
ENVIRONMENTAL Fact Sheet



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2019

Guidance on Addressing Bacteria Contamination in Small Transient Water Systems

This guidance is intended to assist small transient public water systems in New Hampshire to quickly evaluate and correct bacteria contamination for compliance with the Revised Total Coliform Rule (RTCR) and the Groundwater Rule (GWR). Under some circumstances, systems may be contacted to perform *immediate* actions such as a boil order, to prevent the spread of bacteria contamination. Please refer to the New Hampshire Department of Environmental Services (NHDES) fact sheet WD-DWGB-4-1 “Coliform Bacteria in Drinking Water” for more information on coliform bacteria and its causes.

ADDRESSING THE CONTAMINATION

1. **System Evaluation** – Two or more positive total coliform samples in a month will result in an assessment, which requires finding the cause of bacteria and fixing it. A Level 1 assessment is triggered if the system has 2 or more total coliform positive samples in the same month or fails to collect required repeat samples. A Level 2 assessment is triggered if an E. coli MCL violation (boil order) occurs or a second Level 1 assessment is triggered within 12 months of a prior Level 1 assessment. Please refer to fact sheet WD-DWGB-7-13 “How to Perform Public Water System Assessments” for guidance on who can perform the assessment and things to consider when conducting the assessment.

NHDES recommends collecting additional samples to help you isolate and identify the problem. These samples are considered general system evaluation samples and are in addition to those required for compliance with the RTCR requirements –[repeat bacteria samples and triggered groundwater rule (GWR) sample(s)]. A “General System Evaluation Form” is provided at the end of your Master Sampling Schedule on [OneStop](#) specifically for this purpose.

Examples of where to collect additional system evaluation samples include:

- Sample taps following major treatment units, such as filters, aeration units, etc. as applicable.
- Sample taps before and after atmospheric storage.
- Distribution entry point sample tap (last tap before entering distribution).

2. **Eliminating the Source of Contamination** – If contamination is from the well source, examine your well construction and sanitary protective area for possible bacteria sources. Contact a **licensed well contractor** (see [OneStop](#) for current listings), to diagnose any construction deficiencies in your existing well source. Note that all PWS modifications are subject to prior approval by NHDES.

3. **Shock Chlorination** – Please refer to NHDES fact sheet WD-DWGB-4-11 “Disinfecting Public Water Systems,” or contact the NHDES Drinking Water and Groundwater Bureau for the procedure for disinfecting your well source. Proper sanitizing of the water system is required after all repairs or new work is completed. Note that installation of permanent disinfection requires prior approval by NHDES.

4. **Persistent bacteria contamination** – If your system has followed steps 1-3 above with no resolution and you wish to continue serving water to the public, two remaining options may be approved to address recurring bacteria contamination:

(a) Develop an alternative water source – either a new well or connection to another public water system (PWS). Bottled water cannot be accepted as a permanent solution to address contamination.

(b) Install permanent disinfection treatment – systems that install permanent disinfection are required to conduct **six months of raw water *E. coli* sampling**. If *E. coli* is detected, disinfection will not be approved until all other deficiencies are corrected, and the system will be required to report daily chlorine residuals and monthly operating reports to NHDES, among other requirements under the Groundwater Rule.

5. **Permanent Disinfection options** – Drinking water can be made bacterially safe by a number of treatment methods as follows:

- a) The water can be boiled for a minimum of one minute at a rolling boil.
- b) Addition of chemicals such as chlorine which requires maintaining a residual concentration to ensure the killing action.
- c) The water can be exposed to a physical killing agent, such as ultraviolet (UV) radiation. Refer to NHDES fact Sheet WD-DWGB-4-5 “Ultraviolet Drinking Water Disinfection” for more information about how UV works, the design for installation and maintenance of the unit.

NHDES will **not** approve the installation of disinfection as a corrective measure for poorly maintained well sources, inadequate operations or maintenance, or resolution of correctible well and/or system construction deficiencies. However, if you have exhausted all other corrective measures and wish to pursue disinfection, the following must be submitted for state review and approval **PRIOR** to its installation:

- 1. **Assessment Report** detailing the results of the bacteria evaluation and corrective measures, including the recommendation to install permanent treatment.
- 2. **Simple schematic** showing the location and sizes of all existing and proposed treatment equipment, source water meter, sampling taps, and storage and/or pressure tanks. Pretreatment shall be as recommended by the equipment manufacturer.
- 3. **Specifications** for the proposed equipment, certified under NSF/ANSI 61 Drinking Water System Components - Health Effects and/or NSF/ANSI 55 Ultraviolet Microbiological Water Treatment Systems. Installation of all components shall be in accordance with the manufacturer’s specifications.
- 4. **Operational & Maintenance Plan**, including the name of a New Hampshire-certified operator, contractor, or owner representative responsible for performing regular maintenance of the equipment. Minimum operational controls shall be as outlined below for disinfection options.

Description	Disinfection for TOTAL COLIFORM	
	Chlorination	UV Light
Maintenance checks	- Daily check -Tank refill as needed	- Daily check - Annual lamp replacement
Minimum control requirements	Chemical feed interlock with well pump operation	- Lamp on/off indicator - Audible alarm - Run time clock - Lamp replacement light
State reporting	6 to 12 months of investigative monitoring (raw water) of each water source	

As stated above, six to 12 months of raw water *E. coli* sampling or investigative monitoring (IM) will be required at the source tap for each active source. An “Investigative Monitoring Analysis Request Form” is provided on the Master Sampling Schedule on [OneStop](#) specifically for this purpose. The Master Sampling Schedule **will not** reflect that IM samples are required to be collected.

For More Information

Please contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or dwgbinfo@des.nh.gov or visit our website at www.des.nh.gov.

Note: This fact sheet is accurate as of September 2019. Statutory or regulatory changes or the availability of additional information after this date may render this information inaccurate or incomplete.