

Executive Summary

Title 25, Pa. Code Chapter 109. Safe Drinking Water

Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBPR),

Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR),

and the Groundwater Rule (GWR)

Purpose of Final Rulemaking:

The purpose of this final-form rulemaking is to amend Chapter 109 (relating to Safe Drinking Water) to incorporate necessary federal requirements for the Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBPR), the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and the Groundwater Rule (GWR) needed to maintain primary enforcement authority (primacy).

The Stage 2 DBPR augments the Stage 1 DBPR and is intended to reduce disease incidence associated with the disinfection byproducts (DBPs) that are formed when public water systems (PWSs) add disinfectants. The Stage 2 DBPR is designed to reduce the level of exposure from DBPs without undermining the control of microbial pathogens. The Stage 2 DBPR also contains a risk-targeting approach to better identify monitoring sites where customers are exposed to high levels of DBPs. This rule will reduce DBP exposure and provide more equitable health protection, and will result in lower cancer and reproductive and developmental risks.

The LT2ESWTR will further protect public health against *Cryptosporidium* and other microbial pathogens and will supplement existing microbial treatment regulations by identifying PWSs with higher potential risk from *Cryptosporidium*. *Cryptosporidium* is highly resistant to chlorine and has been identified as the cause of a number of waterborne disease outbreaks in the United States. Consequently, these amendments will require PWSs to monitor their source water to determine an average *Cryptosporidium* level that will be used to establish the degree of additional treatment, if any, the filtered PWS must provide.

The GWR provides for increased public health protection against fecal contaminants at public water systems served by groundwater sources. The GWR establishes a risk-targeted strategy to identify the subset of groundwater sources that are at higher risk of fecal contamination and require corrective actions to reduce or eliminate that risk.

The Stage 2 DBPR, the LT2ESWTR and the GWR are being finalized and implemented simultaneously to ensure that drinking water is microbiologically safe at the limits set for DBPs. Additional amendments are included for the variance and exemption provisions of Chapter 109. These amendments are necessary to incorporate revised Federal provisions to retain primacy.

Summary of Amendments:

The provisions of Stage 2 DBPR focus on:

- Identifying the higher risk monitoring locations through the Initial Distribution System Evaluation (IDSE).
- Reducing exposure and lowering DBP peaks in distribution systems by using a new method, a locational running annual average (LRAA), to determine MCL compliance.

- Defining operational evaluation levels. The operational evaluation level is an LRAA threshold, meant to help systems identify if they are in danger of exceeding the MCL. The process is useful in that it alerts the system to the potential of an MCL violation if DBP levels remain at their current level and encourages them to consider what operational changes may be necessary to reduce DBP levels.

There are no provisions of the Stage 2 DBPR that are more stringent than the Federal regulations.

The LT2ESWTR amendments require public water systems to monitor their source water for *Cryptosporidium*, *E.coli*, and turbidity to determine an average *Cryptosporidium* level. PWSs will be classified in one of four treatment categories (or “bins”) based on the results of the source water *Cryptosporidium* monitoring. The higher the *Cryptosporidium* oocyst concentration, the higher the bin classification. This bin classification determines the degree of additional treatment, if any, the filtered PWS must provide above and beyond existing treatment requirements. No additional treatment is required for PWSs with Bin 1 sources. However, PWSs classified in Bins 2, 3, or 4 must achieve 1.0-log to 2.5-log of additional treatment.

The following LT2ESWTR amendments are more stringent than the federal regulations:

- A breakdown in treatment requires a Tier 1 Public Notification (PN) to be consistent with existing PN regulations.
- All systems that are using alternative filtration technologies are required to report the same information under the microbial toolbox.

The GWR establishes a risk-targeted approach to identify ground water systems that are susceptible to fecal contamination. Indications of risk may come from total coliform monitoring, hydrogeologic sensitivity analyses, or other system-specific data and information. The GWR specifically targets viral pathogens as a category of fecal contaminants. For systems identified as at-risk to fecal contamination, various corrective action options exist. If treatment is required, at least 4-log inactivation or removal of viruses must be achieved. Systems that either have no treatment or do not meet at least 4-log treatment and draw groundwater from sensitive aquifers, including karst settings, may opt to conduct special source water assessment monitoring to assess source water quality.

The following State GWR regulations are more stringent than Federal regulations:

- At least 4-log treatment of viruses at all CWSs is required.
- CWSs will be required to maintain at least 0.40 mg/L chlorine residual or other Department-approved residual capable of achieving 4-log treatment of viruses.
- Pennsylvania does not allow discontinuation of 4-log treatment if put into place because of a corrective action.
- A breakdown in 4-log treatment requires a Tier 1 Public Notification (PN) to be consistent with existing PN regulations.
- The federal GWR allows source water sampling to be conducted at a location after treatment if approved by the state. Pennsylvania will only allow source water sampling for the GWR at locations prior to treatment.

Minor clarifications are being made to the variance and exemption requirements in Subchapter I of Chapter 109 to be consistent with the Federal rule and as a condition of primacy.

Who Is Affected by the Proposed Regulation:

All public water systems in Pennsylvania are affected by at least one of these rules as follows:

- The Stage 2 DBPR applies to approximately 2,045 community water systems (CWSs) and 600 nontransient noncommunity water systems (NTNCWSs) that add a primary or residual disinfectant other than ultraviolet light (UV) or deliver water that has been treated with a disinfectant other than UV. These 2,645 public water systems serve approximately 10.5 million Pennsylvanians.
- The LT2ESWTR applies to approximately 355 public water systems using surface water sources or groundwater under the direct influence of surface water (GUDI) sources. These water systems serve 8.4 million Pennsylvanians.
- The GWR affects all public water systems using groundwater sources including systems that receive groundwater from another public water system. However, the rule does not apply to public water systems that combine all of their groundwater with surface water prior to treatment under the Surface Water Treatment Rule. There are approximately 9,100 PWSs serving 7 million Pennsylvanians affected by the GWR.

Public Comment Period:

The proposed regulations were published in the Pennsylvania Bulletin separately, as individual rulemaking packages as follows:

- GWR was published on November 29, 2008, with a 30-day comment period. Six commentators provided comments on the proposed rulemaking.
- LT2ESWTR was published on December 20, 2008, with a 30-day comment period. Three commentators provided comments on the proposed rulemaking.
- Stage 2 DBPR was published on December 20, 2008, with a 30-day comment period. Three commentators provided comments on the proposed rulemaking.

Advisory Committee Review:

The draft final rulemaking package was presented to the Small Water Systems Technical Assistance Center Advisory Board (TAC) for review and discussion on May 21, 2009. Comments received from the TAC Board are summarized in the attached letter.

Adoption Deadline:

The Department recommends that the Board incorporate the amendments into the Pa. Safe Drinking Water Regulations (25 Pa. Code Chapter 109) in order to maintain primacy. Pennsylvania must adopt regulations implementing the provisions of these regulations by January 4, 2010. Failure of the Board to adopt these regulations may result in Pennsylvania losing primacy for the Safe Drinking Water program.