



Seasonal Total Coliform Sample Siting Plan Template

Division of Drinking and Ground Waters

(Revised 2/15/2018)

This template is intended for **seasonal public water systems only** (see definitions on page 3). All other public water systems should use the "General Total Coliform Sample Siting Plan Template." Contact the local Ohio EPA District Office for assistance.

Water System Information

Water System Name: _____ PWS ID Number: OH

Water System Address: _____

Water System Contacts

Primary Contact

Name: _____ Cell Phone: _____

Email: _____ Home Phone: _____

Backup Contact

Name: _____ Cell Phone: _____

Email: _____ Home Phone: _____

Laboratory Contacts

Primary Laboratory

Name: _____ Phone Number: _____

Address: _____ Certified Lab #: _____

Days of week/times lab will accept samples: _____

Backup Laboratory

Name: _____ Phone Number: _____

Address: _____ Certified Lab #: _____

Days of week/times lab will accept samples: _____

Section 1. Start-Up Sample

Complete this section if you operate a **depressurized or partially-depressurized seasonal system** (see definitions on page 3).

Collect at least one total coliform sample prior to opening for the season. Contact Ohio EPA if the sample is unsafe (positive/present).

Start-Up Location #1 (Required): _____

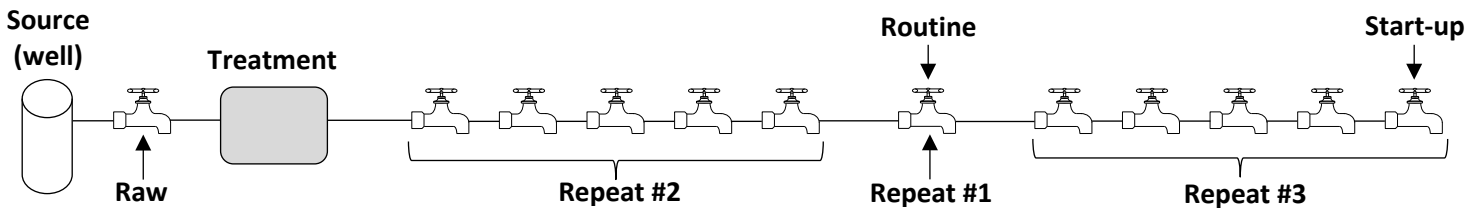
(Sample location that is the most susceptible to contamination (e.g., furthest from well))

Start-Up Location #2 (Optional): _____

(Sample location that is susceptible to contamination)

Start-Up Location #3 (Optional): _____

(Sample location that is susceptible to contamination)



Section 2. Primary Sample Locations

Section 2. Routine Location: _____

(Location where the monthly/quarterly sample is routinely collected (e.g., women’s restroom))

If the Routine is unsafe (positive/present), collect the samples in Sections 2a and 2b (if applicable) within 24 hours:

Section 2a. Repeat Locations

- Repeat #1: _____
(Same location as the Routine location)
- Repeat #2: _____
(Sample location within 5 sample taps closer to the well/source)
- Repeat #3: _____
(Sample location within 5 sample taps further from the well/source)

What should I do if I only have 1 acceptable sample tap?

Collect all 3 repeat samples from the same sample tap and let the water run 5 minutes between collecting each sample.

The Routine location and all 3 Repeat sample locations should be the same (e.g., women’s restroom).

Section 2b. Source Water Sample Location(s)

- See Section 2c below to determine if applicable
- Collect 1 sample from **each well** in use when the Routine sample was collected

- Raw #1: _____
(Sample location before any treatment for the 1st well)
- Raw #2: _____
(Sample location before any treatment for the 2nd well)
- Raw #3: _____
(Sample location before any treatment for the 3rd well)

