

Well Definitions

Private Wells and Public Water Systems

Are you looking to purchase your first water well system? Don't let the technical terminology scare you.

The following definitions will help you better understand water well systems. It is important that you know as much as you can about your water well system so you can ensure that it is always providing quality water.

Construction

- **Well logs** are documents containing vital information about the history of the well and the ground surrounding it. Contractors file well logs with state departments upon completion of all wells, but well owners should have a copy too.
- **Well casing** is the tubular structure placed in the drilled hole to maintain the well opening. The casing also confines the groundwater to its zone underground and prevents contaminants from mixing with the water.
- **Well screens** are filtering devices at the bottom of the casing. They allow water to move through the well, while keeping out most gravel and sand.
- **Grouting** is a cement-like fluid injected into the hole to protect the well casing. It helps prevent corrosion and infiltration of contaminants.
- On top of the casing will be a **well cap**, which should fit snugly so debris, insects, or small animals can't find their way into the well system.
- **Yield** is the amount of water produced by a well. The quantity of water can be expressed in rates of gallons per minute, per hour, and per day. A low yield is a decrease in the amount of water produced.

Maintenance

- When a water well fails to produce the amount of water that it did when it was installed, a contractor can often "rehabilitate" the well. **Well rehabilitation** is based on several factors, including the ground that the well is drilled in, the well's construction, and the problem causing the decreased flow.
- **Low flow** is often caused by a drop in the water table, plugged holes along the well's casing, and/or incrustations on the well screens.
- **Well testing** will ensure that the well is running properly and will check for contaminants that can impede the well

from operating at peak capacity. It is recommended that you have your well tested by a professional contractor once a year.

Testing

- The most common problem associated with groundwater is **hard water**, which is caused when there is an abundance of calcium or magnesium. Hard water causes no health problems but can cause soap curds to form on pipes and plumbing fixtures. A water softener usually solves the problem.
- A **pH test** can determine if mineral deposits or corrosion are a problem due to hydrogen. Literally standing for "potential of hydrogen," the test measures the intensity of the water's acidity and alkalinity.
- A "rusty" taste in water is a result of iron in groundwater. It also can stain pipes and clothing. There are several methods of treatment, including installing a water softener. **Aeration**—the addition of oxygen to the water—can aid in the precipitation of iron, which removes it from the water as well.
- A rotten egg smell is often associated with **sulfur** in water. Sulfides also can cause corrosion to plumbing and darken water. Chlorination, a reverse osmosis system, or a negative ion-exchanger are effective in combating sulfur, while aeration is effective against hydrogen sulfide gas.
- **Silica** comes from the weathering of silicate minerals in the ground. Large amounts can cause scaling in pipes.
- Most **nitrogen** in groundwater comes from the atmosphere. However, nitrogen compounds also can reach groundwater through fertilizers, manure, sewage, and landfills. The most common forms in groundwater are ammonia, nitrate, and nitrite. Nitrates can be especially toxic to children under six months of age. However, there are a variety of treatment methods, including reverse osmosis systems with a water softener.

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.