

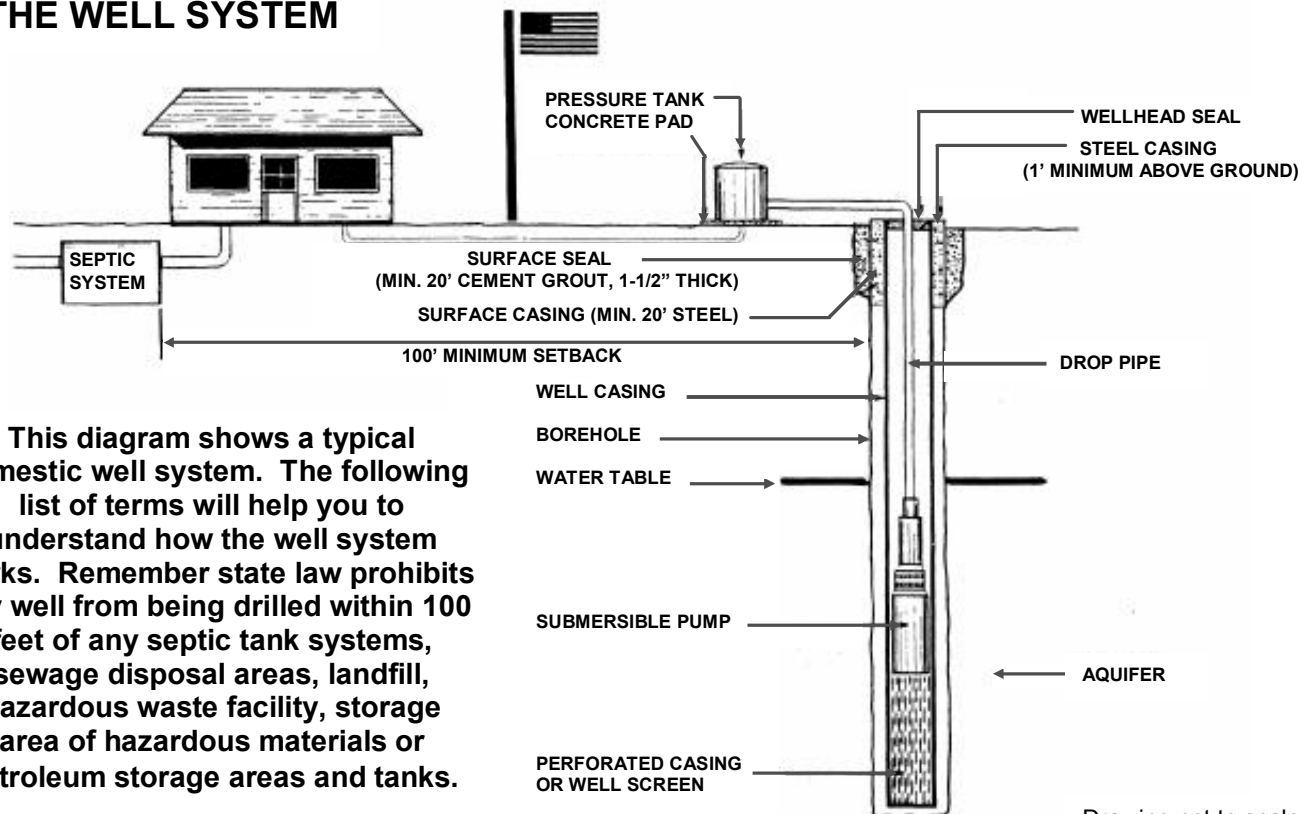
# WELL OWNER'S GUIDE



This guide was prepared to provide you with useful information and advice concerning your upcoming well construction project. Arizona state law requires that all wells be constructed in compliance with the standards set forth in the Arizona Department of Water Resources (ADWR) rules governing well construction and the licensing of well drillers, in A.A.C. R12-15-801 through R12-15-822, and A.A.C. R12-15-850 through R12-15-852. It is recommended that you become familiar with these rules since you and your well driller share the responsibility to ensure your new well is constructed to meet the state standards. You may download these rules from the ADWR Internet website at: <http://www.water.az.gov/adwr>. The following sections offer advice concerning some of the more significant aspects of well construction projects and the well construction standards.

