

wellcare™ information for you about **Drinking Water Testing**

To keep your drinking water clean and pure and your well operating at peak performance, regular water testing is an important maintenance tool. Private well owners are solely responsible for the quality of their drinking water. So it is up to you, the well owner, to decide when and how to test your water.

Recommended Testing

At a minimum, your water should be tested every year for bacteria, the most common water quality problem. Other tests may be required, depending on where you live and what is located near your drinking water supply.

Table 1 (see page 2) describes some conditions that may prompt you to test for select contaminants. Table 2 (see page 2) lists the limits for some primary contaminants.

For example, if your well is in an area of intensive agricultural use, test for nitrates and the pesticides commonly used in that region. If household tests of radon in the air are very high, test for radon in water. If you have problems with taste, odor, staining or color of your water, then test levels of iron, manganese and sulfate.

Testing more than once a year may be warranted in special situations:

- someone in your household is pregnant or nursing
- there are unexplained illnesses in the family
- your neighbors find a dangerous contaminant in their water
- you note a change in water taste, odor, color or clarity
- there is a spill of chemicals or fuels into or near your well.

Contact your local health department, cooperative extension service, state health or environmental agency or your well professional for guidance in selecting tests.

Choosing a Testing Lab

Approach water testing as a smart shopper. Get an up-to-date list of all state-approved laboratories and the specific tests they are certified to perform from your state health department. Check with individual laboratories to get prices. Ask how soon you should expect results (not more than two weeks) and about the information that will be provided with the test results. A good lab should help you interpret the results and make sense of the scientific data.

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Table 1: Tests for Specific Conditions

Conditions or Nearby Activities	Recommended Test
Recurrent gastrointestinal illness	Coliform bacteria
Household plumbing contains lead	pH, alkalinity, hardness, lead, copper
Radon present in indoor air or region	Radon
Scaly residues, soaps don't lather	Hardness
Water softener to treat hardness	Manganese, iron (before purchase)
Stained plumbing fixtures, laundry	Iron, copper, manganese
Objectionable taste or smell	Hydrogen sulfide, corrosion, pH, alkalinity, hardness, metals
Water is cloudy, frothy or colored	Color, detergents
Corrosion of pipes, plumbing	Corrosion, pH, lead, copper, alkalinity
Rapid wear of water treatment equipment	pH, corrosion, alkalinity, hardness
Nearby areas of intensive agriculture	Nitrate, pesticides, coliform bacteria
Nearby coal, other mining operation	Metals, pH, corrosion
Gas drilling operation nearby	Chloride, sodium, barium, strontium
Gasoline or fuel oil odor	Volatile organic compounds (VOCs)
Dump, landfill, factory or dry-cleaning operation nearby	VOCs, pH, sulfate, chloride, metals
Salty taste and seawater, or a heavily salted roadway nearby	Chloride, TDS, sodium

Table 2: Tests for Specific Contaminants

Contaminant	When to Test	How to Test	When to Treat / Maximum Limits
Arsenic	Baseline test in areas prone to arsenic / annually after treatment	State Laboratory	10 parts/billion
Bacteria	Annually in spring; newborn in house; well equipment installed	Local health department test of total coliforms	Positive test for total coliforms, presence of fecal coliforms
Chromium	In at-risk states*	State laboratory	100 parts/billion
Iron	Water red, rusty	State laboratory	300 parts/billion
MTBE (methyl tertiary butyl ether)	Water has nasty smell in area where MTBE used	State laboratory	20 parts/billion
Nitrate	Annually in farm areas, pregnant woman in house	State laboratory	10 parts per million
Radium	Shallow well in area with high radium in bedrock	State laboratory	5 picocuries per liter
Radon	Before buy / move into new home	State laboratory	2,000 picocuries per liter
Sulfur & Manganese	Bitter taste, rotten egg odor	Local health department	250 parts/million
TCE (trichloroethylene)	In at-risk states**	State laboratory	5 parts/billion

* Chromium at-risk states: California, Connecticut, Delaware, Illinois, Indiana, Maryland, New York, New Jersey, Pennsylvania, Texas and Wisconsin

** TCE at-risk states: Pennsylvania, Illinois, Georgia, Texas, Massachusetts and West Virginia

Taking a Water Sample

The laboratory you choose should provide specific sampling instructions and clean bottles or small plastic bags in which to collect the water sample. Do not rinse lab containers or fill them to overflowing. Check to see if the sample must be refrigerated or treated with special chemicals.

You may need to take a sample from the tap with the first flush of water in the morning or after the tap has been allowed to run for a period of time. If you suspect a problem somewhere in your home plumbing, you may need to take samples from several points: before and after water enters the hot water tank, for example, or at the inlet and outlet of a filtering device. If testing for evidence of corrosion, you must let water stand in the plumbing system at least 12 hours.

Again, carefully follow instructions for taking samples. Sampling is the most important part of testing. A carelessly collected sample can give you inaccurate results.

Understanding Test Results

The report of analysis, as some laboratories call test results, can take a variety of forms. It may be a computer printout of results for the specific tests you requested or a preprinted form with your results typed or written into blocks or spaces. It may include some general information about the laboratory that performs the test and the types of tests that were done or it may provide only your results.

The amount of a specific contaminant in your water sample will be expressed as a concentration of a specific weight of the substance in a specific volume of water. The most commonly used concentration units for drinking water analyses are provided in Table 2.

The test results also may use other symbols and abbreviations. Laboratory methods have detection limits, or levels below which contaminants cannot be reliably detected. That does not necessarily mean that the chemical is not present. There could be so little present that it cannot be reliably detected with the laboratory equipment or testing procedures being used.

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To Collect Most Water Samples

Always follow laboratory directions carefully to ensure the accuracy of the test.

Step 1: Remove the aerator from an indoor, lead-free cold water faucet. If testing for bacteria, flame the end of the faucet with a lighter to destroy any organisms in the tap itself.



Step 2: Let water run for five minutes to bring in water that has not been in contact with household plumbing.



Step 3: Reduce the water flow until the stream is about 1/4-inch in diameter.



Step 4: Fill the special container as instructed by the testing laboratory. Do not let anything touch the inside of the cap or the container.



Step 5: Close the sample container and transport it as instructed by the laboratory.



** From "Drinking Water Well Management," Home*A*System, Natural Resource, Agriculture and Engineering Service (NRAES)*

The important question is whether the contaminant poses a health threat at that particular concentration. Compare your water test results to the federal standards in Table 2 and to other guidance numbers, such as health advisories, to assess the potential for health problems. If in doubt, contact your state health department or environmental agency, the local extension service or your water well contractor.

After you get your first test results, you would be wise to follow up with a second test taken at a different time before you decide on any water treatment. This is because there is a certain margin of error in water testing and contamination problems may vary.

For more information on your drinking water

The following sites provide up-to-date information on efforts to protect public water supplies and steps you can take as a private well owner:

Home*A*Syst Program	www.uwex.edu/homeasyst
Water Quality Association	www.wqa.org
The Groundwater Foundation	www.groundwater.org

For more information about wells and other wellcare™ publications

wellcare™ is a program of the **Water Systems Council (WSC)**. WSC is a national nonprofit organization dedicated to promote the wider use of wells as modern and affordable safe drinking water systems and to protect ground water resources nationwide.

Contact us at 888-395-1033 or visit www.watersystemscouncil.org



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