

Residential Well Cleaning

What You Need to Know

The National Ground Water Association encourages well owners to periodically get a water well system checkup that considers, among other things, whether the well system needs cleaning.

How do you know if a well needs cleaning?

Following are some signs that may indicate a need to clean your well system.

- The well water is turbid, which means it is cloudy or has suspended matter in it.
- There has been a decrease in the well's capacity—that is, the gallons of water per minute that the pump can supply to the system.
- The water has developed an odor or taste problem.
- The water tests positive for total coliform and/or overall biological activity.

Work with a qualified water well system contractor to determine whether your well needs cleaning.

Why do wells need to be cleaned?

There are a variety of reasons why a well might need to be cleaned.

Bacteria. In the upper reaches of the well, the presence of oxygen encourages the growth of aerobic bacteria (bacteria requiring oxygen) and the oxidation of metals. Aerobic bacteria tend to cause clogging by the production of large amounts of slime and the entrapment of oxidized iron and manganese as well as other minerals.

Debris from bacterial activity in the upper portions of the well tends to accumulate at the bottom of the well. Water in the lower portions of the well can become depleted of oxygen due to chemical reactions and bacterial activity, creating an environment for anaerobic bacteria (bacteria able to live without oxygen). These anaerobic bacteria, natural to the aquifer, are often responsible for methane gas, a fishy taste, various odors, and hydrogen sulfide (which causes a distinctive rotten egg odor).

Encrustation. This is the process by which a crust or coating is formed on the well intake and/or casing, typically through chemical or biological reactions.

Cost and Operating Efficiencies

A well that needs cleaning can be more costly to operate. For example, a well screen clogged due to encrustation can reduce the flow of water into the well, causing the pump to work harder. This results in higher electrical costs and wear on the pump.

To summarize, proper well maintenance offers a positive payoff in extended pump and water treatment system life, and reduced impacts on plumbing fixtures and appliances.

How Well Systems Are Cleaned

Some well owners view chlorination as a cure-all for water quality problems. While chlorination might temporarily prevent taste and odor problems, it leaves behind debris or accumulated organic material. Such debris or material provides a food source for future bacterial growth. Chlorination may therefore not be effective in the long run.

There are two basic approaches to well cleaning—mechanical and chemical, with the most effective strategy often being a combination of the two. Within both the chemical and mechanical methods is an array of options. A water well system contractor is best qualified to help the well owner decide which methods to use, depending on the condition of the well.

Mechanical processes for loosening debris and/or encrustations and removing them from the well include the use of:

- Pressurized air or water
- Wire brushes or scrapers
- Agitation of water in the well
- Sonic waves.

Chemical cleaning often involves the use of various acids to loosen or dissolve debris so that it can be pumped out of the well. Depending on the nature of the cleaning job, there are also polymers and “caustic” chemicals (that increase the alkalinity of the water) to remove debris.

The age of a well may determine which methods are used to clean it. If a well's water intake areas or the well casing have corroded significantly over time, they may be damaged or destroyed by more aggressive cleaning practices. In such cases, a well owner may opt to proceed directly to new well construction or prepare for that option if cleaning is ineffective.

Well Disinfection

Well cleaning should be followed immediately by a thorough disinfection of the well system and its immediate environment. Disinfection of the well should be completed by the water well contractor to ensure that it is done properly.

Where can I get more information?

For more information on your private water well, contact your local contractor. Also, visit the website of the National Ground Water Association, www.ngwa.org, and its site just for well owners, www.wellowner.org.