

City of Dartmouth Reduces Polymer Usage and Improves Dry Solids with Polyblend® Polymer Preparation Systems

Located about 60 miles from Boston with over 21,000 residents, the City of Dartmouth, Massachusetts is one of the oldest communities in the country, having been incorporated in 1664. The City of Dartmouth, Massachusetts Water Pollution Control Division is responsible for operating the town's 3 million gallon per day wastewater treatment facility, a testing laboratory, a composting site, a sludge facility, and 21 sewerage-pumping stations. Interestingly, the wastewater treatment plant also composts its biosolids residuals (combined with brush and yard waste from local landscapers) into marketable quality product, which is sold commercially.



The Dartmouth facility utilizes emulsion polymers to aid in the dewatering of the sludge. With plant personnel always striving for improved efficiencies, polymer usage was targeted as an area for improvement. Prior to 2014, the plant used hydraulic polymer mixing systems to feed two belt filter presses which operate four days a week for 8 hour shifts. Hydraulic polymer mixing systems rely on a pressure drop as the driving force for polymer activation at the moment of initial wetting (MOIW) to create a high shear initial mixing zone that is crucial for proper polymer activation. In some cases, plant water pressure is inadequate to create consistent high-shear at the MOIW and a mechanical activation scheme can improve full polymer activation.

Two Polyblend® M-series units were installed in 2014. The PolyBlend® systems utilize a two-zone mechanical mixing regimen to generate the correct amount of shear force on the polymer mixture ("G-value") to properly and consistently activate the polymers utilized by Dartmouth. Since installation by Methuen Construction, the Polyblend® polymer activation units have run flawlessly and resulted in significant polymer savings for the Dartmouth plant.



One of two Polyblend® M-series polymer activation units in the City of Dartmouth Water Pollution Control Facility

"The Polyblend® polymer activation systems have performed flawlessly since installation and will result in very significant polymer saving for our facility".

Carlos Cardoso, Water Pollution Control Manager
City of Dartmouth, MA