

PRIVATE DRINKING WATER IN CONNECTICUT

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Testing your well water provides you with information on the quality of your drinking water. Testing is the best way to ensure that your drinking water supply is safe from harmful chemicals. In addition, water testing can determine whether nuisance impurities are present, such as iron and manganese. The purpose of this fact sheet is to assist private well owners in deciding how frequently to test their private well water and what to test for. It also provides homeowners with information about how to get their water tested, understanding their water test results and protecting their well from contamination.



Private Water Supplies

Homeowners with private wells are responsible for the quality of their own drinking water. They are generally not required to test their drinking water. However, testing is a good idea even if you do not suspect a problem because testing is the only way to be sure your water is safe to drink. A good time to test is when buying a home so that you can make any contamination findings part of your home purchase decision. The best time of the year to test is after a spring or summer heavy rainy period. Even if your current water supply proves to be clean and safe to drink, regular testing is important because it establishes a record of water quality that may help identify and solve future problems.

In accordance with Section 19-13-B101 of the Public Health Code, testing is required for new wells. However, the required tests do not cover all contaminants. Water tests done during home purchases are usually required by the bank providing the mortgage. Contrary to common belief, such tests are not required by law. Water tests done for a home purchase do not necessarily cover all contaminants.

This fact sheet provides general guidelines for private well water testing. However, these are just guidelines. Check with your Local Health Department to find out whether there are water quality problems specific to your area. It is also a good idea to ask your neighbors whether they have ever had water quality problems. The Connecticut Department of Public Health (DPH) Private Well Program is also a resource for questions about private well testing. DPH's Environmental and Occupational Health Assessment Program is a resource for questions about safe limits of chemicals in water and health concerns. Contact information is provided at the end of this fact sheet.



What To Test For? How Frequently to Test?

Even if you do not suspect any well water problems, it is important to test your water to ensure that it is safe to drink. Table 1 lists the tests we recommend for all private wells even if you do not notice any problems with your water. Table 3 lists water quality issues you might encounter and what tests you should do if you have a particular issue with your water. Whenever you notice a change in the taste, color, odor, or clarity of your water, contact your Local Health Department or DPH for assistance.



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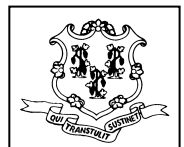


Table 1. Recommended Tests for All Private Wells

Type of Test	When?	Why?
Basic Indicators (Potability) See Table 2 below	Every Year Also test after repair or replacement of your well, pump or water pipes. <i>If 5 years of results show no problems, test once every 5 years.</i>	Provides a general indication of water quality. Can provide clues that additional tests are needed. Required for all new wells.
Lead	At Least Once Also test when planning a pregnancy or if you have a child under 6 years old. <i>If your water is corrosive (pH less than 6.0), test every 3-5 years.</i>	Lead can leach from plumbing (pipes and faucets). Lead pipes may be in homes built before 1930. Lead-based solder may be in homes built before 1988. Brass is used in new plumbing and fixtures. All brass contains small amounts of lead. Corrosive water leaches more lead. Young children are more susceptible to harmful effects from lead exposure.
Arsenic, Uranium, Radon	At Least Once Ideally, repeat test every 5 years	Arsenic, uranium and radon are naturally occurring in some groundwater in CT. Private wells with high levels have been found sporadically around CT. Levels can fluctuate over time.
Volatile Organic Compounds (VOCs)	At Least Once	Gasoline, oil, solvents or industrial chemicals spilled or leaked on the ground could get into your well water.
Fluoride	Every 5 years when a child under 12 is present	Fluoride can occur naturally in wells throughout CT. A child's permanent teeth can become discolored from excess fluoride. Too little fluoride can increase risk of tooth decay. Your child's dentist will likely ask you about the fluoride level in your well water.

Some acceptable limits are based on aesthetics and some are based on health. If your water exceeds a Basic Indicator Parameter, contact your Local Health Department for advice about whether you should stop drinking the water.

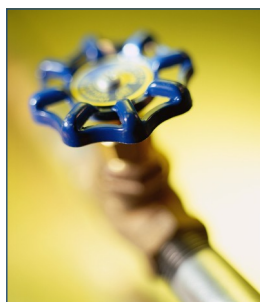


Table 2. Basic Indicators Test

Parameter	Acceptable Limit
Total Coliform Bacteria	None Present
Nitrate-Nitrogen	10 mg/L
Nitrite-Nitrogen	1 mg/L
pH	6.4 - 8.5 Standard Units
Odor	Less than 2
Chloride	250 mg/L (milligrams per liter)
Hardness	150 mg/L
Apparent Color	Less than 15 Standard Units
Sulfate	250 mg/L
Turbidity	Less than 5 Standard Units
Iron	0.3 mg/L
Manganese	0.05 mg/L (taste/odor concern) 0.5 mg/L (health concern)

