



DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION POLICY AND PROCEDURE

DWEHD-399-031 – Secondary Treatment Requirements

Effective Date: May 4, 2022
Distribution: All DWEHD Staff

ISSUE

In recent years, the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), has become aware of facilities that receive treated drinking water from a public water supply (PWS) and have opted to install treatment and inject treatment chemicals into their internal distribution system plumbing. Most often, these facilities are adding disinfecting chemicals to prevent *Legionella* from multiplying within premise plumbing. Some facilities may be adding chemicals for corrosion control treatment or for other reasons. These facilities, referred to as those that provide secondary treatment, meet the definition of a PWS as described in the federal Safe Drinking Water Act and the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), and are subject to all applicable requirements.

There is currently much discussion underway about what these facilities must do to be considered in compliance with federal and state laws. As of the date of this policy, Michigan awaits further guidance from the United States Environmental Protection Agency (USEPA) on all the requirements they must meet. In the interest of public health protection and until further guidance is received or regulations are promulgated that clearly establish requirements for providing secondary treatment, this policy outlines the actions that are expected of facilities providing secondary treatment in Michigan.

STAKEHOLDER INVOLVEMENT

This policy was reviewed by stakeholders during the governor appointed KWR Watercycle Research Institute's efforts to draft a state *Legionella* response strategy. This policy was developed as a response to institutions implementing treatment strategies which would, in turn, make them a PWS by definition. The Michigan Departments of Health and Human Services and Licensing and Regulatory Affairs and local health departments (Bay County, Detroit, Oakland County, Jackson County, Ionia County, and District Health Department No. 4) participated in the review. The DWEHD plans to schedule additional stakeholder input shortly after this policy becomes effective to further refine and improve procedures.

DEFINITIONS

Action Level: The concentration of lead or copper in water as specified in Act 399, R 325.10604f(1)(c) that determines, in some cases, the treatment requirements that a water supply is required to complete.

ANSI/ASHRAE Standard 188-2015: An American National Standards Institute (ANSI)/American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard, *Legionellosis: Risk Management for Building Water Systems*. It establishes the minimum *legionellosis* risk management requirements for building water systems and is intended to be used by owners and managers of human occupied buildings and those involved in the design, construction, installation, commissioning, operation, maintenance, and service of centralized building water systems and components.

Community Water Supply or CWS: A PWS that provides year-round service to not fewer than 15 living units or which regularly provides year-round service to not fewer than 25 residents.

Consecutive System or Supply: A PWS that receives some or all of its finished water from one or more wholesale supplies. Delivery may be through a direct connection or through the distribution system of one or more consecutive supplies.

Corrosion Control Treatment: A treatment designed to reduce the corrosivity of water toward metal plumbing materials, particularly lead and/or copper.

Customer Site Piping: An underground piping system owned or controlled by the customer that conveys water from the customer service connection to building plumbing systems and other points of use on lands owned or controlled by the customer. Customer site piping does not include any system that incorporates treatment to protect public health.

Distribution System: A system that consists of the following components through which water is distributed and used or intended for use for drinking or household purposes:

- I. Piping
- II. Transmission or distribution mains
- III. Pumps
- IV. Pumping stations
- V. Storage tanks
- VI. Controls
- VII. Associated appurtenances

Facility: For the purposes of this policy, a commercial, governmental, or industrial property, such as a building or plant, that exists for the performance of one or more specific activities or functions and is a customer of a PWS.

Local Health Department: For the purposes of this policy, means the district or county health department overseeing the noncommunity water supplies within their jurisdiction.

Maximum Contaminant Level or MCL: The maximum permissible level of a contaminant in water that is delivered to any user of a PWS.

Noncommunity Water Supply: A PWS that is not a community supply but has not less than 15 service connections or that serves not fewer than 25 individuals on an average daily basis for not less than 60 days per year.

Public Water Supply or PWS: A waterworks system that provides water for drinking or household purposes to persons other than the supplier of the water and does not include either of the following:

- I. A waterworks system that supplies water to only one living unit.
- II. A waterworks system that consists solely of customer site piping.

Secondary Treatment: For the purposes of this policy, a facility that receives their drinking water from a PWS and further treats the drinking water by injection of water treatment chemicals to disinfect, control corrosion, or for other reasons, into their facility's internal plumbing.

Treatment Technique: A minimum treatment requirement or a necessary methodology or technology that is employed by a PWS for the control of the chemical, physical, biological, or radiological characteristics of the PWS.

