



Revised Total Coliform Rule



On April 1, 2016, the federal Revised Total Coliform Rule (RTCR) will replace the 1989 Total Coliform Rule (TCR). The RTCR will continue to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbial contamination. Like the TCR, RTCR is the only drinking water rule that applies to all water systems. EPA expects the RTCR to better protect public health by requiring systems vulnerable to microbial contamination to “find and fix” problems that allow contamination to enter a water system.

We always required water systems with microbial contamination to look for any maintenance or operational defects that can allow contamination to enter the system. We also required them to correct any defects they found. RTCR formalizes this process and requires water systems to submit a water system assessment report to us any time they have unsatisfactory coliform sample results. It also assigns violations to water systems that fail to complete these tasks.

Facilitating your transition to RTCR

If your March 2016 routine sample is total coliform-positive, you must collect all the repeats the TCR requires. Therefore, we recommend that you collect your March 2016 routine samples early in the month so you also can collect any required repeat samples in March.

If you collect routine samples late in March and your repeat samples in April, you also must take any routine samples the RTCR requires in April.

Routine Monitoring

Water systems will continue to collect the same number of routine samples and at the same frequency as they do now. See your *Water Facilities Inventory* (WFI) form for your monitoring schedule.

Repeat Samples

The RTCR requires all water systems to collect three repeat samples for every total coliform-positive routine sample. Systems that collect one sample a month will collect three repeats instead of four. Systems that collect two or more routine samples will continue to collect three repeats. If a water system fails to collect three repeat samples for every total coliform-positive repeat sample, the rule will require it to conduct an assessment to find and fix any sanitary defect that allowed the contamination to occur.

E. coli MCL

RTCR calls the acute MCL an “*E. coli* MCL.” There are four ways a water system can have an *E. coli* MCL:

1. A total coliform-positive repeat sample follows an *E. coli* positive routine sample.
2. An *E. coli* positive repeat sample follows a total coliform-positive routine sample.
3. The lab fails to test a total coliform-positive repeat sample for *E. coli*.
4. **New.** The system fails to take three repeat samples following an *E. coli* positive routine sample.

A water system with an *E. coli* MCL must notify water users within 24 hours. See public notification requirements on page 3.

High 5 Award

By Mark Steward, Eastern Regional Office

This month we salute Mark Nelson, manager of the Evergreen Valley Utilities Satellite Management Agency near Cle Elum. Mark is the certified operator for a wide array of water systems—including community systems, farmworker housing units, and other transient noncommunity systems—in Kittitas, Grant, Chelan, Franklin and Okanogan counties.

Some of these systems have nitrate treatment and, when nitrate issues come up, Mark is very responsive and acts on our recommendations for a good resolution to the issue.

We had chronic problems with one system until Mark took over as operator. He brought a level of stability and accountability that makes it easier for us to do our work and achieve our public health mission.

We enjoy Mark's sense of humor but, when it comes to his work, he knows his job is important to public health. He has a "can do" attitude, is attentive to his responsibilities, and never hesitates to ask us for assistance and offer suggestions. We are glad to have Mark overseeing so many systems in the Eastern Region. We can always count on him to get the job done!



Danielle Russell from our Eastern Regional Office congratulates our newest High 5 award winner, Mark Nelson, manager of the Evergreen Valley Utilities Satellite Management Agency near Cle Elum.

Seasonal Water Systems

The RTCR recognizes a new type of noncommunity seasonal water system. RTCR's seasonal water system doesn't operate year-round, totally depressurizes the water lines at the end of each operating season, and has at least one month when it serves no people.

A complete system shut down presents opportunities for contamination to enter or spread throughout the distribution system. Therefore, by April 1, 2016, all seasonal water systems must have a state-approved start-up procedure. They must follow the procedure before opening up for the season each year. In addition, they must send us a certificate declaring that they followed the approved start-up procedure before serving water to the public. Failure to do so is a treatment technique violation, which requires public notification for water system customers.

Most start-up procedures include activating the source, disinfecting and flushing the distribution system, cleaning and disinfecting storage facilities, inspecting the water system, and collecting a coliform sample with a satisfactory result.

Many traditional seasonal water systems, such as ski resorts, campgrounds, RV parks, and temporary farmworker housing, won't meet RTCR's criteria for a seasonal system because they don't depressurize their entire water distribution system when they shut down. Even if only one caretaker is receiving water from the distribution system, it doesn't qualify as a seasonal system under the RTCR.

