

**RATIONALE FOR THE PROPOSED REVISIONS TO
HAWAII ADMINISTRATIVE RULES TITLE 11,
DEPARTMENT OF HEALTH
CHAPTER 20, "RULES RELATING TO PUBLIC WATER SYSTEMS"
TO ADD PROVISIONS OF THE GROUND WATER RULE**

Part I: Introduction

The purpose of the current proposed revisions is to incorporate new Environmental Protection Agency (EPA) requirements into the Department of Health's (DOH) Hawaii Administrative Rules Title 11 Chapter 20 (HAR 11-20). These Rules are implemented by the DOH Safe Drinking Water Branch (SDWB), the local primacy agency. The requirements consist of one (1) new Rule: The Ground Water Rule (GWR), published in the Federal Register on November 8, 2006.

The GWR was subsequently codified in Title 40 Code of Federal Regulations (C.F.R.), primarily Parts 141 and 142. These codified Rules have been incorporated verbatim into the amended HAR 11-20 except for the addition of definitions for the Code of Federal Regulations and the Federal Register. HAR 11-20 will also refer specifically to the July 1, 2010 edition of the C.F.R.

The GWR affects public water systems (PWS) that are supplied by a groundwater source. Its primary purpose is to improve control of fecal contamination, specifically fecal indicators in drinking water.

A total of 124 public water systems, serving approximately 1,450,000 customers on Kauai, Oahu, Molokai, Lanai, Maui and the Big Island of Hawaii, must comply with the new GWR. The initial compliance date for the GWR was December 1, 2009.

This rationale document serves to provide an explanation for the changes which are proposed for HAR 11-20. Additional information may be obtained by calling (808) 586-4258 or by writing to the following address:

Hawaii Department of Health
Safe Drinking Water Branch
919 Ala Moana Boulevard, #308
Honolulu, Hawaii 96814

Part II: Format Revisions

By direction of the Legislative Reference Bureau (LRB) and pursuant to the procedures established in Hawaii Administrative Rules Drafting Manual (LRB, 1999 Reprint), parts of Chapter 11-20 have been reformatted. These reformatting changes do not affect the content of the document. Content, or technical changes, are discussed thoroughly in Part III of this rationale document.

Part III: Content or Technical Changes

For clarity, [deleted text] has been bracketed and shaded, while all **new material** has been bolded and underlined.

1. §11-20-2 Definitions

Proposed:

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“Code of Federal Regulations” or “C.F.R.” means the official codification of Federal regulations, as previously published in the Federal Register by the Executive departments and agencies of the Federal Government. The effective revision date of the C.F.R. references in this chapter is July 1, [2009]2010.

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"Sedimentation" means a process for removal of solids before filtration by gravity or separation.

“Service connection,” as used in the definition of “public water system,” does not include a connection to a system that delivers water by a constructed conveyance other than a pipe if: (1) The water is used exclusively for purposes other than residential uses (consisting of drinking, bathing, cooking, or other similar uses); (2) The State determines that alternative water to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulation is provided for residential or similar uses for drinking and cooking; or (3) The State determines that the water provided for residential or similar uses for drinking, cooking, and bathing is centrally treated or treated at the point of entry by the provider, a pass-through entity, or the user to achieve the equivalent level of protection provided by the applicable national primary drinking water regulations.

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Rationale: This proposed revision updates the C.F.R. reference to include the Ground Water Rule and other minor revisions that are being adopted in HAR 11-20.

2. §11-20-9 Microbial contaminant sampling and analytical requirements.

Proposed:

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(4) Sanitary surveys conducted by the State under the provisions of subsection 11-20-50(b) may be used to meet the sanitary survey requirements of this section.

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Rationale: This proposed revision clarifies that sanitary survey inspections conducted under the Ground Water Rule may be used to satisfy requirements of this section. This Rule change is incorporated verbatim into HAR 11-20-9.

