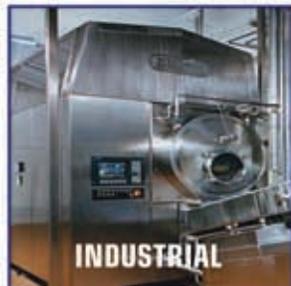


# AquaTec, Inc.

## **MBR** *Wastewater Treatment*

**The High Performance  
Membrane Bioreactor**

**AMBiR**





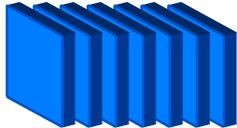
## What is a Membrane Bioreactor (MBR) ?

The MBR is a wastewater treatment system which combines the activated sludge process and membrane filtration .

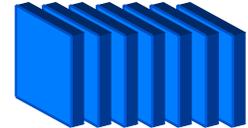


## What is an AMBiR ?

AMBiR is the MBR produced by AquaTec, Inc. This product is a result of the combined resources of AquaTec and Keppel Seghers . It represents over 10 years of experience with operating MBR systems. Experience is critical in MBR design.



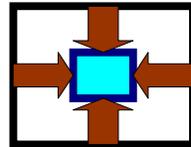
## Why choose AMBiR ?



### • EXCEPTIONALLY CLEAN EFFLUENT

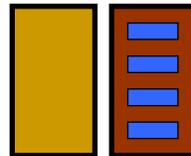
#### Achievable Effluent Characteristics

- BOD < 2 mg/l
  - TSS < 2 mg/l
  - Ammonia < 1 mg/l
  - TN < 3 mg/l
  - TP < 0.1 mg/l \*\*
  - TBTY < 0.1 NTU
- \*\* may require coagulant



### • REDUCE PLANT SIZE

A space savings of up to 75% over traditional treatment methods is possible with AMBiR



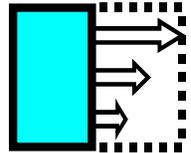
### • RETROFIT WITH AMBiR

Convert your existing plant and increase capacity and quality



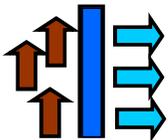
### • KEEP IT SIMPLE

Unlike most other MBR systems AMBiR is designed for simple operation and maintenance



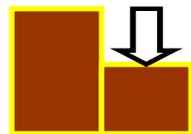
### • EXPANDABILITY

AMBiR systems allow for phased growth and can minimize initial investments



### • POSITIVE BARRIER

All effluent must pass through the AMBiR Ultrafiltration membrane



### • REDUCE SLUDGE COST

The ability to waste sludge at high MLSS levels reduces sludge processing cost



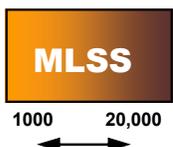
### • HIGHER FLOW RATE

Superior AMBiR membranes combined with proven biological design = GREATER FLOW



### • BETTER CONTROL

The AMBiR dual flow process separates biological control from the membrane feed system



### • WIDER PROCESS RANGE

AMBiR membranes are designed to operate without biofilm and resist fouling at high MLSS levels



### • LOWER COST

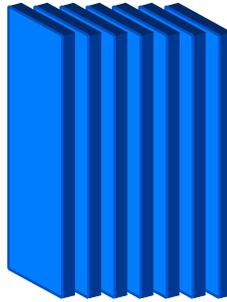
Better membranes  
+ fewer components  
+ smaller plant size  
+ simple operation  
= lowest cost solution

# PUTTING IT ALL TOGETHER



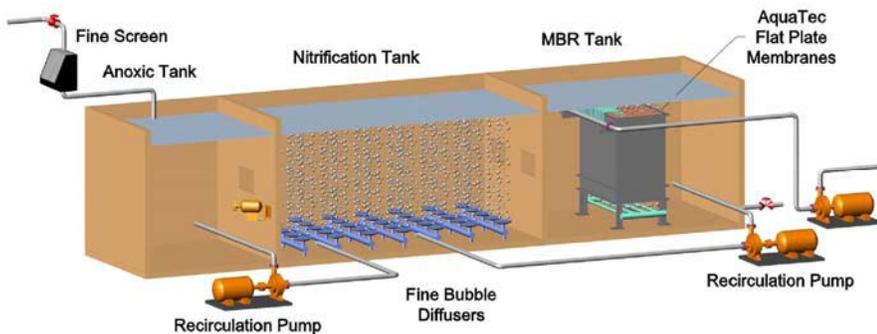
## FLAT PLATE MEMBRANE

- PVDF sheet permanently attached to ABS back plate
- Ultrafiltration without the need for Biofilm
- Highest flux rates using lowest differential pressure



