

Appendix A

Triggered Source Water Monitoring (TSWM) Requirements
Step-by-Step Example – Source Water Systems

Triggered Source Water Monitoring (TSWM) Requirements

Source Water System Example

The following is a step-by-step guide of TSWM Procedures.

The Ground Water Supply (GWS) used for this example has two wells (well 1 and well 2). Each month the operator collects 3 routine distribution samples for total coliform and one raw sample from each well (well 1 and well 2) for total coliform and *E. coli*. This is a total of 5 samples each month.

On Tuesday December 12th, 2009 the GWS is contacted by the lab by telephone and notified that one of the three distribution samples collected on Monday December 11th is total coliform-positive (but fecal and/or *E. coli* negative). All the other routine distribution and well samples collected on December 11th are negative. Below describes the next steps the water operator must take.

Step 1

The operator must know if his water supply has been issued a triggered source water monitoring (TSWM) special exceptions permit (SEP). (*See page 9-4 of this chapter*)

YES, we do have a TSWM SEP issued by the Illinois EPA.

If this is the case, then no additional raw well samples are required for the month. The GWS will have to only collect the three distribution repeat samples. One repeat must be collected at total coliform (TC) positive location, the second within 5 service connections downstream of the TC positive location, and the third within 5 service connections upstream of TC positive sample. All must be collected within 24-hours, or in this example, by Wednesday December 13th.

NO, we do not have a TSWM SEP issued by the Illinois EPA (or our past TSWM SEP has been revoked). Proceed to Step 2.

Step 2

In addition to collecting the normal three repeat samples (one at the distribution total coliform (TC) positive location, the second within 5 service connections downstream of TC positive location, and the third within 5 service connections upstream of the TC positive sample); **one sample must be collected from each well (well 1 and well 2)**. Please note that this is in addition to the routine well samples already collected on December 11th.

If either well sample result comes back ***E. coli* positive**, proceed to Step 3.

If the well sample is negative for both total coliform and *E. coli*, no further well sampling is required for TSWM.

If any of the repeat distribution samples are positive, you will need to collect another set of three distribution repeats (regardless of the well sample results). This must continue until you get a clean set (as required under the Total Coliform Rule).

Step 3

Since one of the well repeat samples was *E. coli* positive, you must issue public notice immediately after notification of the positive result (and in no case later than 24-hours). Please see *Chapter 1 Public Notification Appendix C* of this Handbook for example template/requirements.

In addition to issuing the public notice, you must contact the Illinois EPA Ground Water Rule Coordinator at 217-785-0561 to discuss additional follow-up actions. Depending on your situation, you may be required to collect 5 additional samples from the well that had the *E. coli* positive result and/or initiate other remediation measures.

If you provide water to another community water supply, proceed to Step 4.

Step 4

Since one of the well repeat samples was *E. coli* positive, you must contact each water supply that receives your water (either directly or indirectly). This contact must be made immediately (within 24-hours). The satellite system must then also issue public notice immediately after your notification to them of the positive result (and in no case later than 24-hours). Please see *Chapter 1 Public Notification Appendix C* of this Handbook for example template/requirements.

Additional Notes

- (1) In the example above, only one routine distribution was originally positive that triggered TSWM. If multiple routine distribution samples are positive, then an equal number of source water samples must be collected from each source (Step 2).

For example, a system collects 4 total coliform each month for the TCR and two well samples. If three of the four samples are total coliform positive, the system would be required (within 24 hours) to take three *E. coli* samples at each well or a total of 6 source samples. The intent of the rule is to identify contamination of the source. Multiple TC+ in the distribution system means more triggered samples are collected, which means a better body of data is available on the quality of that source.

- (2) Under Step 1, a TSWM SEP is mentioned. How do I know if my GWS has one? How can I get one if we do not have one? When a GWS is initially issued a TSWM SEP by the Illinois EPA, they are sent written notification. This notification should be kept by the GWS. If still not sure, call the Illinois EPA Ground Water Rule Coordinator at 217-785-0561. Likewise, if you know you do not have a TSWM SEP and would like to discuss the evaluation criteria, please contact the Coordinator.
- (3) If you collect distribution routine samples throughout the month (and do not have a TSWM SEP) and have multiple distribution positives on different days, then the rule of thumb is to treat each as a new detection and conduct TSWM for each occurrence. If you think you have already established it is a distribution deficiency resulting in the multiple detections, please

contact the Ground Water Rule Coordinator at 217-785-0561 to discuss eliminating the TSWM until the distribution deficiency is resolved. However, please remember that TSWM sampling is due within 24-hours so any contact with the Illinois EPA must be made quickly to allow time for TSWM should your request be denied.

- (4) If you cannot meet the 24-hour TSWM sampling timeframe for reason beyond your control, please contact the GWR Coordinator at 217-785-0561 or your Illinois EPA Regional Office and request an extension (extension must be obtained prior to the 24-hours expiring, not after the fact).
- (5) In reference to Step 2, if a GWS collects only 1 routine distribution sample a month, they must collect 4 repeats. One repeat must be collected at total coliform (TC) positive location, the second within 5 service connections downstream of the TC positive location, and the third within 5 service connections upstream of TC positive sample. The fourth repeat can be collected anywhere within the distribution system. If the GWS is required to collect TSWM samples, the TSWM well sample may be used to satisfy the fourth repeat.