



Ohio Administrative Code

Rule 3745-81-50 Revised total coliform rule - general monitoring requirements.

Effective: May 1, 2022

(A)

(A) The director may determine that a public water system shall apply best available technology in order to reduce the level of a contaminant to below its maximum contaminant level (MCL). The director identifies the following as the best available technology for achieving compliance with the MCL for *Escherichia coli* (total coliforms and *E. coli*) as set forth in this rule:

(1) Protection of wells from *E. coli* contamination by appropriate placement and construction in accordance with Chapter 3745-9 of the Administrative Code.

(2) Maintenance of a disinfectant residual throughout the distribution system in accordance with rule 3745-81-72 of the Administrative Code and paragraph (C) of rule 3745-83-01 of the Administrative Code.

(3) Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, continual maintenance of positive water pressure in all parts of the distribution system and backflow prevention as described in Chapter 3745-95 of the Administrative Code.

(4) Filtration or disinfection by public water systems using surface water, in whole or in part, as required by rules 3745-81-64 to 3745-81-69 and 3745-81-71 to 3745-81-75 of the Administrative Code, or disinfection of ground water, as required by rules 3745-81-41 to 3745-81-45 of the Administrative Code, using strong oxidants such as chlorine, chlorine dioxide or ozone.

(5) Where appropriate, the development and implementation of a source water assessment and protection program approved by the director.

(B) Sample siting plans:



(1) Each public water system shall develop a written sample siting plan that identifies a sample collection schedule and sampling sites that are representative of water throughout the distribution system. Such plans are subject to review and revision by the director. A public water system shall collect total coliform samples according to the written sample siting plan. Monitoring required in rules 3745-81-51 and 3745-81-52 of the Administrative Code shall take place at a designated compliance sampling location. Routine and repeat sample sites and any sampling points necessary to meet rules 3745-81-41 to 3745-81-45 of the Administrative Code shall be included in the sample siting plan. Seasonal systems monitoring on a quarterly schedule shall designate the time period for monitoring based on site-specific considerations, such as periods of highest demand or highest vulnerability to contamination.

(2) Each public water system shall monitor with routine samples taken at regular time intervals throughout the month in accordance with the system's sample siting plan, except that systems using only ground water and serving four thousand nine hundred or fewer people may collect all required samples on a single day if taken from different sites.

(3) Every public water system shall take at least the minimum number of required samples even if the system has had an E.Coli MCL as set forth in rule 3745-81-54 of the Administrative Code or has exceeded the coliform treatment technique triggers as set forth in rule 3745-81-53 of the Administrative Code.

(4) A public water system may conduct more compliance monitoring than is required by this rule and rules 3745-81-51 to 3745-81-53 of the Administrative Code to investigate and discover potential problems in the distribution system. If the additional routine samples are taken in accordance with the existing sample siting plan and are representative of the water throughout the distribution system, the results of the samples must be included in calculating whether the coliform treatment technique trigger in paragraph (A)(1)(a) or (A)(1)(b) of rule 3745-81-53 of the Administrative Code has been exceeded.

(5) Each public water system shall identify repeat monitoring locations in the sample siting plan. Unless the provisions of the following paragraphs are met, the system shall monitor with at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, and



at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site. If a total coliform-positive sample is at the end of the distribution system, or one service connection away from the end of the distribution system, the system shall still take all required repeat samples; however, the director may allow an alternative sampling location in lieu of the requirement to monitor with at least one repeat sample upstream or downstream of the original sampling site. Except as provided for in paragraph (B)(5)(b) of this rule, each public water system required to conduct triggered source water monitoring as set forth in paragraph (A) of rule 3745-81-42 of the Administrative Code shall take a ground water source sample in addition to repeat samples required in this rule and rules 3745-81-51 to 3745-81-53 of the Administrative Code.

(a) A system may propose repeat monitoring locations to the director that the system considers to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in the system's sample siting plan. The system shall design the SOP to focus the repeat samples at locations that best verify and determine the extent of potential contamination of the distribution system area based on specific situations. The director may modify the SOP or require alternative monitoring locations as needed.

