

Project Profile

Spring Canyon Ranch Quemado, New Mexico



Background

Spring Canyon Ranch, LLC operates a community water system located in Quemado, New Mexico. Two water supply wells provide potable water to approximately 120 service connections. Groundwater enters the treatment system at approximately 40 gallons per minute (gpm) with arsenic concentrations of about 137 parts per billion (ppb). The EPA MCL for arsenic requires treatment to below 10 ppb. The raw well water also contains 140 ppb of vanadium, a contaminant which can potentially cause interference with some arsenic treatment technologies. Spring Canyon Ranch, LLC contracted with AdEdge Technologies Inc. (AdEdge) to furnish a water treatment system that is capable of reducing arsenic concentrations in their water supply wells. Spring Canyon Ranch, LLC also contracted with Souder Miller for all engineering services during permitting and construction of the site. In addition to adding arsenic treatment systems, Spring Canyon Ranch, LLC is also required to monitor untreated and treated water quality. The system exists in a very remote location with little operator interaction where electrical power source issues are problematic, and must be a low-maintenance, high-performance solution.



Treatment System

The AdEdge arsenic treatment system features a skid-mounted adsorption package unit (APU) sized to accommodate a maximum design flow rate of 80 gpm. The model APU-80LLCS-2-S-AVH utilizes AdEdge Bayoxide® E33 media in a two vessel carbon steel configuration in series configuration. The system includes an automated CO₂ pretreatment module for pH adjustment from raw pH levels of 9.3 down to 7.0. The treatment system is equipped with an automated control valve harness, central control panel with programmable logic controller (PLC) and a color touch screen user interface. The system also features control panel and local gauges, flow sensors & totalizers, an integrated auxiliary backwash pump and a central hydraulic panel with sample ports for a complete functioning packaged unit.

| PRIORITY PARAMETERS | | |
|---------------------------|---------|--------------------------|
| pH 9.32 adjusted to pH ** | 7-7.3 | (adjusted) |
| As Capacity Calc Basis | 0.137 | mg/L As+1/3V |
| As(III) | no data | mg/L (if known) |
| Sulfides ** | no data | mg/L |
| Hardness ** | 3.5 | mg/L @ CaCO ₃ |
| Silica ** | 14.0 | mg/L SiO ₂ |
| Phosphate ** | - | mg/L P ₀₄ |
| Sulfate ** | 12.0 | mg/L SO ₄ |
| Iron ** | 0.06 | mg/L Fe |
| Manganese ** | 0.00 | mg/L Mn |
| Vanadium ** | 0.14 | mg/L V |
| Total Arsenic | 0.09 | mg/L |

Performance

In service for almost two years, the system continues to continuously remove arsenic to non-detect levels. At current utilization rates, adsorption media replacement will not be required for several more years.

For More Information Contact

AdEdge Technologies, Inc.
 Dr. Ley Hathcock, Vice President
 5152 Belle Wood Court, Suite A
 Buford, Georgia 30518
 678-835-0052 678-835-0057 Fax
ley@adedgetechnologies.com
www.adedgetechnologies.com

Souder Miller Associates
 Andrew Robinson
 3451 Candelaria Road NE, Suite D
 Albuquerque, NM 87107
 505-299-0942 505-293-3430 Fax
agr@soudermiller.com
www.soudermiller.com