

Sample Siting Plans and Coliform Sample Collection



Lillian Johnson
Revised Total Coliform Rule
TCEQ Public Drinking Water
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Overview and Purpose

- Goal of the Sample Siting Plan (SSP)
- Sample Siting Plan Template
- Water System Distribution Map
- Coliform Sample Collection
- Quality Assurance



Goal of the SSP

To identify routine, repeat, and triggered source monitoring coliform sample locations and a sampling schedule that is representative of water in the distribution system.



RTCR Sample Siting Plan

- Required by all public water systems
- Included with Monitoring Plan
- SSP must be updated as necessary and submitted to the TCEQ prior to coliform sample collection

Elements of an SSP

- Routine coliform sampling locations
- Repeat coliform sampling locations
- Coliform sampling schedule
- Groundwater sources
- Water distribution system map



Elements of an SSP

Sampling Locations

- Routine coliform sampling locations
- Repeat coliform sampling locations

IV. Routine and Repeat Monitoring Location Table

RTCR Sample Siting Plan

Routine and Repeat Sampling Locations*

Original Routine (OR) Sample Site: **123 Main Street - ROUTINE**

UPSite1: **125 Main Street**

DNSite1: **121 Main Street**

UPSite2: **127 Main Street**

DNSite2: **119 Main Street**

UPSite3: **129 Main Street**

DNSite3: **117 Main Street**

UPSite4:

DNSite4:

UPSite5:

DNSite5:

REPEAT

Coliform Sample Tap Selection



Select a coliform sampling location that:

- Is free of leaks, obstructions (tall grass), or attachments (water softener, aerator)
- Has a downward-facing outlet
- Is at least 18 inches above the ground
- Can be disinfected using a torch or strong bleach solution



Elements of an SSP

Coliform Sampling Schedule

- Coliform sampling schedule

V. RTCR Sampling Schedule

- ~ A public water system must collect samples at regular time intervals throughout the month, except systems using only groundwater and serving 4,900 or fewer people who may collect all required samples on a single day if they are taken from different sites.
- ~ Please provide a written description in the text box below to explain the system's sample collection schedule (e.g., at either regular time intervals throughout the month or on a single day) which is representative of water throughout the distribution system.

Coliform samples are taken at regular intervals throughout the month which is representative of water in the distribution system.



Elements of an SSP

Groundwater Sources

- Groundwater sources

VI. Groundwater Source Monitoring Sites		
<p>~ Sample locations necessary to meet the requirements of the Ground Water Rule (GWR) must be reflected in the Sample Siting Plan. Public Water Systems must include their TCEQ Assigned Well Source Identification Number (i.e., G0000000A), sample location, and whether or not the Well(s) Entry Point (treated) is used as a repeat monitoring location OR if the Well (raw) is used as a repeat location to satisfy Triggered Source Monitoring (TSM) requirements under the GWR.</p> <p>Reminder: If a groundwater system serves a total of 1,000 people or less, an entry point sample can be used as the third repeat location. A triggered source monitoring (TSM) sample can double as the third repeat sample if the groundwater system only operates one well.</p>		
Groundwater Wells		
Assigned Source ID	Sample Location	Used as Repeat Sample Location?
- G1234567A	Back of bldg. at 111 Main Street	<input type="checkbox"/> Yes



Repeat Coliform Samples

If a PWS reports a total coliform or *E. coli* positive compliance sample:

- Three repeat samples are required:
 - One repeat at the original location
 - One repeat sample upstream
 - One repeat sample downstream



Triggered Source Monitoring

If a PWS reports a total coliform or *E. coli* positive distribution sample:

- A Triggered Source Monitoring (TSM) sample is required for each positive distribution sample at every well that was online and serving water during the time of total coliform-positive sample.

SSP SUCCESS



- List addresses, not descriptions or names of people at a residence.
- List more routine and repeat sampling locations than the minimum requirement.
- Keep this document current and revise as necessary.



SSP SUCCESS (continued)

A System is only authorized to collect coliform samples at locations that are listed in the System's SSP.

Choose alternate sites to account for unexpected changes!

