Citation No. 03-11-14C-008

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

IN RE: **CRESSEY ELEMENTARY SCHOOL**
Water System No. 2400097

TO: Mr. Ed Hickman, M.O.T. Director
Cressey Elementary School
11818 W. Gregg Street
Ballico, CA 95303

CC: Merced County Environmental Health Division
Jared Steeley, Operator, 2705 Big Tree Avenue Denair, CA 95316

CITATION FOR NONCOMPLIANCE
TOTAL COLIFORM MAXIMUM CONTAMINANT LEVEL VIOLATION
June 2014

Section 116650, Chapter 4, Part 12, Division 104 of the California Health and Safety Code (CHSC), authorizes the issuance of a citation for failure to comply with a requirement of the California Safe Drinking Water Act, or any regulation, standard, permit, or order issued thereunder.

VIOLATION

The State Water Resources Control Board, Division of Drinking Water Field Operations Branch (hereinafter 'Division') hereby issues a Citation to Cressey Elementary School (hereinafter 'School'), for failure to comply with Section 116555(a)(1) of the CHSC and Section 64426.1(b)(2) and Section 64430 of Title 22, California Code of Regulations

(CCR). Specifically, the School (mailing address: 11818 W. Gregg Street Ballico, CA 95303) failed to comply with the Total Coliform Maximum Contaminant Level (MCL) and the Ground Water Rule for the month of June 2014.

Section 64426.1(b)(2) specifies that a public water system collecting fewer than forty (40) samples per month is in violation of the total coliform MCL when more than one (1) sample collected during any month is total coliform-positive.

Section 64430, 141.402 (2) specifies that a ground water system must collect, within 24 hours of notification of the total coliform-positive sample, at least one ground water source sample from each ground water source in use at the time the total coliform-positive sample was collected under 22 California Code of Regulations sections 64422 and 64423.

The School is required to collect one distribution system bacteriological sample per month. On June 24, 2014, the School submitted bacteriological water quality analysis results for a routine sample that was positive for total coliform bacteria. The routine sample was absent for fecal coliform or Escherichia coli (E.coli) bacteria. On June 27, 2014, the School collected four repeat samples from the distribution system. All four repeat samples tested positive for total coliform bacteria but negative for E. coli bacteria. No source sample was collected from the well in the month of June. The distribution system was disnfected and flushed immediately after the repeat sample results were reported. The following month, the four routine samples collected on July 25, 2014, were absent for total coliform bacteria. The School was not in session during the months of June and July. Due to having more than two total coliform positive samples collected in a month, the School failed the Total Coliform Rule for June 2014.

On July 29, 2014, the sample collected at the wellhead tested negative for total coliform and E. coli bacteria. Because the source sample was collected late in the month of July instead of 24 hours after the notification of a positive routine sample, the School failed the Ground Water Rule in the month of June 2014.

The above violations are classified as a non-continuing violation.

NOTIFICATION REQUIREMENTS

Section 64426.1(c) requires a public water system to notify the Division and the consumers of the water system, when a violation of Section 64426.1(b)(1) through (4) occurs. Notification to the Division shall be by the end of the business day on which the violation has been determined. If the Division is closed, notification shall be within 24 hours of the determination. The Division was notified in accordance with the above-referenced section.

A Tier 2 Public Notice for violations of paragraphs 64426.1(b)(1) or (2)) shall be given pursuant to Sections 64463.4 and 64465. The Tier 2 Public Notice shall include the mandatory health effects language from Appendix 64465-A for a total coliform MCL failure.

Section 64463.4 allows non-community water systems to notify customers/consumers of the TCR MCL violation by posting a Tier 2 notice in conspicuous locations throughout the area served by the School and the use of one or more of the following methods to notify persons not likely reached by posting: publication in a daily or weekly newspaper or newsletter distributed to customers, email message to employees or students, posting on the Internet or intranet, or direct delivery to each customer. The Tier 2 notification methods are included in Attachment B along with instructions on completing the public notice. In addition to public posting, the School shall either mail or conduct direct delivery of the public notice to

all customers served within the general service area. Section 116450(g) requires that upon receipt of notification from a public water system, schools must notify school employees, students, and parents (if the students are minors), residential rental property owners or managers (including nursing homes and care facilities) must notify their tenants and business property owners, managers or operators must notify employees of businesses located on the property. These secondary notification requirements are included in the public notice.

Since there were no students or staff at the school facilties during the time the violations occurred, the Divison hereby waives the secondary notification by mail or direct delivery.

DIRECTIVES

The Cressey Elementary School is hereby directed to take the following actions:

1. By **September 15, 2014**, the School shall provide public notification of the Total Coliform Maximum Contaminant Level failure and Ground Water Rule failure by posting using Attachment B.

2. By **September 15, 2014,** the School shall provide proof of public posting of the total coliform MCL violation and Ground Water Rule violation notification to the consumer using Attachment C.