Shutdown procedures are also important. Implementing best practices during system shutdown can save money in repairs and keep contamination out of your water system. Typical best practices include inspecting the system, turning off the power, draining all components that may freeze, draining internal plumbing, and closing all taps.



Coliform Monitoring Plans

Group A water systems must still have a written Coliform Monitoring Plan (CMP) identifying routine and repeat sample sites representative of water throughout the distribution system. You may need to update your CMP to include RTCR requirements.

Options for Selecting Repeat Sample Sites

RTCR requires all water systems to collect three repeat samples for every unsatisfactory routine sample. This is a change for water systems now required to collect four repeat samples a month.

All water systems have two options for choosing repeat sample sites:

Option 1

Take repeats at all the following locations:

- The site of the unsatisfactory routine sample.
- A site within five active connections upstream of the routine site.
- A site within five active connections downstream of the routine site.

Option 2

You may propose repeat sites that better represent a pathway for contamination to enter the distribution system. You may specify either:

- Alternative fixed repeat locations.

- A standard operating procedure defining criteria for selecting repeat sites on a case-by-case basis, subject to our review and revision.

You may choose a combination of these options. You can use Option 1 for some routine sites and one of the choices in Option 2 for others.



Month after a Total Coliform-Positive Routine Sample

The RTCR will require you to collect your usual number of routine samples the month after an unsatisfactory routine sample. **Systems that serve 4,100 or fewer people** will no longer have to collect five routine samples.

Groundwater Rule (GWR)

The GWR requires water systems with one or more groundwater sources to collect a sample from each source that was “in use” when an unsatisfactory routine RTCR sample was collected. RTCR will not allow any system to use a source sample as both a repeat sample and a groundwater source sample.

Public Notification Requirements

E. coli MCL violation—Issued within 24 hours (Tier 1)

- Routine total coliform-positive; repeat *E. coli*-positive.
- Routine *E. coli*-positive; repeat total coliform-positive.
- Routine *E. coli*-positive; system fails to take all repeat samples.
- Repeat total coliform-positive; sample not tested for *E. coli*.

Treatment technique violation—Issued within 30 days (Tier 2)

- System fails to conduct a required assessment within 30 days of the treatment technique trigger.
- System fails to correct a sanitary defect within required timeframe.
- Seasonal system fails to complete state-approved start-up procedure prior to serving water to the public.

Monitoring violation—Issued within one year (Tier 3)

- System fails to collect all required routine samples.
- Routine total coliform-positive; sample not tested for *E. coli*.

Reporting violation—Issued within one year (Tier 3)

- System fails to submit a monitoring report or completed assessment form in a timely manner.
- System fails to notify us of an *E. coli*-positive sample in a timely manner.
- Seasonal system fails to submit certification of completion of approved start-up procedure.



Assessments and treatment technique triggers

When a “treatment technique trigger” occurs, water systems must conduct an assessment to “find and fix” any sanitary defects. There are two assessment levels; both evaluate the entire water system from the point of sample collection to the source of supply.

A **Level 1 assessment** is a basic water system evaluation that an owner, certified operator, or other knowledgeable person can do. The RTCR requires a Level 1 assessment when one of these treatment technique triggers occurs:

- A water system that collects fewer than 40 routine samples a month has two or more total coliform-positive samples in the same month.
- A water system that collects 40 or more routine samples has coliform-positive results in more than 5 percent of the routine and repeat samples.
- A water system fails to collect three repeat samples for every total coliform-positive routine sample.

A **Level 2 assessment** is a more complex assessment that only a person with state-required qualifications, such as an engineer, certified operator (WDM2 or higher), or state or local health staff can do. While state and local health staff are qualified to do Level 2 assessments, their availability may be limited to *E. coli* events. RTCR requires a Level 2 assessment when one of these treatment technique triggers occurs:

- A water system has an *E. coli* MCL violation (see definition on page 1).
- A water system has a second Level 1 treatment technique trigger within a rolling 12-month period.

A treatment technique trigger could occur any time you collect routine and repeat samples. You should be ready to start a system evaluation as soon as the lab notifies you of positive results that trigger the assessment requirement. We recommend that you sample early in the month, so you can complete the assessment and repeat sampling before you collect samples the following month. We will be available for consultation.

3 parts of an assessment

Investigation: Identify any sanitary defects that allowed coliform to enter the distribution system or a failure or imminent failure of an existing barrier.

