Ohio Administrative Code

Rule 3745-83-01 Operational requirements.

Effective: March 4, 2016

(A) Except as otherwise noted, the definitions in rule 3745-81-01 of the Administrative Code shall apply to this chapter.

(B) Except as otherwise noted, analyses required by this rule shall be conducted in accordance with methods as specified in rule 3745-81-27 of the Administrative Code. In addition, analysis for parameters listed in the table in this paragraph shall be conducted in a laboratory certified in accordance with Chapter 3745-89 of the Administrative Code:

Parameter	Application
Total alkalinity	Precipitative softening or membrane technology; daily monitoring.
Phenol alkalinity	Precipitative softening; daily monitoring.
Stability	Precipitative softening or membrane technology; weekly monitoring.
Copper	All.
Fluoride	All.
Iron	For split sample or weekly analysis.
Manganese	For split sample or weekly analysis.
pH	Precipitative softening or membrane technology; daily monitoring. Surface water treatment plant; daily monitoring.
Total hardness	Precipitative softening or membrane technology; daily monitoring.
Total phosphorus	All.

(C) Disinfection.

(1) Except as prescribed in rule 3745-81-72 of the Administrative Code, noncommunity public water systems serving a population of at least one thousand people and all community public water systems shall maintain a minimum chlorine residual of at least two-tenths milligram per liter free chlorine, or one milligram per liter combined chlorine measured at representative points throughout the

distribution system. All other noncommunity public water systems that provide water treated with chlorine for disinfection purposes shall maintain the chlorine residual levels as described in this rule. The director may require higher residuals as necessary to compensate for pH, temperature, or other characteristics of the delivered water.

[Comment: Rule 3745-81-72 of the Administrative Code establishes similar but separate requirements for disinfection of systems using a surface water source. These two requirements are not inconsistent and failure to comply with either is considered a separate violation with different consequences. Contact your district office representative if you have questions or require clarification.]

(2) Noncommunity public water systems serving a population of at least one thousand people and all community public water systems shall install and place in operation equipment capable of meeting disinfection requirements of this rule.

(3) A system is exempt from maintaining a chlorine residual as required in paragraph (C)(1) of this rule if, with written approval of the director, it uses chlorine dioxide as a primary disinfectant in accordance with the terms of the approval.

(4) At times of actual or threatened outbreak of waterborne disease as defined in rule 3745-81-01 of the Administrative Code, or water supply emergency as determined by the director in accordance with section 6109.05 of the Revised Code, the director may require a public water system subject to paragraph (C)(1) of this rule to maintain a minimum chlorine residual of at least one milligram per liter free chlorine, or six milligrams per liter combined chlorine measured at representative points throughout the distribution system, despite possible resulting tastes or odors in the delivered water.

(5) "Finished water storage facilities," means a tank, reservoir, or other facility used to store water that will undergo no further treatment except residual disinfection, aeration or recirculation. Finished water storage facilities serving noncommunity water systems serving a population of at least one thousand people and all community water systems, prior to being placed into service or being returned to service after repairs, inspections, painting, cleaning, or other activities that might lead to contamination, shall complete the following:

(a) Meet the requirements of "American Water Works Association Standard C652-02 Disinfection of Water-Storage Facilities" (2002).

(b) Be monitored for chlorine residual and comply with the minimum chlorine residual established in paragraph (C)(1) of this rule and the MRDL established in paragraph (C) of rule 3745-81-10 of the Administrative Code.

(6) Water mains serving noncommunity water systems serving a population of at least one thousand people and all community water systems, prior to being placed into service or being returned to service after repairs, inspections, or other activities that might lead to contamination, unless a minimum pressure of twenty pounds per square inch gauge at ground level is maintained at all points in the distribution system, shall complete the following:

(a) Meet the requirements of "American Water Works Association Standard C651-14 Disinfecting Water Mains" (2014).

(b) Be monitored for chlorine residual and comply with the minimum chlorine residual established in paragraph (C)(1) of this rule and the MRDL established in paragraph (C) of rule 3745-81-10 of the Administrative Code.

(D) Approval of chemicals and components. All chemicals, substances, and materials added to or brought in contact with water in or intended to be used in a public water system or used for the purpose of treating, conditioning, altering, or modifying the characteristics of such water shall be shown by either the manufacturer, distributor, or purveyor to be non-toxic and harmless to humans when used in accordance with the formulation and concentration as specified by the manufacturer, and shall be certified as meeting the "American National Standards Institute/National Sanitation Foundation (ANSI/NSF)" standards in paragraphs (D)(1) to (D)(3) of this rule. Certification shall be from an "ANSI" accredited product certification organization.

