

Report to  
Legislative Council Rules Clearinghouse  
NR 140, Wis. Adm. Code  
Natural Resources Board Order No. DG-15-19

Wisconsin Statutory Authority

Sections 160.07(5), 160.15(1), 281.15, 281.19(1), and 299.11, Wis. Stats.

Federal Authority

Not applicable. The US EPA does not promulgate groundwater quality standards for substances detected in or having a reasonable probability of entering groundwater.

Comparison of Adjacent States

The states adjacent to Wisconsin, Minnesota, Michigan, Illinois and Iowa, use groundwater protection values/levels/standards in their regulation of practices and activities that might impact the quality of groundwater. Minnesota, Michigan and Illinois have promulgated individual state groundwater protection standards. Iowa uses established federal standards (federal drinking water MCLs, LHAs and established cancer risk levels) as its state groundwater protection standards.

Groundwater protection quality values/levels/standards are usually developed based on health risk assessments. States are often required to follow state-specific health risk assessment methodology when establishing groundwater protection quality standards. States may use state-specific health risk assessments, factors and methodology in calculating and developing their groundwater protection standards. This use of different health risk assessment factors and methodologies has led to the establishment of different state groundwater protection values/levels/standards for the same substance. For example, the health-based groundwater protection level for strontium used by the states surrounding Wisconsin varies by state. The level established in Minnesota is 3,000 micrograms per liter (ug/L), the level established in Michigan is 4,600 ug/L, Illinois has not established a strontium groundwater protection level, and Iowa uses the federal lifetime health advisory level of 4,000 ug/L as its strontium groundwater protection level.

The state of Minnesota has established state groundwater protection "Health Risk Limits" (HRLs) under Minnesota Statutes Section 103H.201. The state of Minnesota has established HRLs for: hexavalent chromium (100 ug/L), thiamethoxam (200 ug/L), clothianidin (200 ug/L), PFOA (35 nanograms per liter or ng/L), TCE (0.4 ug/L), PCE (5 ug/L), 1,2,3-TCP (7 ug/L) and 1,4-dioxane (100 ug/L). The Minnesota Department of Health has also calculated "Health Based Values" (HBVs) for some groundwater contaminants. Minnesota HBVs are not standards that have been promulgated by rule but are calculated concentrations that may be used as advisory levels by Minnesota state groundwater and environmental protection programs. The state of Minnesota has established HBVs for: imidacloprid (3 ug/L), glyphosate (500 ug/L), glyphosate AMPA (1,000 ug/L) degradate and PFOS (20 ng/L). The Minnesota Department of Health also issues Risk Assessment Advice (RAA) levels for some groundwater contaminants. Minnesota Department of Health RAAs are advisory concentrations developed to assist Minnesota agencies in evaluating potential health risks to humans from exposures to a chemical. Generally, RAAs contain greater uncertainty than HRLs and HBVs because the information available to develop them is more limited. The state of Minnesota has established RAAs for: strontium (3,000 ug/L) and boron (500 ug/L).

The state of Michigan has established state groundwater protection quality standards. Michigan "Drinking Water Criteria and Risk Based Screening Levels" (RBSLs) are Michigan state groundwater protection

standards authorized in accordance with Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA). The State of Michigan has established a Drinking Water Criteria/RBSL for: hexavalent chromium (100 ug/L), strontium (4,600 ug/L), glyphosate (700 ug/L), PFOA + PFOS (70 ng/L), TCE (5 ug/L), PCE (5 ug/L), 1,2,3-TCP (42 ug/L) and 1,4-dioxane (7.2 ug/L).

The state of Illinois has established state groundwater quality standards for "potable resource groundwater." Illinois Groundwater Quality Standards are state groundwater protection standards promulgated in 35 Ill. Adm. Code 620, environmental protection regulations. Illinois state "Groundwater Quality Standards for Class I: Potable Resource Groundwater" have been established for: TCE (5 ug/L), PCE (5 ug/L), boron (2,000 ug/L) and 1,4-dioxane (7.7 ug/L).

