

## **Well Rehab - It's a Must!**

Gary G. Small, President, HydroSystems, Inc., Phoenix, Arizona, USA

Coauthor: Ronald D. Huber

### ABSTRACT

Aquifer Storage and Recovery (ASR) wells present unusual challenges to keep them operation efficiently while minimizing plugging. Unlike water supply well, water is pulling out the well whereas in an ASR well, the water is being pushed into the well. These wells are often susceptible to the three major components of plugging, which are: 1) air entrainment, 2) suspended solids, and 3) biological activity.

The Fountain Hills Sanitary District operates five (5) ASR wells as a means to store and recover high quality effluent. The effluent is treated by microfiltration and then disinfected prior to injecting. The ASR wells are equipped with Baski downhole control valves and operated by a SCADA control system.

The SCADA operating system selects the wells to operate, starts and stops the wells, and ensures that each operating well is performing within a set of operational parameters. The SCADA system also collects operating data and stores it in a historic file to be used for Agency reporting and the evaluation of each well's performance.

Well rehabilitation has become a normal part of the District's operation and maintenance procedures. As the operating water levels of the wells approach the high water level during injection or the low water level during back flushing, the operators can schedule either chemical treatment or the full well rehabilitation including mechanical agitation.

The District has developed an operational procedure whereby all the wells need to be operated on a regular basis whether it is injecting or pumping. This constant operation has helped to keep the wells active and has lowered the need for well rehabilitation therefore reducing the annual maintenance costs.