(1) All chemicals shall be certified as meeting the specification of "ANSI/NSF Standard 60 Drinking Water Treatment Chemicals - Health Effects (2009)."

(2) All components installed by a public water system shall be certified as meeting the specifications

of "ANSI/NSF Standard 61 Drinking Water System Components - Health Effects (2010)." If certification to "ANSI/NSF Standard 61" is not available for a component, an alternate component with "ANSI/NSF Standard 61" certification must be used. In cases where no alternate "ANSI/NSF Standard 61" component exists, the director may accept another component on a case by case basis until the "ANSI/NSF Standard 61" certified component is available.

(3) Replacement of an existing component that is not certified to "ANSI/NSF Standard 61 Drinking Water System Components - Health Effects (2010)" may be required if the director determines the component may pose a risk to human health, safety or the environment.

(E) Minimum pressure. Community water systems shall maintain a minimum pressure of twenty pounds per square inch gauge at ground level at all points in the distribution system under all conditions of flow other than conditions caused by line breaks, extreme fire flows, or other extraordinary circumstances.

(F) Operational analyses.

(1) Alkalinity.

(a) Total alkalinity.

(i) A public water system that provides precipitative softening as defined in rule 3745-7-01 of the Administrative Code or membrane technology to reduce hardness shall monitor for total alkalinity daily at each entry point to the distribution system.

(ii) A public water system that adjusts the alkalinity of the water for optimization of corrosion control pursuant to the lead and copper requirements in rules 3745-81-82 and 3745-81-87 of the Administrative Code shall monitor for total alkalinity at least once every two weeks at regular intervals at each entry point to the distribution system.

[Comment: In addition to the monitoring requirements above, public water systems exceeding the lead and copper action level that adjust the alkalinity of the water for the purpose of providing optimal corrosion control treatment pursuant to rules 3745-81-82 and 3745-81-87 of the Administrative Code

shall also monitor in accordance with the requirements of those rules.]

(b) Phenolphthalein (or phenol) alkalinity. A public water system that provides precipitative softening as defined in rule 3745-7-01 of the Administrative Code shall monitor for phenolphthalein alkalinity daily at each entry point to the distribution system.

(c) Stability. A public water system that provides precipitative softening as defined in rule 3745-7-01 of the Administrative Code or membrane technology to reduce hardness shall monitor for stability at least weekly at each entry point to the distribution system.

(2) Chlorine residual.

(a) A public water system that provides water treated with chlorine shall monitor for free or combined chlorine at least once every day that water is available to the public at each entry point to the distribution system and a representative point or points in the distribution system. A noncommunity ground water system whose distribution system is solely interior plumbing in a single building only needs to collect one representative sample daily.

(b) A public water system that uses chlorine solely for the oxidation of iron, manganese or hydrogen sulfide and is not required to maintain a residual in the distribution system does not have to perform the monitoring in paragraph (F)(2)(a) of this rule.

[Comment: In addition to the requirements in this paragraph, a public water system that uses a surface source, in whole or in part, shall also conduct disinfection monitoring in accordance with rule 3745-81-74 of the Administrative Code. A public water system that uses a ground water source and provides 4-log inactivation of viruses shall also conduct disinfection monitoring in accordance with rule 3745-81-43 of the Administrative Code.]

(3) Copper. A public water system that intends to apply a copper compound to the water supply source shall notify the director of their intent to apply the compound, and monitor for copper at least weekly, at each entry point to the distribution system for at least one month after the compound has been applied.

(4) Fluoride.

(a) A public water system that adds fluoride to the water supply shall monitor for fluoride in accordance with the following:

(i) At least once every day that water is available to the public at each entry point to the distribution system.

(ii) Prior to fluoridation at least once per month.

(b) Samples shall be analyzed as soon as possible, but in no case later than forty-eight hours after the time of collection.

(5) Iron.

A community public water system that provides treatment to reduce iron shall monitor for iron at least at each entry point to the distribution system.

(a) Community systems serving up to and including two hundred fifty persons shall monitor either of the following:

(i) Weekly with an in-house test kit in accordance with paragraph (F)(5)(c) of this rule and one split sample monthly by a state certified laboratory.

