



Providing Treatment Solutions for Air, Water, & Land

www.TheiaLLC.com

(888)330-2260

Energy Efficient Aeration Systems Save Money, Reduce your Maintenance



Theia Water offers the most energy efficient aeration systems in the marketplace. These systems are also unique in that they are *simple*. Simple to install, simple to operate and they require very little maintenance. What little maintenance is required is all performed on dry land.

All of our systems are designed to operate efficiently while keeping all the critical parts of the system *outside* of the water. The only thing that goes under water is pipe.



Nothing goes in the tank so neither do you

We now offer a wide range of solutions mostly based on our original and highly successful Oxygenator Nozzle. While this legendary device has been in use for over 30 years in water, wastewater, leachate, sludge, etc, we are not satisfied with just being better. We have coupled this device with some other technologies to offer systems that are even more efficient and can greatly reduce your energy use while keeping your maintenance to a minimum.

Simple to Install; Simple to Operate





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The Oxygenator The Original



It all started when we turned the world of aeration on its head. This unique design allowed mixing and aeration to be applied in one step with an aeration efficiency that exceeded all submerged aeration systems. Because we are pushing a non-compressible fluid, this process is also a great deal more energy efficient than conventional aeration systems, not to mention lower in capital costs.

Today, with other companies trying to copy us, our 2.2 to 1 air-to-water ratio and lower pressure drop keeps us well ahead of other self aspirating aerators.

Despite its energy efficiency, many of the other advantages of our design made us a favorite of wastewater operators everywhere.

- ◆ Low maintenance
- ◆ Ease of access and maintenance
- ◆ Directly oxidizes H₂S instead of stripping it
- ◆ Mixing and aeration in one step
- ◆ Imparts NO heat to the water
- ◆ Allows for tighter DO Control
- ◆ Allows for “turning” of the tank, lagoon or pond
- ◆ Very easy to install
- ◆ Lower capital and installation cost
- ◆ Ideal for retrofits
- ◆ Can be used in Oxic, or Anoxic modes of operation

The Oxygenator approach constantly exposes oxygen deficient water and organic material to oxygen in a high shear environment. Not only is this approach more efficient but it is more predictable and repeatable.





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Save Energy, Use Oxygen

Now, more than ever, there is a push for every type of facility to reduce their power use. Wastewater plants are one of the largest energy users in many areas and they use most of their energy providing oxygen to their process.

Theia-Water can reduce your energy use by as much as 60% by injecting oxygen instead of air into your process. We can provide this energy efficiency in a system design that will also reduce your maintenance and the complexity of your system. Because our oxygen injection systems utilize our Oxygenator nozzle, you still get all of the advantages of our standard systems but with greatly reduced energy use.

- ◆ Nothing but pipe goes into the tank
- ◆ Mixing and Oxygen injection in one step
- ◆ Simple to install; simple to operate
- ◆ Tight DO Control
- ◆ Turn the tank
- ◆ Can be used in Oxidic, or Anoxic modes of operation
- ◆ Ideal for retrofits

Not only does Theia-Water offer the most efficient means on earth of getting this pure oxygen into your wastewater, we also offer simple cost effective means of making this oxygen on site.





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Applications



Eliminating H₂S in a lift station



Aerating a wastewater lagoon



Aeration and DAF for poultry

The Oxygenator has limitless possibilities and a nearly limitless number of possible applications. Not only is it the most efficient and effective technology but it is also the easiest to apply. We do not need to submerge anything in the tank which means installing our system does not require major interruptions to the service or for our customers to drain down tanks or lagoons.

We usually have units available for quick turnaround should an emergency arise and we have test systems available for pilot tests as well as for lease.

Some of the applications in which we have successfully employed this technology are:

- ◆ Aeration for ponds and lagoons
- ◆ Effluent aeration to streams or rivers
- ◆ H₂S elimination in collection systems
- ◆ H₂S elimination in tanks, lift stations, headworks, etc
- ◆ H₂S and BOD reduction in septage facilities
- ◆ Stripping of gases and VOC's
- ◆ Supplemental aeration for treatment plants
- ◆ Post aeration
- ◆ BOD/COD reduction for industrial effluent
- ◆ Leachate pretreatment
- ◆ Mixing and equalization
- ◆ Lake de-stratification



O₂ Injection—Replaces
2700 hp with 150 hp



Aeration Septage—Eliminating H₂S
& reducing BOD



Aeration tank—Replacing diffusers

