

STATEMENT OF SCOPE

Department of Natural Resources

Rule No.: DG-04-22

Relating to: Amendments to ch. NR 140 to set numerical standards to minimize the concentration of polluting substances in groundwater (Cycle 10 Bacteria)

Rule Type: Permanent

1. Finding/nature of emergency (Emergency Rule only):

The rule will be proposed as a permanent rule.

2. Detailed description of the objective of the proposed rule:

The proposed rule will amend ch. NR 140, Wis. Adm. Code, to replace the existing total coliform bacteria standards with new state groundwater quality standards for *Escherichia coli* (*E. coli*) bacteria. The proposed rule will also transition total coliform bacteria from a public health groundwater quality standard to an indicator parameter.

The purpose of establishing groundwater standards is to protect public health. Some types of *E. coli* bacteria, when consumed, can cause acute (short-term) gastrointestinal illnesses causing diarrhea, abdominal discomfort, nausea, and vomiting. Less common effects are chronic (long-term) and include kidney failure, hepatitis, and bloody diarrhea. *E. coli* bacteria are a subgroup of coliform bacteria and are considered to be a much more specific indicator of fecal contamination, and the potential for pathogens to be present in drinking water, than total coliform bacteria. Infants and young children, the elderly, and people with compromised immune systems are at the highest risk for illness from pathogens in water.

Chapter 160, Wis. Stats., and ch. NR 140, Wis. Adm. Code, provide the process for setting numerical standards for consistent use in state regulatory programs to minimize the concentration of polluting substances detected in, or having a reasonable probability of entering, the groundwater resources of the state. Chapter 160, Wis. Stats., requires the department to develop numerical groundwater quality standards, consisting of enforcement standards, preventive action limits, and indicator parameters. Chapter NR 140, Wis. Adm. Code, establishes these Wisconsin state groundwater quality standards.

Additional rule changes may be considered to accomplish the objectives described in this scope statement. Additionally, errors and omissions in Appendix I to Table 1 (Public Health Groundwater Quality Standard) and clarification of definitions and terms will be addressed.

3. Description of the existing policies relevant to the rule, new policies proposed to be included in the rule, and an analysis of policy alternatives:

Chapter NR 140, Wis. Adm. Code, establishes numeric groundwater quality standards for substances of public health and welfare concern and creates a framework for implementation of those standards. The numerical standards, upon adoption, become the criteria for the protection of public health and welfare, to be achieved in groundwater regulatory programs concerning the substances for which standards are adopted. New and revised groundwater quality standards for substances of public health concern are based on recommendations developed by the Wisconsin Department of Health Services (DHS).

Chapter NR 140, Wis. Adm. Code, was adopted by the Natural Resources Board in 1985 to comply with ch. 160, Wis. Stats. Chapter 160, Wis. Stats., created as part of the 1983 Wisconsin Act 410 (The Groundwater Bill), requires the department to develop groundwater quality standards for substances detected in, or having a reasonable probability of entering, the groundwater resources of the state. The Natural Resources Board has approved amendments to ch. NR 140, effective in 1988, 1990, 1992, 1994, 1995, 1999, 2000, 2004, 2006, 2008 and 2011, to revise existing standards, establish new standards and to clarify rule language. There are now groundwater quality standards in ch. NR 140 for 138 substances of public health concern, 8 substances of public welfare concern, and 15 indicator parameters.

Substances of public health concern are regulated using groundwater quality standards at two levels: preventive action limit (PAL) and enforcement standard (ES). In accordance with ch. 160, Wis. Stats., ES groundwater quality standards for substances of public health concern are established based on recommendations received from DHS. PAL groundwater quality standards for substances of public health concern are set at either 20% of the concentration of the established ES, or at 10% of the concentration of the established ES if the substance has carcinogenic, mutagenic or teratogenic properties or interactive effects. The proposed rule will add a new ES and PAL to s. NR 140.10, Table 1, Wis. Adm. Code, for *E. coli* bacteria, based on recommendations from DHS.

Chapter 160, Wis. Stats. and ch. NR 140, Wis. Adm. Code, also establish preventive action limits for indicator parameters. Indicator parameters are standards that take into account background contamination and are used to monitor regulated activities and the potential for health and welfare parameter groundwater standards to be exceeded. Enforcement standards are not established for indicator parameters.

In 2016, the U.S. Environmental Protection Agency (EPA) and the Wisconsin state drinking water program changed how bacteria are regulated in public water systems as part of the Revised Total Coliform Rule. Chapter 809, Wis. Adm. Code, governing state drinking water standards, was amended to remove the maximum contaminant level standard for total coliform bacteria and replace it with a maximum contaminant level standard for *E. coli* bacteria. This change was made because studies show that *E. coli* bacteria are a more specific indicator of contamination from feces and because many coliform bacteria detected by total coliform tests are not pathogenic and occur naturally in the environment. The groundwater standards in ch. NR 140, Wis. Adm. Code, currently contain a groundwater preventive action limit and enforcement standard for total coliform bacteria. The proposed rule will update the groundwater standards to mirror the federal and state drinking water standards for bacteria by replacing total coliform

bacteria standards in s. NR 140.10, Table 1, Wis. Adm. Code with standards for *E. coli* bacteria, and adding an indicator parameter standard for total coliform bacteria in s. NR 140.20, Table 3, Wis. Adm. Code.

