Groundwater Public Water Systems that have more than one Groundwater Source, and Consecutive and Wholesale Public Water Systems

On December 1, 2009, public water systems (PWSs) using groundwater sources will be required to comply with provisions of the Ground Water Rule (GWR). The "Triggered Source Water Monitoring" component of the Rule will require PWSs to test their groundwater sources for a fecal indicator whenever there is a Total Coliform Rule (TCR) positive sample in distribution system monitoring. For systems that have more than one source of supply, a provision of the Rule will permit them to sample only those groundwater sources that are capable of supplying the location that had a positive sample result. This will require submission of a triggered source water monitoring plan and approval from the Department of Public Health. The following excerpts from a draft United States Environmental Protection Agency (EPA) guidance document are being provided now so that groundwater systems can begin to prepare for this submission.

The GWR includes flexibility for representative source water monitoring to reduce the burden of sampling ground water sources. The GWR has granted flexibility on representative monitoring in that it is not an all-or-nothing approval process .That is, not all systems need to participate, and not all sources in a given system warrant representative monitoring.

The GWR is specific in requiring that representative monitoring be approved before it can be applied by a system; therefore, a Groundwater System (GWS) cannot conduct monitoring only at representative sources without prior state approval. The department will review requests from water systems that intend to conduct representative source water monitoring. Water utilities are encouraged to submit the highest quality data available to support their case for conducting representative monitoring.

A system may propose conducting representative monitoring to sample certain wells that represent certain TCR sampling sites in the distribution system (and not sample other wells that do not provide water to the particular TCR sampling site). Some criteria that states may use during a technical review of both these categories of representative monitoring are provided below.

A system should provide all of the information needed for a complete review. Depending on the nature of the system's request, different materials will be submitted. The written plan should include:

- *Map or schematic of the system. The distribution system map or schematic should not contain information that poses a security risk to the system, but should include the following:*
    - *Pressure zone boundaries in the distribution system.*
    - *TCR routine monitoring locations, distinctly labeled.*
    - *Entry points of all sources, distinctly labeled, with the contributing sources clearly identified.*
    - *Entry points and status of any interconnections to other systems.*
    - *Storage tanks / reservoirs.*
    - *Pressure regulation facilities (reducing stations).*
    - *Other infrastructure that may affect pressure and/or flow in the distribution system.*
    - *Booster pump stations.*
    - *Critical valves.*

- *The source type and level of treatment provided for each source/point of entry such as whether it is seasonal, emergency, ground water, surface water, a wholesale supply, etc.*
- *The source(s) serving each TCR compliance monitoring location and the basis for the determination such as system hydraulics, operation, water quality data, etc.*

The triggered source water monitoring plan can be a stand-alone, independent document but will be incorporated into the systems overall distribution system sampling site plan. In addition, many systems might need to create a multi-scenario triggered source water monitoring plan to reflect the variety of ways their system is operated over the year. The system should not only submit the appropriate supporting study results and other information, but should also include a narrative explaining how the information supports the system's case for representative monitoring.

GWSs have a wide variety of tools available for evaluating the distribution system and determining which sources contribute to each TCR site. Simple water systems with uncomplicated distribution systems should be straightforward to evaluate. For some systems, locating sources, entry points, pressure zones, and TCR sites on the distribution system map may suffice. Systems that are more hydraulically complex will require a more advanced analysis of water movement. Hydraulic models or tracer studies help to inform whether sections of the distribution system are hydraulically separated. To provide maximum public health protection, states should take a conservative approach when considering reducing the number of sources that have to be sampled when source sampling is triggered.

GWSs must have department approval before implementing representative source water monitoring.

EPA is finalizing a guidance document that will provide more information on this topic. The above information is being provided to allow systems to begin to prepare to submit a representative source water sampling plan, if they wish to do so. Consecutive (purchased) and wholesale public water systems must be aware of what groundwater sources are capable of providing water to the consecutive system as those sources will be required to conduct source water monitoring following TCR positive sample results in the consecutive system distribution system (see http://www.epa.gov/safewater/disinfection/gwr/pdfs/guide_gwr_consecutive-guidance.pdf for additional information on this).

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