

Appendix A

Primacy Revision Crosswalk

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SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
PART 141B NATIONAL PRIMARY DRINKING WATER REGULATIONS			
SUBPART CB MONITORING AND ANALYTICAL REQUIREMENTS			
40 CFR 141.21 COLIFORM SAMPLING.			
Sanitary surveys conducted by the State under the provisions of 40 CFR 142.16(o)(2) of this chapter may be used to meet the sanitary survey requirements of this section.	40 CFR 141.21(d)(3)		
40 CFR 141.28 CERTIFIED LABORATORIES.			
For the purpose of determining compliance with 40 CFR 141.21 through 141.27, 141.30, 141.40, 141.74, 141.89 and 141.402, samples may be considered only if they have been analyzed by a laboratory certified by the State except that measurements of alkalinity, calcium, conductivity, disinfectant residual, orthophosphate, pH, silica, temperature and turbidity may be performed by any person acceptable to the State.	40 CFR 141.28		

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SUBPART O – CONSUMER CONFIDENCE REPORTS			
40 CFR 141.153 CONTENT OF THE REPORTS.			
<p><i>Systems required to comply with subpart S.</i> Any ground water system that receives notice from the State of a significant deficiency or notice from a laboratory of a fecal indicator-positive ground water source sample that is not invalidated by the State under 40 CFR 141.402(d) must inform its customers of any significant deficiency that is uncorrected at the time of the next report or of any fecal indicator-positive ground water source sample in the next report. The system must continue to inform the public annually until the State determines that particular significant deficiency is corrected or the fecal contamination in the ground water source is addressed under 40 CFR 141.403(a). Each report must include the following elements.</p>	40 CFR 141.153 (h)(6)(i)		
<p>The nature of the particular significant deficiency or the source of the fecal contamination (if the source is known) and the date the significant deficiency was identified by the State or the dates of the fecal indicator-positive ground water source samples;</p>	40 CFR 141.153 (h)(6)(i)(A)		
<p>If the fecal contamination in the ground water source has been addressed under 40 CFR 141.403(a) and the date of such action;</p>	40 CFR 141.153 (h)(6)(i)(B)		
<p>For each significant deficiency or fecal contamination in the ground water source that has not been addressed under 40 CFR 141.403(a), the State-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed;</p>	40 CFR 141.153 (h)(6)(i)(C)		

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If the system receives notice of a fecal indicator-positive ground water source sample that is not invalidated by the State under 40 CFR 141.402(d), the potential health effects using the health effects language of Appendix A of subpart O.	40 CFR 141.153 (h)(6)(i)(D)					
If directed by the State, a system with significant deficiencies that have been corrected before the next report is issued must inform its customers of the significant deficiency, how the deficiency was corrected, and the date of correction under paragraph (h)(6)(i) of this section.	40 CFR 141.153 (h)(6)(ii)					
APPENDIX A TO SUBPART O OF PART 141—REGULATING CONTAMINANTS.						
Appendix A to Subpart O is amended by adding a new entry “Fecal Indicators (enterococci or coliphage)” is added to read as follows:	Appendix A to Subpart O of Part 141					
Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Microbiological Contaminants:						
Fecal Indicators (enterococci or coliphage).	TT.....	TT.....	N/A.....	Human and animal fecal waste.	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
TT=Treatment Technique						

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SUBPART Q PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS			
40 CFR 141.202 – TIER 1 PUBLIC NOTICE—FORM, MANNER, AND FREQUENCY OF NOTICE.			
<p>This entry is redesignated as entry (9), and a new paragraph (8) is added to read as follows:</p> <p>Detection of <i>E. coli</i>, enterococci, or coliphage in source water samples as specified in 40 CFR 141.402 (a) and 40 CFR 141.402 (b).</p>	40 CFR 141.202 (a) Table 1 (8)		
40 CFR 141.203 – TIER 2 PUBLIC NOTICE—FORM, MANNER, AND FREQUENCY OF NOTICE.			
<p>Failure to take corrective action or failure to maintain at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer under 40 CFR 141.403 (a).</p>	40 CFR 141.203 (a)(4)		

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APPENDIX A TO SUBPART Q OF PART 141—NPDWR VIOLATIONS AND OTHER SITUATIONS REQUIRING PUBLIC NOTICE¹				
Entry I.A.11 is added; entry IV.F is redesignated as entry IV.G; and a new entry IV.F is added in alphabetical order, as listed in the following table:	Appendix A to Subpart Q of Part 141 I.A.II, IV.F, and IV.G			
Contaminant	MCL/MRDL/TT violations ²		Monitoring and testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
I. Violations of National Primary Drinking Water Regulations (NPDWR):³ A. Microbiological Contaminants				
11. Ground Water Rule violations	2	141.404	3	141.402(h). 141.404(d).
IV. Other Situations Requiring Public Notification				
F. Source Water Sample Positive for GWR Fecal indicators: <i>E. coli</i> , enterococci, or coliphage	1	141.402(g)	N/A	N/A
<p>1. Violations and other situations not listed in this table (e.g., failure to prepare Consumer Confidence Reports) do not require notice, unless otherwise determined by the primacy agency. Primacy agencies may, at their option, also require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under 40 CFR 141.202(a) and 40 CFR 141.203(a).</p> <p>2. MCL—Maximum contaminant level, MRDL—Maximum residual disinfectant level, TT—Treatment technique.</p> <p>3. The term Violations of National Primary Drinking Water Regulations (NPDWR) is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.</p>				

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APPENDIX B TO SUBPART Q OF PART 141—STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION

Entries A.1.c and A.1.d are added in numerical order to read as follows:	Appendix B to Subpart Q of Part 141 A.1.c and A.1.d		
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Contaminant	MCLG ¹ mg/L	MCL ² mg/L	Standard health effects language for public notification
National Primary Drinking Water Regulations (NPDWR) A. Microbiological Contaminants			
1c. Fecal indicators (GWR) i. <i>E. coli</i> ii. enterococci iii. coliphage	Zero None None	TT TT TT	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
1d. Ground Water Rule (GWR) TT violations	None	TT	Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

- 1. MCLG – Maximum contaminant level goal
- 2. MCL – Maximum contaminant level

APPENDIX C TO SUBPART Q OF PART 141—LIST OF ACRONYMS USED IN PUBLIC NOTIFICATION REGULATIONS

GWR Ground Water Rule	Appendix C to Subpart Q of Part 141		
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SUBPART S GROUND WATER RULE			
40 CFR 141.400 GENERAL REQUIREMENTS AND APPLICABILITY.			
<i>Scope of this subpart.</i> The requirements of this subpart S constitute National Primary Drinking Water Regulations.	40 CFR 141.400 (a)		
<i>Applicability.</i> This subpart 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 under subpart H. For the purposes of this subpart, “ground water system” is defined as any public water system meeting this applicability statement, including consecutive systems receiving finished ground water.	40 CFR 141.400 (b)		
<i>General Requirements.</i> Systems subject to this subpart must comply with the following requirements:	40 CFR 141.400 (c)		
Sanitary survey information requirements for all ground water systems as described in 40 CFR 141.401.	40 CFR 141.400 (c)(1)		
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 State-approved combination of 4-log virus inactivation and removal) before or at the first customer as described in 40 CFR 141.402.	40 CFR 141.400 (c)(2)		

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<p>Treatment technique requirements, described in 40 CFR 141.403, that apply to ground water systems that have fecally contaminated source waters, as determined by source water monitoring conducted under 40 CFR 141.402, or that have significant deficiencies that are identified by the State or that are identified by EPA under SDWA section 1445. A ground water system with fecally contaminated source water or with significant deficiencies subject to the treatment technique requirements of this subpart must implement one or more of the following corrective action options: correct all significant deficiencies; provide an alternate source of water; eliminate the source of contamination; or provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer.</p>	40 CFR 141.400 (c)(3)		
<p>Ground water systems that provide at least 4-log treatment of viruses (using inactivation, removal, or a State-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 40 CFR 141.403(b).</p>	40 CFR 141.400 (c)(4)		
<p>If requested by the State, ground water systems must provide the State with any existing information that will enable the State to perform a hydrogeologic sensitivity assessment. For the purposes of this subpart, “hydrogeologic sensitivity assessment” is a determination of whether ground water systems obtain water from hydrogeologically sensitive settings.</p>	40 CFR 141.400 (c)(5)		

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<i>Compliance date.</i> Ground water systems must comply, unless otherwise noted, with the requirements of this subpart beginning December 1, 2009.	40 CFR 141.400 (d)		
40 CFR 141.401 SANITARY SURVEYS FOR GROUND WATER SYSTEMS.			
Ground water systems must provide the State, at the State's request, any existing information that will enable the State to conduct a sanitary survey.	40 CFR 141.401 (a)		
For the purposes of this subpart, a "sanitary survey," as conducted by the State, 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.	40 CFR 141.401 (b)		
The sanitary survey must include an evaluation of the applicable components listed in paragraphs (c)(1) through (8) of this section:	40 CFR 141.401 (c)		
(1) Source,	40 CFR 141.401 (c)(1)		
(2) Treatment,	40 CFR 141.401 (c)(2)		
(3) Distribution system,	40 CFR 141.401 (c)(3)		
(4) Finished water storage,	40 CFR 141.401 (c)(4)		
(5) Pumps, pump facilities, and controls,	40 CFR 141.401 (c)(5)		
(6) Monitoring, reporting, and data verification,	40 CFR 141.401 (c)(6)		
(7) System management and operation, and	40 CFR 141.401 (c)(7)		
(8) Operator compliance with State requirements.	40 CFR 141.401 (c)(8)		

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40 CFR 141.402 GROUND WATER SOURCE MICROBIAL MONITORING AND ANALYTICAL METHODS.			
<i>Triggered source water monitoring.</i> —(1) General requirements. A ground water system must conduct triggered source water monitoring if the conditions identified in paragraphs (a)(1)(i) and (a)(1)(ii) of this section exist.	40 CFR 141.402 (a)		
The system does not provide at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for each ground water source; and	40 CFR 141.402 (a)(1)(i)		
The system is notified that a sample collected under 40 CFR 141.21(a) is total coliform-positive and the sample is not invalidated under 40 CFR 141.21(c).	40 CFR 141.402 (a)(1)(ii)		
<i>Sampling Requirements.</i> 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 under 40 CFR 141.21(a), except as provided in paragraph (a)(2)(ii) of this section.	40 CFR 141.402 (a)(2)		
The State 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. In the case of an extension, the State must specify how much time the system has to collect the sample.	40 CFR 141.402 (a)(2)(i)		

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<p>If approved by the State, systems with more than one ground water source may meet the requirements of this paragraph (a)(2) by sampling a representative ground water source or sources. If directed by the State, systems must submit for State 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 40 CFR 141.21(a) and that the system intends to use for representative sampling under this paragraph.</p>	<p>40 CFR 141.402 (a)(2)(ii)</p>		
<p>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 40 CFR 141.21(b) and to satisfy the monitoring requirements of paragraph (a)(2) of this section for that ground water source only if the State approves the use of <i>E. coli</i> as a fecal indicator for source water monitoring under this paragraph (a). If the repeat sample collected from the ground water source is <i>E. coli</i> positive, the system must comply with paragraph (a)(3) of this section.</p>	<p>40 CFR 141.402 (a)(2)(iii)</p>		
<p><i>Additional Requirements.</i> If the State does not require corrective action under 40 CFR 141.403(a)(2) for a fecal indicator-positive source water sample collected under paragraph (a)(2) of this section that is not invalidated under paragraph (d) of this section, 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.</p>	<p>40 CFR 141.402 (a)(3)</p>		

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<p><i>Consecutive and Wholesale Systems.</i> In addition to the other requirements of this paragraph (a), a consecutive ground water system that has a total coliform-positive sample collected under 40 CFR 141.21(a) must notify the wholesale system(s) within 24 hours of being notified of the total coliform-positive sample.</p>	40 CFR 141.402 (a)(4)(i)		
<p>In addition to the other requirements of this paragraph (a), a wholesale ground water system must comply with paragraphs (a)(4)(ii)(A) and (a)(4)(ii)(B) of this section.</p>	40 CFR 141.402 (a)(4)(ii)		
<p>A wholesale ground water system that receives notice from a consecutive system it serves that a sample collected under 40 CFR 141.21(a) is total coliform-positive must, within 24 hours of being notified, collect a sample from its ground water source(s) under paragraph (a)(2) of this section and analyze it for a fecal indicator under paragraph (c) of this section.</p>	40 CFR 141.402 (a)(4)(ii)(A)		
<p>If the sample collected under paragraph (a)(4)(ii)(A) of this section 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 sample monitoring result and must meet the requirements of paragraph (a)(3) of this section.</p>	40 CFR 141.402 (a)(4)(ii)(B)		
<p><i>Exceptions to the Triggered Source Water Monitoring Requirements.</i> A ground water system is not required to comply with the source water monitoring requirements of paragraph (a) of this section if either of the following conditions exists:</p>	40 CFR 141.402 (a)(5)		

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The State determines, and documents in writing, that the total coliform-positive sample collected under 40 CFR 141.21(a) is caused by a distribution system deficiency; or	40 CFR 141.402 (a)(5)(i)		
The total coliform-positive sample collected under 40 CFR 141.21(a) is collected at a location that meets State criteria for distribution system conditions that will cause total coliform-positive samples.	40 CFR 141.402 (a)(5)(ii)		
<i>Assessment Source Water Monitoring.</i> If directed by the State, ground water systems must conduct assessment source water monitoring that meets State-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 section to meet the requirements of paragraph (b) of this section. State-determined assessment source water monitoring requirements may include:	40 CFR 141.402 (b)		
Collection of a total of 12 ground water source samples that represent each month the system provides ground water to the public,	40 CFR 141.402 (b)(1)		
Collection of samples from each well unless the system obtains written State approval to conduct monitoring at one or more wells within the ground water system that are representative of multiple wells used by that system and that draw water from the same hydrogeologic setting,	40 CFR 141.402 (b)(2)		
Collection of a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used,	40 CFR 141.402 (b)(3)		

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Analysis of all ground water source samples using one of the analytical methods listed in the in paragraph (c)(2) of this section for the presence of <i>E. coli</i> , enterococci, or coliphage,	40 CFR 141.402 (b)(4)		
Collection of ground water source samples at a location prior to any treatment of the ground water source unless the State approves a sampling location after treatment, and	40 CFR 141.402 (b)(5)		
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 State approves an alternate sampling location that is representative of the water quality of that well.	40 CFR 141.402 (b)(6)		
<i>Analytical methods.</i> A ground water system subject to the source water monitoring requirements of this paragraph of this section must collect a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used.	40 CFR 141.402 (c)(1)		
A ground water system must analyze all ground water source samples collected under paragraph (a) of this section using one of the analytical methods listed in the following table in paragraph (c)(2) of this section for the presence of <i>E. coli</i> , enterococci, or coliphage:	40 CFR 141.402 (c)(2)		