3. §11-20-15 Certified Laboratories.

Proposed:

(a) For the purpose of determining compliance with sections 11-20-9 through 11-20-13, 11-20-34, [and]11-20-35, **and 11-20-50,** samples may be considered only if they have been analyzed by a laboratory certified by the director as specified in EPA 815-B-97-001, "Manual for the Certification of Laboratories Analyzing Drinking Water", 4th Edition, March 1997, except that measurements for turbidity, [free chlorine]**disinfectant** residual, temperature, **alkalinity, calcium, conductivity, orthophosphate, silica,** and pH may be performed by any person acceptable to the director.

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Rationale: The proposed revision includes the requirements of the Ground Water Rule and adds the measurements related to the Lead and Copper Rule that were previously omitted. These Rule changes are incorporated verbatim into HAR 11-20-15.

4. §11-20-18 Public Notice Requirements.

Proposed:

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- (b) Tier 1 Public Notice – form, manner, and frequency of notice.
- (1) Tier 1 public notices are required for the following violations or situations:

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(H) **Detection of *E. coli* in source water samples as specified in sections 11-20-50(c)(1) and 11-20-50-(c)(2).**

(I)

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- (c) Tier 2 Public Notice – form, manner, and frequency of notice.
- (1) Tier 2 public notices are required for the following violations or situations:

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- (B) Violations of the monitoring and testing procedure requirements, where the State 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; [and]
- (C) Failure to comply with the terms and conditions of any variance or exemption in place[.]; **and**
- (D) **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 section 11-20-50(d)(1).**

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Rationale: The proposed revisions include the public notice requirements of the Ground Water Rule for detection of *E. coli* and for treatment technique violations. These Rule changes

are incorporated verbatim into HAR 11-20-18.

5. §11-20-48 Adoption of the national primary drinking water regulations for lead and copper

Proposed:

The national primary drinking water regulations for lead and copper, adopted under the Safe Drinking Water Act, and appearing at 40 C.F.R. Part 141, Subpart I, §§~~141.43~~, 141.80, 141.81, 141.82, 141.83, 141.84, 141.85, 141.86, 141.87, 141.88, 141.89, 141.90, and 141.91 are made a part of this chapter. For this chapter, "State" as used in these federal regulations means "state" or "director" as used in this chapter.

Rationale: The proposed revision adds the lead prohibition requirements related to the Lead and Copper Rule that were previously omitted. These Rule changes are adopted by reference and incorporated verbatim into HAR 11-20-48.

6. §11-20-50 Ground Water Rule

Proposed:

(a) General requirements and applicability.

- (1) Scope of this section. The requirements of this section constitute National Primary Drinking Water Regulations.**
- (2) Applicability. This section 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 section 11-20-46. For the purposes of this section, "ground water system" is defined as any public water system meeting this applicability statement, including consecutive systems receiving finished ground water.**
- (3) General requirements. Systems subject to this section must comply with the following requirements:**

- (A) Sanitary survey information requirements for all ground water systems as described in subsection (b).
- (B) 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 subsection (c).
- (C) Treatment technique requirements, described in subsection (d), that apply to ground water systems that have fecally contaminated source waters, as determined by source water monitoring conducted under subsection (c), 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 section must implement one or more of the following corrective action options: correct all significant deficiencies; provide an alternative 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.
- (D) 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 subsection (d)(2).
- (E) 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 section, "hydrogeologic

sensitivity assessment” is a determination of whether ground water systems obtain water from hydrogeologically sensitive settings.

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

Rationale: This new subsection’s requirements establish compliance dates and specify the water systems affected under the Ground Water Rule. All Rule changes are incorporated verbatim into the new subsection HAR 11-20-50(a).