Water Management Program or WMP: The risk management plan, described in ANSI/ASHRAE Standard 188, for the prevention and control of *legionellosis* associated with building water systems.

Waterworks System: A system of pipes and structures through which water is obtained and distributed, including but not limited to wells and well structures, intakes and cribs, pumping stations, treatment plants, storage tanks, pipelines and appurtenances, or a combination thereof, actually used or intended for use for the purpose of furnishing water for drinking or household purposes.

Wholesale System or Supply: A PWS that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another PWS. Delivery may be through a direct connection or through the distribution system of one or more consecutive supplies.

POLICY

Under the Act 399 definition of a PWS, a customer (or facility as defined in this policy) that receives their drinking water from a PWS is exempt from regulation as a PWS if the facility consists solely of customer site piping. If the facility installs treatment equipment and begins to treat the drinking water within their distribution system, the exemption from regulation as a PWS no longer applies. The facility then meets the Act 399 definition of a consecutive PWS that receives their water from a wholesale PWS.

Until the USEPA issues further regulatory guidance on this matter, this policy only applies to facilities that install any type of disinfection, corrosion control, or other treatment equipment that directly injects a chemical or chemicals into their distribution system. This policy does not apply to passive water treatment systems that do not function by direct chemical injection, such as water softeners, filters, membranes, or reverse osmosis systems. This policy also does not apply to water that is diverted and properly isolated from the drinking water distribution system and is chemically treated for use in boilers, cooling towers, or another industrial or commercial processing regime not used to provide drinking water.

Therefore, any facility that meets the definition of a consecutive water supply and treats their drinking water by direct chemical injection into their distribution system will be regulated as a PWS under Act 399 and must, prior to constructing, installing, or operating the drinking water treatment that injects chemicals, meet the following requirements:

- Prior to construction or installation of a chemical treatment system, a permit application must be submitted to EGLE for engineering review. The reviewing engineers will consider the facility's evaluation of nonchemical treatment alternatives for achieving water quality goals. The engineers will further base the approval of the permit on the completeness of the application and the inclusion of a WMP, as defined in the current version of ANSI/ASHRAE Standard 188. Based on treatment goals, the WMP should include a testing schedule for target microbes and contaminants as well as a response plan for detections.
- The facility must separate their water treatment system from the wholesale PWS with an approved cross connection control assembly and make certification to the DWEHD of such. The facility will be required to notify the wholesale PWS regarding the treatment system and the method of separating the water systems.
- A drinking water certified operator will be required to operate and oversee the drinking water treatment. The certification level required will be dependent upon the classification and/or population served by the facility.
- The facility will be required to monitor certain water quality parameters in their water system, on a frequency, schedule, and location as determined by the DWEHD, depending on the nature of the treatment system to be installed. Common indicators include:
 - Total coliform bacteria
 - Lead and copper
 - Disinfection byproducts
 - Disinfectant residual
 - Water quality parameters for corrosion control treatment systems, if applicable
 - All analyses, except for disinfection residuals, must be done by a Michigan certified drinking water laboratory.
- The facility must submit a monthly operation report (MOR) for each month of operation to the DWEHD on a form provided by the DWEHD. The MOR shall be submitted to the DWEHD the month following the month the report was prepared unless otherwise required by Part 7, Surveillance, Inspection, and Monitoring, of Act 399. The following information is required in the MOR:
 - General operation data
 - A summary of samples analyzed, including the sample results, date of the sample, and the laboratory performing the analyses
 - Information on daily treatment system pumpage
 - Information on daily dosage and residual disinfectant concentrations
 - Analyses of general parameters related to the quality of the drinking water
 - Certification of adherence to their WMP.

- The facility must post public notices and provide public education materials as required by Act 399 when there is an MCL or treatment technique violation, a monitoring or reporting violation, or an exceedance of an action level.
- The facility will become part of Michigan’s PWS inventory and will be required to pay an annual fee to EGLE, as required by Sections 11a and 11b of Act 399.

