



## Directions

Applications will be reviewed on a rolling basis. PWSs *cannot* conduct monitoring at representative wells without prior MassDEP approval. For more information, please call your regional GWR contact or Frank Niles, Boston, at 617-574-6871.

Central: Kelly Momberger – 508-849-4023

Western: Jim Bumgardner – 413-755-2270

Northeast: Jim Dillon – 978-694-3231

Southeast: Terry Martin – 508-946-2765

## Background

Beginning December 1, 2009, all Massachusetts public water systems (PWS) using ground water (wells), including systems receiving their water from other systems using ground water (i.e., consecutive systems) must comply with the new federal Ground Water Rule (GWR). This rule is intended to increase protection against potential viral contamination in PWSs that use ground water sources. It does not apply to systems with ground water under the direct influence of surface water or systems that combine all of their ground water with surface water prior to treatment.

All PWSs that do not provide MassDEP approved 99.99% (4-log) treatment of viruses must conduct “*triggered monitoring*” of their source water for a fecal indicator each time the PWS is notified of a total coliform-positive sample collected under Total Coliform Rule bacteria monitoring. A triggered GWR source sample must be collected:

- within 24 hours of being notified of the TCR total coliform positive, and
- prior to any treatment or chemical addition, and at every ground water source that was active at the time the TCR sample was collected, *unless the PWS completes this application and develops a representative triggered monitoring plan as described below.*

## Representative Triggered Monitoring Plan

To reduce the costs and burdens associated with collecting a GWR triggered source water sample at every active well in systems with multiple wells, the GWR includes flexibility for PWSs to conduct “representative” triggered source water monitoring. There are three conditions under which a PWS can apply for representative triggered monitoring and thus reduce the number of individual wells that must be sampled during GWR triggered monitoring. More than one condition may apply to a PWS. Note: There are eligibility criteria that must be met for each of the conditions. *Before completing an application, please read all application sections to determine if your PWS is eligible.*

1. *Individual Wells Represent Water Sampled at Individual TCR Sites* (See Section C) - The PWS distribution system is physically separated and a specific well (or wells) supplies water to a specific TCR sampling site at all times. GWR triggered samples are collected only at the well(s) supplying water to the positive TCR sample site.
2. *Wells Discharge to a Common Header Prior to Entering the Distribution System* (See Section D) - PWSs with multiple wells that discharge to a raw water common header prior to treatment and/or before entering the distribution system may collect GWR triggered samples at a tap on the common header.
3. *Wells are Representative of Each Other* (See Section E) - The PWS collects GWR triggered samples at one well that represents multiple wells with the same water quality and similar risk of fecal contamination.

## Section A: PWS Information & Certification

PWS Name:	City/Town:	PWS ID:
PWS Address:		COM, NTNC, or TNC (circle one)
Contact Person:	Date Submitted: ___/___/___	
Phone Number:	Email:	

1. Number of active wells serving your PWS: \_\_\_\_\_
2. Number of routine TCR sample sites on your approved TCR sampling plan: \_\_\_\_\_
3. Does your TCR sampling plan include a source water sample at each well?  Yes  No This sample is required for all systems that apply chemicals, treat, or alter the raw water in any way prior to distribution.
4. Which of the following criteria does your system meet and for which are you applying? Please read the entire application before determining which criteria apply to your PWS. Check all that apply.
  - Section C – Individual Wells Represent Water Sampled at Individual TCR Sites
  - Section D – Wells Discharge to a Common Header Prior to Entering the Distribution System
  - Section E – Wells Are Representative of Each Other

**Well Information – Attachment A:** Based on the information provided in Sections A-E, complete and submit Attachment A. Submit additional sheets if necessary. Is Attachment A enclosed?  Yes  No

**Proposed Triggered Monitoring Plan – Attachment B:** Based on the information provided in Sections A-E, complete and submit Attachment B. Indicate which wells will be sampled following a routine total coliform positive sample at each TCR site. Submit additional sheets if necessary. Is Attachment B enclosed?  Yes  No

**Seasonal Operation or Variations in Use of Active Wells:** The GWR only requires triggered source water sampling at wells that were in operation when a TCR positive sample was collected. Therefore, it is important to indicate any variations in well use on Attachments and A and B.

**Certification:** I certify under penalty of law that I am the person authorized to fill out this form, that *all wells being considered for representative monitoring are structurally sound*, and the information contained herein is true, accurate and complete to the best of my knowledge and belief.

Print Name: \_\_\_\_\_ Title: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Phone #: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Email: \_\_\_\_\_

## Section B: System Map

All PWSs must attach a map that includes the following: wells, treatment facilities, and storage tanks.

- If you are completing Section C (read section for details), the map must include all routine TCR sample sites AND valves and piping that physically separate water flow in the distribution system.
- If you are completing Section D (read section for details), indicate the wells with common headers and the entry points(s) to the distribution system.
- If you are completing Sections D or E, all sources of potential fecal contamination in the Zone I must be located on the map.
- PWSs with a limited distribution system can attach a schematic map.

**Section C: Individual Wells Represent Water Sampled at Individual TCR Sites**

This section applies only to those PWSs with a well or wells that solely supply water to individual TCR sample sites. Water from the “representative” well or wells must never mix with water from other wells at the specific TCR sample site. The water must be physically separated in the distribution system by valves or independent piping networks.

*For example:* A PWS has three wells and two TCR sample sites. Wells one and two serve the north part of the distribution system where TCR sample site 1 is located. Well three serves the south part of the distribution system where TCR sample site 2 is located. A valve prevents water from flowing between the north and south sections of the distribution system. Mixing never occurs. When a total coliform positive is detected at TCR site 1, wells one and two are sampled. When a total coliform positive is detected at site 2, well three is sampled.

