

STAGE 1 DISINFECTANTS/DISINFECTION BYPRODUCTS RULE
CHLORINE AND CHLORAMINES MONITORING PLAN
EXAMPLE FORMAT FOR GROUND WATER SYSTEMS¹

SECTION 1: SYSTEM INFORMATION			
System Name:		County:	
PWS ID Number:		Contact Person:	
Phone Number:	Cell (optional):	Fax Number (optional)	
e-mail address (optional):			

SECTION 2: SYSTEM CHARACTERISTICS			
SYSTEM TYPE		POPULATION DATA	
<input type="checkbox"/>	Community	Total Population Served ^{1*} :	
<input type="checkbox"/>	Non-Transient, Non Community	Number of Service Connections-	
<input type="checkbox"/>	Consecutive*	Source of Population Data (i.e. U.S. Census, Based on number of service connections (indicate multiplier) etc.)	
		Effective Date of Population Data	

^{1*}In accordance with 62-550.821(2)(a), the number of persons served by a wholesale system must include the number of persons served by the consecutive systems that receive finished water from the wholesale system.

SECTION 3: SOURCES OF RAW WATER:			
<input type="checkbox"/> Ground	How Many Wells?		
<input type="checkbox"/> Purchased	If finished or raw water is purchased from a wholesale system(s), indicate the name and PWS ID Number for the system.	Wholesale System Name	PWS ID Number

¹Monitoring plans must be prepared in accordance with 62-550.821(11), F.A.C. This example format does not address the monitoring plan requirements for subpart H systems or for PWSs using chlorine dioxide. Example format prepared by the Florida Department of Environmental Protection and the Florida Rural Water Association. Effective date 09/30/03.

SECTION 4: DISINFECTANTS
INDICATE THE DISINFECTANTS UTILIZED IN THE TREATMENT
PROCESS AS A DISINFECTANT OR OXIDANT (CHECK ALL THAT
APPLY)

<input type="checkbox"/> Chlorine	If chlorine is selected as the primary disinfectant, indicate the chlorine type below	Does your system have one or more disinfection addition points after the entrance to the distribution system? (i.e. booster chlorination) <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, indicate the number of addition points in your system:</i>	
<input type="checkbox"/> Chloramines			<input type="checkbox"/> Chlorine Gas
<input type="checkbox"/> Other (Specify ¹)			<input type="checkbox"/> Sodium Hypochlorite
	<input type="checkbox"/> Calcium Hypochlorite		
	<input type="checkbox"/> Other (Specify)		

¹Monitoring plans must be prepared in accordance with 62-550.821(11), F.A.C. This example format does not address the monitoring plan requirements for subpart H systems or for PWSs using chlorine dioxide.

SECTION 5: SCHEMATIC DRAWING OF THE DISTRIBUTION SYSTEM

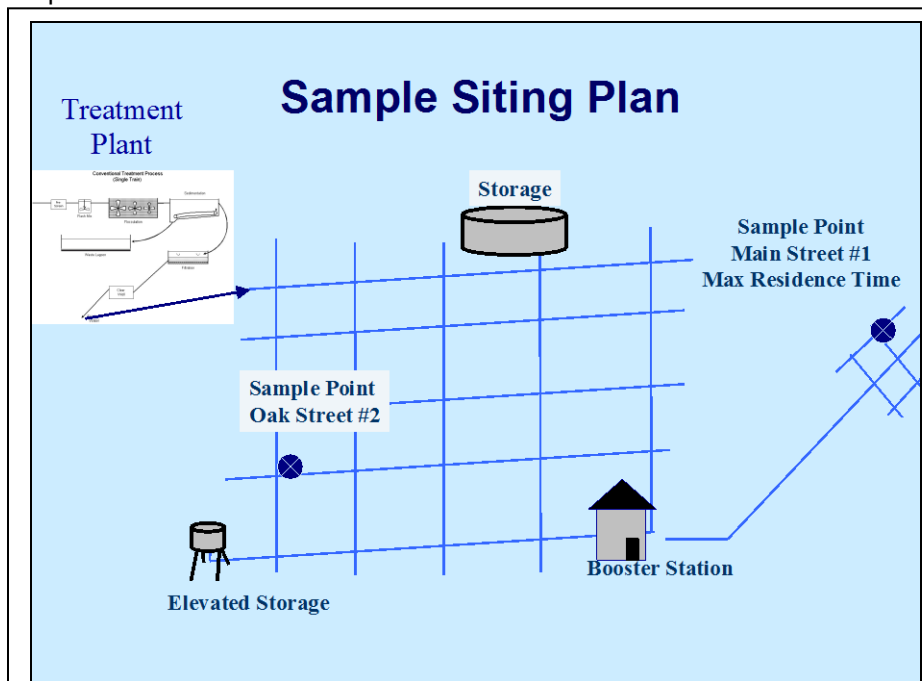
In accordance with Rule 62-550.821(11) (e) attach a schematic drawing of the system's distribution system. The schematic drawing at a minimum, must include the following information: (An example is provided below)

Entry points to the distribution system (i.e. water treatment plants and, if the system is a consecutive system, entry points from the wholesale systems)

Finished water storage facilities and booster chlorination facilities

Sampling locations identified and numbered

An example is provided below.