7. §11-20-50 Ground Water Rule

Proposed:

- (b) **Sanitary surveys for ground water systems.**
- (1) **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.**
- (2) **For the purposes 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.**
- (3) **The sanitary survey must include an evaluation of the following applicable components:**
- (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 chapter 11-25.**

Rationale: This new subsection’s requirements establish sanitary survey

inspection requirements of the Ground Water Rule for public water systems. All Rule changes are incorporated verbatim into the new subsection HAR 11-20-50(b).

8. §11-20-50 Ground Water Rule

Proposed:

- (c) **Ground water source microbial monitoring and analytical methods.**
- (1) **Triggered source water monitoring.**
 - (A) **General requirements. A ground water system must conduct triggered source water monitoring if the following conditions are identified and exist:**
 - (i) **The system does not provide 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 each ground water source; and**
 - (ii) **The system is notified that a sample collected under section 11-20-9(a) is total coliform-positive and the sample is not invalidated under section 11-20-9(c).**
 - (B) **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 section 11-20-9(a), except as provided in clause (ii).**
 - (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 subparagraph 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 section 11-20-9(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 section 11-20-9(b) and to satisfy the monitoring requirements of this subparagraph for that ground water source. If the repeat sample collected from the ground water source is *E. coli* positive, the system must comply with paragraph (1)(C).

(C) Additional requirements. If the State does not require corrective action under subsection (d)(1)(B) for an *E. coli*-positive source water sample collected under subparagraph (B) that is not invalidated under paragraph (4), the system must collect five additional source water samples from the same source within 24 hours of being notified of the *E. coli*-positive sample.

(D) Consecutive and Wholesale Systems.

(i) In addition to the other requirements of this paragraph, a consecutive ground water system that has a total coliform-positive sample collected under section 11-20-9(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 wholesale ground water system that receives notice from a consecutive system it serves that a sample collected under section 11-20-9(a) is total

coliform-positive must, within 24 hours of being notified, collect a sample from its ground water source(s) under subparagraph (B) and analyze it for *E. coli* under paragraph (3). If the collected source water sample is *E. coli*-positive, the wholesale ground water system must notify all consecutive systems served by that ground water source of the *E. coli* source water positive within 24 hours of being notified of the ground water source sampling monitoring result and must meet the requirements of subparagraph (C).

(E) 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 (1) if either of the following conditions exists:

(i) The State determines, and documents in writing, that the total coliform-positive sample collected under section 11-20-9(a) is caused by a distribution system deficiency;

or

(ii) The total coliform-positive sample collected under section 11-20-9(a) is collected at a location that meets State criteria for distribution system conditions that will cause total coliform-positive samples.

(2) 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 (1)(B) to meet the requirements of this paragraph. State-determined assessment source water monitoring requirements may include:

(A) Collection of a total of 12 ground water source samples that represent each month the system provides ground water to the public,

- (B) 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,
 - (C) Collection of a standard sample volume of at least 100 mL for *E. coli* analysis regardless of the analytical method used,
 - (D) Analysis of all ground water source samples using one of the analytical methods listed in paragraph (3)(B) for the presence of *E. coli*,
 - (E) 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
 - (F) 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 alternative sampling location that is representative of the water quality of that well.
- (3) Analytical methods.
- (A) A ground water system subject to the source water monitoring requirements of paragraph (1) must collect a standard sample volume of at least 100 mL for *E. coli* analysis regardless of the analytical method used.
 - (B) A ground water system must analyze all ground water source samples collected under paragraph (1) using one of the analytical methods listed in the following table for the presence of *E. coli* or one of the alternative methods listed in Appendix A to Subpart C, 40 C.F.R. Part 141:

| <u>Analytical Methods for Source Water Monitoring</u> | | |
|---|---------------------------------------|-------------------------------------|
| <u>Fecal indicator¹</u> | <u>Methodology</u> | <u>Method citation</u> |
| <u><i>E. coli</i></u> | <u>Colilert³</u> | <u>9223 B.²</u> |
| | <u>Colisure³</u> | <u>9223 B.²</u> |
| | <u>Membrane Filter Method with MI</u> | <u>EPA Method 1604.⁴</u> |

Agar
m-ColiBlue24 Test⁵
E*Colite Test⁶
EC-MUG⁷
NA-MUG⁷

9221 F.²
9221 G.²

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 2-7 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-regulation/sibr-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, 100 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 section 11-20-9(h)(6)(A) or section 11-20-9(h)(6)(B) after use of Standard Methods 9221 B, 9221 D, 9222 B or 9222 C.

