

wellcare[®] information for

Environmental Health Specialists

Inspecting a Well

Millions of American homes today are served by private water well systems. Environmental Health Specialists are often the best local source of information for well owners. Health departments are generally responsible for:

- Permitting and approval of well location
- Post-construction inspection to ensure proper seal and sufficient yield
- Maintaining well completion reports filed by well contractors
- Sampling or reviewing water test results to certify water quality
- Providing well owners with water testing and well maintenance recommendations
- Conducting real estate certifications required by mortgage lenders

This wellcare[®] information sheet provides guidance for Environmental Health Specialists to help well owners understand how to best manage their drinking water and well system. Additional information on water testing, water treatment, and septic systems can be found at <https://www.watersystemscouncil.org/water-well-help/wellcare-info-sheets/>.

Well Records

Search for any available information about the well, including well logs, maintenance records, and water test results. These records will provide a wealth of information about the well system. If the well owner is not able to provide these records, check with the well contractor or local health department.

Well Log

Well contractors are generally required to file the well log (also known as a construction record or drilling report) following construction of a new well. Well logs are increasingly being made available online by state groundwater agencies. Bear in mind that not all well logs will be available. The well log will include:

- Permit or reference number for the well
- Name of well owner at the time of construction
- Location of the well on the property
- Drilling method used (percussion or rotary)
- Static water level and yield at time of drilling
- Depth and diameter of the borehole
- Length of casing and type of casing material
- Size and type of screen (if applicable)
- Size and setting of the pump installed
- Description of the layers of soil and bedrock in which the well is constructed

Maintenance and Testing Records

Ask the well owner for all available records of maintenance, inspection, and testing completed in the years following well construction. If the well owner does not have records, check with the well contractor or the local health department for any available water test results.

Inspecting the Well

Well records provide a lot of information about the well, but a physical inspection needs to be performed to assess the well's current condition, in addition to other very important aspects of the well. The list below represents *ideal* conditions for a water well:

Well Location

- **Proximity to Pollution Sources** – located uphill from sources of pollution
- **Distance from Pollution Sources** – located at least 100 feet away from potential pollution sources and meets or exceeds all local and state separation requirements
- **Soil Layer**– thick layer of fine-textured soils, like clay loams and silty clays, which have lower porosity than sandy soils and better filter impurities
- **Subsurface Conditions** – water table or fractured bedrock is deeper than 20 feet which should allow for sufficient natural filtration