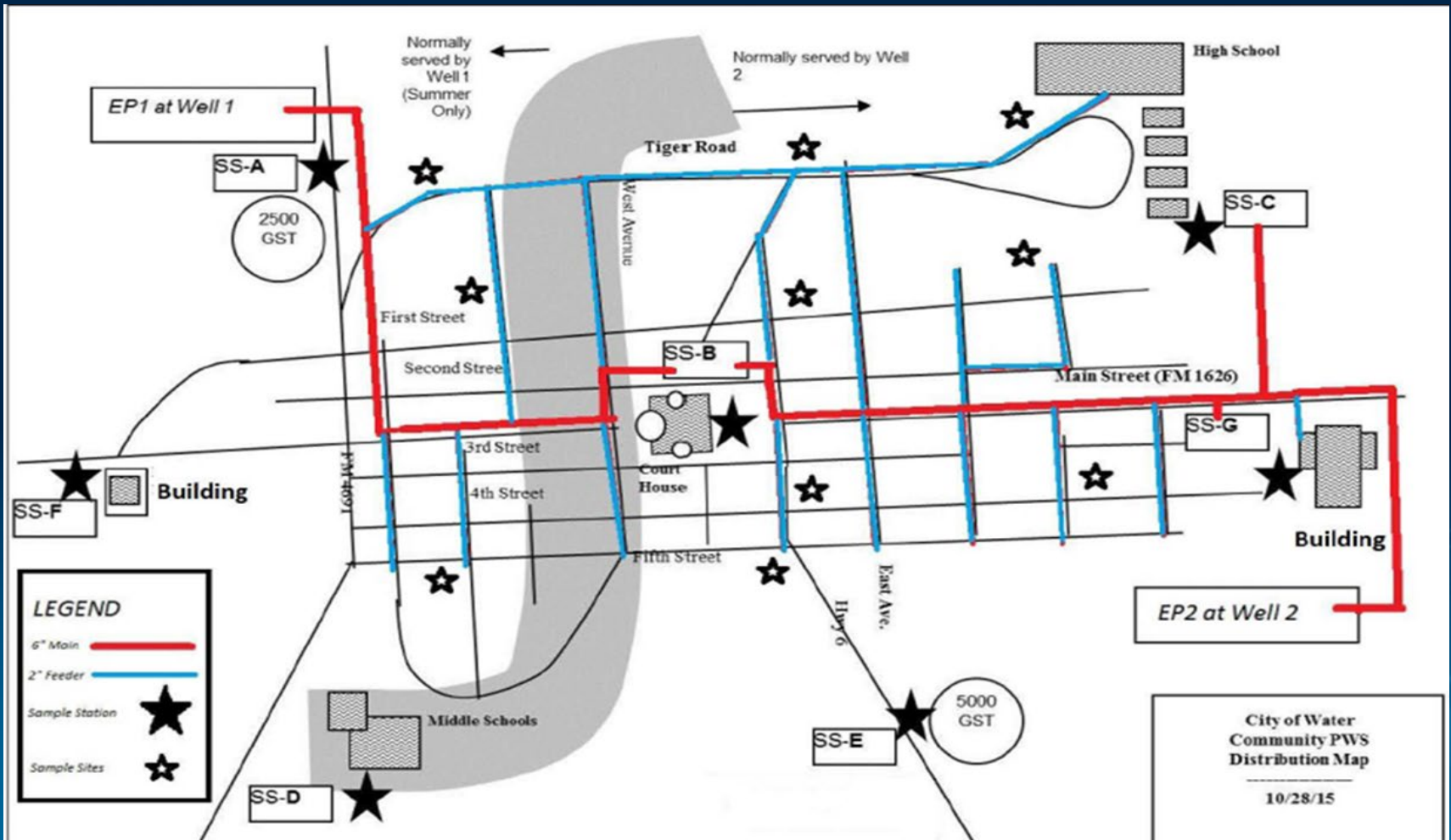


Elements of a Distribution Map

- Routine coliform sampling locations
- Water mains and their sizes
- Entry point source locations
- Water storage facilities (if any)
- Pressure plane boundaries (if > 1)

Elements of a Distribution Map

Example



Coliform Sample Collection *Guidance*



After completion and submission of the RTCR Sample Siting Plan and Distribution Map, the PWS needs to document how to properly collect a coliform sample and train all sample collectors.

TCEQ has developed Guidance of Bacteriological Sample Collection Standard Operating Procedures (SOP).

This document can be adopted or used as a guide.

