

**Title 10 - DEPARTMENT OF NATURAL RESOURCES**  
**Division 60 - Safe Drinking Water Commission**  
**Chapter 4 - Contaminant Levels and Monitoring**

**DRAFT PROPOSED RULE**

10 CSR 60-4.025 Ground Water Rule

*Purpose: This rule sets standards for public water systems using ground water, including monitoring, treatment techniques, and corrective actions. Recording keeping, reporting, and public notice requirements are found in the associated chapters of 10 CSR 60.*

(1) General requirements and applicability.

(A) Scope of this rule. The requirements of this rule constitute National Primary Drinking Water Regulations.

(B) Applicability. This rule 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 after treatment. Also, it does not apply to ground water systems under the direct influence of surface water. For the purposes of this rule, ground water system is defined as any public water system meeting this applicability statement, including consecutive systems receiving finished ground water.

(C) General requirements.

1. Systems subject to this rule must comply with sanitary survey information requirements described in section (2) of this rule.

2. Wherever it is used in this rule, the term “4-log treatment of viruses” shall mean treatment to at least 99.99 percent (4-log) treatment of viruses using inactivation, removal, or a department-approved combination of 4-log virus inactivation and removal before or at the first customer.

3. The Missouri Guidance Manual for Inactivation of Viruses in Ground Water (2009) is incorporated by reference in this rule.

4. Systems subject to this rule must comply with 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 before or at the first customer as described in section (3) of this rule.

5. Systems subject to this rule must comply with treatment technique requirements, described in section (4) of this rule that apply to ground water systems that have fecally contaminated source waters, as determined by source water monitoring conducted under section (3) of this rule, or that have significant deficiencies that are identified by the department, or that are identified by EPA under SDWA section 1445. For the purposes of this rule, significant deficiencies are defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the department determines have caused, or have potential for causing, the introduction of contamination into the water delivered to consumers and that has the near-term potential to pose risks to public health or safety. A ground water system with fecally contaminated source water or with significant deficiencies subject to the treatment technique requirements of this rule must implement one (1) or more of the following corrective action options under the direction and approval of the department:

A. Correct all significant deficiencies;

B. Provide an alternate source of water;  
C. Eliminate the source of contamination; or  
D. Provide treatment that reliably achieves at least 4-log treatment of viruses before or at the first customer.

6. Ground water systems that provide at least 4-log treatment of viruses before or at the first customer are required to conduct compliance monitoring to demonstrate treatment effectiveness, as described in subsection (4)(B) of this rule.

7. If requested by the department, ground water systems must provide any existing information that will enable the department to perform a hydrogeologic sensitivity assessment. For the purposes of this rule, a hydrogeologic sensitivity assessment is a determination of whether ground water systems obtain water from hydrogeologically sensitive settings.

## (2) Sanitary surveys for Ground Water Systems.

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

(B) For the purposes of this rule, a sanitary survey 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 water system's 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 department requirements.

## (3) Ground Water Source Microbial Monitoring.

### (A) Triggered Source Water Monitoring.

1. General Requirements. A ground water system must conduct triggered source water monitoring if the following conditions exist

A. The system does not provide at least 4-log treatment of viruses before or at the first customer for each ground water source; and

B. The system is notified that a sample collected under 10 CSR 60-4.020(1) is total coliform-positive and the sample is not invalidated under 10 CSR 60-4.020(3).

2. Sampling Requirements. A ground water system must collect, within twenty-four (24) hours of notification of the total coliform-positive sample, at least one (1) ground water source sample from each ground water source in use at the time the total coliform-positive sample was collected under 10 CSR 60-4.020(1) except as provided in subparagraph (3)(A)2.B. of this rule.

A. The department may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the ground water source water sample within twenty-four (24) hours due to circumstances beyond its control. In the case of an extension, the department will specify how much time the system has to collect the sample.

B. If approved by the department, systems with more than one (1) ground water source may meet the requirements of this subparagraph by sampling a representative ground water source or sources. If directed by the department, systems must submit for department approval a triggered source water monitoring plan that identifies one (1) or more ground water sources that are representative of each monitoring site in the system's sample siting plan under 10

CSR 60-4.020(1) and that the system intends to use for representative sampling for triggered source water monitoring.

C. A ground water system serving one thousand (1,000) people or fewer may use a repeat sample collected from a ground water source to meet both the requirements of 10 CSR 60-4.020(2) and to satisfy the monitoring requirements of this section (3) for that ground water source only if the department approves the use of *E. coli* as a fecal indicator for source water monitoring under this subsection (3)(A). If the repeat sample collected from the ground water source is *E.coli* positive, the system must comply with the additional requirements in paragraph (3)(A)3.

3. Additional Requirements. If the department does not require corrective action under paragraph (4)(A)2. for a fecal indicator-positive source water sample collected under paragraph (3)(A)2. that is not invalidated under subsection (3)(D), the system must collect five (5) additional source water samples from the same source within twenty-four (24) hours of being notified of the fecal indicator-positive sample.

