

310 CMR 22.00: DRINKING WATER

22.26 Ground Water Rule

(1) General Requirements and Applicability.

(a) Applicability. 310 CMR 22.26 applies to all public water systems that use ground water except that it does not apply to public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment. For the purposes of 310 CMR 22.26, "ground water system" is defined as any public water system meeting this applicability statement, including consecutive systems receiving finished ground water.

(b) General requirements. Systems subject to 310 CMR 22.26 must comply with the following requirements:

1. Sanitary survey information requirements for all ground water systems as described in 310 CMR 22.26(2).
2. Microbial source water monitoring requirements for ground water systems that do not treat all of their ground water to at least 99.99 percent (4-log) treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer as described in 310 CMR 22.26(3).
3. Treatment technique requirements, described in 310 CMR 22.26(4), that apply to ground water systems that have fecally contaminated source waters, as determined by source water monitoring conducted under 310 CMR 22.26(3), or that have significant deficiencies that are identified by the Department. A ground water system with fecally contaminated source water or with significant deficiencies subject to the treatment technique requirements of 310 CMR 22.26 must implement one or more of the following corrective action options:
  - a. correct all significant deficiencies;
  - b. provide an alternate source of water
  - c. eliminate the source of contamination; or
  - d. provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer.
4. Ground water systems that provide at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer are required to conduct compliance monitoring to demonstrate treatment effectiveness, as described in 310 CMR 22.26(4)(b).

(c) Compliance date. Ground water systems must comply, unless otherwise noted, with the requirements of 310 CMR 22.26 beginning December 1, 2009.

(2) Sanitary Surveys For Ground Water Systems.

(a) Ground water systems must provide the Department or its agents, at the Department's request, any existing information that will enable the Department to conduct a sanitary survey.

(b) For the purposes of 310 CMR 22.26, a sanitary survey, as conducted by the Department or its agents, includes but is not limited to, an onsite review of the water source(s) (identifying sources of contamination by using results of source water assessments or other relevant information where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.

(c) The sanitary survey must include a written evaluation of the applicable components listed in 310 CMR 22.26 (2)(c)1. through 8:

1. Source,
2. Treatment,
3. Distribution system,
4. Finished water storage,
5. Pumps, pump facilities, and controls,
6. Monitoring, reporting, and data verification,
7. System management and operation, and
8. Operator compliance with Department requirements.

(3) Ground Water Source Microbial Monitoring and Analytical Methods.

(a) Triggered source water monitoring.

1. General requirements. A ground water system must conduct triggered source water monitoring if the conditions identified in 310 CMR 22.26 (3)(a)1.a. and (a)1.b. exist.
  - a. The system does not provide at least 4-log treatment of viruses (using inactivation, removal, or a Department-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 310 CMR 22.05(1)(a) is total coliform-positive and the sample is not invalidated under 310 CMR 22.05(3).
2. Sampling Requirements. A ground water system must collect, within 24 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, except as provided in 310 CMR 22.26(3)(a)2.b.
  - a. The Department may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the ground water source water sample within 24 hours due to circumstances beyond its control. The system must contact the Department for pre-approval of the delay of sampling. In the case of an extension, the Department will specify in writing how much time the system has to collect the sample.
  - b. If approved by the Department, systems with more than one ground water source may meet the requirements of 310 CMR 22.26(3)(a)2. by sampling a representative ground water source or sources. Systems must submit for Department approval a triggered source water monitoring plan that identifies one or more ground water sources that are representative of each monitoring site in the system's sample siting plan under 310 CMR 22.05(1) and that the system intends to use for representative sampling under 310 CMR 22.26(3). After December 1, 2009, a system that has not received written Department approval of their triggered source water monitoring plan, must collect triggered source water samples as required by 310 CMR 22.26(3)(a)2 until written approval is received.
  - c. A ground water system serving 1,000 people or fewer may use a repeat sample collected from a ground water source to meet both the requirements of 310 CMR 22.05(2) and to satisfy the monitoring requirements of 310 CMR 22.26(3)(a)2. for that ground water source. If the repeat sample collected for the ground water source is *E.coli* positive, the system must comply with 310 CMR 22.26(3)(a)4.
  - d. A ground water system may use a raw water sample collected to meet the requirements of 310 CMR 22.05(1) to satisfy the monitoring requirements of 310 CMR 22.26(3)(a)2. for that ground water source only if: the raw water sample was collected on the same day as the distribution sample that tested total coliform positive under 310 CMR 22.05(1) and triggered the requirements of 310 CMR 22.26(3)(a)2; and the raw water sample was analyzed in accordance with 310 CMR 22.05(3)(b)1. and the analytical methods in 310 CMR 22.26(3)(c). If the raw water sample is total coliform-negative, no additional testing is required under 310 CMR 22.26 unless otherwise determined by the Department..
3. Fecal Indicator Requirement.
  - a. All Non-Transient Non-Community Water Systems, all Transient Non-Community Water Systems and each Community Water Systems serving 3,300 or fewer people shall use *E.coli* as the fecal indicator to comply with 310 CMR 22.26(3)(a).
  - b. For Community Public Water System serving greater than 3,300 people:
    - i. If *E.coli* is detected in samples collected under 310 CMR 22.05(1), the Community Public Water System shall use *E.coli* as the fecal indicator to comply with 310 CMR 22.26(3)(a).
    - ii. If total coliform is detected in samples collected under 310 CMR 22.05(1) without the confirmation of *E.coli*, the Community Public Water System shall use enterococci as the fecal indicator to comply with 310 CMR 22.26(3)(a).
  - c. Testing for additional fecal indicators may be required to further evaluate contamination at a ground water source.
4. Additional Requirements. If the Department does not require corrective action under 310 CMR 22.26(4)(a)2. for a fecal indicator-positive source water sample collected

