Executive Summary

Long Term 2 Enhanced Surface Water Treatment Rule
(Title 25, Pa. Code Chapter 109)

Purpose of Proposed Rulemaking:

The purpose of the proposed rulemaking package is to amend the Department's Safe Drinking Water regulations to further protect public health against Cryptosporidium and other microbial pathogens in drinking water. These amendments will supplement existing microbial treatment regulations and targets PWSs with higher potential risk from Cryptosporidium. Cryptosporidium is a particular concern because it is highly resistant to chlorine and has been identified as the cause of a number of waterborne disease outbreaks in the United States. EPA has concluded that existing treatment requirements do not provide adequate public health protection in filtered PWSs with the highest source water Cryptosporidium levels. 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 Cryptosporidium treatment, if any, the filtered PWS must provide. Additional Cryptosporidium treatment must be achieved by using one or more treatment or control processes form a microbial toolbox of options, and systems must report that these toolbox options are adequately maintained.

Summary of Amendments:

Applicability:

These draft proposed amendments apply to public water systems (PSWs) supplied by a surface water source and public water systems supplied by a ground water source under the direct influence of surface water. Approximately 355 PWSs, serving about 8.4 million citizens will be impacted by the proposed amendments. Compliance dates will be determined following four schedules based on population served by the PWS.

Source Water Monitoring Requirements:

These amendments require applicable public water systems to monitor their source water (the influent water entering the treatment plant) to determine an average Cryptosporidium level. More specifically, schedule 1-3 systems must monitor for Cryptosporidium, E.coli, and turbidity at least once per month for 24 consecutive months. Schedule 4 systems must initially monitor just for E.coli for one as a screening analysis and are required to monitor for Cryptosporidium only if their E. coli levels exceed specified "trigger" values. Schedule 4 PWS's that exceed the E. coli trigger must monitor for Cryptosporidium for either 12 consecutive months (2 samples per month) or 24 consecutive months (one sample per month).

Bin Classification and Treatment Technique Requirements:

Applicable PWSs will be classified in one of four treatment categories (or "bins") based on the results of the source water Cryptosporidium monitoring described in the previous section. The higher the Cryptosporidium oocyst concentration of the source water, the higher the bin classification. This bin classification determines the degree of additional Cryptosporidium treatment, if any, the filtered PWS must provide above and beyond existing treatment requirements, all of which remain in effect under this amendment. EPA suspects that the majority of filtered PWSs will be classified in Bin 1, which carries no additional treatment requirements. PWSs classified in Bins 2, 3, or 4 must achieve 1.0-log to 2.5-log of treatment

(90-99.7 percent reduction) for Cryptosporidium over and above that provided by existing conventional treatment. Ultimately, this additional treatment establishes a new treatment technique requirement for filter plants whose source water is bin 2 or greater.

Requirements for Microbial Toolbox Components:
Filtered PWSs must meet the additional Cryptosporidium treatment required in Bins 2, 3, or 4 by using treatment or control processes from a "microbial toolbox of options. The microbial toolbox provides feasible treatment options specifically targeted at Cryptosporidium and establishes operational and design standards for each option. The toolbox options include standards for Cryptosporidium inactivation and removal processes, which were researched and developed by EPA and are published for the first time in this proposed regulation. More specifically, standards for Cryptosporidium inactivation by ozone, chlorine dioxide, and UV light are established. Standards established for processes that physically remove Cryptosporidium contamination include membranes, bag filters, cartridge filters, pre-sedimentation basins, and riverbank filtration. The development of these standards overcomes an existing significant limitation by providing specific strategies to comply with additional Cryptsporidium treatment.

Reporting and Record Keeping Requirements:
PWSs impacted by these proposed amendments must report source water monitoring results and bin determination. PWSs which fall into Bin 2, 3, or 4 must report which toolbox options are used to meet these requirements. Additionally these systems must report monthly that the selected toolbox options are being adequately maintained within specified operating standards.

Advisory Committee Review:

On November 13, 2007, the Small Water Systems Technical Assistance Center Advisory Board (TAC) reviewed the proposed rulemaking. Although the Board is supportive of the revisions to the regulations, the Board provided written comments to the Department which outline a number of concerns. The Department has addressed those concerns and when necessary amended the proposed rulemaking to directly incorporate the Board's suggestions.

Adoption Deadline:

The Department recommends that the Board incorporate the proposed amendments into the Pa. Safe Drinking Water Regulations (25 Pa. Code Chapter 109) in order to enhance public health against Cryptosporidium and other microbial pathogens in drinking water. These regulations should be adopted no later than January 4, 2010.

Recommendations for Public Comment Period and Public Meetings/Hearings:

The Department recommends a 30-day public comment period. It is not anticipated that public meetings or hearings will be required.

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