

3745-81-42 **Ground water rule - ground water source microbial monitoring and analytical methods.**

(A) Triggered source water monitoring.

- (1) A ground water system shall conduct triggered source water monitoring if the conditions identified in paragraphs (A)(1)(a) and (A)(1)(b) of this rule exist.
 - (a) The system does not provide at least 4-log treatment of viruses (using inactivation, removal, or a director-approved combination of 4-log virus inactivation and removal) before or at the first customer for each ground water source; and
 - (b) The system is notified that a sample collected under paragraph (A) of rule 3745-81-21 of the Administrative Code is total coliform-positive and the sample is not invalidated in accordance with paragraph (B)(9) of rule 3745-81-21 of the Administrative Code.
- (2) A ground water system shall collect, within twenty-four hours of notification of the total coliform-positive sample, at least one ground water source sample from each ground water source in use at the time the total coliform-positive sample was collected under paragraph (A) of rule 3745-81-21 of the Administrative Code, except as provided in paragraph (A)(2)(b) of this rule. The ground water source sample shall be analyzed for fecal indicators as described in paragraph (C) of this rule.
 - (a) Upon a request from a public water system, the director may extend the twenty-four hour time limit on a case-by-case basis if the system logistically cannot collect the ground water source samples within twenty-four hours due to circumstances beyond the system's control. When an extension is granted, the director shall specify how much time the system has to collect the ground water source samples.
 - (b) If acceptable to the director, public water systems with more than one ground water source may meet the requirements of paragraph (A)(2) of this rule by collecting a representative sample(s) from location(s) acceptable to the director. If required, public water systems shall submit a triggered source water monitoring plan acceptable to the director that identifies one or more sampling locations that are representative of each monitoring site in the system's sample siting plan under paragraph (A) of rule 3745-81-21 of the Administrative Code and that the system intends to use for representative sampling under this paragraph.

- (c) A noncommunity ground water system serving one thousand people or fewer that has minimal treatment, as defined in rule 3745-81-01 of the Administrative Code, may use a repeat sample to meet both the requirements of paragraph (A) of rule 3745-81-21 of the Administrative Code and to satisfy the monitoring requirements of paragraph (A)(2) of this rule. If any repeat sample collected from distribution is E. coli positive, the system shall comply with paragraph (A)(3) of this rule.
- (3) If the director does not require corrective action in accordance with paragraph (A)(2) of rule 3745-81-43 of the Administrative Code for a fecal indicator-positive source water sample collected under paragraph (A)(2) of this rule that is not invalidated under paragraph (D) of this rule, a system shall collect a minimum of five additional source water samples within twenty-four hours of being notified of a fecal indicator-positive sample. At least one sample shall be collected from each well that was in operation at the time of the first positive routine sample. If the system does not have records that indicate which wells were in operation at the time of the first positive routine sample, then samples shall be collected from all active wells in the system. If there are less than five wells in the system, additional samples shall be distributed as evenly as possible between sampled wells to assure that at least five samples are collected.
- (4) Consecutive and wholesale systems.
 - (a) In addition to the other requirements of paragraph (A) of this rule, a consecutive ground water system that has a total coliform-positive sample collected under paragraph (A) of rule 3745-81-21 of the Administrative Code shall notify the wholesale system within twenty-four hours of being notified of the total coliform-positive sample.
 - (b) In addition to the other requirements of paragraph (A) of this rule, a wholesale ground water system shall comply with paragraphs (A)(4)(b)(i) and (A)(4)(b)(ii) of this rule.
 - (i) A wholesale ground water system that receives notice from a consecutive system it serves that a sample collected under paragraph (A) of rule 3745-81-21 of the Administrative Code is total coliform-positive shall, within twenty-four hours of being notified, collect a sample from its ground water sources under paragraph (A)(2) of this rule and analyze it for a fecal indicator under paragraph (C) of this rule.
 - (ii) If the sample collected under paragraph (A)(4)(b)(i) of this rule is fecal indicator-positive, the wholesale ground water system shall

notify all consecutive systems served by that ground water source of the fecal indicator source water positive within twenty-four hours of being notified of the ground water source sample monitoring result and shall meet the requirements of paragraph (A)(3) of this rule.

- (5) A ground water system is not required to comply with the source water monitoring requirements of paragraph (A) of this rule if either of the following conditions exists:
- (a) The director determines, and documents in writing, that the total coliform-positive sample collected under paragraph (A) of rule 3745-81-21 of the Administrative Code is caused by a distribution system deficiency; or
 - (b) The total coliform-positive sample collected under paragraph (A) of rule 3745-81-21 of the Administrative Code is collected at a location that meets the director's criteria for distribution system conditions that will cause total coliform-positive samples.

