



Drinking Water and Groundwater Protection Division

BACTERIOLOGICAL SAMPLING PLAN FOR POPULATION 1,000 OR LESS

1. This form is for water systems with **populations 1,000 or less** and is only for Community (CWS), Non-Transient Non-Community (NTNC), and Consecutive water systems. Transient Non-Community (TNC) water systems do not need to fill out this form.
2. **Attach a map** of the water system with the following information:
 - a. Water system name and identification (WSID) Number
 - b. A schematic of the distribution system including locations served, directional flow of water, treatment facility location (including booster pumps), and delineated pressure zones (if applicable).
 - c. Clearly labeled sample locations.
Sampling plans will not be accepted without a map.
3. **Keep a copy** of the form and map for your files.
4. The Division will send you a written approval letter for your sampling plan or will contact you to make necessary changes.

Mail to: Total Coliform Rule Administrator, Drinking Water and Groundwater Protection Division, One National Life Drive – Main 2, Montpelier, VT 05620-3521.

or

Fax to: 802-828-1541

System Information

System Name:

System Type:

CWS NTNC

System WSID:

Service Connections:

Adm. Contact:

≤100

Telephone:

101-500

Operator:

Population:

501-1,000

Telephone:

(For populations over 1,000 please use alternate form)

Source Water Type:

Surface Water/GWUDI
 Groundwater

Pressure Zones:

Sample Site Location and Explanation	
Sample Site Location (Room or address)	Explanation (Why sample here?)
Base Site:	
Alternate 1:	
Alternate 2:	
Alternate 3 (optional):	
Alternate 4 (optional):	
Alternate 5 (optional):	
Alternate 6 (optional):	

Sample Site Schedule	
Non-Transient, Non-Community (NTNC) Systems:	
Quarter	Routine Sample Site (Room or address)
1 st - January 1 st -> March 31 st	Base Site:
2 nd - April 1 st -> June 30 th	Alternate 1:
3 rd - July 1 st -> September 30 th	Base Site:
4 th - October 1 st -> December 31 st	Alternate 2:
Community Water Systems (CWS):	
Month	Routine Sample Site (Room or address)
January	Base Site:
February	Alternate:
March	Base Site:
April	Alternate:
May	Base Site:
June	Alternate:
July	Base Site:
August	Alternate:
September	Base Site:
October	Alternate:
November	Base Site:
December	Alternate:

Signature of System Owner or Administrative Contact	
I have read the Bacteriological Sampling Plan Guidance document and certify that the above information is true and accurate to the best of my knowledge.	
Signature:	Date:
Printed Name:	Title:

BACTERIOLOGICAL SAMPLING PLAN GUIDANCE

The Total Coliform Rule requires public water systems to sample in accordance with a written sampling plan subject to review and approval by the Water Supply Division. The purpose of the sampling plan is to ensure the entire distribution system is monitored for contamination. Sample locations should be representative of the entire distribution system, and should be able to detect contamination in any portion of the distribution system. This document provides guidelines for developing a sampling plan for your water system.

Sample Number and Frequency

Systems can use the table below to identify the number of samples required within a given monitoring period. NTNCs are required to take one sample per monitoring period per source. If multiple sources mix before entering the distribution system, then there is only one sample needed for the NTNC per monitoring period. If you are a seasonal water system you must make sure that the Water Supply Division is made aware of your open and close dates. If you are open one day into a monitoring period you must take a sample for the monitoring period while you are still open. PCWS should base the amount of samples on population served, see table below.

Number of Samples		
Type of System	Population	Routine Monitoring Frequency
Non-Transient Non-Community	25 to 1,000	1 per quarter
Community	25 to 1,000	1 per month
	1,001 to 2,500	2 per month
	2,501 to 3,300	3 per month
	3,301 to 4,100	4 per month
	4,100 to 4,900	5 per month
	4,901 to 5,800	6 per month
	5,801 to 6,700	7 per month
	6,701 to 7,600	8 per month
	7,601 to 8,500	9 per month
	8,501 to 12,900	10 per month

Location and Rationale

Collection of your routine monthly or quarterly sample(s) should alternate between a BASE sample point and one of several pre-selected sample locations. If the water system collects more than one sample per month or quarter, both sample sites would be considered base points. Locate the BASE sample point near the center of your distribution system. The BASE should be sampled every other monitoring period. Select additional sample points, based on the population of the water system, to represent the entire distribution system. Please sample from dead end areas in distribution to aid in the identification of potential water system deficiencies. Other areas to consider would include areas with known pressure zone changes (described at the bottom of the page) and areas that may have potential issues due to low water usage. All TCR sampling points are considered distribution samples and should be denoted as such on your sample collection / chain-of-custody form.

Collect the first monitoring period sample from your BASE point. The next monthly or quarterly sample should come from one of your other pre-selected points. Go back to the BASE point during the third monitoring period,

and then to a different pre-selected point the fourth period. Repetition of this pattern will ensure that the entire system is monitored effectively.

Please note that if you have more than one pressure zone, each zone should have a sample that is representative of that zone. Different pressure zones create isolation zones from the rest of the system which may produce areas of vulnerability as discussed in Appendix A of the Water Supply Rule.

Sample Collection

If you chlorinate, you must report the free chlorine residual on the chain-of-custody form. If no free chlorine is present, measure the total chlorine and record on the chain-of-custody form. Identify sample sites using the 911 address (i.e. 83 White Street). You must also include your Water System Identification (WSID) Number on the sample collection / chain-of-custody form.

Please refer to the laboratory's sampling instructions for important collection information.

As with most monitoring, the State recommends you collect samples early in the monitoring period. This will allow time for resampling within the monitoring period due to sampling or laboratory errors.

Evaluating Your Results

If you receive a positive result during routine monitoring you will need to take four repeat samples within 24 hours of notification of the positive result. Always keep five sample containers on hand at any given time so that you are able to collect repeat samples within the 24-hour time requirement. The total coliform rule asks for extent and severity of the contamination; please do not turn on your disinfection system if your water system does not normally disinfect, unless asked by the Water Supply Division. All repeat samples must be taken on the same day. You must take:

1. One sample from the original sample location. The location field should be appropriately completed and include the term "RPOR" to designate it as the repeat sample at the original sample location;
2. One sample from a tap within five connections *upstream* of the original sample point. The location field should be appropriately completed and include the term "RPOT" to designate it as a repeat sample at an other location;
3. One sample from a tap within five connections *downstream* of the original sample point. The location field should be appropriately completed and include the term "RPOT" to designate it as a repeat sample at an other location; and
4. One sample at *any other* location within the system. The location field should be appropriately completed and include the term "RPOT" to designate it as a repeat sample at an other location.

Five routine samples are needed the month following the initial positive sample result. If your system has a groundwater source then the five routine samples can be taken from five different sample sites on the same day. If you have a surface water source then your system should take the five routine samples throughout the month following the positive result.

This form and related environmental information are available electronically via the internet. For information visit the Vermont Homepage at <http://www.vermont.gov> or visit us directly at www.drinkingwater.vt.gov

Drinking Water and Groundwater Protection Division
One National Life Drive – Main 2
Montpelier, VT 05620-3521
Ph: 802-241-3400
Fax 1-802-828-1541