance under this section, a permittee may not apply again after the permit is issued for a variance from the phosphorus water quality standard based on the factor in s. 283.15 (4) (a) 1. f., Stats., for the same permit term.

(d) A permittee may seek a variance from a phosphorus limit in a reissued WPDES permit based on the factors in s. 283.15 (4) (a) 1. a. to e., Stats, and using the procedures and requirements in s. 283.15, Stats., and ch. NR 200.

Note: All variances are subject to US EPA review and approval.

(4) PERMIT TERMS IF VARIANCE IS APPROVED. If the department approves a variance to the phosphorus effluent limitations under this section, the following requirements shall be included in the reissued permit:

(a) The permit shall include a phosphorus variance effluent limitation as follows:

1. The numeric limitation shall equal the upper 99th percentile of representative daily discharge concentrations (one-day P_{99}) as calculated in s. NR 106.05 (5) (a).

2. The variance limitation shall be expressed as a daily maximum concentration.

(b) The permittee shall conduct monitoring of phosphorus during discharge periods at a frequency specified in the permit.

(c) The permittee shall, to the extent practicable, identify and minimize the non-domestic sources of phosphorus to the system and operate the treatment system to minimize exceedances of the calculated limits.

(d) The permittee shall investigate treatment technologies, process changes, pollutant source reduction steps, wastewater reuse or other techniques that may result in compliance by the permittee with the applicable phosphorus water quality standard, and shall submit reports on those investigations as required by the department.

(5) CONTINUED VARIANCES. If a permittee received approval for a variance to the phosphorus standard under this section in a reissued permit, the permittee may request a continued

variance from the phosphorus standard in a subsequent reissued permit pursuant to the procedures and requirements in this section.

SECTION 19. EFFECTIVE DATE. This rule shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22 (2), Stats.

SECTION 20. BOARD ADOPTION. The forgoing rule was approved and adopted by the State of Wisconsin Natural Resources Board on June 23, 2010.

Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

By _____.

Matthew J. Frank, Secretary

(SEAL)