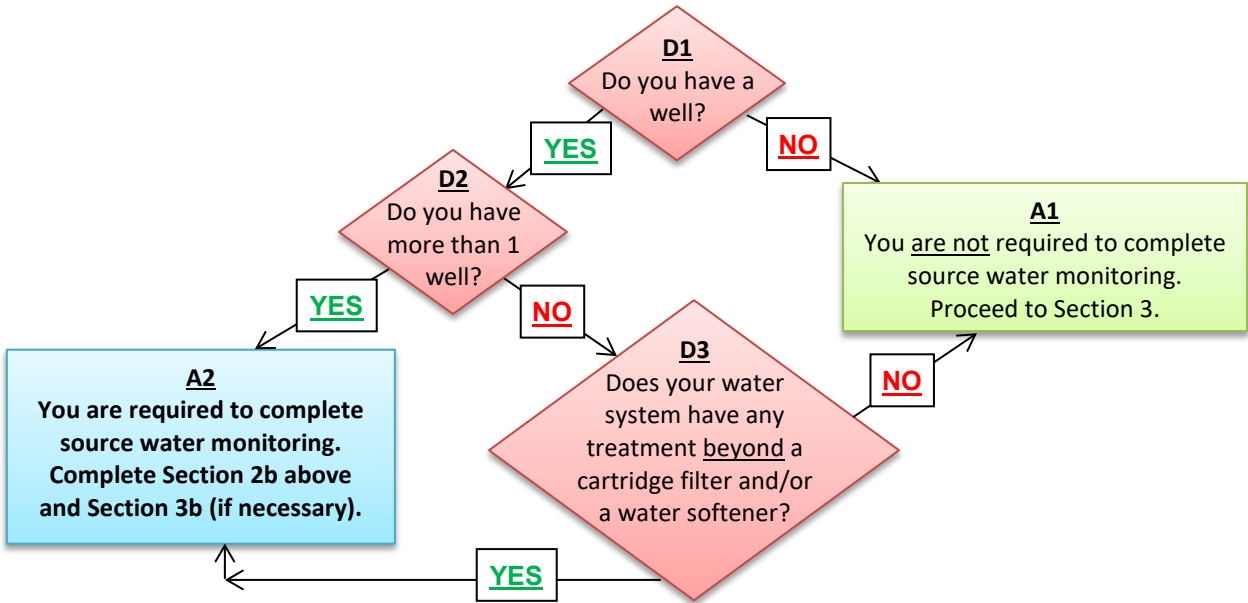
What should I do if I have 2 wells that operate at the same time (e.g., lead-lag)?

If you are not sure which well was in use when the Routine sample was collected, then you must collect a source water sample from each well.

First well = Raw #1
Second well = Raw #2

Section 2c. Determine if Source Water Sampling is Required

If the Routine sample is unsafe, some ground water systems are required to collect at least one source water sample. Answer the following questions to determine if this requirement applies to your system:



Section 3. Alternate Sample Locations

Complete this section if your water system needs to collect a Routine sample from a different location than what is listed in Section 2 above (e.g., partially-depressurized seasonal systems may need to collect a sample from a different location during the off-season).

Section 3. Alternate Routine Location: _____

(Describe another location where a monthly/quarterly sample is collected (e.g., men’s restroom))

If the Routine is unsafe (positive/present), collect the samples in Sections 3a and 3b (if applicable) within 24 hours:

Section 3a. Repeat Locations

Repeat #1: _____
 (Same location as the alternate Routine location)

Repeat #2: _____
 (Location within 5 sample taps closer to the well/source)

Repeat #3: _____
 (Location within 5 sample taps further from the well/source)

Section 3b. Source Water Locations (see Section 2c)

Raw #1: _____
 (Location before any treatment for the 1st well)


Raw #2: _____
 (Location before any treatment for the 2nd well)

Raw #3: _____
 (Location before any treatment for the 3rd well)


Section 4. Temporary Routine Locations

Complete this section if you **monitor quarterly for at least one quarter** during the year.

If the Routine sample is unsafe, collect 3 Routine samples the following month **using Option A or Option B:**

Option A = 3 Different Taps  15th
 Collect 3 samples on the same day from 3 different locations:

Location #1: _____
Location #2: _____
Location #3: _____

Option B = 3 Different Days  7th 14th 21st
 Collect 1 sample from the same location on 3 different days that are evenly spaced throughout the month (e.g., 1 sample the 1st week, 1 sample the 2nd week, 1 sample the 3rd week).

