

Seasonal Public Drinking Water Systems

Start-Up Procedures Guidance under the Revised Total Coliform Rule



Developed by the New Mexico Environment Department's Drinking Water Bureau

1-877-654-8720

www.env.nm.gov/dwb/RTCR.htm

Why am I getting this?

On April 1, 2016, owners/operators of seasonal public water systems must perform a “Seasonal Start-Up Procedure” to be in compliance with the Federal Safe Drinking Water Act. If you are receiving this booklet, your facility has been identified as a **seasonal public water system**. If you believe this information is incorrect, please contact your DWB Compliance Officer.



A “**seasonal public water system**” a non-community water system that is not operated as a public water system (PWS) on a year-round basis and starts-up and shuts-down at the beginning and end of each operating season .

Examples include:

Campgrounds, fairgrounds, seasonal food service facilities, and ski areas open during part of the year.

What do I have to do?

- Complete the start-up procedure described in this guidance ***prior*** to serving water to the public.
- Let us know you have completed it by completing and submitting the attached checklist prior to opening for the season.

Failure to complete start-up procedures will result in a violation, and increase your water sampling requirements.



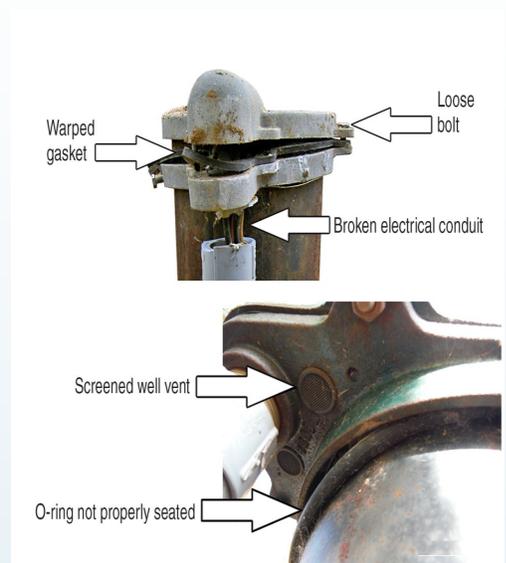
*For additional information or assistance, please contact your assigned
NMED-DWB Compliance Officer or our Central Office at 1-877-654-8720 or
www.env.nm.gov/dwb/RTCR.htm*

Step 1 - Maintain/Inspect Source Components

Inspect your well for any potential problems which may increase the possibility of bacteria entering your drinking water system. Check for any potential contamination sources and **correct immediately**.

Please note: All well cap components are not the same due to differences in well types and cap configurations. If the listed components are present in your well please insure the following:

1. Well(s) / Springs completely sealed
 - Well cap is snug fitting on casing and not broken.
 - All well cap bolts are present and tight against the cap.
 - Vent screens are not missing or damaged.
 - Electrical conduit is not broken or electrical wires exposed.
 - Gasket and O-ring are in place and properly seated.
2. Any openings that could allow in animals, insects, or stagnant water
3. Any changes to the source that could affect the water quality?
4. Are any repairs necessary to the source?



Examples include:

- Ponded water around the well due to newly formed depressions, flooding, rain or snow melt. The land around the well should be graded to direct water away.
- Vegetation growing on or over the well. This increases the risk of vermin and air borne bacteria entering the well. **Remove the vegetation.**
- Areas of concentrated pet and animal waste (especially during deep snow cover and long winters.) **Remove immediately.**
- Debris, animal waste, and other contamination sources within a structure placed over the well. Remove contamination immediately.



Overgrown vegetation around well head

Step 2 - Maintain/Inspect Storage Tank Components

Inspect your storage tanks for any **potential problems** which may increase the possibility of bacteria entering your drinking water system. If any defects are discovered, those defects must be **repaired prior to opening for the season**.

Examples include:

1. All Storage Tank openings should be either **completely sealed or properly screened**
2. All air vents and overflows should be **properly screened and intact**.



