

ADMINISTRATIVE RULES Fiscal Estimate & Economic Impact Analysis

1. Type of Estimate and Analysis

Original Updated Corrected

2. Administrative Rule Chapter, Title and Number

NR 106- Procedures for calculating water quality based effluent limitations for point source discharges to surface waters

NR 205- General Provisions

NR 212- Waste load allocated water quality related effluent limitations

3. Subject

WT-11-12: Revisions to the Wisconsin Pollution Discharge Elimination System (WPDES) Permit program to address some of the issues and potential inconsistencies with federal regulations identified by the U.S. Environmental Protection Agency (EPA) in a letter dated July 18, 2011.

4. Fund Sources Affected

GPR FED PRO PRS SEG SEG-S

5. Chapter 20, Stats. Appropriations Affected

None

6. Fiscal Effect of Implementing the Rule

No Fiscal Effect Increase Existing Revenues Increase Costs
 Indeterminate Decrease Existing Revenues Could Absorb Within Agency's Budget
 Decrease Cost

7. The Rule Will Impact the Following (Check All That Apply)

State's Economy Specific Businesses/Sectors
 Local Government Units Public Utility Rate Payers
 Small Businesses (if checked, complete Attachment A)

8. Would Implementation and Compliance Costs Be Greater Than \$20 million?

Yes No

9. Policy Problem Addressed by the Rule

The primary purpose of this rule revision is to establish clear regulatory requirements for the processing of WPDES permits. In a letter dated July 18, 2011, the U.S. Environmental Protection Agency (EPA) identifies 75 potential issues with Wisconsin's statutory and regulatory authority for the WPDES permit program. EPA directed the department to either make rule changes to address these inconsistencies or address these issues through other avenues. The proposed revisions seek to address 18 of these issues relating to calculation of water quality based effluent limitations, expression and inclusion of effluent limits in WPDES permits, whole effluent toxicity, compliance schedules, and TMDL development and implementation, among others.

10. Summary of the businesses, business sectors, associations representing business, local governmental units, and individuals that may be affected by the proposed rule that were contacted for comments.

This proposed rule revision may impact some businesses with a surface water discharge regulated by a WPDES permit. Businesses most likely to be impacted are those with whole effluent toxicity (WET) concerns. This may include municipal wastewater treatment facilities and industrial discharges such as paper mills, power plants, and cheese makers. WPDES permittees will also likely receive additional permit limitations for pollutants already limited in their permit. These additional limitations are not believed to have an increase monitoring or compliance costs.

11. Identify the local governmental units that participated in the development of this EIA.

None

12. Summary of Rule's Economic and Fiscal Impact on Specific Businesses, Business Sectors, Public Utility Rate Payers, Local Governmental Units and the State's Economy as a Whole (Include Implementation and Compliance Costs Expected to be Incurred)

Businesses and municipalities most likely to be economically impacted by the proposed rule revision are those with whole effluent toxicity (WET) testing requirements. The proposed rule revision changes WET reasonable potential procedures, which are used to determine the need for WET limitations in WPDES permits. The EPA reasonable potential procedure being incorporated into the proposed rule requires that historical WET datasets be used to predict a 95%

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percentile value (i.e., the amount of toxicity expected to be present in the effluent 95% of the time). If this site-specific 95th percentile value is determined to be greater than the WET criteria, then a limit is required. Based on an analysis of all WET data collected from 2004 - 2014, it is estimated that 62 WPDES permit holders will trigger the need for acute WET limitations in their permits that would not be triggered using existing reasonable potential procedures. Receiving an acute WET limitation in a WPDES permit will likely increase costs associated with WET monitoring for the permittee. The cost of an individual acute WET test ranges from \$600 - \$850/test (includes test cost based on WET lab quotes, plus \$100 for sample shipping). Assuming that two additional tests will be conducted per permit term for each of the 62 permit holders, the estimated net cost increase for acute WET monitoring is \$75,000 - \$106,000 over the five-year permit term. Additionally, it is projected that 9 of these facilities will also incur costs for performing a toxicity reduction evolution (TRE) study to investigate the cause of toxicity, given the frequency and/or severity of the toxicity in their effluent compared to the acute WET limitation. The cost range for an individual acute TRE is \$5,000 - \$10,000, which translates to a total TRE cost for these 9 facilities from \$45,000 - \$90,000. The proposed change in reasonable potential determinations will also increase the number of chronic WET limitations in WPDES permits. Based on an analysis of all WET data collected from 2004 - 2014, it is estimated that 64 additional WPDES permits will contain chronic WET limitations. Assuming two additional chronic WET tests per permit term, and an individual chronic test cost of \$1,500 - \$1,850 (includes test costs based on WET lab quotes, plus \$350 for sample shipping), the estimated net cost increase for chronic WET monitoring at these 64 facilities over the five-year permit term is between \$190,000 - \$240,000. Additionally, it is projected that 8 of these facilities will also incur costs of performing a chronic TRE given the frequency and/or severity of the toxicity in their effluent compared to the chronic WET limitation. The cost range for an individual chronic TRE is \$15,000 - \$20,000, translating to a net increase of \$120,000 - \$160,000 for chronic TRE costs at these 8 facilities. The proposed rule revision is believed to cost an estimated total of about \$452,000 - \$626,000 (sum of above, plus 5% margin of safety) over a 5-year period. Given the nature of these costs, these costs are not believed to dissipate over time.

