

Case Study: Rodeo's demands for irrigation and feeding



Agriculture is by far the largest user of water – up to 70% of all fresh water consumption is for irrigation. Water has many other agricultural purposes such as washing stations, misters, or drinking water for livestock. In fact, horses consume up to 15 gallons of water per day.

At the Everett Bowman Arena in Wickenburg, AZ., water has the two-fold purpose of keeping the arena “rodeo ready,” with irrigation systems designed to maintain the arena surface, while watering the more than 150 horses and other livestock that stay there.



As a residential water systems installer, Walt Kadle, of Wickenburg Pump and Supply, says he’s seen “lots of shared wells in the area, requiring plenty of constant pressure systems to boost performance, reduce energy costs and minimize water waste.”

However, the pressure system he installed at the Bowman Arena fulfills other requirements. The arena, he said, needed 60 to 65 gallons per minute at 60 PSI to water down the arena, keeping dust levels low as well as provide a packed, safe running surface for the animals and riders. The system he installed also helps maintain a healthy herd of livestock in the holding areas.



The water source comes in the form of two 10,000-gallon storage tanks – each fed by a submersible pump in a deep water well installed and serviced by Walt Kadle, a Goulds professional dealer.

Walt researched the pressure per square inch each nozzle would need, Then he calculated the total friction loss, added in the water needed for the livestock. He took this information to his distributor and selected the system that would meet the arena’s demands. It’s similar to calculating the peak demands for a residential system except the numbers may be higher.



At each tank is a Goulds centrifugal pump and Aquavar controller, featuring a variable frequency motor drive and programmable logic controller in one compact pump package.

The advantage of the Aquavar controller, Walt says, is that it is designed specifically to work with all configurations of centrifugal pumps, “so they will match pump output to a wide range of system conditions, while protecting the pump, the motor and the pumping system.

“Just pipe it up, wire it, set the pressure and press the start,” Walt said of the Aquavar controller. “The constant pressure system meets every need.”