under 310 CMR 22.26(3)(a)2. that is not invalidated under 310 CMR 22.26(3)(d), the system must collect five additional source water samples from the same source within 24 hours of being notified of the fecal indicator-positive sample.

5. Consecutive and Wholesale Systems.

a. In addition to the other requirements of 310 CMR 22.26(3)(a), a consecutive ground water system that has a total coliform-positive sample collected under 310 CMR 22.05(1) must notify the wholesale system(s) within 24 hours of being notified of the total coliform positive sample.

b. In addition to the other requirements of 310 CMR 22.26(3)(a), a wholesale ground water system must comply with 310 CMR 22.26(3)(a)5.b.i. and (3)(a)5.b.ii.

i. A wholesale ground water system that receives notice from a consecutive system it serves that a sample collected under 310 CMR 22.05(1) is total coliform-positive must, within 24 hours of being notified, collect a sample from its ground water source(s) under 310 CMR 22.26(3)(a)2. and analyze it for a fecal indicator under 310 CMR 22.26(3)(c).

ii. If the sample collected under 310 CMR 22.26(3)(a)5.b.i. is fecal indicator-positive, the wholesale ground water system must notify all consecutive systems served by that ground water source of the fecal indicator source water positive within 24 hours of being notified of the ground water source water sample monitoring result and must meet the requirements of 310 CMR 22.26(3)(a)4.

6. Exceptions to the Triggered Source Water Monitoring Requirements.

A ground water system is not required to comply with the source water monitoring requirements of 310 CMR 22.26(3)(a) if either of the following conditions exists:

a. The Department determines, and documents in writing, that the total coliform-positive sample collected under 310 CMR 22.05(1) is caused by a distribution system deficiency; or

b. The total coliform-positive sample collected under 310 CMR 22.05(1)(a) is collected at a location that meets Department criteria for distribution system conditions that will cause total coliform-positive samples.

(b) Other source water monitoring.

1. A ground water system meeting the applicability requirements of 310 CMR 22.26(1)(a) that does not treat their ground water to at least 99.99 percent (4-log) treatment of viruses and conducts any type of source water monitoring under 310 CMR 22.00 or otherwise that includes analysis of total coliform, *E.coli*, enterococci, or coliphage is subject to the requirements of 310 CMR 22.26 if the source water sample analysis yields a positive result. The requirements of 310 CMR 22.26 apply only to the ground water sources with positive source water sample results. A positive sample shall satisfy the monitoring requirements of 310 CMR 22.26(3)(a)2. If the source water sample is tested for total coliform, and the sample is total coliform-positive, the system must analyze that total coliform-positive culture medium for *E.coli*. *E.coli* shall serve as the fecal indicator under this condition.

2. The Department reserves the right to require additional source water monitoring for fecal indicators using analytical methods as defined under 310 CMR 22.26(3)(c) if circumstances warrant additional testing to determine system vulnerability.