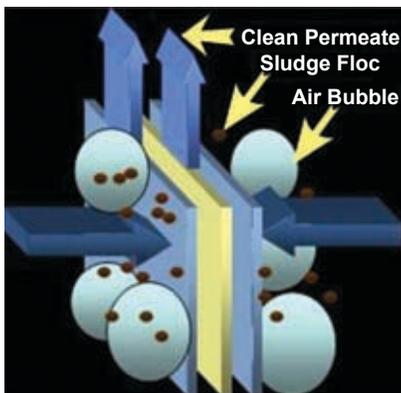
## CASSETTE

- Multiple flat plates are combined (different sizes available)
- Permeate line connects with plates via tubing
- Lower diffuser provides air for scour, circulation and biological process



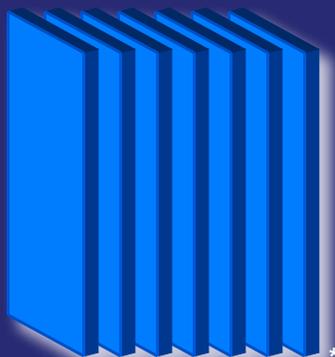
## PROVEN AMBiR PROCESS

- Separate zones are required for best performance
- Multiple recycle zones separate biological control from MBR feed control
- Precise nutrient control based on proven process with MBR



## KEEP IT SIMPLE OPERATION AND CLEANING

- Air Scour cleans flat plates, moves activated sludge past the membrane and contributes oxygen to the biological process.
- 99% of cleaning is with air scour. NO BACKPULSE NEEDED.
- Recommend bi-yearly cleaning with chemicals. Cassettes remain in undrained tank. Cleaning operation takes about 1-2 hours.
- Very small amount of chemicals required as compared to other MBR systems.
- Ability to operate at both low and high MLSS levels makes operation simpler
- Hair and fiber are not trapped in membrane



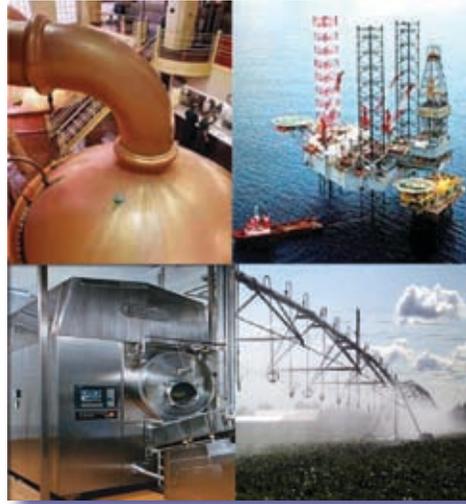
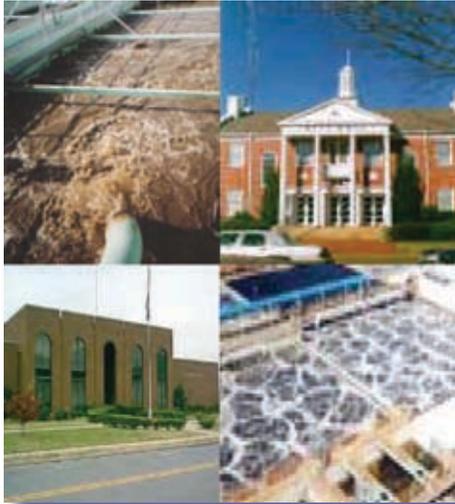
**AMBiR**\*

The simple solution

# MUNICIPAL

# INDUSTRIAL

# COMMERCIAL



## AMBiR MBR SOLUTIONS

- Pre-engineered plants from 5,000 gpd to 150,000 gpd
- Hybrid plants (pre-engineered + custom site work)
- Retrofit—Upgrade flow and quality of existing plants
- Custom plants to 10 MGD and larger
- Industrial plants for high BOD/COD
- AMBiR can be supplied with RO systems
- Phased design/construction to meet future needs



## AMBiR MEMBRANES ARE REPLACING EXISTING HOLLOW FIBER SYSTEMS

- Simpler to operate
- Easier to clean
- Greatly reduced chemical amounts
- Eliminates chemical disposal problems

\* Trademark Applied

AMBiR systems are available as equipment/engineering solutions or as Turnkey solutions. AquaTec, Inc. has capabilities beyond those available through traditional MBR suppliers. AquaTec, Inc can work with local resources to help you design/build the lowest cost and highest performance system . AquaTec, Inc can also offer alternate wastewater solutions including SBR, High Rate Activated Sludge, Submerged Filter Media and conventional systems. Special Anaerobic solutions are also available.



## AquaTec, Inc.

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