(ii) Weekly by a state certified laboratory.

(b) Community systems serving greater than two hundred fifty persons shall monitor either of the following:

(i) A minimum of five days per week with an in-house test kit in accordance with paragraph (F)(5)(c) of this rule and one split sample monthly by a state certified laboratory.

(ii) Weekly by a state certified laboratory.

(c) An iron test kit shall have a minimum detection level of 0.2 milligrams per liter. Furthermore, the deviation of the split sample shall not be greater than 0.2 milligrams per liter. If the deviation is greater, then the public water system shall cease monitoring with the test kit and substitute with weekly monitoring at a state certified laboratory. A public water system may resume monitoring with their test kit once the deviation of a split sample is no greater than 0.2 milligrams per liter. The director may accept an alternate collection frequency and deviation from in-house test kits for split sampling requirements.

(6) Manganese.

A community public water system that provides treatment to reduce manganese shall monitor for manganese at least at each entry point to the distribution system.

(a) Community systems serving up to and including two hundred and fifty persons shall monitor either of the following:

(i) Weekly with an in-house test kit in accordance with paragraph (F)(6)(c) of this rule and one split sample monthly by a certified laboratory.

(ii) Weekly by a state certified laboratory.

(b) Community systems serving greater than two hundred fifty persons shall monitor either of the following:

(i) A minimum of five days per week with an in-house test kit in accordance with paragraph (F)(6)(c) of this rule and one split sample monthly by a certified laboratory.

(ii) Weekly by a state certified laboratory.

(c) A manganese test kit shall have a minimum detection level of 0.02 milligrams per liter. Furthermore, the deviation of the split sample shall be no greater than 0.04 milligrams per liter. If it is greater, then the public water system shall cease monitoring with the test kit and substitute with

weekly monitoring at a state certified laboratory. A public water system may resume monitoring with their test kit once a deviation of the split sample is no greater than 0.04 milligrams per liter. The director may accept an alternate collection frequency and deviation from in-house test kits for split sampling requirements.

(7) Orthophosphate.

(a) A public water system that adds orthophosphate to the water for the purpose of providing corrosion control treatment for purposes other than compliance with the lead and copper rules shall monitor at least monthly at each entry point to the distribution system.

(b) A public water system that adds orthophosphate to the water supply for optimization of corrosion control pursuant to the lead and copper requirements of rules 3745-81-82 and 3745-81-87 of the Administrative Code shall monitor for orthophosphate at least once every two weeks at regular intervals at each entry point to the distribution system.

[Comment: In addition to the monitoring requirements above, public water systems exceeding the lead and copper action level that add orthophosphate to the water for the purpose of providing optimal corrosion control treatment pursuant to rules 3745-81-82 and 3745-81-87 of the Administrative Code shall also monitor in accordance with the requirements of those rules.]

(8) pH.

(a) A public water system that adjusts the pH of the water supply for stabilization shall monitor for pH at least once every day that water is available to the public at each entry point to the distribution system.

(b) A public water system that employs precipitative softening as defined in rule 3745-7-01 of the Administrative Code or membrane technology to reduce hardness shall monitor for pH at least once every day that water is available to the public at each entry point to the distribution system.

(c) A public water system that uses a surface water source, in whole or in part, shall also conduct pH monitoring in accordance with rule 3745-81-74 of the Administrative Code.

(d) A public water system that adjusts the pH of the water for optimization of corrosion control pursuant to the lead and copper requirements of rules 3745-81-82 and 3745-81-87 of the Administrative Code shall monitor for pH at least once every two weeks at regular intervals at each entry point to the distribution system.

[Comment: In addition to the monitoring requirements above, public water systems exceeding the lead and copper action level that adjust the pH of the water for the purposes of providing optimal corrosion control treatment pursuant to rules 3745-81-82 and 3745-81-87 of the Administrative Code shall also monitor in accordance with the requirements of those rules. A public water system that uses a ground water source and provides 4-log inactivation of viruses shall also conduct disinfection monitoring in accordance with rule 3745-81-43 of the Administrative Code.

(9) Total hardness.

(a) A community public water system serving up to and including two hundred fifty persons that provides ion exchange treatment to reduce hardness shall monitor for total hardness at least monthly at each entry point to the distribution system.

(b) A community public water system serving greater than two hundred fifty persons that provide ion exchange treatment to reduce hardness shall monitor for total hardness at least weekly at each entry point to the distribution system.