3. The School shall continue its investigation into the cause of the positive samples. By **September 15, 2014**, the School shall advise the Division in writing of the findings of this investigation and any corrective actions taken. An investigation form is provided in Attachment D. The investigation shall include, but not be limited to, the following:

a) Current operating procedures that are or could potentially be related to the increase in bacterial count, such as main repairs or well work conducted without disinfection.

b) System pressure loss to less than 5 psi.

c) Potential cross connections.

d) Physical evidence indicating bacteriological contamination of facilities (such as openings in the well casing, storage tank or evidence of animal activity in the vicinity of the well).

e) Analytical results of any additional investigative samples collected, including well samples.

f) Consumers' illness suspected of being waterborne.

g) Records of the investigation and any action taken.

4. By **September 15 ,2014**, the School shall submit an updated Bacteriological Sample Siting Plan (BSSP) to reflect the required source monitoring following a total coliform positive sample under the Ground Water Rule. A copy of the BSSP guidelines and template is attached (Attachment E).

5. By **August 31, 2014**, the School shall submit a written response to the Division acknowledging that it has received this citation and will comply with all the directives listed herein.

6. The School shall reimburse the Division, in accordance with an invoice that shall be provided to the School, the costs for enforcement activities, and such reimbursement shall be made prior to September 1 of the fiscal year following the fiscal year in which such costs are incurred as described in CHSC Section 116577(a)(1-2) and 116577(b).

7. All items requested by this Citation shall be submitted to:

Kassy D. Chauhan, P.E.
Senior Sanitary Engineer, Merced District
State Water Resources Control Board
Division of Drinking Water Field Operations Branch
265 W. Bullard Avenue, Suite 101
Fresno, CA 93704

FURTHER ENFORCEMENT ACTIONS

Section 116270, Division 104, Part 12, Chapter 4 of the CHSC authorizes the Division to: issue additional citations with assessment of penalties if the public water system continues to fail to correct a violation identified in a citation; take action to suspend or revoke a permit that has been issued to a public water system if the system has violated applicable laws or regulations or has failed to comply with orders of the Division; and petition the superior court to take various enforcement measures against a public water system that has failed to comply with orders of the Division. The Division does not waive any further enforcement action by issuance of this citation.

PARTIES BOUND

This citation shall apply to and be binding upon Cressey Elementary School, its officers, directors, agents, employees, contractors, successors, and assignees.

SEVERABILITY

The directives of this citation are severable, and Cressey Elementary School comply with each and every provision thereof, notwithstanding the effectiveness of any other provision.

CIVIL PENALTY

Section 116650, subsection (d) and (e) of the CHSC allow for the assessment of a civil penalty for the failure to comply with the requirements of the Safe Drinking Water Act. Failure to comply with any Directive of this Citation may result in the Division imposing an administrative penalty of not less than $200 (two hundred dollars) for each day that the violation continues beyond the date set for correction in this Citation.

The Division does not waive any further enforcement action by issuance of this citation, and expressly reserves the right to issue a citation with penalties for the violations on which the Directives of this citation are based.

8/18/14
Date

Kassy D. Chauhan
Kassy D. Chauhan, P.E.
Senior Sanitary Engineer, Merced District
State Water Resources Control Board
Southern California Branch
DRINKING WATER FIELD OPERATIONS BRANCH

Attachments:

Attachment A:	Summary of Bacteriological Samples collected in June-July 2014
Attachment B:	Tier 2 Public Notice
Attachment C:	Proof of Notification
Attachment D:	Positive Total Coliform Investigation form
Attachment E:	BSSP Template & Guidelines

KDC/mlm/2400097/03-11-14C-008 TCRMCL June 2014.doc

Bacteriological Distribution Monitoring Report

2400097 CRESSEY SCHOOL

Distribution System Freq: 1/M

Sample Date	*Location*	*T Coli*	*E Coli*	*F Coli*	*HPC*	*Type*	*Cl2*	*Violation*	*Comment*
6/24/2014	Site 2	P	A			Routine			
6/27/2014	Site 2	410.6	<1.0			Repeat			
6/27/2014	Site 3	204.6	<1.0			Repeat			*TCR & GWR violation*
6/27/2014	Site1	172.3	<1.0			Repeat			
6/27/2014	Tank	260.2	<1.0			Repeat			
7/2/2014	4 samples: Tank & Sites A, B, C	<1.0	<1.0			Routine			
7/29/2014	Well - follow sample	A	A			Routine			

Violation Key

MCL	Exceeds the maximum contaminant level
MR1	No monthly sample for the report month
MR2	No quarterly sample for the report month
MR3	Incorrect number of routine samples for the report month
MR4	Did not collect 5 routine samples for previous month's positive sample
MR5	Incorrect number of repeat samples as follow-up to a positive sample
MR6	No source sample
MR7	No summary report submitted
MR8	Other comments and/or info.

Instructions for Tier 2 Resolved Total Coliform Notice Template

Template Attached

Since exceeding the total coliform bacteria maximum contaminant level is a Tier 2 violation, you must provide public notice to persons served as soon as practical but within 30 days after you learn of the violation [California Code of Regulations, Title 22, Chapter 15, Section 64463.4(b)]. **Each water system required to give public notice must submit the notice to the Department for approval prior to distribution or posting, unless otherwise directed by the Department [64463(b)].**

Notification Methods

You must use the methods summarized in the table below to deliver the notice to consumers. If you mail, post, or hand deliver, print your notice on letterhead, if available.