Coliform Sample Collection

Sample Bottles



- Use a sterile coliform sample bottle that is obtained from a NELAP-accredited laboratory.
- Ensure that extra bottles are on-hand.
- Do not use bottles that are damaged, opened, or expired.

Coliform Sample Collection

Before Collecting



Prior to coliform sample collection:

- Wash hands properly.
- Disinfect the sample tap by flaming with a torch or disinfecting with a strong bleach solution.
- Flush the sample tap for several minutes.
- Measure and record the disinfectant
- Reduce residual flow to a pencil-sized stream.

Coliform Sample Collection

What Not to Do

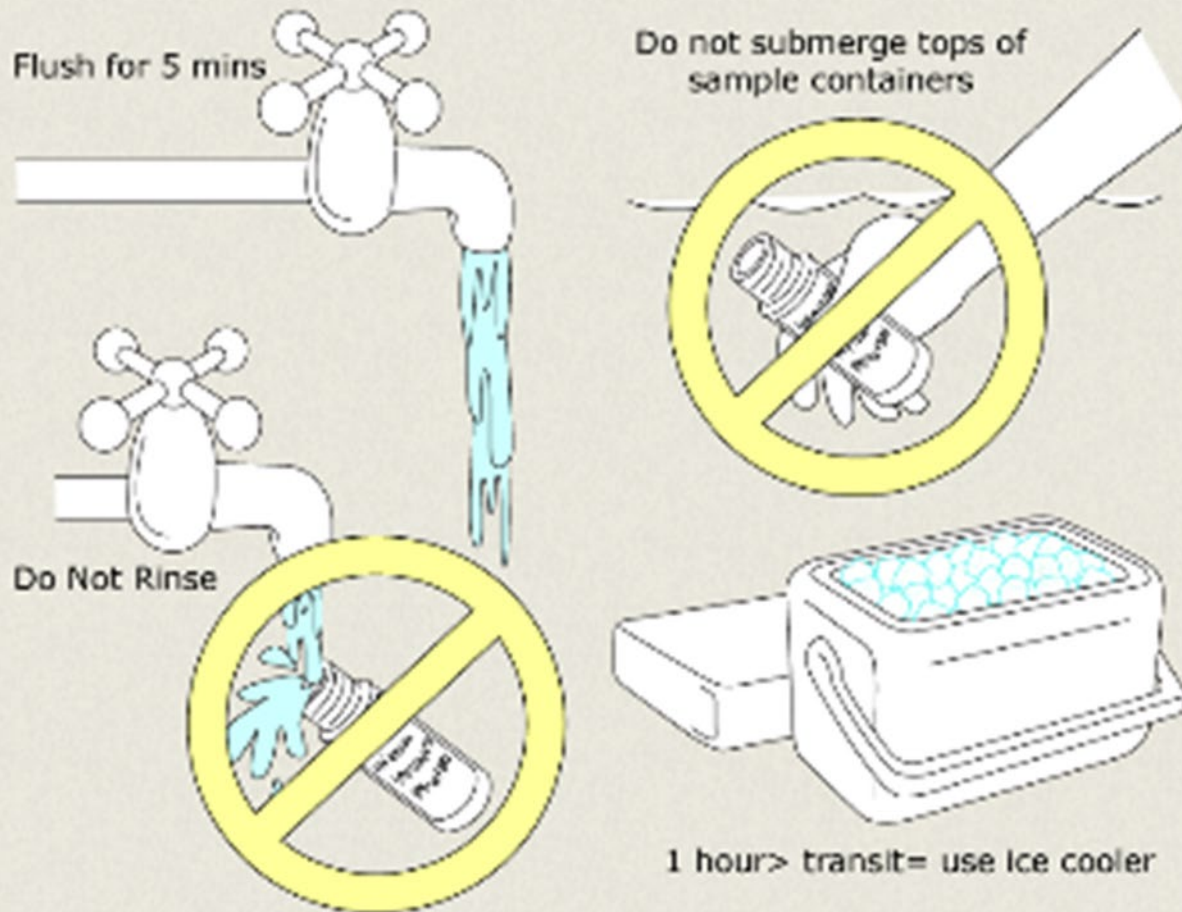


DO NOT:

- Sample on windy or rainy days, if possible
- Rinse or overfill the sample bottle
- Touch the interior surface of the sample bottle or cap
- Place the sample cap on the ground

Coliform Sample Collection

Sample Collection Steps



Coliform Sample Collection

After Sample Collection



After coliform sample collection:

- Immediately transport the samples to an ice-chest cooled by reusable ice packs.
- Verify that the Microbial Reporting Form is filled out accurately and completely.
- Transport the samples to your laboratory as soon as possible and within 30 hours.

