

September 30, 2016

STATE WATER RESOURCES CONTROL BOARD  
DIVISION OF DRINKING WATER

# Multi-Fauceted

## The DE Corner

### Expanding our knowledge base

By Janice Thomas

Our September 2013 newsletter was sent at a time when it was uncertain if the Drinking Water Program would be reorganized and moved from the California Department of Public Health to the State Water Resources Control Board (SWRCB). That transition took place effective July 1, 2014, creating the Division of Drinking Water (DDW).

Many have asked, "How is it being part of the SWRCB?" One notable difference is access to resources: hydrogeologists and GIS (geographic information system). The SWRCB recognizes that DDW needs more field positions.

We learned in the aftermath of the 2014 Napa Earthquake and the 2015 Valley Fire that

mutual aid makes a difference for water systems. Despite many local utilities reaching out to the City of Napa and the water systems in Lake County to offer assistance, only those in the CalWARN system (<http://www.calwarn.org/>) could send (and accept) crews. Our "Quick Links" article contains information on joining CalWARN and EPA's community water resilience resources. We are grateful for the generosity displayed in response to these local disasters.

Given the recent lessons learned, we encourage water systems to act now before another disaster to establish mutual aid relationships. Whether formally through the CalWARN system or

by reaching out to nearby water systems, your water system will enhance its reliability and can expand knowledge and expertise by establishing relationships. Outside of disasters, water systems can share knowledge on new technologies and equipment, troubleshoot treatment difficulties, and consult on design. We applaud existing partnerships.

As we have benefited from access to resources since the move to SWRCB, we encourage water systems to establish relationships in our shared goal of ensuring safe and reliable drinking water.



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#### Hints & Tips

- Division forms available at the SWRCB website: [www.waterboards.ca.gov](http://www.waterboards.ca.gov)
- Contact changes? Call (707) 576-2145
- Example binder to organize small water system records (Page 4)
- Free trainings through RCAC and CRWA
  - ⇒ [www.rcac.org](http://www.rcac.org)
  - ⇒ [www.calruralwater.org](http://www.calruralwater.org)

# The Revised Total Coliform Rule

By Zachary Rounds



Photomicrograph of Enterotoxigenic *E. coli* (CDC)

Beginning April 1, 2016, the Federal Revised Total Coliform Rule (rTCR) became effective. The revisions include the new Coliform Treatment Technique requirement replacing the Total Coli-

form MCL, and a new *E.coli* MCL regulatory limit. The rTCR establishes a “Find-and-fix” approach for investigating and correcting causes of coliform problems within water distribution systems. California will be revising its version of the Total Coliform

Rule (TCR) in Title 22; however, the draft regulations will not be adopted in time to correspond with the Federal rule requirements.

**Beginning April 1, 2016, all public water systems need to comply with California’s existing TCR and the new requirements in the federal rTCR, until California can complete the regulatory adoption process for the rTCR.**

At the website below, you will find guidance and forms to help comply with California’s current TCR and the new federal rTCR during this interim period. A two-page summary table of both rules is also provided at the link below to help illustrate how compliance with the current TCR and the federal rTCR can be achieved. This webpage will be updated with news on California’s rTCR regulation adoption process as it is available.

[http://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/rtrcr.shtml](http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/rtrcr.shtml)

## Water System Basics

### Fundamentals for water systems regulated by the state

By Misha Anderson

All water systems are required to collect **routine bacteriological sample(s)** in the distribution system (§64423) and **test annually for nitrate and triennially for nitrite** at the water source(s) (§64432). Each water source must have a **totalizing flow meter installed and production readings must be recorded monthly** (§64561).

All systems must have the following plans on file with the Division:

**Bacteriological Sample Siting Plan** (BSP) (§64422) and **Emer-**

**gency Notification Plan** (ENP) (§116460). Templates for these plans are available at the District 18 website (see the “*Quick Links*” article). Follow the BSP when a routine bacteriological sample has a posi-

tive detection. People listed in the BSP should have an approved copy to facilitate quick action if the plan needs to be implemented. The ENP details how the system delivers public notification to water system users. People who are responsible for overseeing and implementing notification to water users should have an approved copy.

