

Wastewater Treatment: Dual DAF & MBBR System

Food Manufacturer treats wastewater with twin DAFs and Moving Bed Biofilm Reactor (MBBR).
Stuart Ward of *Process Engineered Water Equipment, LLC* explains system design...

Case Study

The new YIBO, Inc. facility in Warrenton MO is the firm's first US production plant. Using state of the art equipment they will manufacture 26 varieties of soy sauce products for the commercial market. Five gallon containers will be distributed nationwide. As a discharge requirement the local POTW requested a wastewater plant for effluent control prior to release. Without an operating facility an estimated flow along with surrogate numbers for TSS and BOD were utilized in designing the treatment system.

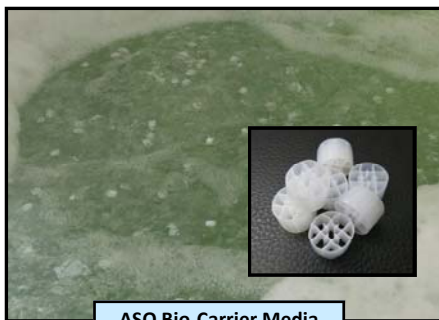


New US Facility

The treatment challenge was overcome with multiple components for the process stages. The unique compact system was designed with a Screen, EQ/pH, pre-DAF, aerobic Moving Bed Biofilm Reactor (MBBR), post-DAF and solids recovery. The screen removed coarse solids, DAF1 removed TSS and insoluble BOD, the aerobic MBBR unit removed soluble BOD and then DAF2 provided final clarification of the TSS.

MBBR System

PEWE patent-pending *ASO Bio-Carrier™* media provide 626²m/m³ of surface area for robust and effective biological growth.



ASO Bio-Carrier Media

Dual DAF

The key to the design is the patented *Dueler™* DAF technology. This innovative equipment has 2 DAF systems in 1. The first vessel provides pre-treatment while the second vessel handles post treatment



Dueler DAF

duties. They share a common skimmer and solids disposal. In between DAF1 and DAF2 is the *ASO Bio-Carrier™* MBBR unit. With DAF1 protecting the MBBR, the aerobic bacteria are secure and can efficiently do their work. Once the water leaves DAF1 sump it then flows by gravity through the remaining components until discharge. The new operation featured a PEWE *Command Control™* panel.



Dueler Solids Skimmer

Final Results

At start-up the system seamlessly transferred the water through the various process stages. The Screen, *Dueler* DAF and MBBR system worked with quiet efficiency. Mr. Limu Feng Project Manager for YIBO Inc, was quite pleased the start-up could be accomplished as planned. In fact, the wastewater facility was up and running in less than a week in 1 degree F weather!



MBBR & Blower System

Plant personnel were on a quick learning curve managing the new system while also battling the unseasonably cold elements by weather proofing the now fully wet and functioning wastewater plant. At the end of the day he is very satisfied with the new *Dueler™* DAF, the smooth running *ASO Bio-Carrier™* MBBR system and his experience with PEWE personnel and equipment.



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