



**SECONDARY TREATMENT SAMPLE SITING PLAN  
NONCOMMUNITY PUBLIC WATER SUPPLIES**

**Water Supply Information**

_____ Secondary Treatment Supply Name		_____ WSSN
_____ Address		_____ Total Population
_____ City, State, Zip Code	_____ County	_____ Non-Transient Population

**Contacts – Water Supply**

_____ Name and Title	_____ Email	_____ Telephone Number
_____ Name and Title	_____ Email	_____ Telephone Number

**Contacts – EGLE**

_____ EGLE Drinking Water Analyst	_____ Email	_____ Telephone Number
_____ EGLE Drinking Water Engineer	_____ Email	_____ Telephone Number

**Sample Siting Plan Prepared by:**

_____ Name	_____ Title	_____ Date
_____ Signature	_____ Email	_____ Telephone Number

**Water System Owner Certification:**

_____ Name	_____ Title	_____ Date
_____ Signature	_____ Email	_____ Telephone Number

By signing this sample siting plan, you are agreeing to sample according to this plan.

# I. Bacteriological

Total Routine Required Samples:	Monitoring Frequency:
Primary Water Supply Name:	Source Water Type: <input type="checkbox"/> Groundwater* <input type="checkbox"/> Surface Water

## Bacteriological Sampling Requirements

Collect at least the total routine samples per the monitoring period from the routine sites listed below. For a chlorinated system, measure and record the chlorine residual at the same time and place as every routine and repeat samples collected. Results from all routine and repeat sites are used to determine compliance. Results from other sites might not be allowed for compliance.

**Table 1. Hot Water Distribution System Samples Sites**

No.	Routine Site Location (Hot)	Upstream Repeat Location (Hot)	Downstream Repeat Location (Hot)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

**Table 2. Cold Water Distribution System Samples Sites**

No.	Routine Site Location (Cold)	Upstream Repeat Location (Cold)	Downstream Repeat Location (Cold)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

When a routine sample is positive for total coliform or *E. coli*, collect samples from repeat sites in the distribution system. \*Public water supplies using groundwater that serve secondary treatment (ST) supplies must also sample all water sources for each positive routine sample results within the ST supplies. ST supplies that purchase their water must notify their water supplier within 24 hours of a positive routine sample result(s). This requirement does not apply if the ST supply receive water from a surface water supplies.

**Comments:**

## Bacteriological Monitoring Instructions

### Instructions to Develop Bacteriological Sample Siting Plan

1. Choose distribution system sample sites that are representative of water throughout the distribution system in your facility. If possible, choose sites where a smooth nonthreaded sampling tap is available or can be installed. A layout floor plan of all sites listed in the Distribution System Sample Site Tables 1 and 2 can show that sites are representative of water throughout the distribution system of your secondary treatment. Including a layout floor plan with the Sample Siting Plan is strongly recommended. If approved by EGLE, list more than the required number of routine sites and describe the procedure in the Comments box, such as, "Collect a sample from either distribution site 1 or site 2, or both, to fulfill the 1 required routine sample per month." Please note that results from all routine and repeat sites are used to determine compliance. Results from other sites might not be allowed for compliance.
2. Indicate repeat sites within five fixtures upstream and downstream of the routine site. If approved by EGLE, an alternate fixture can be selected. Use the Comment field to explain why the alternate fixture is necessary.
3. If your routine lab is not open on weekends, choose an alternate lab that is, in case sampling is required at that time.
4. Update the Sample Siting Plan when population changes, when existing sample sites are no longer representative of water throughout the distribution system, when routine or repeat sites become unavailable, or when supply contact information changes.
5. Submit the Sample Siting Plan to the EGLE field office for review and possible revision. For field office addresses, visit [Michigan.gov/EGLE](http://Michigan.gov/EGLE) and click on Contacts.
6. Keep a copy easily accessible to the water operator and available for inspection by EGLE staff.

### Monitoring

1. Collect samples at regular time intervals throughout the monitoring period when several samples are required and collect early during the monitoring period to have time to address any issue that can delay the sampling and analysis.
2. Notify your public water supply if you have a positive sample within 24 hours, if applicable.
3. Failure to collect all required routine samples in a monitoring period is a violation. Another total coliform monitoring violation in the following 12 months will result in a fine. Notify EGLE if monitoring was not performed as required.

### Sample Instructions

1. Remove the aerator, if present.
2. Flush sample tap for a minimum of two minutes, allowing the water to reach a constant temperature
3. Disinfect sample tap by either using chlorine bleach, or flaming the tap with a torch.
4. Flush sample tap again.
5. Reduce water stream to a modest, non-splashing flow (pencil width in diameter).
6. If your water is disinfected, measure and record the disinfectant residual at the same time and place as every routine and repeat sample collected (e.g., comments section of the chain of custody form and Monthly Operation Report). Flush the tap until you feel a temperature change, then record the chlorine residual measurement.
7. Remove cap from bottle and hold cap with the inner surface facing downward. Do not set cap down. Dust-like particles in the bottle are a preservative; do not empty out or rinse out this preservative.
8. Fill the bottle to the shoulder (1/4 inch from the top). Avoid contact with sample tap or other surfaces. Do not overfill.
9. Recap the sample bottle before turning off the water.
10. Complete the laboratory sample request form and attach it to the sample bottle.
11. Mail or deliver the sample to a laboratory certified by the state to perform bacteriological analyses. Samples must be analyzed within 30 hours of collection. Note that some laboratories are not available to accept samples on Fridays, weekends, holidays, etc. Having an alternative laboratory that is available on Fridays, weekends, and holidays is strongly advised.

