

WELL WATER TESTING

THE NEED FOR PROPER TESTING AND ADEQUATE INFORMATION

- WELL WATER SCHEMATIC
- WELL WATER TESTING



ENVIRONMENTAL WATER SYSTEMS®
Quality Water Filtration Crafted in the USA Since 1987.

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Well Water - Where to Begin and How to Proceed

Well Water Specifications: The Need for Proper Testing and Adequate Information

EWS Well Water Statement:

EWS, Inc. is focused on the manufacture of quality water treatment equipment and is not a water testing laboratory. Since other organizations, including water dealers, test for the sale, EWS, Inc. considers the testing of water and the specification of equipment a conflict of interest.

(Editor's note: Municipal water is treated and tested by water districts. Water quality results are readily available to the public. Door-to-door salespeople testing water are only running a program to sell product and are incapable of providing any valid or meaningful testing information to the consumer)

Lab Testing of Well Water Prior To Any Proper Specifications:

EWS, Inc. requires test results that are independent, complete *(the basic complete test along with a referral is a pdf file located within www.ewswater.com or available upon request by e-mail or fax)*, and done in accordance with EPA compliances and chain of custody. EWS, Inc. has no affiliation with any lab, and only refers consumers to a lab that tests in accordance with standards that will allow for proper specification of treatment methods or options.

EWS, Inc. allows and encourages a consumer that may elect to use a lab of their own choosing based on their research, locale and/or pricing. However, the standard must be met for independence, completeness of the testing *(which may include additional items known to be potentially in the area)*, and compliances of testing and custody.

Water Testing Information Requirements:

EWS, Inc. will not specify, nor make any recommendation for any treatment equipment or options, under the following testing circumstances; no test results available, incomplete testing performed, on-site salesperson door-to-door testing, the use of assumptions based on physical observations without any complete testing.

Well Equipment and Well Water Requirements for Proper Specifications:

EWS, Inc. requires that the consumer supply information on the well, well water, well equipment and pumping circumstances that will allow for proper specification of treatment methods or options. Circumstances may require, but are not limited to, the following; pumping equipment, adequate pressure and flow rates, volume or production of water from the well, disinfection, chemical feed, oxidation, water storage, physical debris, silt, silica, sediment, and/or particulate material.

Well Equipment and Well Water Information Requirements:

EWS, Inc. will not specify, nor make any recommendation for any treatment equipment or options, under the following well, well water, well equipment and/or pumping circumstances; no well depth disclosed or accurate information available, inadequate information on well equipment in use, inadequate information on pumping flow rates and pressure, inadequate information on well water volume or production, need for upgraded and/or other equipment or treatment to provide proper water and/or mechanical results to satisfy treatment equipment parameters.

Equipment recommendations are based on lab results from source water and other information provided. All information should be available to EWS, Inc. prior to the recommendation of any equipment to verify that the concentrations and other factors are within the limitations of the equipment. There are items over which EWS, Inc. has no control, or of which EWS, Inc. has no knowledge, which may cause unsatisfactory performance of the recommended equipment. It is the responsibility of the consumer to verify the application information required above. EWS, Inc. assumes no liability for equipment installed based on inadequate information, improper installation and/or changes in water quality. EWS, Inc. will make every reasonable effort to provide information, in order to, assist in solving any problems that may occur.

No equipment is intended for use where water is microbiologically unsafe or with water of unknown quality without adequate disinfection before any equipment. Filter maintenance schedules will vary and must be replaced, as necessary, as determined by usage and local water conditions.

Go to ewswater.com and find the tab for Well Water.

For the most complete information on well water - review, download or print out the "Guide For The Private Well Owner".

