



RTCR Sample Siting Plan Template for Small Seasonal Public Water Systems

(Final 12/04/2015)

This template includes sample siting plan requirements under the Revised Total Coliform Rule (RTCR) for seasonal, ground water, noncommunity systems serving fewer than 1001 persons.

Contact Information for the Water System		
System Name:		Date:
Address:		PWS ID #:
Season start date (mm/dd):	Season end date (mm/dd):	County:
The following people are thoroughly familiar with this sample siting plan and are authorized to implement all or part of the plan as necessary.		
Name	Address	Phone Numbers
		Office:
		Mobile:
		Office:
		Mobile:
Persons Responsible for collecting samples:		
Primary:		Phone:
Backup:		Phone:

Routine and Repeat Bacteriological Sampling Locations:
 If the water system only has one sample tap: Only complete the "Primary Location" section highlighted below (and the "Source Water Sampling" section if applicable), and collect the repeat samples five minutes apart from same tap.

Primary Location
Routine Sample Location _____ Describe location and sample tap (e.g., Office hand sink)
Repeat Sample Locations
1) _____ (Same location as routine sample)
2) _____ (Within 5 taps upstream from the routine sample)
3) _____ (Within 5 taps downstream from the routine sample)

First Alternate Location
Routine Sample Location _____ Describe location and sample tap (e.g., Office ladies room sink)
Repeat Sample Locations
1) _____ (Same location as routine sample)
2) _____ (Within 5 taps upstream from the routine sample)
3) _____ (Within 5 taps downstream from the routine sample)

Second Alternate Location
Routine Sample Location _____ Describe location and sample tap (e.g., Office men's room sink)
Repeat Sample Locations
1) _____ (Same location as routine sample)
2) _____ (Within 5 taps upstream from the routine sample)
3) _____ (Within 5 taps downstream from the routine sample)

Source Water Sampling (check one box below based on description)
<input type="checkbox"/> No Additional Source Water Sample If the water system has <u>a single well</u> and has been designated as a <i>Ground Water Rule Minimal Treatment System</i> (consisting of a water softener or cartridge filter) in its Ohio EPA monitoring schedule, then all repeat sites listed in this sample siting plan are considered source water sites. Therefore, the system <u>does not</u> need to collect a separate source water sample when conducting repeat sampling.
<input type="checkbox"/> Source Water Sample Required A water system that has been designated as a <i>Ground Water Rule Substantial System</i> in its Ohio EPA monitoring schedule is not eligible for dual purpose sampling. Following a total coliform-positive routine sample, the system shall collect a source water sample (i.e., before any treatment) in addition to three repeat samples. If multiple wells are in use (e.g., lead-lag), a sample shall be collected from each well. If only one well is in use, then only one source water sample is required and shall be collected from the well in service at the time the positive routine sample was collected. The source water sample(s) will be collected from: _____ Describe source water location(s)

Certified Laboratory Information		
	Primary Laboratory	Backup Laboratory
Name		
Address		
Phone Number		
Lab Certification Number		
Days of the week and times lab will accept samples		

Start-Up Special Purpose Samples		
START-UP SAMPLING	<ul style="list-style-type: none"> As part of the Start-Up Checklist, depressurized and partially-depressurized seasonal systems are required to collect at least one special purpose sample at the service connection considered to be most susceptible to contamination for total coliform (TC) analysis. The service connection farthest from the entry point is often the appropriate location. Multiple TC samples are recommended especially in distribution systems that are large or split into different sections. For each start-up special purpose sample, write "Start-Up" in the comments section on the laboratory Sample Submission Report. The sample must be TC-negative before the system may open. If the sample is TC-positive, repeat the disinfection and flushing procedure (See instructions in the Start-Up Checklist). Following flushing, collect 2 special purpose samples at least 24 hours apart. Both samples must be TC-negative before the system can serve water to the public. 	
	1) _____ Location 1	2) _____ Location 2

Seasonal Systems on Quarterly Routine Monitoring for at Least One Quarter:			
TEMPORARY ROUTINE SAMPLES	Systems that are on quarterly monitoring for at least one quarter and have a total coliform-positive routine sample result during that quarter are required to collect 3 routine samples the following month. These samples can be collected in one of two ways. Select one of the following options based on the number of sample taps available (see Option 1 and Option 2 below).		
	OPTION 1: If all three temporary routine samples are collected from different sample taps , they may be collected on the same day from the following three locations. We recommend spreading sample collection out over the month even if samples will be collected at different taps to ensure the quality of the water over time, etc.		
	1) _____ Location 1	2) _____ Location 2	3) _____ Location 3
	-OR-		
OPTION 2: If all three temporary routine samples are collected from the same sample tap , they will be taken at regular intervals throughout the month from the following location:		_____ Location	

Fully-Pressurized Seasonal Systems															
Seasonal systems that are fully-pressurized year-round must <u>select one month during each quarter they are open to the public</u> for routine monitoring. The selection shall be based on peak demand or peak vulnerability (e.g., month with highest water usage). Check one box in each quarter below. Routine samples are required to be collected during the selected months.															
1 st Qtr	Jan.	Feb.	Mar.	2 nd Qtr	Apr.	May	June	3 rd Qtr	July	Aug.	Sept.	4 th Qtr	Oct.	Nov.	Dec.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Copies of this plan are maintained at the following locations:		
1)	2)	3)

Ohio EPA District Office Contact Name:		Phone:	
--	--	--------	--

SEASONAL SYSTEM DEFINITIONS

The Revised Total Coliform Rule (RTCR) requires different start-up and routine monitoring requirements depending on the type of seasonal system. The three types of seasonal public water systems include:

1. Depressurized Seasonal:

The entire water system is depressurized (all of the waterlines are drained) for a period of time each year.