The other aspects of this revision are expected to have no economic impact. This includes proposed revisions relating to the calculation of fish and aquatic life water quality based effluent limitations for toxic substances. Although the proposed changes may result in more restrictive water quality based effluent limitations derived from acute fish and aquatic life criteria, these changes are projected to impact less than 20 facilities that discharge to effluent dominated receiving waters. Copper and zinc water quality based effluent limitations are most likely to be impacted by the proposed regulations. Of these 20 facilities, many will continue to discharge well below the threshold for triggering these limits. The remaining point sources that have previously triggered the need for copper and zinc limits have also been granted a water quality standards variance, which allows for more cost efficient source reduction activities to be done in lieu of installing new treatment technologies to reduce the discharge of these compounds. These permittees would be able to continue those activities, pending U.S. EPA approval of future variance applications. DNR is also investigating the use of a biotic ligand model to develop site-specific criteria for copper in these areas, which may result in these facilities no longer triggering the need for water quality based effluent limitations. For these reasons, fiscal and economic impacts are unlikely. This rule revision also recommends expressing permit limitations for pollutants already limits in WPDES permits in different time periods. Additional permit limitations for these pollutants may also be included in the WPDES permit upon permit reissuance. These proposed modifications are not believed to impact monitoring or compliance costs, and are, therefore, not believed to have a fiscal or economic impact.

13. Benefits of Implementing the Rule and Alternative(s) to Implementing the Rule

This rule revision will address several issues raised in EPA's July 18th, 2011 letter regarding DNR's authority to administer the WPDES permit program. For example, EPA over promulgated Wisconsin's WET reasonable potential procedures used for discharges to the Great Lakes Basin on December 6, 2000 at 40 CFR 132.6(j). This rule revision would align Wisconsin's program on a statewide basis with the federal. If this rule revision is not completed, EPA would continue to coordinate the WET program within the Great Lakes Basin. Several sections being amended were also invalidated in *MEDC v. WDNR*, Case No. 12CV3654 including the calculation of ammonia limitations and compliance

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schedule procedures for chloride and ammonia limitations. These regulations would make the rules consistent with the court decision. This rule may also have a benefit to some specific businesses, business sectors, and local governmental units. Specifically, this rule revision will preserve DNR's authority to issue chloride limits in lieu of WET limits in certain situations, authorize additional time for the purposes of data collection in compliance schedules for secondary values within the Great Lakes basin, and clarify the public comment procedures during the TMDL development process.

14. Long Range Implications of Implementing the Rule

There are no additional long-range impacts beyond those described 12.

15. Compare With Approaches Being Used by Federal Government

Department rules will be made consistent with existing federal regulations with the revisions contained in this rule package. No proposed federal regulations are applicable for this rule package. Specific federal laws that this rule seeks to conform with include:

- 40 CFR 122.44(d) which provides that water quality-based effluent limits (WQBELs) must be derived from and comply with water quality standards and designated uses;
- 40 CFR 122.45 which addresses a variety of issues including the duration over which effluent limitations are to be expressed, internal waste streams, and mass limitations;
- 40 CFR 122.47, which specifies the protocols and restrictions for establishing compliance schedules in WPDES permits for pollutants including ammonia and chloride;
- 40 CFR Part 132, Appendix F, Procedure 9, which authorizes compliance schedule extensions within the Great Lakes Basin;
- 40 CFR, Part 132, Appendix F, Procedure 3, pertaining to TMDLs in the Great Lakes Basin;
- 40 CFR, Part 132, Appendix F, Procedure 5, pertaining to establishing WQBELs in the Great Lakes Basin; and
- 40 CFR, Part 132, Appendix F, Procedure 6, pertaining to whole effluent toxicity in the Great Lakes Basin.