4. Consecutive and Wholesale Systems. In addition to the other requirements of this subsection (3)(A):

A. A consecutive ground water system that has a total coliform-positive sample collected under 10 CSR 60.4.020(1) must notify the wholesale system(s) within twenty-four (24) hours of being notified of the total coliform-positive sample.

B. A wholesale ground water system that receives notice from a consecutive system it serves that a sample collected under 10 CSR 60-4.020(1) is total coliform-positive must, within twenty-four (24) hours of being notified, collect a sample from its ground water source(s) under paragraph (3)(A)2.of this rule and analyze it for a fecal indicator under subsection (3)(C) of this rule. If this sample is fecal indicator-positive, the system must notify all consecutive systems served by that ground water source of the fecal indicator source water positive within twenty-four (24) hours of being notified of the ground water source sample monitoring result and must meet the requirements of paragraph (3)(A)3. of this rule.

5. Exceptions to Triggered Source Water Monitoring Requirements. A ground water system is not required to comply with the source water monitoring requirements of this subsection (3)(A) if either of the following conditions exists:

A. The department determines, and documents in writing, that the total coliform-positive sample collected under 10 CSR 60-4.020(1) is caused by a distribution system deficiency; or

B. The total coliform-positive sample collected under 10 CSR 60-4.020(1) is collected at a location that meets department criteria for distribution system conditions that will cause total coliform-positive samples.

(B) Assessment Source Water Monitoring. If directed by the department, ground water systems must conduct assessment source water monitoring that meets department-determined requirements. A ground water system conducting assessment source water monitoring may use a triggered source water sample collected under paragraph (3)(A)2. of this rule to meet the requirements of this subsection. The department may require any combination of:

1. Collection of a total of twelve (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 department 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 (3)(C)2. of this rule 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 department approves a sampling location after treatment; or

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 department 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 subsection (3)(A) of this rule 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 subsection (3)(A) of this rule using one of the analytical methods listed in the 40 CFR 141.402 and incorporated by reference in 10 CSR 60-5.010.

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

1. A ground water system may obtain department invalidation of a fecal indicator-positive ground water source sample collected under subsection (3)(A) of this rule only under the following conditions:

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

B. The department determines and documents in writing that there is substantial evidence that a fecal indicator-positive ground water source sample is not related to source water quality.

2. If the department invalidates a fecal indicator-positive ground water source sample, the ground water system must collect another source water sample under subsection (3)(A) of this rule within twenty-four (24) hours of being notified by the department of its invalidation decision and have it analyzed for the same fecal indicator listed in the 40 CFR 141.402 and incorporated by reference in 10 CSR 60-5.010. The department may extend the twenty-four (24)-hour time limit on a case-by-case basis if the system cannot collect the source water sample within twenty-four (24) hours due to circumstances beyond its control. In the case of an extension, the department will specify how much time the system has to collect the sample.

(E) Sampling location.

1. Any ground water source sample required under subsection (3)(A) of this rule must be collected at a location prior to any treatment of the ground water source unless the department 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 department-approved location to meet the requirements of subsection (3)(A) of this rule if the sample is representative of the water quality of that well.

(F) New Sources. If directed by the department, a ground water system that places a new ground water source into service after November 30, 2009, must conduct assessment source water monitoring under subsection (3)(B) of this rule. If directed by the department, 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 subsection (3)(A) or (3)(B) of this rule that is fecal indicator-positive and that is not invalidated under subsection (3)(D) of this rule, including consecutive systems served by the

ground water source, must conduct Tier 1 public notification under 10 CSR 60-8.010.

(H) Monitoring Violations. Failure to meet the requirements of subsections (3)(A)-(F) of this rule is a monitoring violation and requires the ground water system to provide Tier 3 public notification under 10 CSR 60-8.010.

(4) Treatment technique requirements.

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

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

2. If directed by the department, a ground water system with a ground water source sample collected under paragraph (3)(A)3., paragraph (3)(A)4., or subsection (3)(B) that is fecal indicator-positive must comply with the treatment technique requirements of this section (4).

3. When a significant deficiency is identified at a 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 subsection (4)(A) except in cases where the department determines that the significant deficiency is in a portion of the distribution system that is served solely by surface water or ground water under the direct influence of surface water.