(c) Analytical methods.

1. A ground water system subject to the source water monitoring requirements of 310 CMR 22.26(3)(a) must collect a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical methods used.

2. A ground water system must analyze all ground water source samples collected under 310 CMR 22.26(3)(a) and (b) using methods listed in the following table in 310 CMR 22.26(3)(c)2. for the presence of *E.coli* or enterococci as specified in 310 CMR 22.26(3)(a)3. The Department reserves the right to require coliphage analysis.

Analytical Methods for Source Water Monitoring

Fecal Indicator <sup>1</sup>	Methodology	Method Citation
<i>E.coli</i>	Colilert® <sup>3</sup>	SM 9223 B. <sup>2</sup>
	Colisure® <sup>3</sup>	SM 9223 B. <sup>2</sup>
	Colilert-18®	SM 9223B
	Membrane Filter Method with MI Agar	EPA Method 1604. <sup>4</sup>

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	E*Colite Test <sup>5</sup> NA-MUG	SM 9222 G. <sup>2</sup>
Enterococci	Membrane Filter Technique Membrane Filter Technique Enterolert™ <sup>7</sup>	SM 9230C <sup>2</sup> EPA Method 1600 <sup>6</sup>
Coliphage	Two-Step Enrichment Presence-Absence Procedure Single Agar Layer Procedure	EPA Method 1601 <sup>8</sup> EPA Method 1602 <sup>9</sup>

Analyses must be conducted in accordance with the documents listed below. Copies may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW., EPA West, Room B102, Washington DC 20460 (Telephone: 202-566-2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

<sup>1</sup> The time from sample collection to initiation of analysis may not exceed 30 hours. The ground water system is encouraged but is not required to hold samples below 10°C during transit.

<sup>2</sup> Methods are described in Standard Methods for the Examination of Water and Wastewater 20th edition (1998) and copies may be obtained from the American Public Health Association, 1015 Fifteenth Street, NW., Washington, DC 20005-2605.

<sup>3</sup> Medium is available through IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092

<sup>4</sup> EPA Method 1604: Total Coliforms and *Escherichia coli* in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium); September 2002, EPA 821-R-02-024. Method is available at

<http://www.epa.gov/nerlcwww/1604sp02.pdf> or from EPA's Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue, NW., Washington, D.C. 20460.

<sup>5</sup> A description of the E\*Colite Test, "Charm E\*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Drinking Water, January 9, 1998, is available from Charm Sciences, Inc, 659 Andover St., Lawrence, MA 01843-1032 or from EPA's Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

<sup>6</sup> EPA Method 1600: Enterococci in Water by Membrane Filtration Using membrane-Enterococcus Indoxyl-[beta]-D-Glucoside Agar (mEI) EPA 821-R-02-022 (September 2002) is an approved variation of Standard Method

9230C. The method is available at <http://www.epa.gov/nerlcwww/1600sp02.pdf> or from EPA's Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460. The holding time and temperature for ground water samples are specified in footnote 1 above, rather than as specified in Section 8 of EPA Method 1600.

<sup>7</sup> Medium is available through IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092. Preparation and use of the medium is set forth in the article "Evaluation of Enterolert for Enumeration of Enterococci in Recreational Waters," by Budnick, G.E., Howard, R.T., and Mayo, D.R., 1996, Applied and Environmental Microbiology, 62:3881-3884.

<sup>8</sup> EPA Method 1601: Male-specific (F+) and Somatic Coliphage in Water by Two-step Enrichment Procedure; April 2001, EPA 821-R-01-030. Method is available at <http://www.epa.gov/nerlcwww/1601ap01.pdf> or from EPA's Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

<sup>9</sup> EPA Method 1602: Male-specific (F+) and Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure; April 2001, EPA 821-R-01-029. Method is available at <http://www.epa.gov/nerlcwww/1602ap01.pdf> or from EPA's Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

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

1. A ground water system may obtain Department invalidation of a fecal indicator-positive ground water source sample collected under 310 CMR 22.26(3)(a) only under the conditions specified in 310 CMR 22.26(3)(d)1.a. and b.

a. The system provides the Department with written notice from the laboratory that improper sample analysis occurred; or

b. The Department 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 Department invalidates a fecal indicator-positive ground water source sample, the ground water system must collect another source water sample under 310 CMR 22.26 (3)(a) within 24 hours of being notified by the Department of its invalidation decision and have it analyzed for the same fecal indicator using the analytical methods in 310 CMR 22.26(3)(c). The Department may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the Department will specify how much time the system has to collect the sample.

