



TOTAL COLIFORM RULE REQUIREMENTS FOR PUBLIC WATER SYSTEMS

This document provides a quick reference of the Total Coliform Rule (TCR) regulations for public water systems. This information is provided to assist with interpretation of the requirements, but may not cover the entire regulation. For a complete copy of the DEQ Drinking Water Regulations please call (406) 444-4400.

What is the purpose of sampling?

Coliform bacteria, while generally not considered the cause of disease themselves, are indicators that other disease-causing organisms may be present. These disease-causing organisms can cause illness from limited exposure to contaminated water.

What is routine sampling?

Systems must routinely collect samples of water in their distribution system and have them analyzed by a state-approved laboratory to determine the presence of certain bacteria. Water is tested for total coliform bacteria and if total coliform bacteria are found to be present, the sample is tested further for fecal coliform bacteria or *E. coli*. Many test methods provide simultaneous total coliform and fecal coliform or *E. coli* results.

How many? The number of samples collected each month depends on how many people are served by the system - see Table 1.

How often? Sampling for Total Coliform Rule compliance is generally conducted monthly. Transient ground water systems serving no more than 1,000 people may petition to sample quarterly. Written authorization from DEQ is required.

Where? Samples are taken in the distribution system. You must develop a sample site plan that identifies your routine sample locations. These locations must be representative of water throughout the system.

What happens if a routine sample tests positive?

If a routine sample tests positive for total coliform, fecal coliform, or *E. coli*, additional sampling is required.

Immediate Repeat Samples: Within 24 hours of being notified of the positive test results, repeat samples must be collected. All repeat samples must be collected on the same day. Systems that serve more than 1,000 people must take 3 repeat samples for each positive routine sample. Smaller systems, serving 1,000 or fewer must take 4 repeat samples. Samples must be taken at these locations:

- Sample at the site that gave positive routine results.
- If possible, take one sample within 5 service connections upstream and one sample within 5 service connections downstream of the positive sample site.
- Systems that take 4 repeats may collect one of the repeat samples at the water source or anywhere that will help isolate the contamination.
- Systems with single service connections take all 4 repeat samples at the coliform-positive site.

Increased Sampling the Following Month:

- If you routinely take 5 or more samples each month, your sampling requirements the next month do not change.
- If you collect less than 5 routine samples per month, you must take 5 routine samples the month following the positive total coliform sample, regardless of whether or not any repeat samples were positive.
- If your system was authorized to sample quarterly, you must return to monthly sampling and collect 12 monthly samples before you may request from DEQ to return to quarterly sampling.

Table 1. Routine TCR Samples

Number of People Served (Average Day During Peak Month)	Minimum Number of Routine Monthly Samples *
25 to 1,000**	1
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
*or quarterly if authorized	
**or 15 connections	

What happens if a repeat sample tests positive?

For systems that collect fewer than 40 samples per month, if one or more repeat sample tests positive for total or fecal coliform or *E. coli*, a violation occurs. See below.

For systems that collect 40 or more samples, if one or more repeat samples tests positive for total or fecal coliform or *E. coli*, take the following actions:

- Determine if there has been a violation (see below). If so, take the appropriate actions discussed to the right.
- If no violation has occurred, take 3 repeat samples for each positive sample within 24 hours of notification of the results.

When does a violation occur?

There are 2 types of violations of the Total Coliform Rule – monitoring and maximum contaminant level (MCL) violations. Monitoring violations are incurred if you fail to conduct required monitoring. MCL violations are determined by the presence of total coliform, fecal coliform, or *E. coli* in your samples and are classified as “Acute” or “Non-Acute.”

Non-Acute MCL Violation of the TCR:

- For systems that collect fewer than 40 samples per month, a non-acute MCL violation occurs if more than one sample is total coliform-positive in any month.
- For systems that collect 40 or more samples per month, a non-acute MCL violation occurs if more than 5.0 percent of the samples taken in a month are total coliform-positive.

Acute MCL Violation of the TCR:

An acute MCL violation occurs when fecal coliform are present. This violation assumes an immediate health risk exists and occurs if either of the following conditions apply:

- If a routine sample is total coliform-positive, and any of the repeat samples associated with that routine sample are fecal coliform or *E. coli*-positive.
- If a routine sample is fecal coliform or *E. coli*-positive, and any of the repeat samples associated with that routine sample are total coliform-positive.

Monitoring Violations

- Failure to conduct routine monthly sampling as required is a monitoring violation.
- Failure to take required repeat samples is considered a Non-Acute MCL Violation.
- Failure to conduct increased monitoring the month following a coliform-positive sample is a monitoring violation.

What must be done if I have a violation?

For a Routine Monitoring Violation

- Fulfill all Tier 3 public notice requirements within 1 year, and
- Return to compliance by conducting all required monitoring.

For a Non-Acute MCL Violation, including a repeat monitoring violation:

- Increase sampling the following month if you take fewer than 5 routine samples.
- Fulfill all Tier 2 public notice requirements as soon as possible but no later than 30 days.

For an Acute Violation:

- Contact DEQ within 24 hours: (406) 444-4400
- Fulfill all Tier 1 public notice requirements as soon as possible but no later than 24 hours.
- Take corrective action - Necessary corrective action will depend on the system and the reason for the violation. Examples of possible actions include chlorinating and flushing the system, taking a source out of service, or removing a cross-connection.
- Increase sampling the following month if you take fewer than 5 routine samples.

Public notification

It is important to keep the public informed about water quality issues that can impact their health. Systems do this by issuing a public notice when certain violations or situations exist. DEQ often assists systems by sending an example public notice when a violation occurs. However, it is ultimately the responsibility of the system to provide notice to the public.

Each type of violation has specific requirements which vary depending on the violation type and whether your system is community, non-transient non-community, or transient. Regulations set forth timing of the notice, the methods of delivery (posting, mail, hand delivery, radio or television), and the required content including 10 required notification elements and specific health effects language for the violation. Please refer to DEQ's Drinking Water Regulations Summaries for more information. Failure to comply with public notification is a violation of the Public Notification Rule.

After the notice has been provided to the public, you must submit a copy to DEQ within 10 days of issuance. Finally, notify the public when precautions, such as a boil order, are no longer necessary once you have returned to compliance.

PN iWriter

EPA has created a Web-based tool to help water systems create public notices by answering questions and filling in blanks based on the system's violation or situation. The PN iWriter is free and available at: <http://www.pniwriter.org>