4. Unless the department directs the ground water system to implement a specific corrective action, the ground water system must consult with the department regarding the appropriate corrective action within thirty (30) days of receiving written notice from the department of a significant deficiency, written notice from a laboratory that a ground water source sample collected under paragraph (3)(A)3. of this rule was found to be fecal indicator-positive, or direction from the department that a fecal indicator positive sample collected under paragraph (3)(A)2., paragraph (3)(A)4., or subsection (3)(B) of this rule requires corrective action. For the purposes of this rule, significant deficiencies are defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the department determines have caused, or have potential for causing, the introduction of contamination into the water delivered to consumers and that has the near term potential to pose risks to public health or safety. Such significant deficiencies include but may not be limited to the following:

A. Any improperly constructed, sealed or inadequately screened opening in the well head;

B. Failure to perform and record the results of sufficient analyses to maintain control of treatment process or water quality;

C. The existence of a known unprotected cross-connection;

D. The existence of any unprotected, inadequately protected or improperly constructed opening in a storage facility;

E. Repeated or persistent low pressures caused by pump or pump control problems or inadequate pump capacity;

F. Falsification of monitoring or reporting records;

G. Community system is not formed as a legal entity; and

H. Lack of properly certified chief operator in charge of treatment or distribution.

5. Within one hundred twenty (120) days (or earlier if directed by the department) of receiving written notification from the department of a significant deficiency, written notice

from a laboratory that a ground water source sample collected under paragraph (3)(A)3. of this rule was found to be fecal indicator-positive, or direction from the department that a fecal indicator-positive sample collected under paragraph (3)(A)2., paragraph 3)(A)4., or subsection (3)(B) of this rule requires corrective action, the ground water system must either:

A. Have completed corrective action in accordance with applicable department plan review processes or other department guidance or direction, if any, including department-specified interim measures; or

B. Be in compliance with a department-approved corrective action plan and schedule subject to the following conditions:

(I) Any subsequent modifications to a department-approved corrective action plan and schedule must be approved by the department; and

(II) If the department specifies interim measures for protection of the public health pending department approval of the corrective action plan and schedule or pending completion of the corrective action plan, the system must comply with these interim measures as well as with any schedule specified by the department.

6. Corrective Action Alternatives. Ground water systems that meet the conditions of paragraph (4)(A)1. or (4)(A)2. of this rule must implement one (1) or more of the following corrective action alternatives under the direction and approval of the department:

A. Correct all significant deficiencies;

B. Provide an alternate source of water;

C. Eliminate the source of contamination; or

D. Provide treatment that reliably achieves at least 4-log treatment of viruses 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.

A. In addition to the applicable public notification requirements of 10 CSR 60-8.010(2), a community ground water system that receives notice from the department of a significant deficiency or notification of a fecal indicator-positive ground water source sample that is not invalidated by the department under subsection (3)(D) of this rule must inform the public served by the water system under 10 CSR 60-8.030(2)(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 department to be corrected under paragraph (4)(A)5. of this rule.

B. In addition to the applicable public notification requirements of 10 CSR 60-8.010, a non-community ground water system that receives notice from the department of a significant deficiency must inform the public served by the water system in a manner approved by the department of any significant deficiency that has not been corrected within twelve (12) months of being notified by the department, or earlier if directed by the department. The system must continue to inform the public annually until the significant deficiency is corrected.

(I) The information must include:

(a) The nature of the significant deficiency and the date the significant deficiency was identified by the department;

(b) The department-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 department, 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.

(II) If directed by the department, 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.

(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 rule for any ground water source because it provides at least 4-log treatment of viruses before or at the first customer for any ground water source before December 1, 2009, must notify the department in writing that it provides at least 4-log treatment of viruses before or at the first customer for the specified ground water source and begin compliance monitoring in accordance with paragraph (4)(B)3. of this section by December 1, 2009. Notification to the department must include engineering, operational, or other information that the department requests to evaluate the submission. If the system subsequently discontinues 4-log treatment of viruses before or at the first customer for a ground water source, the system must conduct ground water source monitoring as required under section (3) of this rule.

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 rule because the system provides at least 4-log treatment of viruses before or at the first customer for the ground water source must comply with the following:

A. The system must notify the department in writing that it provides at least 4-log treatment of viruses before or at the first customer for the ground water source. Notification to the department must include engineering, operational, or other information that the department requests to evaluate the submission;

B. The system must conduct compliance monitoring as required under paragraph (4)(B)3. of this rule within thirty (30) days of placing the source in service; and

C. The system must conduct ground water source monitoring under section (3) of this rule if the system subsequently discontinues 4-log treatment of viruses before or at the first customer for the ground water source.

3. Monitoring requirements. A ground water system subject to the requirements of subsection (4)(A), or paragraphs (4)(B)1. or (4)(B)2. of this rule must monitor the effectiveness and reliability of treatment for that ground water source before or at the first customer as follows:

A. Chemical disinfection.

(I) A ground water system that serves greater than three thousand three hundred (3,300) people must continuously monitor the residual disinfectant concentration using analytical methods specified in 10 CSR 60-5.010(5) at a location approved by the department and must record the lowest residual disinfectant concentration each day that water from the ground water source is served to the public. The ground water system must maintain the department-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public. If there is a failure in the continuous monitoring equipment, the ground water system must conduct grab sampling every four (4) hours until the continuous monitoring equipment is returned to service. The system must resume continuous residual disinfectant monitoring within fourteen (14) days.