2. Partially-Depressurized Seasonal:

The water system is partially-depressurized (some of the waterlines are drained) for a period of time each year.

3. Fully-Pressurized Year-Round Seasonal:

The entire system stays fully-pressurized (none of the waterlines are drained), but no one has access to the water for a period of time during the year (must be more than 90 consecutive days).

INSTRUCTIONS

All public water systems are required to collect routine and repeat total coliform samples at sites that are representative of water throughout the distribution system according to a written sample siting plan.¹ The purpose of this document is to provide you (the system) with a template you may use to prepare your sample siting plan to comply with the Revised Total Coliform Rule (RTCR). This template is tailored to the needs of a small system. Please contact your Ohio EPA District Office representative with any questions.

Your existing sample siting plan must be updated **before April 1, 2016** when new requirements take effect.

The plan must be available to the Ohio EPA inspector for a detailed review that will be done during each sanitary survey. The Director may make adjustments to ensure sampling is representative.

Keep an up-to-date sampling plan (the plan is to be updated annually) at your facility where it can be easily reached by people responsible for collecting samples. If you contract with a laboratory to collect your samples for you, provide the laboratory with a copy of your completed sample siting plan.

Although your laboratory is required to provide Ohio EPA with the results of your tests for total coliform, occasionally errors may occur and a laboratory may fail to report these results. It remains your responsibility to **ensure Ohio EPA receives a copy of your total coliform test results**. You are required to keep copies of these results for 5 years.²

Depending on the results of your total coliform sampling, **you may be required to post a public notice** explaining the results.³ If this occurs, your district office representative will send you a letter that includes the appropriate public notice.

ROUTINE SAMPLING

- 1. Collect Samples.** Collect your total coliform routine samples at the locations designated in your sample siting plan. Follow the instructions for total coliform sample collection located in Appendix A.

2. Check Chlorine Residual. Are you a nontransient noncommunity public water system that adds chlorine or chloramines as a disinfectant? Yes No (circle one)

If so, before you take the routine or repeat total coliform sample(s), measure the total chlorine residual using a DPD colorimetric test kit with a digital display and a precision of 0.1 mg/L or another analytical method as described in Ohio Administrative Code rule 3745-81-27(C)(1). Allow the tap to run for 3 to 5 minutes before measuring the residual. Then disinfect the tap and proceed with total coliform sampling.

3. Complete Sample Submission Form. You will need to provide your laboratory with the following information for each sample or your sample will not be analyzed: facility name, PWS ID, sample collection date and time, sample collector, name of sample tap, and DS000 for "Sample ID". Clearly mark each sample as **routine**.

a) Start-up special purpose samples should be marked as **special purpose** and should say "**Start-Up**" in the comments section of the Microbiological Sample Submission Report.

4. Have Samples Analyzed. All of your total coliform bacteria routine samples must be analyzed within 30 hours of collection at a laboratory certified by Ohio EPA or the results will not be valid. In this case you may have to collect more samples if the monitoring period has not expired or you will have a monitoring violation if the monitoring period has expired.⁴

REPEAT SAMPLING

5. Collect Repeats within 24 Hours. If a routine sample result is total coliform positive you must take repeat samples within 24 hours of notification.⁵

a) Measure total chlorine before taking total coliform samples, if required (see Step 2).

b) Collect a set of 3 repeat samples from the taps designated as repeat sample locations in your sample siting plan.

c) Clearly mark each sample as **repeat**.

d) Ohio EPA must receive all repeat sample results no later than the end of the next business day after the result was obtained. Your system will be required to complete a Level 1 Assessment if Ohio EPA does not receive all repeat sample results as required.⁶

e) A public water system is in violation of the maximum contaminant level (MCL) for Escherichia coli (E. coli) when any of the following conditions occur.⁷

(1) The public water system has an E. coli-positive repeat sample following a total coliform-positive routine sample.

(2) The public water system has a total coliform-positive repeat sample following an E. coli-positive routine sample.

(3) The system fails to collect all required repeat samples following an E. coli-positive routine sample.

(4) The system fails to test for E. coli when any repeat sample is total coliform-positive.

A public water system in violation of the E. coli MCL shall notify the public using Tier 1 notification requirements in accordance with rule 3745-81-32 of the Administrative Code.

Repeat Monitoring Tips

Avoid outside taps, taps that swivel, and hose bibs.

The first tap is the same tap used for the routine sample(s). In addition, select 2 other taps and note their location in your Sample Siting Plan.

