

CASE STUDY

CITY OF FORT ATKINSON

City of Fort Atkinson, Wisconsin Saves Over 25% on Polymer Expense by Implementing Two-Zone Polymer Activation System



OVERVIEW

Located in the southeastern portion of Wisconsin, lies the humble city of Fort Atkinson. Hosting a population of nearly 13,000 people, Fort Atkinson is the largest city in the Jefferson County positioned just a few miles upstream from Lake Koshkonong.

The city saw significant growth in its history once the Chicago and Northwestern Railroad was introduced, which led it to being the bright, populous town that it is today, despite the rather small space that it occupies.

It wasn't until 1972 that the first wastewater treatment plant (WWTP) was built in Fort Atkinson. At that time, it was a conventional activated sludge system. It has been upgraded several times since then and now features aerobic digestion, sludge storage and centrifuge dewatering. While it did work for some time, the operating team ran into some issues regarding maintenance and costs that needed to be addressed.

SITUATION

As with many WWTPs, a large portion of the treatment plant's operating budget is spent on polymer. The polymer is primarily used to dewater aerobically digested sludge.

At Fort Atkinson, the sludge typically has a 2% solids concentration and is dewatered via a centrifuge. The plant had an existing polymer system that consisted of a polymer tote, transfer pump, static mixer, aging tank and progressive cavity metering pump. The system was effective, but the operators sensed it required too much polymer and started to investigate efficiency opportunities. The Utility Manager, Maintenance Supervisor and Plant Operator, began looking for a way to optimize their polymer system and lower costs.

As of 2020, the City of Fort Atkinson uses roughly 1.8 million gallons of water on average every day, which is over 650 million gallons of water each year



APPROACH

As the team evaluated their options, their local Wisconsin representative from Energenecs offered a free demonstration of the Polyblend® Magnum skid mounted polymer system.

After careful consideration and analysis, the City agreed to test the Polyblend® Magnum system. It was installed alongside the old tank-mixing system so that two systems were both accessible.

It did not take long for the management team to get the results they were looking for. In fact, the Polyblend® Magnum would prove to be even more impressive than they initially thought.

“It was a no brainer. We are so happy we changed our polymer system to the Polyblend® Magnum system. It has really done the job for us and has saved the City so much in operating costs, specifically polymer.”

Operating Team at Fort Atkinson

The Polyblend® Magnum Demo Unit is in the forefront. The old tank-mix system can be seen behind the Polyblend® Magnum system.



Polyblend® Magnum Mix Chamber with Two Zone Mixing

RESULTS

30%

Savings

In Polymer-Related Costs

25%

REDUCTION

In Overall Polymer Usage

- Overall polymer usage was decreased by 25-30% and efficiency was increased.
- The introduction of the Polyblend® Magnum system allowed the City to save nearly \$20,000 annually or 30% on costs. These savings were much higher than originally projected prior to testing and installation.
- The Polyblend® Magnum system decreased the average quantity of daily emulsion polymer usage from 35 gallons to 25 gallons.
- The Polyblend® Magnum system utilized less space than their previous system.

CONCLUSION

After viewing the results of the test, it was clear to the City that the Polyblend® Magnum system was the obvious choice. The City purchased the Polyblend® system.

Being able to reduce the amount of polymer used each year, reduce costs and increase efficiency was a major win for the team at Fort Atkinson.

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