(II) A ground water system that serves three thousand three hundred (3,300) or fewer people must monitor the residual disinfectant concentration using

analytical methods specified in 10 CSR 60-5.010(5) at a location approved by the department and record the residual disinfection concentration each day that water from the ground water source is served to the public. The ground water system must maintain the department-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public. The ground water system must take a daily grab sample during the hour of peak flow or at another time specified by the department. If any daily grab sample measurement falls below the department-determined residual disinfectant concentration, the ground water system must take follow-up samples every four (4) hours until the residual disinfectant concentration is restored to the department-determined level. Alternatively, a ground water system that serves three thousand three hundred (3,300) or fewer people may monitor continuously and meet the requirements in part (I) of this subparagraph (4)(B)3.A.

B. Membrane filtration. A ground water system that uses membrane filtration to meet the requirements of this rule must monitor the membrane filtration process in accordance with all department-specified monitoring requirements and must operate the membrane filtration in accordance with all department-specified compliance requirements. The department will consider the manufacturer's recommendations and guidelines as well as standard industry practices in setting monitoring and compliance requirements. A ground water system that uses membrane filtration is in compliance with the requirement to achieve at least 4-log removal of viruses when:

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

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

(III) The integrity of the membrane is intact.

C. Alternative treatment. A ground water system that uses a department-approved alternative treatment to meet the requirements of this rule by providing at least 4-log treatment of viruses before or at the first customer must monitor the alternative treatment in accordance with all department-specified monitoring requirements and operate the alternative treatment in accordance with all compliance requirements that the department determines to be necessary to achieve at least 4-log treatment of viruses. The department will consider the manufacturer's recommendations and guidelines as well as standard industry practices in setting monitoring and compliance requirements for the approved alternative treatment .

(C) Discontinuing treatment. A ground water system may discontinue 4-log treatment of viruses before or at the first customer for a ground water source if the department determines and documents in writing that 4-log treatment of viruses is no longer necessary for that ground water source. A system that discontinues 4-log treatment of viruses is subject to the source water monitoring and analytical methods requirements of section (3)of this rule.

(D) Failure to meet the monitoring requirements of this section is a monitoring violation and requires the ground water system to provide public notification under section 10 CSR 60-8.010(4) (Tier 3 notice).

(5) Treatment technique violations for ground water systems.

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

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

2. Is not in compliance with a department-approved corrective action plan and schedule.

(B) Unless the department invalidates a fecal indicator-positive ground water source sample under subsection (3)(D) of this rule, a ground water system is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the department) of meeting the conditions of paragraphs (4)(A)1. or (4)(A)2. of this rule, the system:

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

2. Is not in compliance with a department -approved corrective action plan and schedule.

(C) A ground water system subject to the requirements of paragraph (4)(B)3. of this rule that fails to maintain at least 4-log treatment of viruses 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 section 10 CSR 60-8.010(3) (Tier 2 notice) for the treatment technique violations specified in this section.

(6) Reporting Requirements. Reporting requirements are in 10 CSR 60-7.010 Reporting Requirements.

(7) Record Keeping Requirements. Record keeping requirements are in 10 CSR 60-9.010 .Requirements for Maintaining Public Water System Records.

*Authority: Section 640.100, RSMo. Original rule filed January\_\_\_\_, 2010.*

*State costs: This proposed rule is anticipated to cost the Missouri Department of Natural Resources \$\_\_\_\_\_ and \_\_\_##\_\_ publicly-owned public water systems \$\_\_\_\_\_ .*

*Private costs: This proposed rule is anticipated to cost \_#\_ privately-owned public water systems .....*

*Notice of Public Hearing and Notice to Submit Comments: The Safe Drinking Water Commission will hold a public hearing on this proposed rule at (time) on March \_\_, 2010 at (location). Any interested person may comment during the public hearing in support or or opposition to the proposed rule. Written comments postmarked or received by March 31, 2010 will also be accepted. Written comments must be mailed to: Linda McCarty, MDNR Public Drinking Water Branch, P.O. Box 176, Jefferson City, MO 65102, or hand-delivered to the Lewis and Clark State Office Building, 1101 Riverside Drive, Jefferson City, Missouri.*

**Title 10—DEPARTMENT OF NATURAL RESOURCES**  
**Division 60—Safe Drinking Water Commission**  
**Chapter 5—Laboratory and Analytical Requirements**

**DRAFT PROPOSED AMENDMENT**

**10 CSR 60-5.010 Acceptable and Alternate Procedures for Analyses.** The commission is adding section (9).

*PURPOSE: This amendment updates the incorporates by reference of analytical methods for source water monitoring under the Ground Water Rule and the Long-Term 2 Enhanced Surface Water Treatment Rule as published in the July 1, 2008 Code of Federal Regulations.*

(3) Microbiological Contaminants and Turbidity. Unless substitute methods are approved by the department, analysis shall be conducted in accordance with the microbiological conta[i]minant and turbidity analytical methods in 40 CFR 141.21(f)[ and], 40 CFR 141.74(a)(1), **and 40 CFR 141.704(a)** of the July 1, [2003] **2008** Code of Federal Regulations, which are incorporated by reference.