If You Are a…	*You Must Notify Consumers by…*	*…and By One or More of the Following Methods to Reach Persons Not Likely to be Reached by the Previous Method…*
Community Water System [64463.4(c)(1)]	Mail or direct delivery [(a)]	Publication in a local newspaper
		Posting [(b)] in public places served by the water system or on the Internet
		Delivery to community organizations
Non-Community Water System [64463.4(c)(2)]	Posting in conspicuous locations throughout the area served by the water system [(b)]	Publication in a local newspaper or newsletter distributed to customers
		Email message to employees or students
		Posting [(b)] on the Internet or intranet
		Direct delivery to each customer

(a) Notice must be distributed to each customer receiving a bill including those that provide their drinking water to others (e.g., schools or school systems, apartment building owners, or large private employers), and other service connections to which water is delivered by the water system.

(b) Notice must be posted in place for as long as the violation or occurrence continues, but in no case less than seven days.

The notice attached is appropriate for the methods described above. However, you may wish to modify it before using it for posting. If you do, you must still include all the required elements and leave the health effects and notification language in italics unchanged. This language is mandatory [64465].

Multilingual Requirement

Spanish. Each public notice must contain information in Spanish regarding (1) the importance of the notice or (2) contain a telephone number or address where Spanish-speaking residents may contact the water system to obtain a translated copy of the public notice or assistance in Spanish.

Non-English Speaking Groups Other than Spanish-Speaking. For each group that exceeds 1,000 residents or 10% of the residents in the community served, whichever is less, the public notice must (1) contain information in the appropriate language(s) regarding the importance of the notice or (2) contain a telephone number or address where such residents may contact the water system to obtain a translated copy of the notice or assistance in the appropriate language.

Population Served

Make sure it is clear who is served by your water system -- you may need to list the areas you serve.

Description of the Violation

Make sure that the notice is clear about the fact that the coliform problem has been resolved, and there is no current cause for concern. The description of the violation and the MCL vary depending on the number of samples you take. The following table should help you complete the second paragraph of the template.

If You Take Fewer Than 40 Samples a Month	**If You Take 40 or More Samples a Month**
State the number of samples testing positive for coliform. The standard is that no more than one sample per month may be positive.	State the percentage of samples testing positive for coliform. The standard is that no more than 5.0 percent of samples may test positive each month.

Corrective Action

In your notice, describe corrective actions you have taken. Listed below are some steps commonly taken by water systems with total coliform violations. Use one or more of the following actions, if appropriate, or develop your own:

- "We have increased sampling for coliform bacteria to catch the problem early if it recurs."
- "The well and/or distribution system has been disinfected and additional samples do not show presence of coliform bacteria."

After Issuing the Notice

Send a copy of each type of notice and a certification that you have met all the public notice requirements to the Department within ten days after you issue the notice [64469(d)].

It is recommended that you notify health professionals in the area of the violation. People may call their doctors with questions about how the violation may affect their health, and the doctors should have the information they need to respond appropriately.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Este informe contiene información muy importante sobre su agua potable.
Tradúzcalo o hable con alguien que lo entienda bien.

The Cressey Elementary School Has Levels of Coliform Bacteria

Above the Drinking Water Standard

Our water system recently violated a drinking water standard. Although this is not an emergency, as our customers, you have a right to know what you should do, what happened, and what we did to correct this situation.

We routinely monitor for drinking water contaminants. We took 10 samples to test for the presence of coliform bacteria during June 2014. Five of our samples showed the presence of total coliform bacteria. The standard is that no more than one sample per month may do so.

What should I do?

- **You do not need to boil your water or take other corrective actions.**
- This is not an emergency. If it had been, you would have been notified immediately. Total coliform bacteria are generally not harmful themselves. *Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.*
- Usually, coliforms are a sign that there could be a problem with the system's treatment or distribution system (pipes). Whenever we detect coliform bacteria in any sample, we do follow-up testing to see if other bacteria of greater concern, such as fecal coliform or *E. coli*, are present. **We did not find any of these bacteria in our subsequent testing, and further testing shows that this problem has been resolved.**
- People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice about drinking water from their health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from U.S. EPA's Safe Drinking Water Hotline at 1(800) 426-4791.
- If you have other health issues concerning the consumption of this water, you may wish to consult your doctor.

What happened? What was done?

Due to the presence of total coliform, the entire distribution system was disinfected with chlorine and flushed. Further testing showed no coliform were present.

For more information, please contact Jared Steeley at (209) 620-1662 or 2705 Big Tree Avenue Denair, CA 95316.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this public notice in a public place or distributing copies by hand or mail.

Secondary Notification Requirements

Upon receipt of notification from a person operating a public water system, the following notification must be given within 10 days [Health and Safety Code Section 116450(g)]:

- SCHOOLS: Must notify school employees, students, and parents (if the students are minors).
- RESIDENTIAL RENTAL PROPERTY OWNERS OR MANAGERS (including nursing homes and care facilities): Must notify tenants.
- BUSINESS PROPERTY OWNERS, MANAGERS, OR OPERATORS: Must notify employees of businesses located on the property.