A requirement of which many systems may not be aware is keeping a **complaint log** (§64470[a]). For a

template see the District 18 website, Form 65.

The final item common to all water systems

is the **Annual Report**. Every year each water system must submit an Annual Report to ensure the information DDW has on file is up to date and to provide details about the system’s operations in the previous

year.

In addition, Community and Non-transient systems must deliver a **Consumer Confidence Report annually** (§64480) and perform ‘**at the tap’ Lead & Copper monitoring** (§64675). Those Community and Nontransient systems that disinfect (except using UV) must **sample for Disinfection Byproducts** (DBP) (§64534.2) in the distribution system and develop a **DBP Sampling Plan** (§64534.8).

Regulatory requirements increase with more complex treatment and distribution facilities, including a **minimum certification level the operator(s) must maintain** (§63765 and §63770).

A good practice to adopt is to maintain an informational binder containing important documents. See the article, “*Water System Informational Binders*” which details the benefit and contents of this reference.

***Regulatory requirements increase with more complex treatment and distribution facilities***

# Treatment and Distribution Operators

By Karen Bolan

Distribution (D) operators operate the water distribution system, including water mains, storage and pressure tanks, pumps, wells, and in some cases treatment. All community and nontransient-noncommunity water systems must have a distribution operator on-site or able to be contacted within one hour. *Decisions* that must be made by a distribution operator include:

- Install, tap, re-line, disinfect, test, and connect water mains and appurtenances.
- Shutdown, repair, disinfect, and test broken water mains.
- Oversee the flushing, cleaning, and pigging of existing water mains.
- Pull, reset, rehabilitate, disinfect, and test domestic water wells.
- Stand-by emergency response duties for after hours distribution system operational emergencies.
- Drain, clean, disinfect, and maintain distribution reservoirs.



tailed in an approved operations plan, able to be contacted within one hour. If water treatment is voluntary disinfection only (UV or chlorination, for example), a distribution operator may be used instead.

Either certified distribution or treatment operators can make decisions that:

- Determine and control proper chemical dosage rates for wellhead disinfection and distribution residual maintenance.
- Investigate water quality problems in the distribution system.

Only certified distribution or treatment operators that have

been trained to make decisions addressing the following operational activities can:

- Operate pumps and related flow and pressure control and storage facilities manually or by SCADA.

- Maintain and/or adjust system flow and pressure requirements, control flows to meet consumer demands and minimum pressure requirements.

Some work does not have to be *completed* by a certified operator, but all work must be *overseen* by the chief operator. For example, a water meter can be installed by a plumbing contractor, but the distribution operator must be consulted to make decisions about the installation. An on-site maintenance employee can observe and record details about the treatment operation, but any change or activity of operation must be done by the treatment operator. Any person trained in sample collection can collect chemical and bacteriological samples.

Depending on the type and complexity of treatment and distribution system, your treatment and distribution operators may be needed on-site full-time, daily, weekly, monthly, or as needed. For example, most voluntary treatment of groundwater requires weekly certified operator oversight. Most surface water treatment requires full-time or daily operation. Surface water treatment plants must have a designated and trained backup treatment operator.

***Distribution operators operate the water distribution system, including water mains, storage and pressure tanks, pumps, wells, and in some cases treatment. Treatment operators have overall responsibility for the day-to-day, hands-on, operation of all water treatment facilities.***

Treatment (T) operators have overall responsibility for the day-to-day, hands-on, operation of all water treatment facilities. All water systems with treatment must have a treatment operator on-site, or if de-

# Water System Information Binder(s)

By Cindi Lee

The DDW has found that it is extremely useful for water systems to have critical water system information available and current in one location. It is particularly helpful for backup personnel when a key person is out of town or when board members change frequently.