**(9) Analytical Methods for Source Water Monitoring. Unless substitute methods are approved by the department, analysis shall be conducted in accordance with the analytical methods in 40 CFR 141.402(c) of the July 1, 2008 Code of Federal Regulations, which are incorporated by reference. This does not include later amendments or additions. The Code of Federal Regulations is published by the U.S. Government Printing Office, 732 North Capitol Street NW, Washington, DC 20401 and is available by calling toll-free (866) 512-1800 or going to <http://bookstore.gpo.gov>.**

*AUTHORITY: sections 640.100, RSMo Supp. 2007 and 640.125.1, RSMo 2000. Original rule filed May 4, 1979, effective Sept. 14, 1979. For intervening history, please consult the Code of State Regulations. Amended: Filed March 2, 2009, effective Oct. 30, 2009. Amended: Filed Jan. \_\_\_\_\_, 2010.*

*PUBLIC COST: This proposed amendment will cost state agencies and other political subdivisions less than five hundred dollars (\$500) in the aggregate.*

*PRIVATE COST: This proposed amendment will cost private entities less than five hundred dollars (\$500) in the aggregate.*

*Notice of Public Hearing and Notice to Submit Comments: The Safe Drinking Water Commission will hold a public hearing on this proposed rule at (time) on March \_\_\_\_, 2010 at (location). Any interested person may comment during the public hearing in support or or opposition to the proposed rule. Written comments postmarked or received by March 31, 2010 will also be accepted. Written comments must be mailed to: Linda McCarty, MDNR Public Drinking Water Branch, P.O. Box 176, Jefferson City, MO 65102, or hand-delivered to the Lewis and Clark State Office Building, 1101 Riverside Drive, Jefferson City, Missouri.*

**Title 10 -- DEPARTMENT OF NATURAL RESOURCES  
Division 60 -- Public Drinking Water Program  
Chapter 7 -- Reporting**

**DRAFT PROPOSED AMENDMENT**

**10 CSR 60-7.010 Reporting Requirements.** The commission is adding a new section (11).

*PURPOSE: This amendment adopts without variance the reporting requirements in the federal Ground Water Rule found in subpart S of 40 CFR part 141, July 1, 2008.*

**(11) Reporting requirements for the Ground Water Rule.**

**(A) In addition to any other applicable reporting requirements of this rule, a ground water system regulated under 10 CSR 60-4.025 must provide the following information to the department:**

**1. A ground water system conducting compliance monitoring under 10 CSR 60-4.025(4)(B) must notify the department any time the system fails to meet any department-specified requirements including, but not limited to, minimum residual disinfectant concentration, membrane operating criteria or membrane integrity, and alternative treatment operating criteria, if operation in accordance with the criteria or requirements is not restored within four hours. The ground water system must notify the department as soon as possible, but in no case later than the end of the next business day;**

**2. After completing any corrective action under 10 CSR 60-4.025(4)(A), a ground water system must notify the department within thirty (30) days of completion of the corrective action; and**

**3. If a ground water system subject to the requirements of 10 CSR 60-4.025(3)(A) does not conduct source water monitoring under subparagraph (3)(A)5.B. of that rule, the system must provide documentation to the department within thirty (30) days of the total coliform positive sample that the system met the department criteria.**

*AUTHORITY: section 640.100, RSMo Supp. 2002.\* Original rule filed May 4, 1979, effective Sept. 14, 1979. Amended: Filed April 14, 1981, effective Oct. 11, 1981. Amended: Filed July 12, 1991, effective Feb. 6, 1992. Amended: Filed Dec. 15, 1999, effective Sept. 1, 2000. Amended: Filed March 17, 2003, effective Nov. 30, 2003. Amended: Filed Mar. 2, 2009, effective Oct. 30, 2009. Amended: Filed January \_\_\_\_, 2010.*

*PUBLIC COSTS: This proposed amendment is anticipated to cost the Missouri Department of Natural Resources approximately \$ \_\_\_\_ and ## publicly-owned public water systems \$\_\_\_\_\_.*

*PRIVATE COSTS: This proposed amendment is anticipated to cost ## privately-owned public water systems approximately \$ \_\_\_\_ .*

*Notice of Public Hearing and Notice to Submit Comments: The Safe Drinking Water Commission will hold a public hearing on this proposed rule at (time) on March \_\_\_\_, 2010 at (location). Any interested person may comment during the public hearing in support or or opposition to the proposed rule. Written comments postmarked or received by March 31, 2010 will also be accepted. Written comments must be mailed to: Linda McCarty, MDNR Public Drinking Water Branch, P.O. Box 176, Jefferson City, MO 65102, or hand-delivered to the Lewis and Clark State Office Building, 1101 Riverside Drive, Jefferson City, Missouri.*

**Title 10 - DEPARTMENT OF NATURAL RESOURCES**  
**Division 60 – Safe Drinking Water Commission**

**DRAFT PROPOSED AMENDMENT**

**10 CSR 60-8.010 Public Notification of Conditions Affecting a Public Water Supply.** The commission is amending subsection (2)(A), subsection (3)(A), and section (11).

