



## ***EPA Region 8 Drinking Water Unit Tech Tips for WY & Tribal Systems*** **Follow-up to an Unsafe/Total Coliform Positive Sample**

Under the Total Coliform Rule with Ground Water Rule Requirements Included

### **What is an unsafe or total coliform positive sample?**

A water sample is unsafe, present or total coliform positive if coliform bacteria are found in the sample. Generally coliforms are bacteria that are not harmful and are naturally present in the environment. They are used as an indicator that other, potentially harmful, fecal bacteria could be present. The presence of coliform bacteria in tap water suggests that there could be a problem with existing equipment, treatment systems or a breach in the distribution system that could introduce fecal contamination.

### **What actions must be taken?**

When a water system receives an unsafe or total coliform positive sample result, within 24 hours the owner or operator must collect a set of repeat total coliform samples in the distribution system for the Total Coliform Rule (TCR); additionally, all ground water sources must be sampled for *E. coli* under the Ground Water Rule (GWR). The purposes of the Total Coliform Rule repeat and Ground Water Rule source water samples are to confirm the presence of coliform bacteria in the system and to determine if the ground water source is fecally contaminated.

### **Follow these 5 steps after a positive Total Coliform Rule routine sample:**

**Anytime you have an E.coli (EC+) sample call EPA IMMEDIATELY at 303-312-6034 and take repeat TCR samples, as well as GWR source samples (if applicable). See the last section of this guidance for more information on EC+ follow-up actions.**

- 1) Do not shock chlorinate** the system before collecting repeat, routine or source samples unless you have prior approval from EPA Region 8.
- 2) Review your sampling procedures to ensure you are sampling properly**

**Avoid:** Sampling at new faucets or newly repaired faucets, leaky faucets, outdoor faucets or those faucets connected to softeners, hot water heaters, or pressure tanks; setting down the bottle lid or exposing the inside of the lid or bottle to anything other than the sample water (do not rinse or remove powder); and rushing your sample collection.

**Do:** Take your time; sanitize the sample tap and your hands; flush the tap for 5 minutes before taking the sample; and minimize the time the sample bottle is opened—open the bottle immediately prior to gathering your sample and replace the lid as soon as the sample is collected. Keep in mind that improper sampling can result in a TC positive sample that can lead to costly follow-up sampling. Also, carefully fill out chain of custody forms with your PWS ID# and sample location(s). Ensure that your total coliform rule samples are located within your distribution system and labeled appropriately, and that your ground water rule source samples are collected at your source(s) before treatment and labeled appropriately.

3) Follow the flowchart below to take your required TCR samples:

**STEPS TO TAKE AFTER A TOTAL COLIFORM RULE (TCR)  
ROUTINE POSITIVE/UNSAFE SAMPLE**

**1) Within 24 hours of notification of the *routine* TCR positive sample result:**  
If you collect one routine sample a month/quarter, collect 4 repeat samples in the distribution system for each positive sample; use your regular lab form and mark the samples as TCR repeats.  
  
If you collect 2 or more routine samples a month or quarter, collect 3 repeat samples in the distribution system for each positive routine sample; use your regular lab form and mark the samples as repeats.

**2) Collect your GWR source samples if you use a groundwater (e.g. well) source.** See the next page for more information.

**Remember: Anytime you have an E.coli (EC+) sample call EPA IMMEDIATELY at 303-312-6034. See last section of this guidance for EC+ information.**

Are all TCR repeats safe and only one TCR routine was positive?

Y  
E  
S

N  
O

1) There is no violation  
2) No public notice is needed  
3) Take 5 additional routine samples the following month (even if you sample quarterly).

You have a MCL violation:  
1) Provide public notice  
2) Inspect your system to identify the cause of the positive samples.  
3) Take 5 additional routine samples the following month (even if you sample quarterly)

Are the 5 additional TCR routine samples safe?

Y  
E  
S

N

Return to your normal TCR routine sampling the following month/quarter

Start from the beginning

- 4) **Follow the instructions below if you use a ground water (e.g. well) source and are subject to the Ground Water Rule (GWR).** Check your annual Monitoring and Reporting Requirements to verify if you are subject to this rule.

