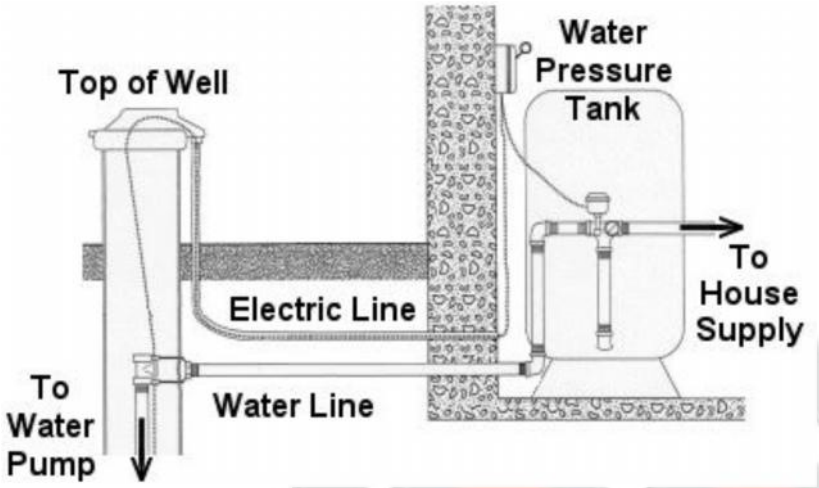
If you live outside a municipality or in an area not served by public water, your water supply is almost certainly provided by a private well. Water wells tap underground sources of drinkable water called aquifers.



Water Well Problems

The safety of any water supply is largely dependent on the construction and maintenance of the water system. Below is a list of common well system problems that can spell trouble if their symptoms are ignored:

1. **Well pump turns on and off continuously when used.** A waterlogged pressure tank causes this condition. In many cases, a leak has developed in a line, fitting, etc. Depleting all line pressure, turning off the pump and repressurizing the pressure tank, at its air fitting, to 28 PSI (atmospheric pressure) may correct the problem. If you do not know how to do this, you may need to contact a well contractor.
2. **Poor water pressure.** There are a number of potential causes for this problem. One of the most common is improper pump setting on the pressure switch. Most pressure switches are set to turn the well pump on at 30 p.s.i. (pounds per square inch) and off at 50 p.s.i. However, water pressure is delivered in a more satisfactory manner at 50-60 p.s.i. Contact a well contractor to adjust the pressure switch accordingly.
3. **The well pump turns on when water is not in use.** This problem almost always means that there is a leak somewhere in the water system. Check the inside plumbing for leaks. If none are found, check outside for wet spots in the yard between the well and the house. Consult with a well contractor if you cannot determine the source of the leak.

4. **Physical defects.** Homeowners should periodically inspect their water systems for defects that could affect the safety of their water. If the well casing extends above the ground, which is the standard in many states, make sure the cap fits tightly onto the casing and is in good condition. If the cap is loose, tighten it. If it is damaged, replace it. Check the electrical wiring to the well.
Ideally, the wires should be enclosed in metal conduit between the well and ground, and between the basement wall and the pressure switch. If the electrical system appears to be damaged, call a well contractor to repair it immediately.

5. **Poor water quality.** Water from private systems may contain bacteria, minerals or other impurities that affect its quality. Any private water well may be tested, typically for a fee. Samples are routinely tested for coliform bacteria, lead and nitrate/nitrite levels. Contact a qualified home inspector or local Health Department for information about having your water tested. Installing a water-conditioning unit can reduce water hardness and iron content. Other water quality problems may sometimes be solved through disinfection of the well water distribution system.

Procedure For Disinfection of Well Water Distribution Systems

Disinfection may be accomplished by the use of ordinary household bleach containing chlorine. For the average home well, one to two gallons of bleach will be adequate. Be sure to use regular bleach, not "lemon scented" or other modified bleach products. It is important to remember that even after the well has been disinfected, the water supply is not considered safe until a satisfactory laboratory report has been received.

Disinfection procedure:
1. Check the well seal, to be certain of a tight-fitting construction. The well cap should be 6-12 inches above ground level or the bottom of the well pit. Replace any worn or damaged parts. A well must be in good condition to prevent contamination.
2. Mix the gallon or two of bleach in a bucket with three or four gallons of water. Water drawn from the contaminated well is satisfactory. Pour the solution directly into the well. Run a garden hose into the well and recirculate the water until you smell the bleach in the water coming out of the hose. Check again to see that the well seal is in good order before closing the well.
3. Turn on each water faucet successively throughout the entire distribution system and let it run until you smell bleach at each tap.
4. Turn off the taps and allow the solution to remain in the water lines for at least two hours. Then run each tap for ten seconds and close again and allow to stand overnight. The water should not be used except for flushing toilets.

5. On the following morning:
a. Connect a garden hose to an outside water faucet and run the water into a road ditch until the disinfectant odor disappears. Then run each tap inside the house to rid the system of any lingering disinfectant.
b. Run each tap until the disinfectant odor disappears.
6. After two days and if the odor of bleach is not detected, re-test your water. It is also recommended that you have the water tested again about two weeks after chlorinating the system to assure that the contamination problem is eliminated. Boil all drinking water for 5 minutes or use bottled water until a satisfactory lab report has been received. Water may also be made safe for drinking by putting 5 drops of unscented bleach into each gallon of water. Let the water stand for 30 minutes before drinking. This method should be used only with water that is clean in appearance and free of odor.
Disinfecting your well in the manner described above should be performed anytime your well is serviced.

Many consumers still have concerns about whether this treatment process can be depended upon for long term water quality. Fact is, this treatment creates a relatively short term fix to bacteria contaminated water supplies.
For a long term, reliable, method of treatment of bacteria contaminated water, consider the installing an ultraviolet light in-line treatment device. This device bathes incoming water in ultraviolet rays, thereby virtually eliminating harmful bacteria in the water supply. These devices are available in varied capacity ratings. These can be easily installed by a consumer or consider the use of a qualified plumber for installation and routine service.

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
American Water Works Association: www.awwa.org
wellcare® Hotline for Well Owners: 888-395-1033