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Analytical Methods for Source Water Monitoring			
Fecal Indicator ¹	Methodology	Method citation	
<i>E. coli</i>	Colilert ³ Colisure ³ Membrane Filter Method with MI Agar m-ColiBlue24 Test ⁵ E*Colite Test ⁶ EC-MUG ⁷ NA-MUG ⁷	9223 B. ² 9223 B. ² EPA Method 1604. ⁴ 9221 F. ² 9222 G. ²	
Enterococci	Multiple-Tube Technique Membrane Filter Technique Membrane Filter Technique Enterolert ⁹	9230B. ² 9230C. ² EPA Method 1600. ⁸	
Coliphage	Two-Step Enrichment Presence-Absence Procedure Single Agar Layer Procedure	EPA Method 1601. ¹⁰ EPA Method 1602. ¹¹	
<p>Analyses must be conducted in accordance with the documents listed below. The Director of the Federal Register approves the incorporation by reference of the documents listed in footnotes 2–11 in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources 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.</p> <p>1 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.</p> <p>2 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.</p> <p>3 Medium is available through IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092.</p> <p>4 EPA Method 1604: Total Coliforms and <i>Escherichia coli</i> 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, DC 20460.</p> <p>5 A description of the m-ColiBlue24 Test, “Total Coliforms and <i>E. coli</i> Membrane Filtration Method with m-ColiBlue24@ Broth,” Method No. 10029 Revision 2, August 17, 1999, is available from Hach Company, 100 Dayton Ave., Ames, IA 50010 or from EPA’s Water Resource Center (RC–4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.</p> <p>6 A description of the E*Colite Test, “Charm E*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and <i>Escherichia coli</i> 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.</p> <p>7 EC–MUG (Method 9221F) or NA–MUG (Method 9222G) can be used for <i>E. coli</i> testing step as described in 40 CFR 141.21(f)(6)(i) or (ii) after use of Standard Methods 9221 B, 9221 D, 9222 B, or 9222 C.</p> <p>8 EPA Method 1600: Enterococci in Water by Membrane Filtration Using membrane-Enterococcus Indoxyl–b–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.</p> <p>9 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.</p> <p>10 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.</p> <p>11 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.</p>			

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<p><i>Invalidation of a fecal indicator-positive ground water source sample.</i> A ground water system may obtain State invalidation of a fecal indicator-positive ground water source sample collected under paragraph (a) of this section only under the conditions specified in paragraphs (d)(1)(i) and (ii) of this section.</p>	40 CFR 141.402 (d)(1)		
<p>The system provides the State with written notice from the laboratory that improper sample analysis occurred; or</p>	40 CFR 141.402 (d)(1)(i)		
<p>The State 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.</p>	40 CFR 141.402 (d)(1)(ii)		
<p>If the State invalidates a fecal indicator-positive ground water source sample, the ground water system must collect another source water sample under paragraph (a) of this section within 24 hours of being notified by the State of its invalidation decision and have it analyzed for the same fecal indicator using the analytical methods in paragraph (c) of this section. The State 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 State must specify how much time the system has to collect the sample.</p>	40 CFR 141.402 (d)(2)		
<p><i>Sampling location.</i> Any ground water source sample required under paragraph (a) of this section must be collected at a location prior to any treatment of the ground water source unless the State approves a sampling location after treatment.</p>	40 CFR 141.402 (e)(1)		

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<p>If the system's configuration does not allow for sampling at the well itself, the system may collect a sample at a State-approved location to meet the requirements of paragraph (a) of this section if the sample is representative of the water quality of that well.</p>	40 CFR 141.402 (e)(2)		
<p><i>New Sources.</i> If directed by the State, a ground water system that places a new ground water source into service after November 30, 2009, must conduct assessment source water monitoring under paragraph (b) of this section. If directed by the State, the system must begin monitoring before the ground water source is used to provide water to the public.</p>	40 CFR 141.402 (f)		
<p><i>Public Notification.</i> A ground water system with a ground water source sample collected under paragraph (a) or (b) of this section that is fecal indicator-positive and that is not invalidated under paragraph (d) of this section, including consecutive systems served by the ground water source, must conduct public notification under 40 CFR 141.202.</p>	40 CFR 141.402 (g)		
<p><i>Monitoring Violations.</i> Failure to meet the requirements of paragraphs (a)–(f) of this section is a monitoring violation and requires the ground water system to provide public notification under 40 CFR 141.204.</p>	40 CFR 141.402 (h)		
<p>40 CFR 141.403 TREATMENT TECHNIQUE REQUIREMENTS FOR GROUND WATER SYSTEMS.</p>			
<p><i>Ground water systems with significant deficiencies or source water fecal contamination.</i> The treatment technique requirements of this section must be met by ground water systems when a significant deficiency is identified or when a ground water source sample collected under 40 CFR 141.402(a)(3) is fecal indicator-positive.</p>	40 CFR 141.403 (a)(1)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
If directed by the State, a ground water system with a ground water source sample collected under 40 CFR 141.402(a)(2), 40 CFR 141.402(a)(4), or 40 CFR 141.402(b) that is fecal indicator-positive must comply with the treatment technique requirements of this section.	40 CFR 141.403 (a)(2)		
When a significant deficiency is identified at a Subpart H 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 this paragraph except in cases where the State 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.	40 CFR 141.403 (a)(3)		
Unless the State directs the ground water system to implement a specific corrective action, the ground water system must consult with the State regarding the appropriate corrective action within 30 days of receiving written notice from the State of a significant deficiency, written notice from a laboratory that a ground water source sample collected under 40 CFR 141.402(a)(3) was found to be fecal indicator-positive, or direction from the State that a fecal indicator-positive [sample] collected under 40 CFR 141.402(a)(2), 40 CFR 141.402(a)(4), or 40 CFR 141.402(b) requires corrective action. For the purposes of this subpart, 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 State determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.	40 CFR 141.403 (a)(4)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Within 120 days (or earlier if directed by the State) of receiving written notification from the State of a significant deficiency, written notice from a laboratory that a ground water source sample collected under 40 CFR 141.402(a)(3) was found to be fecal indicator-positive, or direction from the State that a fecal indicator-positive sample collected under 40 CFR 141.402(a)(2), 40 CFR 141.402(a)(4), or 40 CFR 141.402(b) requires corrective action, the ground water system must either:	40 CFR 141.403 (a)(5)		
Have completed corrective action in accordance with applicable State plan review processes or other State guidance or direction, if any, including State-specified interim measures; or	40 CFR 141.403 (a)(5)(i)		
Be in compliance with a State-approved corrective action plan and schedule subject to the conditions specified in paragraphs (a)(5)(ii)(A) and (a)(5)(ii)(B) of this section.	40 CFR 141.403 (a)(5)(ii)		
Any subsequent modifications to a State-approved corrective action plan and schedule must also be approved by the State.	40 CFR 141.403 (a)(5)(ii)(A)		
If the State specifies interim measures for protection of the public health pending State 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 State.	40 CFR 141.403 (a)(5)(ii)(B)		
<i>Corrective Action Alternatives.</i> Ground water systems that meet the conditions of paragraph (a)(1) or (a)(2) of this section must implement one or more of the following corrective action alternatives:	40 CFR 141.403 (a)(6)		
Correct all significant deficiencies;	40 CFR 141.403 (a)(6)(i)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Provide an alternate source of water;	40 CFR 141.403 (a)(6)(ii)		
Eliminate the source of contamination; or	40 CFR 141.403 (a)(6)(iii)		
Provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.	40 CFR 141.403 (a)(6)(iv)		
<i>Special notice to the public of significant deficiencies or source water fecal contamination.</i> In addition to the applicable public notification requirements of 40 CFR 141.202, a community ground water system that receives notice from the State of a significant deficiency or notification of a fecal indicator-positive ground water source sample that is not invalidated by the State under 40 CFR 141.402(d) must inform the public served by the water system under 40 CFR 141.153(h)(6) of the fecal indicator-positive source sample or of any significant deficiency that has not been corrected. The system must continue to inform the public annually until the significant deficiency is corrected or the fecal contamination in the ground water source is determined by the State to be corrected under paragraph (a)(5) of this section.	40 CFR 141.403 (a)(7)(i)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
<p>In addition to the applicable public notification requirements of 40 CFR 141.202, a non-community ground water system that receives notice from the State of a significant deficiency must inform the public served by the water system in a manner approved by the State of any significant deficiency that has not been corrected within 12 months of being notified by the State, or earlier if directed by the State. The system must continue to inform the public annually until the significant deficiency is corrected. The information must include:</p>	40 CFR 141.403 (a)(7)(ii)		
<p>The nature of the significant deficiency and the date the significant deficiency was identified by the State;</p>	40 CFR 141.403 (a)(7)(ii)(A)		
<p>The State-approved plan and schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed; and</p>	40 CFR 141.403 (a)(7)(ii)(B)		
<p>For systems with a large proportion of non-English speaking consumers, as determined by the State, information in the appropriate language(s) regarding the importance of the notice or a telephone number or address where consumers may contact the system to obtain a translated copy of the notice or assistance in the appropriate language.</p>	40 CFR 141.403 (a)(7)(ii)(C)		
<p>If directed by the State, a non-community water system with significant deficiencies that have been corrected must inform its customers of the significant deficiencies, how the deficiencies were corrected, and the dates of correction under paragraph (a)(7)(ii) of this section.</p>	40 CFR 141.403 (a)(7)(iii)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
<p><i>Compliance monitoring.</i> Existing ground water sources. A ground water system that is not required to meet the source water monitoring requirements of this subpart for any ground water source because it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-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 State in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-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 paragraph (b)(3) of this section by December 1, 2009. Notification to the State must include engineering, operational, or other information that the State requests to evaluate the submission. If the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a State-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 under 40 CFR 141.402.</p>	40 CFR 141.403 (b)(1)		
<p><i>New ground water sources.</i> 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 this subpart because the system provides at least 4-log treatment of viruses (using inactivation, removal, or a State-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 paragraphs (b)(2)(i), (b)(2)(ii) and (b)(2)(iii) of this section.</p>	40 CFR 141.403 (b)(2)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
<p>The system must notify the State in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source. Notification to the State must include engineering, operational, or other information that the State requests to evaluate the submission.</p>	40 CFR 141.403 (b)(2)(i)		
<p>The system must conduct compliance monitoring as required under 40 CFR 141.403(b)(3) of this subpart within 30 days of placing the source in service.</p>	40 CFR 141.403 (b)(2)(ii)		
<p>The system must conduct ground water source monitoring under 40 CFR 141.402 if the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.</p>	40 CFR 141.403 (b)(2)(iii)		
<p><i>Monitoring requirements.</i> A ground water system subject to the requirements of paragraphs (a), (b)(1) or (b)(2) of this section must monitor the effectiveness and reliability of treatment for that ground water source before or at the first customer as follows:</p>	40 CFR 141.403 (b)(3)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
<p><i>Chemical disinfection. Ground water systems serving greater than 3,300 people.</i> A ground water system that serves greater than 3,300 people must continuously monitor the residual disinfectant concentration using analytical methods specified in 40 CFR 141.74(a)(2) at a location approved by the State 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 State-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.</p>	<p>40 CFR 141.403 (b)(3)(i)(A)</p>		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
<p><i>Ground water systems serving 3,300 or fewer people.</i> A ground water system that serves 3,300 or fewer people must monitor the residual disinfectant concentration using analytical methods specified in 40 CFR 141.74(a)(2) at a location approved by the State 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 State-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 State. If any daily grab sample measurement falls below the State-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 State-determined level. Alternatively, a ground water system that serves 3,300 or fewer people may monitor continuously and meet the requirements of paragraph (b)(3)(i)(A) of this section.</p>	40 CFR 141.403 (b)(3)(i)(B)		
<p><i>Membrane filtration.</i> A ground water system that uses membrane filtration to meet the requirements of this subpart must monitor the membrane filtration process in accordance with all State-specified monitoring requirements and must operate the membrane filtration in accordance with all State-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:</p>	40 CFR 141.403 (b)(3)(ii)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
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;	40 CFR 141.403 (b)(3)(ii)(A)		
The membrane process is operated in accordance with State-specified compliance requirements; and	40 CFR 141.403 (b)(3)(ii)(B)		
The integrity of the membrane is intact.	40 CFR 141.403 (b)(3)(ii)(C)		
<i>Alternative treatment.</i> A ground water system that uses a State-approved alternative treatment to meet the requirements of this subpart by providing at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer must:	40 CFR 141.403 (b)(3)(iii)		
Monitor the alternative treatment in accordance with all State-specified monitoring requirements; and	40 CFR 141.403 (b)(3)(iii)(A)		
Operate the alternative treatment in accordance with all compliance requirements that the State determines to be necessary to achieve at least 4-log treatment of viruses.	40 CFR 141.403 (b)(3)(iii)(B)		
Discontinuing treatment. A ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source if the State 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 40 CFR 141.402 of this subpart.	40 CFR 141.403 (c)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Failure to meet the monitoring requirements of paragraph (b) of this section is a monitoring violation and requires the ground water system to provide public notification under 40 CFR 141.204.	40 CFR 141.403 (d)		
40 CFR 141.404 TREATMENT TECHNIQUE VIOLATIONS FOR GROUND WATER SYSTEMS.			
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 State) of receiving written notice from the State of the significant deficiency, the system:	40 CFR 141.404 (a)		
Does not complete corrective action in accordance with any applicable State plan review processes or other State guidance and direction, including State specified interim actions and measures, or	40 CFR 141.404 (a)(1)		
Is not in compliance with a State-approved corrective action plan and schedule.	40 CFR 141.404 (a)(2)		
Unless the State invalidates a fecal indicator-positive ground water source sample under 40 CFR 141.402(d), a ground water system is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the State) of meeting the conditions of 40 CFR 141.403(a)(1) or 40 CFR 141.403(a)(2), the system:	40 CFR 141.404 (b)		
Does not complete corrective action in accordance with any applicable State plan review processes or other State guidance and direction, including State-specified interim measures, or	40 CFR 141.404 (b)(1)		
Is not in compliance with a State-approved corrective action plan and schedule.	40 CFR 141.404 (b)(2)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
A ground water system subject to the requirements of 40 CFR 141.403(b)(3) that fails to maintain at least 4-log treatment of viruses (using inactivation, removal, or a State-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.	40 CFR 141.404 (c)		
Ground water system must give public notification under 40 CFR 141.203 for the treatment technique violations specified in paragraphs (a), (b) and (c) of this section.	40 CFR 141.404 (d)		
40 CFR 141.405 REPORTING AND RECORDKEEPING FOR GROUND WATER SYSTEMS.			
<i>Reporting.</i> In addition to the requirements of 40 CFR 141.31, a ground water system regulated under this subpart must provide the following information to the State:	40 CFR 141.405 (a)		
A ground water system conducting compliance monitoring under 40 CFR 141.403(b) must notify the State any time the system fails to meet any State-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 State as soon as possible, but in no case later than the end of the next business day.	40 CFR 141.405 (a)(1)		
After completing any corrective action under 40 CFR 141.403(a), a ground water system must notify the State within 30 days of completion of the corrective action.	40 CFR 141.405 (a)(2)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
If a ground water system subject to the requirements of 40 CFR 141.402(a) does not conduct source water monitoring under 40 CFR 141.402(a)(5)(ii), the system must provide documentation to the State within 30 days of the total coliform positive sample that it met the State criteria.	40 CFR 141.405 (a)(3)		
<i>Recordkeeping.</i> In addition to the requirements of 40 CFR 141.33, a ground water system regulated under this subpart must maintain the following information in its records:	40 CFR 141.405 (b)		
Documentation of corrective actions. Documentation shall be kept for a period of not less than ten years.	40 CFR 141.405 (b)(1)		
Documentation of notice to the public as required under 40 CFR 141.403(a)(7). Documentation shall be kept for a period of not less than three years.	40 CFR 141.405 (b)(2)		
Records of decisions under 40 CFR 141.402(a)(5)(ii) and records of invalidation of fecal indicator-positive ground water source samples under 40 CFR 141.402(d). Documentation shall be kept for a period of not less than five years.	40 CFR 141.405 (b)(3)		
For consecutive systems, documentation of notification to the wholesale system(s) of total-coliform positive samples that are not invalidated under 40 CFR 141.21(c). Documentation shall be kept for a period of not less than five years.	40 CFR 141.405 (b)(4)		
For systems, including wholesale systems, that are required to perform compliance monitoring under 40 CFR 141.403(b):	40 CFR 141.405 (b)(5)		
Records of the State-specified minimum disinfectant residual. Documentation shall be kept for a period of not less than ten years.	40 CFR 141.405 (b)(5)(i)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the State-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.	40 CFR 141.405 (b)(5)(ii)		
Records of State-specified compliance requirements for membrane filtration and of parameters specified by the State for State-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.	40 CFR 141.405 (b)(5)(iii)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	EXPLANATION OF STATE POLICIES AND PROCEDURES
PART 142B NATIONAL PRIMARY DRINKING WATER REGULATIONS IMPLEMENTATION		
SUBPART BB PRIMARY ENFORCEMENT RESPONSIBILITY		
40 CFR 142.14 RECORDS KEPT BY STATES.		
Records of the currently applicable or most recent State determination, including all supporting information and an explanation of the technical basis of each decision, made under the following provisions of 40 CFR part 141, subpart S and 40 CFR part 142.	40 CFR 142.14 (d)(17)	
40 CFR 142.16(o)(2)(v). Records of written notices of significant deficiencies.	40 CFR 142.14 (d)(17)(i)	
40 CFR 141.403(a)(5)(ii) of this chapter. Records of corrective action plans, schedule approvals, and State-specified interim measures.	40 CFR 142.14 (d)(17)(ii)	
40 CFR 142.16(o)(4). Records of confirmations under 40 CFR 141.403(a) of this chapter that a significant deficiency has been corrected or the fecal contamination in the ground water source has been addressed.	40 CFR 142.14 (d)(17)(iii)	
40 CFR 141.402(a)(5) of this chapter. Records of State determinations and records of ground water system's documentation for not conducting triggered source water monitoring.	40 CFR 142.14 (d)(17)(iv)	
40 CFR 141.402(d) of this chapter. Records of invalidations of fecal indicator-positive ground water source samples.	40 CFR 142.14 (d)(17)(v)	
40 CFR 141.402(a)(2)(ii) of this chapter. Records of State approvals of source water monitoring plans.	40 CFR 142.14 (d)(17)(vi)	
40 CFR 142.16(o)(4)(ii). Records of notices of the minimum residual disinfection concentration (when using chemical disinfection) needed to achieve at least 4-log virus inactivation before or at the first customer.	40 CFR 142.14 (d)(17)(vii)	