(c) A public water system that provides precipitative softening treatment as defined in rule 3745-7-01 of the Administrative Code or that provides membrane technology to reduce hardness shall monitor for total hardness at least daily at each entry point to the distribution system.

(10) Total phosphorus. A public water system that adds phosphate to the water supply for purposes other than corrosion control, shall monitor for total phosphorus at least monthly at each entry point to the distribution system.

(G) The director may require additional monitoring as needed to assess operational performance than is otherwise specified in this rule, including but not limited to operational monitoring required

to assess the effectiveness of treatment for contaminants regulated in Chapter 3745-81 of the Administrative Code. The director shall notify the public water system of additional monitoring required under this paragraph in writing or via plan approval issued in accordance with Chapter 3745-91 of the Administrative Code.

(H) Maintenance of facilities and equipment.

(1) The owner and operator shall ensure that all facilities and equipment necessary for the treatment and distribution of water shall be maintained, at a minimum so as to function as intended.

(2) In the event that the treatment facilities or equipment no longer function as intended, corrective action (which may include additional maintenance or modifications of the public water system) shall be taken by the owner.

(3) The owner and operator shall document the completion of the above referenced maintenance in accordance with Chapter 3745-7 of the Administrative Code.

(I) Reports.

(1) In addition to any other reporting requirement of Chapter 3745-81 of the Administrative Code, the owner or operator of a public water system required to monitor under paragraphs (F) and (G) of this rule shall prepare and submit an operation report for each month of operation on forms acceptable to the director and in accordance with instructions provided by the director. The director may require that the report include the following:

(a) General operation data, including but not limited to, identification of the operating source at a given time, number of hours of operation, filter run times, backwash duration, filter backwash recycle percentages, head loss, interruptions in treatment, equipment inspection/maintenance dates, minimum system pressure, pre and intermediate tap sampling results, and deviations from normal day-to-day operations.

(b) A summary of samples analyzed, including distribution system sampling and chlorine residual sampling.

(c) Information on daily water treatment and system pumpage.

(d) Information on chemical application, including but not limited to, chemical feed pump ranges, chemical dosages, chemical feed rates, pre, intermediate or post treatment application changes in chemical type, location, and dosage due to emergencies, and seasonal variations.

(e) Analysis of general parameters relating to the quality of the treated drinking water.

(f) Source water levels, including but not limited to, low and high levels in flowing in streams, lakes and reservoirs, static and drawdown levels in production and monitoring wells under any conditions including flooding and drought periods.

(g) Such other information as may be necessary or desirable for the director to carry out the director's duties under Chapter 6109. of the Revised Code.

(2) The operation report shall be signed by the operator of record designated in accordance with rule 3745-7-02 of the Administrative Code. If an operator of record is not required by rule 3745-7-02 of the Administrative Code, the operation report shall be signed by an individual designated by the public water system owner.

(3) The operation report shall be submitted electronically via a method acceptable to the director no later than the tenth of the month following the month for which the report was prepared.

(4) The owner or operator shall report to the appropriate Ohio environmental protection agency district office as soon as possible, but within twenty-four hours, the discovery of any serious plant or distribution system breakdown or condition causing or likely to cause any of the following:

(a) Any discharge of water not in accordance with Chapter 6109. of the Revised Code or the rules adopted thereunder.

(b) Any major interruption in service or disinfection.

(c) Any hazard for employees, consumers, the public or the environment.

(5) Records of operation reports for each month of operation shall be kept for not less than ten years, except for lead and copper data which shall be kept for not less than twelve years.

[Comment: This rule incorporates the "AmericanWater Works" standards C651-14 and C652-02 by reference. Copies may beobtained from the "AWWA Bookstore, 6666 West Quincy Avenue, Denver, Co,80235, 1-800-926-7337, www.awwa.org." These standards are available forreview at "Ohio EPA, Lazarus Government Center, 50 W. Town Street, Suite700, Columbus, OH, 43215."]

[Comment: This rule incorporates the ANSI/NSFstandards 60 and 61 by reference. Copies may be obtained from "NSFInternational, 789 Dixboro Road, P.O. Box 130140, Ann Arbor, MI, 48113-0140,(734) 769-8010, www.nsf.org." These standards are available for review at"Ohio EPA, Lazarus Government Center, 50 W. Town Street, Suite 700,Columbus, OH, 43215."]