(e) Sampling location.

1. Any ground water source sample required under 310 CMR 22.26(3)(a) must be collected at a location prior to any treatment of the ground water source. All systems are required to maintain a raw water source water sample tap in accordance with 310 CMR 22.05(1)(a)(i).

2. If the system's configuration does not allow for sampling at the well itself, the system may collect a sample at a Department-approved location to meet the requirements of 310

CMR 22.26(3)(a) if the sample is representative of the water quality of that well.

Approval must be received in writing.

(f) New Sources. A ground water system that plans to place a new ground water source into service after November 30, 2009, must conduct source water monitoring in accordance with Chapter 4 of the Massachusetts Guidelines for Public Water Systems and may have to meet the requirements of 310 CMR 22.26(3)(b) if the Department determines additional testing is required.

(g) Public Notification. A ground water system with a ground water source sample collected under 310 CMR 22.26(3)(a) or (b) that is fecal indicator-positive and that is not invalidated under 310 CMR 22.26(3)(d), including consecutive systems served by the ground water source, must conduct public notification under 310 CMR 22.16.

(h) Monitoring Violations. Failure to meet the requirements of 310 CMR 22.26(3)(a)-(f) is a monitoring violation and requires the ground water system to report each failure to the Department pursuant to 310 CMR 22.15(1), and provide public notification under 310 CMR 22.16.

(i) Department Notification. The system must notify the Department by the end of the day that the system is notified of a fecal indicator-positive source water test result. If the system receives such notification after the Department's regular business hours, then the supplier of water shall provide notification to the Department on the next business day, unless the system receives such notification on a Friday or Saturday. If the system receives such notification on a Friday, after the Department's regular business hours, or Saturday, then it shall provide notification to the Department by calling the Department's 24-hour emergency response phone number no later than 24 hours after it receives such notification from the laboratory. In no circumstance shall notification be performed more than 24 hours after receiving notification from the laboratory.

(4) Treatment Technique Requirements For Ground Water Systems.

(a) Ground water systems with significant deficiencies or source water fecal contamination.

1. The treatment technique requirements of 310 CMR 22.26(4) must be met by ground water systems when a significant deficiency is identified or when a ground water source sample collected under 310 CMR 22.26(3)(a)4. is fecal indicator-positive.

2. If directed by the Department, a ground water system with a ground water source sample collected under 310 CMR 22.26(3)(a)2., (3)(a)5., or (3)(b) that is fecal indicator positive must comply with the treatment technique requirements of 310 CMR 22.26(4).

3. When a significant deficiency is identified at a surface or ground water under the direct influence of surface water public water system that uses both ground water and surface water or ground water under the direct influence of surface water, the system must comply with provisions of 310 CMR 22.26(4) except in cases where the Department determines that the significant deficiency is in a portion of the distribution system that is served solely by surface water or ground water under the direct influence of surface water.

4. Unless the Department directs the ground water system to implement a specific corrective action, the ground water system must consult with the Department regarding the appropriate corrective action within 30 days of receiving written notice from the Department of a significant deficiency, written notice from a laboratory that a ground water source sample collected under 310 CMR 22.26(3)(a)4. was found to be fecal-indicator-positive, or direction from the Department that a fecal indicator-positive sample collected under 310 CMR 22.26 (3)(a)2., (3)(a)5., or (3)(b) requires corrective action. For the purposes of 310 CMR 22.26, significant deficiencies include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the Department determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.

5. Within 120 days (or earlier if directed by the Department) of receiving written notification from the Department of a significant deficiency, written notice from a laboratory that a ground water source sample collected under 310 CMR 22.26(3)(a)4. was found to be fecal indicator positive, or direction from the Department that a fecal indicator-positive sample collected under 310 CMR 22.26(3)(a)2., (3)(a)5., or (3)(b) requires corrective action, the ground water system must either:

- a. Have completed corrective action in accordance with applicable Department plan review processes or other Department guidance or direction, if any, including Department-specified interim measures; or
- b. Be in compliance with a Department-approved corrective action plan and schedule subject to the conditions specified in 310 CMR 22.26(4)(a)5.b.i. and (a)5.b.ii.
  - i. Any subsequent modifications to a Department-approved corrective action plan and schedule must also be approved by the Department.
  - ii. If the Department specifies interim measures for protection of the public health pending Department approval of the corrective action plan and schedule or pending completion of the corrective action plan, the system must comply with these interim measures as well as with any schedule specified by the Department.

