

Revised Total Coliform Rule: A Quick Reference Guide

Overview of the Rule

Title*	Revised Total Coliform Rule (RTCR) 78 FR 10269, February 13, 2013, Vol. 78, No. 30
Purpose	Increase public health protection through the reduction of potential pathways of entry for fecal contamination into distribution systems.
General Description	The RTCR establishes a maximum contaminant level (MCL) for <i>E. coli</i> and uses <i>E. coli</i> and total coliforms to initiate a "find and fix" approach to address fecal contamination that could enter into the distribution system. It requires public water systems (PWSs) to perform assessments to identify sanitary defects and subsequently take action to correct them.
Utilities Covered	The RTCR applies to all PWSs.
* This document provides a summary of federal drinking water requirements; to ensure full compliance, please consult the federal regulations at 40 CFR 141 and any approved state requirements.	

Public Health Benefits

Implementation of the RTCR will result in:

- ▶ A decrease in the pathways by which fecal contamination can enter the drinking water distribution system.
- ▶ Reduction in fecal contamination *should* reduce the potential risk from all waterborne pathogens including bacteria, viruses, parasitic protozoa, and their associated illnesses.

Critical Deadlines and Requirements

- April 1, 2016**
- ▶ PWSs must develop a written sample siting plan that identifies the system's sample collection schedule and all sample sites, including sites for routine and repeat monitoring.
 - ▶ Sample siting plans are subject to state review and revision.

What are the Major Provisions?

Routine Sampling Requirements

- ▶ Total coliform samples must be collected by PWSs at sites which are representative of water quality throughout the distribution system according to a written sample siting plan subject to state review and revision.
- ▶ For PWSs collecting more than one sample per month, collect total coliform samples at regular intervals throughout the month, except that ground water systems serving 4,900 or fewer people may collect all required samples on a single day if the samples are taken from different sites.



Routine Sampling Requirements (cont.)

- ▶ Each total coliform-positive (TC+) routine sample must be tested for the presence of *E. coli*.
- ▶ If any TC+ sample is also *E. coli*-positive (EC+), then the EC+ sample result must be reported to the state by the end of the day that the PWS is notified.
- ▶ If any routine sample is TC+, repeat samples are required.
 - PWSs on quarterly monitoring must take a minimum of three additional routine samples (known as additional routine monitoring) the month following a TC+ routine or repeat sample.

Repeat Sampling Requirements

Within 24 hours of learning of a TC+ routine sample result, at least 3 repeat samples must be collected and analyzed for total coliform:	▶ One repeat sample must be collected from the same tap as the original sample.
	▶ One repeat sample must be collected from within five service connections upstream.
If one or more repeat sample is TC+:	▶ One repeat sample must be collected from within five service connections downstream.
	▶ The PWS may propose alternative repeat monitoring locations that are expected to better represent pathways of contamination into the distribution system.
If one or more repeat sample is TC+:	▶ The TC+ sample must be analyzed for the presence of <i>E. coli</i> .
	▶ If any repeat TC+ sample is also EC+, then the EC+ sample result must be reported to the state by the end of the day that the PWS is notified.
	▶ The PWS must collect another set of repeat samples, unless an assessment has been triggered and the PWS has notified the state.

Assessments and Corrective Action

The RTCR requires PWSs that have an indication of coliform contamination (e.g., as a result of TC+ samples, *E. coli* MCL violations, performance failure) to assess the problem and take corrective action. There are two levels of assessments (i.e., Level 1 and Level 2) based on the severity or frequency of the problem.

Purpose of Level 1 and Level 2 Assessments	<p>To find sanitary defects at the PWS including:</p> <ul style="list-style-type: none"> ▶ Sanitary defects that could provide a pathway of entry for microbial contamination, or ▶ Sanitary defects that indicate failure (existing or potential) of protective barriers against microbial contamination. <p><i>Guidance on how to conduct Level 1 and Level 2 Assessments and how to correct sanitary defects found during the Assessments can be found at:</i> http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/regulation_revisions.cfm.</p>
Deadline for Completing Corrective Actions	<p>When sanitary defects are identified during a Level 1 or Level 2 Assessment, they should be corrected as soon as possible to protect public health. The PWS must complete corrective actions by one of the following timeframes:</p> <ul style="list-style-type: none"> ▶ No later than the time the assessment form is submitted to the state, which must be within 30 days of triggering the assessment, or ▶ Within state-approved timeframe which was proposed in the assessment form.