schematic for varied or difficult well water conditions

CONDITIONS	APPLICATIONS
<p>Source Water (before any treatment) - Test Results</p> <p>Pre-Treatment: Coliform/Bacterial/E-Coli microorganism problems, decaying vegetation, organic bonding, Iron/manganese bacteria Tannins (yellow)</p> <p>Pre-treatment is the primary need to disinfect, break down organic bonds and/or add oxygen to water. To remove iron, manganese, pre-filter, balance pH and/or generally prepare the water for consumption additional filtration is used to minimize water issues for use in the home.</p>	<p>Based on Test Results</p> <p>Chlorination/Chemical Feed (as needed) Ozonation UV (only safeguard, not a solution)</p>
<p>Oxidation/aeration (as needed) <i>location or sequence of tank may vary</i> Low supply water flow and/or pressure</p>	<p>Storage tank and Equipment Booster Pump (Need minimum of 40 psi & 8 gpm (or 12 gpm for all 1354 tank systems)</p>
<p>Iron Removal (as needed): Iron (red or pinkish) Manganese (black or brownish) Hydrogen sulfide (rotten egg smell)</p>	<p>(pictured) High Purity - High Oxidation Media Systems</p>
<p>Pre-Sediment Filtration (as needed): Silt, dirt, heavy particulate matter <i>location or sequence of unit may vary</i></p>	<p>3-micron Self Cleaning System or (pictured) 5-micron Pre-Sediment Cartridge Unit (not a whole home filter)</p>
<p>pH Balancing (as needed): Low pH, less than 6.6, corrosive, acidic water High pH, more than 8.6, corrosive, basic water <i>location or sequence of unit may vary</i></p>	<p>Custom Blended, (pictured) pH Increasing Reagent System pH Decreasing Ion-Exchange</p>
<p>Point of Entry Filtration (as needed): Chlorine, VOC's, herbicides, pesticides, solvents, dyes, fuels, odor, taste, clarity</p> <p>Softeners strictly soften water and have their application. However, softeners replace valuable calcium and magnesium minerals (non-contaminants) with sodium or potassium chloride. The resultant water may be of lesser water quality, has warranty issues with other products and may be legally restricted due to the damaging brine discharge. The EWS Series of appliances is applicable up to 30 grains of hardness and is an alternative.</p> <p>EWS/CWL system can be installed at the main service line and a softener after the EWS/CWL system or on the hot side (supply line the heater(s) based on the preference of the consumer or water condition.</p>	<p>CWL Series - Filtration only EWS Series - Filtration and Conditioning vs. Softening</p>
<p>Point of Use Filtration (as needed): Dependent upon test results, removal and/or safeguard, as applicable</p> <p>Both types of systems have their advantages, capabilities, and in the case of reverse osmosis, some disadvantages. EWS, Inc. can provide either system correctly specified for the application and with UV disinfection options.</p>	<p>Various Drinking Water Systems or (pictured) Reverse Osmosis Units</p>



All systems should be correctly applied and installed based on water issues, concerns and/or consumer preference.
Contact EWS Customer Service if you have any questions.

Well Water Testing

Make sure labs are independent, compliant, and certified testing facilities offering complete well water testing and analysis. Labs should have complete tests for well water, including microbiological, inorganics, organics and water balance. Kits are normally shipped to the consumer with sterile bottles and simple instructions. Once the testing is performed the kit is shipped back overnight (may be included in the cost, inquire with lab) to preserve the samples, create a chain of custody and properly test the water.

Caution: Water must be tested at the source before any treatment. Testing filtered, conditioned, softened or any water that has been treated will not provide accurate results.

Make sure to see the following list of what to completely test for in order for proper specification of product. Any incomplete test will not be reviewed for specification. Additional items may have to be tested based on the local water conditions and environment.

Go to ewswater.com and find the tab for Well Water. For the most complete information on well water - review, download or print out the "Guide For The Private Well Owner".

Mandatory Microbiological Drinking Water Standards Required Test and Required Absent or "Safe" Result Prior to Any Water Filtration and/or Treatment Product

Coliform Bacteria "Safe Water Test"

Coliform bacteria or "Potability" testing measures possible harmful bacteria in your water. E. Coli is the test for contamination due to waste product. This test is recommended for all wells at least on an annual basis by the Environmental Protection Agency. Test results should always read absent, negative or N/D. A lab should provide you with a sterile sampling bottle & preservative, as well as detailed sampling instructions.

Mandatory Primary Drinking Water Standards

Nitrate (NO₃) + Nitrite (NO₂) (Annual Test)

An important addition to the your water test kit, in accordance with the Safe Drinking Water Act. These compounds cause electrolyte imbalances and are essential for homes with an infant under six months of age. The EPA has established a primary drinking water standard of 10 mg/L (1.0 ppm or mg/l for nitrate) for these parameters in water.

Conductivity (EC) (Annual Test)

A low or negative number would be water aggressive or corrosive in nature (softened water will have this issue due to the exchange of naturally found minerals for salts) Water with a higher number exceeding 0.78 umhos/cm will have higher concentrations of TDS, hardness, and/or other factors. This is a simple and inexpensive test that should be performed annually as a benchmark as to whether or not you have changes in your water.

Lead (Pb)

It is important to whether any Lead results from the actual water source or from the piping or delivery system into the home. Lead is a toxic metal that was used in older water pipes in some homes. As water stands in the pipes, the lead will slowly dissolve into the water. The water sampled for a lead test must be a "first draw" or the water first out of the pipe, which should be at least six hours prior to the last run of the faucet. The established primary drinking water standard is 0.01 ppm or mg/l.