**Procedure When Sample Result Is POSITIVE**

1. If a distribution system sample result is positive for total coliform bacteria or *E. coli*, then collect repeat samples **within 24 hours** of learning of the positive result from all of the following sites:
  - a. The site of the original positive sample result(s); and
  - b. The designated upstream and downstream site(s).
  - c. A supply that purchases groundwater must notify the supplier of water within 24 hours of a positive total coliform or *E. coli* routine sample result.

Note: If approved by EGLE, when an upstream repeat location is temporarily not available, sample the closest available location to the repeat site that is also upstream of the routine site and similarly for the downstream side.

2. Notify the EGLE field office within 24 hours to learn what further action is required when **more than one** distribution system sample result is positive for total coliform bacteria. Follow up action includes a formalized assessment of the water supply.
3. Notify the EGLE field office **by the end of the day** if any sample result is positive for *E. coli*.

## II. Disinfection Byproducts

Total Number of Samples:	Frequency:	Monitoring Period:	Disinfection by Product: <input type="checkbox"/> TTHM <input type="checkbox"/> HAA5 <input type="checkbox"/> Bromate
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No.	Site Location	Hot / Cold	No. of Samples	Rationale for site location (distal point, low usage, etc.)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Peak historic month: \_\_\_\_\_ (month of highest formation, based on past results or monitoring schedule as approved by EGLE).

### Monitoring Frequencies Considerations:

- If monitoring yearly or every 3rd year, monitoring must occur during the peak historic month.
- If monitoring every 3rd month, check the group below that contains the peak historic month. Monitor during each of the months in the group.

- January, April, July, and October (1st month of each calendar quarter)
- February, May, August, and November (2nd month of each calendar quarter)
- March, June, September, and December (3rd month of each calendar quarter)
- No quarterly monitoring required as per monitoring schedule

- If this supply adds ozone, it is required to monitor for **Bromate**. Supplies using ozone must collect one (1) sample per month for bromate at the entry point (plant tap) of each treatment plant that uses ozone. EGLE may reduce frequency from monthly to quarterly if the **Bromate** running annual average (RAA) is  $\leq 0.0025$  mg/L (milligrams per liter) (2.5 parts per billion [ppb]). Indicate below if the facility is using ozone:

- Currently Injecting Ozone, bromate monitoring is required
- Not Injecting Ozone

- Number of disinfection samples are also based on population of the supply, therefore any change in population must be assessed and will require an update of this plan. Refer to first page for population information.

### Schematic

It is strongly recommended to include a floor plan showing the sample sites for disinfection byproducts in this monitoring plan.

### Note:

If EGLE lab is used, sample containers are Unit 36VO, Test Code CXTM and Unit 36HA, Test Code CXHA.

### III. Lead/Copper (Cold Water Side)

Frequency:		Number of Samples:
Site Number	Site Location and Description (Cold)	Reason for Site Selection
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Site Number	Site Location and Description	Reason for Site Selection
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		

Sample containers: One (1) liter wide-mouth bottles should be used for lead and copper corrosion control sampling. Do not use narrow mouth bottles you may have on hand. Sample containers: Order Unit 36CC, Test Code CCUB if using EGLE laboratory.

Lead and copper samples shall be collected first-draw with a flow rate like the rate used under normal use (as in filling a glass of water). The fixture must have been used the day prior. Procedures shall not include a “pre-stagnation flush” but must involve a minimum six-hour stagnation period prior to first-draw sampling.

Ensure site locations are specific and descriptive, and the reason for selecting the site is provided.

**Example:**

Site Number	Site Location and Description (Cold)	Reason for Site Selection
1	South Tower Waiting Room Drinking Fountain (HC-02).	Plumbing to sink consists of pre-1988 plumbing, high patient use area.

## IV. Water Quality Parameters (**Hot** and **Cold**)

### Distribution Samples

Frequency:		Monitoring Period:			
No.	Sample Description	Hot / Cold	Building or Area	Sampling Location (room number, fixture)	Sample Tag ID
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					



**Entry Point Samples**

Frequency:		Monitoring Period:			
No.	Sample Description	Hot / Cold	Building or Area	Sampling Location (room number, fixture)	Sample Tag ID
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

**Example:**

Frequency: <b>Quarterly</b>		Monitoring Period: <b>March, June, September, December</b>			
No.	Sample Description	Hot / Cold	Building or Area	Sampling Location (room number, fixture)	Sample Tag ID
1	WQP Water Distribution	Hot	North Tower	Room 123, bathroom sink hot	DS-123
2	WQP Water Entry Point	Hot	North Tower	Utility room 456, sample tap after injection point	TP-456
3	WQP Facility Entry Point	Cold	North Tower	Utility room 023, sample tap after injection point	EP-001

The following list specifies the laboratory sample containers (if using EGL laboratory):

- Order Unit 33, Test Code CORR for Conductivity, Alkalinity, and Calcium
- Order Unit 33, Test Code CPH for pH Determination
- Order Unit 36CC, Test Code CCUB for Lead/Copper for corrosion control
- Order Unit 32, Test Code R for Chloride and Sulfite

**Sampling Procedures**

1. Remember to record the WSSN each water sample form. Without this number on the sample form, you may not be credited for collecting a required sample.
2. Obtain sample bottles, instructions, and report forms. These materials can be ordered directly from the EGL laboratory or at the certified laboratory of your selection. Payment of EGL laboratory fees is the responsibility of the owner or operator of the water supply.
3. If a laboratory other than the EGL laboratory is used for sample analysis, it must be certified by EGL for the analysis performed, and a copy of the results of the analysis must be provided to this office by the water supply owner/operator as soon as possible to avoid monitoring violations.