wellcare® information for you about

Determining the Depth of a Well

The quality and quantity of water from your well depends upon the geology and hydrology of the area in which it lies. Well water comes from underground aquifers, which exist throughout the ground at different depths.

Aquifers act as water storage spaces, containing different amounts of water. Determining how deep your water well contractor must drill to gain access to a sufficient supply of water is part science and part educated guesswork.

Basic Well Construction

A bedrock well is one drilled into solid rock, tapping cracks in the rock that carry water. Typically, household wells are six inches in diameter, with a six-inch casing, or liner. The casing is the pipe that is installed down to bedrock in order to keep surface water and sand out of the well. In many cases, a drive shoe or casing seal is attached to the bottom of the casing to create a seal in the bedrock.

In constructing the well, the casing should extend at least 12 inches or more above the surface of the ground. In most cases, it takes one day to drill a well and another day to install the well pump.

All private well construction is based on establishing the right location for the well, sizing the system correctly and choosing the proper construction techniques. A professional water well contractor knows the hydrogeology in your area and all local codes and regulations for wells. They also have the modern equipment and expertise to make sure your well is properly constructed to meet the water needs of your family.

Estimating the Depth of the Well

The depth of a well is a determining factor in figuring the basic cost of drilling and the cost of pipe, since most water well contractors charge by the foot. A water well professional will base estimates on what experience shows is an average depth for your area. If the water first tapped is adequate for your family, then drilling can stop. If not, then drilling may have to go deeper.

However, a water well contractor cannot tell you exactly how deep to go to get water or predict the exact quality of the water that will be tapped. What a contractor can do is make reasonable judgments about water quality based on previous experience.

In many communities, ample water is found by 300 feet. Most wells for household use range from 100 to 500 feet deep, but a few are over 1,000 feet deep.

Well yields can be increased by fracturing the bedrock immediately around the drill hole and intercepted rock faults. One technique to accomplish this fracturing is to pump high volumes of water into the drill hole at high pressure, up to 3,000 pounds per square inch (psi). This process is called hydrofracturing.

The quality of water is much more dependent on the geological formations and water bed surrounding your well than any specific depth. In general, the deeper the well, the greater the likelihood for increased minerals in the water, which may require a water softening unit for your well system.

For more information on determining the depth of a well

New Hampshire Department of Environmental Services fact sheets at:
www.des.state.nh.us/ws.htm

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**

For more information about wells and other wellcare® publications

wellcare® is a program of the **Water Systems Council (WSC). WSC** is a national nonprofit organization dedicated to promote the wider use of wells as modern and affordable safe drinking water systems and to protect ground water resources nationwide. **Well owners and others with questions about wells or well water can now call the new wellcare® hotline at 888-395-1033 or visit www.watersystemscouncil.org**

This publication was developed in part under Assistance Agreement No. X-82849101-3 awarded by the U.S. Environmental Protection Agency. It has not been formally reviewed by EPA. The views expressed in this document are solely those of WSC. EPA does not endorse any products or commercial services mentioned in this publication.