

Manufacturer Saves US\$193,000/Year With KlarAid* CDP, PolyFloc* AE, and Increased Automation

Background

A floor covering manufacturer had an old and inefficient wastewater treatment plant. Operators kept few records and had not been held accountable for performance.

Solids were not being removed from the facility. Each of two 100,000-gal (378,000-L) settling tanks was three-fourths full of old sludge solids. The sludge was so thick that the centrifuge, which is normally efficient for dewatering, could only increase solids from 20% to 22%. In addition, the concentrate was so thick that a 2-inch (5-cm) water line had to be used to wash the sludge back to the headworks. As a result, the system was reprocessing most of the solids.

The plant exceeded limits on biological oxygen demand (BOD) and chemical oxygen demand (COD), total suspended solids, and BEHP (a priority pollutant). After several years of warnings, the city began imposing US\$10,000 fines per month.

Solution

GE Water & Process Technologies analyzed all streams entering and leaving the treatment plant and solved the wastewater problem first by feeding a KlarAid CDP series product, a unique cationic coagulant, followed by a PolyFloc AE series product, an anionic emulsion polymer.

GE also assisted in the design and implementation of automation for the treatment plant. Using a Programmable Logic Controller (PLC), operations improved dramatically.

Results

Effluent total suspended solids were reduced 69%, COD was reduced 36%, and BEHP was reduced 88%. The wastewater plant was brought into compliance with a return on investment of 452% in a payback period of 202 days.

Continuous Cost Reduction Summary	
Item	Savings (US\$ per year)
Manpower	\$60,000
Retired operator not replaced because of increased automation and efficiency	
Surcharges	\$120,000
US\$10,000/month surcharges eliminated by bringing facility into compliance	
Sewer Charges	\$13,200
Elimination of 40 gpm (9 m ³ /h) of water previously needed to move supernate back to pit (US\$2.75/1,000 gal, [\$0.72/m ³])	
Continuous Cost Reduction	US\$193,200



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