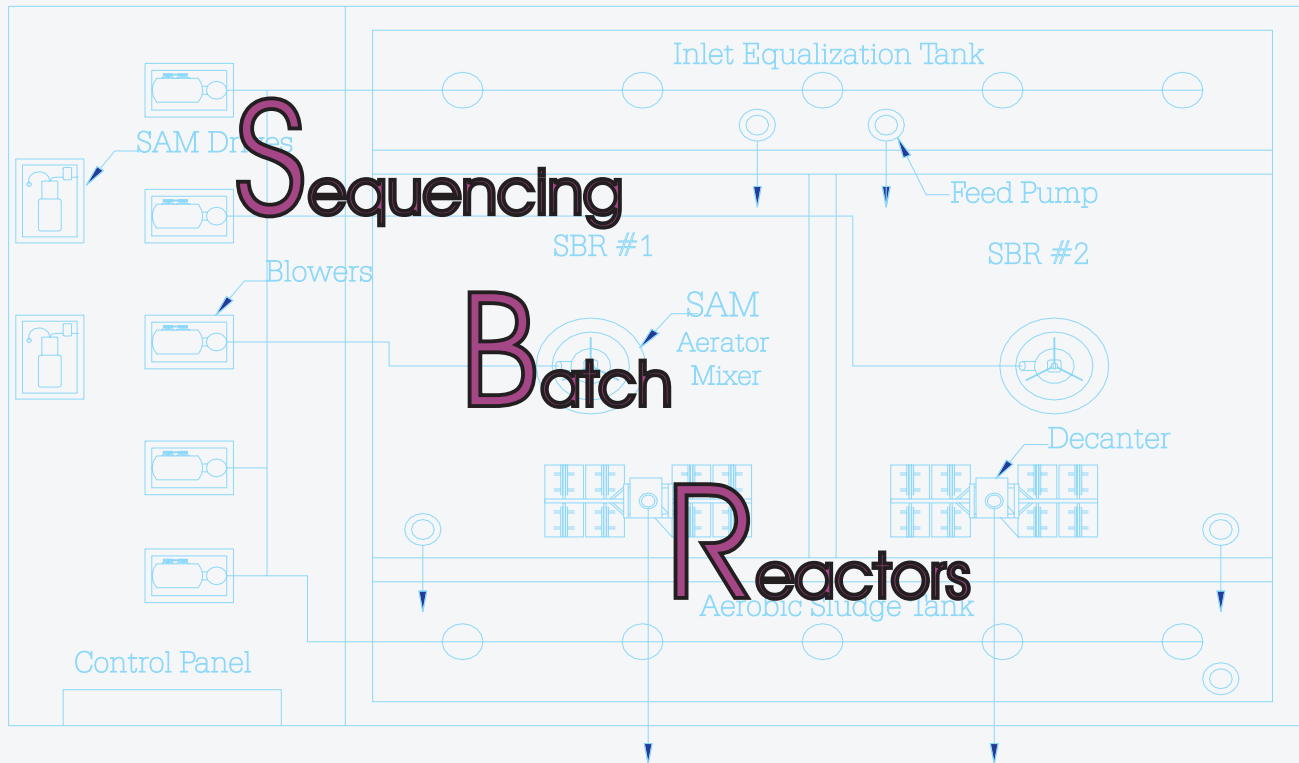


Engineered SBR Systems

By

AquaTec, Inc.



Guaranteed System Performance And Reliability

❁ Experience

❁ Capability

❁ Service

26 Years of Innovative Solutions to Water & Wastewater Process Problems

Why Should You Choose To Work With AquaTec, Inc.?

Experience....

Since 1972, AquaTec has provided services and products to the environmental sector of industry and public utilities markets. You can only get experience by being there, and there is no substitute for experience. AquaTec has long been active in developing energy efficient environmental treatment systems... with proven performance and reliability. AquaTec is one of the few environmental technology and engineering companies with both aerobic and anaerobic wastewater process expertise... especially when SBR processes are in tandem with high-efficiency anaerobic treatment. If you are considering the SBR process, you can only increase your project success factor by working with AquaTec.

Capability....