Calculation of Water Quality-Based Effluent Limitations (Issue 28, 35, 36, 40, 42, 43, 70, and 74)

40 CFR 122.44(d)(1)(vii)(A) states that effluent limits must be established using a calculated numeric water quality criterion for the pollutant which will attain and maintain applicable narrative water quality criteria and will fully protect the designated use. Under existing Wisconsin law, acute water quality criteria may be exceeded in a stream or river in low stream flow situations. To address this apparent discrepancy, a new method is proposed for calculating water quality-based effluent limitations based on acute toxicity effects to fish and aquatic life. Additionally, adjustments to the limit calculation procedures for chloride and ammonia were made to conform to these requirements. These changes specify that chloride and ammonia limitations will be included in WPDES permits whenever these limitations are determined to be necessary through reasonable potential. The proposed rules also address how WET limitations and chloride limitation interact to meet the requirements of 40 CFR 122.44(d).

Expression and Inclusion of Effluent Limits in WPDES Permits (Issue 2)

40 CFR 122.45(d) stipulates that permit limitations be expressed as weekly average and monthly average limitations for continuous POTW discharges, and maximum daily limitations and monthly average limitations for all other continuous discharges, unless impracticable. Additionally, EPA provides a methodology for calculating and expressing limitations in conformance with 40 CFR 122.45(d) in the "Technical Support Document for Water Quality-based Toxic Control" (March 1991). The proposed rule revisions comply with these requirements by creating a methodology and process for calculating water quality-based effluent limits and expressing all permit limits in Wisconsin. This methodology draws from the Technical Support Document as well as the toxicological data and intent of the water quality criteria to ensure that permit limits are adequately protective of Wisconsin's surface water and designated uses, without being overly restrictive. This rule also maintains the ability to express limitations through other averaging periods if an impracticability demonstration is made. 40 CFR 122.45 also includes requirements for establishing effluent limitations for internal waste streams, mass limitations, and other issues. Revisions are proposed to include these federal

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requirements.

Whole Effluent Toxicity (Issue 10)

The GLI requires specific reasonable potential procedures be used to determine the need for WET limitations for point source discharges in the Great Lakes Basin at 40 CFR part 132, Procedure 6 of Appendix F. EPA over promulgated Wisconsin's WET reasonable potential procedures in the Great Lakes Basin on December 6, 2000 at 40 CFR 132.6(j) because Wisconsin's existing program does not comply with these requirements. The proposed rule revision modifies the reasonable potential procedures used for WET limitations to address this over promulgation.

TMDL Development and Implementation (Issue 10)

The GLI requires specific procedures for developing and implementing TMDLs in the Great Lakes Basin at 40 CFR part 132, Procedure 3 of Appendix F. TMDL procedures are also specified at 40 CFR 130.7. In 2000, EPA disapproved of Wisconsin's TMDL development program for toxic compounds, and other pollutants regulated in the GLI and discharged into the Great Lakes Basin and consequently promulgated 40 CFR 132.6(h). The proposed rule revision creates a subchapter in NR 212 to address this over promulgation and to conform to the federal requirements in 40 CFR 132.6(h) and 40 CFR 130.7.

Compliance Schedules (Issues 31, 32, 37, and 40)

Section 502(17) of the Clean Water Act (CWA), 33 U.S.C. 1362(17), defines a compliance schedule as an "enforceable sequence of actions or operations leading to compliance with an effluent limitation". 40 CFR 122.47 also establishes requirements for compliance schedules. A demonstration or data collection that is intended to justify a change in an effluent limitation is not an action leading to compliance with a final effluent limitation under the CWA. Therefore, the proposed rule revision recommends changes to the ammonia and chloride compliance schedule procedures to conform to these requirements. 40 CFR Part 132, Appendix F, Procedure 9, does allow time to be added to a compliance schedule for these purposes for dischargers within the Great Lakes basin that have limitations based on secondary criteria. Therefore, revisions are also recommended to the compliance schedule program for secondary values to limit this authority to only discharges in the Great Lakes Basin in conformance with federal law.

