

CASE STUDY**RESULTS**

Treating high-stress cooling towers under harsh conditions is challenging. It's important to have a water treatment partner that understands your systems and can provide the chemical and mechanical solutions required.

Increased Production:

15,000-20,000 gallons per day

Lowered Maintenance:

Achieved lower maintenance on chillers and CO₂ production

Reduced Cost:

60-70% reduction in biocide usage, resulted in lower chemical cost

These production numbers were recorded on the hottest days of summer under dusty conditions.



TOTAL SAVINGS
\$35,000 – 50,000
annually

**CHALLENGE**

A 50,000,000 gallon per year corn-based ethanol plant relied heavily on a large cooling tower system. The cooling tower relied on well water containing high levels of iron for the tower make up. The high iron levels were concentrated in the cooling tower, resulting in fouling of the fermentation heat exchangers and tower.

The location of the tower was an additional challenge. It was located in an area of high dust and high heat during the summer months, which led to stress on the tower and lower production rates.

The existing iron removal filters and side stream filters were not working properly, and in fact the iron level in the effluent from the iron filters was higher than the untreated well water.

**SOLUTION**

WATERTECH evaluated the existing well water iron filters and tower side stream filters. Numerous design, installation and operation flaws were discovered in the two systems.

Our in-house team of consultants put together a comprehensive plan to rebuild the two systems, including new under-drain systems, custom-engineered media and controls.

By reducing the iron and suspended solids in the cooling tower heat exchanger, fouling was reduced, increasing the heat transfer and reducing demand for biocide in the tower.

More than a water treatment solution.

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