AquaTec offers single source responsibility for engineering, supply of the right materials and equipment, construction, and financing if needed. Design and build is the heart of AquaTec's business routine, with no "buck passing" of responsibility. AquaTec is backed by a professional management staff which includes engineers, technicians, manufacturers, and speciality contractors. This unique staff and our network of associated equipment and service providers is a proven successful method to maximize value for AquaTec's customers. Both project cost reduction and customer satisfaction for system performance and dependability are achieved. The record speaks for itself, as much of AquaTec's business is from repeat customers. The back cover of this brochure is a partial listing of AquaTec's business success with major companies. We would like to add your company's project to our list of satisfied customers.

Why You Should Choose AquaTec's Engineered SBR

The Process Benefits

- ✿ Lower cost than conventional methods
- ✿ Less land space needed for SBR plants
- ✿ Consistent high-quality effluent
- ✿ High tolerance for wide swings in flow and organic loading
- ✿ No separate clarifier required
- ✿ Controls filamentous growth
- ✿ Nutrient removal without chemicals
- ✿ Simple sludge process management
- ✿ Less equipment to maintain
- ✿ Less operator attention required

The Equipment Benefits

- ✿ AquaTec custom designed packages
- ✿ All aeration and mixing equipment is removable without dewatering reactor
- ✿ Variable power level control for both aeration and mixing functions
- ✿ No scheduled maintenance for any underwater equipment items
- ✿ Standard hardware parts used to build and drive process equipment
- ✿ Nearly unlimited flexibility and adjustment... manual or automatic
- ✿ Simple and easy to understand control functions make operator training easy

AquaTec Engineered "Design-Build" (Turnkey) Examples



Multi-Stage Dual Reactor SBR Plant



High-Rate Anaerobic-Aerobic SBR Plant

AquaTec engineered systems are many in number and process configurations. The examples shown on this page are high efficiency plants, with wide ranges of wastewater characteristics being treated. The SBR process, an aerobic process, lends itself to being put in tandem with high-rate anaerobic pre-treatment. Where high strength industrial wastes are suitable to the anaerobic process, AquaTec can normally show you a considerable economic and process advantage with the anaerobic-SBR combination. Since AquaTec specializes in total process design and construction responsibility, you have the advantage of after the job support and ongoing knowhow when upsets and other problems occur... and you need real expertise on the jobsite in a hurry... AquaTec is your best answer.

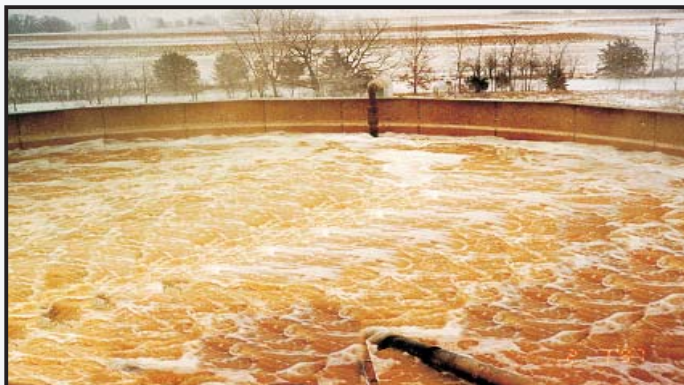


High-Rate Fixed-Film Anaerobic-Aerobic Plant



Single Tank SBR High-Rate Plant

The AquaTec SBR installation shown here is located in Northern Illinois, very near the Wisconsin state line. The severe sub-freezing winters in this region are well known. It is noteworthy to observe the SBR plant in these photos... operating at high efficiency without the typical problems associated with conventional process equipment... frozen aeration systems, wind-blown ice spray and subsequent ice build up on structures and equipment. Not to mention the loss of ammonia nitrogen treatment efficiency... and ice problems with the conventional type clarifier equipment. Note the ease with which the AquaTec decanter in the photo below performs in these severe freezing conditions. The SAM removable "Submersible Aerator-Mixer" provides the aeration and mixing without concern for the climate.



