

Project Profile

Quail Ridge Prescott, AZ Arsenic Treatment System



Background

The Quail Ridge Community owns and operates the Quail Ridge Community water system located near Prescott, AZ. The water system is served by two wells that provide drinking water for the community's residents at a maximum of 160 gallons per minute (gpm) with an approximate arsenic concentration of 13 parts per billion (ppb). After a successful pilot, the site was able to be funded for the Arsenic treatment system. In August 2007, RW Turner and Sons contracted with AdEdge to help design, supply, and install the arsenic treatment system for the Quail Ridge community. AdEdge Technologies supplied an arsenic treatment system capable of reducing arsenic concentrations from the ground water supplying the community.



Treatment System

AdEdge supplied an APU-4860CS-S-2-AVH adsorption unit, capable of treating up to 160 gpm. The packaged system features two 48-inch diameter carbon steel adsorption vessels mounted on a epoxy painted steel skid utilizing the Bayoxide E33 media. The system is equipped with fully automated control valves, a piping harness, central control panel with programmable logic controller (PLC) and a color touch screen user interface. The system also features a control panel with local gauges, flow sensors & totalizers, along with a central hydraulic panel with sample ports for a complete functioning packaged unit. Included with the treatment process is a chlorine feed module for pre-oxidation and disinfection purposes. The system also features a 100% complete backwash water collection, filtration, and recycle of the water for reuse. This option provides for both water conservation and eliminates the need for a permitted discharge.



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Performance

The system is completely automatic allowing its operation to be simple and requires minimal maintenance. Total gallon throughput and flow rate for each unit is measured continuously with dedicated flow totalizing meters. The AdEdge adsorption system does not require any chemicals or regeneration nor does it generate any solid hazardous waste. The system was installed and commissioned in January 2008 and has been treating an average of 60,000 gallons per day. Treated water has tested well below the arsenic MCL since installation. The media life has exceeded initial predictions of performance by over 6 months to date showing the conservative predictions of performance.

Priority Parameters		
pH **	7.90	(no data, assumed)
Total As **	0.013	mg/L As
As(III)	no data	mg/L (if known)
Sulfides**	no data	mg/L
Hardness **	no data	mg/L @ CaCO3
Alkalinity **	140.0	mg/L @ CaCO3
Silica **	26-49	mg/L SiO2
Phosphate **	no data	mg/L P04
Sulfate **	10.0	mg/L SO4
Iron **	assumed <0.2	mg/L Fe
Manganese **	assumed < 0.02	mg/L Mn

For More Information Contact

AdEdge Technologies, Inc.
Mr. Greg Gilles, Vice President
5152 Belle Wood Court, Suite A
Buford, Georgia 30518
678-835-0052 * 678-835-0057 Fax
greg@adedgetechnologies.com
www.adedgetechnologies.com

Quail Ridge Community
Jennifer Bartos
Quail Ridge Domestic Water Improvement District
117 East Gurley Street, Suite 206
Prescott, Arizona 86301