The state of Iowa has not established specific state groundwater protection standards. In accordance with Iowa Environmental Protection Regulations 567 IAC Chapter 133, Iowa uses established federal EPA lifetime health advisory levels, "negligible risk levels" (NRLs) for carcinogens, the estimate of one additional cancer case per million people over a lifetime of exposure, and federal drinking water maximum contaminant levels (MCLs) as "Action Levels" in their regulation of practices and activities that may adversely impact groundwater quality. Federal lifetime health advisory levels have been established for: strontium (4,000 ug/L), the sum of Dacthal and its degradates (MTP and TPA) (70 ug/L), perfluorooctanoic acid (PFOA) (70 ng/L), perfluorooctane sulfonate (PFOS) (70 ng/L), boron (6,000 ug/L), molybdenum (40 ug/L) and 1,4-dioxane (200 ug/L). EPA cancer slope factors have been established that can be used to determine NRLs for carcinogens. EPA cancer slope factors have been established for: hexavalent chromium [EPA OPP = 0.791 (mg/kg-day)<sup>-1</sup>, EPA IRIS draft = 0.5 (mg/kg-day)<sup>-1</sup>], isoxaflutole [0.0114 (mg/kg-day)<sup>-1</sup>], 1,2,3-trichloropropane (1,2,3-TCP) [30 (mg/kg-d)<sup>-1</sup>] and 1,4-dioxane [0.01 (mg/kg-d)<sup>-1</sup>]. Federal drinking water MCLs have been established for: glyphosate (700 ug/L), *Escherichia coli* (*E. coli*) bacteria (0 bacteria present), trichloroethylene (TCE) (5 ug/L) and tetrachloroethylene (PCE) (5 ug/L).

#### Court Decisions Directly Relevant

None.

#### Analysis of the Rule - Rule Effect - Reason for the Rule

Chapter 160, Wis. Stats., requires the department to develop numerical groundwater quality standards, consisting of enforcement standards and preventive action limits. Chapter NR 140, Wis. Adm. Code, establishes groundwater standards and creates a framework for implementation of the standards by the department. These proposed amendments to ch. NR 140, Wis. Adm. Code, would add new state groundwater quality standards for 17 substances and revise existing standards for another 8 substances. In accordance with 160.07, Wis. Stats., amendments to ch. NR 140, Wis. Adm. Code, groundwater quality standards for substances of public health concern are based on recommendations from DHS.

New public health related groundwater quality standards are proposed for: hexavalent chromium, strontium, thiamethoxam, imidacloprid, clothianidin, isoxaflutole, isoxaflutole DKN degradate, isoxaflutole BA degradate, thiencarbazone-methyl, Dacthal TPA and MTP degradates, glyphosate, glyphosate aminomethylphosphonic acid (AMPA) degradate, sulfentrazone, *Escherichia coli* (*E. coli*) bacteria, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

Revised public health related groundwater quality standards are proposed for: trichloroethylene (TCE), tetrachloroethylene (PCE), 1,2,3-trichloropropane (1,2,3-TCP), 1,4-dioxane, aluminum, boron, molybdenum and cobalt.

Minor revisions, to clarify rule language and update rule reference information, are also proposed to ch. NR

140. These revisions include:

- Revising order of Antimony and Anthracene in s. NR 140.10, Table 1 to correct their alphabetical order in the table.
- Removing, in s. NR 140.20, Table 3, the indicator parameter for ammonia nitrogen. Health standards were established for ammonia (as N), in s. NR 140.10, Table 1, as part of the "Cycle 9" revisions to ch. NR 140.
- Making needed additions and revisions to ch. NR 140 Appendix I to Table 1 substance names, Chemical Abstracts Service (CAS) registry numbers, and common synonyms.

Agency Procedures for Promulgation

The department will hold a hearing online on January 6, 2022 at 1:00pm. The hearing will be followed by a request for Natural Resources Board adoption, expected in February 2022, followed by a request for the governor's approval and legislative review.

Description of any Forms (attach copies if available)

None.

Name and Telephone Number of Agency Contacts

Processing: Emma Esch, (608) 266-1959  
Technical: Bruce Rheineck, (608) 266-2104