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	EXPLANATION OF STATE POLICIES AND PROCEDURES
40 CFR 142.16(o)(4)(iv) and 142.16(o)(4)(v) Records of notices of the State-specified monitoring and compliance requirements (when using membrane filtration or alternative treatment) needed to achieve at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer.	40 CFR 142.14 (d)(17)(viii)	
40 CFR 141.403(b)(1) and 141.403(b)(2) of this chapter. Records of written notices from the ground water system that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source.	40 CFR 142.14 (d)(17)(ix)	
40 CFR 142.16(o)(4)(vi). Records of written determinations that the ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal).	40 CFR 142.14 (d)(17)(x)	
40 CFR 142.15 RECORDS BY STATES.		
<i>Ground water rule. Sanitary surveys.</i> The month and year in which the most recent sanitary survey was completed or, for a State that uses a phased review process, the date the last element of the applicable eight elements was evaluated under 40 CFR 142.16(o)(2) for each ground water system.	40 CFR 142.15 (c)(7)(i)	
<i>Corrective action requirements.</i> For any corrective action under 40 CFR 141.403(a) of this chapter, the date the ground water system completed corrective action.	40 CFR 142.15 (c)(7)(ii)	
<i>Compliance monitoring.</i> All ground water systems providing at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for any ground water source(s).	40 CFR 142.15 (c)(7)(iii)	

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	EXPLANATION OF STATE POLICIES AND PROCEDURES
40 CFR 142.16 SPECIAL PRIMACY REQUIREMENTS.		
<i>Table 1 of 40 CFR 141.202(a) (Items (5), (6), and (9))</i> —To require public water systems to give a Tier 1 public notice (rather than a Tier 2 or Tier 3 notice) for violations or situations listed in Appendix A of Subpart Q of Part 141 of this chapter;	40 CFR 142.16 (a)(2)(iii)	
<i>Requirements for States to adopt 40 CFR part 141, subpart S.</i> In addition to the general primacy requirements specified elsewhere in this part, including the requirement that State regulations are no less stringent than the Federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart S, must contain the information specified in this paragraph (o).	40 CFR 142.16 (o)	
<i>Legal authority.</i> The application for primacy must demonstrate the State has:	40 CFR 142.16 (o)(1)	
The authority contained in statute or regulation to ensure that ground water systems conduct source water monitoring under 40 CFR 141.402(a)(2), 40 CFR 141.402(a)(3) and 40 CFR 141.402(a)(4)(ii)(A) of this chapter.	40 CFR 142.16 (o)(1)(i)	
The authority contained in statute or regulation to ensure that ground water systems take the appropriate corrective actions including interim measures, if necessary, needed to address significant deficiencies.	40 CFR 142.16 (o)(1)(ii)	
The authority contained in statute or regulation to ensure that ground water systems take the appropriate corrective actions, including interim measures if necessary, to address any source water fecal contamination identified during source water monitoring under 40 CFR 141.402 of this chapter.	40 CFR 142.16 (o)(1)(iii)	
The authority contained in statute or regulation to ensure that ground water systems consult with the State regarding corrective action(s).	40 CFR 142.16 (o)(1)(iv)	

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	EXPLANATION OF STATE POLICIES AND PROCEDURES
<p><i>State practices or procedures for sanitary surveys.</i> In addition to the general requirements for sanitary surveys contained in 40 CFR 142.10(b)(2), a primacy application must describe how the State will implement a sanitary survey program that meets the requirements of paragraph (o)(2)(i) of this section. A “sanitary survey,” as conducted by the State, 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.</p>	40 CFR 142.16 (o)(2)	
<p>The State must conduct sanitary surveys that address the eight sanitary survey components listed in this section no less frequently than every three years for community water systems, except as provided in paragraph (o)(2)(iii) of this section, and every five years for non-community water systems. The State may conduct more frequent sanitary surveys for any system. The initial sanitary survey for each community water system must be conducted by December 31, 2012, unless the system meets the requirements of paragraph (o)(2)(iii) of this section. The initial sanitary survey for each community water system that meets the requirements of paragraph (o)(2)(iii) of this section and for each non-community water system must be conducted by December 31, 2014. The sanitary survey must include an evaluation of each of the following elements as applicable:</p>	40 CFR 142.16 (o)(2)(i)	
Source,	40 CFR 142.16 (o)(2)(i)(A)	
Treatment,	40 CFR 142.16 (o)(2)(i)(B)	
Distribution system,	40 CFR 142.16 (o)(2)(i)(C)	
Finished water storage,	40 CFR 142.16 (o)(2)(i)(D)	
Pumps, pump facilities, and controls,	40 CFR 142.16 (o)(2)(i)(E)	
Monitoring, reporting, and data verification,	40 CFR 142.16 (o)(2)(i)(F)	
System management and operation, and	40 CFR 142.16 (o)(2)(i)(G)	
Operator compliance with State requirements.	40 CFR 142.16 (o)(2)(i)(H)	

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	EXPLANATION OF STATE POLICIES AND PROCEDURES
<p>The State may use a phased review process to meet the requirements of (o)(2)(i) of this section if all the applicable elements of paragraphs (o)(2)(i)(A) through (o)(2)(i)(H) of this section are evaluated within the required interval.</p>	<p>40 CFR 142.16 (o)(2)(ii)</p>	
<p>The State may conduct sanitary surveys once every five years for community water systems if the system either provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer for all its ground water sources, or if it has an outstanding performance record, as determined by the State and documented in previous sanitary surveys and has no history of total coliform MCL or monitoring violations under 40 CFR 141.21 of this chapter since the last sanitary survey. In its primacy application, the State must describe how it will determine whether a community water system has an outstanding performance record.</p>	<p>40 CFR 142.16 (o)(2)(iii)</p>	
<p>The State must define and describe in its primacy application at least one specific significant deficiency in each of the eight sanitary survey elements in paragraphs (o)(2)(i)(A) through (o)(2)(i)(H) of this section. 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 State determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.</p>	<p>40 CFR 142.16 (o)(2)(iv)</p>	
<p>As a condition of primacy, the State must provide ground water systems with written notice describing any significant deficiencies no later than 30 days after the State identifies the significant deficiency. The notice may specify corrective actions and deadlines for completion of corrective actions. The State may provide the written notice at the time of the sanitary survey.</p>	<p>40 CFR 142.16 (o)(2)(v)</p>	
<p><i>State practices or procedures for source water microbial monitoring.</i> The State's primacy application must include a description of the following:</p>	<p>40 CFR 142.16 (o)(3)</p>	
<p>The criteria the State will use under 40 CFR 141.402(a)(2)(i) and 141.402(d)(2) of this chapter for extending the 24-hour time limit for a system to collect a ground water source sample to comply with the source water monitoring requirements.</p>	<p>40 CFR 142.16 (o)(3)(i)</p>	

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	EXPLANATION OF STATE POLICIES AND PROCEDURES
The criteria the State will use under 40 CFR 40 CFR 141.402(a)(5)(i) and 141.402(a)(5)(ii) of this chapter to determine whether the cause of the total coliform-positive sample taken under 40 CFR 141.21(a) of this chapter is directly related to the distribution system.	40 CFR 142.16 (o)(3)(ii)	
The criteria the State will use for determining whether to invalidate a fecal indicator-positive ground water source sample under 40 CFR 141.402(d)(1)(ii) of this chapter.	40 CFR 142.16 (o)(3)(iii)	
The criteria the State will use to allow source water microbial monitoring at a location after treatment under 40 CFR 141.402(e)(1) of this chapter.	40 CFR 142.16 (o)(3)(iv)	
<i>State practices or procedures for treatment technique requirements.</i> As a condition of primacy, the State must verify that significant deficiencies or source water fecal contamination have been addressed. The State must verify within 30 days after the ground water system has reported to the State that it has completed corrective action. The State must verify either through written confirmation from the ground water system or a site visit by the State. Written notice from the ground water system under 40 CFR 141.405(a)(2) of this chapter may serve as this verification. The State's primacy application must include the following:	40 CFR 142.16 (o)(4)	
The process the State will use to determine that a ground water system achieves at least a 4-log treatment of viruses (using inactivation, removal, or a combination of inactivation and removal) before or at the first customer for a ground water source for systems that are not subject to the source water monitoring requirements of 40 CFR 141.402(a) of this chapter because the ground water system has informed the State that it provides at least 4-log treatment of viruses.	40 CFR 142.16 (o)(4)(i)	
The process the State will use to determine the minimum residual disinfectant concentration the system must provide prior to the first customer for systems using chemical disinfection.	40 CFR 142.16 (o)(4)(ii)	

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	EXPLANATION OF STATE POLICIES AND PROCEDURES
The State-approved alternative technologies that ground water systems may use alone or in combination with other approved technologies to achieve at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer for a ground water source.	40 CFR 142.16 (o)(4)(iii)	
The monitoring and compliance requirements the State will require for ground water systems treating to at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of inactivation and removal) before or at the first customer for State-approved alternative treatment technologies.	40 CFR 142.16 (o)(4)(iv)	
The monitoring, compliance and membrane integrity testing requirements the State will require to demonstrate virus removal for ground water systems using membrane filtration technologies.	40 CFR 142.16 (o)(4)(v)	
The criteria, including public health-based considerations and incorporating on-site investigations and source water monitoring results the State will use to determine if a ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of inactivation and removal) before or at the first customer.	40 CFR 142.16 (o)(4)(vi)	

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Appendix B

Rule Requirements

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PART 9—OMB APPROVALS UNDER THE PAPERWORK REDUCTION ACT

■ 1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 *et seq.*, 136–136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601–2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 *et seq.*, 1311, 1313d, 1314, 1318,

1321, 1326, 1330, 1342, 1344, 1345 (d) and (e), 1361; Executive Order 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–1, 300j–2, 300j–3, 300j–4, 300j–9, 1857 *et seq.*, 6901–6992k, 7401–7671q, 7542, 9601–9657, 11023, 11048.

■ 2. In § 9.1 the table is amended by adding entries § 141.401–141.405”, § 142.14(d)(17)”, § 142.15(c)(7)” and § 142.16(o)” in numerical order, as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act.