- (4) Invalidation of an *E. coli*-positive ground water source sample.
 - (A) A ground water system may obtain State invalidation of an *E. coli*-positive ground water source sample collected under paragraph (1) only under the following conditions:
 - (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 an *E. coli*-positive ground water source sample is not related to source water quality.
 - (B) If the State invalidates an *E. coli*-positive ground water source sample, the ground water system must collect another source water sample under paragraph (1) within 24 hours of being notified by the State of its invalidation decision and have it analyzed for the *E. coli* using the analytical methods in paragraph (3). 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.
- (5) Sampling location.
 - (A) Any ground water source sample required under paragraph (1) must be collected at a location prior to any treatment of the ground water source

- unless the State approves a sampling location after treatment.
- (B) 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 (1) if the sample is representative of the water quality of that well.
- (6) 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 (2). If directed by the State, the system must begin monitoring before the ground water source is used to provide water to the public.
- (7) Public Notification. A ground water system with a ground water source sample collected under paragraph (1) or paragraph (2) that is *E. coli*-positive and that is not invalidated under paragraph (4), including consecutive systems served by the ground water source, must conduct public notification under section 11-20-18(b).
- (8) Monitoring Violations. Failure to meet the requirements of paragraphs (1) through (6) is a monitoring violation and requires the ground water system to provide public notification under section 11-20-18(d).

Rationale: This new subsection's requirements establish sampling and analytical method requirements of the Ground Water Rule, including sampling location, analytical methods to be used, invalidation of sample results, public notice requirements and monitoring violations. All Rule changes are incorporated verbatim into the new subsection HAR 11-20-50(c), except the selection of *E. coli* as the fecal indicator. The State selected *E. coli* as the fecal indicator because there is sufficient laboratory capacity to analyze *E. coli* in the State, it is the most economical fecal indicator to analyze for most water systems and *E. coli* has been reliably demonstrated as an indicator of fecal contamination in ground water.

9. **§11-20-50 Ground Water Rule**

Proposed:

- (d) Treatment technique requirements for ground water systems.
- (1) Ground water systems with significant deficiencies or source water fecal contamination.
 - (A) 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 subsection (c)(1)(C) is *E. coli*-positive.
 - (B) If directed by the State, a ground water system with a ground water source sample collected under subsections (c)(1)(B), (c)(1)(D), or (c)(2) that is *E. coli*-positive must comply with the treatment technique requirements of this section.
 - (C) When a significant deficiency is identified at a system regulated under section 11-20-46 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 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.
 - (D) 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 subsection (c)(1)(C) was found to be *E. coli*-positive, or direction from the State that an *E. coli*-positive sample collected under subsections (c)(1)(B), (c)(1)(D), or (c)(2) requires corrective action. For the purposes 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.

(E) 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 subsection (c)(1)(C) was found to be *E. coli*-positive, or direction from the State that an *E. coli*-positive sample collected under subsections (c)(1)(B), (c)(1)(D), or (c)(2) 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 following conditions: Any subsequent modifications to a State-approved corrective action plan and schedule must also be approved by the State; and 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 correction action plan, the system must comply with these interim measures as well as with any schedule specified by the State.

(F) Corrective Action Alternatives. Ground water systems that meet the conditions of subparagraphs (A) or (B) 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.