Ensure the sample locations listed in the Sample Submission Report match the locations listed in the Sample Siting Plan.

If there are not 2 other taps available, a single tap may be used more than once, but the water must run continuously between samples for no less than 5 minutes (if you are also required to check total chlorine residual, you only need to measure it once).

6. If any of the repeat samples are total coliform-positive, contact your district office representative immediately for additional instructions.

SAMPLING THE MONTH FOLLOWING A TOTAL COLIFORM POSITIVE SAMPLE

7. If you are monitoring with **one routine sample per quarter**, you will be required to collect at least 3 routine total coliform samples the month following the total coliform positive. If you are **monitoring monthly for total coliform**, you would return to your routine monthly total coliform sampling schedule. Repeat samples do not count towards this requirement.

References:

¹OAC rule 3745-81-50(B)

²OAC rule 3745-81-55(B)(1)

³OAC rule 3745-81-32

⁴OAC rule 3745-81-27(D)(1)

⁵OAC rule 3745-81-52(A)(1)

⁶OAC rule 3745-81-53(A)

⁷OAC rule 3745-81-54(A)

Appendix A

*Collection of Drinking Water Samples
for Total Coliform Bacteria Analysis*

The following is the approved procedure for the collection of drinking water samples for analysis of total coliform, as detailed in the methods approved in Ohio Administrative Code rule 3745-81-27. The following procedure should be followed **in detail** to ensure a valid laboratory analysis.

1. Select the sampling tap.
 - a. A tap, such as faucet or small valve, is preferable. Do not sample from hoses or drinking water fountains.
 - b. Avoid taps with a leak at the stem or taps with a swivel joint.
 - c. Aerated or screened nozzles may harbor bacteria. The aerator or screen must be removed before collection of the sample.
 - d. Use/install a smooth nosed sample tap.
2. Place all carbon filters, sediment filters and water softeners on bypass unless operated by the public water system.
3. Sanitize the nozzle of the tap with a chlorine solution.
 - a. Use a 6% sodium hypochlorite solution, such as household liquid bleach. **Do not use chlorine solutions with special scents.** To prepare a sanitizing solution, add one ounce of bleach to one gallon of water (or 1 tablespoon per half-gallon). Store the mixed solution in a tightly closed screw-capped container. The solution should be discarded and remade 6 months after preparation. Stronger solutions can be used; however, some faucet discoloration may result.
 - b. Flush the sample tap to waste for 1 minute. Close the valve.
 - c. Apply the sanitizing solution (prepared in step a.) to the nozzle. This can be accomplished by either using a spray bottle or a plastic bag.
 - i. Using a spray bottle, saturate the tap opening with sanitizing solution then wait at least 2 minutes before proceeding, or
 - ii. Place a bag over the nozzle and hold the top of the bag tightly on the tap. Alternately squeeze and release the bag to flush the solution in and out of the tap. Do this for 2 minutes. A fresh solution and bag must be used to sanitize each tap.
4. Flush the tap.

The sample to be collected is intended to be representative of the water in the main. The tap must be opened fully and the water run to waste for at least 3-5 minutes to allow for adequate flushing of the piping between the tap and water main.
5. Reduce the flow from the tap to the width of a pencil to allow the sample bottle to be filled without splashing.
6. Open the sample bottle.
 - a. Grasp the bottom of the same bottle.

- b. Remove the cap and hold the exterior of the cap between your fingers while filling the sample bottle. Do not lay the cap down. Take care to not touch the mouth of the sample bottle or the inside of the cap with fingers as the sample could become contaminated.
 - c. The sample bottle must be open only during the collection of the sample.
7. Fill the sample bottle.
- a. Do not rinse out the sample bottle before collecting the sample. Do not remove any pills, powder, or liquid from the sample bottle. The sample bottle contains a small amount of sodium thiosulfate to neutralize any chlorine in the water.
 - b. Do not touch the rim or mouth of the sample bottle during collection of the sample.
 - c. Do not overfill the sample bottle. Fill the sample bottle to within ½” to 1” of the top or to the indicator line on the sample bottle.
8. Immediately recap the sample bottle tightly.
9. If there is any question as to whether a sample has become contaminated during collection, it must be discarded and a new one collected in a new sample bottle.
10. Deliver the sample to the laboratory as soon as possible.
11. Samples should be kept cool after collection and during transport to the laboratory. The laboratory must receive the sample so that analysis can be initiated within 30 hours after collection. Allow the laboratory adequate time to analyze the sample. Certified laboratories will not test samples greater than 30 hours old because the results will be invalid.

Additional information

- A bacteriological sample report form is supplied with each sample bottle. The top half of the form is to be filled out in a legible manner using an indelible pen, rubber stamp, or typewriter. Do not use a fountain pen or other pens having water soluble ink.
- Samples must be collected in sample bottles supplied by the certified laboratory.
- Bacteriological sample report forms that have not been properly completed, including the name of the water system, PWS ID#, address, date and time of collection, sample type and location (specific tap) and signature of collector will not be accepted for bacteriological examination.