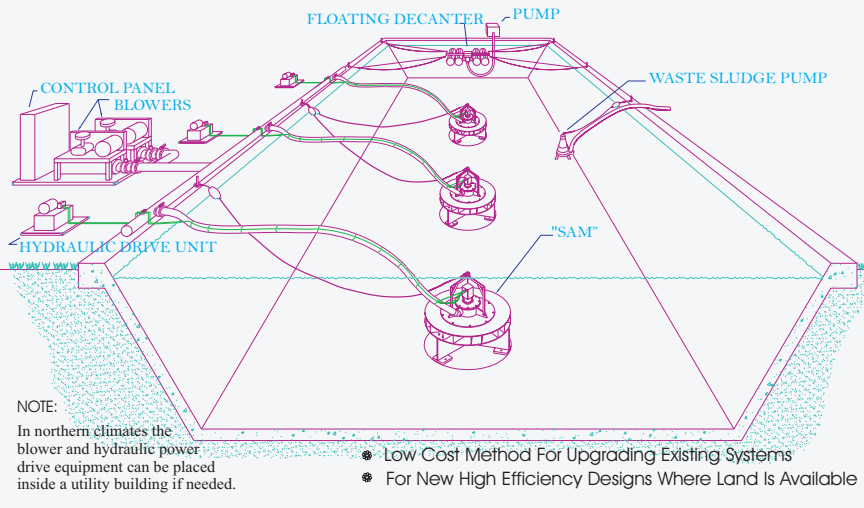
AquaTec's Submersible Aerator-Mixer Ignores Winter Climate



The AquaTec Decanter During Sub-Freezing Winter Operation

Typical SBR Systems... Many Others Available

Lagoon SBR System with the "SAM" Submersible Aerator-Mixer

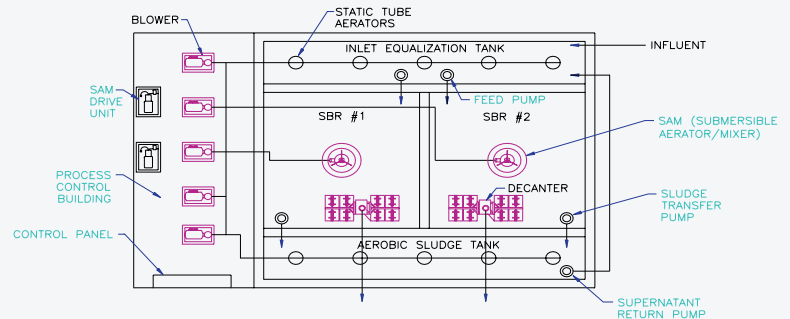


The AquaTec engineered SBR system may be the answer to upgrading or expanding the capacity of your present wastewater treatment system. If you want a professional evaluation for the potential that upgrading can provide you, AquaTec will assist you upon request. It may be possible that modification of your present lagoon site will get you through the next upgrade phase for your treatment needs. If land cost allow and if land is available, a lagoon type design using SBR technology, or other lagoon process system, may be of interest because of the SAM (submersible aerator-mixer) removable units. The SAM units do solve many of the aeration problems in cold climates and adverse aerosol effects. If you are responsible for any type of wastewater treatment system where lagoons are involved, you need to look into these new advanced methods to upgrade and/or improve your system.

AquaTec engineered SBR systems are available in many different process design schemes, and in as many different physical plant layouts. The SBR process lends itself to many existing plant tank configurations, which can simply be retrofitted with SBR components. Also, step-up type upgrading can work without interrupting the existing process. For new SBR plant designs, AquaTec has extensive experience in a broad range of industrial waste and municipal type systems. AquaTec has provided SBR processes especially designed to follow several types of anaerobic plants (also designed by AquaTec), as well as stand alone SBR systems that meet stringent NPDES requirement. AquaTec has some unique components (such as SAM removable aerator-mixer units and special high-efficiency decanter units); and AquaTec can provide conventional components in SBR'S as well.

Sequencing Batch Reactor Layout

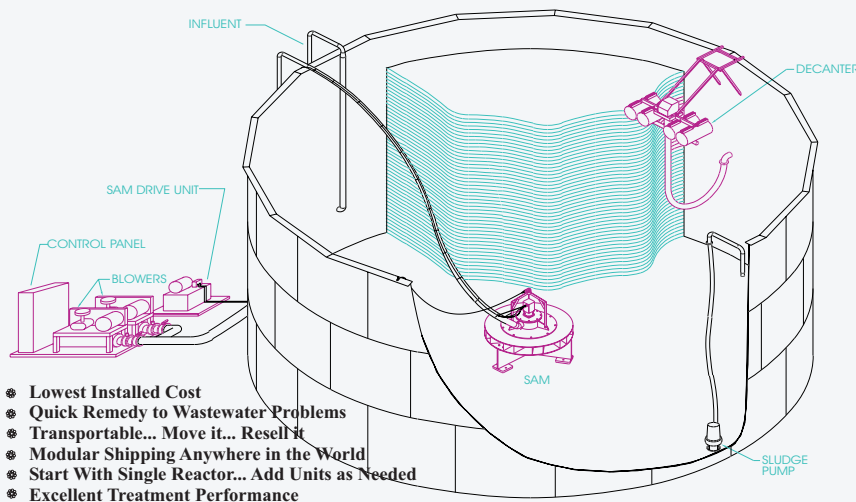
A Definite Advantage Over Conventional Methods