- **Establish and Maintain Good Communication With Your Well Driller:** Maintaining good communication with your well driller may do more to ensure a successful well drilling project than any other step you might take. Make sure your well driller holds current licenses with both the ADWR and the Arizona Registrar of Contractors (AROC). Read and understand all the terms and conditions of your drilling contract. Observe the drilling activities and ask questions about what is going on, and make sure the well is being constructed to state standards. Don't ask your well driller to construct a well that will not meet state standards.
- **Well Location:** One decision that should be made prior to filing your Notice of Intention to Drill is to select a suitable drilling site. If possible, your well should be located on high or well-drained ground to help prevent potential surface contamination entering your well. Even if high ground isn't an option, you can still contour the land surface, or otherwise enhance drainage to prevent potential surface contamination. ADWR's rules prohibit a well from being drilled within **100 feet** of any septic system, sewage disposal area, landfill, hazardous waste facility, storage area of hazardous materials or petroleum storage areas and tanks. Please be advised that violations of the 100-foot setback rule are very serious and can pose significant health risks to you and your family and also result in compliance actions that can include the forced abandonment of the well.
- **Well Surface Seal:** The surface seal of your well prevents potential contaminants from entering the well from the land surface. ADWR's rules require the surface seal to be properly constructed using **steel casing**, with at least **1 foot extending above ground level**, and **cement grout** placed in the annular space between the steel casing and borehole in one continuous application from the bottom of the zone to be grouted to the land surface. The minimum length of steel casing must be **20 feet**, and the minimum annular space between the steel well casing and the borehole must be at least **1.5 inches** (this means the borehole diameter must be at least 3 inches larger than the outer diameter of the steel casing). Additionally, any annular space between the outer casing and an inner casing (drop pipe) must be completely sealed (see the figure on the reverse side for details on the surface seal). If a pitless adaptor is installed the cement grout may terminate at the bottom of the pitless adaptor.
- **Well Disinfection:** ADWR's rules require all wells that withdraw water for human consumption or culinary purposes without prior treatment to be disinfected by the drilling contractor before removing the drilling rig. Well disinfection helps prevent potential contamination and is usually carried out using a chlorine solution. Please refer to Arizona Department of Health Services (ADHS) Engineering Bulletins 8 and 10 (1978) for details. Copies of these bulletins may be obtained from the Arizona Department of Environmental Quality (ADEQ) website at: <http://adeq.state.az.us/comm/library/download/publist.pdf>. Well disinfection is also advised any time your drop pipe and pump are pulled or reset in your well.
- **Water Sampling and Testing:** Water sampling and testing are not required for your domestic well, but are recommended to identify possible hazardous contaminants in your well water. Information on water sampling and testing is available from the Arizona Department of Health Services, Lab Licensure and Certification Program at 602-364-0720 and from the ADHS Internet website at: <http://www.hs.state.az.us/lab/license/env.htm>
- **Important Documents and Filing Requirements:** Your well driller is required by statute to file a well driller report (ADWR form 55-55) and well log with ADWR within 30 days of the completion of your well. The filing of these documents is very important because the ADWR must receive this information to properly record your well in the State's official well registry database. Failure to file these documents can result in a compliance action being taken against your well driller and major inconvenience and problems for you. Typically, inaccurate or incomplete well records can significantly complicate and delay real estate transactions for the sale or transfer of property. Inaccurate well records can also deprive well owners who live within Active Management Areas from the protections that are provided under ADWR's Well Spacing and Well Impact Rule. It is in your best interest to make sure your well driller files the proper paperwork and also provides you with copies of all documents and records. Please be aware that you are required to file a Pump Installation Completion Report (ADWR form 55-56) within 30 days of the installation of your pump. A blank copy of the Pump Installation Completion Report is enclosed with this guide.

# THE WELL SYSTEM



Drawing not to scale

This diagram shows a typical domestic well system. The following list of terms will help you to understand how the well system works. Remember state law prohibits any well from being drilled within 100 feet of any septic tank systems, sewage disposal areas, landfill, hazardous waste facility, storage area of hazardous materials or petroleum storage areas and tanks.

- Aquifer:** An underground formation capable of yielding or transmitting usable quantities of water.
- Borehole:** The hole that is created by any one of a number of well construction methods, i.e., drilled, dug, jetted or driven.
- Cap:** A tamper-resistant watertight cover that is affixed to the top of the casing to help prevent contaminants, as well as small animals and children, from entering the well.
- Casing:** A steel or plastic (PVC) pipe installed in the hole during or after drilling to support the sides of the well and prevent caving.
- Drop pipe:** The pipe that hangs in the well and is attached to the pump. Water travels through the drop pipe to the surface.
- Open well:** A well that is not equipped with either a cap or a pump.
- Perforated casing:** A series of openings in a casing, made either before or after installation of the casing, to permit the entrance of water into the well.
- Pressure tank:** A tank used to store water under pressure for household use.
- Pump:** The part of the well that mechanically draws water up to the surface. There are many different types of pumps. This diagram shows a submersible pump, which is typical for domestic wells.
- Surface seal:** A cement grout seal that is installed around the top 20 feet of the steel casing to prevent contaminants from entering the well from the land surface.
- Water table:** The point where groundwater is encountered below the land surface. To withdraw water, a well must be drilled deep enough to reach below the water table.
- Well depth:** The total depth of your well. This will vary depending upon the depth to useable water in your area.
- Well screen:** A factory manufactured steel or PVC screen that keeps sand and gravel from being drawn into the well as water is pumped. The perforated casing or well screen is usually located at the bottom of the well or in the water producing zone.
- Wellhead seal:** A device used to seal the area between the drop pipe and the casing.