cleanwater1

CASE STUDY

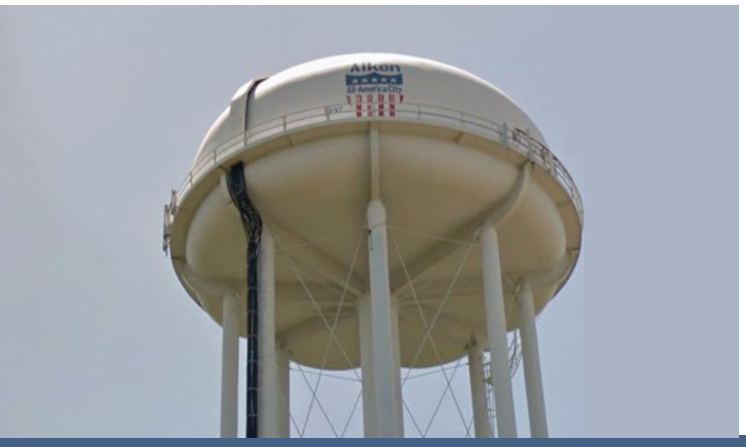
AIKEN COUNTY

Aiken County, South Carolina Saves Over 50% on Polymer Expense by Migrating to a Two-Zone Emulsion Polymer Activation System

OVERVIEW

Aiken County, South Carolina is located midway between the mountains and the east coast. It is the fourth largest county in the state with over 160,000 inhabitants. Initially known for its breakthroughs in railroad technology, Aiken County has expanded beyond railroads and has developed a solid manufacturing foundation that has allowed it to experience impressive growth.

Aiken County Public Service Authority operates the Horse Creek Pollution Control Facility (HCPCF) and provides wastewater treatment services for the City of Aiken and numerous other towns and industries in the area. The plant's treatment capacity was increased to 26 million-gallons-per-day (MGD) from 20 MGD in 2019. Biosolids residuals or byproducts are 100% reclaimed and clean water is discharged to the Savannah River.



The Horse Creek Pollution Control Facility (HCPCF) treats nearly 13 million gallons of wastewater every day.

SITUATION

The HCPCF like many wastewater treatment plants uses polymers to aid in the dewatering of the biosolids residuals on belt-filter-presses (BFP). Polymer can be a major expense in a treatment plant's operating budget. The HCPCF was originally using a dry polymer system with mixing/aging tanks to create the polymer solution that was fed to the two belt-filter-presses.

This low-energy mixing system had trouble activating the polymer properly and often wasted polymer (estimates of about 15%) in the mixing tanks themselves.

Operations personnel investigated other polymer dosing options and determined that an emulsion (liquid) polymer system would be more efficient and would yield better quality (drier) biosolids residuals.

Low-quality wet sludge from previous dry polymer system

High-quality dry sludge from the Polyblend® system

APPROACH

The operation team at HCPCF wanted to test the emulsion polymer system before fully committing to a new system. They wanted be sure that the new system would generate the efficiency and performance they expected. As a result, the team was given a Polyblend® Emulsion Activation Demo Unit to for one of the belt filter press lines.

RESULTS

50% Savings
On Polymer

15% Less
Wasted Polymer During Operation

- **Overall polymer usage went down almost immediately after the Polyblend® Liquid Polymer System was activated. They went from two totes per week to one.**
- **Switching to the Polyblend® system decreased costs by nearly 50%. Previous systems that utilized mixing/aging tanks, used to waste up to 15% of Polymer due to inefficient use.**
- **The biosolids product that resulted was much higher quality when compared to the quality produced by the old system. See photos above.**

"It was a quick decision once we saw the results in reduced polymer use and improvement in sludge quality. The units will pay for themselves".

Neil Simmons
Plant Engineer, Aiken County

CONCLUSION

The Polyblend® Liquid System proved to Neil and his team that this solution had lots of potential and could effectively solve their polymer and sludge issues. With the demonstrated improvement in sludge quality and the roughly 50% savings in polymer, the plant decided to purchase a Polyblend® Magnum unit for one BFP line and prepared to purchase another for the other BFP line later in the calendar year.

Polyblend® Demonstration Unit Installed for Testing

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