PROCEDURE

Establishment as PWS

Step	Who	Does What
1	Applicant	Applies to become a secondary treating PWS by submitting: <ul style="list-style-type: none"> • Application For Secondary Treatment Public Water Supply Designation, EQP2231 • Secondary Treatment Nontransient Noncommunity Water Supply Capacity Development Plan, EQP2232 (including worksheets) • Permit Application for Secondary Treatment, EQP 2233 (with attachments) • Facility license (if applicable) • Cross connection control plan, EQP 2268 • Proposed compliance sampling plans (EQP 2248) and monthly operation report
2	DWEHD Engineering Unit Supervisor	Assigns application to secondary treatment engineer to review
3	DWEHD Secondary Treatment Engineers	Reviews submitted materials and provides approval, as appropriate
4	DWEHD Technical Support Unit Analysts	Assigns Water Supply Serial Number (WSSN)
5	DWEHD Environmental Health (EH) and CWS Sections	The EH Section/Noncommunity Water Supplies Unit assesses PWS fees on noncommunity secondary treatment supplies The CWS Section/Technical Support Unit assesses PWS fees on community ST supplies

LINKS TO ADDITIONAL INFORMATION

ANSI/ASHRAE Standard 188-2018, *Legionellosis: Risk Management for Building Water Systems*, is available on the EGLE Web site at <https://www.ashrae.org/technical-resources/bookstore/ansi-ashrae-standard-188-2018-legionellosis-risk-management-for-building-water-systems>.

EGLE information on secondary treatment and applying for a construction permit is available at https://www.michigan.gov/egle/0,9429,7-135-3313_3675-502703--,00.html.

United States Centers for Disease Control (CDC). www.cdc.gov/legionella. The CDC provides information on diseases caused by *Legionella*, and a toolkit, *Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings: A Practical Guide to Implementing Industry Standards*. The toolkit provides practical guidance based on the ANSI/ASHRAE Standard 188-2015, on developing a facility specific WMP.

Legionella.org. Legionella.org is a nonprofit organization that provides comprehensive answers to clinicians, water treatment professionals, and others. The information provided is based on more than 30 years of clinical and environmental research.

Moore, Melinda, MD, MPH and Shelton, Shoshana, MPH; *Updated Guidelines for the Control of Legionella in Western Pennsylvania*. Issued by the Allegheny County Health Department, Pittsburgh Regional Health Initiative, October 2014. These guidelines are comprehensive and were developed in consultation with experts representing a range of organizations, disciplines, and expertise. The guidelines can be downloaded at <https://www.prhi.org/resources/resources-article/archives/legionella-guidelines/101-guidelines-for-the-control-of-legionella-in-western-pa/file>.

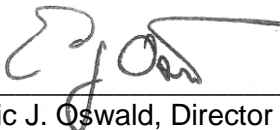
NSF International. NSF, the National Sanitation Foundation, at www.nsf.org, is an independent, accredited organization that develops standards, and tests and certifies equipment and chemicals as safe for use in drinking water systems.

USEPA, Office of Water, EPA 815-D-15-001, October 2015, *Draft-Technologies for Legionella Control: Scientific Literature Review*. This document is a compilation of publicly available, peer-reviewed, technical literature that evaluates the effectiveness of technologies to control *Legionella*. The document can be downloaded from the USEPA's Web site at <https://www.epa.gov/sites/production/files/2015-10/documents/drafttechlegionellaoct2015.pdf>

Michigan Department of Environmental Quality Resource Management Division, *New Community Water System Capacity Guideline Document*, May 1, 2000, as amended
https://www.michigan.gov/documents/deq/deq-wb-dwehs-cws-CDNewSystemGuideline_247603_7.pdf

EGLE *Nontransient Noncommunity Water Supply Capacity Development Plan*
https://www.michigan.gov/documents/deq/deq-odwma-399-014_409220_7.pdf

APPROVING AUTHORITY



Eric J. Oswald, Director
Drinking Water and Environmental Health Division



Aaron B. Keatley, Chief Deputy Director

HISTORY

Policy No.	Action	Date	Title
DWEHD-399-031	Original	May 4, 2022	Secondary Treatment Requirements

CONTACT/UPDATE RESPONSIBILITY

Any questions or concerns regarding this policy and procedure should be directed to Michael Bolf, Supervisor, Engineering Unit, DWEHD, EGLE, at 906-630-4107 (mobile) or BolfM@Michigan.gov.

An EGLE policy and procedure cannot establish regulatory requirements for parties outside of EGLE. This document provides direction to EGLE staff regarding the implementation of rules and laws administered by EGLE. It is merely explanatory, does not affect the rights of or procedures and practices available to the public, and does not have the force and effect of law. EGLE staff shall follow the directions contained in this document.