A solution for each water system, no matter the size, is to keep an updated **Information Binder** of important water system documents. Three-ring binders work well for this along with an electronic copy. **In addition, given the recent experiences with the fires in Lake County, we recommend that files be backed up at an off-site location or a “cloud storage” site such as Dropbox or Google Drive.**

Each water system must make sure the correct persons have access to the binders and must designate who is tasked with keeping them current.

The first page of the Binder should have the following:

- Water System Name and number assigned by the Division

- Phone and address of the State-certified laboratory used for routine bacteriological and source chemical monitoring
- Current phone numbers and contact information for system personnel responsible for the water system and meeting DDW regulations
- The DDW’s contact information as the regulatory agency under the California Safe Drinking Water Act.
- The certified operator’s name and phone number(s) (if one is required)

**Example of a Table of Contents of a Small Water System Information Binder** (\* applies to every system)

Section 1\*: Current, approved Bacteriological Sampling Plan

Section 2\*: Current, approved Water Quality Emergency Notification Plan

Section 3\*: Current year’s Source Chemical

Monitoring Schedule for each water source

Section 4: Disinfection Byproducts Monitoring Plan (if required)

Section 5\*: Water system schematic and site plan

Section 6: Lead and Copper (at the tap) Sampling Plan and current monitoring requirements

Section 7: Signed and dated contract with a Certified Water Operator describing duties to be performed and frequency of on-site inspections

Section 8\*: Copy of current Water System Emergency Response Plan

Section 9\*: Copy of Domestic Water Supply Permit and most recent DDW Inspection Report with cover letter.

***Given the recent experiences with the fires in Lake County, we recommend that files be backed up... off-site***

## Consolidation Authority

By Janice Thomas

Governor Edmund G. Brown Jr. signed Senate Bill 88 (Statutes 2015, Chapter 27), authorizing the State Water Board to require systems that consistently fail to meet standards to consolidate with, or obtain service from, a public water system. Senate Bill 88 is crafted to expedite permanent solutions for failing water systems and those that have run out of water due to the drought. Although recent rains have improved condi-

tions at many water systems, we are still finding water systems with water quality problems, extreme deferred maintenance, and history of violations.

We understand the difficulty of compliance with the myriad drink-

***We will assist water systems that want to seek voluntary consolidation with neighboring water systems.***

ing water related requirements and will assist water systems that want to seek voluntary consolidation with neighboring water systems. We will introduce water systems to appropriate representatives with the Division of Financial Assistance and discuss details with Local Agency Formation Commission (LAFCO) for feasibility.

If you want to learn more about consolidation potential of your water system, please call our office at (707) 576-2145.



# Well Maintenance

By George Chien

A good well protection and maintenance program not only reduces possible migration of contaminants into your drinking water source, but also helps you to save money in the long run. Here are some examples of the minimum requirements:

- A concrete base (or pad) must be constructed around the well casing at ground level and must be in watertight contact with the annular seal.
- The concrete base must have a minimum thickness of 4 inches and shall slope away from the well casing or pump pedestal. The pad must extend a minimum of 2 feet laterally in all directions from the outside of the well boring. No cracks or leakage points should be observed.
- The wellhead should be a minimum of 18 inches

above the finished grade. The well should be protected against flooding.

- There should be a check valve on the line exiting the wellhead, before any chemical addition.
- There should be a raw water sampling tap to collect samples before any treatment. The tap should be non-threaded and downturned, and located between the well head and the check

valve.

- Each source must have a totalizing flow meter capturing production before any water use.

Here are some good well maintenance practices:

- Clear weeds, vegetation, and animal droppings from around the wellhead.
- The well house should not be used to store motor oils, fuels, pesticides, or other hazardous chemicals.
- Ensure the well vent screen is in place and clean it on a regular basis. Check to be sure the electrical conduit is sealed.
- If you notice the well production is decreasing over the years, the decreased production may be caused by iron/manganese deposits accumulating on the pump impellers. You may need a specialist to clean the well pump.
- If you have an abandoned well, make sure it is destroyed properly.



