

Water Well Rehabilitation

Private Wells and Public Water Systems

The situation is not always bleak when a household water well fails to produce the amount of water that it did when it was first installed. Instead of the expense of abandoning the well and installing a new one, a professional contractor can often “rehabilitate” the well and restore flows that provide enough water for all of a family’s daily needs.

Several factors are involved in a contractor’s decision to rehabilitate a well, including the ground formation that the well is drilled in, the construction of the well, and the problem that has caused the decreased flow. Sometimes, the water table in the area has dropped and simply drilling the well deeper is the answer.

Following are more answers to questions concerning well rehabilitation.

How can you tell if water well rehabilitation can work?

A professional contractor can do tests to see if rehabilitating measures will be successful. The well will often be shut off for 24 to 48 hours to see if the static level—the level of the water table in a well when the pump is not operating—returns to or gets near the original level. If so, rehabilitation will usually work.

Before starting the project, contractors will often lower a downhole video camera into the well to make sure no other problems will be encountered.

What are reasons for drops in water production?

Along with the water table dropping, which has happened in several parts of the country because of drought, there can be other reasons for reduced productivity. The most common is the plugging of holes along the well’s casing and incrustations forming on the well screens. The amount of water going through the well system will drop significantly if several holes or portions of the screens are clogged. Calcium carbonate, iron bacteria, silt, clay, and “slime”—a combination of sediment and deposits—are all common well cloggers.

What methods are used to rehabilitate a well?

Two typical methods are (1) using chemicals to dissolve the encrusting materials so they can be pumped from the well, and (2) cleaning the well with a brush that can be attached to a drilling rig. High pressure jetting, hydrofracturing, and well surging

are also procedures in which water is injected into the well at extreme pressures. Contractors will often use a combination of these methods.

What chemicals are put in the well? Are they safe?

For iron bacteria and slime, a liquid bacteria acid is effective. For clogs with carbonate scale, sulfamic acids are used with inhibitors and modifiers. If the bacteria problem is persistent, some of the more aggressive chemicals are muriatic acid and hydroxyacetic acid.

The chemicals are placed in the well and agitated frequently for 24 to 72 hours. The chemicals are safe to use, and the well is then pumped with water before a water test is given to ensure that the well system is ready to be put back in service.

What is the difference between high pressure jetting, hydrofracturing, and well surging?

High pressure jetting features a tool with an adjustable, multihead, water-powered jet that lowers into the well and injects water at a high pressure, dislodging debris from the well.

With hydrofracturing, water is sent into the entire well at an extreme pressure. The water removes debris from the clogged perforations in the casing and can crack the formations underground to create new sources of water.

Well surging is the repeated injecting and flushing out of water in a well system. With repeated flushing, the debris is washed away.

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.