* * * * *

	40 CFR citation	OMB control No.
	* * * * *	*
National Primary Drinking Water Regulations		
	* * * * *	*
141.401–141.405		2040–0271
	* * * * *	*
National Primary Drinking Water Regulations Implementation		
	* * * * *	*
142.14(d)(17)		2040–0271
	* * * * *	*
142.15(c)(7)		2040–0271
	* * * * *	*
142.16(o)		2040–0271

* * * * *

PART 141—NATIONAL PRIMARY DRINKING WATER REGULATIONS

■ 3. The authority citation for part 141 continues to read as follows:

Authority: 42 U.S.C. 300f, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–4, 300j–9, and 300j–11.

■ 4. Section 141.21 is amended by adding paragraph (d)(3) to read as follows:

§ 141.21 Coliform sampling.

* * * * *

(d) * * *

(3) Sanitary surveys conducted by the State under the provisions of § 142.16(o)(2) of this chapter may be used to meet the sanitary survey requirements of this section.

* * * * *

■ 5. Section 141.28 is amended by revising paragraph (a) to read as follows:

§ 141.28 Certified laboratories.

(a) For the purpose of determining compliance with § 141.21 through 141.27, 141.30, 141.40, 141.74, 141.89 and 141.402, samples may be

considered only if they have been analyzed by a laboratory certified by the State except that measurements of alkalinity, calcium, conductivity, disinfectant residual, orthophosphate, pH, silica, temperature and turbidity may be performed by any person acceptable to the State.

* * * * *

■ 6. Section 141.153 is amended by adding a new paragraph (h)(6) to read as follows:

§ 141.153 Content of the reports.

* * * * *

(h) * * *

(6) Systems required to comply with subpart S. (i) Any ground water system that receives notice from the State of a significant deficiency or notice from a laboratory of a fecal indicator-positive ground water source sample that is not invalidated by the State under § 141.402(d) must inform its customers of any significant deficiency that is uncorrected at the time of the next report or of any fecal indicator-positive ground water source sample in the next report. The system must continue to inform the public annually until the State determines that particular

significant deficiency is corrected or the fecal contamination in the ground water source is addressed under § 141.403(a). Each report must include the following elements.

(A) The nature of the particular significant deficiency or the source of the fecal contamination (if the source is known) and the date the significant deficiency was identified by the State or the dates of the fecal indicator-positive ground water source samples;

(B) If the fecal contamination in the ground water source has been addressed under § 141.403(a) and the date of such action;

(C) For each significant deficiency or fecal contamination in the ground water source that has not been addressed under § 141.403(a), the State-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed; and

(D) If the system receives notice of a fecal indicator-positive ground water source sample that is not invalidated by the State under § 141.402(d), the potential health effects using the health effects language of Appendix A of subpart O.

(ii) If directed by the State, a system with significant deficiencies that have been corrected before the next report is issued must inform its customers of the significant deficiency, how the

deficiency was corrected, and the date of correction under paragraph (h)(6)(i) of this section.

* * * * *

■ 7. Appendix A to subpart O is amended by adding a new entry “Fecal Indicators (enterococci or coliphage)” to read as follows:

APPENDIX A TO SUBPART O OF PART 141—REGULATED CONTAMINANTS

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Microbiological Contaminants:						
* * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
Fecal Indicators (enterococci or coliphage).	TT	TT	N/A	Human and animal fecal waste.	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
* * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *

TT=Treatment Technique.

■ 8. Section 141.202 is amended by redesignating entry (8) in Table 1 in paragraph (a) as entry (9); and adding a new paragraph (8) to read as follows:

§ 141.202 Tier 1 Public Notice—Form, manner, and frequency of notice.

(a) * * *

Table 1 to § 141.202—Violation Categories and Other Situations Requiring a Tier 1 Public Notice

* * * * *

(8) Detection of *E. coli*, enterococci, or coliphage in source water samples as

specified in § 141.402(a) and § 141.402(b).

* * * * *

■ 9. Section 141.203 is amended by adding entry (4) to Table 1 in paragraph (a) to read as follows:

§ 141.203 Tier 2 Public Notice—Form, manner, and frequency of notice.

(a) * * *

Table 1 to § 141.203—Violation Categories and Other Situations Requiring a Tier 2 Public Notice

* * * * *

(4) Failure to take corrective action or failure to maintain at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer under § 141.403(a).

* * * * *

■ 10. Appendix A to Subpart Q of Part 141 is amended to read as follows:

- a. Adding I.A.11;
- b. Redesignating entry IV.F as entry IV.G; and
- c. Adding a new entry IV.F in alphabetical order:

APPENDIX A TO SUBPART Q OF PART 141—NPDWR VIOLATIONS AND OTHER SITUATIONS REQUIRING PUBLIC NOTICE ¹

Contaminant	MCL/MRDL/TT violations ²		Monitoring and testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
I. Violations of National Primary Drinking Water Regulations (NPDWR):³				
A. Microbiological Contaminants				
* * * * *	* * * * *	* * * * *	* * * * *	* * * * *

11. Ground Water Rule violations	2	141.404	3	141.402(h). 141.403(d).
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APPENDIX A TO SUBPART Q OF PART 141—NPDWR VIOLATIONS AND OTHER SITUATIONS REQUIRING PUBLIC NOTICE¹—Continued

Contaminant	MCL/MRDL/TT violations ²		Monitoring and testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
IV. Other Situations Requiring Public Notification				
F. Source Water Sample Positive for GWR Fecal indicators: E. coli, enterococci, or coliphage	1	141.402(g)	N/A	N/A

¹ Violations and other situations not listed in this table (e.g., failure to prepare Consumer Confidence Reports) do not require notice, unless otherwise determined by the primacy agency. Primacy agencies may, at their option, also require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under § 141.202(a) and § 141.203(a).

² MCL—Maximum contaminant level, MRDL—Maximum residual disinfectant level, TT—Treatment technique.

³ The term Violations of National Primary Drinking Water Regulations (NPDWR) is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.

* * * * * ■ 11. Appendix B of Subpart Q of Part 141 is amended by adding entries A.1.c and A.1.d in numerical order to read as follows:

APPENDIX B TO SUBPART Q OF PART 141—STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION

Contaminant	MCLG ¹ mg/L	MCL ² mg/L	Standard health effects language for public notification
National Primary Drinking Water Regulations (NPDWR)			
A. Microbiological Contaminants			
1c. Fecal indicators (GWR): i. E. coli ii. enterococci iii. coliphage	Zero	TT	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
1d. Ground Water Rule (GWR) TT violations	None	TT	Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

¹ MCLG—Maximum contaminant level goal.

² MCL—Maximum contaminant level.

* * * * * ■ 12. Appendix C to Subpart Q is amended by adding the following abbreviations in alphabetical order:

Appendix C to Subpart Q of Part 141—List of Acronyms Used in Public Notification Regulations

* * * * *
GWR Ground Water Rule
* * * * *

■ 13. A new subpart S is added to read as follows:

Subpart S—Ground Water Rule

- Sec.
141.400 General requirements and applicability.
141.401 Sanitary surveys for ground water systems.
141.402 Ground water source microbial monitoring and analytical methods.
141.403 Treatment technique requirements for ground water systems.
141.404 Treatment technique violations for ground water systems.
141.405 Reporting and recordkeeping for ground water systems.

Subpart S—Ground Water Rule

§ 141.400 General requirements and applicability.

(a) *Scope of this subpart.* The requirements of this subpart S constitute National Primary Drinking Water Regulations.

(b) *Applicability.* This subpart 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 under subpart

H. For the purposes of this subpart, "ground water system" is defined as any public water system meeting this applicability statement, including consecutive systems receiving finished ground water.

(c) *General requirements.* Systems subject to this subpart must comply with the following requirements:

(1) Sanitary survey information requirements for all ground water systems as described in § 141.401.

(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 State-approved combination of 4-log virus inactivation and removal) before or at the first customer as described in § 141.402.

(3) Treatment technique requirements, described in § 141.403, that apply to ground water systems that have fecally contaminated source waters, as determined by source water monitoring conducted under § 141.402, or that have significant deficiencies that are identified by the State or that are identified by EPA under SDWA section 1445. A ground water system with fecally contaminated source water or with significant deficiencies subject to the treatment technique requirements of this subpart must implement one or more of the following corrective action options: correct all significant deficiencies; provide an alternate source of water; eliminate the source of contamination; or provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a State-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 State-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 § 141.403(b).

(5) If requested by the State, ground water systems must provide the State with any existing information that will enable the State to perform a hydrogeologic sensitivity assessment. For the purposes of this subpart, "hydrogeologic sensitivity assessment" is a determination of whether ground water systems obtain water from hydrogeologically sensitive settings.

(d) *Compliance date.* Ground water systems must comply, unless otherwise noted, with the requirements of this subpart beginning December 1, 2009.

§ 141.401 Sanitary surveys for ground water systems.

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

(b) For the purposes of this subpart, a "sanitary survey," as conducted by the State, 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 an evaluation of the applicable components listed in paragraphs (c)(1) through (8) of this section:

- (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 State requirements.

§ 141.402 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 paragraphs (a)(1)(i) and (a)(1)(ii) of this section exist.

(i) The system does not provide at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for each ground water source; and

(ii) The system is notified that a sample collected under § 141.21(a) is total coliform-positive and the sample is not invalidated under § 141.21(c).

(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 under § 141.21(a), except as provided in paragraph (a)(2)(ii) of this section.

(i) The State 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. In the case of an extension, the State must specify how much time the system has to collect the sample.

(ii) If approved by the State, systems with more than one ground water source may meet the requirements of this paragraph (a)(2) by sampling a representative ground water source or sources. If directed by the State, systems must submit for State 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 § 141.21(a) and that the system intends to use for representative sampling under this paragraph.

(iii) 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 § 141.21(b) and to satisfy the monitoring requirements of paragraph (a)(2) of this section for that ground water source only if the State approves the use of *E. coli* as a fecal indicator for source water monitoring under this paragraph (a). If the repeat sample collected from the ground water source is *E. coli* positive, the system must comply with paragraph (a)(3) of this section.

(3) *Additional Requirements.* If the State does not require corrective action under § 141.403(a)(2) for a fecal indicator-positive source water sample collected under paragraph (a)(2) of this section that is not invalidated under paragraph (d) of this section, 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.

(4) *Consecutive and Wholesale Systems.* (i). In addition to the other requirements of this paragraph (a), a consecutive ground water system that has a total coliform-positive sample collected under § 141.21(a) must notify the wholesale system(s) within 24 hours of being notified of the total coliform-positive sample.

(ii) In addition to the other requirements of this paragraph (a), a wholesale ground water system must comply with paragraphs (a)(4)(ii)(A) and (a)(4)(ii)(B) of this section.

(A) A wholesale ground water system that receives notice from a consecutive system it serves that a sample collected under § 141.21(a) is total coliform-positive must, within 24 hours of being notified, collect a sample from its ground water source(s) under paragraph (a)(2) of this section and analyze it for

a fecal indicator under paragraph (c) of this section.

(B) If the sample collected under paragraph (a)(4)(ii)(A) of this section 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 sample monitoring result and must meet the requirements of paragraph (a)(3) of this section.

(5) *Exceptions to the Triggered Source Water Monitoring Requirements.* A ground water system is not required to comply with the source water monitoring requirements of paragraph (a) of this section if either of the following conditions exists:

- (i) The State determines, and documents in writing, that the total coliform-positive sample collected under § 141.21(a) is caused by a distribution system deficiency; or
- (ii) The total coliform-positive sample collected under § 141.21(a) is collected at a location that meets State criteria for distribution system conditions that will cause total coliform-positive samples.

(b) *Assessment Source Water Monitoring.* If directed by the State,

ground water systems must conduct assessment source water monitoring that meets State-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 section to meet the requirements of paragraph (b) of this section. State-determined assessment source water monitoring requirements may include:

- (1) Collection of a total of 12 ground water source samples that represent each month the system provides ground water to the public,
- (2) Collection of samples from each well unless the system obtains written State approval to conduct monitoring at one or more wells within the ground water system that are representative of multiple wells used by that system and that draw water from the same hydrogeologic setting,
- (3) Collection of a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used,
- (4) Analysis of all ground water source samples using one of the analytical methods listed in the in

paragraph (c)(2) of this section for the presence of *E. coli*, enterococci, or coliphage,

(5) Collection of ground water source samples at a location prior to any treatment of the ground water source unless the State approves a sampling location after treatment, and

(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 State approves 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 section must collect a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used.

(2) A ground water system must analyze all ground water source samples collected under paragraph (a) of this section using one of the analytical methods listed in the following table in paragraph (c)(2) of this section for the presence of *E. coli*, enterococci, or coliphage:

ANALYTICAL METHODS FOR SOURCE WATER MONITORING

Fecal indicator ¹	Methodology	Method citation
<i>E. coli</i>	Colilert ³	9223 B. ²
	Colisure ³	9223 B. ²
	Membrane Filter Method with MI Agar	EPA Method 1604. ⁴
	m-ColiBlue24 Test ⁵	
	E*Colite Test ⁶	
	EC-MUG ⁷	9221 F. ²
Enterococci	NA-MUG ⁷	9222 G. ²
	Multiple-Tube Technique	9230B. ²
	Membrane Filter Technique	EPA Method 1600. ⁸
Coliphage	Enterolert ⁹	
	Two-Step Enrichment Presence-Absence Procedure.	EPA Method 1601. ¹⁰
	Single Agar Layer Procedure	EPA Method 1602. ¹¹

Analyses must be conducted in accordance with the documents listed below. The Director of the Federal Register approves the incorporation by reference of the documents listed in footnotes 2–11 in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources 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.

¹ 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.

² 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.

³ Medium is available through IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092.

⁴ 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, DC 20460.

⁵ A description of the m-ColiBlue24 Test, "Total Coliforms and *E. coli* Membrane Filtration Method with m-ColiBlue24® Broth," Method No. 10029 Revision 2, August 17, 1999, is available from Hach Company, 101 Dayton Ave., Ames, IA 50010 or from EPA's Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

⁶ 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.

⁷ EC-MUG (Method 9221F) or NA-MUG (Method 9222G) can be used for *E. coli* testing step as described in § 141.21(f)(6)(i) or (ii) after use of Standard Methods 9221 B, 9221 D, 9222 B, or 9222 C.

⁸EPA Method 1600: Enterococci in Water by Membrane Filtration Using membrane-Enterococcus Indoxyl-β-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.

⁹Medium 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.

¹⁰EPA 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.

