

Project Profile

Naval Air Station Electronic Warfare Range (EWR) Centroid Facility - Fallon, NV



Background

In late 2006, AdEdge Technologies was awarded a turnkey adsorption based system for arsenic removal for the NAS Electronic Warfare Range (EWR) Centroid Facility - Fallon, NV. AdEdge performed this turnkey contract under a Task Order from Barajas & Associates and NAVFAC oversight. Engineering plans and permit application were developed and submitted by AdEdge and subsequently approved by the Nevada Department of Environmental Protection (NVDEP). Extensive coordination was executed with the base, NAVFAC, BAI, and other parties. Construction began in April, 2007 to install the packaged adsorption system inside the existing facility. The APU is designed to treat the flow from the single existing groundwater well which directly feeds the system before entering a 300,000 gallon above ground storage tank. The system features a twin vessel parallel configuration that utilizes *Bayoxide® E33* adsorption media, a proven alternative for arsenic removal permitted by NVDEP at multiple locations in Nevada and throughout the U.S. The system also includes a control panel, differential pressure gauges, inlet and outlet pressure gauges, and stainless steel sample ports for ease of operation and monitoring.



Treatment System

The AdEdge APU-100CS-U-2-MVH arsenic treatment system features a model modular Adsorption Package Unit (APU) system designed for 100 gpm flow at 60 psi. The system was modularized for ease of placement through the available doorway near the former fuel tank storage area. Prior to entering the system, the raw water is chlorinated with sodium hypochlorite. The system features Bayoxide® E33 granular ferric oxide media loaded into the two vessels operating in parallel. The E33 is simple to use in conventional adsorption vessels, has a very long life before replacement, does not impart any harmful residuals or odor, and is certified by NSF International for use in drinking water applications. Each vessel is equipped with a 5-valve piping harness. To keep costs down, piping, internals and distributors on the units were SCH 80 PVC. Subsequent to the installation, a complete backwash recycle system was requested by the NAVY and designed and installed by AdEdge. This additional equipment enables particulate filtration and 100% recycle of the periodic backwash water from the unit.

pH **	8.2-8.4	
Total As **	0.021 - 0.023	mg/L As
As(III)	no data	mg/L (if known)
Sulfides**	no data	mg/L
Hardness **	49-50	mg/L @ CaCO3
Alkalinity **	110.0	mg/L @ CaCO3
Silica **	32.0	mg/L SiO2
Phosphate **	<0.010	mg/L P04
Sulfate **	41.0	mg/L SO4
Iron **	<0.1	mg/L Fe
Manganese **	<0.005	mg/L Mn

Performance

Since operations began in April, 2007 the system has consistently met all the EPA MCL for arsenic and discharge criteria removing arsenic from approximately 28 parts per billion (ppb) to less than 2 ppb. The site utilizes approximately 40,000 gallons per week. The system is sampled and monitored by a local certified operator contracted by the Base. The system has operated thus far with 100% on-line time and minimal operator attention.

For More Information Contact

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