This notice is being sent to you by the Cressey Elementary School.

State Water System ID#: 2400097. Date distributed: _____.

Attachment C

PROOF OF NOTIFICATION

(Return with copy of notice)

As required by Section 116450 of the California Health and Safety Code, I notified all users of water supplied by the **Cressey Elementary School** of the failure to meet the **Total Coliform Rule Maximum Contaminant Level (MCL)** requirement for **June 2014** as directed by the Department.

Notification was made on _____ by
(date)
hand delivering / mailing / posting / publishing the written notice.

(*circle all that apply*)

_____
Signature of Water System Representative

_____
Date

DISCLOSURE: Be advised that Section 116725 and 116730 of the California Health and Safety Code state that any person who knowingly makes any false statement on any report or document submitted for the purpose of compliance with the attached order may be liable for a civil penalty not to exceed five thousand dollars ($5,000) for separate violation for each day that violation continues. In addition, the violators may be prosecuted in criminal court and upon conviction, be punished by a fine of not more than $25,000 for each day of violation, or be imprisoned in the county jail not to exceed one year, or by both the fine and imprisonment.

Due: September 15, 2014
TCR MCL Violation
System Number: 2400097
Citation No.: 03-11-14C-008

Attachment D

POSITIVE TOTAL COLIFORM INVESTIGATION
Simple Well with Pressure Tank Systems

This form is intended to assist public water systems in completing the investigation required by the California Department of Public Health (Section 64426(b) of Title 22, California Code of Regulations) and may be modified to take into account conditions unique to the system.

ADMINISTRATIVE INFORMATION

PWS Name:		PWSID NUMBER:	
	Name	**Address**	**Telephone #**
Operator in Responsible Charge (ORC)			
Person that collected TC samples if different than ORC			
Owner			
Certified Laboratory for Microbiological Analyses			
Date Investigation Completed:			
Month(s) of Total Coliform MCL Failure:			

INVESTIGATION DETAILS

SOURCE	WELL (____)	WELL (____)	WELL (____)	WELL (____)	COMMENTS
1. Inspect each well head for physical defects and report					
a. Is raw water sample tap upstream from point of disinfection?					
b. Is wellhead vent pipe screened?					
c. Is wellhead seal watertight?					
d. Is well head located in pit or is any piping from the wellhead submerged?					
e. Does the ground surface slope towards well head?					
f. Is there evidence of standing water near the wellhead?					
g. Are there any connections to the raw water piping that could be cross-connections? (describe all connections in comments)					
h. Is the wellhead secured to prevent unauthorized access?					
i. To what treatment plant (name) does this well pump?					
j. How often do you take a raw water total coliform (TC) test?					
k. Provide the date and result of the last TC test at this location					

DISTRIBUTION SYSTEM	SYSTEM RESPONSES
1. What is the minimum pressure you are maintaining in the distribution system?	
2. Did pressure in the distribution system drop to less than 5 psi prior to experiencing the TCR positive finding.	

POSITIVE TOTAL COLIFORM INVESTIGATION

DISTRIBUTION SYSTEM	SYSTEM RESPONSES
3. Has the distribution system been worked on within the last week? (service taps, hydrant flushing, main breaks, main extensions, etc.) If yes, provide details.	
4. Are there any signs of excavations near your distribution system not under the direct control of your maintenance staff?	
5. Did you inspect your distribution system to check for mainline leaks? Do you or did you have a mainline leak?	
6. If there was a mainline leak, when was it repaired?	
7. On what date was the distribution system last flushed?	
8. Is there a written flushing procedure you can provide for our review?	
9 Do you have an active cross connection control program?	
10. What is name and phone number of your Cross-Connection Control Program Coordinator?	
11. Is the review and testing of backflow prevention devices current?	
12. On what date was the last physical survey of the system done to identify cross-connections?	

SAMPLE SITE EVALUATION (Complete for all TC+ or EC+ findings)	Routine Site TC+ or EC+	Upstream Site	Downstream Site	Sample 4 (specify)
1. What is the height of the sample tap above grade? (inches)				
2. Is the sample tap located in an **ext**erior location or is it protected by an **enc**losure?				
3. Is the sample tap threaded, have a swing arm (kitchen sink) or aerator (sinks)?				
4. Is the sample tap in good condition, free of leaks around the stem or packing?				
5. Can the sample tap be adjusted to the point where a good laminar flow can be achieved without excessive splash?				
6. Is the sample tap and area around the sample tap clean and dry (free of animal droppings. other contaminants or spray irrigation systems)				
7 Is the area around the sample tap free of excessive vegetation or other impediments to sample collection				
8. Describe how the tap was treated in preparation for sample collection (ran water, swabbed with disinfectant, flamed, etc.)				
9. Is this sample tap designated on the sampling plan submitted with this information request?				
10. What were the weather conditions at the time of the positive sample (rainy, windy, sunny),				

POSITIVE TOTAL COLIFORM INVESTIGATION

GENERAL OPERATIONS:	Response
1. Where there any power outages that affected water system facilities during the 30 days prior to the TC+ or EC + findings?	
2. Where there any main breaks, water outages, or low pressure reported in the service area where TC+ or EC+ samples were located.	
3. Does the system have backup power or elevated storage?	
4. During or soon after bacteriological quality problems, did you receive any complaints of any customers' illness suspected of being waterborne? How many?	
5. What were the symptoms of illness if you received complaints about customers being sick?	