Repair storage tank leaks



Replace torn screens



Properly screen vents and overflows



Screen or flapper overflows

Step 3 - Repair Any Leaks and Flush Your Water System



1. Find and **repair** any distribution leaks.
2. Flushing Program. Plan the flushing sequence using system maps and hydraulic models. Always start at the source water and storage tanks. Flush toward system extremities, pushing the dirty water downstream. **An inadequate flushing program is worse than no flushing at all.** Use valve and hydrant locations to map out a unidirectional flushing pattern.
3. Divide distribution system into sections and flushing sequences. These should be manageable that can be accomplished during normal working shifts. The AWWA recommends flushing 500 foot sections at a time to **maintain adequate flow and pressure.** This is dependent on isolation valve configuration
4. Set targets for flushing velocities. It has to be high enough to clean the pipe and to remove biofilm. A flushing velocity of 2 to 5 feet per second should be adequate; however, it depends on specific pipe conditions. Flushing at low velocities (less than 1 foot per second) only **wastes water and does not adequately cleaning the lines**, while 7 to 10 feet per second is TOO high and can damage pipes.
5. Test and exercise valves and hydrants during flushing. Record current conditions (normally open/closed, number of turns, etc.) and compare to conditions recorded during previous flushing or valve exercising event. **Complete any necessary repairs.**
6. FLUSH! Ensure storage tanks are full to provide adequate flush volume and pressure for flushing. Unidirectional flushing requires careful monitoring of pressure, flow, and velocities. Open hydrant for a period long enough (5-10 minutes) to clean the pipe. **Flush until the water is clear.** Assure that system pressures in other parts of the distribution system do not drop below 20 psi. If discharging chlorinated water, check chlorine residual concentrations to ensure that chlorine has dissipated by the time the water reaches sensitive flora or fauna, or use a dechlorinating agent to consume the chlorine.

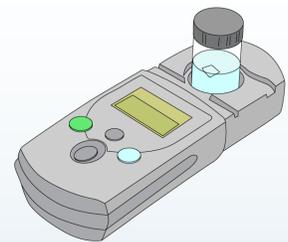
Step 4 - Disinfection of Distribution System & Storage Tanks

- Use a chlorine solution to inactivate any bacteria that may have accumulated while not being used. Disinfectant should be flushed throughout the entire distribution system until a chlorine residual of at least 4.0 mg/L is detected throughout the system.
- Record the Chlorine Residual at the beginning of the distribution system and at the far reaches of your distribution system.
- Once an adequate chlorine residual is present throughout the distribution system, disinfectant should be allowed to sit in the system for a minimum of 24 hours.
- Flush disinfected water out of the distribution system and fill the distribution system with water chlorinated to normal operating residual.
- **Manage the flushed water to not cause harm to any nearby flora or fauna if residual is elevated.**



Disinfection of Storage Tanks

- Use a chlorine solution to inactivate any bacteria that may have accumulated while not being used. Disinfected water should be used to fill the storage tank until a chlorine residual of at least 4.0 mg/L is detected in the tank.
- Once an adequate chlorine residual is present within the tank, disinfectant should be allowed to sit in the tank for a minimum of 24 hours. Flush disinfected water out of the tank and refill the tank with water chlorinated to your normal operating residual.
- Manage the flushed water to not cause harm to any nearby flora or fauna if residual is elevated.



Step 5 - Collect "Special" Total Coliform Samples

"Special Samples" are:

- Collected and paid for by the water system.
- Not directly reported to NMED-DWB by the Certified Laboratories
- Should be reported to NMED-DWB by the PWS as part of Seasonal System Start-Up Procedures.
- These "Special Start-Up" sampling locations should be included in your PWS's Sampling Plan.



Ensure that the sample is labeled as "Special" on chain of custody forms.

Storage Tank Special Samples

- Collect a Special Total Coliform Sample that is representative of tank contents and submit to lab for analysis.
- If the special sample is positive for Total Coliform or E.coli bacteria, repeat the disinfection procedures described in Step 4 and collect another special sample and submit for analysis.
- Repeat the disinfection process until the special sample is free of Total Coliform or E.coli bacteria.

Distribution Special Sample

- Collect at least one Special Total Coliform Sample representative of the distribution system water and submit to lab for analysis.
- If the special sample is positive for Total Coliform or E.coli bacteria, repeat the disinfection procedure described in Step 4 and collect another special sample and submit for analysis.
- Repeat the disinfection process until the special sample is free of Total Coliform or E.coli bacteria.

Step 6 - Final Certification

The RTCR Start-Up Checklist as well as all special start-up microbiological results must be submitted to NMED-DWB no later than 10 days prior to opening for the season.