SECTION 6: DISTRIBUTION SYSTEM CHARACTERISTICS

In accordance with 62-550.821(11)(f) F.A.C., provide a summary of typical distribution system operating characteristics. The summary should address seasonal operating characteristics and identify the areas where average and maximum residence times are expected to occur in the distribution system. Provide a brief explanation of why you believe the locations that you selected represent the maximum residence time(s). (You may have more than one location to represent your maximum residence time sampling point.) For example, "the maximum residence time is located in an area with several dead-ends"; "in the summer months few residents are served by our water system resulting in extended residence times", etc).

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SECTION 8: SAMPLE COLLECTION PROCEDURES						
Parameter	Container	Cap/Septa Material	Sample Collection Guidelines	Preservative(s)	Maximum Holding Time	Analytical Method(s)
Chlorine	> 500 mL Plastic or Glass	N/A	Grab sample. Either free or total residual chlorine measurement is acceptable	None	Analysis should be completed within 15 minutes of collection	Free-Standard Methods (SM) 4500-C1D, CL F, 4500-C1 G (DPD Colormetric)
						Combined- SM 4500 CI D, F, G
						Total-SM 4500-CI D, E, F, G, I
Chloramines	> 500 mL Plastic or Glass	N/A	Grab sample. The residual measurement must be combined or total chlorine	None	Analysis should be completed within 15 minutes of collection	Standard Methods 4500C1 D, 4500C1E, 4500CL F4500-C1 I 4500-C1G- (DPD Colormetric) ASTM Method D 1253-86
pH	Plastic or Glass	N/A	Grab Sample	None	Sample should be analyzed within 15 minutes of collection	All methods allowed in 40 CFR 141.23(k)(1) including but not limited to Standard Method 4500 H B, EPA Method 150.1 & 150.2

SECTION 9: MONITORING SUMMARY/CONDITIONS FOR REDUCED MONITORING FOR GROUND WATER SYSTEMS¹

PARAMETER	APPLICABILITY	ROUTINE MONITORING FREQUENCY	CRITERIA FOR REDUCED MONITORING	REDUCED MONITORING FREQUENCY*
Chlorine/ Chloramines	PWSs that use the disinfectants	At the same time and location and frequency as total coliform sampling	<u>Monitoring may not be reduced.</u>	Not Applicable

SECTION 10: METHOD FOR CALCULATING COMPLIANCE FOR MAXIMUM RESIDUAL DISINFECTANT LEVELS (MRDL) (CHLORINE AND/OR CHLORAMINES)

Sample Locations: Within the distribution system at the same time and locations where samples for total coliform are collected in accordance with 62-550.518, F.A.C.

Compliance Determination: In accordance with 40 CFR 141.133(c)(1), compliance is based on a running annual arithmetic average computed quarterly, using the monthly averages of all samples collected

How to Determine Compliance with the MRDL:

1. Each month, add together the disinfectant residual results of all the samples taken during the month at the total coliform sampling locations. Divide by the total number of total number of samples. This is your monthly MRDL average.
2. Determine the running annual average. To determine the running annual average, add the twelve most recent consecutive monthly MRDL averages together, then divide by twelve. This is your running annual average.
3. Compare your running annual average to the MRDL for chlorine / chloramines of 4.0 mg/L. If your running annual average for the MRDL is less than 4.0 mg/L, the facility is in compliance with the maximum residual disinfectant level.

An example MRDL compliance calculation is provided below. The results are listed in mg/L.

Month	MRDL Monthly Averages	Reporting the MRDL to the Department
January 2004	4.5	<ul style="list-style-type: none"> ◆ Report your Monthly MRDL results to the Department on a quarterly basis. ◆ Submit the quarterly RAA within 10 days of the end of each quarter ◆ For example, January-March 2004 results are due to the Department on April 10, 2004.
February 2004	3.5	
March 2004	3.2	
April 2004	4.6	
May 2004	3.3	
June 2004	2.4	
July 2004	3.4	
August 2004	2.9	
September 2004	2.8	
October 2004	2.7	
November 2004	2.4	
December 2004	3.1	
MRDL Running Annual Average	Add the last 12 monthly averages to calculate the RAA $4.5 + 3.5 + 3.2 + 4.6 + 3.3 + 2.4 + 3.4 + 2.9 + 2.8 + 2.7 + 2.4 + 3.1 =$ $38.8/12 \text{ (Most Recent Months)} = 3.2 \text{ mg/L}$	

The running annual average is 3.2 mg/L. Therefore, the system in the example is in compliance with the MRDL of 4.0 mg/L.