*Purpose: This amendment adopts new public notice requirements required by the Ground Water Rule as published in 40 CFR (July 2007). The requirements are adopted from the federal rules without variance.*

(2) Tier 1 Public Notice.

(A) Violation Categories and Other Situations Requiring a Tier 1 Public Notice.

1. Tier 1 public notice is required for violations or other situations with significant potential to have serious adverse effects on human health as a result of short-term exposure.

2. Specific violations and other situations requiring Tier 1 notice include:

A. Violation of the MCL for total coliforms when fecal coliform or *E. coli* are present in the water distribution system, or when the water system fails to test for fecal coliforms or *E. coli* when any repeat sample tests positive for coliform;

B. Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, or when the water system fails to take a confirmation sample within twenty-four (24) hours of the system's receipt of the first sample showing an exceedance of the nitrate or nitrite MCL;

C. Exceedance of the nitrate MCL by noncommunity water systems where permitted by the department to exceed the MCL;

D. Violation of the MRDL for chlorine dioxide, when one (1) or more samples taken in the distribution system the day following an exceedance of the MRDL at the entrance of the distribution system, exceed the MRDL, or when the water system does not take the required samples in the distribution system;

E. Violation of the maximum turbidity level where the sample results exceed five (5) nephelometric turbidity units (NTU);

F. Violation of a treatment technique requirement pursuant to 10 CSR 60-4.050 resulting from a single exceedance of the maximum allowable turbidity limit, where the department determines after consultation that the violation has significant potential to have serious adverse effects on human health or where the system fails to consult with the department within twenty-four (24) hours after the system learns of the violation;

G. Occurrence of a waterborne disease outbreak or other waterborne emergency (such as failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination);

**H. Detection of *E. coli*, enterococci, or coliphage in source water samples as specified in 10 CSR 60-4.025(3)(A) and 10CSR 60-4.025(3)(B)**

I. Other violations or situations with significant potential to have serious adverse effects on human health as a result of shortterm exposure, as determined by the department either in regulation or on a case-by-case basis.

(3) Tier 2 Public Notice.

(A) Violation Categories and Other Situations Requiring a Tier 2 Public Notice.

1. Tier 2 public notice is required for violations and other situations with potential to have serious adverse effects on human health.

2. Specific violations and other situations requiring Tier 2 notice.

A. Tier 2 notice is required for violations of MCL, MRDL, or treatment technique requirements, except where a Tier 1 notice is required or where the department determines that a Tier 1 notice is required, for the following: microbiological contaminants; inorganic contaminants (IOCs); synthetic organic contaminants (SOCs); volatile organic contaminants (VOCs); radiological contaminants; disinfection byproducts, byproduct precursors, and disinfectant residuals; treatment techniques for acrylamide, epichlorohydrin, lead, and copper; and other situations determined by the department to require Tier 2 notice. Systems with treatment technique violations involving a single exceedance of a maximum turbidity limit under 10 CSR 60-4.050 must initiate consultation with the department within twenty-four (24) hours of learning of the violation. Based on this consultation the department may subsequently decide to elevate the violation to Tier 1. If a system is unable to make contact with the department in the twenty-four (24)-hour period, the violation is automatically elevated to Tier 1.

B. Failure to comply with the terms and conditions of a variance or exemption; and

C. Violations of the monitoring and testing procedure requirements where the department determines that a Tier 2 rather than a Tier 3 public notice is required, taking into account potential health impacts and persistence of the violation. This includes but is not limited to collecting no total coliform samples during the applicable monitoring period at the discretion of the department.

**D. Failure to take corrective action or failure to maintain at least 4-log treatment of viruses (using inactivation, removal, or a department -approved combination of 4-log virus inactivation and removal) before or at the first customer under 10 CSR 60-4.025 (4)(A).**

(11) Standard Health Effects Language for Public Notification.

(A) Microbiological Contaminants.

1. Total coliform. .Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems..

2. Fecal coliform/*E. coli*. .Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause shortterm 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.

