The Dynatec Difference

**Significant Savings**
- Water reuse lowers operating costs
- Better treatment lowers surcharge
- Low maintenance

**Technology Benefits**
Membrane Separation System Using Tubular Ultrafilters (UF)
- Simple mechanical process
- Consistent high quality water
- Low operating costs
- Minimal operator intervention required
- Reduced sludge disposal costs

**Contaminants Removed**
- BOD
- Phosphorous
- Suspended solids
- COD
- NH₃-N

Other Services Provided
- Systems Design
- Equipment and Installation
- Operator Training
- Multi-year service contract
- Design-Build-Own-Operate-Maintain (DBOOM)

Equipment Shown
Pictures shown of ultrafilter

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**Poultry Plant MBR**

Dynatec Systems’ installed a HiRate™ UF for MBR service that processes 800,000 gallons per day. The HiRate™ MBR operates at high flux which means less membrane surface area is required and ultimately saving capital cost. Dynatec Systems has installed over 600 membrane systems providing wastewater solutions since 1979. The HiRate™ MBR UF combines sound engineering and effective process design with state of the art materials of construction.

Outsource your wastewater service! Dynatec will design-build-own-operate-maintain your wastewater treatment plant allowing you to concentrate on your core business.

Graphic shows flow of bio-mass and treated water through membrane
HiRate™ MBR UF - Advantages Over Other Treatment:

- It is a simple controllable operation and requires less operator attention
- Reliable high quality effluent
- Smaller footprint - high MLSS levels (8,000 - 25,000 mg/l )
- High rejection efficiency of organic constituents, solids and microorganisms
- Lower effluent turbidity
- Excellent nutrient removal capability (<3 mg/l total N)
- Lower sludge yield (0.35 #MLSS/# BOD5)
- Operates at higher sludge concentrations (Less waste sludge to haul or dewater at high mixed liquor concentrate)
- Eliminates problem associated with filamentous bacteria and sludge bulking problems
- Handles variable loading with higher MLSS level
- Lower chemical requirements
- Controlled environment around the membrane system

HiRate™ MBR UF - Advantages over Immersed Membrane Systems:

- Removing immersed membranes from the process tank is difficult and inefficient
- Cleaning is easier for operator
- No working above aeration tanks with hoist that can be dangerous. Maintenance is safer
- No annual fine bubble diffuser replacement required. Maintenance is less frequent
- Less oxygen is recycled to the denitrification zone minimizing carbon addition
- No recycle pump for denitrification, UF recirculation pump provides membrane scouring and recycle
- No permeate vacuum pumps, valves and air relief valves
- No backwash pump and backwash tank
- No denitrification recycle pumps
- No hoist system for membrane removal
- No soak tank for membrane cleaning
- No dedicated blower needed for membrane air scour
- Lower capital cost than immersed membrane MBR’s
- Lower membrane replacement cost
- Hollow Fiber failure bypasses solids when membrane fails
- Higher temperature membranes available for thermophillic applications