

Project Profile

Century Packaging - Las Piedras, Puerto Rico Arsenic Treatment System



Background

In February of 2010 AdEdge was engaged by Pharmaceutical Services & Installations (PSI) to provide a treatment option for the Century Packaging Corporation in Las Piedras, Puerto Rico. The packaging facility has a water-supply well which pumps water to a 30,000 gallon storage tank and has a daily utilization of 60,000 gallons per day. Water-quality analyses revealed that arsenic concentrations exceeded the new maximum contaminant level (MCL). AdEdge Technologies Inc. (AdEdge) presented a proposal and was awarded the project for arsenic treatment using adsorption-based granular ferric oxide (GFO) technology. AdEdge worked closely with PSI and plant's engineer Vincenty, Heres & Associates. (VHA) to prepare submittals for approval and subsequent installation of the system. The system was rapidly constructed, shipped, and commissioned in approximately 6 weeks. It was the first arsenic treatment system AdEdge has deployed in Puerto Rico.



Treatment System

The AdEdge arsenic treatment system consists a skid-mounted adsorption package unit (APU) sized to accommodate a maximum design flow flow of 120 gpm. The model APU-4260CS-S-2-MVH system utilizes a twin vessel carbon steel vessel configuration for arsenic removal in a parallel configuration. The system is equipped with manual control valves and harness, central monitoring panel with individual digital flow totalizers. System features also include differential pressure switches, monitoring panel and local gauges, flow sensors & totalizers, and a central hydraulic panel with sample ports for a complete functioning packaged unit.

Priority Parameters		Other Parameters	
pH	7.15	T.O.C.	ND
Total As	0.013 mg/L As	Chlorides	29.00 mg/L C
As(III)	no data mg/L (if known)	Lead	no data mg/L Pb
Sulfides	no data mg/L	Molybdenum	no data mg/L Mo
Total Hardness	112 mg/L @ CaCO3	Selenium	no data mg/L Se
Alkalinity	189.0 mg/L @ CaCO3	Fluoride	0.21 mg/L F
Silica	39.0 mg/L SiO2	Turbidity	0.16 NTU
Phosphate	no data mg/L P04	pended Solids	no data mg/L
Sulfate	15.3 mg/L SO4	Uranium	no data mg/L U
Iron	0.04 mg/L Fe	TDS:	349.00 mg/L
Manganese	0.01 mg/L Mn	Temp.	88 Deg. F

Groundwater is pumped from the well directly through the treatment system. The 42-inch diameter APU vessels each contain approximately 30 cubic feet of Bayoxide E33® adsorption media. In addition to the adsorption system other components include sodium hypochlorite injection supplied by the site which is injected prior to the system.

Performance

Bayoxide E33® adsorption media has been in commercial use since 1999 serving nearly two million customers and has been deployed in over 350 public water installations in the U.S., Canada, and Mexico since 2002. AdEdge's packaged solutions utilizing GFO media include small community water systems, schools, mobile home parks, and extensive use in over 5,000 private residential applications. The 120-gpm Century Packaging system was installed in March 2010 and began full scale operations treating approximately 60,000 gallons per day. Effluent samples taken at the time of startup and subsequently, have indicated a high efficiency arsenic removal from 13-15 ppb to non-detectable concentrations.

For More Information Contact

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