

## Drinking Water and Groundwater Protection Division

**Procedure:** Boil water notices necessary to prevent consumption of waterborne pathogens

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Section 10.2.3 of the Vermont Water Supply Rule (February 24, 2024) states:

*The Secretary may modify the requirements of this subchapter, or require additional public notification measures (e.g. Boil Water notices, Do Not Drink notices, or other language) when necessary, in his or her judgement, to inform consumers of the water for protection of public health. Such additional measures may include other forms of notification and specific language in the notice.*

**A. Circumstances Requiring Additional Public Notification Measures (Boil Water Notice).** Pursuant to Vermont Water Supply Rule Section 10.2.3, the Secretary has determined that, for the protection of public health to prevent consumption of water potentially or actually contaminated with waterborne pathogens, it is necessary for a Water System to issue a notice to affected consumers<sup>1</sup> instructing the consumers to boil tap water prior to any consumptive use of the water in the following circumstances:

1. The Water System violates the *E. coli* Maximum Contaminant Level (MCL) as established in the Vermont Water Supply Rule, Section 6 (see Table 6-1).
2. Results of the Water System's routine total coliform monitoring as established in the Vermont Water Supply Rule, Section 6.6.2.1 show the presence of total coliform and *E. coli*, and the Water System is unable to collect repeat samples within 24 hours.
3. Operational issues (may be referred to as "non-MCL") (e.g., leaks, breaks, or other emergencies) experienced by the Water System resulting in all or a portion of the Water System's distribution system experiencing a loss of pressure below 20 psi, including Uncontrolled or Catastrophic situations (see Appendix A for examples and guidance)<sup>2</sup>.
4. Repairs or maintenance completed on the Water System resulting in all or a portion of the Water System's distribution system experiencing a loss of pressure below 20 psi, unless the repairs are completed pursuant to American Water Works Association (AWWA) Standard C-651 or other equally protective means as authorized by the Secretary (see Appendix A for examples and guidance).
5. Repairs completed on the Water System requiring the use of an unpermitted or unauthorized hydrant-to-hydrant connection to enable continued service of water to consumers.
6. Filtration or disinfection equipment for a surface water/groundwater under the direct influence of surface water source no longer operating as designed or permitted or is otherwise unable to achieve adequate disinfection or inactivation of bacteria or viruses.
7. Receiving a delivery of bulk hauled water in a means that does not comply with the Secretary's procedure or the Vermont Water Supply Rule Section 11.2 on bulk water hauling.
8. Any other circumstance where the Secretary determines that additional measures are necessary for the protection of public health to prevent consumption of water that is potentially or actually contaminated by waterborne pathogens. In such cases, the Secretary will provide a directive to the Water System to issue a notice to affected consumers instructing the consumers to boil tap water prior to any consumptive use of the water.

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<sup>1</sup> In some circumstances, including when a Water System is required to issue a boil water notice due to the circumstances described in A.1, A.2, A.6, and A.7, "affected customers" are all customers served by the Water System.

<sup>2</sup> Systems must refer to their Permit to Operate; these circumstances classify as non-routine operating conditions, which require notification to the Division. Additionally it must be noted that there is a distinction between a leak/break/change in operating situation that causes a depressurization and the need to depressurize as part of the repair.

**B. Notice to Customers.** As soon as possible, but not more than 24 hours, after becoming aware of one of the circumstances identified in Section A, the Water System shall provide a Boil Water notice that meets the requirements of Sections C to every affected consumer.

**C. Notice; Contents.** The Boil Water notice shall use the existing Boil Water notice template or other document that includes, at a minimum, all the following information:

1. Instructions to boil water for at least 60 seconds prior to any consumptive use, including:
  - a. drinking, including using water for juices or formula.
  - b. making ice;
  - c. brushing teeth;
  - d. washing and preparing food; and
  - e. washing dishes<sup>3</sup>.
2. Clear explanation of the affected location(s) required to boil water until otherwise directed by the Water System or Secretary.
3. Explanation by the Water System about what is being done to address the actual or potential contamination.
4. Contact information for Water System personnel managing the situation.

**D. Certification.** A Water System required to provide notice in accordance with this procedure shall provide to the Secretary a certification of notice within 10 days of issuing the notice in accordance with Section 10.3 of the Vermont Water Supply Rule.

**E. On-going Notice.** If the requirement to boil tap water extends for more than three consecutive calendar months, the Water System shall provide a reminder Boil Water notice that meet the requirements of Section D to every affected consumer every three months and provide a certification of notice within 10 days of issuing each notice in accordance with Section 10.3 of the Vermont Water Supply Rule.

**F. Satisfaction of Directives.** The Water System shall not inform consumers that boiling of tap water is no longer required until the satisfaction of all required directives identified and documentation that the water is safe for consumption in accordance with this section. Boiling of tap water is no longer required for the protection of public health when the following steps have been completed by the Water System and all monitoring results show the absence of total coliform and *E. coli* as confirmed by receipt of final validated written sample results (on paper or electronic format) from the analytic laboratory:

1. When a Water System issues a Boil Water notice due to the circumstance described in Section A.1 the Water System has first confirmed with the Secretary upon completion of the following:
  - a. the Level 2 Site Assessment in accordance with Section 6.6.5 of the Vermont Water Supply Rule has been completed.
  - b. all sanitary defects identified in the Level 2 Site Assessment have been corrected.
  - c. the number of total coliform samples identified in Table 1 below based on the water system's total population have been collected. Unless directed by the Secretary to collect additional samples to account for system-specific conditions, at locations that are geographically and hydraulically representative of the Water System. Samples shall be collected under one of the following schedules:
    - i. evenly distributed over two sequential days; or

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<sup>3</sup> Boiled water may not be required in all instances for dishwashing, assuming adequate disinfection/sanitizing is provided according to Vermont Department of Health requirements.

