

INDUSTRIAL

CFAS® and DAF technology TAINAN, TAIWAN

Project Name:	Touch Panel Manufacturer WWTP
Location:	Tainan, Taiwan
Type of Plant:	Industrial - Opto-electronic
Consultant:	Eco-firm Environmental Technology Co. Ltd.
Technology Used:	CFAS® & DAF & Slot Jet Injectors
Biowater Used:	Biowater BWT-35®
Operational Since:	July 2011



Slot Jet Aerator.

The Challenge

The plant manufactures touch panels and polarizers as the materials for the LCD (Liquid Crystal Display) assembly. Since the manufacturing process is semi-conductor process, the wastewater contains large quantity of organic solvent such as developers, strippers and rinse liquid waste. The wastewater consists of difficult and non-biodegradable chemicals such as Dimethyl Sulphoxide (DMSO, $[\text{CH}_3]_2\text{SO}$), Ethanolamine (MEA, $\text{C}_2\text{H}_5\text{ONH}_2$) and Tetramethyl Ammonium Hydroxide (TMAH, $[\text{CH}_3]_4\text{NOH}$) that causes large footprint for biological tank and unstable operating issue under shock load situation when using the conventional activated sludge and fixed film process.

The Design

The plant is located in the Tainan Science-Based Industrial Park, Taiwan and facing an increasing organic loading problem in the raw wastewater due to the expansion of the product manufacturing



capability. The client chooses the Biowater CFAS due to its high biomass attached surface area, tolerance for shock load and smaller footprint features. A unique slot jet aerator with appropriate retention sieve was designed for complete aeration and agitation. It also saves more than one thirds of power consumption due to its high oxygen transfer performance and low gas/liquid features. A DAF followed by CFAS was designed for removal of residue suspended solid in the effluent.

Achievements

The system was started-up in July 2011. It saves one third of space but reach more stringent effluent quality by comparing with the existing fixed film biological process. After the star-up work, the client kept going a new retrofit work for the existing fixed film media and using Biowater media for replacement.

PARAMETER	DESIGN LOAD		EFFLUENT REQUIREMENTS
	US	INTL.	
FLOW	0,4 MG/D	62,5 m ³ /h	
COD	2645 lb/d	800 mg/l	< 200 mg/l



Media Flow in Aeration Tank.



Biomass Attached to the Media.

HEADQUARTERS

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Biowater Technology is an innovative company with over 40 years of experience in the biological treatment field. Our focus is on saving energy and resource recovery, with water as our major resource.