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September 25, 2017

Pennsylvania Department of Environmental Protection
Rachel Carson Building
400 Market Street
Harrisburg, PA 17101

2017 SEP 26 A 10:34

Re: Proposed Rulemaking: Safe Drinking Water General Update and Fees - General
Comment Regarding Water Loss Auditing

This rulemaking proposes revisions to Chapter 109 of 25 PA Code relating to safe drinking water. The proposed amendments address important public health issues as well as measures to improve the reliability of public water systems.

The physical integrity of the water distribution system is essential for maintaining public health, and impacts the financial stability of the system operator. Water losses, in the form of real losses due to leakage from the distribution system, serve to increase operating expenses, while apparent losses stemming from measurement and billing errors reduce system revenues and undermine the financial viability of the water system if unchecked.

Every water system leaks. Altogether, billions of gallons of water are lost every day from U.S. drinking water systems. A recent estimate places water losses in Pennsylvania at more than 325 million gallons per day, far above the average production of the largest public water supplier in the Commonwealth. Lost revenues are estimated to be in excess of \$200 million per year.¹

Water main breaks and unseen leaks act like a tax on the cost of drinking water and the reliability of water service. Communities need reliable and efficient water delivery systems—for public health, fire safety, and good environmental stewardship. However, excessive water losses place additional burdens on water sources and can stress a community's ability to manage its financial and physical assets. Thus, the need for a more objective accounting of water losses and a more strategic understanding of loss reduction strategies is gaining attention across the country.

The States at the forefront of water loss reduction strategies (e.g., Georgia, Hawaii, California) are all requiring annual water loss reports from local water suppliers using a standardized format developed by the American Water Works Association (AWWA), the principal trade group for drinking water utilities. More than 150 water supply systems in Pennsylvania are already using this format and submitting annual water loss audit reports under regulations adopted by the Pennsylvania Public Utility Commission and the Delaware River Basin Commission. Most of these entities have been reporting for at least 4 years.

Water loss audits are the first step towards achieving cost-effective reductions in water loss. These audits can be readily conducted by any water utility, at minimal cost. AWWA makes

¹ Kunkel Water Efficiency Consulting, *Report on the Evaluation of Water Audit Data for Pennsylvania Water Utilities*, February 15, 2017.

available free auditing software, and an accompanying manual costs approximately \$100. Audits are typically performed with modest investment of time by existing utility staff. For example, utilities regulated by the Delaware River Basin Commission reported that, even though most were unfamiliar with the AWWA water audit methodology before new Commission regulations required them to submit annual audits, most utilities completed the audit in 1 to 3 days without outside help.²

The AWWA water audit methodology is a significant improvement over the historic, but imprecise, method of reporting “unaccounted-for” water and the use of a percentage of “unaccounted-for” water as a performance indicator. AWWA discourages use of the “unaccounted-for” term and percentage indicator since they give a misleading and unreliable measure of utility performance. Specifically, the volumetric percentage indicator lacks effectiveness because:

- A percentage is greatly influenced by the total volume of customer consumption, which may vary significantly from one year to the next, often due to changes in weather and rainfall, although water losses are only minimally influenced by such factors. As such, percentage losses can drastically misrepresent a water utility’s efficiency standing – making their losses appear to be inordinately higher or lower than they actually are.
- A percentage cannot distinguish among the specific components of non-revenue water occurring in a distribution system; specifically the portion of the non-revenue water that is real (leakage) losses vs. apparent (customer) losses. Utilities need to know the breakdown of these losses in order to develop loss control strategies to control the specific losses.
- A percentage reveals nothing about the volume of water losses nor the associated costs that such losses are imparting to the water utility (the two most important factors in assessing water waste within water supply operations).

AWWA provides information on the reasons to move away from dated “unaccounted-for” methods and to employ the AWWA water audit method. An AWWA informational flyer is posted on the webpage of the Water Loss Control Committee of the Pennsylvania Section of AWWA at this link:

<http://www.paawwa.org/wp-content/uploads/2017/02/AWWA-Water-Audit-Best-Practice-Flyer-3.pdf>

Currently, The Pennsylvania Department of Environmental Protection assesses non-revenue water in drinking water utilities via the “unaccounted-for” approach and uses an “unaccounted-for” percentage to gage standing and identify systems with excessive losses.

It is recommended that the Commonwealth advance its oversight capability for water accountability and loss control in drinking water utilities by sunseting the use of outdated “unaccounted-for” water assessments, and adopting the AWWA Water Audit Methodology in its

² Delaware River Basin Committee, Water Management Advisory Committee, Meeting Summary (June 16, 2015), http://www.nj.gov/drbc/library/documents/WMAC/06162015/wmac_june15.pdf.

place. At the earliest opportunity, we recommend that the Pennsylvania Department of Environmental Protection –

- Revise all current reporting forms, training courses, and related materials, including the Annual Water Supply Report form, to address water loss in terms consistent with AWWA terminology;
- Develop further revisions to Chapter 109 or to other relevant parts of the Code, or draft legislation, that would lay out a process and timetable for all public water systems to systematically and consistently address water losses, beginning with procedures for all large systems to prepare and file a water loss audit report annually using AWWA terminology and methods;
- In cooperation with stakeholders, including drinking water associations, prepare and provide training for the conduct of water audits and the validation of water audit reports.

As stated in the public notice:

Safe drinking water is vital to maintaining healthy and sustainable communities. Proactively avoiding incidents such as waterborne disease outbreaks can prevent loss of life, reduce the incidents of illness and reduce health care costs. Proper investment in PWS infrastructure and operations helps ensure a continuous supply of safe drinking water, enables communities to plan and build future capacity for economic growth, and ensures their long-term sustainability.

Annual water loss auditing will provide an essential foundation for prudent investment in the drinking water infrastructure of Pennsylvania.

Sincerely,

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