¹¹EPA 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 State invalidation of a fecal indicator-positive ground water source sample collected under paragraph (a) of this section only under the conditions specified in paragraphs (d)(1)(i) and (ii) of this section.

(i) The system provides the State with written notice from the laboratory that improper sample analysis occurred; or

(ii) The State 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 State invalidates a fecal indicator-positive ground water source sample, the ground water system must collect another source water sample under paragraph (a) of this section within 24 hours of being notified by the State of its invalidation decision and have it analyzed for the same fecal indicator using the analytical methods in paragraph (c) of this section. The State 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 State must 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 section must be collected at a location prior to any treatment of the ground water source unless the State approves 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 State-approved location to meet the requirements of paragraph (a) of this section if the sample is representative of the water quality of that well.

(f) *New Sources.* If directed by the State, a ground water system that places a new ground water source into service after November 30, 2009, must conduct assessment source water monitoring under paragraph (b) of this section. If

directed by the State, the system must begin monitoring before the ground water source is used to provide water to the public.

(g) *Public Notification.* A ground water system with a ground water source sample collected under paragraph (a) or (b) of this section that is fecal indicator-positive and that is not invalidated under paragraph (d) of this section, including consecutive systems served by the ground water source, must conduct public notification under § 141.202.

(h) *Monitoring Violations.* Failure to meet the requirements of paragraphs (a)-(f) of this section is a monitoring violation and requires the ground water system to provide public notification under § 141.204.

§ 141.403 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 this section must be met by ground water systems when a significant deficiency is identified or when a ground water source sample collected under § 141.402(a)(3) is fecal indicator-positive.

(2) If directed by the State, a ground water system with a ground water source sample collected under § 141.402(a)(2), § 141.402(a)(4), or § 141.402(b) that is fecal indicator-positive must comply with the treatment technique requirements of this section.

(3) When a significant deficiency is identified at a Subpart H 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 this paragraph except in cases where the State 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 State directs the ground water system to implement a specific corrective action, the ground water system must consult with the State

regarding the appropriate corrective action within 30 days of receiving written notice from the State of a significant deficiency, written notice from a laboratory that a ground water source sample collected under § 141.402(a)(3) was found to be fecal indicator-positive, or direction from the State that a fecal indicator-positive sample collected under § 141.402(a)(2), § 141.402(a)(4), or § 141.402(b) requires corrective action. For the purposes of this subpart, 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 State 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 State) of receiving written notification from the State of a significant deficiency, written notice from a laboratory that a ground water source sample collected under § 141.402(a)(3) was found to be fecal indicator-positive, or direction from the State that a fecal indicator-positive sample collected under § 141.402(a)(2), § 141.402(a)(4), or § 141.402(b) requires corrective action, the ground water system must either:

(i) Have completed corrective action in accordance with applicable State plan review processes or other State guidance or direction, if any, including State-specified interim measures; or

(ii) Be in compliance with a State-approved corrective action plan and schedule subject to the conditions specified in paragraphs (a)(5)(ii)(A) and (a)(5)(ii)(B) of this section.

(A) Any subsequent modifications to a State-approved corrective action plan and schedule must also be approved by the State.

(B) If the State specifies interim measures for protection of the public health pending State 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 State.

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

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

(7) *Special notice to the public of significant deficiencies or source water fecal contamination.* (i) In addition to the applicable public notification requirements of § 141.202, a community ground water system that receives notice from the State of a significant deficiency or notification of a fecal indicator-positive ground water source sample that is not invalidated by the State under § 141.402(d) must inform the public served by the water system under § 141.153(h)(6) of the fecal indicator-positive source sample or of any significant deficiency that has not been corrected. The system must continue to inform the public annually until the significant deficiency is corrected or the fecal contamination in the ground water source is determined by the State to be corrected under paragraph (a)(5) of this section.

(ii) In addition to the applicable public notification requirements of § 141.202, a non-community ground water system that receives notice from the State of a significant deficiency must inform the public served by the water system in a manner approved by the State of any significant deficiency that has not been corrected within 12 months of being notified by the State, or earlier if directed by the State. The system must continue to inform the public annually until the significant deficiency is corrected. The information must include:

(A) The nature of the significant deficiency and the date the significant deficiency was identified by the State;

(B) The State-approved plan and schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed; and

(C) For systems with a large proportion of non-English speaking consumers, as determined by the State, information in the appropriate

language(s) regarding the importance of the notice or a telephone number or address where consumers may contact the system to obtain a translated copy of the notice or assistance in the appropriate language.

(iii) If directed by the State, a non-community water system with significant deficiencies that have been corrected must inform its customers of the significant deficiencies, how the deficiencies were corrected, and the dates of correction under paragraph (a)(7)(ii) of this section.

(b) *Compliance monitoring*—(1) *Existing ground water sources.* A ground water system that is not required to meet the source water monitoring requirements of this subpart for any ground water source because it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-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 State in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-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 paragraph (b)(3) of this section by December 1, 2009. Notification to the State must include engineering, operational, or other information that the State requests to evaluate the submission. If the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a State-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 under § 141.402.

(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 this subpart because the system provides at least 4-log treatment of viruses (using inactivation, removal, or a State-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 paragraphs (b)(2)(i), (b)(2)(ii) and (b)(2)(iii) of this section.

(i) The system must notify the State in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.

Notification to the State must include engineering, operational, or other information that the State requests to evaluate the submission.

(ii) The system must conduct compliance monitoring as required under § 141.403(b)(3) of this subpart within 30 days of placing the source in service.

(iii) The system must conduct ground water source monitoring under § 141.402 if the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a State-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 paragraphs (a), (b)(1) or (b)(2) of this section must monitor the effectiveness and reliability of treatment for that ground water source before or at the first customer as follows:

(i) *Chemical disinfection*—(A) *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 § 141.74(a)(2) at a location approved by the State 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 State-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.

(B) *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 § 141.74(a)(2) at a location approved by the State 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 State-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 State. If any daily grab sample

measurement falls below the State-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 State-determined level. Alternatively, a ground water system that serves 3,300 or fewer people may monitor continuously and meet the requirements of paragraph (b)(3)(i)(A) of this section.

(ii) *Membrane filtration.* A ground water system that uses membrane filtration to meet the requirements of this subpart must monitor the membrane filtration process in accordance with all State-specified monitoring requirements and must operate the membrane filtration in accordance with all State-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:

(A) 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;

(B) The membrane process is operated in accordance with State-specified compliance requirements; and

(C) The integrity of the membrane is intact.

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

(A) Monitor the alternative treatment in accordance with all State-specified monitoring requirements; and

(B) Operate the alternative treatment in accordance with all compliance requirements that the State 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 State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source if the State 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 § 141.402 of this subpart.

(d) Failure to meet the monitoring requirements of paragraph (b) of this section is a monitoring violation and requires the ground water system to provide public notification under § 141.204.

§ 141.404 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 State) of receiving written notice from the State of the significant deficiency, the system:

(1) Does not complete corrective action in accordance with any applicable State plan review processes or other State guidance and direction, including State specified interim actions and measures, or

(2) Is not in compliance with a State-approved corrective action plan and schedule.

(b) Unless the State invalidates a fecal indicator-positive ground water source sample under § 141.402(d), a ground water system is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the State) of meeting the conditions of § 141.403(a)(1) or § 141.403(a)(2), the system:

(1) Does not complete corrective action in accordance with any applicable State plan review processes or other State guidance and direction, including State-specified interim measures, or

(2) Is not in compliance with a State-approved corrective action plan and schedule.

(c) A ground water system subject to the requirements of § 141.403(b)(3) that fails to maintain at least 4-log treatment of viruses (using inactivation, removal, or a State-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 § 141.203 for the treatment technique violations specified in paragraphs (a), (b) and (c) of this section.

§ 141.405 Reporting and recordkeeping for ground water systems.

(a) *Reporting.* In addition to the requirements of § 141.31, a ground water system regulated under this subpart must provide the following information to the State:

(1) A ground water system conducting compliance monitoring under § 141.403(b) must notify the State any time the system fails to meet any State-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 State as soon as possible, but in no case later than the end of the next business day.

(2) After completing any corrective action under § 141.403(a), a ground water system must notify the State within 30 days of completion of the corrective action.

(3) If a ground water system subject to the requirements of § 141.402(a) does not conduct source water monitoring under § 141.402(a)(5)(ii), the system must provide documentation to the State within 30 days of the total coliform positive sample that it met the State criteria.

(b) *Recordkeeping.* In addition to the requirements of § 141.33, a ground water system regulated under this subpart 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 § 141.403(a)(7). Documentation shall be kept for a period of not less than three years.

(3) Records of decisions under § 141.402(a)(5)(ii) and records of invalidation of fecal indicator-positive ground water source samples under § 141.402(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 § 141.21(c). 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 § 141.403(b):

(i) Records of the State-specified minimum disinfectant residual. Documentation shall be kept for a period of not less than ten years.

(ii) Records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the State-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.

(iii) Records of State-specified compliance requirements for membrane filtration and of parameters specified by the State for State-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.

PART 142—NATIONAL PRIMARY DRINKING WATER REGULATIONS IMPLEMENTATION

■ 14. The authority citation for part 142 continues to read as follows:

Authority: 42 U.S.C. 300f, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-4, 300j-9, and 300j-11.

■ 15. Section 142.14 is amended by adding paragraph (d)(17) to read as follows:

§ 142.14 Records kept by States.

* * * * *

(d) * * *

(17) Records of the currently applicable or most recent State determination, including all supporting information and an explanation of the technical basis of each decision, made under the following provisions of 40 CFR part 141, subpart S and 40 CFR part 142.

(i) Section 142.16(o)(2)(v). Records of written notices of significant deficiencies.

(ii) Section 141.403(a)(5)(ii) of this chapter. Records of corrective action plans, schedule approvals, and State-specified interim measures.

(iii) Section 142.16(o)(4). Records of confirmations under § 141.403(a) of this chapter that a significant deficiency has been corrected or the fecal contamination in the ground water source has been addressed.

(iv) Section 141.402(a)(5) of this chapter. Records of State determinations and records of ground water system's documentation for not conducting triggered source water monitoring.

(v) Section 141.402(d) of this chapter. Records of invalidations of fecal indicator-positive ground water source samples.

(vi) Section 141.402(a)(2)(ii) of this chapter. Records of State approvals of source water monitoring plans.

(vii) Section 142.16(o)(4)(ii). Records of notices of the minimum residual disinfection concentration (when using chemical disinfection) needed to achieve at least 4-log virus inactivation before or at the first customer.

(viii) Sections 142.16(o)(4)(iv) and 142.16(o)(4)(v) Records of notices of the State-specified monitoring and compliance requirements (when using membrane filtration or alternative treatment) needed to achieve at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer.

(ix) Sections 141.403(b)(1) and 141.403(b)(2) of this chapter. Records of written notices from the ground water system that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source.

(x) Section 142.16(o)(4)(vi). Records of written determinations that the ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal).

* * * * *

■ 16. Section 142.15 is amended by adding paragraph (c)(7) to read as follows:

§ 142.15 Reports by States.

* * * * *

(c) * * *

(7) *Ground water rule.* (i) *Sanitary surveys.* The month and year in which the most recent sanitary survey was completed or, for a State that uses a phased review process, the date the last element of the applicable eight elements was evaluated under § 142.16(o)(2) for each ground water system.

(ii) *Corrective action requirements.* For any corrective action under § 141.403(a) of this chapter, the date the ground water system completed corrective action.

(iii) *Compliance monitoring.* All ground water systems providing at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for any ground water source(s).

* * * * *

■ 17. Section 142.16 is amended as follows:

■ a. Revise paragraph (a)(2)(iii), and

■ b. Add paragraph (o) to read as follows:

§ 142.16 Special primacy requirements.

(a) * * *

(2) * * *

(iii) *Table 1 of 40 CFR 141.202(a) (Items (5), (6), and (9))*—To require

public water systems to give a Tier 1 public notice (rather than a Tier 2 or Tier 3 notice) for violations or situations listed in Appendix A of Subpart Q of Part 141 of this chapter;

(o) *Requirements for States to adopt 40 CFR part 141, subpart S.* In addition to the general primacy requirements specified elsewhere in this part, including the requirement that State regulations are no less stringent than the Federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart S, must contain the information specified in this paragraph (o).

(1) *Legal authority.* The application for primacy must demonstrate the State has:

(i) The authority contained in statute or regulation to ensure that ground water systems conduct source water monitoring under § 141.402(a)(2), § 141.402(a)(3) and § 141.402(a)(4)(ii)(A) of this chapter.

(ii) The authority contained in statute or regulation to ensure that ground water systems take the appropriate corrective actions including interim measures, if necessary, needed to address significant deficiencies.

(iii) The authority contained in statute or regulation to ensure that ground water systems take the appropriate corrective actions, including interim measures if necessary, to address any source water fecal contamination identified during source water monitoring under § 141.402 of this chapter.

(iv) The authority contained in statute or regulation to ensure that ground water systems consult with the State regarding corrective action(s).

(2) *State practices or procedures for sanitary surveys.* In addition to the general requirements for sanitary surveys contained in § 142.10(b)(2), a primacy application must describe how the State will implement a sanitary survey program that meets the requirements of paragraph (o)(2)(i) of this section. A "sanitary survey," as conducted by the State, 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.

(i) The State must conduct sanitary surveys that address the eight sanitary survey components listed in this section no less frequently than every three years

for community water systems, except as provided in paragraph (o)(2)(iii) of this section, and every five years for non-community water systems. The State may conduct more frequent sanitary surveys for any system. The initial sanitary survey for each community water system must be conducted by December 31, 2012, unless the system meets the requirements of paragraph (o)(2)(iii) of this section. The initial sanitary survey for each community water system that meets the requirements of paragraph (o)(2)(iii) of this section and for each non-community water system must be conducted by December 31, 2014. The sanitary survey must include an evaluation of each of the following elements as applicable:

- (A) Source,
- (B) Treatment,
- (C) Distribution system,
- (D) Finished water storage,
- (E) Pumps, pump facilities, and controls,
- (F) Monitoring, reporting, and data verification,
- (G) System management and operation, and
- (H) Operator compliance with State requirements.

(ii) The State may use a phased review process to meet the requirements of (o)(2)(i) of this section if all the applicable elements of paragraphs (o)(2)(i)(A) through (o)(2)(i)(H) of this section are evaluated within the required interval.

(iii) The State may conduct sanitary surveys once every five years for community water systems if the system either provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer for all its ground water sources, or if it has an outstanding performance record, as determined by the State and documented in previous sanitary surveys and has no history of total coliform MCL or monitoring violations under § 141.21 of this chapter since the last sanitary survey. In its primacy application, the State must describe how it will determine whether a community water system has an outstanding performance record.

