



# Start-Up Procedures for Non-Community Water Systems

331-310 • 4/1/2016

Every designated seasonal water system must have a state-approved start-up procedure. And, every operating season, before serving drinking water to the public, you must certify that you completed the approved start-up procedure to ensure the system is ready to supply safe drinking water to customers. This guidance helps you implement your approved start-up procedure.

## Seasonal water systems:

- ◆ Don't operate year round.
- ◆ Totally depressurize the water lines at the end of the operating season.
- ◆ Have at least one month when they serve no people.

Start preparing your water system to open at least one month before you plan to serve water to customers. You will need that time to evaluate the condition of the water system, make repairs, disinfect, and ensure the water system is free of coliform bacteria.

## 1. Inspect the Water System

Inspect all components of your water system, including your distribution lines. The [Small Water System Start-up Shut-down Self-Inspection Checklist 331-312 \(PDF\)](#) will help you identify potential problems. Repair any deficiencies you identify before you serve water to customers.

## 2. Activate Source and Treatment

- ◆ Turn on the power to your pump and treatment equipment.
- ◆ Read the source meter and record the reading on the checklist. If you don't have a source meter, arrange to have one installed as soon as possible.
- ◆ Disinfect the level probe, measure the static water level, and record the result on the checklist. If you don't have a probe, ask your local health department if you can borrow one.
- ◆ **Chlorinated systems:** Purchase fresh chlorine, mix fresh feed solution, replace or clean all lines and parts, and verify the feed rate of the feed pump.
- ◆ **Other treatment:** Refer to the manufacturer, your operating procedures, or call our regional engineer for instructions.

## 3. Operate the Water System

Run water through the entire water system by opening up hydrants, blow-offs, and faucets. Make sure all pressure tanks are pressurized.

## 4. Disinfect and Flush

- ◆ Disinfect and flush all sources, pressure tanks, storage tanks, and distribution lines. Refer to [Emergency Disinfection of Small Systems 331-242 \(PDF\)](#) for guidance.
- ◆ Chlorinate your system. Leave chlorinated water in the lines for at least 24 hours.
  - **If anyone could drink the water during the chlorination process**, use 2 parts per million (ppm) of unscented household bleach (about  $\frac{3}{4}$  cup) for every 1,000 gallons of water in the system.

- **If no one has access to the water**, use 5 ppm of unscented household bleach (about 1 ½ cups) for every 1,000 gallons of water in the system.
- ◆ Beginning with the tap closest to the source, flush all distribution lines thoroughly. Make sure you don't damage a pump by drawing water down below a pump intake level. If you have a storage tank, watch the water level in the tank to ensure you maintain 30 pounds per square inch of pressure in the lines. When you flush, keep chlorinated water away from all surface water such as lakes, streams, or ponds.

## 5. Collect Coliform Samples

- ◆ Measure the chlorine residual from taps or blow-offs throughout your distribution lines. You will need a chlorine residual test kit that measures from 0 to 3.5 ppm of "free chlorine."
  - **Untreated systems** must not have any detectable free chlorine when coliform samples are collected. If you do detect chlorine, re-flush before you collect coliform samples.
  - **Chlorinated systems** should have free chlorine residual at the "normal" operating level for the system (and greater than 0.2 ppm) when samples are collected.
- ◆ At least two weeks prior to opening, collect several coliform samples at different locations in your distribution lines to ensure all areas of the system are free of coliform bacteria.
- ◆ Refer to the [Coliform Sampling Procedure 331-225 \(PDF\)](#) for instructions.
- ◆ For type of sample on your lab slip, check "Sample Collected for Information Only." These samples will not count for compliance.
- ◆ Re-evaluate the water system if any samples are unsatisfactory. Refer to [Troubleshooting Checklist for Coliform Contamination 331-180 \(PDF\)](#). Call our regional office for assistance.

## 6. Additional Things To Do

- ◆ Review your [Water Facilities Inventory Form](#) to make sure the contact person, population figures, and other information is correct. Make changes if needed and send a copy to us. Note the coliform sampling schedule in Box 33.
- ◆ Put a monthly reminder on your calendar on the day you intend to collect coliform samples. We recommend collecting samples in the first week or two of each month. Be sure you know where to drop off or mail your samples and when your lab accepts samples for testing.
- ◆ Collect other water quality tests (such as nitrate).
- ◆ Have a certified backflow assembly tester test all backflow prevention devices. Have repairs made, if needed.
- ◆ Open and shut each valve to ensure they all work.
- ◆ Refine treatment operations. Understand water flow rate, chemical feed rates, pressure differentials, and so on. Make sure treatment is removing or adding what it was designed to remove or treat. Test by measuring it.
- ◆ Calibrate all instruments.
- ◆ Inventory supplies. Order what you need for the entire season.
- ◆ Check the area where any treatment backwash discharges to ensure there is no blockage and water can drain freely. Make sure backwash water can't re-enter the water supply.

## 7. Provide Drinking Water

When all the sampling results are satisfactory and the water system is operating as it should, you can start serving drinking water to the public.

## For More Information

Find more resources on our [Publications and Forms webpage](#).

Contact our nearest regional office from 8 AM to 5 PM, Monday through Friday. If you have an after-hours emergency, call 877-481-4901.

[Eastern Region](#), Spokane 509-329-2100, [ero.coli@doh.wa.gov](mailto:ero.coli@doh.wa.gov).

[Northwest Region](#), Kent 253-395-6750, [nwro.coli@doh.wa.gov](mailto:nwro.coli@doh.wa.gov).

[Southwest Region](#), Tumwater 360-236-3030, [SWRO.admin@doh.wa.gov](mailto:SWRO.admin@doh.wa.gov).



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