- *Lowest Installed Cost
- *High Quality Effluent
- *Wide Range of Organic Loading
- *Less Land Usage

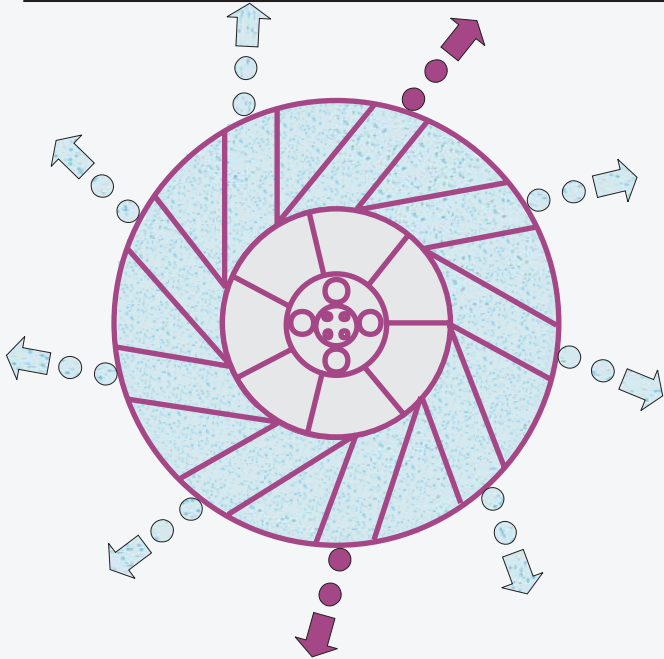
- *No Separate Clarifier Needed
- *Controls Filamentous Growth
- *Nutrients Removed W/O Chemicals
- *Simple Sludge Process Management

Single Tank SBR With Removable "SAM" Aerator-Mixer Unit

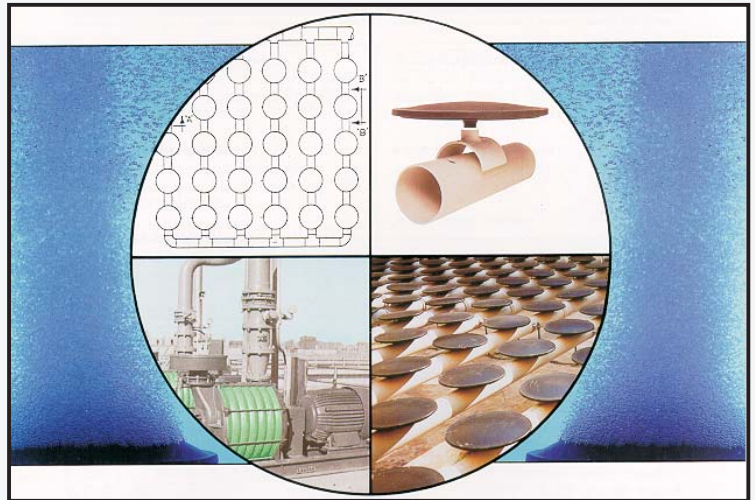


The AquaTec "packaged" SBR modular plant is cost effective where rapid deployment of a complete wastewater treatment system yielding high levels of effluent quality must be attained. The modular plant is available in any size. It offers fixed cost, expansion value, simplified site planning and reduced engineering for subsequent additions. The use of standard hardware components make the AquaTec system attractive for use in domestic and foreign installations. The AquaTec SBR is capable of being dismantled and relocated by reasonably skilled construction crews. Shipping containers are compact and can be quickly dispatched to any location. Standard packages include bolted steel tanks, however, component items can be supplied for other types of treatment vessels. Call AquaTec for more information on these unique modular SBR plants.