ADDITIONAL INFORMATION TO BE SUBMITTED WITH RESPONSES TO THE ABOVE QUESTIONS

1. **Sketch** of System showing all sources, treatment locations, storage tanks, microbiological sampling sites and general layout of the distribution system including the location of all hazardous connections such as the wastewater treatment facility.
2. A set of photographs of the well, pressure tanks, and storage tanks in the system may be submitted if they would show that the contamination is directly related and changes have been made since the last inspection by our Department
3. Name, certification level and certificate number of the Operator in Responsible Charge.
4. Copy of the last cross connection survey performed that identifies the location of all unprotected cross connections.

SUMMARY: BASED ON THE RESULTS OF YOUR INVESTIGATION AND ANY OTHER INFORMATION AT YOUR DISPOSAL, WHAT DO YOU BELIEVE TO BE THE CAUSE OF THE POSITIVE TOTAL COLIFORM SAMPLES FROM YOUR PUBLIC WATER SYSTEM?

CERTIFICATION: I CERTIFY THAT THE INFORMATION SUBMITTED IN RESPONSE TO THE QUESTIONS ABOVE IS ACCURATE TO THE BEST OF MY PROFESSIONAL KNOWLEDGE

NAME:_____ **TITLE:**_____ **DATE:** _____

State Water Resources Control Board
Division of Drinking Water

Attachment E

DRINKING WATER FIELD OPERATIONS BRANCH – MERCED DISTRICT

GUIDELINES FOR COMPLETION OF THE BACTERIOLOGICAL SAMPLE SITING PLAN

(For systems collecting four or fewer routine samples per month)

The total coliform regulation requires the water supplier to submit a bacteriological sample siting plan to the Department for review and approval. The locations where samples are to be collected must be written down and formally approved by the Department. These guidelines and Attachments B and C, "Bacteriological Sample Siting Plan" forms, are to assist you in complying with these requirements.

To comply with the requirements for submitting a Bacteriological Sample Siting Plan, two (2) items must be submitted to the Department at this time.

1. A system map, street map, or system schematic showing all sampling locations must be submitted. The map can be prepared by any system representative. It does not have to be prepared by an engineer. The following are to be shown on the map:

   - Water Sources (i.e., well or spring)
   - Treatment Facilities (i.e., chlorination)
   - Storage Tanks
   - Pressure Reducing Stations
   - Booster Stations
   - Pressure Zones
   - Dead Ends
   - Service Area Boundaries
   - Routine Sample Sites
   - Repeat Sample Sites
   - Special Sample Sites

2. Complete either Attachment B or C, the "Bacteriological Sample Siting Plan" form, and return the system map and form to the Department for review and approval. The use of either Attachment B or C depends on the number of repeat samples required. Refer to pages 2 and 3 below in "*How many repeat sampling sites are required?*"

3. Once the Bacteriological Sample Siting Plan has been approved by the Department, copies should be provided to the person responsible for sample collection, the laboratory and the person responsible for reporting coliform-positive samples to the Department.

Selection of Sampling Sites

The routine sampling sites chosen must be representative of the water distribution system including all pressure zones, areas supplied by each water source and distribution reservoir.

Looped Systems: If your entire water distribution system is looped, then one routine sample point may be representative of your system, assuming valves are open.

Pressure Zones: You should only be concerned about sampling in different pressure zones if your water system serves different areas of varying elevations, for example in mountainous areas.

How many routine sampling sites are required?

A minimum of five (5) routine sampling sites must be selected and indicated on your map and sampling plan form. If your water system is required to collect less than 5 routine samples a month, then 5 routine samples must be collected the month following any coliform positive sample. This is the reason for identifying 5 routine sites in your plan.

If the water system is not adequately represented by 5 routine sample locations, you may identify additional locations and collect more than one sample per month. Each site identified should be rotated for sampling at least every three months.

How many repeat sampling sites are required?

Either complete **Attachment B** if your system collects **one or fewer** samples per month, a repeat sample set is consists of four samples to be collected from the following locations:

- One repeat sample from the same routine location.
- One repeat sample from an *upstream location.*
  (within 5 connections of the routine site)
- One repeat sample from a *downstream location.*
  (within 5 connections of the routine site)
- One sample from *some other location.*
  (within 5 connections upstream or downstream of the routine site or a well site[see Attachment A])

or complete **Attachment C** if your system collects **more than one** routine sample per month, a repeat sample set consists of three samples from the following locations:

- One repeat sample from the same routine location.
- One repeat sample from an upstream location.
  (within 5 connections of the routine site)
- One repeat sample from a downstream location.
  (within 5 connections of the routine site)

What if the water system does not have enough locations to select the required number of routine and repeat sample sites?

If the water system does not have enough sample locations to identify 5 routine sites and 3 to 4 repeat sites per routine, you may either (1) identify fewer than 5 routine sites as long as the sampling adequately reflects water quality in the distribution system, or (2) use some of the routine sites as repeat sites for other routines (i.e., double up on use of available sites).