Other

A variance is a revision to a water quality standard that must be supported on the basis of one of the factors specified in 40 CFR 131.10(g), and requires EPA review and approval before it can be implemented (40 CFR 131.21(c)). This rule revision proposes to clarify EPA's role in reviewing variances, and also provides clarification on chloride and ammonia variance procedures.

16. Compare With Approaches Being Used by Neighboring States (Illinois, Iowa, Michigan and Minnesota)

All the other EPA Region 5 states (Illinois, Indiana, Michigan, Minnesota and Ohio) are subject to the EPA regulations. Iowa and portions of the Region 5 states that do not drain to the Great Lakes are not subject to GLI requirements. Although Wisconsin's program is consistent with federal law, it is not directly comparable to the Iowa implementation program, as Wisconsin is subject to these additional federal requirements. A brief comparison of key states is provided below on the six key issues addressed in the proposed rule revision.

Calculation of Water Quality-Based Effluent Limitations

All Region 5 states and Iowa appear to use the final acute value (FAV) and mass balanced approach for calculating water quality-based effluent limitations to protect from acute toxicity effects on fish and aquatic life. Iowa, Indiana, and Ohio use a 1Q10 mass balance based approach for calculating these types of water quality-based effluent limitations. Illinois, Michigan, and Minnesota also use a mass balance based approach for calculating these water quality-based effluent limitations but do not specify the specific stream flow data used in this equation in code. After a cursory review of available guidance, it appears that 7Q10 data are used or alternative flow based on best professional judgment.

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Additionally, none of these states have a 20 mg/L or 40 mg/L cap for ammonia limitations specified in code. It is noted, however, that Michigan does have specific ammonia limitations codified for categories of point source discharges. Therefore, repealing this provision would make Wisconsin's program consistent with EPA regulations, the other Region 5 states, and Iowa.

Expression and Inclusion of Effluent Limits in WPDES Permits

Michigan, Illinois, Ohio, and Iowa express water quality-based effluent limitations derived from acute toxicity impacts on fish and aquatic life as daily maximum limitations, and water quality-based effluent limitations derived from chronic toxicity as monthly average limitations. Statistical methods are not specified in Ohio or Iowa for converting chronic water quality standards for toxic substances to monthly average permit limitations. Michigan and Illinois, on the other hand, chose to codify portions of EPA's Technical Support Document to convert chronic water quality standards to monthly average limitations. Human health limitations are solely expressed as monthly average limitations in these states.

These states do not provide a codified methodology for creating additional permit limitations if the triggered water quality-based effluent limitations are not sufficient to meet the requirements of 122.45(d). Minnesota and Indiana's approach for expression and inclusion of effluent limitations in permits is structured identically to 122.45(d). Minnesota does not provide a methodology in code for calculating these limitations. Indiana, on the other hand, chose to codify EPA's recommending methodology in the Technical Support Document. The proposed rule revisions closely mirrors Indiana's approach for calculating and expressing permit limits as this approach reflects the requirements of 122.45(d) and EPA guidance. However, the proposed methodology also considers the averaging period used to deriving the toxicity criteria and, therefore, differs slightly from the Indiana approach.

Whole Effluent Toxicity

Indiana, Michigan, and Ohio's WET reasonable potential procedures were also over promulgated by EPA on September 5, 2000 at 40 CFR 132.6(c). Indiana and Michigan updated their WET reasonable potential procedures to be consistent with the GLI since the over promulgation. Michigan also specifies when chloride or other pollutant limitations can be used in lieu of WET limitations similar to Wisconsin. Other states do not specify this authority in code. It is not clear whether this action has satisfied EPA at this time. Illinois chose to incorporate the requirements of Procedure 5 of Appendix F at 40 CFR 132 by reference. Illinois uses an alternative method for WET data outside of the Great Lakes basin, however. Wisconsin is proposing to apply the same procedure statewide. Iowa does not appear to have specific WET procedures in code. Iowa is not subject to the GLI and is, therefore, not subject to the same federal restrictions as Wisconsin.