(b) Ground water systems serving one thousand people or fewer may propose repeat sampling locations to the director that differentiate potential source water and distribution system contamination (e.g., by sampling at entry points to the distribution system). If acceptable to the director, a ground water system with a single well required to conduct triggered source water monitoring may take one of the repeat samples at the monitoring location required for triggered source water monitoring as set forth in paragraph (A) of rule 3745-81-42 of the Administrative Code if the system demonstrates to the director that the sample siting plan remains representative of water quality in the distribution system.

(i) If a repeat sample taken at the monitoring location required for triggered source water monitoring is E. coli-positive, the public water system is in violation of the MCL for E. coli and shall conduct additional source water monitoring in accordance with paragraph (A)(3) of rule 3745-81-42 of the Administrative Code. If the system takes more than one repeat sample at the monitoring location required for triggered source water monitoring, the system may reduce the number of additional



source water samples required in paragraph (A)(3) of rule 3745-81-42 of the Administrative Code by the number of repeat samples taken at that location that were not E. coli-positive.

(ii) If the system takes more than one repeat sample at the monitoring location for triggered source water monitoring in paragraph (A) of rule 3745-81-42 of the Administrative Code, and more than one repeat sample is E. coli-positive, the system has violated the MCL for E. coli and shall comply with rule 3745-81-61 of the Administrative Code.

(iii) If all repeat samples taken at the monitoring location required for triggered source water monitoring are E. coli-negative and a repeat sample taken at a monitoring location other than the one required for triggered source water monitoring is E. coli-positive, the system has violated the MCL for E. coli, but is not required to conduct additional source water monitoring in accordance with paragraph (A)(3) of rule 3745-81-42 of the Administrative Code.

(6) The director may review, revise and accept, as appropriate, repeat sampling proposed by public water systems under paragraphs (B)(5)(a) and (B)(5)(b) of this rule. The system shall demonstrate that the sample siting plan remains representative of the water quality in the distribution system. The director may determine that monitoring at the entry point to the distribution system (especially for ground water systems having minimal treatment as defined in rule 3745-81-01 of the Administrative Code) is effective to differentiate between potential source water and distribution system problems.

(C) Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement or repair, shall not be used to determine whether the coliform treatment technique trigger has been exceeded. Repeat samples taken in accordance with rule 3745-81-52 of the Administrative Code are not considered special purpose samples, and shall be used to determine whether the coliform treatment technique trigger has been exceeded.

(D) A routine or repeat total coliform sample must be invalidated (unless total coliforms are detected) if the sample exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filtration technique in accordance with the "Ohio EPA Laboratory Manual for the Microbiological Analyses of Public Drinking Water 2014," Chapter 3745-89 of the Administrative Code and rule 3745-81-27 of the Administrative Code. A public water system shall monitor with a replacement sample within twenty-four hours of being notified of the



invalid sample. Upon a request from a public water system, the director may extend the twenty-four hour limit on a case-by-case basis when the public water system has a logistical problem collecting the repeat samples within twenty-four hours which is beyond the control of the public water system. When an extension is granted, the time the public water system has to monitor with repeat samples shall be specified by the director.

(E) The director will invalidate a total coliform result if the total coliform analysis performed by a certified laboratory does not conform to the "Ohio EPA Laboratory Manual for the Microbiological Analyses of Public Drinking Water 2014."

[Comment: This rule incorporates the "Ohio EPA Laboratory manual for the Microbiological Analyses of Drinking Water 2014" by reference. Copies are available at <https://epa.ohio.gov/wps/portal/gov/epa/divisions-and-offices/drinking-ground-and-waters/public-water-systems/laboratory-certification> and at the "Ohio EPA, Lazarus Government Center, 50 West Town Street, Suite 700, Columbus, OH 43215." Copies can also be obtained by contacting the laboratory certification office at (614) 644-4245.]

(F) All routine and repeat total coliform samples shall be collected under normal operating conditions. If the public water system does not collect these total coliform samples under normal operating conditions, the director may require additional monitoring.