Discussion: Evaluate what you identified during the assessment that might have allowed the contamination to occur and the corrective action needed to fix it.

Corrective action: Record the steps you took or will take to fix the sanitary defect that allowed the contamination to occur.



Staff at Marysville Utilities, (from left) Billy Gilbert, Kari Chennault, and Brad Zahnow, open and inspect a spring collector to ensure there are no sanitary defects.

Don't wait for us to send you written notification of the event.

You must complete the assessment within 30 days after the trigger occurs. Start by identifying the individual or entity responsible for doing the assessment and reporting the findings to us. We will review the assessment report to ensure the evaluation was adequate and determine whether the assessor identified the likely cause of the contamination. (In some cases, the assessor won't find the cause.)

If you have a Level 1 treatment technique trigger in two consecutive months, the RTCR will require you to complete a Level 1 assessment the first month and a Level 2 assessment the second month. The worst-case scenario would be two *E. coli* MCL violations triggering two Level 2 assessments.

Templates for both assessment levels will be online in January. You may use them or develop your own. If you develop your own, please be sure to include all the required elements.

Corrective Actions

Sanitary Defects and Defects

RTCR distinguishes between “sanitary defects” and “defects.” Either might result in a positive coliform sample that triggers the assessment requirement. The assessment includes taking or identifying corrective actions to fix sanitary defects and recommendations for responding to defects. (See *assessments on page 4*)

Sanitary defect is a pathway for contaminants to enter the water system or failure or imminent failure of an existing barrier. A sanitary defect may be as simple as a missing reservoir vent screen or a poorly sealed reservoir hatch, or as substantial as a failing reservoir.

Corrective action for a sanitary defect could be as simple as installing a new screen on a reservoir vent or replacing the seal on a reservoir hatch, or as substantial as building a new water tank or installing new water pipe.

Defects are issues identified during an assessment that could have caused positive coliform samples. A defect might be as simple as an improper sampling technique, such as rinsing out a bottle before collecting a sample.

Corrective action for a defect might be as simple as training on correct sampling techniques for the person who collects water samples. RTCR won't enforce correction of defects but, if uncorrected, they may trigger additional assessments, or require a system that doesn't disinfect to begin providing disinfection.

If you can't correct a sanitary defect before the 30-day deadline, you must submit an assessment with a Corrective Action Plan to us for review and approval. Your Corrective Action Plan must describe the uncorrected sanitary defect and your timeline for correcting it. Because a sanitary defect or defect still exists, some water systems that don't disinfect may need to install disinfection as an interim corrective measure.

Your Corrective Action Plan should include any proactive action you intend to take to correct defects and prevent positive coliform samples in the future. For example, it isn't enough to say you repaired the water main break that contaminated the water system. Instead, you must summarize the procedures you or your staff followed to repair the break and the procedures you will use to decrease future risk of contamination.

How we will review your assessment report

We will strive to review assessment reports within two weeks after receipt. Level 2 assessments will receive priority. Assessment reports should cover all the elements identified in our templates, thoroughly discuss any issues found during the assessment, and identify appropriate corrective actions. If the assessment is incomplete, we will return it to the system with a request to resubmit a completed assessment within 30 days. Failure to submit a complete assessment is a treatment technique violation with a Tier 2 public notice requirement.

In addition to reviewing assessment reports for completeness, the RTCR requires us to answer the following questions:

1. Did the assessment identify the source of contamination?
2. Did the assessment identify a sanitary defect (pathway or failed barrier) for contamination to enter the distribution system?
3. Did the assessment identify the driving force that brought the contamination into the distribution system?

Experience suggests that many assessments won't identify the likely cause of the coliform incident. Your assessment may not reveal the cause of the contamination, but the learning that occurs during the process should lead to better operational practices.



Sammamish Plateau Water Superintendent, John Anderson (right), explains why air/vacuum release valves need screening material on discharge piping during a recent visit with Derek Pell from our Northwest Regional Office.

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DOH 331-500

For people with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).

**RTCR Informal
Comment Period**

The informal comment period
for the Revised Total Coliform
Rule is from **November 19 until
December 18, 2015.**

More information is available at
www.doh.wa.gov/odwrulemaking

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www.wacertservices.org
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Help us celebrate 2016 Drinking Water Week
by nominating an operator or system
that deserves recognition.

The deadline is January 29, 2016.

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