

Total Coliform Rule Quick Guide

Summary of the Colorado Primary Drinking Water Regulations—
Article 5 Microbiological Contaminants

July, 2008

Version 1

Purpose of Total Coliform Sampling

To reduce risk of illness from disease-causing organisms such as fecal coliforms and *E. coli* that are often associated with sewage or animal wastes.

These microbiological contaminants have been known to cause diarrhea, cramps, nausea, jaundice, and associated headaches and fatigue, including rare occasions leading to death.

Sampling

All public water systems (PWSs) in Colorado must collect representative samples from their distribution systems regularly for total coliforms. The amount and time of sampling is determined by the type of source, kind of treatment and size of population served.

Schedules are sent out in December of each year, so that each system can properly plan for and schedule all the necessary sampling, bottle ordering, etc.

If a total coliform sample is positive for coliforms (TC+) then repeat sampling is required within 24 hours of the TC+ notification.

- If a PWS collects **one** sample per month or less, then the PWS is required to collect **four** repeats.
- If a system collects **more than one** sample per month they are required to collect **three** repeats.

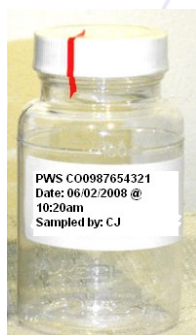
One repeat should be collected from the original TC+ location, one from upstream within **five** service connections, one downstream within **five** service connections and, if required, the fourth can be collected anywhere in the distribution system.

After the repeat sampling, a system should conduct an investigation into the reason for the TC+. This is just for the system's records in case there are further complications. (There is a template available; call the Rule Manager if needed.)



Escherichia coli (*E. coli*)
Photo courtesy of:
www.kimicontrol.com

One more follow-up action is required for systems that collect fewer than five samples per month. The PWS must collect a full set of **five** samples the month following the TC+ sample.



Sampling hints

- For smaller systems, sample **early** in the week or month, so you don't run into hold time or lab issues. (This is especially helpful if analyses comes back TC+.)
- Have extra bottles on hand and rotate through them, just in case.
- Try not to use an outside spigot. (You just never know who's been there.)
- Use a good tap, not a swing arm faucet.
- Be certain to remove any attachments to the spigot: hose, faucet aerator, etc.
- Wear a fresh pair of gloves to sample.
- If using an outside tap, try not to sample on days of inclement weather.
- Do not set down or touch the inside of the cap while sampling.
- Make sure to disinfect the spigot and flush for several minutes prior to sampling.
- Never over- or under-fill sample bottles; usually stop at the neck of the bottle.
- If you suspect something went wrong, just resample. It's easier and cheaper in the end to get another sample.
- Verify that the laboratory forms are filled out correctly: PWS # on it, type of sample, date, etc.
- Samples of water, where the water is not consumed, need to be marked "special purpose".
- Seasonal systems: **ten** days prior to opening collect one pre-opening sample.
- Seasonal systems: Mark pre-opening samples as "special purpose" and "pre-opening" in notes.
- Make sure to use a certified laboratory. Check labs at:



**WHEN IN DOUBT,
THROW IT OUT!**

<http://www.cdphe.state.co.us/lr/Certification/SDWLIST.pdf>

HINT

If you just need to submit data, the fastest, easiest way is to E-mail the signed results in a PDF or JPEG to cdphe.drinkingwater@state.co.us.

Compliance Tips:

Protect well heads.

Disinfect appropriately.

Maintain distribution system.

Check if filtration is appropriate.

Complete a Source Water Assessment.

(You can contact 303-692-3592 for more information on this.)



Total Coliform Rule Manager

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Data can be submitted to

cdphe.drinkingwater@state.co.us

but must be in a PDF or JPEG.

TCR Violation

A Total Coliform Rule violation occurs when there has been a Failure to Monitor (FTM) or when the Maximum Contaminant Level (MCL) is reached. Public Notice is required for all TCR violations.

FTM violations occur when either a routine or repeat sample is not collected **or** not reported to the division.

MCL violations occur in two scenarios:

- 1) An **Acute MCL** is when a routine and repeat come back TC+ and one has E. Coli or fecal present.
- 2) A **Monthly MCL** is when a system collecting fewer than 40 samples per month has more than one routine (with repeat) sample per month that is TC+ **or** a system collecting 40 or more samples per month has greater than 5% of the routine (with repeat) samples TC+.

How to Return to Compliance

Once a violation has been received, there are a few ways to return to compliance depending on the violation.

- If the division did not receive the data, simply submit the data via fax to the rule manager.
- If **no** sample was taken, then follow the instructions outlined in your violation, which include submitting the Public Notice and Certificate of Delivery back to the division. Also, make sure that the sampling is

scheduled and ready for the next monitoring period.

- If an MCL violation was received, then submit the Public Notice and Certificate of Delivery back to the division. You may need to follow up on the investigation from the first TC+ sample to remedy the real issue.

Online Guidance

The department's Drinking Water Program home page is a very useful location to bookmark. It has a listing of Operator training workshops, certified laboratories, the Colorado Primary Drinking Water Regulations, Source Water Assessments, etc., at <http://www.cdphe.state.co.us/wq/drinkingwater/index.html>.

For new systems, here's a little extra guidance

<http://www.cdphe.state.co.us/wq/drinkingwater/NewSystems.html>.

Colorado Department of Public Health and Environment

Water Quality Control Division

Compliance Assurance and Data Management B-2

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<http://www.cdphe.state.co.us/wq/drinkingwater/index.html>