Pointers for Sample Site Selection

- When selecting a routine sample site you should be able to select a site upstream and a site downstream for repeat sampling.
- Select a site where the water is used continuously all year round.
- Pick a site that is easily accessible, i.e., a fenced yard with a locked gate and vicious dog is not a good selection.
- When choosing a sampling tap you should consider these factors:

The sampling tap should be located in as clean an environment as possible. It should be protected from contamination by humans, animals, airborne materials or other sources of contamination.

If you choose an outside private tap, it should be one that is in frequent use, clean, and at least 1½ feet (18 inches) above the ground. The sample tap should discharge downward.

If you choose an inside tap, be sure that you are not sampling from drinking fountains, taps which have aerators or strainers, or swivel faucets, or taps off of individual homeowner treatment units.

Do not choose a fire hydrant as sampling tap.

Avoid taps that are surrounded by excessive foliage or taps that are dirty or corroded.

Avoid taps that leak, have fittings with packing, or have permanent hoses or attachments fastened to the tap (Never collect a sample from a hose).

Avoid the use of dead ends for routine sample collection, and use for repeat samples only of no other sample sites are available and if there is continuous water use from a service off the dead-end.

Instructions for Completing the Bacteriological Sample Siting Plan Form

This form has been designed to include all the requirements for the Bacteriological Sample Siting Plan.

- **PWS Classification**

  The public water system (PWS) classification for your water system is either community, nontransient noncommunity or transient noncommunity. This classification determines the type and frequency of all water quality testing. If you are uncertain of your classification, contact the Department.

- **Month/Daily Users**

  The monthly population determines the frequency of bacteriological sample collection for community water systems. The daily population determines the frequency of sample collection for transient and nontransient noncommunity systems.

- **Active Service Connections (Community water systems only)**

  This is the number of active hook-ups served by the system. If your system has a hook-up to a vacant lot, do not count this as an active connection. If a vacant lot has a right to a future connection, do not count this an active connection. If a residence is connected to the system, but the residence is vacant, count this as an active hook-up.

- **Distribution Sampling Frequency**

  This is the minimum number of routine bacteriological samples required at the frequency specified. If any routine sample is positive for coliform bacteria, additional repeat samples will be required. Repeat samples are in addition to the required routine samples. If you are uncertain of the routine sampling frequency for your water system, contact the Department. Attachment A provides the minimum frequency based on type of water system. This will be increased if more than 1,000 people have been served on a daily basis.

  A coliform-positive sample will increase the routine monitoring for a small system the following month. A system normally collecting less than 5 routine samples per month which has a coliform positive sample must collect a minimum of five (5) routine samples the following month.

- **Source Sampling Frequency**

This is the amount of bacteriological sampling that the water system is going to collect from each source (well, surface water-raw, spring, etc.) per month or quarter. Source sampling is required at a specified frequency when the water system continuously treats (i.e. chlorination) the water or has a surface water treatment plant.

- **Water Treatment**

This is the type of water treatment that the water system applies to the water that is entering the distribution system. If your water system does not provide water treatment, then write N/A.

- **Trained Sampler**

The person collecting samples must be trained.

Sampling Service: Water systems utilizing a certified laboratory or other sampling service for water sample collection will be considered to have trained samplers. Enter the name of the laboratory or sampling service collecting your samples. A copy of the approved Bacteriological Sample Siting Plan should be provided to the laboratory or sampling service, if one is used.

Other Trained Samplers: Any person receiving a certificate from AWWA for attendance of the Water Sampling Training should submit a copy of their certificate along with the completed form. Any other samplers should submit a statement of their experience and training to this Department for approval.

- **Analyzing Lab**

Enter the state certified laboratory which will be analyzing your water samples.

- **Person Responsible to Report Coliform-Positive Samples to DHS**

This should be the person that the laboratory is required to contact when a sample is total or fecal coliform positive. This person must notify the Department within 24 hours of a violation of the total coliform standard (more than one positive sample in a month) or when any sample is fecal or *E. coli* positive. This person should have the authority to take corrective action as required by regulation and the Department. This should be the same person listed on your Emergency Notification Plan. Refer to Attachment A for additional instructions related to follow-up to positive samples. Please note: Regulation now requires the water supplier to require the laboratory immediately notify the Department of any positive bacteriological result if the laboratory cannot make direct contact with water system's designated contact person within 24 hours. We recommend you provide a copy of your emergency notification plan to your laboratory.

- **Day/Evening Phone Number**

  The Department requires that the water system provide the phone numbers of the person listed above so that they can be contacted by the laboratory or the Department at any time during the day or evening in the event of a bacteriological emergency.

- **Signature and Date**

  The person preparing the Sample Siting Plan should sign and date the plan. If the Department has questions regarding the sampling plan, this is the person to be contacted.

- **Sample ID**

  This should be entered on the laboratory slip when the sample is turned into the laboratory. This is the unique identifier for the water sample location or the location address may also be used.

  For systems collecting one or fewer routine samples per month, a minimum of five (5) routine sampling sites with three (3) repeat sampling sites for each routine sample locations must be listed. Use the **Attachment B** plan form.

