Proposed Rulemaking
25 Pa.Code Chapter 109
Revised Total Coliform Rule

Environmental Quality Board Meeting
April 21, 2015
Incorporate federal requirements needed to obtain primary enforcement authority (primacy)

Provide for the increased protection of public health at public water systems (PWS)

Promote healthy and sustainable communities
• Incorporate the federal Revised Total Coliform Rule (RTCR) and address distribution system sanitary defects
• Make minor corrections to obtain primacy for the Long-Term 2 (LT2) Enhanced Surface Water Treatment Rule and Stage 2 Disinfectants / Disinfection Byproducts Rule (Stage 2 DBPR)
• Include several other general updates to clarify and strengthen existing requirements
Significant Provisions: RTCR

• Monthly monitoring for all water systems
• New requirements for seasonal systems
  – Start-up procedures and additional samples
• New assessment requirements – “Find and Fix”
  – Self-assessment (Level 1) or a more detailed assessment (Level 2) depending on the severity and frequency of contamination
  – Replaces current non-acute MCL violation and public notice requirements for total coliforms
Why is it important to find and fix sanitary defects?

- Sanitary defects include low/no disinfectant residual, ineffective O&M practices, waterline breaks/leaks, cross-connections, poor storage tank maintenance practices, etc.

- Sanitary defects can lead to the degradation of water quality, contamination, and waterborne disease outbreaks.
National Waterborne Disease Outbreaks

Source: CDC, MMWR, Vol. 62, No. 35, September 6, 2013
National Waterborne Disease Outbreaks

Outbreaks (N=33)
- Legionella (19)
- Bacteria, other (6)
- Parasites (3)
- Multiple (2)
- Viruses (2)
- Chemical (1)

Outbreaks (N=33)
- Legionella in premise plumbing (19)
- Untreated ground water (8)
- Distribution system (4)
- Untreated GW & DS (1)
- POU - bottled water (1)
Regarding the incidence of distribution system deficiencies and waterborne disease outbreaks:

- Distribution system and premise plumbing deficiencies continue to be a major contributor to outbreaks.
- The distribution system is the remaining component yet to be adequately addressed in national efforts to eradicate waterborne disease.
Legionellae

- Causes Legionnaires’ Disease (pneumonia) and Pontiac Fever
- Mode of exposure – inhalation or aspiration
- No safe level of Legionella
- Mortality rate is 5 - 20%
Legionellae:

• Are ubiquitous in water
• Are persistent
• Have a unique ecology, flourish in biofilms, and can survive over a wide range of temperatures
• Can be present even when water meets safe drinking water standards
Legionellae can colonize and multiply within water pipes due to:

- Lack of disinfectant residual
- Excessive water age and residence times
- Ideal water temperatures (25 - 42°C)
- Presence of nutrients, sediment and biofilms
Pathogens can be introduced into potable water lines through:

- Treatment breakthrough
- Cross connections and backflow
- Leaking pipes, valves, joints and seals
- Water line breaks, repairs, and new construction
- Storage tanks
Legionella control may involve multiple approaches, such as:

• Finding and fixing sanitary defects to limit entry of pathogens (as required under the RTCR)
• Maintaining adequate disinfectant residuals
• Improving hydraulics and water quality to control biofilms
• Implementing effective O&M and BMPs
Other Significant Provisions

• Increase the minimum disinfectant residual to 0.30 mg/L free chlorine (or 0.50 mg/L total chlorine) throughout distribution system

• Distribution disinfection provisions will:
  – Help control Legionella and other pathogens
  – Ensure adequately disinfected water is delivered to all customers
  – Establish a comprehensive treatment technique
  – Make PA consistent with industry and other states’ standards
Simultaneous compliance issues are a concern with distribution disinfection provisions:

– Increased residual requirements could lead to increased disinfection byproducts

– Systems should be able to meet the new standards through better operations and BMPs, which will reduce chlorine demand and improve overall water quality
Other Significant Provisions

• Require pre-drilling plan, source assessment, and SWIP testing *prior to* source approval

• Surface Water Provisions
  – Revise turbidity monitoring and reporting requirements
  – Mandate alarm and shut-down capabilities for filter plants
  – Require daily CT calculations to determine log inactivation of giardia and viruses
Applicability of RTCR

- Federal RTCR provisions apply to all PWSs
- Source water protection revisions apply to community water systems
- Turbidity revisions apply to PWSs using surface water sources
- Disinfection revisions apply to all PWSs except transient noncommunity water systems without 4-log treatment of viruses
Comparison to Other States

• The federal RTCR will need to be complied with or adopted in all 50 states

• At least 14 other states have turbidity monitoring and recording standards similar to the proposed regulations

• At least 19 other states have more stringent distribution disinfection requirements, including several nearby states such as West Virginia, Delaware and Ohio
• The avoidance of health effects from the consumption of contaminated drinking water

• The continuity of a safe and adequate supply of potable water

• Increased protection of public drinking water sources
Expected RTCR costs per system type:

- CWS: $126.77 per system/year
- NTNC: $128.90 per system/year
- TNC: $229.31 per system/year

All other costs associated with this regulatory package could vary as not every PWS will have to comply with all of the proposed provisions.
• DEP drinking water field staff meeting January 2014

• Technical Assistance Center for Small Water Systems (TAC) meetings:
  – June 18, 2014 & September 23, 2014

• Proposing a 60 day public comment period with two public hearings
The federal RTCR begins April 1, 2016
  – Negotiated extension agreement effective through February 2017

Provisions that may require significant capital costs are effective one year from the date of the final publication

Classroom training and web based training to begin summer 2015