TMDL Development and Implementation

TMDL develop and implementation procedures vary among the Region 5 states. Minnesota, for example, does not have any procedures in code for specifying TMDL development or implementation at this time. Their current TMDL program relies solely on guidance. Michigan and Indiana have promulgated general principles and procedures for developing and implementing TMDLs that appear to align with the requirements of the GLI. Indiana's program solely applies to TMDLs within the Great Lakes Basin, and not to discharges outside of the Basin. Indiana does specify general provisions for calculating wasteload allocations in the absence of a TMDL and preliminary wasteload allocations for the entire state, however. Ohio's program incorporates by reference the requirements of 40 CFR 130.7. Additional specificity is provided in Ohio's TMDL procedures, but these do not align directly with the requirements for the GLI. Illinois TMDL program in the Great Lakes Basin is not specific at this time, and was over promulgated by EPA on September 5, 2000 at 40 CFR 132.6(b). Iowa does not appear to have specific TMDL procedures in code. Iowa is not subject to the GLI and is, therefore, not subject to the same federal restrictions as Wisconsin.

Compliance Schedules

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All Region 5 states and Iowa specify their authority for granting compliance schedules for toxic substances in code, including ammonia and chloride. This authority aligns with the CWA, but these programs have varying specificity provided in code. For example, Michigan and Illinois have specific measures and time frames specified in code for their compliance schedules. They also provide that a “reopener” clause can be included in a NPDES permit to modify the permit pending new data, but these data collection efforts are not authorized as part of the compliance schedule. Additionally Michigan and Illinois allow time extensions for the purposes of data collection in compliance schedule for water quality-based effluent limitations derived secondary values. Illinois does not limit this extension to only Great Lake discharges, however. Indiana and Minnesota’s compliance schedule authority, on the other hand, is more generically stated compared to Michigan and Illinois, and solely defines what a compliance schedule is and what the maximum duration of a compliance schedule may be.

Other

All water quality standard variances must be approved by EPA. Some states including Illinois, Iowa, and Minnesota do not specify this approval authority specifically in code. Other states such as Michigan and Indiana do specify this authority.

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ATTACHMENT A

1. Summary of Rule's Economic and Fiscal Impact on Small Businesses (Separately for each Small Business Sector, Include Implementation and Compliance Costs Expected to be Incurred)

Of the 126 WPDES permit holders that are believed to be economically and fiscally impacted by the proposed rule revision, 43 dischargers are believed to be small businesses. The potentially impacted businesses include food processors, cheese makers, and other small businesses like metal finishing plants and manufacturers. WET laboratories are typically small business and would likely be positively impacted by the revisions. Using the same methods previously described, it is estimated that small cheese makers may incur a fiscal impact of \$83,000-\$109,000, the impact to food processors may range from \$51,000-\$65,500, and other small businesses may incur a cost between \$24,000-\$35,000.

2. Summary of the data sources used to measure the Rule's impact on Small Businesses

DNR's System for Wastewater Applications, Monitoring and Permits (SWAMP) was used to compile existing WET data by permittee. These data were then analyzed to determine which of these permittees would trigger a chronic or acute WET limitation based on the revised reasonable potential methodology.

Quotes from WET laboratories frequently used by point source discharges in Wisconsin were used to provide a range of costs for WET testing and TRE studies. Shipping quotes were also gathered from frequently used shipping companies, which included overnight and weekend shipping rates. Other costs, such as staff time, are site-specific and difficult to approximate. Therefore, a 5% margin of safety was added to the total costs projected to account for other potential costs.

3. Did the agency consider the following methods to reduce the impact of the Rule on Small Businesses?

- Less Stringent Compliance or Reporting Requirements
- Less Stringent Schedules or Deadlines for Compliance or Reporting
- Consolidation or Simplification of Reporting Requirements
- Establishment of performance standards in lieu of Design or Operational Standards
- Exemption of Small Businesses from some or all requirements
- Other, describe:

4. Describe the methods incorporated into the Rule that will reduce its impact on Small Businesses

This rule does not specify monitoring frequencies or TRE requirements. Therefore, TRE thresholds and monitoring frequencies were assumed for each permittee. Additional guidance will be developed to help clarify what appropriate monitoring frequencies may be, and when a TRE study should be considered. These decisions will be made on a case-by-case basis to ensure adequate environmental protection and reasonable reporting requirements.

5. Describe the Rule's Enforcement Provisions

N/A

6. Did the Agency prepare a Cost Benefit Analysis (if Yes, attach to form)

- Yes No
-