On Attachment B – Proposed Representative Triggered Monitoring Plan, identify each well or wells and the individual TCR sample site that is served. In the space below describe the physical separation (valves, piping) that prevents mixing within the distribution system. Reference the map or schematic you attached to this application.

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**Section D: Wells Discharge to a Common Header Prior to Entering the Distribution System**

This section applies only to those PWSs with multiple wells that discharge raw water to a common header prior to treatment and/or entering the distribution system. PWSs may collect GWR triggered monitoring samples at a raw water tap on the common header if this application is approved by MassDEP. PWSs that choose this option and sample at a raw water common header are required to maintain raw water sample taps on each individual well feeding the header. Individual sample taps are required by regulation. Are individual sample taps located at each well?  Yes  No

Which wells serve a common header and are being considered for representative monitoring?

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Wells with raw water samples that were positive for total coliform, fecal coliform, or *E. coli* during the last three years are not eligible for representative monitoring. Are all bacteria results negative for any raw water samples taken at the individual wells or at the common header serving the individual wells?  Yes  No

In the following table, list each well indentified above and check all potential sources of fecal contamination that are located in the Zone I of each well. NOTE: If there are any sources of fecal contamination checked for a particular well, MassDEP will likely deny inclusion of the well in the proposed representative monitoring plan. Any sources of potential fecal contamination in the Zone I must be indicated on the PWS map submitted with this application. Use multiple sheets if necessary.

**Section D Continued:**

Well Name					
Septic systems					
Recreation areas					
Farming/pastures					
Manure/waste storage					
Flooding at wellhead					
Golf course					
Storm drains					
Other					

Complete and submit Attachment B – Proposed Triggered Monitoring Plan along with a map or schematic indicating the various wells with common headers and the entry point(s) to the distribution system.

**Section E: Wells Are Representative of Each Other**

This section applies only to those PWSs with wells that can be considered representative of each other because they have the same water quality and are at similar risk of fecal contamination. Wells must draw from the same aquifer and should have similar depth, construction, wellhead protection, pumping rates, and water quality. Wells must be physically and hydrogeologically representative of each other. All wells being considered for representative monitoring must be structurally sound. PWSs that choose this option and sample at a representative well are required to maintain sample taps on each individual well. Individual sample taps are required by regulation. Please note the following:

- Bedrock wells are not eligible for representative monitoring.
- Tubular (small diameter shallow wells discharging by suction lift) and satellite wells (smaller wells associated with a larger well) will be evaluated on a case-by-case basis and the criteria listed below may or may not apply. Contact your regional representative for more information.

If your PWS has multiple wells that can be classified as representative of each other, you must complete Section E for each set of wells being considered. For example: PWS USA has 12 wells. The wells can be grouped into three representative sets of four wells. Only one well in each of the three groups will be sampled for triggered GWR monitoring. PWS USA must submit three copies of Section E and answer the questions below for each group of representative wells. Which wells are being considered for representative monitoring?

**Please answer the following questions to determine the eligibility of the wells listed above for representative monitoring. All criteria including a “must” are required for approval.**

1. Any well with a raw water sample result that was positive for total coliform, fecal coliform, or *E. coli* for the last three years is not eligible for representative monitoring.  
Are all bacteria results negative?  Yes  No
2. Water quality data for each well must be similar for the last three years. This data includes nitrate, sodium, and all chemical contaminants detected (regulated and unregulated). Is the data similar?  Yes  No  
Please provide a brief narrative about the data on the lines provided. MassDEP will make a determination based on available data.

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**Section E continued:**

3. Wells must be screened in the same aquifer material?  Yes  No PWS must attach well borings. Are well borings attached?  Yes  No
4. Wells must draw from the same aquifer. Do wells draw from the same aquifer?  Yes  No
5. Wells must have similar construction. PWS must attach well as-built/construction details (including depth, grouting, sanitary seal, and screened interval). Well depths should be within 10 feet in depth of each other. Are they?  Yes  No Well screens lengths should be within one foot of each other? Are they?  Yes  No MassDEP will evaluate data and make a determination.
6. Average daily pumping rates must be within plus or minus 10 percent of each other. Are rates within this range?  Yes  No If no, the well with the highest pumping rate must be the sampled representative well.

**Wells pumping less than 100,000 gpd:**

1. To be considered representative of each other, the wells must have overlapping Interim Wellhead Protection Areas (IWPA). Do the IWPA's overlap?  Yes  No
2. Are septic systems present in any of the IWPA's?  Yes  No

**Wells pumping greater than 100,000 gpd:**

1. To be considered representative of each other, wells must have the same Zone II. Do the wells share the same Zone II?  Yes  No
2. Do you have a Zone II by-law?  Yes  No
3. Are septic systems present in the Zone II?  Yes  No

**All wells:**

Is all property in each Zone I owned by the PWS?  Yes  No

In the following table list each well identified in the first question of this section and check all potential sources of fecal contamination that are located in the Zone I of each well. NOTE: If there are any sources of fecal contamination checked for a particular well, MassDEP will likely deny inclusion of the well in the proposed representative monitoring plan. Any sources of potential fecal contamination in the Zone I must be indicated on the PWS map submitted with this application. Use multiple sheets if necessary.

Well Name					
Septic systems					
Recreation areas					
Farming/pastures					
Manure/waste storage					
Flooding at wellhead					
Golf course					
Storm drains					
Other					

Complete and submit Attachment B – Proposed Triggered Monitoring Plan along with a map or schematic.

DWP Use Only: Date Received \_\_\_/\_\_\_/\_\_\_ Action Taken:

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