Microbial Reporting Form (MRF)



TCEQ Microbial Reporting Form															TCEQ Form 10525 09/2017								
Water System Identification & Sample Collection Information (Please type or use block print)																							
Public Water System ID:		TX		1234567																			
Public Water System Name:		Water Girl Inc.													TCEQ Laboratory ID:								
County:		Travis													Test Results must meet all accreditation / certification requirements unless stated otherwise.								
SHADED AREA FOR LABORATORY USE ONLY																							
Report Results To:	Name:		Crystal Cleer													Sample Iced?		Requisitioned By (Sampler):		Date / Time:			
	Address:		123 Watering Hole													<input type="checkbox"/> Yes <input type="checkbox"/> No		Received By (Counter, if applicable):		Date / Time:			
	City:		Austin													Temperature		Requisitioned By (Counter):		Date / Time:			
	State:		TX		Zip Code:		78753											°C		Received By (Lab):		Date / Time:	
	Phone #:		(512) 456-7890		Other Contact:													Corrected Temp					
	Sampler Name (Print):		Bobby Boucher													Lab Comments:		Incubation Date & Time					
	Signature:		<i>Bobby Boucher</i>													Tested By:		Begin		End			
	Operator License #:		WG1234567		<input type="checkbox"/> Owner <input checked="" type="checkbox"/> Operator <input type="checkbox"/> Other:													Laboratory Approval		Date:		Time:	
	Report to Client By:															Date:		Time:					
	Falsification of this form or tampering with water samples is a crime punishable under state and/or federal law. (Texas Penal Code, Title 9, Chapter 37.10) By signing this form, the sampler acknowledges that samples were collected according to the systems established sample collection procedures, and that all information is accurate.																						
Sample Identification/Location		Sample Type: (i one)		Collected		Sample ID & Date of Originating Sample (All Repeat, Replacement, & Triggered Raw Samples)		Chlorine Residual		Rejection Code (if applicable) - Please Resubmit		Lab Results						Laboratory Sample ID Number					
Use Specific Address / Location Identified in Sample Siting Plan		Routine Distribution, Repeat, Raw Well, Special, Construction		Date, Time				Circle "F" for Free, "T" for Total (mg/L)				Test Method: Chlorine, Total Coliform, E. Coli											
Raw Wells - Use Source ID for Well Sampled (Example: G1234567A)				Month, Day, Year, Please circle AM or PM								Absent, Present, Absent, Present, Absent, Present											
456 Crystal Lake Ave		✓		5 18 20 8:30 pm				1.20		T		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>											
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MRF Reminders

Please ensure:

- System name, PWS ID, and contact information are accurate
- Sampler name and signature are included
- Time and date of collection are recorded
- Sample type is identified
 - Compliance-Raw, repeat, routine
 - Non-compliance-Special or construction



Coliform Sample Collection

- If the coliform sample is rejected by your lab:
 - A replacement sample is required within 24 hours of being notified.
- If the coliform sample is total coliform-positive (TC+):
 - Repeat and TSM samples are required within 24 hours of being notified by your lab.



Record Retention

- Keep records of Sample Siting Plans for at least 10 years
- Keep records of Microbial Reporting Forms and sample analyses for at least 5 years
- Keep records of the sampling SOP in use at the time with the MRF records



Quality Assurances

- Maintain good correspondence with your laboratory.
- Ensure you review your MRF with your laboratory prior to releasing the samples.
- Update the System's SSP as needed and ensure proper training for all operators.



Assistance

- If you need assistance-Don't wait!!
- Call TCEQ- we are here to help
- TCEQ provides free financial, managerial, and technical (FMT) assistance
- To request FMT assistance, please call 512-239-4691
- THANK YOU for all that your do!

Questions



Lillian Johnson
Revised Total Coliform Rule

lillian.johnson@tceq.texas.gov

512-239-5283