(iv) The State must define and describe in its primacy application at least one specific significant deficiency

in each of the eight sanitary survey elements in paragraphs (o)(2)(i)(A) through (o)(2)(i)(H) of this section. 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 State determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.

(v) As a condition of primacy, the State must provide ground water systems with written notice describing any significant deficiencies no later than 30 days after the State identifies the significant deficiency. The notice may specify corrective actions and deadlines for completion of corrective actions. The State may provide the written notice at the time of the sanitary survey.

(3) *State practices or procedures for source water microbial monitoring.* The State's primacy application must include a description of the following:

(i) The criteria the State will use under §§ 141.402(a)(2)(i) and 141.402(d)(2) of this chapter for extending the 24-hour time limit for a system to collect a ground water source sample to comply with the source water monitoring requirements.

(ii) The criteria the State will use under §§ 141.402(a)(5)(i) and 141.402(a)(5)(ii) of this chapter to determine whether the cause of the total coliform-positive sample taken under § 141.21(a) of this chapter is directly related to the distribution system.

(iii) The criteria the State will use for determining whether to invalidate a fecal indicator-positive ground water source sample under § 141.402(d)(1)(ii) of this chapter.

(iv) The criteria the State will use to allow source water microbial monitoring at a location after treatment under § 141.402(e)(1) of this chapter.

(4) *State practices or procedures for treatment technique requirements.* As a condition of primacy, the State must verify that significant deficiencies or source water fecal contamination have been addressed. The State must verify within 30 days after the ground water system has reported to the State that it has completed corrective action. The State must verify either through written confirmation from the ground water system or a site visit by the State.

Written notice from the ground water system under § 141.405(a)(2) of this chapter may serve as this verification. The State's primacy application must include the following:

(i) The process the State will use to determine that a ground water system achieves at least a 4-log treatment of viruses (using inactivation, removal, or a combination of inactivation and removal) before or at the first customer for a ground water source for systems that are not subject to the source water monitoring requirements of § 141.402(a) of this chapter because the ground water system has informed the State that it provides at least 4-log treatment of viruses.

(ii) The process the State will use to determine the minimum residual disinfectant concentration the system must provide prior to the first customer for systems using chemical disinfection.

(iii) The State-approved alternative technologies that ground water systems may use alone or in combination with other approved technologies to achieve at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer for a ground water source.

(iv) The monitoring and compliance requirements the State will require for ground water systems treating to at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of inactivation and removal) before or at the first customer for State-approved alternative treatment technologies.

(v) The monitoring, compliance and membrane integrity testing requirements the State will require to demonstrate virus removal for ground water systems using membrane filtration technologies.

(vi) The criteria, including public health-based considerations and incorporating on-site investigations and source water monitoring results the State will use to determine if a ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of inactivation and removal) before or at the first customer.

* * * * *

[FR Doc. 06-8763 Filed 11-7-06; 8:45 am]

BILLING CODE 6560-50-P

Corrections

Federal Register

Vol. 71, No. 224

Tuesday, November 21, 2006

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

Wednesday, November 8, 2006, make the following correction:

§141.402 [Corrected]

On page 65655, in § 141.402(c)(2), the table is corrected to read as follows:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 141

[EPA-HQ-OW-2002-0061; FRL-8231-9]

RIN 2040-AA97

National Primary Drinking Water Regulations: Ground Water Rule

Correction

In rule document 06-8763 beginning on page 65574 in the issue of

ANALYTICAL METHODS FOR SOURCE WATER MONITORING

Fecal indicator ¹	Methodology	Method citation
<i>E. coli</i>	Colilert ³	9223 B. ²
	Colisure ³	9223 B. ²
	Membrane Filter Method with MI Agar	EPA Method 1604. ⁴
	m-ColiBlue24 Test ⁵	
	E*Colite Test ⁶	
	EC-MUG ⁷	9221 F. ²
Enterococci	NA-MUG ⁷	9222 G. ²
	Multiple-Tube Technique	9230B. ²
	Membrane Filter Technique	9230C. ²
	Membrane Filter Technique	EPA Method 1600. ⁸
Coliphage	Enterolert ⁹	
	Two-Step Enrichment Presence-Absence Procedure.	EPA Method 1601. ¹⁰
	Single Agar Layer Procedure	EPA Method 1602. ¹¹

[FR Doc. C6-8763 Filed 11-20-06; 8:45 am]

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Appendix C

Rule Factsheets and Quick Reference Guide

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Ground Water Rule Factsheet: General Rule Requirements

WHAT IS THE GROUND WATER RULE?

The U.S. Environmental Protection Agency (EPA) published the Ground Water Rule (GWR) on November 8, 2006. One goal of the GWR is to provide increased protection against microbial pathogens, specifically bacterial and viral pathogens, in public water systems (PWSs) that use ground water. Instead of requiring disinfection for all ground water systems, the GWR establishes a risk-targeted approach to identifying ground water systems that are susceptible to fecal contamination. The GWR requires systems at risk of microbial contamination to take corrective action to protect consumers from bacteria and viruses.

TO WHOM DOES THE GWR APPLY?

The GWR applies to all PWSs that:

- Rely entirely on one or more ground water sources.
- Are consecutive systems receiving finished ground water.
- Mix surface and ground water, where ground water is added directly to the distribution system and provided to consumers without treatment equivalent to the treatment provided for surface water.

Although all of these systems are subject to the GWR provisions, systems that have been identified as at-risk for contamination (by inspection or based on monitoring results) will account for most of the systems that have to take action to comply with this rule.

WHAT ARE THE BASIC REQUIREMENTS OF THE GWR?

The basic requirements of the GWR include:

- Sanitary surveys.
- Source water monitoring.
- Compliance monitoring.
- Corrective actions.

Sanitary surveys are primarily the responsibility of the states, while ground water systems are responsible for the other requirements.

WHAT ARE THE SANITARY SURVEY REQUIREMENTS?

For the first time, states are required to conduct sanitary surveys of all ground water systems to identify significant deficiencies, including deficiencies that could make a system susceptible to

For information on source water monitoring and compliance monitoring, please refer to "Ground Water Rule Factsheet: Monitoring Requirements."

microbial contamination. Following the initial sanitary survey, states must conduct surveys every 3 years for community water systems (CWSs) and every 5 years for non-community water systems (NCWSs).

Systems must provide the state with any information that will enable the sanitary survey to be complete and accurate. Each survey must include, but is not limited to, an onsite review and evaluation of: source; treatment; distribution system; finished water storage; pumps, pump facilities, and controls; monitoring, reporting, and data verification; system management and operation; and operator compliance with state requirements.

If a state identifies a significant deficiency during a sanitary survey or at another time, the system must take corrective action. A significant deficiency may include defects in design, maintenance, or operation of the water system. A significant deficiency may also include the failure or malfunction of the source, treatment, or distribution system that may cause contamination of water delivered to consumers.

WHAT IS SOURCE WATER MONITORING?

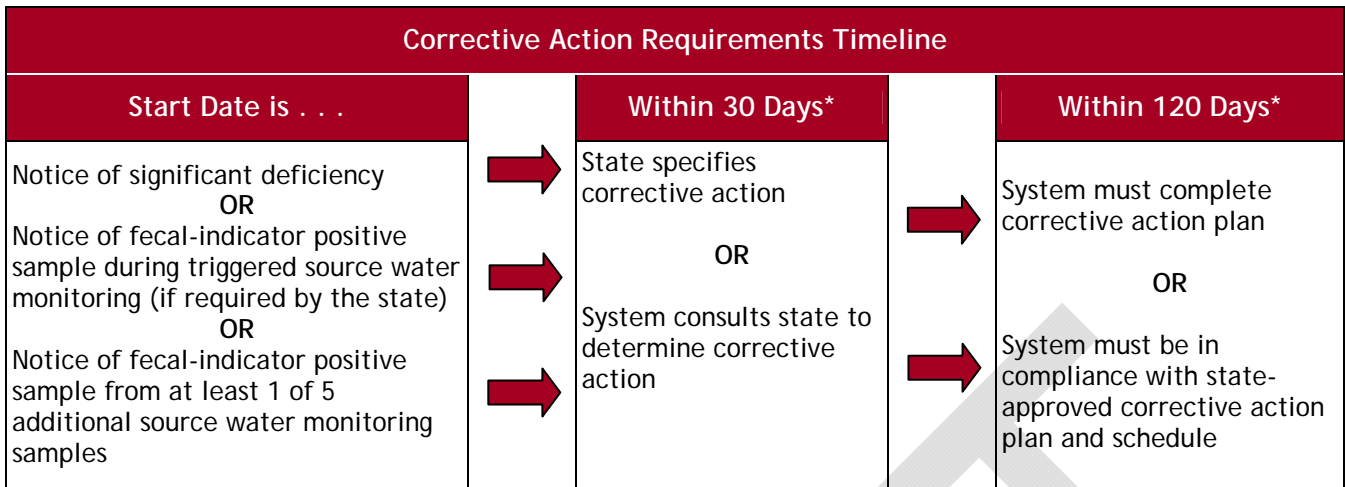
Triggered source water monitoring is required for any ground water system that has a positive total coliform result under the Total Coliform Rule (TCR) sampling. Triggered source water monitoring will be used to determine if fecal contamination is present in the ground water source. If a triggered source water sample is positive for a fecal indicator, the state will require the system to take corrective action or take five additional samples from the same source within 24 hours of notification of the fecal indicator-positive result, and analyze them for the same state-approved fecal indicator. If any one of the five additional samples is fecal indicator-positive, the system must take corrective action.

WHAT IS COMPLIANCE MONITORING?

Systems providing at least 99.99 percent (4-log) treatment of viruses (using inactivation, removal, or a state-approved combination of inactivation and removal) of all of their ground water can notify the state of this treatment and are then not required to conduct triggered source water monitoring. Those systems are, however, required to conduct compliance monitoring to show they are providing consistent and sufficient treatment. Compliance monitoring requirements depend on the system's size and the type of treatment it is using.

WHAT ARE THE CORRECTIVE ACTION REQUIREMENTS?

Corrective action is required by any ground water system with a **significant deficiency**. Some systems with fecal indicator-positive results from their **triggered source water monitoring** may be required by their states to take corrective action rather than conduct additional source water monitoring. If a system is instructed to carry out **additional source water monitoring** after a fecal indicator-positive triggered source water monitoring result, corrective action is required when a ground water system has a fecal indicator-positive result during the additional source water monitoring. As the figure below shows, systems have four corrective action alternatives.



*Based on start date.

Corrective Action Alternatives Systems must do one or more of the following:
Correct all significant deficiencies
Provide an alternate source of water
Eliminate the source of contamination
Provide treatment that reliably achieves 99.99 percent (4-log) inactivation and/or removal of viruses

WHAT ARE THE COMPLIANCE DEADLINES ASSOCIATED WITH THE GWR?

PWS Requirements	Required Beginning ¹ :
Source water monitoring	December 1, 2009
Corrective actions	
Compliance monitoring ²	
	Required By ¹ :
Notification of 4-log treatment of viruses ²	December 1, 2009
	Required By ¹ :
Complete sanitary surveys for most CWSs ³	December 31, 2012 (and every 3 years after)
Complete sanitary surveys for NCWSs and remaining CWSs	December 31, 2014 (and every 5 years after)

1. Individual states may have different compliance requirement dates.

2. If systems providing at least 4-log treatment of viruses want to avoid triggered source water monitoring, they must submit written notification to the state by December 1, 2009 or begin conducting compliance monitoring by December 1, 2009.

3. Includes CWSs providing at least 4-log treatment of viruses for all their ground water sources and those systems that have an outstanding performance record as determined by the state.

WHAT ARE THE VIOLATIONS ASSOCIATED WITH THE GWR?

If a system is in violation of a GWR requirement, the system must report the problem to the state and notify the public. Note that when a system has a ground water source with a fecal indicator-positive sample, it is a situation and not a violation. In accordance with to the GWR, the system must still meet the Tier 1 Public Notification requirements.

Situation or Violation	Report to State	Notify Public ¹	Tier	PN Method
Source water monitoring sample fecal indicator-positive for <i>E. coli</i> , enterococci, or coliphage and not invalidated by the state	Within 24 Hours	Within 24 Hours	1	TV, hand-delivery, public postings, or other state-approved method (consult your state)
Failure to complete required corrective action	Within 48 Hours	Within 30 Days	2	Hand-delivery, direct mail, public postings, newspaper or radio announcements
Failure to comply with a state-approved correction schedule and plan ²	Within 48 Hours	Within 30 Days	2	Hand-delivery, direct mail, public postings, newspaper or radio announcements
For systems conducting compliance monitoring, failure to maintain 4-log treatment of viruses and restore 4-log treatment within 4 hours ²	Within 48 Hours	Within 30 Days	2	Hand-delivery, direct mail, public postings, newspaper or radio announcements
Failure to conduct required source water monitoring (triggered, additional, or assessment)	Consult your state	Within 12 Months	3	CCR ³ (consult your state for other specific PN requirements)
Failure to conduct required compliance monitoring	Consult your state	Within 12 Months	3	CCR ³ (consult your state for other specific PN requirements)

1. Systems are required to send a copy of the PN to the state within 10 days of making the notification.

2. Community ground water systems with an uncorrected significant deficiency must report it in the appropriate Consumer Confidence Report (CCR). Those systems are also required to report any fecal indicator-positive samples in the appropriate CCR. They are required to inform the public annually until the state determines that the particular significant deficiency or fecal contamination in the ground water source has been addressed.

3. The CCR requirement applies to CWS. NCWSs must use an alternate form of Tier 3 notice approved by their state.

ADDITIONAL GUIDANCE MATERIALS

The following guidance materials for states and PWSs will be released in 2007/2008:

Ground Water Rule: A Quick Reference Guide - This guide will provide a description of the GWR and includes critical deadlines and requirements.

Ground Water Sanitary Survey Guidance Manual (under development) - This guidance will provide states, tribes, and other primacy agencies with a brief review of the sanitary survey regulatory provisions, give specific examples of what constitutes a significant deficiency, and provide a checklist of elements that should be evaluated during the course of a sanitary survey inspection.

Source Water Assessment Guidance Manual (under development) - This guidance will provide states, tribes, and other primacy agencies with a brief review of hydrogeologic sensitivity assessments, an overview of the characteristics of a sensitive aquifer, information about how source water assessments may be used, and how to determine if a sensitive aquifer has a hydrogeologic barrier.

