

Contaminant Guide



& Borehole Water vs Municipal Water

Overview

Even though many municipalities obtain their drinking water from wells, there are two main differences between municipal well water and private well water:

- Municipal water supplies are monitored for water quality by the municipality.
- Municipal water supplies are usually treated prior to distribution and consumption by consumers.

Because water supplied by a public utility is regulated by the EPA and individual states, consumers of water supplied from a municipality can be quite confident that their water quality meets specific health guidelines. However, very few regulations exist to govern the quality of private well water supplies. Typically, well water is required to be evaluated for microbiological contamination only at the time the well is installed. Some health departments have begun requiring microbiological testing when the property changes ownership as well. During routine operation, however, it is up to the well owner to monitor and ensure the quality of their well water supply.

Basic Water Testing

There are several basic tests that private well owners may wish to consider having performed on their well water supplies to determine its quality. Many county health departments offer water testing, or you may want to consider using an accredited private testing laboratory.

- Microbiological testing for total coliform should be performed annually to determine if any bacteria are present in the water supply.
- To determine impact of nearby agricultural operations or on-site septic system, private well users should have their water analyzed each year for nitrates/nitrites.

In addition, private well water can be influenced by many local and regional factors. Some of these factors are natural, and others are the result of human activity. Although there are a wide variety of possible factors, some of the more common factors can be evaluated through the following tests:

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- A hardness test can be performed to determine if a hard water condition exists. Hard water can leave skin feeling dry, cause hard water deposits on shiny surfaces, and build up over time in appliances.
- The pH level of your water should be checked to determine whether your water is acidic. Water with a low pH (less than 7.0) may have problems with leaching of copper and lead from residential plumbing. Copper leaching will be indicated with a bluish-green stain; an analysis for lead will need to be performed to determine if lead leaching is a problem.
- If the area is known to have high arsenic levels in the groundwater, a test for arsenic concentration should be performed at least annually.
- If there is a gas station nearby (within a 1/4 mile), a BTEX and MTBE analysis should be conducted. This is a volatile organic analysis to detect the presence of gasoline and/or the gasoline additive MTBE. This analysis should also be repeated annually.
- If you live in a region of the country where radon is known to be a problem, have your water analyzed for radon. If radon is detected, homeowners may also want to have their indoor air analyzed for radon as well.
- If you have a private well and live in an area where pesticide use is common, such as near a golf course, orchard, or agricultural area, you may also want to consider having your water analyzed for pesticides.

Odor and Color Problems

Well water users can sometimes experience odor or staining problems on appliances and laundry. Several of the more common complaints are described below.

- If there is a rotten egg odor associated with the well water, you may want to consider a hydrogen sulfide and methane analysis.
- If there is a musty or moldy odor with well water, an iron bacteria analysis should be conducted.
- If you are experiencing problems with red staining of fixtures, the iron level of the well water should be analyzed.
- If you are experiencing problems with brown or black staining of white laundry, have your water checked for manganese.

Once your water has been analyzed, you can compare your test results against EPA or state drinking water regulations to see if any contaminants are exceeding recommended levels. Once you have identified if any problems exist, you can begin your search for a specific treatment for your well water.

Treatment of Well Water

The treatment of well water will depend on the result of your water quality analysis. Some water quality problems are better handled through point-of-entry applications, such as color and odor problems, or conditions such as hardness. Other contaminants can be best handled through point-of-use devices.

Keep in mind that some treatment technologies may require that the homeowner pretreat the water in order for the product to be effective. For example, reverse osmosis systems designed for arsenic or nitrate reduction will last longer if hard water is softened prior to entering the unit. In addition, arsenic can be present in

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water in two forms - if your water contains trivalent arsenic (Arsenic 3 or Arsenite), prechlorination will be required prior to using a reverse osmosis system.