- (G) Special notice to the public of significant deficiencies or source water fecal contamination.
- (i) In addition to the applicable public notification requirements of section 11-20-18(b), a community ground water system that receives notice from the State of a significant deficiency or notification of an *E. coli*-positive ground water source sample that is not invalidated by the State under subsection (c)(4) must inform the public served by the water system under section 11-20-48.5 of the *E. coli*-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 subparagraph (E).
- (ii) In addition to the applicable public notification requirements of section 11-20-18(b), 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: The nature of the significant deficiency and the date the significant deficiency was identified by the State; the State-approved plan and schedule for

correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed; and 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 clause (ii).

(2) Compliance monitoring.

(A) 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 subparagraph (C) 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 subsection (c).

- (B) 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 following requirements:
- (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 subparagraph (C) within 30 days of placing the source in service.
 - (iii) The system must conduct ground water source monitoring under subsection (c) 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.
- (C) Monitoring requirements. A ground water system subject to the requirements of paragraph (1), subparagraphs (A) or (B) must monitor the effectiveness and reliability of treatment for that

ground water source before or at the first customer as follows:

- (i) Chemical disinfection. *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 section 11-20-46(d)(1)(B) 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. *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 section 11-20-46(d)(1)(B) 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 *ground water systems serving greater than 3,300 people* of this clause.

(ii) Membrane filtration. A ground water system that uses membrane filtration to meet the requirements of this section 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: 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; the membrane process is operated in accordance with State-specified compliance requirements; and 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: Monitor the alternative treatment in accordance with all State-specified monitoring requirements; and 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.

- (3) 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 subsection (c).
- (4) Failure to meet the monitoring requirements of subsection (d)(2) is a monitoring violation and requires the ground water system to provide public notification under section 11-20-18(d).

Rationale: This new subsection's requirements establish the treatment technique requirements of the Ground Water Rule, including corrective actions for significant deficiencies, monitoring requirements for 4-log virus inactivation or removal treatment, and discontinuation of treatment. All Rule changes are incorporated verbatim into the new subsection HAR 11-20-50(d), except the references to specifically *E. coli* as the fecal indicator, as discussed in the previous section.

10. §11-20-50 Ground Water Rule

Proposed:

- (e) Treatment technique violations for ground water systems.
- (1) 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:

- (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**
 - (B) Is not in compliance with a State-approved corrective action plan and schedule.**
- (2) Unless the State invalidates an *E. coli*-positive ground water source sample under subsection (c)(4), 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 subsections (d)(1)(A) or (d)(1)(B), the system:**
- (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 measures, or**
 - (B) Is not in compliance with a State-approved corrective action plan and schedule.**
- (3) A ground water system subject to the requirements of subsection (d)(2)(C) 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.**
- (4) A ground water system must give public notification under section 11-20-18(c) for the treatment technique violations specified in paragraphs (1), (2) and (3).**

Rationale: This new subsection's requirements establish the treatment technique violations of the Ground Water Rule, including failure to complete corrective actions and failure to maintain approved 4-log treatment of viruses. All Rule changes are incorporated verbatim into the new subsection HAR 11-20-50(e), except the references to specifically *E. coli* as the fecal indicator, as discussed in previous sections.

11. §11-20-50 Ground Water Rule

Proposed:

- (f) Reporting and recordkeeping for ground water systems.
- (1) Reporting. In addition to the requirements of section 11-20-17, a ground water system regulated under this section must provide the following information to the State:
 - (A) A ground water system conducting compliance monitoring under subsection (d)(2) 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.
 - (B) After completing any corrective action under subsection (d)(1), a ground water system must notify the State within 30 days of completion of the corrective action.
 - (C) If a ground water system subject to the requirements of subsection (c)(1) does not conduct source water monitoring under subsection (c)(1)(E)(ii), the system must provide documentation to the State within 30 days of the total coliform positive sample that it met the State criteria.
- (2) Recordkeeping. In addition to the requirements of section 11-20-19, a ground water system regulated under this subpart must maintain the following information in its records:
 - (A) Documentation of corrective actions. Documentation shall be kept for a period of not less than ten years.