Table 3. Private Well Water Quality Issues and Testing Recommendations

Water Quality Issue	Possible Cause(s)	Recommended Water Test(s)
Low pH (pH less than 6.0)	Naturally corrosive (low pH) water, low hardness, low alkalinity	Hardness, Alkalinity, Sulfate, Lead, Copper, Cadmium, Zinc
Buildup of limescale (off-white chalky solids) on hot water plumbing, fixtures, kettles. Reduced soap lathering.	Hard water (hardness level exceeding 150 mg/L)	Hardness
Blue or reddish stains on plumbing, fixtures or laundry. Plumbing leaks.	Corrosive (low pH) water.	Hardness, Alkalinity, Sulfate, Lead, Copper, Cadmium, Zinc
Rust-colored water, foul odor, rust stains on clothing and plumbing fixtures, rust coating in toilet tank	Elevated Iron or Manganese, Iron Bacteria	Iron, Manganese
Rotten egg odor, musty or swampy odor, tarnished copper and silverware, yellow or black stains on plumbing fixtures	Hydrogen sulfide gas, high sulfates, sulfur bacteria, iron/manganese bacteria, coliform bacteria	Odor, Hydrogen Sulfide, Sulfate, Coliform Bacteria, Iron, Manganese
Cloudy, Turbid, Muddy Water	Silt, Sediment, microorganisms	Turbidity and Coliform Bacteria, Check Well Construction with an expert
Chemical, fuel or fruity odor	Leaking underground fuel tank, gas station fuel spill, industrial chemical spill, road runoff	Volatile Organic Compounds (VOCs)
Nitrates exceed 10 mg/L Nitrites exceed 1 mg/L	Fertilizer runoff, malfunctioning septic system	Pesticides (contact your local health department about pesticide use in your area), Coliform Bacteria
Radon in Air exceeds 4 picocuries per liter	Naturally-occurring uranium in bedrock	Radon water test
Recurrent gastrointestinal illness	Human or animal waste contaminating well, cracked well casing, flooded well, malfunctioning septic system	Coliform Bacteria, Nitrates, Nitrites
Bitter, metallic taste	Corrosive (low pH) water	pH, Lead, Copper
Salty, brackish taste	Road salt runoff, nearby salt storage, well near salt water, improper setting on water softener	Chloride, Sodium, Total Dissolved Solids
Well within 1/4 mile of current or former orchard or farmland	Agricultural and/or arsenic-based pesticides get into well	Arsenic, Nitrates, Pesticides (ask for EPA Method 505)*
Well within 1/4 mile of commercial or industrial area	Gasoline, oil, solvents leaked or spilled on the ground get into well	Volatile Organic Compounds (VOCs)
Well flooding, ponding around well	Heavy rains, poor drainage around well	Basic Indicators
House foundation treated for termites before 1990	Termite pesticides leach into well	Pesticides dieldrin and chlordane
Noticeable change in taste, color, odor, or clarity of your water.	Unknown	Contact your local health department or DPH

* Contact your Local Health Department or CT Dept. of Energy and Environmental Protection for advice about whether you should test for additional pesticides.

What If I Already Have A Treatment System In My Home?

If you have water treatment equipment in your home, you should monitor whether the treatment system is doing its job by testing for the specific contaminant(s) that the system is treating. Be aware that water treatment systems are designed for specific contaminants. Treatment systems will not necessarily remove all contaminants! Periodically you should test your water before and after treatment to be sure the system is continuing to work properly. Refer to [Purchasing Water Treatment Equipment](#) for more information about treatment.

How Do I Get My Water Tested?

You can have your water tested at any State-certified water testing lab. A current list of certified labs can be obtained from your local health department or from the [DPH Certified Environmental Labs](#) website. Make sure the private lab is certified to test drinking water for the contaminants you are requesting.



In most cases, you can collect a sample of your tap water yourself, although many labs will send a technician to collect a sample if you request. If you collect your own sample, carefully follow the laboratory's instructions to obtain a good sample. How to take a sample varies depending on the tests being done. For example, some contaminants such as lead and copper may require that water remains stagnant in the pipes for a minimum of 6 hours and is collected upon the first draw of water. Other contaminants require that the water be flushed or run for a minimum period of time before collecting the sample. Some contaminants require special sample bottles and procedures. Cleanliness is a must; make sure that nothing but the water comes in contact with the opening of the bottle or the inside of the cap. Timeliness is important, too. Some contaminants deteriorate or change form with time. Most water samples need to be kept cool when being taken to the lab. To assure accurate results, make certain the lab receives your water sample within the specified time directed on the instructions.



Keep Records

Keep a record of all your water tests for reference. Include the date and the test results. A change in the concentration of a contaminant may indicate that a water quality problem is developing. By comparing test results over time, you may find that a change in treatment is necessary or that a treatment device is not functioning properly.

Understanding Your Water Test Results

There are federal and state criteria for many of the substances that you might find in your well water. These criteria represent the concentration above which your water might not be safe to drink or might have a noticeable taste or odor.

