Testing and Disinfecting Your Well

Testing your private well water provides you with information on the quality of your water and is the best way to ensure that your home's water supply is safe for use. It can also determine if nuisance contaminants, such as iron and manganese are present and at what concentrations. The following information is meant to assist private well owners decide what to test for and how often. These are only general guidelines. For more specific information contact CCHD.

Testing frequency

It is recommended that you test your private well annually for basic potability parameters which include: total coliform bacteria, nitrate, nitrite, sodium, chloride, iron, manganese, hardness, turbidity, pH, sulfate, apparent color and odor. If you suspect the presence of other contaminants, you should test for those also. You can also contact CCHD to find out what substances may be common in your area's groundwater.

You may want to test more frequently if small children or elderly adults live in your house or if someone in your house is pregnant or nursing. These segments of the population are often more vulnerable to pollutants than others.

You should also test your private well immediately if:

- There are known problems with ground water or drinking water in your area
- Conditions near your well have changed significantly (i.e. flooding, land disturbances, and new construction or industrial activity)
- You replace or repair any part of your well system.
- You notice a change in your water quality (i.e. odor, color, taste).

Further guidance is available on the Connecticut Department of Public Health website at

https://portal.ct.gov/DPH/Environmental-Health/Private-Well-Water-Program/Private-Well-Testing

Where to test your water

Only use laboratories that are Connecticut certified to do drinking water testing. To find a certified laboratory you can contact:

- https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/environmental_health/environmental_laboratories/pdf/Instate-Aproved-Laboratories-Certified-to-Test-Drinking-Water.pdf?la=en

Test results

Your water test results will include the concentrations of the substances you tested for, and may also include whether the substance concentration exceeds a national primary or secondary drinking water standard. In case your test results are not compared to EPA's national health standards, the standards are provided for your reference here:

- https://portal.ct.gov/DPH/Environmental-Health/Private-Well-Water-Program/Private-Well-Testing
- List of Drinking Water Contaminants and their Maximum Contaminant Levels (MCL), About PDF) for information on Drinking Water Contaminants.

Treatment

If a contaminant is found to exceed health standards in your sample, contact CCHD for specific steps to follow and have your well re-tested to confirm the contaminant's presence and concentration. Some problems can be handled quickly. For example, high bacteria concentrations can sometimes be controlled by adding disinfection to a well, such as: chlorine, ozone or ultra-violet light. More specific information can be found in the Center for Disease Control's guide to drinking water treatments for household use.

On-site treatment processes like disinfection, distillation, and filtration may remove the contaminants found in your well water.

Disinfection

Use the table below to determine the amount of liquid household bleach needed to disinfect a well. Use only unscented, uncolored bleach.

Approximate Amount of Bleach for Disinfection of a Drilled or Driven Well						
	Diameter of Well Casing					
Depth of Water	**2 inches**	**4 inches**	**6 inches**	**8 inches**	**10 inches**	**24 inches**
10 feet	3/4 tbsp	3-1/4 tbsp	1/2 cup	3/4 cup	1-1/4 cups	7 cups
20 feet	1-1/2 tbsp	6-1/2 tbsp	1 cup	1-1/2 cups	2-1/2 cups	14 cups
30 feet	2-1/4 tbsp	9-3/4 tbsp	1-1/2 cups	2-1/4 cups	3-3/4 cups	1-1/4 gal
40 feet	3 tbsp	13 tbsp	2 cups	3 cups	5 cups	1-3/4 gal
50 feet	3-3/4 tbsp	1 cup	2-1/2 cups	3-3/4 cups	6-1/4 cups	2-1/4 gal
100 feet	7-1/2 tbsp	2 cups	5 cups	7-1/2 cups	12-1/2 cups	4-1/2 gal

Key:

- tbsp: tablespoon
- gal: gallon
- 1 cup = 8 fluid ounces
- 1 gallon = 16 cups

Notes:

- Use only unscented household liquid chlorine bleach.
- Bleach concentrations are generally between 5%-6%. Less will be needed if using concentrated bleach (8%).
- Quantities given in this table are approximate and are rounded to the nearest practical measurement. Amounts given are calculated to achieve a chlorine concentration of > 100 mg/L

Procedure:

- Using a 5-gallon bucket, mix the bleach with 3-5 gallons of water.
- Remove the vent cap.
- Pour the bleach water mixture into the well using a funnel. Avoid all electrical connections. Attach a clean hose to the nearest outside faucet. Run the water and circulate the water back into the well for thorough mixing.
- Rinse the inside of the well casing with the garden hose for 5-10 minutes, then shut off the outside faucet.
- Open all faucets inside the home and run the water until you notice a strong odor of chlorine (bleach) at each faucet. Turn off all faucets and allow the solution to remain in the well and plumbing for a minimum of 12 hours.
- After at least 12 hours, attach a hose to an outside faucet and drain the chlorinated water onto an area without plants or other vegetation, such as a driveway. Continue draining until the chlorine odor disappears. Avoid draining into open sources of water (streams, ponds, etc.).
- Turn on all indoor faucets and run water until the chlorine odor disappears.
  Until well water has been tested, boil it (rolling boil for 1 minute) before using or use another alternative water source. Water sampling cannot be done until all traces of chlorine have been flushed from the system. Wait several days after disinfection, then have the water in your well sampled.
- Sample the water for total coliform and either *E. coli* or fecal coliform bacteria to confirm that the water is safe to drink. The lab will also need to test for chlorine residual to confirm that there is no longer chlorine in the water.
- If results show no presence of total coliforms or fecal coliforms, the water can be considered safe to drink.
- Follow up with another water test one to two months later to confirm the absence of bacteria.
- Continue to monitor bacterial quality at least once per year or more often if you suspect any changes in your water quality.

If results show the presence of any coliform bacteria, repeat the well disinfection process and test again. If tests continue to show the presence of bacteria, contact CCHD or your well service company for assistance.

The disinfection process may damage water softeners due to the large amounts of chlorine used. Follow your manufacturers' instructions for appropriate methods to disinfect your softener unit. You will need to bypass the unit until completing the disinfection process.