Fluoride (F)

Fluoride is added to water by some municipalities to encourage healthy teeth in children and young adults. The EPA has established a primary drinking water standard of 4.0 mg/L for fluoride. A contaminant in higher concentrations or to people with chemical sensitivities, this test will allow you do discover the amounts of fluoride your water contains.

Mercury (Hg)

A toxic liquid metal that can easily be stored in human tissue if absorbed. The maximum contaminant level designated by the EPA is 0.002 mg/L. A certified lab can determine if your water is safe and under the harmful limit.

Arsenic (As)

Arsenic is more common than one may imagine. It is a natural element found below the Earth's surface. If your well has a crack in it, there is a possibility of it becoming contaminated. The effects of arsenic are similar to those of mercury. The EPA limit for arsenic in drinking water is 0.01 ppm or mg/l (10 ug/l, micro-grams/liter or parts per billion). A very small amount.

Well Water Testing

Mandatory Secondary Drinking Water Standards

Sodium (Na)

Sodium can be a major concern for people with circulatory ailments and critical for low sodium diets. Even though there is no official standard, sodium is considered present at 50 ppm or mg/l and above 150 ppm may be actionable.

Chloride (Cl)

Chloride can have an effect on the taste of your water. Standards placed at 250 ppm or mg/l are actionable.

Sulfate (SO₄)

Sulfates can have an effect on the taste of your water. Standards placed at 250 ppm or mg/l are actionable.

Iron (Fe)

The EPA has established a secondary drinking water standard of 0.30 mg/L for Iron. The secondary drinking water standards were designed for aesthetic purposes (i.e. taste, odor, color, etc.)

Manganese (Mn)

The EPA has established a secondary drinking water standard of 0.05 mg/L for Manganese. Just like Iron, it may cause rusty water, stains, deposits, and affect water's taste, but it is not a health hazard.

Iron/Sulfur Bacteria

Although this bacteria does not present a health threat, this type of bacteria can make water smell and taste bad. By linking to the iron or manganese it plugs plumbing equipment and diminishes the effectiveness of treatment systems. Test results should always read absent, negative or N/D. If not, pre-treatment before any equipment is required

Tannins

There are many factors that may cause color in water. The most common are organic matter, and/or colloidal solids that are too small and too fine to settle out properly. These suspended particles can cause problems with disinfection and filtration processes, and also be an indicator of bacterial activity in the water. Frequently seen in shallow wells, wells under the influence of surface run-off water, or area that have heavy rainy periods.

Aesthetic Drinking Water Standards

pH

Acceptable pH range is between 6.6 and 8.6, best results should be between 7.2 – 7.6. Too low water pH (below 6.5) is acidic and corrosive (staining of blue/green may be present), too high pH (above 8.8) is basic and chalky (staining also be present or may make water hardness issues, if applicable appear to be greater).

Alkalinity

This is a good test for when the household plumbing contains lead, objectionable taste or smell are indicators. Below 40 mg/l the water can be more aggressive. Above 240 mg/l water is more basic and is more chalky which makes water hardness appear more of an issue than it may actually be.

Total Hardness

Measured in mg/l the number can seem high, however if you divide this number of mg/l by 17.1 (ie: 200mg/l divide by 17.1 = 11.7 grains) you will get the common reference number of grains of hardness (or grains per gallon - gpg). Water hardness can be very frustrating. When problems arise with hard water, any surface the water comes into contact with can be affected. A perfect example of this build-up is on drains and faucets. Total Hardness test is a good measure of how much naturally found calcium & magnesium (not contaminants) are in your water. Hardness concentrations greater than 35 grains/gallon are considered high and softening the water should be considered. Result can determine exactly where you want to be and how to address this mostly aesthetic issue.

Total Dissolved Solids (TDS)

Water containing more than 1500 mg/l total dissolved solids is not recommended for human consumption. Some mineral water such as Panna or Pelligrino can have TDS exceeding 900 ppm. Averages usually can be found around between 250 and 650 while 1,000 ppm may be actionable depending on other results found.

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The EWS, Inc./Environmental Water System Product available through:



Authorized Kitchen & Bath Showrooms, Appliance Showrooms, Building & Plumbing Wholesale Supply Locations and their building, plumbing, HVAC and service contractors, and Authorized Online Distributors.

EWS is a Proud Contributor and Sponsor of Organizations Dedicated to Improving Health, Well-Being and the Environment

- Heart • Lung & Respiratory • Allergy & Asthma • Dermatology & Skin • Digestive: Crohn's & Colitis •
- Oceans • Inland Water Ways • Wetlands • Forestry • Soil • Air •



ALL FILTRATION PRODUCT PROUDLY MADE & ASSEMBLED IN THE USA



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Quality Water Filtration Crafted in the USA Since 1987.

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