

# Project Profile

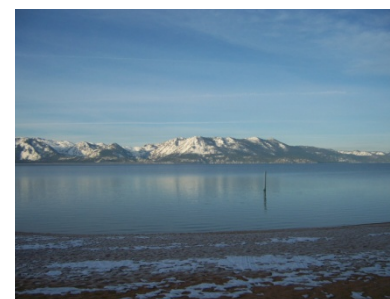
## Uranium Treatment System

### Elk Point Country Club – S. Lake Tahoe, Nevada



#### Background

In early March, 2009 after an evaluation period, AdEdge Technologies was selected among other alternatives and contracted by Elk Point Country Club Community (EPCCHOA) to provide a packaged treatment system for uranium removal that complied with the Nevada Department of Environmental Protection (NDEP) regulations. The EPCCHOA is located on the South East side of Lake Tahoe at Elk Point, Nevada, and this community is served by a well, which initially had a flow rate of 120 gpm. The flow of the well pump was modified to obtain the specified 60 gallons per minutes (gpm) design flow rate with an average uranium concentration of 40 µg/L, exceeding the EPA Maximum Contaminant Level (MCL) of 30 µg/L. Water quality is shown below. AdEdge worked closely with EPCCHOA's engineer to provide technical support, drawings and final design of a uranium-treatment solution for the community that satisfied the NDEP drinking water regulations.



#### Treatment System

The regenerative AD92 IX ion exchange approach was the preferred and most cost-effective option for this site, and this technology has been designed to provide high efficiency removal of naturally-occurring uranium from groundwater supplies. The AD92 IX media is a strong base-anion exchange resin used to selectively remove naturally-occurring uranium from groundwater. The AD92 IX media can selectively remove the negatively charged uranium anion to below the State and Federal MCL of 30 ppb. As uranium passes through the bed, it is removed allowing the chloride and bicarbonate ions to be exchanged for the uranium. In addition, AD92 IX resin provides superior regeneration efficiency and greater resistance to organic fouling.



The AdEdge AD92 pre-engineered, and packaged system provided for Elk Point Country Club is composed of twin 30-inch diameter vessels with a design flow of 60 gpm in a parallel configuration. The system is controlled during normal operation, backwash, and on-site regeneration using the Programmable Logic Controller PLC with a control panel. The system was furnished complete with a regeneration/brine system to regenerate the IX resin periodically on demand. A sodium chloride (brine) solution is used to regenerate the anion resin. The brine module is a separate system composed of a single polyethylene brine tank with valves, flow restrictors and rotometers which work during the automatic cycle operation, service, backwash, brining, slow rinse and fast rinse cycles.



#### Performance

The complete system was packaged and delivered for site installation in September of 2009 and was placed into full operation in early January of 2010, processing about 6,000 to 8,000 gallons per day. Water samples of the treated water were taken in February of 2010 and results from a State Certified Lab reports excellent performance with uranium levels of less than 0.001 mg/L or (1 ug/L).

Priority Parameters	
pH **	7.78
Gross Alpha	33 700 pCi/L
Uranium	40.000 ug/L (ave)
Sulfides**	0.10 mg/L
Total Hardness **	30 mg/L @ CaCO3
Total Alkalinity **	56.0 mg/L @ CaCO3
Silica **	23.0 mg/L SiO2
TDS:	110 -120 mg/L
Sulfate **	6 - 8.4 mg/L SO4
Iron **	0.05 - 0.12 mg/L Fe
Manganese **	0.0040 mg/L Mn

#### For More Information Contact

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