AquaTec Hardware Makes The Difference!



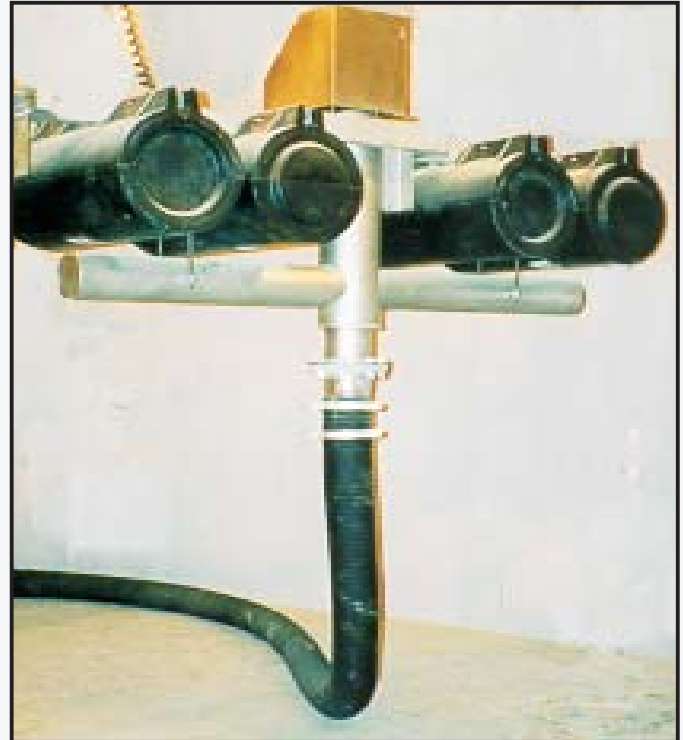
The SAM (Submersible Aerator-Mixer) is the most advanced SBR process control device ever introduced to the wastewater treatment industry. It is a removable unit, that sits on the bottom of the reactor maximizing the oxygen transfer and in depth mixing. Its powerful pumping action is far superior to jets.



AquaTec's "FlexAir" high-efficiency membrane disc diffusers have been used in SBR process for over 12 years without the clogging problems of tubular and porous media diffusers. If you want fine or coarse bubble "in place" or "lift out" designs, we can accommodate your preferences. AquaTec offers several types of mixing devices to give SBR'S total process control and flexibility. AquaTec can offer SBR plants with many options.



AquaTec's SAM (Submersible Aerator-Mixer)



AquaTec's High-Efficiency Decanter

The two photos above, the SAM unit and the Decanter are the two basic equipment items you need to build a high-efficiency SBR, simply add process air, tank or basin, some piping and waste sludge pump(s), and a AquaTec control panel, and you have your SBR. It's that simple, and you will have the most advanced SBR technology... only by AquaTec.

AquaTec is Committed to Your Satisfaction...

Experience...

AquaTec, Inc. Since 1974, is an innovative and successful company specializing in developing energy efficient aerobic and anaerobic treatment systems. Our experience increases satisfaction for our customers.

Capability...

AquaTec is backed by a professional management staff which includes engineers, technicians, manufacturers and specialty contractors. We can assist you with selection of process, system design, equipment or even turnkey design construction if you desire.

Service...

AquaTec not only offers equipment and related applications technologies, but we can assist you with proper design and operation of your facility as well. Helping you perform effectively and efficiently is our objective.

Availability...

For information call (815) 654-1500, write AquaTec, Inc., 1235 Shappert Dr., Rockford Illinois, 61115; or, contact the representative below:

A Partial List of Clients Served By AquaTec:

A.E. Staley Manufacturing Company
American Maize, Inc.
Beatrice, Inc.
Dean Foods, Inc.
Formost Foods
Joan of Arc Company
Mobil Chemical Company
Ocean Spray Cranberry Company
U.S. Gypsum, Inc.

Abbott Labs
Amoco Chemical Company
Bergstrom Paper
Del Monte Corp.
Illinois Power Company
Kraft, Inc.
National Starch
Pet, Inc.
Waste Management, Inc.

Alto Dairy
ADM Corporation
Campbell Soup Company
E.J. Brach Candy company
James River Pulp & Paper
Libby, McNeil & Libby
Nekoosa Papers
The Quaker Oats Company

Represented By:



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