DPH sets state drinking water criteria specifically for private wells, called [Action Levels](#). Action levels are developed to protect you from health risks. Federal drinking water criteria to protect your health are set by the Environmental Protection Agency (EPA) and are called [Maximum Contaminant Levels \(MCLs\)](#). You should compare the results of your private well tests to these criteria to determine whether the water is safe. If any chemical detected in your water is higher than an Action Level or an MCL, you should:

- Retest the water to confirm the exceedance,
- Stop drinking the water until the issue is resolved,
- Contact your Local Health Department, DPH, or DEEP for specific advice about using your water.
- Consider treatment to remove the contaminant(s) from your water. Refer to DPH's Publication about [Purchasing Water Treatment Equipment](#) for more information about treatment.

Refer to DPH's factsheet [Chemical Contaminants in Private Wells](#) factsheet for more information about drinking water criteria.

EPA also sets drinking water criteria to protect you from aesthetic concerns such as taste, color and odor. These criteria are called [Secondary Standards](#). Secondary contaminants themselves do not present a health risk but could be an indication that your water has problems that could pose a health risk. One example is pH. If the pH of your water is too low, you might notice a bitter taste. The bitter taste does not pose a health risk but water with low pH is corrosive and corrosive water can leach metals like lead from pipes and fixtures. High levels of lead in your water does pose a health risk, particularly for young children.

Results of a Basic Indicators Test should be compared with the appropriate limits shown in Table 2 in this fact sheet. However, be aware that some of the parameters in the Basic Indicators Test are based on aesthetics (taste/color/odor) and some are based on health risk. If your water tests results exceed any of the limits on the Basic Indicators Test, contact your Local Health Department for advice regarding whether you should stop drinking the water.

Protect Your Well!

You can protect your private well by paying careful attention to what you do in and around your home as well as your neighbor's activities near your well. Regular testing and good practices to prevent contamination can help ensure that your well supplies you and your family with good quality drinking water. Here are some important ways you can protect your drinking water well.



- ⇒ Locate a new well far from potential contamination sources.
- ⇒ Hire a professional to construct a new well and periodically inspect an existing well.
- ⇒ Use backflow prevention devices on outside faucets.
- ⇒ Properly seal abandoned and unused wells.
- ⇒ Never flush gasoline, motor oils, automotive chemicals, painting chemicals or solvents down the sink or toilet into a septic system.
- ⇒ Inspect and maintain your septic system.
- ⇒ Keep livestock and pet waste away from well.
- ⇒ Do not allow road, driveway or roof runoff to collect around well.
- ⇒ Do not mix or use pesticides, herbicides, fertilizers, fuels or other hazardous materials near well.
- ⇒ Do not allow waste oils or gasoline to get into soil. Make sure home heating tanks are above ground or in basement. Never do automotive maintenance or repair on exposed soils in your yard.
- ⇒ Test your well water according to recommendations in this fact sheet.
- ⇒ As needed, consult sources of additional information listed at the end of this fact sheet.



For more information on well protection refer to [Publication #26: Private Drinking Water Wells-Types of Construction](#)

For More Information



For more information, please contact:

CT Department of Public Health

- Environmental and Occupational Health Assessment Program: 860-509-7740
- Private Well Program: 860-509-7296

CT Department of Energy and Environmental Protection

- Remediation Division: 860-424-3705

Your [Local Health Department](#)

For more information, click on the following links:



Safe Drinking Water Limits:

- [Action Levels](#)
- [MCLs](#)
- [Secondary MCLs](#)

CT Department of Energy and Environmental Protection

- [Potable Water Program](#)
- [Remediation Division](#)

DPH Private Well Fact Sheets:

- [Arsenic in Private Wells](#)
- [Lead in Private Wells](#)
- [Uranium in Private Wells](#)
- [Fluoride in Private Wells](#)
- [Bacteria in Private Wells](#)
- [Iron and Manganese in Private Wells \(1\), Iron and Manganese in Private Wells \(2\)](#)
- [Nitrogen Contamination in Private Wells](#)
- [pH Acidity of Private Wells](#)
- [Questions to Ask When Purchasing Water Treatment Equipment](#)
- [Flood and Storm Water Concerns for Private Wells](#)
- [Private Wells-Types of Construction](#)
- [Hardwater-Softeners Facts and Issues](#)
- [Corrosion of Copper Pipe and Fittings](#)

Other Resources:

- [DPH Certified Environmental Labs](#)
- [Chemical Contaminants in Private Wells Fact Sheet](#)
- [DPH Groundwater and Well Contamination Publications](#)
- [DPH Private Well Program Publications](#)
- [ATSDR Hazardous Substances Fact Sheets \(ToxFAQs\)](#)
- [Hazardous Waste Site Lists](#)
- [EPA Office of Groundwater and Drinking Water](#)
- [EPA New England](#)

If you require aid/accommodation to fully and fairly enjoy this publication, please contact 860 - 509 -7740.