

Ford Reduces Water Consumption and Sewer Disposal by 230,400 Gallons per Year

Challenge

The wastewater defoaming process was performing poorly at the Ford Motor Company, Kentucky Truck Plant (KTP) in Louisville, Kentucky.

Wastewater from this assembly plant (800,000 to 1 million gallons per day) is collected and treated at KTP Waste Water Treatment Plant (WWTP) prior to discharge into the Metropolitan Sewer District (MSD) system. Due to the large volume of foam that is generated, an antifoam agent is applied to the discharge. However, the product was separating, clumping up and clogging pumps and piping systems.

Consequently, feed lines needed to be cleaned every three days. The two-hour cleaning process tied up two specially trained and certified wastewater treatment operators, making them unavailable to perform jobs elsewhere in the plant.

"This cleaning process was particularly onerous," according to Mark J. Weinzapfel, Plant Design Engineer. "It was beginning to create morale problems in the plant."

Another problem was the need to dilute the antifoam agent prior to application, a labor intensive process that also consumed a large volume of water. One quart of concentrated solution was combined with 120 quarts of water in mixing tanks, six times per day. Each time, operators needed to fill and carry five gallon buckets of the antifoaming concentrate from the storage area to the location of the mixing tanks.

Solutions

Weinzapfel tasked GE Infrastructure Water & Process Technologies and the WWTP operators to find a solution. After a thorough review of the GE product line and utilizing the WWTP operators knowledge of the equipment and treatment process, it was decided that the plant would attempt to convert to Antifoam Feed Conversion AF1440, a formulation that can be applied neat (without dilution).

After a two-month pilot test demonstrated that the AF1440 solution effectively defoamed the discharge at



KTP, a full-scale dosing system was put into operation. The process is automated with two metering pumps, flexible tubing, and a remote control box.

Results

"Everything performed as planned. There were no surprises," says Gilbert Bridges, WWTP Operator. "Instead of cleaning the lines every three days, we now do it only every three-months. And we no longer have to perform the cumbersome task of transferring products in 5 gallon buckets."

Ford calculates that 242 hours of labor are now saved each year from the reduced cleaning requirements, alone. This equates to more than \$10,800 in savings, without factoring in the additional labor savings from not having to dilute the antifoaming agent.

Moreover, by no longer diluting the antifoam agent, KTP is reducing its water consumption and sewer disposal by 230,400 gallons per year. This figure does not include the water saved by the reduced flushing and cleaning requirements.

Weinzapfel says, "The new system is highly dependable and easy to use. There are none of the headaches that were involved with the old dilution system. We are pleased with the environmental benefit of less water usage and the clear cost savings to Ford. We are also happy to have freed up WWTP operators from some unpleasant and unproductive tasks, allowing them to focus more on preventative maintenance tasks."



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