Within 24 hours of being notified of a *routine* TCR positive sample result, you must:

- Sample all ground water sources that were in use during the collection of the *routine* TCR sample.
- Collect the sample(s) at the groundwater source(s) prior to treatment.
- Collect one source sample for every routine TCR positive sample (e.g. if you have three routine TCR positive samples you will need to collect three source water samples from *each* ground water source).
- Indicate the correct Sample Point Code (e.g. GWR Elm Well) on the lab chain of custody form. The Sample Point Code may be found on your yearly Monitoring and Reporting Requirements document provided to all systems every year. If your groundwater sources combine before treatment you may take a combined source sample, but make sure to mark the sample location as “combined” and note the groundwater source Facility Codes that were combined (e.g. Combined WL01, WL02, and WL03).
- A copy of the GWR Source Sampling Form may be found at the following website <http://www2.epa.gov/region8-waterops>, clicking on the “Reporting Forms” link under the picture and selecting the “Ground Water Rule” link.
- The lab must analyze the sample for *E. coli*.
- If the GWR source sample is safe there is no further sampling requirement. If the source is TC+, you should inspect your system to identify the cause of the positive result but there is no further sampling requirement.
- **If any GWR source sample result is *E. coli* (EC+) positive:**
  - a) Call EPA immediately at 303-312-6497 to speak with Gail Franklin the GWR Manager;
  - b) Within 24 hours collect five additional GWR source samples from the same source that had the EC+. If you previously took a combined source sample you will need to sample all wells separately; and
  - c) Provide Tier 1 public notice.

**Wholesale and Consecutive Systems:**

Wholesale systems must meet all of the above GWR sampling requirements when notified of a routine TCR total coliform positive sample at the consecutive’s system or when the wholesale system’s groundwater sources have a routine TCR total coliform positive sample result. If the GWR source sample is *E. coli* positive, the wholesaler must also notify all consecutive systems within 24 hours of being notified of the EC+ source sample result.

Consecutive systems must notify their wholesale system within 24 hours of being notified of the routine TCR total coliform positive sample result. If the consecutive system was utilizing any of their own ground water sources at the time of the routine TCR sample collection the

consecutive's groundwater sources must be sampled to meet all of the above GWR sampling requirements.

## 5) Thoroughly inspect the water system

Coliform bacteria in a water system are generally either a result of a failure to maintain a "closed" system and/or equipment failure. Visually inspect the system including wells, tanks, chlorinator, etc. Look for areas where soil, leaves, insects, animals, sewage or animal wastes could get into your system. You can go to the following website and click on the Technical Tips for more information: <http://www2.epa.gov/region8-waterops/system-and-operational-improvements-sanitary-surveys>.

### Wyoming Systems:

The Wyoming Association of Rural Water Systems (WARWS) may be contacted at 307-436-8636 to help identify the cause of the positive sample results.

### Tribal Systems:

Contact your local EPA office to request help with identifying the cause of the positive sample:

MT - Barb Burkland at 406-457-5009

ND and SD - Andrea Griese at 605-945-1192

CO, UT, and WY - Mindy Mohr at 303-312-6525

SD Rural Water Systems (SDRWS) - Denny Davis at [dndavis@sdarws.com](mailto:dndavis@sdarws.com), 605-556-7219

ND Rural Water Systems (NDRWS) - Eric Volk at [ericvolk@ndrw.org](mailto:ericvolk@ndrw.org), 701-391-5080

### **If you have an E. coli positive (EC+) sample result:**

- a) Call EPA immediately at 303-312-6034.
- b) For the Total Coliform Rule, take repeat samples within 24 hours in the distribution system. If any of the TCR repeat samples are TC+ or EC+, you have an acute MCL. Provide Tier 1 public notice including a boil water advisory violation and distribute it to all residents and customers within 24 hours. Take five additional TCR routine samples the following month.
- c) (As applicable) For the Ground Water Rule, take ground water source samples. If any of the GWR source samples are EC+, you must collect 5 routine samples from the same source that had the EC+ within 24 hours and provide Tier 1 public notice including a boil water advisory, and distribute it to all residents and customers within 24 hours.
- d) Even if you can't reach EPA by phone, you are expected and required to take the previous steps (collect TCR repeat samples (and GWR source samples as applicable), and provide Tier 1 public notice boil water advisory).