- ii. if the Water System is continuously applying a chemical disinfectant and maintaining a measurable disinfectant residual throughout the entire distribution system, the Water System may collect all required samples in a single day.
- 2. When a Water System issues a Boil Water notice due to the circumstance described in Section A.2 and the Water System collects the number of repeat samples in accordance with Section 6.6.2.2 of the Vermont Water Supply Rule and the samples are all shown to be *E. coli* and total coliform-absent.
- 3. When a Water System issues a Boil Water notice due to the circumstances in Sections A.3-A.8 and the Water System:
  - a. resumes normal operation;
  - b. collects the number of total coliform samples identified in Table 1 based on the number of total affected consumers, unless directed by the Secretary to collect additional samples to account for system-specific conditions, at locations that are, as identified by the Water System’s certified Operator, the best locations that are geographically and hydraulically representative of the affected area of the Water System under one of the following schedules:
    - i. evenly distributed over two sequential days; or
    - ii. if the Water System is continuously applying a chemical disinfectant and maintaining a measurable disinfectant residual throughout the entire distribution system samples may be collected over one day.

**Table 1 – Number of Total Coliform Samples**

Affected Population	Number of Samples
≤25 – 2,500	2
2,501 – 3,300	3
3,301 – 4,100	4
4,101 – 4,900	5
4,901 – 5,800	6
5,801 – 6,700	7
6,701 – 7,600	8
7,601 – 8,500	9
8,501 and greater	10

**G. Additional Requirements for Total Coliform and *E. coli*.** If a Water System’s monitoring results collected pursuant to Section F.1.c., F.2, or F.3.b. show a presence of total coliform (or *E. coli*), the Water System shall communicate with the Secretary to determine and complete steps for identifying and resolving sanitary defects and for conducting subsequent monitoring to show the absence of total coliform and *E. coli*.



Ben Montross, Drinking Water Program Manager  
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## Appendix A – When repairs require a Boil Water Notice

Fully controlled repair: A fully controlled repair is one that maintains positive pressure throughout the duration of the repair and there is no interruption of service. This is often accomplished through use of circle clamps or sleeves. Because positive pressure is maintained it is unlikely that contamination has entered the system and therefore when completing a fully controlled repair, a Boil Water notice is not required. The Division does not need to be contacted in instances of fully controlled repairs.

Mostly controlled repair: A mostly controlled repair is one with limited or isolated depressurization during controlled, temporary, and isolated localized shutdown. This repair would follow AWWA Standard C-651. The Water System's certified operator must perform or directly oversee the repair. Throughout the repair, pressure must be maintained in the repair location until the pipe is exposed in a de-watered trench; shutdown or depressurization must be limited to the immediate valved-off area; there can be no loss of pressure anywhere else in system; adequate disinfection, pressurization, and flushing occur following the repair; the Water System must document that it has resumed normal disinfectant residuals in distribution; the Water System or affected user shuts off service(s) in affected area and positive pressure is maintained throughout the duration of repairs; and users must then be instructed to flush domestic fixtures upon completion. Because there is only limited and localized interruption in service as part of a controlled repair, the potential for contamination is low. If the necessary precautions are taken and AWWA Standard C-651 is followed<sup>4</sup>, a Boil Water notice is not required. If the Water System can control the repair and adhere to AWWA Standard C-651 or equally protective Division-approved protocol, the Division does not need to be contacted upon performing a mostly controlled repair.

Uncontrolled repair: An uncontrolled repair is one with an uncontrolled loss of pressure at the site of the break/leak or depressurization elsewhere in the system as a result. There is pressure loss (below 20psi) at or around the break site or beyond the surrounding area because of the break (*not* the resulting repair). The pipe is exposed, the trench is de-watered, and the shutdown of service is limited to the immediate valved-off area. Because of the pressure loss locally or elsewhere in the system, there is a significant risk of contamination. This also includes any repair requiring use of unauthorized hydrant-to-hydrant connection to continue service. Due to the significant risk of contamination, **a Boil Water notice is required** to be issued to all affected users. The Boil Water notice may be localized or system-wide based on the situation. The Division must be notified within 24 hours of an uncontrolled repair and issuance of the Boil Water notice.

Catastrophic Event: A catastrophic event is one resulting in complete loss of pressure at the system, either locally or system wide. It is often an extensive water loss and outage, with portions of the system having no pressure, reduced pressure, negative pressure, or no water service at all. During these events, contamination is highly likely or certain to occur. Because of the high likelihood for contamination, upon resuming service, **a Boil Water notice is required**. The Division must be notified as soon as possible, but within 24 hours of the event and issuance of the Boil Water notice.

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<sup>4</sup> AWWA Standard C-651 includes additional information, beyond what is stated in this Appendix.