Ground Water Rule Source Water Monitoring Methods Guidance Manual. July 2007. EPA 815-R-07-019 - This guidance provides ground water systems, states, tribes, and other primacy agencies with a brief review of the source water monitoring provisions. Since the primacy agencies may select one of three fecal indicators (e.g., *E. coli*, enterococci, coliphage) that the system would be required to test for in the ground water source sample, the source water monitoring guidance manual provides criteria to assist primacy agencies in their determination of which fecal indicator is most appropriate. Available at www.epa.gov/safewater/disinfection/gwr/pdfs/guide_gwr_sourcewatermonitoring.pdf.

[Corrective Action Guidance Manual \(under development\)](#) - This guidance will provide states, tribes, other primacy agencies and ground water systems with an overview of the treatment technique requirements of the GWR. The guidance manual will provide assistance with determining the information that should be included in a systems corrective action plan.

[Consecutive System Guide for the Ground Water Rule. July 2007. EPA 815-R-07-020](#) - This guidance describes the regulatory requirements of the GWR as it applies to wholesale ground water systems and to the consecutive ground water systems that receive and distribute that ground water supply. Available at www.epa.gov/safewater/disinfection/gwr/pdfs/guide_gwr_consecutive-guidance.pdf.

[Complying with the Ground Water Rule: Small Entity Compliance Guide One of the Simple Tools for Effective Performance \(STEP\) Guide Series. July 2007. EPA 815-R-07-018](#) - This guidance document is intended to be an official compliance guide to the GWR for small public water systems, as required by the Small Business Regulatory Enforcement Fairness Act of 1996. This guide contains a general introduction and background for the GWR, describes the specific requirements of the GWR and provides information on how to comply with those requirements. Available at www.epa.gov/safewater/disinfection/gwr/pdfs/guide_gwr_secg_may11.pdf.

For additional information, please contact the Safe Drinking Water Hotline at 1-800-426-4791, send an email to TBD@epa.gov, or visit www.epa.gov/safewater/disinfection/gwr.



Ground Water Rule Factsheet: Monitoring Requirements

WHAT IS THE GROUND WATER RULE?

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WHAT ARE THE SOURCE WATER MONITORING REQUIREMENTS?

Some systems will be required to conduct triggered source water monitoring or assessment source water monitoring of a state-approved fecal indicator (e.g., *E. coli*, enterococci, or coliphage) to detect microbial contamination in the source.

Triggered Source Water Monitoring

Triggered source water monitoring is required for any ground water system that has a positive total coliform result under the Total Coliform Rule (TCR). Triggered source water monitoring will be used to determine if fecal contamination is present in the ground water source.

Triggered Source Water Monitoring Basic Requirements

Within 24 hours of being notified of a positive total coliform result under the TCR, a system must collect at least one ground water source sample from each source in use when the positive total coliform result under the TCR was collected. These samples are **triggered source water samples**.

If a triggered source water sample is positive for a fecal indicator, the state will require the system to take corrective action or take five **additional samples** from the same source within 24 hours of notification of the fecal indicator-positive result, and analyze them for the same state-approved fecal indicator. If any one of the five additional samples is fecal indicator-positive, the system must take corrective action.

Triggered Source Water Monitoring Exceptions

A state may waive the triggered source water monitoring requirement if the state determines and documents, in writing, that the total coliform-positive sample is solely a result of a documented distribution system deficiency.

Triggered vs. Additional Samples

Triggered samples are source water samples required as a result of positive total coliform result under the TCR in the distribution system.

Additional samples are source water samples that may be required in response to a positive fecal indicator result collected during triggered source water monitoring.

Representative Source Water Monitoring

With state approval, ground water systems with more than one ground water source may fulfill the triggered source water monitoring requirements by taking a ground water sample at a representative source. The state may require the system to submit a triggered source water monitoring plan that identifies sample sites that are representative of its TCR sampling sites.

Systems providing at least 99.99 percent (4-log) treatment of viruses (using inactivation, removal, or a state-approved combination of inactivation and removal) of all of their ground water can notify the state of this treatment and are then not required to conduct triggered source water monitoring. Those systems are, however, required to conduct compliance monitoring to show they are providing consistent and sufficient treatment. Compliance monitoring requirements depend on the system's size and the type of treatment it is using.

Small Systems

Systems serving less than 1,000 people that have a positive total coliform result under the TCR may use the triggered source water monitoring sample collected from the ground water source to meet both the triggered source water monitoring requirement of the GWR as well as part of the repeat sampling requirement of the TCR (if the state approves the use of *E. coli* as a fecal indicator for source water monitoring).

Consecutive Systems

A consecutive system with a positive total coliform result under the TCR must notify its wholesale system(s) within 24 hours of being notified of the positive sample.

Wholesale Systems

A wholesale system that receives notice from a consecutive system of a positive total coliform result under the TCR must collect a sample from its ground water source and analyze it for a state-approved fecal indicator within 24 hours of being notified by the consecutive system. If this triggered source water sample is positive for the fecal indicator, the wholesale system must notify all consecutive systems served by that source within 24 hours of the positive sample result. The wholesale system and any consecutive systems served by the fecal indicator-positive source must all notify their consumers within 24 hours of learning of the result. If the state does not require corrective action for this fecal indicator-positive sample, the wholesale system must collect five additional source water samples from the same source within 24 hours of receiving notification of the fecal indicator-positive sample.

New Treatment

After November 30, 2009, ground water systems that begin providing at least 4-log treatment of viruses must notify the state and conduct compliance monitoring in order to avoid being required to conduct triggered source water monitoring.

Assessment Source Water Monitoring

States may require ground water systems with sources that seem most susceptible to fecal contamination to conduct assessment source water monitoring. States may require assessment source water monitoring at any time, on a case-by-case basis. Assessment source water monitoring requirements are in addition to triggered source water monitoring requirements. A system may, however, use a triggered source water sample to meet part of the assessment source water monitoring requirement. Based on the results of the assessment source water monitoring, systems may

Invalidation of Source Water Monitoring Samples

If the state provides written documentation that a positive fecal indicator sample does not reflect source water quality, or if a ground water system provides the state with written notice from the laboratory that improper analysis of a sample occurred, the state may invalidate the positive fecal indicator sample. Within 24 hours of receiving state sample invalidation notification, a ground water system is required to take another sample and have it analyzed for the same fecal indicator.

Analytical Methods	
Fecal Indicator	Method Name
<i>E. coli</i>	9223 B EPA Method 1604 9221 F 9222 G
Enterococci	9230B 9230C EPA Method 1600
Coliphage	EPA Method 1601 EPA Method 1602

have to take corrective action.

New Sources and Systems

Ground water systems that begin service from a new source after November 30, 2009, may be required by their state to conduct assessment source water monitoring or provide 4-log treatment of viruses. The state may require the system to conduct assessment source water monitoring before the new source provides water to the public.

Other Source Water Monitoring Details

Sampling Locations for All Source Water Monitoring

Triggered, additional, and assessment source water monitoring samples must be collected prior to treatment or at a state-approved location.

Sample Volume

All source water samples must be at least 100 mL for all fecal indicator analytical methods.

WHAT ARE THE COMPLIANCE MONITORING REQUIREMENTS?

Compliance monitoring requirements apply to systems that provide 4-log treatment of viruses and are not subject to triggered source water monitoring requirements. These systems must:

- ☀ Notify the state that they provide 4-log treatment of viruses.
- ☀ Conduct compliance monitoring rather than source water triggered monitoring.
 - Systems with existing ground water sources must notify the state in writing by December 1, 2009 that they provide at least 4-log treatment of viruses for the sources.
 - Systems with treated ground water sources placed into service after November 30, 2009 must notify the state in writing that they provide at least 4-log treatment of viruses of those sources and begin compliance monitoring within 30 days of placing the source in service.

Compliance Monitoring

Compliance monitoring ensures that systems already providing 99.99 percent (4-log) inactivation, removal, or a state-approved combination of inactivation and removal of viruses are achieving this level of treatment.

Systems that provide 4-log treatment should check with their state regulators to see if they need to satisfy any additional state compliance monitoring requirements beyond the requirements listed below.

System Type	Monitor For	Frequency	Sample Location
Disinfecting ground water systems ≤ 3,300	Residual disinfectant concentration (must meet state minimum)	Daily or continuous ^{1,2}	State-approved location(s)
Disinfecting ground water systems > 3,300		Continuous only ^{2,3}	
Ground water systems using membrane filtration	Membrane filtration process effectiveness	Consult state for specific information	
Ground water systems using state-approved alternative treatment	Alternative treatment effectiveness		

1. Provisions available for equipment failure.

2. If any daily grab sample is less than the minimum, the system must take follow-up samples every 4 hours until residual meets or exceeds the minimum.

3. System must record the lowest residual disinfectant concentration each day water from the ground water source is served to the public.

WHAT ARE THE COMPLIANCE DEADLINES ASSOCIATED WITH GWR MONITORING?

Individual states may have different compliance requirement dates.

Requirements	Deadline:
<i>Source Water Monitoring</i>	
☀ Triggered	Beginning December 1, 2009
☀ Additional	
☀ Assessment	
<i>Notification of 4-log treatment of viruses (for existing ground water source)</i>	By December 1, 2009
<i>Compliance Monitoring (for systems with 4-log treatment of viruses)</i>	Beginning December 1, 2009

WHAT ARE THE MONITORING VIOLATIONS ASSOCIATED WITH THE GWR?

If a system is in violation of a GWR monitoring requirement, the system must report the problem to the state and notify the public. Systems are required to send a copy of the public notification (PN) to the state within 10 days of the notification.

Situation or Violation	Report to State	Notify Public	Tier	PN Method
Source water monitoring sample fecal indicator-positive for <i>E. coli</i> , enterococci, or coliphage and not invalidated by the state	Within 24 Hours	Within 24 Hours	1	TV, hand-delivery, public postings, or other state-approved method (consult your state)
Failure to conduct required source water monitoring (triggered, additional, or assessment)	Consult your state	Within 12 Months	3	Consumer Confidence Report (CCR) ¹ (consult your state for other specific PN requirements)
Failure to conduct required compliance monitoring	Consult your state	Within 12 Months	3	CCR ¹ (consult your state for other specific PN requirements)

1. The CCR requirement applies to community water systems. Noncommunity water systems must use an alternate form of Tier 3 notice approved by their state.

Community ground water systems must also report any fecal indicator-positive samples in their CCR that addresses the year in which the samples were collected.

ADDITIONAL GUIDANCE MATERIALS

The following guidance materials for states and PWSs will be released in 2007/2008:

[Ground Water Rule: A Quick Reference Guide](#) - This guide will provide a description of the GWR and includes critical deadlines and requirements.

[Ground Water Sanitary Survey Guidance Manual \(under development\)](#) - This guidance will provide states, tribes, and other primacy agencies with a brief review of the sanitary survey regulatory provisions, give specific examples of what constitutes a significant deficiency, and provide a checklist of elements that should be evaluated during the course of a sanitary survey inspection.

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For additional information, please contact the Safe Drinking Water Hotline at 1-800-426-4791, send an email to TBD@epa.gov, or visit www.epa.gov/safewater/disinfection/gwr.

Ground Water Rule: A Quick Reference Guide

Overview of the Rule	
Title	Ground Water Rule (GWR) 71 FR 65574, November 8, 2006, Vol. 71, No. 216 Correction 71 FR 67427, November 21, 2006, Vol. 71, No. 224
Purpose	Reduce the risk of illness caused by microbial contamination in public ground water systems (GWSs).
General Description	GWR establishes a risk-targeted approach to identify GWSs susceptible to fecal contamination and requires corrective action to correct significant deficiencies and source water fecal contamination in all public GWSs.
Utilities Covered	The GWR applies to all public water systems (PWSs) that rely entirely on one or more ground water sources; are consecutive systems that receive finished ground water; or, mix surface and ground water, where ground water is added directly to the distribution system and provided to consumers without treatment equivalent to the treatment provided for surface water.

Major Provisions

Source Water Monitoring

Triggered Source Water Monitoring	<ul style="list-style-type: none"> ▶ GWSs that do not provide at least 4-log treatment of viruses before or at the first customer and is notified of a total coliform-positive sample collected in compliance with the TCR (40 CFR 141.21), must conduct triggered source water monitoring. ▶ GWSs must collect at least one ground water source sample from each source in use at the time the total coliform-positive sample was collected. The triggered source water sample must be analyzed for the presence of a state-approved fecal indicator. ▶ If the triggered source water sample is fecal indicator-positive, the GWS must either take corrective action, as directed by the state, or if corrective action is not required by the state and the sample is not invalidated by the state the GWS must collect five additional source water samples and analyze them for the presence of a state-approved fecal indicator. ▶ States may determine that the cause of a total coliform-positive sample collected in compliance with the TCR is directly related to the distribution GWS and should therefore not trigger fecal indicator source water monitoring. States may also invalidate a fecal indicator-positive ground water source sample under specific conditions. If a fecal indicator-positive source sample is invalidated, the GWS must collect another source water sample within 24 hours of being notified by the state of its invalidation decision.
Additional Source Water Sampling	<ul style="list-style-type: none"> ▶ If the state does not require corrective action in response to a fecal indicator-positive triggered source water sample, the GWS must collect five additional source water samples (from the same source) within 24 hours of being notified of the fecal indicator-positive sample.
Assessment Source Water Monitoring	<ul style="list-style-type: none"> ▶ States have the opportunity to target higher risk GWSs for additional testing. States independently can determine on a case by case basis whether monitoring is necessary and when corrective action needs to be taken.

Treatment Technique Requirement

Ground Water GWSs with Significant Deficiencies or Source Water Fecal Contamination	<ul style="list-style-type: none"> ▶ GWSs must take corrective action if a significant deficiency is identified, or if the initial source sample (if required by the state) or one of the five additional ground water source samples has tested positive for fecal contamination. The GWS must implement at least one of the following corrective actions: <ul style="list-style-type: none"> ■ Correct all significant deficiencies. ■ Provide an alternate source of water. ■ Eliminate the source of contamination. ■ Provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a state-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.
Treatment Technique Compliance Monitoring	<ul style="list-style-type: none"> ▶ In order not to be subject to triggered source water monitoring, a GWS must notify the state that it provides at least 4-log treatment of viruses using virus inactivation, removal, or a state-approved combination of 4-log virus inactivation and removal before or at the first customer. The GWS must then begin compliance monitoring designed to show the efficacy of their treatment processes. ▶ GWSs that use chemical disinfection and serve more than 3,300 people must continuously monitor their disinfectant concentration. GWSs must maintain the minimum disinfectant residual concentration determined by the state. ▶ GWSs that use chemical disinfection and serve 3,300 people or fewer must take daily grab samples or meet the continuous monitoring requirements described above for GWSs serving more than 3,300 people. ▶ GWSs using membrane filtration for 4-log treatment of viruses must monitor the membrane filtration process according to state-specified monitoring requirements ▶ GWSs may use alternative treatment technologies (e.g., ultraviolet radiation [UV]) approved by the state. GWSs must monitor the alternative treatment according to state-specified monitoring requirements, and must operate the alternative treatment according to compliance requirements established by the state.