3. **Fecal indicators (GWR) [*E. coli*, enterococci, coliphage]. 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.**

**4. Ground Water Rule (GWR) TT Violations. Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps and associated headaches.**

5. Turbidity. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea cramps, diarrhea and associated headaches..

*AUTHORITY: section 640.100, RSMo Supp.2002.\* Original rule filed May 4, 1979, effective Sept. 14, 1979. Amended: Filed April 14, 1981, effective Oct. 11, 1981. Amended: Filed Aug. 4, 1987, effective Jan. 1, 1988. Rescinded and readopted: Filed June 2, 1988, effective Aug. 31, 1988. Amended: Filed Dec. 4, 1990, effective July 8, 1991. Amended: Filed March 31, 1991, effective Dec. 3, 1992. Amended: Filed Aug. 4, 1992, effective May 6, 1993. Amended: Filed May 4, 1993, effective Jan. 13, 1994. Amended: Filed Feb. 1, 1996, effective Oct. 30, 1996. Amended: Filed Dec. 15, 1999, effective Sept. 1, 2000. Rescinded and readopted: Filed March 17, 2003, effective Nov. 30, 2003. Amended: Filed March 2, 2009.*

*PUBLIC AGENCY COSTS: This proposed amendment is anticipated to cost publicly-owned public water systems approximately \$..... in the aggregate.*

*PRIVATE ENTITY COSTS: This proposed amendment is anticipated to cost \_\_\_##\_\_ privately-owned public water systems approximately \$\_\_\_\_\_in the aggregate.*

*Notice of Public Hearing and Notice to Submit Comments: The Safe Drinking Water Commission will hold a public hearing on this proposed rule at (time) on March \_\_\_\_, 2010 at (location). Any interested person may comment during the public hearing in support or or opposition to the proposed rule. Written comments postmarked or received by March 31, 2010 will also be accepted. Written comments must be mailed to: Linda McCarty, MDNR Public Drinking Water Branch, P.O. Box 176, Jefferson City, MO 65102, or hand-delivered to the Lewis and Clark State Office Building, 1101 Riverside Drive, Jefferson City, Missouri.*

**TITLE 10 -- DEPARTMENT OF NATURAL RESOURCES**  
DIVISION 60 – Public Drinking Water Program  
Chapter 8 – Public Notification

**DRAFT PROPOSED AMENDMENT**

**10 CSR 60-8.030 Consumer Confidence Reports.** The commission is amending subsection (2)(H) and Appendices A and B.

Purpose: This amendment adopts without variance consumer confidence report requirements included in the Ground Water Rule as published in the July 1, 2008 Code of Federal Regulations.

(2) Content of the Reports.

(H) Additional Information.

1. The report must contain a brief explanation regarding contaminants which may reasonably be expected to be found in drinking water, including bottled water. The report must include the language of subparagraph (2)(H)1.A. of this rule. This explanation must also include the information contained in subparagraphs (2)(H)1.B..D. of this rule using this language or comparable language.

A. .Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency.s Safe Drinking Water Hotline (800-426-4791)..

B. .The sources of drinking water, (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity..

C. .Contaminants that may be present in source water include:

(I) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(II) Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

(III) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

(IV) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

(V) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities..

D. .In order to ensure that tap water is safe to drink, the Department of Natural Resources prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Department of Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health..

2. The report must include the telephone number of the owner, operator, or designee of the community water system as a source of additional information concerning the report.

3. In communities with a large proportion of non-English speaking residents, as determined by the department, the report must contain information in the appropriate language(s) regarding the importance of the report. The report may use a notice based on the following wording: .This report contains very important information about your drinking water. Translate it or speak with someone who understands it.. The report may also contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

4. The report must include information (e.g., time and place of regularly scheduled board meetings) about opportunities for public participation in decisions that may affect the quality of the water.

5. The systems may include such additional information as they deem necessary for public education consistent with, and not detracting from, the purpose of the report.

**6. Systems required to comply with the Ground Water Rule.**

**A. Any ground water system that receives notice from the department of a significant deficiency or notice from a laboratory of a fecal indicator-positive ground water source sample that is not invalidated by the department under 10 CSR 60-4.025 (3)(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 department determines that particular significant deficiency is corrected or the fecal contamination in the ground water source is addressed under 10 CSR 60-4.025(4)(A). Each report must include the following elements.**

**(I) 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 department or the dates of the fecal indicator-positive ground water source samples;**

**(II) If the fecal contamination in the ground water source has been addressed under 10 CSR 60-4.025(4)(A) and the date of such action;**

**(III) For each significant deficiency or fecal contamination in the ground water source that has not been addressed under 10 CSR 60-4.025(4)(A), the department -approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed; and**

**(IV) If the system receives notice of a fecal indicator-positive ground water source sample that is not invalidated by the department under 10 CSR 60-4.025 (3)(D), the potential health effects using the health effects language of Appendix C of this rule.**

**B. If directed by the department, a system with significant deficiencies that have been corrected before the next Consumer Confidence Report is issued must inform its customers of the significant deficiency, how the deficiency was corrected, and the date of correction under subparagraph (2)(H)6.A. of this rule.**

Appendix A to 10 CSR 60-8.030

Converting MCL Compliance Values for Consumer Confidence Reports

Contaminant	MCL in compliance units (mg/l)	multiply by	MCL in CCR Units	MCLG in CCR Units
Microbiological Contaminants				
<b>5. Fecal TT Indicators (enterococci or coliphage)</b>	<b>TT</b>			N/A