*Properly constructed wellhead.*

## Reminders About Your STANDBY Source

By Marianne Watada

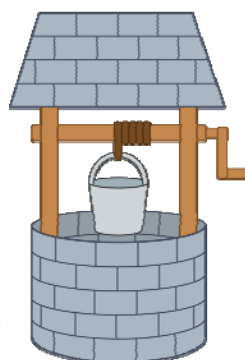
Do you have a well permitted as “STANDBY” status? If your source is standby, it will say it in the name, such as “Well 02-Standby”. Here are some reminders about standby sources:

- The source is only for short-term emergencies of **five consecutive days or less** (§64414 (c)).
- The source can only be used for less than a total of **fifteen calendar days a year** (§64414 (c)).
- **Notify this Division** within three

days after using your standby source and include the reason for and duration of the use (§64414 (d)).

- Continue to conduct **Source Chemical Monitoring** (§64414 (a)).
- **Periodically run the source** to insure that it will be operable in the event that it is needed.
- A well that has not been operated in over three months must be sampled for **bacteriological quality** prior to use.

If the results of the bacteriological sampling are positive for coliform bacteria, the well must be disinfected in accordance with the



American Water Works Association Standards (§64583).

- **Request a permit amendment** if you want to change the status from STANDBY to Active, or vice versa (§64556 (a)(3)(B)).

# Cross Connections and Backflow Prevention Assemblies

By Misha Anderson

A cross connection (or backflow) event is when water that had entered into a home or business flows back into the water main. There are two ways this backflow happens; back-siphoning and backpressure.

An example of back-siphoning would be a leak or low pressure event (such as a sheared hydrant). The water moves to the low pressure area in some cases causing complete dewatering of parts of the system. Back-siphoning essentially 'pulls' water from nearby homes and businesses.

An example of a backpressure event is if a pesticide injection system at a business that is connected to the domestic water system malfunctions such that pressure from the injector pump becomes greater than that in the water main. This backpressure event would result in water with pesticide being 'pushed' into the distribution system.

How do you protect against a cross connection event?

- Develop a cross connection program (§7584) including having a specialist conduct a survey to



**Reduced pressure assembly**

identify the potential locations vulnerable to a backflow event and evaluate the risk of contamination (§7585).

- Install the appropriate type of protection, which depends on the degree of hazard that exists, at the vulnerable locations (§7604). These assemblies should be installed above grade with the test cocks accessible.
- Ensure the assemblies are tested by a certified tester

annually and after installation, relocation, or repair (§7605).

See our handouts for more detailed information on cross connection and backflow prevention assemblies available at the District 18 webpage.



**Double check assembly**

## Quick Links

By Waldon Wong

Many of our most used forms are now available online at: [http://www.waterboards.ca.gov/drinking\\_water/programs/districts/sonoma\\_district.shtml](http://www.waterboards.ca.gov/drinking_water/programs/districts/sonoma_district.shtml).

Contact us! Did you know we have a phone number and e-mail address? You can ask us questions or make an appointment with an engineer by calling (707) 576-2145 or e-mailing [dwpdist18@waterboards.ca.gov](mailto:dwpdist18@waterboards.ca.gov).

National Pollutant Discharge Elimination System (NPDES) Permits are required for all water systems. To get an NPDES permit, visit [http://www.swrcb.ca.gov/water\\_issues/programs/npdes/](http://www.swrcb.ca.gov/water_issues/programs/npdes/) and contact the representative in your region.

Electronic delivery of the Consumer Confidence Report (CCR) is now available! Guidance on delivery methods and examples are located at: <http://www.swrcb.ca.gov/>

[drinking\\_water/certlic/drinkingwater/CCR.shtml](http://drinking_water/certlic/drinkingwater/CCR.shtml).