  For systems collecting more than one routine sample per month, a minimum of five (5) routine sampling sites with two (2) repeat sampling sites for each routine sample location must be listed. Repeat sample sites are to be located within five (5) service connections upstream and downstream of the routine sample site. Use the **Attachment C** plan form.

  All sample locations should be marked in some way with the Sample ID or location address, i.e., the code painted on the sampling location or tagged with a water proof tag so the person collecting the water sample is sure to collect the water from the correct sample locations.

- **Sample Type**

  This describes what type of sample (routine or repeat) is to be collected at this location.

- **Sample Point**

  This is the type of the sample location. Use the following abbreviations, when appropriate.

HB	Hose Bib (exterior)
SF	Sink Faucet

PC	Goose Neck Type Copper Tube with Pet Cock

- **Location of Sample Point**

  This is the description of the area in the distribution that the sample site is located. Routine sample sites shall not be located at dead ends.

DE	Dead End (Not Recommended)
PZ	Pressure Zone
RD	Representative Distribution

- **Location Address**

  This is the actual physical location where the water sample is to be collected. If possible use a street address, i.e., 103 Good Street. If the location does not have a street address use the nearest crossroads or use the last name of the resident, i.e., "Brown Residence." If the location is a business, please list the business name and address.

  When describing the location, keep in mind that the person collecting water samples must be able to locate the sample site from your description.

- **Months Sample Collected at This Location**

  This is the schedule for routine samples to be collected. For example, suppose two (2) sites are representative of your systems. Site No. 1 will be sampled in January, March, May, July, September, and November. Site No. 2 will be sampled in February, April, June, August, October, and December. All routine sites identified should be rotated to allow sampling at least every 3 months.

ATTACHMENT A

BACTERIOLOGICAL MONITORING REQUIREMENTS
For Water Systems collecting 4 or fewer routine samples

1. Minimum Monitoring Frequency

Monthly Population Served			Service Connections			Minimum Frequency
25	to	1,000	15	to	400	1 per month
1,001	to	2,500	401	to	890	2 per month
2,501	to	3,300	891	to	1,180	3 per month
3,301	to	4,100	1,181	to	1,460	4 per month

Increased monitoring frequency may be required if there is more than one pressure zone in the distribution system or multiple sources or storage reservoirs. If your system is providing continuous chlorination treatment, closely review Item 6 below.

2. Routine and Repeat Sampling

All **routine samples** should be collected from the distribution system (not from the well) at locations specified in an approved Bacteriological Sample Siting Plan. If such a plan has not been prepared for your water system, contact the Department for assistance.

3. Repeat Monitoring After a Coliform-Positive Sample

Notification of a Coliform-Positive Sample - The water system shall require the laboratory to notify the system within 24 hours if any sample is coliform-positive. The water system must collect a repeat sample set within 24 hours of notification of the coliform-positive sample. **If the sample is fecal coliform or *E. Coli* positive, the water system should contact the Department immediately.**

Please note: Regulation now requires the water supplier to require the laboratory immediately notify the Department of any positive bacteriological result if the laboratory cannot make direct contact with the water system's designated contact person within 24 hours. We recommend you provide a copy of your emergency notification plan to your laboratory.

Repeat Sampling - *For systems collecting **only one (1)** sample per month or quarter*, a repeat sample set shall consist of four (4) samples as follows: one (1) from the routine sample site at which the positive occurred, one (1) from the upstream repeat sample site, one (1) from the downstream repeat sample site and one (1) from the operating well or another location within the system that would best help to identify the source or area of contamination.

*For systems collecting **more than one (1)** sample per month*, a repeat sample set shall consist of three (3) samples as follows: one from the routine sample site at which the positive occurred and two from the upstream and downstream repeat sample sites.

The repeat sample sites shall be located within five service connections upstream and downstream of the routine site as identified in the Bacteriological Sample Siting Plan. At least one repeat sample shall be collected from upstream and one from downstream unless there is no upstream or downstream service connection. Contact the Department as soon as the results of the repeat samples are obtained.

The following criteria should be considered when determining where to collect the fourth repeat sample:

- For systems with only one active well and do not provide continuous chlorination, the sample may be collected at the wellhead.
- For systems with more than one active well, it may not be possible to determine which well was serving the area where the positive routine sample was collected. For these systems, the fourth repeat sample should be collected at a storage tank or another point in the distribution system.
- For systems providing continuous chlorination, the system should already be conducting raw-water bacteriological monitoring at a point ahead of chlorination on at least a quarterly basis. These samples should be used to determine if the source of bacteriological contamination is from the well itself. For these systems, the fourth repeat sample should be collected at a storage tank or another point in the distribution system.
- Contact the Department for assistance.

If any of the above criteria would result in a change or revision to your existing bacteriological sample-siting plan, you must first submit a revised plan to our office for review and approval before implementing any such change or revision.

Any additional samples collected from the well(s) for investigative purposes (*not part of the repeat sample set*) should be labeled as "special" samples (or "other" samples), and will not be counted towards compliance with the monthly total coliform water quality standards.

