

Fill 'er Up

By Jeff Swanson, Circuit Rider

When drilling a well for domestic water use, the intention is that our old friend will always provide us with lots of good drinking water. However, when the old friend poops out, we are left with a potential conduit into the aquifer where contaminants may be introduced. That is why it is so important to properly abandon the well. Unused wells that are not properly abandoned can cause ground water contamination, waste, or loss of artesian pressure. Landowners can be held responsible for harm to the ground water resource if it is affected by old or unused wells. Oregon's well abandonment standards are designed to prevent contamination of the well or aquifer by surface and subsurface leakage which may carry harmful chemicals or bacteria. The standards also seek to prevent physical injury, waste of water and loss of artesian pressure. Oregon Water Resources Department (OWRD) has set minimum standards that describe the acceptable methods for two types of well abandonment.

“Temporary Abandonment” is when a well is considered temporarily abandoned and it is taken out of service. This means that the well owner intends to bring the well back into service at a future date. In this case, a temporarily abandoned well must be covered by a watertight cap or seal which prevents any materials from entering the well. Historically, some wells slated for temporary abandonment have ended up not being sealed in time. Due to this untimely chain of events, small animals and children have unnecessarily met tragic injury and even death. The intentions to bring a well back into service at a later date are sometimes delayed and even forgotten.

“Permanent Abandonment” means that a well is considered permanently abandoned and it needs to be completely filled so that movement of water within the well is permanently stopped. With the exception of hand-dug wells, a permanent abandonment must be performed by a licensed well constructor, or the landowner under a “Landowner's Water Well Permit”.

The appropriate permanent abandonment method will depend on the information obtained from an

examination of the well log and an onsite investigation of the well. Generally, a drilled well with steel or plastic casing will be abandoned by either removing or ripping the casing and filling the borehole with cement from the bottom up. Any pump, wiring, or debris in the well must be removed before the cement is placed.

If a review of the well log indicates that the well is a filter or gravel-packed well (where pea gravel is used to screen out loose geologic material in the well), OWRD has to preapprove any abandonment method. A greater potential exists for harm to the ground water from incorrect abandonment of this type of well due to the artificial gravel-pack material.

If a hand-dug well is to be abandoned, you must notify OWRD and obtain approval for the abandonment method before beginning the abandonment. Typically, a hand-dug well free of debris may be abandoned by filling the well with cement or concrete to above the water-bearing zone and then clean fill (not gravel) to land surface. Hand-dug wells containing debris may be considered for further abandonment methods.

I hope that this information is helpful when considering digging new wells before the older ones are given their final rights. The old wells if not given proper attention can cause the environment to suffer in a big way. When drilling a new well, you must consult a certified well constructor. That constructor is also the best and proper person to consult when you need specific information about well abandonment. Surface water contamination can have more short-term and immediate effects on the watershed. Ground water contamination can have longer-lasting adverse affects and should always be cautiously monitored and respected. The earth's resources are rapidly being depleted (remember when gasoline was \$0.23 per gallon?). Let's do our best to take care of the renewable resources. What would happen if our earth's 1% of fresh drinking water reached the \$3.00 per gallon mark? Gulp!