

CASE STUDY

CITY OF MARENGO

City of Marengo Solves Wastewater Plant Dilemma with Dynablend™ Liquid- Polymer Technology



OVERVIEW

The City of Marengo, Illinois is a growing municipality of nearly 8,000 people located 60 miles northwest of Chicago and 15 miles south of Wisconsin. The city operates an activated sludge wastewater treatment plant that processes an average of 1.8MGD and a maximum capacity of 5.94MGD.

In the fall of 2007, the operators of the plant began to observe reduced performance of their liquid polymer feed system. This system was used to treat wastewater and played a crucial role in transforming the solid waste and sludge into a usable end product.

The Marengo plant utilizes a multi-stage activated sludge treatment process to effectively treat the 1.8MGD of influent. The process includes initial screening of the influent to remove large debris and eliminate items that can potentially damage the wastewater process equipment.

According to the United States Geological Survey (USGS), the city of Marengo had a daily average water withdrawal of 1.16 million gallons per day (MGD) in 2015

After primary treatment of the wastewater, the wastewater is pumped into an oxidation ditch for secondary biological treatment.

Once the final clarification process is complete, the remaining water is disinfected and released into the Kishwaukee River. Any solids that remain in the clarifier are either pumped back to the oxidation ditch or moved to a sludge-processing system. Liquid polymer is introduced to aid the flocculation of the suspended solids and produce a thick sludge, which eventually is removed and used as a fertilizer.

SITUATION

The old sludge processing system started to show signs of reaching the end of its effective life cycle. The polymer system became unreliable, efficiency declined and system failures became problematic. As such, the city staff knew they needed to look for an alternative system that could effectively replace their old one entirely while being able to produce the sludge they need.

APPROACH

After evaluating their potential options, the staff at Marengo became interested in the Dynablend™ liquid polymer-blending technology.

The Dynablend™ liquid polymer unit was a good option for the Marengo plant because of its reliability and ability to perform well across a wide range of polymers commonly used for sludge processing. The unit was also easy to operate and maintain.

The City arranged to have a demonstration unit installed in order to pilot the Dynablend™ liquid polymer unit for several months prior to purchasing.

RESULTS

- The introduction of the Dynablend™ liquid polymer unit allowed the staff to save significantly on polymer costs. The new system required less polymer to achieve the same, or even better, sludge processing than before.
- Operators noticed that the Dynablend™ liquid polymer unit was easier to work with when adjusting feed rates for the dewatering/thickening process.
- The Dynablend™ decreased processing time given its high efficiency.
- Frequent maintenance became a thing of the past. The Dynablend's injection check valve is designed for disassembly and inspection. This makes any needed maintenance easier to complete.

"It delivers the polymer at either a low-flow rate or high-flow rate, is pretty much maintenance-free, which is nice, it's easy to operate and troubleshoot, and, perhaps best of all, it's a workhorse. I have no negative things to say about it since I've been here."

Jay Berman, Superintendent, Marengo Wastewater Treatment Plant



Dynablend™ Liquid Polymer Unit

CONCLUSION

The Dynablend™ Liquid Polymer Unit proved to be the perfect choice for Marengo wastewater treatment facility. The City of Marengo purchased a permanent Dynablend™ liquid polymer activation system following the test.

The team was sold on its performance. The Dynablend™ unit was able to increase the efficiency of their sludge-producing process, reduce overall operation costs of polymer and make it easier for operators to set dials for feed rates. It also did not require much maintenance. It was a no-brainer for the team. It was a must have for the City of Marengo.

To access our full assortment of case studies, data sheets, brochures and more, visit our document library at <https://documents.cleanwater1.com> or scan the QR code.



The Marengo Wastewater Treatment Plant