

The Basics of Interpreting Well Test & Inspection Results

Critical Information:

Sustained flow rated from well

The single most important piece of information from a well test is the sustained yield of the well. This yield value should be compared with the potential needs that will be placed on the well. For example:

A well is tested, produces 5 Gallons per Minute, and is going to provide water for a large house with a garden and landscaping. This well wouldn't be up to the task unless a large storage tank has been installed with a booster pump. Even with the storage tank, careful consideration should be taken to assure that the water supply were adequate for future needs. If this same well were to be used to provide for a 1 bathroom, 2 bedroom house with water saving fixtures and almost no landscaping, then it would be adequate, especially with a storage tank.

To evaluate water needs think about how many people will be living on the property and figure they will each use about 150 gallons per day. Consult with a landscaper to determine current/future water needs and minimum flow requirements for the landscaping, and then compare the sustainable flow rates from the well with the established requirements.

A property with insufficient water should be carefully considered before purchasing. While it may be possible to drill another well, there is no guarantee that drilling another well will get water. Relying on trucked water is not a good option as it can be expensive and unreliable.

Well Yield or Pump Yield

It is important to note that the well yield and pump yield are very different. The well test may show a yield of 5 Gallons per minute, but that number may be limited by the size of the pump installed in the well. Installing a larger pump could potentially give the homeowner access to more water. To determine if the pump is the limiting factor in the well test, it is important to look at a few more pieces of information: pump depth and sustained pumping level. If the water level in the well stays above the pump during the entire well test, then the well pump is the limiting factor in how much water can be withdrawn from the well. If the water level in the well drops to the level of the well pump, then the well is the limiting factor in the well test. While removing the existing well pump and installing a larger one to ensure the full well yield capacity testing is possible, it adds significantly to the cost and is not normally done.

Recovery

Recovery is the period of time after the well pump has been shut down from the sustained yield test. Water level measurements during this time are extremely important and reveal if the water level in the well comes back up to normal levels (the level before the well test started). Water levels that stay low/recover slowly can indicate, limited water availability, a plugged well casing, etc...

Important information:

Potential buyers should be aware that repair and maintenance of a well pump system are part of the rural homeownership experience. When purchasing a home with an aged well pump system, an aged system may be a point of negotiation in the purchase process.

Condition of well, pump & tank equipment

The inspection should include a general description of the well pump equipment, its condition and approximate age. The equipment should be functioning (hopefully) and providing water reliably. That equipment, while functional, could be 15 or 20 years old. This is an important consideration when the well system is being evaluated for the purpose of a real estate transaction. It is not possible for a well pump technician to give you an exact time frame before a system will fail. Insulation breakdown, corrosion, burned electrical contacts, worn pump, etc... indicate the system is nearing the end of its useful life, however, we've seen old/worn systems continue to work for many years. Potential buyers may want to have the current owner repair leaking valves, faulty/corroded parts, failed pressure tanks, etc... OR they may want to use this as a negotiation point on the price and take care of the issues after the sale is completed.

Water Quality & Effective water treatment

Water tests can show if the water has high levels of minerals that can cause staining/spotting, bacterial contamination or low pH. Frequently, water treatment equipment has been installed to correct the issues identified in the water coming from the well. It is important to determine if this equipment is working properly and what types of ongoing maintenance is associated with keeping the filtration equipment working.

Water pH levels below 7 that have been left untreated can be of particular concern. Low pH water, over time, can dissolve metallic piping (iron, galvanized, copper) and result in pinhole leaks in the metallic piping. If the water test results show water with low pH and the water piping system is comprised of metallic pipe, the pipe should be inspected by a plumber to ascertain if the metallic piping has excessive corrosion. In addition, plans to correct the pH to acceptable levels should be investigated.

Time of Year

A well test performed in the summer or early fall on a well that has been in use will typically give the potential buyer the most accurate results. Well tests done during the winter or spring may give different results since well usage is less due decreased irrigation demands, rainfall, etc...

Interesting information:

Often the well report will have other information of note. Look at it and think about the implications.

For example, some wells have warm or hot water. The temperature of water in the house for "cold" water could be more like tepid/warm. Sometimes the well is in a difficult to access area, this can increase costs to repair/replace the well pump when necessary.

Wells do use electricity to produce water. While a system may be perfectly functional and not show any signs of wear, it may be highly inefficient and use significant amounts of power.