



G E M
Gas Energy Mixing By CWT

CASE STUDY

FURTHER MEAT PROCESSING: GEM + MBBR

INTRODUCTION

A facility specializing in poultry processing with operations in roast beef, poultry and ham cook operations, was utilizing a moving bed film reactor (MBBR) for BOD reductions prior to discharge to the local municipality.

CHALLENGE

The MBBR was designed without pretreatment prior to the biological process. Due to an increase in production and the introduction of the roast beef line, the levels of FOG and TSS prior to the MBBR were harmful to the biological reactor and the Client was no longer able to comply with the POTW discharge limits. Using a pretreatment system that could reduce contaminant loading to the MBBR was deemed necessary so that the existing MBBR could focus on treating the BOD rather than getting bombarded with TSS (solids). While reviewing available pretreatment systems, such as conventional DAF technology, the Client learned about CWT's GEM System.

While comparing the GEM System to conventional DAF systems, the Client found the capital costs to be comparable, but the footprint requirement and the estimated chemical and operational costs with the GEM System to be much lower.

SOLUTION

The Client chose the GEM System for the above reasons and upon learning that the GEM System would achieve favorable results 100% of the time regardless of stream changes or contaminant loading with no increase in capital expenditures.

After installation of the GEM System, reductions were 98%, 99% and 50% TSS, FOG and BOD respectively. These reductions enabled the MBBR to function much more effectively, produce compliant wastewater and help the client avoid surcharges and fines.

TABLE 1: GEM REDUCTIONS PRIOR TO GEM AND AFTER MBBR

PARAMETER	GEM INFLUENT	GEM EFFLUENT	GEM % REDUCTION	MBBR EFFLUENT	MBBR % REDUCTION
TSS (ppm)	950	25	97%	<20	98%
FOG (ppm)	650	12	98%	<1	99%
BOD (ppm)	3,500	1,200	66%	<25	99%

Table 1 outlines the maximum treatability that was shown to be possible on the GEM SYSTEM + MBBR combination at this site. Values to this extreme are general and are dependent on influent wastewater to the system as well as to the chemical dosing used by the Client. However, very high reduction rates can be guaranteed by CWT as provided in a process warranty based upon the parameters of the site specific parameters.