- (B) Documentation of notice to the public as required under subsection (d)(1)(G). Documentation shall be kept for a period of not less than three years.
- (C) Records of decisions under subsection (c)(1)(E)(ii) and records of invalidation of *E.coli*-positive ground water samples under subsection (c)(4). Documentation shall be kept for a period of not less than five years.
- (D) For consecutive systems, documentation of notification to the wholesale system(s) of total-coliform positive samples that are not invalidated under section 11-20-9(c). Documentation shall be kept for a period of not less than five years.
- (E) For systems, including wholesale systems, that are required to perform compliance monitoring under subsection (d)(2):
 - (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.

Rationale: This new subsection's requirements establish the reporting and recordkeeping requirements of the Ground Water Rule. All Rule changes are incorporated verbatim into the new subsection HAR 11-20-50(f).

12. §11-20-50 to §11-20-99 (Reserved)

Proposed:

§11-20-[50]51 to §11-20-99 (Reserved)

Rationale:

This section is renumbered to make use of Section 11-50 for the Ground Water Rule and to make section numbers available for future changes to Hawaii Administrative Rules, Title 11, Chapter 20.

13. §11-20 Appendix A

Standard Health Effects Language for Public Notification

Proposed:

* * * * *

| 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 | | | |
| <u>1c. Fecal indicator (GWR)</u> i. <u><i>E. coli</i></u> | <u>Zero</u> | <u>TT</u> | <u>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. Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated</u> |
| <u>1d. Ground Water Rule (GWR) TT violations</u> | <u>None</u> | <u>TT</u> | |

| | | | |
|--|--|--|-------------------|
| | | | <u>headaches.</u> |
|--|--|--|-------------------|

* * * * *

Rationale: The proposed revisions include the Standard Health Effects Language for Public Notification as required by the Ground Water Rule for the selected fecal indicator, *E. coli*, and treatment technique (TT) violations. All Rule changes are incorporated verbatim into the new subsection HAR 11-20 Appendix A, except the selection of *E. coli* as the fecal indicator. The State selected *E. coli* as the fecal indicator because there is sufficient laboratory capacity to analyze *E. coli* in the State, it is the most economical fecal indicator to analyze for most water systems and *E. coli* has been reliably demonstrated as an indicator of fecal contamination in ground water.

14. **§11-20 Appendix G** **NPDWR VIOLATIONS AND OTHER SITUATIONS REQUIRING PUBLIC NOTICE**
(MAY 4, 2000)¹

Proposed:

| Contaminant | MCL/MRDL/TT Violations ² | | Monitoring & 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 | | | | |
| <u>11. Ground Water Rule violations</u> | <u>2</u> | <u>141.404</u> | <u>3</u> | <u>141.402(h), 141.403(d)</u> |
| * * * | * | * | * | * |
| IV. Other Situations Requiring Public Notification: | | | | |
| F. <u>Source Water Sample Positive for GWR Fecal indicators: E. coli, enterococci, or coliphage</u> | <u>1</u> | <u>141.402(g)</u> | <u>N/A</u> | <u>N/A</u> |
| G. <u>Other situations as determined by the State</u> | ²¹ 1, 2, 3 | N/A | N/A | N/A |

* * * * *

Rationale: The proposed revisions include the National Primary Drinking Water Rules Violations as required by the Ground Water Rule. All Rule changes are incorporated verbatim into the new subsection HAR 11-20 Appendix G.

15. **§11-20 Appendix H** **LIST OF ACRONYMS USED IN PUBLIC NOTIFICATION REGULATION**

Proposed:

* * * * *

GWR Ground Water Rule

* * * * *

Rationale: The proposed revisions include the List of Acronyms Used in Public Notification Regulation as required by the Ground Water Rule. All Rule changes are incorporated verbatim into the new subsection HAR 11-20 Appendix H.