

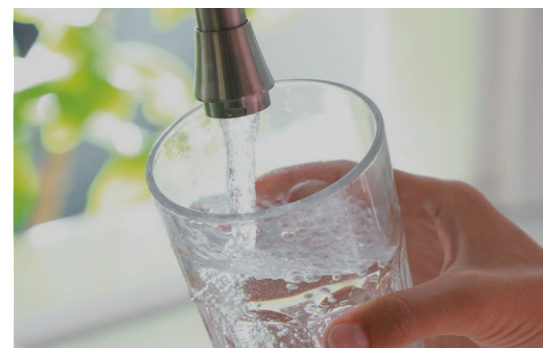
Texas Water Supplier Saves \$3500 Per Day During Taste and Odor Season



Treatment Costs for Algae-Related Taste and Odor Problems Cut by 70% Over One Year

With the onset of severe drought in the summer of 2011, algae overwhelmed a major water treatment plant on the Gulf Coast of Texas. The plant operators called experts at Earth Science Laboratories (ESL) for help. ESL's cost-effective solution saved \$3,500 per day.

The plant provides drinking water to three municipalities in south Texas, treating 50 million gallons per day from its source, the Brazos River. Record-high heat and record-low flows in the summer of 2011 created ideal conditions for algae growth in the plant's clarifiers and filters.



The Problem: Unpleasant Taste and Odor in Drinking Water During Peak Demand

As drought took hold and water usage spiked to its highest ever, the plant struggled to control runaway algae growth. Thick mats of algae floated in the clarifiers. Skin divers were called in to remove algae on steel structures. Algae in the plant's outdoor filters shortened run times and increased the frequency of backwashes.



Cyanobacteria

During times of peak demand, plant operators were using 100 pounds of copper sulfate and 5,000 pounds of powdered activated carbon (PAC) per day to control taste and odor problems caused by algae. The yearly average removal of total organic carbons (TOC)—a widely-used measure of water quality—was 35.1% and from late June to late September of 2011, the monthly average was 31.2%, frequently leaving them in violation of regulatory standards for removal of organics.

“The plant was basically pouring money into the water for minimal returns. “This was a perfect opportunity to help. Ultimately the plant was able to increase TOC removal while lowering costs and reducing complaints about taste and odor.” ESL Senior Scientist and VP of Business Development, David Hammond.



Treatment plant clarifiers with canal in background.

The Solution: Pretreatment with Rapidly Dispersing, Liquid-Copper Algaecide

ESL sent a team of experts to Texas to survey the plant's layout and develop a treatment plan. The team determined that pretreating the plant's raw water with low doses of a copper-based algaecide would control algae. Controlling algae in the source water would restore filter runs to normal and decrease the need for copper sulfate and PAC later in the process.

“One of our objectives was to dispel the notion that algal blooms should be allowed to run their course,” said ESL Senior Scientist, Fred Singleton. “Our unique copper formulation kills algae cells and breaks down chemical compounds that give drinking water a musty taste and odor. This reduces the overall cost of treatment during algae season.”

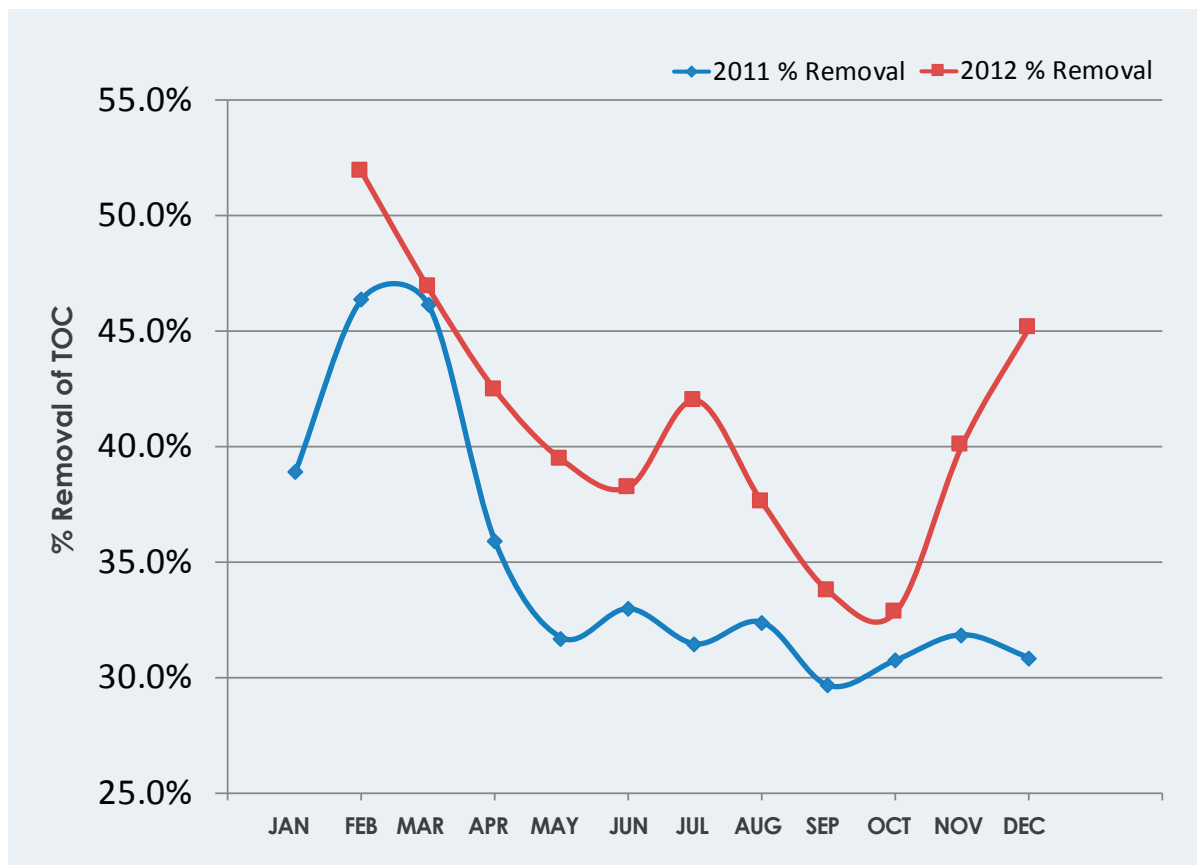
The ESL team recommended treating the raw water with EarthTec®, a rapidly dispersing algaecide that holds copper in solution. EarthTec is EPA registered and NSF Certified to ANSI Standard 60 for use in drinking water. It does not cause the formation of harmful disinfection by-products.

The Results: A 6.1% Increase in Average TOC Removal and a 70% Cost Reduction

A concentration of just one part per million of EarthTec allowed the plant to improve performance while eliminating copper sulfate and reducing PAC use by 75%. The expense of EarthTec was more than offset by these savings. During the summer of 2012 the plant spent a combined \$1,650 per day for EarthTec and occasional use of PAC – a daily savings of \$3,500 over the previous summer.

The plant simultaneously increased its average TOC removal by 6.1%. Monthly average TOC removal improved to 37.9% from late June to late September of 2012, helping the utility to meet their standards. In July alone, the plant achieved a 9.6% increase in TOC removal compared to the previous year.

“The numbers really speak for themselves. We were very pleased to save the plant money and help them bring clean water to the good people of South Texas. That’s our mission. Clean Water for the Planet®.” ESL CEO, David Nicholas



Contact Information

479-278-2499 479-271-7693 (Fax)

903 N. 47th Street, Suite 105 Rogers, AR 72756

EarthTecWaterTreatment.com