

# Cheese Processor Reduces Water and Waste Treatment Costs and Saves US\$269,292

## Challenge

This Iowa cheese and cheese food processor was experiencing poor performance from its wastewater treatment plant. Excessive biological oxidation demand (BOD) when the treated effluent entered a small creek was resulting in violations of state discharge permit limits.

## Solution

GE Water & Process Technologies identified several key problem areas. A competitive supplier's scale inhibitor was reducing the biological population on biodiscs, inhibiting BOD reduction. The polymers used were not appropriate, and the application process reduced their effectiveness even more. Effluent flow also exceeded the plant's design capacity. To overcome these difficulties, a new flow pattern was recommended that added an activated sludge basin and increased dissolved aeration levels. Entec 911 and 618 polymers were also introduced, improving floc formation in the clarifiers. In addition, a program was implemented to reduce bacteria counts in the clean-in-place cow water used to wash down the insides of incoming milk delivery trucks. Instead of using well water for cleaning purposes, the plant was able to reuse approximately 191,000 gallons (723 m<sup>3</sup>) per day of cow water, reducing the load on the wastewater plant.

## Result

The improved effluent could now meet permit limits most of the time, while the recovery of reusable cow water reduced the cost of wastewater treatment from US\$114 to US\$38 per 1,000 gallons (3.8/m<sup>3</sup>). Chemical usage costs also decreased, bringing the net annual savings to US\$269,292. In addition, the company gained time in which to build a new wastewater plant with increased capacity.



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