- Once all required start-up procedures have been completed, the water system Certified Operator must certify completion of these procedures.
- All of the required actions must be completed and all special start-up samples must be free of Total Coliform and E.coli prior to opening.
- If seasonal system fails to fully complete required start up procedures, a treatment technique violation will be issued and a Level 2 assessment will be required to be completed.

For additional information or assistance, please contact your assigned NMED-DWB Compliance Officer or our Central Office at 1-877-654-8720 or www.env.nm.gov/dwb/RTCR.htm

2. Storage/Pressure Tanks*

***If system does not have storage or pressure tanks, this section is not required to be completed.**

Inspect any tanks and verify the following (provide additional comments in the box below the questions):

Yes No Does the water system operate any drinking water storage or pressure tanks?

Yes No Are there any openings on the tanks that need to be sealed or screened?

Yes No All vents or overflows screened and intact?

Disinfect Storage Tank(s)

- Use a chlorine solution to inactivate any bacteria that may have accumulated while not being used.
- Disinfected water should be used to fill the storage tank until a chlorine residual of at least 4.0 mg/L is detected in the tank

- Once an adequate chlorine residual is present within the tank, disinfectant should be allowed to sit in the tank for a minimum of 24 hours
 - Chlorine Residual after 24 hours _____mg/L

- Flush disinfected water out of the tank and refill the tank with water chlorinated to your normal operating residual.
- Manage the flushed water to not cause harm to any nearby flora or fauna if residual is elevated.

Collect a Special Total Coliform Sample that is representative of the tank contents and submit to lab for analysis

- **(Ensure that the sample is labeled as “Special” on chain of custody forms).**
- If the special sample is positive for Total Coliform or E.coli bacteria, complete the disinfection procedure below and collect another special sample and submit for analysis.
- Repeat the disinfection process until the special sample is free of Total Coliform or E.coli bacteria.

Additional comments:

3. Distribution System

- Use unidirectional flushing of distribution system to get rid of stagnant water.

Approximate number of gallons flushed from the distribution system _____ Gallons

- Any leaks in the distribution system must be repaired prior to providing water to the public

- Disinfect distribution system

- Use a chlorine solution to inactivate any bacteria that may have accumulated while not being used.
- Disinfectant should be flushed throughout the entire distribution system until a chlorine residual of at least 4.0 mg/L is detected throughout the system
 - Chlorine Residual at the beginning of the distribution system _____ mg/L
 - Chlorine Residual at the end of the distribution system _____ mg/L
- Once an adequate chlorine residual is present throughout the distribution system, disinfectant should be allowed to sit in the system for a minimum of 24 hours
 - Chlorine Residual after 24 hours _____ mg/L
- Flush disinfected water out of the distribution system and fill the distribution system with water chlorinated to normal operating residual.
- Manage the flushed water to not cause harm to any nearby flora or fauna if residual is elevated.

- Collect at least one Special Total Coliform Sample representative of the distribution system water and submit to lab for analysis

- **Ensure that the sample is labeled as "Special" on chain of custody forms**
- If the special sample is positive for Total Coliform or E.coli bacteria, repeat the disinfection procedures and collect another special sample and submit for analysis.
- Repeat the disinfection process until the special sample is free of Total Coliform or E.coli bacteria.

Additional comments:

4. Final Certification

This checklist as well as all special start-up microbiological results must be submitted to NMED-DWB no later than 10 days prior to opening for the season.

All of the required actions must be completed and all special start-up samples must be free of Total Coliform and E.coli prior to opening.

If seasonal system fails to fully complete required start up procedures, a treatment technique violation will be issued and a Level 2 assessment will be required to be completed.

Certification: I certify that an inspection of my water system and applicable actions were taken prior to serving water to the public for the season.

I certify under penalty of law that I am the person authorized to fill out this form, and the information contained herein is true, accurate and complete to the best of my knowledge and belief.

Print Name: _____	Title: _____
Operator _____	_____
Level _____	License # _____
Signature: _____	Date: _____
Phone #: _____	Email: _____

Please return this form to the **NMED-DWB** regional office where the system is located no later than 10 days prior to opening for the season

DWB USE ONLY: Date received: / /

NMED-DWB Reviewer: _____