6. Corrective Action Alternatives. Ground water systems that meet the conditions of CMR 22.26(4)(a)1. or (a)2. must implement one or more of the following corrective action alternatives:

- a. Correct all significant deficiencies;
- b. Provide an alternate source of water;
- c. Eliminate the source of contamination; or
- d. Provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.

(b) Compliance monitoring.

1. Existing Ground Water Sources. A ground water system that is not required to meet the source water monitoring requirements of 310 CMR 22.26 for any ground water source because it provides at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for any ground water source before December 1, 2009, must notify the Department in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the specified ground water source and begin compliance monitoring in accordance with 310 CMR 22.26(4)(b)3. by December 1, 2009. Notification to the Department must include engineering, operational, or other information that the Department requests to evaluate the submission. If the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source, the system must conduct ground water source monitoring as required 310 CMR 22.26(3).

2. New ground water sources. A ground water system that places a ground water source in service after November 30, 2009, that is not required to meet the source water monitoring requirements of 310 CMR 22.26 because the system provides at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source must comply with the requirements of 310 CMR 22.26 (4)(b)2.a., (4)(b)2.b. and (4)(b)2.c.

- a. The system must notify the Department in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source. Notification to the Department must include engineering, operational, or other information that the Department requests to evaluate the submission.
- b. The system must conduct compliance monitoring as required under 310 CMR 22.26(4)(b)3. within 30 days of placing the source in service.
- c. The system must conduct ground water source monitoring under 310 CMR 22.26(3) if the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.

3. Monitoring requirements. A ground water system subject to the requirements of 310 CMR 22.26 (4)(a), (4)(b)1. or (4)(b)2. must monitor the effectiveness and reliability of treatment for that ground water source before or at the first customer as follows:

a. Chemical disinfection

i. Ground Water Systems Serving Greater than 3,300 People. A ground water system that serves greater than 3,300 people must continuously monitor the residual disinfectant concentration using analytical methods specified in 310 CMR 22.20A(5)(a)2. at a location approved by the Department and must record the lowest residual disinfectant concentration each day that water from the ground water source is served to the public. The ground water system must maintain the Department-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public. If there is a failure in the continuous monitoring equipment, the ground water system must conduct grab sampling every four hours until the continuous monitoring equipment is returned to service. The system must resume continuous residual disinfectant monitoring within 14 days.

ii. Ground Water Systems Serving 3,300 or Fewer People. A ground water system that serves 3,300 or fewer people must monitor the residual disinfectant concentration using analytical methods specified in 310 CMR 22.20A(5)(a)2. at a location approved by the Department and record the residual disinfection concentration each day that water from the ground water source is served to the public. The ground water system must maintain the Department-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public. The ground water system must take a daily grab sample during the hour of peak flow or at another time specified by the Department. If any daily grab sample measurement falls below the Department-determined residual disinfectant concentration, the ground water system must take follow-up samples every four hours until the residual disinfectant concentration is restored to the Department-determined level.

Alternatively, a ground water system that serves 3,300 or fewer people may monitor continuously and meet the requirements of 310 CMR 22.26(4)(b)3.a.i.

b. Membrane filtration. A ground water system that uses membrane filtration to meet the requirements of 310 CMR 22.26 must monitor the membrane filtration process in accordance with all Department-specified monitoring requirements and must operate the membrane filtration in accordance with all Department-specified compliance requirements. A ground water system that uses membrane filtration is in compliance with the requirement to achieve at least 4-log removal of viruses when:

i. The membrane has an absolute molecular weight cut-off (MWCO), or an alternate parameter that describes the exclusion characteristics of the membrane, that can reliably achieve at least 4-log removal of viruses;

ii. The membrane process is operated in accordance with Department-specified compliance requirements; and

iii. The integrity of the membrane is intact.

c. Alternative treatment. A ground water system that uses a Department-approved alternative treatment to meet the requirements of 310 CMR 22.26 by providing at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer must:

i. Monitor the alternative treatment in accordance with all Department-specified monitoring requirements; and

ii. Operate the alternative treatment in accordance with all compliance requirements that the Department determines to be necessary to achieve at least 4-log treatment of viruses.