Policy alternatives

Section 160.07(5), Wis. Stats., directs the department to propose rules establishing DHS recommendations for ES for substances of public health concern. The alternative would be to not promulgate groundwater standards for *E. coli* bacteria. Without numerical health based standards for *E. coli* bacteria, groundwater regulatory programs will continue to be out of step with state and federal drinking water standards and will not adequately protect the public health of Wisconsin residents.

4. Detailed explanation of statutory authority for the rule (including the statutory citation and language):

Chapter 160, Wis. Stats., establishes an administrative process for developing numerical state groundwater quality standards to be used as criteria for the protection of public health and welfare by all state groundwater regulatory programs. Chapter 160, Wis. Stats., directs the department to use this administrative process to establish numeric groundwater quality standards for substances of public health or welfare concern, found in, or having a reasonable probability of being detected in, the groundwater resources of the state. The department is required to engage in rulemaking for all substances of public health concern for which DHS develops enforcement standard recommendations, pursuant to s. 160.07(5), Wis. Stats. The department is also required to establish by rule preventative action limits for all substances with enforcement standards, pursuant to s. 160.15(1), Wis. Stats. For substances without enforcement standards, s. 160.15(3), Wis. Stats., authorizes the department to establish indicator parameters that may show that preventive action limits may be exceeded.

Section 281.15, Wis. Stats., states that the department shall promulgate rules setting standards of water quality, applicable to the waters of the state, that protect the public interest, including the protection of public health and welfare, and the present and prospective future use of such waters for public and private water systems. Section 281.19(1), Wis. Stats., grants the department the authority to issue general orders and adopt rules applicable throughout the state for the construction, installation, use and operation of practicable and available systems, methods and means for preventing and abating pollution of the waters of the state.

In accordance with ch. 160, Wis. Stats., the reliability of sampling data is to be considered when determining the range of responses that a regulatory agency may take, or require, to address attainment or exceedance of a state groundwater quality standard at an applicable "point of standards application." Section 299.11, Wis. Stats., authorizes the department, in conjunction with the Department of Agriculture Trade and Consumer Protection (DATCP), to establish uniform minimum criteria for laboratories certified to conduct water analysis testing, and to establish accepted methodologies to be followed in conducting tests and sampling protocols and documentation procedures to be followed when collecting water samples for testing.

5. Estimate of amount of time that state employees will spend developing the rule and of other resources necessary to develop the rule:

The estimated staff time needed to develop these amendments to ch. NR 140, Wis. Adm. Code, is approximately 600 hours.

6. List with description of all entities that may be affected by the proposed rule:

The proposed groundwater standards for *E. coli* bacteria and total coliform bacteria would apply through other regulatory programs outside of ch. NR 140, Wis. Adm. Code, that regulate facilities, practices and activities which may impact groundwater quality.

Once adopted, numerical groundwater standards become the criteria for protecting public health, and are used in the regulation of:

- Solid and hazardous wastes
- Spills and remediation sites
- Wastewater and water quality
- Septic tanks
- Salt storage
- Fertilizer and pesticides, etc.

7. Summary and preliminary comparison with any existing or proposed federal regulation that is intended to address the activities to be regulated by the proposed rule:

There are no federal groundwater standards, and there is no parallel process for regulating groundwater contaminants at the federal level.

The EPA establishes health based drinking water maximum contaminant levels (MCLs). Federal MCLs, applicable at public water supply systems, are established based on scientific risk assessments and, in some cases, economic and technological considerations. As noted above, EPA's Revised Total Coliform Rule includes a maximum contaminant level for *E. coli*, but not for total coliform. Rather, it uses total coliform bacteria as an indicator of possible microbial pathways into a public drinking water system that triggers additional testing for *E. coli* bacteria.

8. Anticipated economic impact of implementing the rule (note if the rule is likely to have a significant economic impact on small businesses):

The department will examine the economic impact of the proposed rule when the rule is developed. At this time, anticipated economic impact of this rule is expected to be minimal, given that bacteria is already regulated and this rule will cause minimal or no changes to the regulatory regimes that rely on groundwater standards. Because *E. coli* bacteria are a subgroup of coliform bacteria there are no cases where the proposed *E. coli* bacteria standards would be exceeded where existing total coliform bacteria standards are not already being exceeded. Similarly, the specific economic impact to small businesses is indeterminant, but anticipated to be minimal.

State groundwater quality standards protect both public health and welfare. There are significant cost savings to establishing groundwater quality standards for *E. coli* bacteria, a more specific

indicator of fecal contamination, and the potential for pathogens to be present in drinking water, than total coliform bacteria. Standards for a more specific indicator of the potential for pathogens to be present in drinking water will reduce exposure to bacteria which are known to cause acute (short-term) gastrointestinal illnesses causing diarrhea, abdominal discomfort, nausea, and vomiting and in some cases chronic (long-term) illness and kidney failure, hepatitis, and bloody diarrhea. Infants and young children, the elderly, and people with compromised immune systems are at the highest risk for illness from pathogens in water.

Human health impacts and drinking water treatment system costs to remove contamination may be avoided when groundwater pollution is reduced or eliminated. Adoption of groundwater quality rules and regulations by state regulatory programs minimizes the concentrations of polluting substances in groundwater, minimizes water treatment system costs and health care costs, while safeguarding public health and welfare.

9. Anticipated number, month and locations of public hearings:

The department anticipates holding one public hearing in the month of September, 2022. The hearing will be held by videoconference. The department will hold the hearing to gather stakeholder input on a rule package that is used widely statewide.

Contact Person: Bruce Rheineck
(608) 266-2104