Location: _____

Section 5. Routine Sample Month Selection

Complete this section if you monitor quarterly and you have a **fully-pressurized year-round seasonal system** (see definitions below).

Select one month during each quarter you are open when you will collect your Routine sample. The month selected shall be based on peak demand or peak vulnerability (e.g., month with the highest water usage).

| 1 st Quarter: | | | 2 nd Quarter: | | | 3 rd Quarter: | | | 4 th Quarter: | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Check One (if open) | | | Check One (if open) | | | Check One (if open) | | | Check One (if open) | | |
| Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | 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"/> |

SEASONAL SYSTEM DEFINITIONS

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 on a regular basis to reflect any changes in your system. Annual verification of information is recommended.

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 public water system that supplies water treated with chlorine or chloramines for disinfection purposes? Yes No (check 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 Report.** 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**.
- 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
- Measure total chlorine before taking total coliform samples, if required (see Step 2).
 - Collect a set of 3 repeat samples from the taps designated as repeat sample locations in your sample siting plan.
 - Clearly mark each sample type as **repeat**.
 - 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
 - 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
 - The public water system has an *E. coli*-positive repeat sample following a total coliform-positive routine sample.
 - The public water system has a total coliform-positive repeat sample following an *E. coli*-positive routine sample.
 - The system fails to collect all required repeat samples following an *E. coli*-positive routine sample.
 - The system fails to test for *E. coli* when any repeat sample is total coliform-positive.
- 6.** If any of the repeat samples are total coliform-positive, contact your district office representative immediately for additional instructions.

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).

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*

Collection of Drinking Water Samples for Total Coliform Bacteria Analysis

Introduction

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.

Procedure

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. It is recommended to 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.** For example, a public water system includes a single building that has 3 sample taps. One of the sample taps has a carbon filter under the sink. If the total coliform sample will be collected from this faucet, then the carbon filter must be put on bypass during sample collection because the filter is not used by the entire water system.
3. **Prepare a chlorine solution.**
 - a. Use a 6% sodium hypochlorite solution, such as household liquid bleach. **Do not use chlorine solutions with special scents.**
 - b. To prepare a sanitizing solution, add one ounce of bleach to one gallon of water (or 1 tablespoon per half-gallon).
 - c. Store the mixed solution in a tightly closed, screw-capped container.
 - d. The solution should be discarded and remade 6 months after preparation.
 - e. Stronger solutions can be used; however, some faucet discoloration may result.
4. **Remove the Aerator.** The aerator or screen must be removed before collection of the sample. Aerated or screened nozzles may harbor bacteria.
5. **Flush the sample tap to waste for 1 minute, then close the valve.**
6. **Apply the sanitizing solution (prepared in step 3) to the nozzle.** This can be accomplished by either using a spray bottle or a plastic bag.
 - a. **Spray bottle:** Using a spray bottle, saturate the tap opening with sanitizing solution then wait at least 2 minutes before proceeding; or
 - b. **Plastic bag:** 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.
7. **Flush the tap for 3-5 minutes.** 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.
8. **Reduce the flow from the tap to the width of a pencil** to allow the sample bottle to be filled without splashing.
9. **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.

- 10. Fill the sample bottle to within ½” to 1” of the top or to the indicator line on the sample bottle.**
- 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.
 - Do not touch the rim or mouth of the sample bottle during collection of the sample.
 - Do not overfill the sample bottle.
- 11. Immediately recap the sample bottle tightly.**
- 12. If there is any question as to whether a sample has become contaminated during collection, discard the sample and collect a new one in a new sample bottle.**
- 13. Deliver the sample to the laboratory as soon as possible.** The laboratory must receive the sample so that analysis can be initiated within 30 hours after collection. Certified laboratories will not test samples greater than 30 hours old because the results will be invalid. It is recommended to keep samples cool after collection and during transport to the laboratory.

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.

Contact

For more information, contact your inspector in the appropriate District Office:

Northwest: 419-352-8461

Northeast: 330-963-1200

Central: 614-728-3778

Southwest: 937-285-6357

Southeast: 740-385-8501