Level 1 Assessments

Conducting Level 1 Assessments	▶ Performed by the PWS owner or operator each time a Level 1 Assessment is triggered.
	▶ Upon trigger of a Level 1 Assessment, the Level 1 Assessment form must be submitted within 30 days to the state.
Level 1 Assessment Triggers	<p>Level 1 Assessment is triggered if any one of the following occurs:</p> <ul style="list-style-type: none"> ▶ A PWS collecting fewer than 40 samples per month has 2 or more TC+ routine/ repeat samples in the same month. ▶ A PWS collecting at least 40 samples per month has greater than 5.0 percent of the routine/ repeat samples in the same month that are TC+. ▶ A PWS fails to take every required repeat sample after any single TC+ sample.

Level 2 Assessments

Conducting Level 2 Assessments	▶ Performed by the state each time a Level 2 Assessment is triggered.
	▶ The PWS is responsible for ensuring that the Level 2 Assessment is conducted regardless of the entity conducting the Level 2 Assessment.
Level 2 Assessment Triggers	▶ Upon trigger of a Level 2 Assessment, the Level 2 Assessment form must be submitted within 30 days to the state.
	<p>Level 2 Assessment is triggered if any one of the following occurs:</p> <ul style="list-style-type: none"> ▶ A PWS incurs an <i>E. coli</i> MCL violation. ▶ A PWS has a second Level 1 Assessment within a rolling 12-month period.



Seasonal System Provisions

The RTCR defines seasonal systems and specifies additional requirements for these types of PWSs:

- ▶ A seasonal system is defined as a non-community water system that is not operated as a PWS on a year-round basis and starts up and shuts down at the beginning and end of each operating season.

Start-up Procedures for Seasonal Systems	At the beginning of each operating period, before serving water to the public, seasonal water systems must: <ul style="list-style-type: none"> ▶ Conduct state-approved start-up procedures. ▶ Certify completion of state-approved start-up procedures.
	Examples of state-approved start-up procedures, which need to be completed prior to serving water to the public, may include one or more of the following: <ul style="list-style-type: none"> ▶ Disinfection. ▶ Distribution system flushing. ▶ Sampling for total coliform and <i>E. coli</i>. ▶ Site visit by state. ▶ Verification that any current or historical sanitary defects have been corrected.
Routine Monitoring for Seasonal Systems	<ul style="list-style-type: none"> ▶ The baseline monitoring frequency for seasonal systems is monthly.

Major Violations

<i>E. coli</i> MCL Violation	A PWS will receive an <i>E. coli</i> MCL violation when there is any combination of an EC+ sample result with a routine/repeat TC+ or EC+ sample result:	
	<i>E. coli</i> MCL Violation Occurs with the Following Sample Result Combination	
	Routine	Repeat
	EC+	TC+
	EC+	Any missing sample
	EC+	EC+
	TC+	EC+
	TC+	TC+ (but no <i>E. coli</i> analysis)
Treatment Technique Violation	A PWS will receive a Treatment Technique violation when any of the following occur: <ul style="list-style-type: none"> ▶ Failure to conduct a Level 1 or Level 2 Assessment within 30 days of a trigger. ▶ Failure to correct all sanitary defects from a Level 1 or Level 2 Assessment within 30 days of a trigger or in accordance with the state-approved timeframe. ▶ Failure of a seasonal system to complete state-approved start-up procedures prior to serving water to the public. 	

Key Points for Public Water Systems to Remember

Find and correct sanitary defects as soon as you become aware of them.

- ▶ This can help reduce *E. coli* MCL violations, which trigger a Level 2 Assessment.
- ▶ This can help reduce TC+ sample results, which may trigger a Level 1 Assessment.

Make sure to collect all routine and repeat samples as required.

- ▶ Timely and correct monitoring can help reduce triggering a Level 1 or Level 2 Assessment because:
 - Failure to conduct repeat monitoring triggers a Level 1 Assessment.
 - A Level 1 Assessment triggered twice within a certain timeframe triggers a Level 2 Assessment.

For additional information on the RTCR:

Call the Safe Drinking Water Hotline at 1-800-426-4791; visit the EPA website at http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/regulation_revisions.cfm; or contact your state drinking water representative.