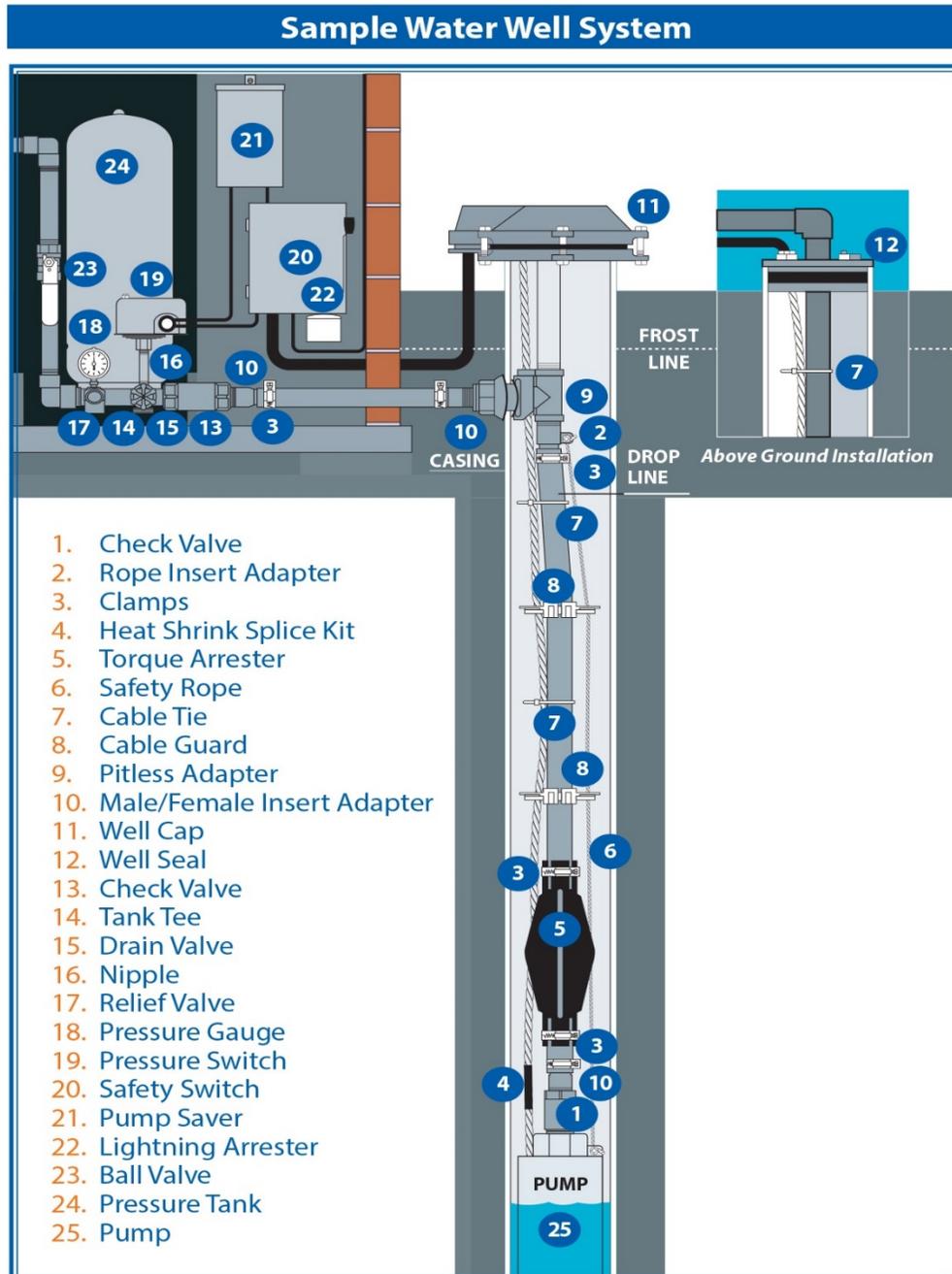
Well Construction and Condition

- **Age** – well is less than 20 years old
- **Well Type** – drilled wells have a lower potential for contamination than old, dug wells
- **Casing Height** – lining of the well (casing) rises to a minimum 12 inches above ground surface, 12 to 24 inches above the highest flood level on record
- **Casing Length** – casing extends at least 25 feet below land surface and meets or exceeds local and state requirements
- **Condition of Casing and Well Cap** – casing is not damaged, well is properly sealed or capped, and any screened vent faces the ground
- **Backflow Protection** – measures are taken to prevent backflow (reverse flow in water pipes) and anti-backflow devices are installed where necessary
- **Well Components** – pump, pressure tank, and water treatment system (if applicable) are in good condition and have been regularly maintained
- **Inspection** – well inspected within the last 10 years and records are available

Well Yield

The well log should include a measurement of the well's yield in gallons per minute (gpm) at the time of construction. A yield of one gpm will provide 1,440 gallons of water per day (gpd), and the average person consumes between 80 -100 gpd. A minimum of 5 gpm is ideal to accommodate periods of peak (above average) water use typical of a suburban or rural family home. Check for state or local regulations requiring a minimum yield.

The yield of a well can decrease over time and may need to be retested to ensure the well can provide a sufficient amount of water to meet household demand. If the yield has been found to have decreased, the well owner can consult a well contractor to discuss possible options to increase the yield.



This image is intended to represent some of the components that can be included in a septic system and is not intended as an installation guide. Check local codes for actual requirements and restrictions.

Water Quality and Testing

If records of well water testing are not available, the well water should be tested by a state-certified laboratory. At a minimum, all wells should be tested annually for bacteria, the most common water quality contaminant. Federal home loan programs require testing for bacteria, lead, and nitrate/nitrites in addition to contaminants of local concern, such as arsenic and radon.

Because the U.S. Environmental Protection Agency (EPA) does not regulate private wells, use EPA's maximum containment levels that regulate public water supplies for guidance to evaluate test results. Visit <https://www.epa.gov/dwstandardsregulations> for information on primary (health risk) and secondary (aesthetic) standards.

A positive test for E. coli requires disinfection of the well system. Chlorine, ultra-violet light, or ozone treatments can successfully treat E. coli and some other harmful germs. Other contaminants may be reduced to acceptable federal standards with a POE or POU treatment system. Contact a local water treatment professional to discuss appropriate treatment options following testing.

Costs involved with water testing will vary by state and lab, often ranging from as little as \$5 to test a single parameter (such as pH) to \$250 or more for tests of many parameters. State and local health departments can provide well owners with guidance on which tests are appropriate to address their specific water quality concerns and maintain a list of state-certified water testing laboratories. Select a lab that can return test results within two weeks in a format that is clear and easy to understand. You can also contact the wellcare® Hotline for assistance at 888.395.1033 or www.wellcarehotline.org.

Water Treatment Systems

Standard treatment systems include water softeners, filters and injection systems. These may be point-of-entry (POE) systems that treat water as it enters the house, or point-of-use (POU) systems that treat water at an individual tap, such as the kitchen sink. Check that any water treatment devices installed are operating as designed and are providing an acceptable water quality. Ideally the water should be tested before and after the treatment devices.

If the well falls short of these ideal conditions, contact a local well contractor about further well inspection, water testing, and/or the need for well repair or replacement. All well owners should schedule regular inspection, maintenance and testing to keep their well systems operating at peak efficiency and prolong the life of their well system.

We recommend providing the well owner with a copy of our **Well Owner's Manual** which includes advice on well maintenance, selecting a well contractor, protecting your wellhead, well water testing, understanding well water test results and more. Contact the wellcare® Hotline at 888.395.1033 for a copy or download a digital copy at <https://www.watersystemscouncil.org/water-well-help/well-owners-manual/>.

For More Information on Inspecting a Well

Home*A*Syst: Home Assessment Guide – Michigan State University Extension Bulletin WQ-51
http://www.greenoaktwp.com/Home_Assessment_Guide.pdf

Kansas Home*A*Syst: An Environmental Risk Assessment Guide for the Home – Kansas State University Agricultural Experiment Station and Cooperative Extension Service
<https://bookstore.ksre.k-state.edu/pubs/HOMEASST.pdf>

FOR MORE INFORMATION to help maintain and protect your water well system:



wellcare® is a program of the **Water Systems Council (WSC)**. WSC is the only national organization solely focused on protecting the health and water supply of more than 13 million households nationwide who depend on private wells.

This publication is one of more than 100 **wellcare®** information sheets available FREE at www.watersystemscouncil.org.

Well owners and others with questions about wells and well water can contact the **wellcare®** Hotline at 1-888-395-1033 or visit www.wellcarehotline.org to fill out a contact form or chat with us live!

JOIN THE WELLCARE® WELL OWNERS NETWORK!

By joining the FREE **wellcare®** Well Owners Network, you will receive regular information on how to maintain your well and protect your well water.

Contact us at 1-888-395-1033 or visit www.wellcarehotline.org to join!



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