(B) Assessment source water monitoring.

If directed, ground water systems shall conduct assessment source water monitoring that meets director-determined requirements for such monitoring. A ground water system conducting assessment source water monitoring may use a triggered source water sample collected under paragraph (A)(2) of this rule to meet the requirements of paragraph (B) of this rule. Director-determined assessment source water monitoring requirements may include:

- (1) A hydrogeologic sensitivity assessment in accordance with paragraph (A)(5) of rule 3745-81-41 of the Administrative Code.
- (2) Collection of a standard sample volume of at least one hundred milliliters for fecal indicator listed in rule 3745-81-27 of the Administrative Code for the presence of *E. coli*, enterococci, or coliphage.
- (3) Collection of ground water source samples in accordance with a sampling schedule determined by the director.
- (4) Analysis of all ground water source samples, using one of the analytical methods listed in rule 3745-81-27 of the Administrative Code or as determined by the director, for the presence of fecal indicators.
- (5) Collection of ground water source samples at a location prior to any treatment of the ground water source unless the director accepts a sampling location after treatment.

- (6) Collection of ground water source samples at the well itself unless the system's configuration does not allow for sampling at the well itself and the director accepts an alternate sampling location that is representative of the water quality of that well.

(C) Analytical methods.

- (1) A ground water system subject to the source water monitoring requirements of paragraph (A) of this rule shall collect a standard sample volume of at least one hundred milliliters for fecal indicator analysis regardless of the fecal indicator or analytical method used.
- (2) A ground water system shall analyze all ground water source samples collected in accordance with paragraph (A) of this rule, using one of the analytical methods listed in rule 3745-81-27 of the Administrative Code or as determined by the director, for the presence of E. coli, enterococci, or coliphage.

(D) Invalidation of a fecal indicator-positive ground water source sample.

- (1) A ground water system may obtain director invalidation of a fecal indicator-positive ground water source sample collected under paragraph (A) of this rule only under the following conditions:
 - (a) The system provides the director with written notice from the laboratory that improper sample analysis occurred; or
 - (b) The director determines, and documents in writing, that there is substantial evidence that a fecal indicator-positive ground water source sample is not related to source water quality.
- (2) If the director invalidates a fecal indicator-positive ground water source sample, the ground water system shall collect another source water sample under paragraph (A) of this rule within twenty-four hours of being notified of the sample invalidation and have the source water sample analyzed for the same fecal indicator using the analytical methods in paragraph (C) of this rule. The director may extend the twenty-four hour time limit on a case-by-case basis if the system cannot collect the source water sample within twenty-four hours due to circumstances beyond the system's control. In the case of an extension, the director shall specify how much time the system has to collect the sample.

(E) Sampling location.

- (1) Any ground water source sample required under paragraph (A) of this rule shall be collected at a location prior to any treatment of the ground water source unless the director accepts a sampling location after treatment.
 - (2) If the system's configuration does not allow for sampling at the well itself, the system may collect a sample at a director-accepted location to meet the requirements of paragraph (A) of this rule if the sample is representative of the water quality of that well.
 - (3) A ground water system with minimal treatment, as defined in rule 3745-81-01 of the Administrative Code, may collect a sample at a location acceptable to the director.
- (F) If required by the director, a ground water system that places a new ground water source into service after November 30, 2009, shall conduct assessment source water monitoring under paragraph (B) of this rule. If required by the director, the system shall begin monitoring before the ground water source is used to provide water to the public.
- (G) A ground water system with a ground water source sample collected under paragraph (A) or (B) of this rule that is fecal indicator-positive and that is not invalidated under paragraph (D) of this rule, including consecutive systems served by the ground water source, shall conduct public notification in accordance with paragraph (B)(1)(h) of rule 3745-81-32 of the Administrative Code.
- (H) Failure to meet the requirements of paragraphs (A) to (F) of this rule is a monitoring violation and requires the ground water system to provide public notification under paragraph (D)(1)(a) of rule 3745-81-32 of the Administrative Code. A ground water system providing 4-log inactivation of viruses and required to conduct assessment source water monitoring in accordance with this rule, and if acceptable to the director, will not be required to issue public notification.

Effective: 10/31/2010

R.C. 119.032 review dates: 10/31/2015

Promulgated Under: 119.03

Statutory Authority: 6109.04

Rule Amplifies: 6109.03, 6109.04