Appendix B to 10 CSR 60-8.030

Regulated Contaminants

Contaminant (units)	MCLG	MCL	Major sources in drinking water
Microbiological Contaminants			
<b>5. Fecal N/A Indicators (enterococci or coliphage)</b>	<b>TT</b>		<b>Human and animal fecal waste.</b>

*Authority: sections 640.100 and 640.125.1, RSMo Supp. 2002. \* Original rule filed July 1, 1999, effective March 30, 2000. Amended: Filed March 17, 2003, effective Nov. 30, 2003. Amended: Filed March 2, 2009, effective Oct. 30, 2009. Amended: Filed January \_\_\_\_ 2010.*

*\*Original authority: 640.100, RSMo 1939, amended 1978, 1981, 1982, 1988, 1989, 1992, 1993, 1995, 1996, 1998, 1999, 2002; 640.125, RSMo 1978, amended 1998.*

**PUBLIC AGENCY COSTS:**

**PRIVATE ENTITY COSTS:**

*Notice of Public Hearing and Notice to Submit Comments: The Safe Drinking Water Commission will hold a public hearing on this proposed rule at (time) on March \_\_\_\_, 2010 at (location). Any interested person may comment during the public hearing in support or or opposition to the proposed rule. Written comments postmarked or received by March 31, 2010 will also be accepted. Written comments must be mailed to: Linda McCarty, MDNR Public Drinking Water Branch, P.O. Box 176, Jefferson City, MO 65102, or hand-delivered to the Lewis and Clark State Office Building, 1101 Riverside Drive, Jefferson City, Missouri.*

**Title 10 -- DEPARTMENT OF NATURAL RESOURCES  
Division 60 -- SAFE DRINKING WATER COMMISSION  
Chapter 9 -- Record Maintenance**

**DRAFT PROPOSED AMENDMENT**

**10 CSR 60-9.010 Requirements for Maintaining Public Water System Records.** The commission is adding section (4).

*PURPOSE: This amendment adopts without variance the record keeping requirements in the federal Ground Water Rule found in subpart S of 40 CFR part 141, July 1, 2008.*

**(4) Record keeping requirements for the Ground Water Rule. These requirements are in addition to any other applicable record keeping requirements of this rule.**

**(A) Documentation of corrective actions shall be kept for a period of not less than ten (10) years.**

**(B) Documentation of notice to the public as required under 10 CSR 60-4.025(4)(A)7. shall be kept for a period of not less than three (3) years.**

**(C) Records of decisions under 10 CSR 60-4.025(3)(A)5.B. and records of invalidation of fecal indicator-positive ground water source samples under subsection 10 CSR 60-4.025(3)(D). Documentation shall be kept for a period of not less than five (5) years.**

**(D) For consecutive systems, documentation of notification to the wholesale system(s) of total-coliform positive samples that are not invalidated under section 10CSR60-4.020(3). shall be kept for a period of not less than five (5) years.**

**(E) For systems, including wholesale systems, that are required to perform compliance monitoring under 10 CSR60-4.025(4)(B) shall maintain:**

**1. Records of the department-specified minimum disinfectant residual for a period of not less than ten (10) years;**

**2. Records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the department-prescribed minimum residual disinfectant concentration for a period of more than four hours. Documentation shall be kept for a period of not less than five (5) years; and**

**3. Records of department-specified compliance requirements for membrane filtration and of parameters specified by the department for department approved alternative treatment and records of the date and duration of any failure to meet the membrane operating, membrane integrity, or alternative treatment operating requirements for more than four hours. Documentation shall be kept for a period of not less than five (5) years.**

*AUTHORITY: Section 640.100, RSMo (cum. supp. 2002). Original rule filed May 4, 1979, effective Sept. 14, 1979. Amended: Filed Aug. 4, 1992, effective May 6, 1993. Amended: Filed March 17, 2003, effective Nov. 30, 2003. Amended: Filed March 2, 2009, effective Oct. 30, 2009. Amended: Filed \_\_\_\_\_.*

*PUBLIC COSTS: This proposed amendment is anticipated to cost state agencies and political subdivisions less than \$500 in the aggregate.*

*PRIVATE COSTS: This proposed amendment is anticipated to cost private entities less than*

*\$500 in the aggregate.*

*Notice of Public Hearing and Notice to Submit Comments: The Safe Drinking Water Commission will hold a public hearing on this proposed rule at (time) on March \_\_\_\_, 2010 at (location). Any interested person may comment during the public hearing in support or or opposition to the proposed rule. Written comments postmarked or received by March 31, 2010 will also be accepted. Written comments must be mailed to: Linda McCarty, MDNR Public Drinking Water Branch, P.O. Box 176, Jefferson City, MO 65102, or hand-delivered to the Lewis and Clark State Office Building, 1101 Riverside Drive, Jefferson City, Missouri.*