Sampling the Month Following a Coliform-Positive Sample - If a public water system for which fewer than five routine samples/month are collected has one or more total coliform-positive samples, the water supplier shall collect at least five routine samples the following month. These samples can be collected on the same day from five different routine sites or from the same routine sites at 15 minute intervals (if fewer than five sites are available). If all five samples are negative for total coliform, the water system may return to the normal sampling frequency during the next sampling period.

4. Determining Compliance with the Coliform Standard

A public water system will fail the coliform maximum contaminant level (MCL) if: For a public water which collects fewer than 40 samples per month, at least two samples collected in the same month are coliform-positive. When this occurs, the water system representative shall contact the Department immediately (within 24-hours or the next business day if the office is closed). The water system will be required to conduct public notification and will be provided with an approved notification to be used. Public notification shall be conducted by direct mail, hand delivery or posting (where approved).

5. Monthly Reporting of Coliform Monitoring Results

The analytical results of all coliform monitoring shall be reported to the Department by the 10th day of the month following sample collection. The water system can request the laboratory to provide the results to the Department; however, the water system is ultimately responsible to ensure that the sample results were received. If the water delivered to your water system is provided with a disinfection treatment, the chlorine residual should be measured and reported at the same time and location(s) that the bacteriological sample(s) are collected. This residual must be provided to the Department on the laboratory analysis report at this time. Beginning January 1, 2004, EPA's Disinfectant/Disinfection By-Product (D/DBP) Rule will require this reporting to our Department.

6. Bacteriological Monitoring of Wells (for systems chlorinating)

Water systems that are routinely chlorinating the water supply are required to sample the raw well water for coliform bacteria. Initially, a minimum of six consecutive monthly samples must be collected from the well discharge. The samples must be collected at a location ahead of chlorination. After six consecutive monthly samples do not show the presence of coliform bacteria, the water system may request a reduction in sampling to one sample per quarter. The laboratory should be instructed to determine the most probable number of coliform (MPN) for well samples. The results of all samples shall be submitted to the Department.

ATTACHMENT B (see p. 6 of instructions)

BACTERIOLOGICAL SAMPLE SITING PLAN

System No.:	**System Name:**		
PWS Classification:	**No. Monthly Users:**	**Daily Users:**	
No. Active Service Connections:	**Distribution Sampling Frequency:**		
Source Sampling Frequency:	**Continuous Water Treatment:**		
Name of Trained Sampler:	**Analyzing Lab:**		
Person responsible to report coliform-positive samples to DHS:	**Day/Evening Phone No.:**		
Signature of Water System Representative:	**Date:**		

Sample ID	Sample Type	Sample Point	Location of Sample Point	Address of Sample Point	Months Sample Collection at this Location
1-ROU	Routine				
1-REP1	Repeat				Repeat Sample Only
1-REP2	Repeat				Repeat Sample Only
1-REP3	Repeat				Repeat Sample Only
2-ROU	Routine				
2-REP1	Repeat				Repeat Sample Only
2-REP2	Repeat				Repeat Sample Only
2-REP3	Repeat				Repeat Sample Only
3-ROU	Routine				
3-REP1	Repeat				Repeat Sample Only
3-REP2	Repeat				Repeat Sample Only
3-REP3	Repeat				Repeat Sample Only
4-ROU	Routine				
4-REP1	Repeat				Repeat Sample Only
4-REP2	Repeat				Repeat Sample Only
4-REP3	Repeat				Repeat Sample Only
5-ROU	Routine				
5-REP1	Repeat				Repeat Sample Only
5-REP2	Repeat				Repeat Sample Only
5-REP3	Repeat				Repeat Sample Only

If the water system has one or more total coliform-positive samples, at least five routine samples will be collected the following month.

ATTACHMENT C (see p. 6 of instructions)

BACTERIOLOGICAL SAMPLE SITING PLAN

System No.:	**System Name:**		
PWS Classification:	**No. Monthly Users:**	**Daily Users:**	
No. Active Service Connections:	**Distribution Sampling Frequency:**		
Source Sampling Frequency:	**Continuous Water Treatment:**		
Name of Trained Sampler:	**Analyzing Lab:**		
Person responsible to report coliform-positive samples to DHS:	**Day/Evening Phone No.:**		
Signature of Water System Representative:	**Date:**		

Sample ID	Sample Type	Sample Point	Location of Sample Point	Address of Sample Point	Months Sample Collection at this Location
1-ROU	Routine				
1-REP1	Repeat				Repeat Sample Only
1-REP2	Repeat				Repeat Sample Only
2-ROU	Routine				
2-REP1	Repeat				Repeat Sample Only
2-REP2	Repeat				Repeat Sample Only
3-ROU	Routine				
3-REP1	Repeat				Repeat Sample Only
3-REP2	Repeat				Repeat Sample Only
4-ROU	Routine				
4-REP1	Repeat				Repeat Sample Only
4-REP2	Repeat				Repeat Sample Only
5-ROU	Routine				
5-REP1	Repeat				Repeat Sample Only
5-REP2	Repeat				Repeat Sample Only

If the water system has one or more total coliform-positive samples, at least five routine samples will be collected the following month.