



# Dairy Eliminated Municipal Wastewater Surcharges

A premier dairy processor of milk, chocolate milk, ice cream, sour cream, cottage cheese and yogurt needed an onsite wastewater pretreatment technology to remove high levels of total suspended solids (TSS), fats, oils and grease (FOG) as well as COD/BOD contaminants. They were limited in space and hindered by municipal surcharges.

During their search for a system, the company learned about Clean Water Technology's (CWT) small footprint GEM<sup>®</sup> System. The dairy sent wastewater samples to CWT's in-house laboratory for analysis and found that contaminant removal rates exceeded the regulatory agency's requirements.

## CHALLENGE

A trial unit was sent to the facility. Since a large volume of coarse solids were present on a regular basis and radical swings in pH and contaminant loadings were observed, CWT was able to pin-point solutions. pH ranged from 2 to 12 and TSS ranged from 335 to 2,600 NTU. Turbidity fluctuated from 750 to 18,500 ppm COD.

The trial demonstrated that the best removal rates were achieved when pH was in the 7.5 to 8.0 range. An equalization tank (EQ) was suggested to maintain pH and homogenize the waste stream. Coarse solids were easily removed using a sidehill or rotary drum screen (RDS).



## Industry Dairy

### Key Benefits

1. Municipal surcharges eliminated
2. Small footprint gave more space.
3. Demo GEM<sup>®</sup> System proved effectiveness before company purchased.

PARAMETER	INFLUENT	EFFLUENT	% REDUCTION
TSS / ppm	6,100	25	99 %
COD / ppm	32,000	8,000	75%
TURBIDITY / NTU	>1,000	13	99%

*Influent @ 7 am Day 1 -Treatment at pH 5.8 using 300 ppm coag, 30 ppm cationic and 10 ppm anionic*

PARAMETER	INFLUENT	EFFLUENT	% REDUCTION
TSS / ppm	2,700	25	99%
COD / ppm	12,000	5,000	58%
Turbidity / NTU	>1,000	11	99%
<i>Influent @ 7 am Day 2 -Treatment at pH 6.5 using 200 ppm coag, 20 ppm cationic and 10 ppm anionic</i>			

CHEMICAL DOSING	COAG	CAT	ANI
High / ppm	300	30	10
Average / ppm	200	20	10
Low / ppm	100	20	10

The dairy installed a GEM System 75/150 and a 20 mesh RDS to sit atop a 40,000 gallon EQ tank outfitted with a D-Loop that adjusted pH and a mixer to homogenize the waste stream.

## CONCLUSION

The total wastewater solution of a primary treatment system provided by Clean Water Technology solved the companies issues with wastewater regulatory surcharges. Compliance was achieved using these components:

- Rotary Drum Screen: large solids are removed before chemistry is needed for smaller solids.
- Equalization Tank: variation in contaminant loadings are minimized and the waste stream going to the GEM System is consistent in contaminant loadings. pH is also balanced in the EQ tank prior to the Gas Energy Mixing primary treatment.
- GEM<sup>®</sup> System 75/150: Easily reduces contaminants to compliance levels.



Contact us today to begin a conversation!