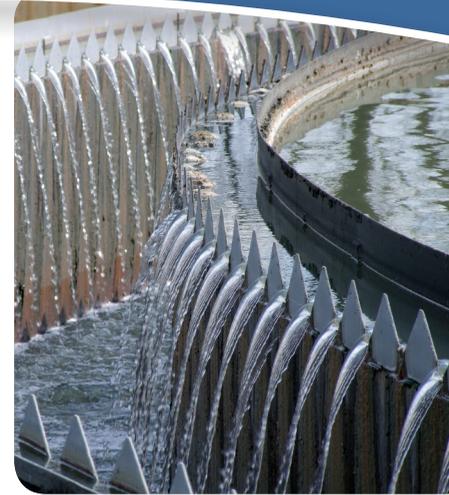


Quadrasperse®

Quadpolymer Provides Green Solution By Utilizing Wastewater Effluent For Cooling Tower Makeup



Background

Soon after securing the water treatment business at a major refinery in the Southern United States, it became apparent that serious fouling problems had been occurring in the plant heat exchangers. As it turns out, the refinery began a major water reuse program approximately 18 months prior to ChemTreat taking over. The reuse program consisted of mixing plant wastewater effluent with city water for use as cooling tower makeup. The refinery had deemed the water reuse program a failure: exchanger cleanings had doubled, the system was running less efficiently, and the cleaning costs were determined to be substantially more than the savings offered by the wastewater reuse.

Solution

ChemTreat requested the refinery send wastewater and city water samples to its laboratory to perform a pilot cooling tower study. We believed a Quadrasperse®-based treatment program could be used to successfully treat the cooling system, and wanted to develop performance data to share with the customer.

quadpolymer as the critical dispersant and phosphate-zinc stabilizing polymer.

Plant personnel were convinced to give the reuse program another chance. After one year of using the ChemTreat treatment program, plant exchangers began to open up clean. Exchanger cleanings went from once every 3–6 months, to once every 1–2 years.

Results

The pilot cooling tower study was conducted and demonstrated that the system could be successfully treated using wastewater effluent as makeup. Performance was evaluated under several defined combinations of wastewater effluent and city water, showing optimum results and refinery cost savings could be obtained. The optimized program consisted of an alkaline-pH-phosphate-zinc program with Quadrasperse®

Corrosion rates with the new program were consistently less than 2 mils per year despite using a blend of 50%–55% wastewater effluent as makeup.

The new Quadrasperse® program was a major success. Since incorporating the technology, the refinery has saved over \$2 million in water costs and over 1.4 million gallons of freshwater per day.

