

**This polymer feed system features a tapered mixing chamber providing high-performance polymer mixing and feed.**



## Eleven Years & Still Going Strong

**T**he 1.5-million-gal-per-day (mgd) wastewater treatment plant in West Carrollton, Ohio, went online in 1989 and today serves 13,143 area residents. The activated sludge facility produces an average of 200 wet tons per month of sludge that, following belt filter press dewatering, is spread on area farmland by a biosolids management company. Polymer is added to the sludge prior to belt press dewatering to aid in liquid-solid separation.

After 13 years, West Carrollton plant management found it was time to replace the facility's two-stage dry polymer feed system.

"Our original system had served its useful life," said Utility Superintendent Tom Scherack. "As with any older system, components were becoming worn out and its operation had become maintenance intensive. We also needed more room in the polymer mixing area and hoped to replace our old system with something smaller."

The old polymer feed system had served the West Carrollton plant well, but it was time for a change.

"Basically, we were looking to maintain our same level of polymer performance, but wanted a system that took up less space and

hopefully required less capital outlay," Scherack said.

So it followed that a PolyBlend M Series polymer feed system was installed in February 2002 at the West Carrollton facility. The liquid polymer feed system features a tapered mixing chamber providing high performance polymer mixing and feed.

The feed system applies high mixing energy at the first contact of polymer and water for a short duration on initial shear. It also applies mixing through a tapered regime, which minimizes polymer agglomeration and fracturing. After initial wetting or inversion in the high-shear impeller zone of the unit, polymer solution passes through a cylindrical processing zone, where it is subjected to continuously decreasing shear rates over a period of time.

The unit is equipped with "C" control functions, which, along with a variable speed mixer, offer a system with effective activation flexibility. The controller is capable of maintaining constant solution strength by sensing changes in incoming makeup water flow and automatically respond to these flow changes via a motor-driven control valve. Even primary and secondary

dilution water are kept at the same ratio as output is adjusted.

After installation of the PolyBlend system, the ideal stroke and speed parameters for West Carrollton's cationic polymer were established. "It's a really simple operation," Scherack said. "We found what stroke and speed the PolyBlend needed to be set at and we just let it go."

West Carrollton's new polymer feed system sits in the same location as the old two-stage system, but is mounted on the wall instead of taking up valuable floor space.

Since installation, the new system has required virtually no maintenance. In addition, the cost of the system was approximately 15% of that of a new, two-stage dry polymer feed system.

"We got what we were looking for in a new polymer feed system," Scherack said. "Our new PolyBlend has a much smaller footprint than our old system, while still providing a high level of polymer activation and with no maintenance headaches. And we got all this for a lot less cost upfront." **WWD**

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