(c) Discontinuing Treatment. A ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source if the Department determines and documents in writing that 4-log treatment of viruses is no longer necessary for that ground water source. A system that discontinues 4-log treatment of viruses is subject to the source water monitoring and analytical methods requirements of 310 CMR 22.26(3).

(d) Failure to meet the monitoring requirements of 310 CMR 22.26(4)(b) is a monitoring violation and requires the ground water system to provide public notification under 310 CMR 22.16(4).

(5) Treatment Technique Violations For Ground Water Systems.

(a) A ground water system with a significant deficiency is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the Department) of receiving written notice from the Department of the significant deficiency, the system:

1. Does not complete corrective action in accordance with any applicable Department plan review processes or other Department guidance and direction, including Department specified interim actions and measures, or
2. Is not in compliance with a Department-approved corrective action plan and schedule.

(b) Unless the Department invalidates a fecal indicator-positive ground water source sample under 310 CMR 22.26(3)(d), a ground water system is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the Department of meeting the conditions of 310 CMR 22.26(4)(a)1. or (4)(a)2., the system:

1. Does not complete corrective action in accordance with any applicable Department plan review processes or other Department guidance and direction, including Department-specified interim measures, or
2. Is not in compliance with a Department-approved corrective action plan and schedule.

(c) A ground water system subject to the requirements of 310 CMR 22.26(4)(b)3. that fails to maintain at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source is in violation of the treatment technique requirement if the failure is not corrected within four hours of determining the system is not maintaining at least 4-log treatment of viruses before or at the first customer.

(d) Ground water system must give public notification under 310 CMR 22.16A for the treatment technique violations specified in 310 CMR 22.26(5) (a),(b) and (c).

(6) Reporting and Recordkeeping For Ground Water Systems.

(a) Reporting. In addition to the requirements of 310 CMR 22.15, a ground water system regulated under 310 CMR 22.26 must provide the following information to the Department:

1. A ground water system conducting compliance monitoring under 310 CMR 22.26(4)(b) must notify the Department any time the system fails to meet any Department-specified requirements including, but not limited to, minimum residual disinfectant concentration, membrane operating criteria or membrane integrity, and alternative treatment operating criteria, if operation in accordance with the criteria or requirements is not restored within four hours. The ground water system must notify the Department as soon as possible, but in no case later than the end of the next business day.
2. After completing any corrective action under 310 CMR 22.26(4)(a), a ground water system must notify the Department within 30 days of completion of the corrective action.
3. If a ground water system subject to the requirements of 310 CMR 22.26(3)(a) does not conduct source water monitoring under 310 CMR 22.26(3)(a)6.b., the system must provide documentation to the Department within 30 days of the total coliform positive sample that it met the Department criteria.

(b) Recordkeeping. In addition to the requirements of 310 CMR 22.17, a ground water system regulated under 310 CMR 22.26 must maintain the following information in its records:

1. Documentation of corrective actions. Documentation shall be kept for a period of not less than ten years.
2. Documentation of notice to the public as required under 310 CMR 22.16A(8). Documentation shall be kept for a period of not less than three years.
3. Records of decisions under 310 CMR 22.26(3)(a)6.b. and records of invalidation of fecal indicator-positive ground water source samples under 310 CMR 22.26(3)(d). Documentation shall be kept for a period of not less than five years.
4. For consecutive systems, documentation of notification to the wholesale system(s) of total-coliform positive samples that are not invalidated under 310 CMR 22.05(3). Documentation shall be kept for a period of not less than five years.



5. For systems, including wholesale systems, that are required to perform compliance monitoring under 310 CMR 22.26(4)(b):

- a. Records of the Department-specified minimum disinfectant residual. Documentation shall be kept for a period of not less than ten years.
- b. Records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the Department-prescribed minimum residual disinfectant concentration for a period of more than four hours. Documentation shall be kept for a period of not less than five years.
- c. Records of Department-specified compliance requirements for membrane filtration and of parameters specified by the Department for Department-approved alternative treatment and records of the date and duration of any failure to meet the membrane operating, membrane integrity, or alternative treatment operating requirements for more than four hours. Documentation shall be kept for a period of not less than five years.