

Ground Water Rule Triggered and Representative Monitoring: A Quick Reference Guide

Overview of the Rule

Title	Ground Water Rule (GWR) 71 FR 65574, November 8, 2006, Vol. 71, No. 216 Correction 71 FR 67427, November 21, 2006, Vol. 71, No. 224
Purpose	Reduce the risk of illness caused by microbial contamination in public ground water systems (GWSs).
General Description	The GWR establishes a risk-targeted approach to identify GWSs susceptible to fecal contamination and requires corrective action to correct significant deficiencies and source water fecal contamination in all public GWSs.
Utilities Covered	The GWR applies to all public water systems (PWSs) that use ground water, including consecutive systems, except that it does not apply to PWSs that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment.

Purpose of Triggered Source Water Monitoring

- ▶ The purpose of triggered source water monitoring is to evaluate whether the presence of total coliform in the distribution system is due to fecal contamination in the ground water source.
- ▶ This type of source water monitoring is triggered by routine total coliform monitoring required by the Total Coliform Rule (TCR) (40 CFR 141.21).
 - Since TCR monitoring is conducted regularly, triggered source water monitoring can occur at any time and thus provides an ongoing evaluation of ground water sources.

Triggered Source Water Monitoring Requirements

Systems Required to Conduct Triggered Source Water Monitoring

GWSs are subject to triggered source water monitoring if they:	<ul style="list-style-type: none"> ▶ Do not provide, and conduct compliance monitoring for, at least 4-log treatment of viruses (through inactivation and/or removal). <ul style="list-style-type: none"> ■ This includes systems that decide to discontinue 4-log treatment. ▶ Do not purchase 100% of their water (and therefore have a source at which to sample).
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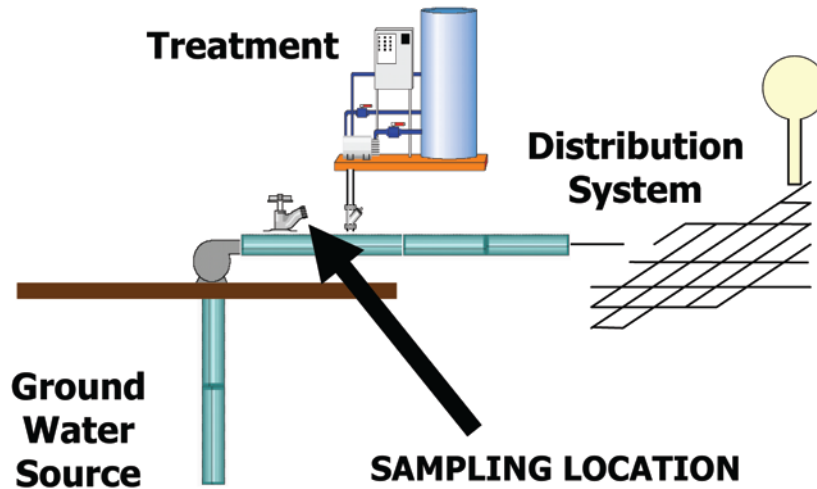
Situations Leading to Triggered Source Water Monitoring

GWSs must conduct triggered source water monitoring when:	<ul style="list-style-type: none"> ▶ The system is notified of a total coliform-positive routine sample collected in compliance with the TCR unless: <ul style="list-style-type: none"> ■ The total coliform sample is invalidated by the State. ■ The State allows an exception to the GWR triggered source water monitoring requirements. <p>OR</p> <ul style="list-style-type: none"> ▶ The system is a wholesale system and is notified by one of its consecutive systems that the consecutive system had a total coliform-positive sample during TCR monitoring.
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Collecting and Analyzing Triggered Source Water Monitoring Samples

When triggered source water monitoring is required, GWSs must:	<ul style="list-style-type: none"> ▶ Collect at least one ground water source sample from each source in use at the time the total coliform-positive sample was collected. <ul style="list-style-type: none"> ■ Samples must be collected within 24 hours of being notified of the total coliform-positive sample (unless the 24-hour limit is extended by the State). ■ Sample must be taken before treatment or at a State-approved location after treatment (see the diagram on the next page). ▶ Ensure all samples are analyzed for the presence of a fecal indicator (e.g., <i>E. coli</i>, enterococci, or coliphage) using an approved GWR method. ▶ If a fecal indicator-positive source sample is invalidated by the State, the GWS must collect another source water sample within 24 hours of being notified by the State of the sample invalidation and analyze for the same fecal indicator using an approved method. See the "Analytical Methods Approved for the Ground Water Rule" at http://www.epa.gov/safewater/methods/analyticalmethods.html.
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- ▶ The diagram below represents an appropriate sampling location for triggered source water monitoring. GWSs should have a sample tap at each source that enables triggered source water monitoring.



Additional Sampling

- ▶ If the initial triggered source water sample is fecal indicator-positive, and the State does not require corrective action in response, GWSs must conduct additional source water monitoring.
 - GWSs must collect five additional source water samples (from the source(s) that contained the original fecal indicator-positive samples) within 24 hours of being notified of the fecal indicator-positive sample.
 - The additional samples must be tested for a fecal indicator using an approved GWR method.
- ▶ If any one of the five additional samples is fecal indicator-positive, the system must take corrective action.
- ▶ If any additional sample is found to be fecal indicator-positive but is subsequently invalidated by the State, the GWS must resample for the same fecal indicator within 24 hours of being notified of the invalidation.

Note: If the GWS is a wholesale system, it must notify all consecutive systems served by a source of any fecal indicator-positive samples from that source within 24 hours of being notified of the sample result.

Sampling at Representative Sources and Triggered Source Water Monitoring Plans

Representative Source Sampling

- ▶ If a GWS has multiple sources, the State may allow the GWS to conduct representative source sampling.
- ▶ Representative source water sampling allows systems to collect samples from the sources that represent (serve) the TCR monitoring site rather than from all sources. These representative ground water sources must be approved by the State.
- ▶ Systems must still:
 - Sample within 24 hours of total coliform-positive sample.
 - Analyze using an approved GWR method.

Triggered Source Water Monitoring Plan

- ▶ If the State allows representative site sampling, the State may require the GWS to submit a triggered source water monitoring plan for approval before the GWS starts conducting representative source sampling.
 - A triggered source water monitoring plan may include:
 - A map of the water system (including location of ground water sources, location of pressure zones, and location of storage facilities),
 - A written explanation of how the GWS knows which source feeds which section of the distribution system, and
 - Seasonal or intermittent ground water sources and when they are used.
 - Regardless of whether or not the State requires a plan to be submitted, all representative source sampling locations must be approved by the State.

