

BENEFIT from CWT's EXPERTISE in treating PLASTIC RECYCLERS' WASTEWATER**LOWER YOUR SURCHARGES and START BEING GREEN!!****INTRODUCTION**

Bottle Recycling has been on the uprise for a number of decades. As the global community becomes more aware of the practices and benefits of reuse and recycling of plastics, they are also demanding that better controls be put in place by the manufacturers, corporations, environmental agencies and end users. This promotes these groups to look toward new technologies that are sustainable and meet their goals of being good corporate stewards. For this reason, Clean Water Technology, Inc. (CWT), has become their advocate in providing the Gas Energy Mixing (GEM) System which provides Clients with a sustainable solution with a smaller environmental footprint.

CHALLENGE

A Recycled Plastics Bottle manufacturer approached CWT when the City gave them a challenge to meet their effluent requirements or be closed down. The Client had an existing dissolved air flotation (DAF) system that was outdated, conditions of longevity were unknown, and the Client struggled with the annual cost of chemicals required to operate their existing system.

SOLUTION

Due to CWT's reputation of helping Clients meet strenuous deadlines and difficult effluent requirements, Client teamed with CWT to find a solution that could be up and running quickly at minimal cost.

The GEM Technology is the only technology that can handle extreme levels of contaminant loading while offering exponential throughput expandability. The GEM Technology is suitable for ALL types and sizes of existing DAF's

Through analysis of Client's wastewater and from previous experience with other recyclers, CWT's laboratory in Los Angeles, CA, provided the Client with a Treatability Study and a Plan of Action. After researching options with Client, CWT proposed to retrofit Client's existing DAF using the GEM Technology. Client is now **in compliance** and **saving over 60% in chemical costs.**

ABOUT THE DAF to GEM RETROFIT



The Gas Energy Mixing (GEM) System is utilized in lieu of conventional DAF technologies for removal of total suspended solids (TSS), Fats, Oils and Grease (FOG), Turbidity, and any undissolved BOD/COD.

When a Client has an existing DAF that fails to meet effluent requirements, CWT will assess the integrity of the existing tank and consider retrofitting the DAF by using GEM Technology. Utilizing the centrifuge effect in a series of mixing heads, combined with the injection of air and chemicals under pressure, the GEM Technology can easily be integrated with the DAF. Since solids and liquids are separated with the GEM Technology before they hit the tank (where DAF separation generally occurs), GEM Technology allows the Client to exponentially increase throughput of the FORMER DAF by 2x, 3x, 4x or more.

LAB ANALYSIS OF WASTEWATER FROM PLASTICS RECYCLERS

TABLE 1: GEM Effectiveness on Influent from Plastic Bottle Recycling Facility, CA

PARAMETER	GEM INFLUENT	GEM EFFLUENT	% REDUCTION
TSS	5,500	25	99%
COD	15,000	5,500	64%
Turbidity	Over 1,000	8	99%



Left: DAF Influent
Right: GEM Effluent

TABLE 2: GEM Effectiveness on Influent from Plastics Recycling Facility, Colombia

PARAMETER	GEM INFLUENT	GEM EFFLUENT	% REDUCTION
TSS	550	25	95%
COD	2,800	550	80%
Turbidity	Over 1,000	8	99%



Left: DAF Influent
Right: GEM Effluent

CWT's technology prevailed over many challenges where other technologies would have struggled. **The Retrofit with GEM Technology provided the Client with the following Benefits:**

- Decreased Use of Chemicals
- Better Contaminant Removal Rates
- Able to Remove all Non-Dissolved Materials
- Reduced Secondary Treatment Costs
- Insurmountable TSS, FOG and BOD Reductions
- Expandable in terms of Loadings and Flow
- Lower Sludge Hauling Costs