CalWARN is a program to support and promote statewide emergency preparedness, disaster response, and mutual aid for public and private water and wastewater utilities. Go to <http://www.calwarn.org/> for more information.

EPA community water resilience resources: <https://www.epa.gov/communitywaterresilience>

# Monitoring Schedules For Your Water System Online

By Janice Thomas

Source chemical monitoring schedules and historical monitoring results are now available online.

Source Chemical Monitoring Schedules can be found at:  
<https://sdwis.waterboards.ca.gov/PDWW/>

Type in your water system name or number and press

“Search for Water Systems.” Click on your water system number. Then click on “Monitoring Schedules” or “Monitoring Results” in the left side bar.

Detailed instructions with screenshots is available on the District 18 webpage here:  
[http://www.waterboards.ca.gov/drinking\\_water/programs/districts/sonoma\\_district.shtml](http://www.waterboards.ca.gov/drinking_water/programs/districts/sonoma_district.shtml)

## Sonoma District Contacts

|   |  |
|---|--|
| Janice M. Thomas, P.E.<br>Senior Sanitary Engineer<br>(707) 576-2006<br><a href="mailto:janice.thomas@waterboards.ca.gov">janice.thomas@waterboards.ca.gov</a><br><b>After hours: (707) 533-4510</b>                                    | Elizabeth (Lyz) Solorzano<br>Staff Services Analyst<br>(707) 576-2145<br><a href="mailto:elizabeth.solorzano@waterboards.ca.gov">elizabeth.solorzano@waterboards.ca.gov</a>  |
| Cynthia Lee<br>Engineering Technician<br>(707) 576-2422<br><a href="mailto:cynthia.lee@waterboards.ca.gov">cynthia.lee@waterboards.ca.gov</a>   | Karen Bolan, P.E.<br>Associate Sanitary Engineer<br>(707) 576-2730<br><a href="mailto:karen.bolan@waterboards.ca.gov">karen.bolan@waterboards.ca.gov</a>   |
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| Tsungchu (George) Chien, P.E.<br>Associate Sanitary Engineer<br>(707) 576-2971<br><a href="mailto:tsungchu.chien@waterboards.ca.gov">tsungchu.chien@waterboards.ca.gov</a>  | Waldon Wong, P.E.<br>Associate Sanitary Engineer<br>(707) 576-2764<br><a href="mailto:waldon.wong@waterboards.ca.gov">waldon.wong@waterboards.ca.gov</a>   |
| <b>Recycled Water Project Review</b><br>Sherly Rosilela, P.E.<br>Water Resource Control Engineer<br>Recycled Water Unit<br>(916) 341-5578<br><a href="mailto:sherly.rosilela@waterboards.ca.gov">sherly.rosilela@waterboards.ca.gov</a> | <b>Funding Related Questions</b><br>Lucio Orellana, P.E.<br>Water Resources Control Engineer<br>Office of Sustainable Water Solutions—Drinking Water<br>(916) 445-2493<br><a href="mailto:lucio.orellana@waterboards.ca.gov">lucio.orellana@waterboards.ca.gov</a> |

*The Sonoma District has drop-in office hours Monday through Friday from 2:30-4:00 PM. At these times, an engineer is available to assist with water system business.*



State Water Resources Control Board  
Division of Drinking Water  
50 D Street, Suite 200  
Santa Rosa, CA 95404

*The Division of Drinking Water is responsible for the enforcement of the federal and California Safe Drinking Water Acts (SDWAs) and the regulatory oversight of approximately 500 public water systems to assure the delivery of safe drinking water to Sonoma and Marin County residents and visitors.*

*Sonoma District staff perform field inspections, issues operating permits, reviews plans and specifications for new facilities, takes enforcement actions for non-compliance with laws and regulations, reviews water quality monitoring results, and provides technical assistance and outreach.*



**STATE WATER RESOURCES  
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DIVISION OF DRINKING WATER**

***Sonoma District***

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Forms on the web!  
[www.waterboards.ca.gov](http://www.waterboards.ca.gov)