Following Up

If you decide to install a home water treatment device, it is important to ensure the system is installed and operated according to the manufacturer's instructions. In addition, it is important to conduct follow-up testing of the treated water to ensure the system is working well. The system may have to be adjusted depending upon its performance. Follow-up testing should be conducted several times throughout the first year of operation of the treatment system and after any adjustment made to the system.

You should continue to monitor the quality of your well water at least annually, even if you choose not to use a home water treatment system. This continuing analysis will help you to determine if the quality of your well water has changed during the previous year. If you installed a home water treatment product, the annual analysis will also help you to determine how well your system is functioning and whether maintenance or replacement of components such as filter cartridges may be necessary.

Selecting a Water Treatment System

When selecting a water treatment system, it is important that you verify that the technology is safe and effective. One good way to ensure that water treatment products are both safe and effective is to use only certified water treatment devices. Certification by NSF to NSF/ANSI standards means that the manufacturer's performance claims have been validated and that the materials used in the construction of the product have been determined by toxicologists to be safe for use with potable water. In addition, NSF ensures that the product literature is correct and not misleading. Through ongoing certification audits of manufacturing facilities and periodic retesting of the system, we also ensure that the water treatment products we certify continue to meet rigorous public health standards year after year.

Additional Information

Please visit our [online drinking water treatment unit product database](#) if you wish to obtain further information on the water treatment products analyzed by NSF International. If you would like further information on the various contaminants commonly found in drinking water supplies, please checked out the [Common Contaminants](#) section of our consumer web pages.

For further questions regarding NSF or any of its product certification programs, please contact our [Consumer Affairs Office](#).

To assist consumers in obtaining further information on the subject of well water quality and treatment, NSF has assembled the following list of resources:

- [Environmental Protection Agency](#)
- [National Ground Water Association](#)

For more information - info@nimbuswater.co.za or www.nimbuswater.co.za

Contaminant Guide

All sources of drinking water contain some naturally occurring contaminants. At low levels, most of these contaminants are not considered by the EPA to be harmful. Naturally occurring contaminants include radon, radium, and arsenic. In addition, people, animals, and industry can also add contaminants to our water supplies. Some of the more common contaminants that can be introduced into our water supplies include microorganisms, pesticides, and nitrates.

Below is a list of many of the common contaminants that can be found in public and private drinking water supplies. In addition, we have also included several chemicals commonly used to treat our drinking water supplies. If you would like to see further information on a specific contaminant, please select that contaminant.

[2,4,5-TP](#)

[2,4-D](#)

[Alachlor](#)

[Arsenic](#)

[Asbestos](#)

[Atrazine](#)

[Bacteria](#)

[Barium](#)

[Cadmium](#)

[Carbufuran](#)

[Chloramine](#)

[Chlordane](#)

[Chlorides](#)

[Chlorine](#)

[Chlorination By-Products](#)

[Chromium](#)

[Copper](#)

[Cryptosporidium](#)

[Cysts](#)

[Dibromochloropropane](#)

[Ethylene Dibromide](#)

[Fluoride](#)

[Hardness](#)

[Heptachlor Epoxide](#)

[Hydrogen Sulfide](#)

[Lead](#)

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[Lindane](#)
[Mercury](#)
[Methoxychlor](#)
[MTBE](#)
[o-dichlorobenzene](#)
[Nitrate](#)
[Nitrite](#)
[Particulate Matter](#)
[PCB](#)
[Perchlorates](#)
[Radium](#)
[Radon](#)
[Selenium](#)
[Sodium](#)
[Sulfates](#)
[Styrene](#)
[Taste and Odor](#)
[Total Dissolved Solids \(TDS\)](#)
[Toxaphene](#)
[Trichloroethylene \(TCE\)](#)
[Trihalomethanes \(TTHM\)](#)
[Turbidity](#)
[Volatile Organic Chemicals \(VOCs\)](#)
[Xylenes](#)
[Zinc](#)



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Water Treatment

The process of removing contaminants from raw, or wastewater to make it safe and palatable for human consumption. A wide variety of technologies may be used, depending on the water source, contaminants present, standards to be met and your requirements.