New Sources

New Ground Water Sources	<ul style="list-style-type: none"> ▶ A GWS that places a new ground water source into service may be required by the state to conduct assessment source monitoring. Unless permitted otherwise by the state, the GWS must begin this monitoring before the water source is used to supply the public.
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Public Health Benefits	
Implementation of the GWR will result in . . .	<ul style="list-style-type: none"> ▶ Targeted protection for over 70 million people served by ground water sources that are either not disinfected or receive less than 4-log treatment. ▶ Avoidance of 42,000 viral illnesses and 1 related death annually. ▶ Reduction in outbreaks caused by bacteriological and viral pathogens in fecally contaminated ground water sources.
Estimated impacts of the GWR include . . .	<ul style="list-style-type: none"> ▶ The annualized present value of the GWR is \$19.7 million, with a 90-percent confidence interval of \$6.5 to \$45.4 million ▶ Mean annual cost per household is estimated to be less than \$1.00 for approximately 96 percent of affected households.

Analytical Methods for Source Water Monitoring		
Fecal Indicator	Methodology	Method Citation
<i>E. coli</i>	Colilert Colisure Membrane Filter Method with MI Agar m-ColiBlue24 Test E*Colite Test EC-MUG NA-MUG	9223 B. 9223 B. EPA Method 1604. 9221 F. 9222 G.
Enterococci	Multiple-Tube Technique Membrane Filter Technique Membrane Filter Technique Enterolert	9230 B. 9230 C. EPA Method 1600.
Coliphage	Two-Step Enrichment Presence-Absence Procedure Single Agar Layer Procedure	EPA Method 1601. EPA Method 1602.

Critical Deadlines and Requirements	
For Drinking Water Systems	
November 30, 2009	New ground water sources put in place after this date must meet triggered source water monitoring requirements or provide 4-log treatment of viruses.
December 1, 2009	GWSs providing at least 4-log virus inactivation, removal, or a state-approved combination of these technologies before or at the first customer must notify the state.
December 1, 2009	GWSs providing at least 4-log virus inactivation, removal, or a state-approved combination of these technologies before or at the first customer must begin compliance monitoring to demonstrate treatment effectiveness.
December 1, 2009	GWSs for which the state has identified a significant deficiency (during a sanitary survey) and GWSs at which at least one of the five additional ground water source samples (or at state discretion, the initial source sample) has tested positive for fecal contamination must comply with the treatment technique requirements.
December 1, 2009	GWSs must conduct triggered source water monitoring if the GWS does not provide at least 4-log virus inactivation, removal, or a state-approved combination of these technologies before or at the first customer and the GWS is notified that a sample collected for the TCR is total coliform-positive.
December 1, 2009	GWSs providing 4-log treatment of viruses must notify the state in writing of the effectiveness and reliability of the treatment. The written notification must include engineering, operational, and other information the state requests.
For States	
August 8, 2008	States are encouraged to submit final primacy applications or extension requests to EPA.
November 8, 2008	Final primacy revision applications for GWR must be submitted to the EPA regional administrator, unless state is granted an extension.
August 8, 2010	States with approved extension agreements are encouraged to submit final primacy applications to EPA.
November 8, 2010	Final primacy applications must be submitted to the EPA regional administrator for states with a full 2 year extension.
December 31, 2012	States must complete initial sanitary survey cycle for all community GWSs except those that meet performance criteria.
December 31, 2014	States must complete initial sanitary survey cycle for all noncommunity GWSs and all community GWSs that meet performance criteria.

Appendix D

Flowcharts

EPA is developing flow charts to provide direction on the GWR including source water monitoring.

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Appendix E

Guidance for Reviewing Extension Requests under Section 1412(b)(10) of the SDWA

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FINAL
Guidance For Reviewing Extension Requests Under 1412(b)(10)
Of The Safe Drinking Water Act

PURPOSE

This document provides guidance concerning how EPA interprets the authorities and limitations of Section 1412(b)(10) of the Safe Drinking Water Act (SDWA). For the purpose of this document State refers to EPA Regions and States exercising primary enforcement responsibility under the SDWA. Under certain conditions, this provision allows States to provide up to a two year extension of the date by which public water systems must comply with a new or revised National Primary Drinking Water Regulation. It also provides recommendations to State Directors on the procedures they may want to follow in using this authority.

The SDWA provisions and EPA regulations described in this document contain legally binding requirements. This document does not substitute for those provisions or regulations, nor is it a regulation itself. Thus, it does not impose legally-binding requirements on EPA, States, or the regulated community, and may not apply to a particular situation based upon the circumstances. EPA and State decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. Any decisions regarding a particular facility will be made based on the applicable statutes and regulations. Therefore, interested parties are free to raise questions and objections about the appropriateness of the application of this guidance to a particular situation, and EPA will consider whether or not the recommendations or interpretations in the guidance are appropriate in that situation. EPA may change this guidance in the future.

BACKGROUND

The SDWA, as amended in 1996, generally requires compliance with national primary drinking water regulations 3 years after promulgation. The Amendments also allow compliance deadlines to be extended for up to an additional 2 years if it is determined that additional time is needed for capital improvement projects to comply with a maximum contaminant level (MCL) or treatment technique (TT). This is specified in Section 1412 (b)(10) of the SDWA:

“A national primary drinking water regulation promulgated under this section (and any amendment thereto) shall take effect on the date that is 3 years after the date on which the regulation is promulgated unless the Administrator determines that an earlier date is practicable, except that the Administrator, or a State (in the case of an individual system), may allow up to 2 additional years to comply with a maximum contaminant level or treatment technique if the Administrator or State (in the case of an individual system) determines that additional time is necessary for capital improvements.”

Furthermore, the responsibilities of the States have been further explained in the legislative history¹ for this provision:

- “The Administrator may establish an earlier date for compliance as part of the regulation, if an extended period is not necessary for design and construction. The **Administrator** is also authorized to extend the compliance period for an additional 2 years (up to a total of 5 years) in the promulgated regulation where the additional period is necessary for construction activities that may be necessary to comply.”[bold added]
- “In addition to the Administrator’s authority to extend the period beyond the 3 years by rule, a **State** may extend the compliance period for particular public water systems in that State that need up to an additional 2 years for the design and construction of treatment facilities or alternative water supplies to comply.” [bold added]
- “The **Administrator** is authorized to provide case-by-case extensions for particular systems in States that do not have primary enforcement responsibility under section 1413.”[bold added]

A State may grant extensions to an MCL or TT under 1412(b)(10) on a case-by-case basis only when additional time has not been incorporated into the rule. Under the authority of this provision, compliance with a regulation may not be extended to beyond five years after the rule publication. In other words, a system’s application for an extension would only apply to those rules with a compliance deadline of less than 5 years from promulgation (e.g., Interim Enhanced Surface Water Treatment Rule). Additional extensions may be granted through the exemption provision of Section 1416. States are granted authority to issue extensions by the federal law and do not need a parallel State statute or regulation.

EPA Regions will provide case-by-case extensions for individual systems in States that do not have primacy or interim primacy (a state has interim primacy if they have submitted a complete primacy application package). The extension only applies to a time frame for compliance with an MCL or TT. A system is still obligated to comply with all other provisions of the regulation such as monitoring and reporting.

As new regulations are promulgated, systems will begin to evaluate the adequacy of their treatment processes to determine if they will satisfy compliance requirements for these rules. During the evaluation process some systems will conclude that, despite best efforts to do so, they will not be able to satisfy compliance requirements (i.e., meet an MCL or TT) and submit applications to their State for extensions under 1412(b)(10).

¹ Report of the Committee on the Environment and Public Works United States Senate on S. 1316, 104th Congress - 1st Session, pg. 49

HYPOTHETICAL EXAMPLE - ABC SYSTEM

ABC System is seeking an extension to comply with the new HAA5 MCL set by the Stage 1 Disinfectant/Disinfection Byproducts Rule (Stage 1 DBPR).

ABC System uses surface water as a source and serves 10,000 or more people. Note: For the Stage 1 DBPR, only Subpart H systems (systems using surface water or ground water under the direct influence of surface water) that serve 10,000 or more people may apply for an extension, since all other affected systems have up to five years to comply.

GUIDANCE

Three general areas the State should consider when reviewing requests for extensions are:

- , qualification criteria,
- , conditions of the extension, and
- , interim treatment measures

Before a system may be granted an extension it should satisfy the qualification criteria and agree to the conditions and measures deemed necessary by the State.

QUALIFICATION CRITERIA

To qualify for an extension, a water system should meet the following criteria:

- , **Demonstrate a need for an extension.**
 - , The system should show that without an extension they would not be able to meet a new MCL or TT specified in the regulation.
 - , The proposed capital improvement should facilitate compliance.
 - , An additional aspect is to allow systems to be progressive (e.g., forethought to design with future rules in mind).

ABC System performed a study over an 18-month period and found while operating under optimum conditions they could not meet the new standards (0.060 mg/L) for the group of five haloacetic acids (HAA5), on a consistent basis.

The system should document their “Good Faith” efforts to meet the original compliance date of the regulation.

- A system should demonstrate that they initiated steps towards compliance in a reasonable period of time after the promulgation date of the rule. A reasonable period can include time for a system to discuss their options with the State prior to initiating any activities. Additionally, when evaluating a system’s “Good Faith” effort toward compliance, the State may wish to consider other factors such as compliance history.
- A system which did not take steps towards compliance, or has only started to do so in the months immediately preceding the compliance date has not demonstrated a “good faith” effort.

In February 1999, shortly after rule publication, ABC System evaluated their plant and determined it would not satisfy new regulations. ABC based the determination on monitoring done after optimization of current processes. Therefore, in January 2000, in good faith ABC initiated renovation and upgrade activities on an expedited time line.

Demonstrate that the scope and/or complexity of the capital improvements warrant the length of the extension.

- Extensions should be granted for only the period necessary to complete the required capital improvements. While 1412(b)(10) allows for extensions of up to two years, extensions for the full time should only be granted where the scope of the proposed improvements justifies the length of the time requested.

ABC System initiated construction activities to upgrade their plant to incorporate granular activated carbon (GAC) treatment to reduce HAA5 levels. Although ABC System began construction in January 2000 (two full years prior to the initial compliance deadline for Stage 1 DBPR), construction would not be completed until April 2003. Thus, ABC System requested an extension for compliance with the HAA5 MCL. Through the negotiation process with the State, ABC Systems received a 1.5 year extension.

EXTENSION CONDITIONS

Systems will likely propose a plan that includes critical milestones and a time-line with a final compliance date. Often these conditions will be refined through negotiations with the State. The State may wish to consider documenting the conditions of the extension through a memorandum of understanding signed by both parties or by signing-off on the system’s plan once negotiations are completed. The conditions of an extension should, at a minimum, contain:

Compliance schedules with critical milestones.

- , A system should present a realistic construction schedule to complete their capital improvement efforts. Schedules should be based upon the scope/complexity of the capital improvement. Critical milestones are those which would indicate that significant progress towards construction goals are being realized.
- , While developing the compliance schedule, the State and system should discuss and document the implications of missed milestones (e.g. violation of National Primary Drinking Water Regulation) and remedies for the delay.

Progress reports corresponding to critical milestones.

- , The State should request progress reports as frequently as is necessary to perform oversight of the system. We do not intend to create any undue reporting burden by requesting information that is not critical to determining the system’s compliance with the negotiated compliance schedule.

The ABC System proposed the following critical milestone to discuss in their progress reports during the extension period:

- , Groundbreaking for the GAC system
- , 50% building completion
- , GAC installed - to include results of pilot test run
- , Building construction complete, and
- , Plant operating with GAC system fully operational

Compliance with interim measures for public health protection as determined by the State.

- , During the extension period the system should make reasonable efforts to meet the intent of the provisions established in the rule. Measures that can be taken within the scope of the system’s current operation should be established and complied with to provide a level of public health protection while capital improvements are on ongoing. Interim measures are discussed further in the following section.

Provide an opportunity for a system’s customers to respond/comment to a notice of an extension.

- , It is important that the public which is served by the system is informed of the purpose of the extension and has an opportunity to provide input to the system and the State.
- , The system should consider publishing a “Notice of Availability” of a public hearing as an opportunity to explain and receive feedback on the extension.

Notice of the extension in the annual Consumer Confidence Report (CCR) [note: applies only to community water systems (CWSs)].

- , A CWS should explain to their customers the reason they pursued an extension.
- , The notice should explain the issues surrounding the extension and the interim measures the system will take to ensure that the quality of service will not be compromised.

ABC System agreed to notify their customers of the **extension** to the HAA5 compliance date in their annual CCR. Note: The system would not be in violation of the MCL/TT or be required to report under the Public Notification Rule, but they are required to report any compliance monitoring results in the CCR (if they are a CWS).

, The CWS is required to publish their compliance monitoring results in the CCR.

, **The State may wish to have a system issue a Public Notice, or a statement in the CCR if the MCL or TT for which the extension was granted is exceeded.**

, A system is not required to issue a public notice during the extension period for an exceedence of an MCL or TT. The State may wish to encourage the system to notify their customers of any exceedences as part of the system's responsibility to keep the public informed of any issues related to public health and the water supply.

For ABC System, conditions of an extension include submitting quarterly sample data and notifying the public if the annual average for HAA5 exceeds 0.060 mg/L.

INTERIM MEASURES

EPA believes that it is important to consider each system's potential for achieving meaningful overall risk reduction through reasonable interim treatment requirements. Some possibilities the States may wish to consider include the following:

, **Change the treatment process, type of treatment, or point of treatment.**

ABC System will optimize treatment in their plant to improve precursor removal and minimize the formation of disinfection byproducts.

, **Implement a main flushing program in areas with high detention times and/or biofilm problems.**

, **Minimize the use of certain sources.**

, **Provide alternate solutions for sensitive populations (e.g., bottled water, point-of-use, or point-of-entry devices).**

In all cases, EPA believes that it is essential to evaluate all potential interim treatment requirements in terms of their impact on disinfection byproduct formation, microbial protection, corrosion control, and other public health issues. States should consider the net gain in public health protection when establishing interim treatment requirements. mike.price@crowncork.com