

DO₂E

WASTEWATER TREATMENT LLC

Little John Digester



“SOLVING THE WORLD’S WATER
PROBLEMS WITH INNOVATIVE
GREEN TECHNOLOGIES”

REVOLUTIONARY CHANGES IN AERATION & MIXING

VISIT US ON THE WEB AT WWW.DO2E.COM



DO₂E Waste Water Treatment LLC has designed and patented some of the most technologically advanced wastewater treatment equipment on the market today. DO₂E is proud to offer products that are environmentally friendly, air driven, and most importantly have no moving parts. This is a new paradigm in wastewater treatment equipment for both municipal and industrial applications. DO₂E continues to be on the cutting edge in the design, development, and production of environmentally friendly and energy efficient technology. Our approach to **Green Technology** continues to set new industry standards when it comes to "Solving the World's Wastewater Problems."



Green Technology refers to technology whose use is intended to mitigate or reverse the effects of human activity on the environment.

DO₂E: The Solution To Pollution!

DO2E F.O.G. TEST with AERATION
F.O.G. (Fats, Oil, & Grease)
With Advanced Oxidation Processing

FOG Before Aeration
01/05/12



FOG 5 Minutes After
Aeration
01/08/12



FOG 5 Days After
Aeration
01/13/12



FOG 10 Days After
Aeration
01/18/12



FOG 20 Days After
Aeration
01/28/12



*Same Samples
12 Months Later*



After Filtration

Proof!
"F.O.G. Will NOT Reform!!!"
(Confirmed by: Registered
Independent Laboratory testing.)

DO₂E's Little John Digester

For
Lift Stations, Wet Wells, & Grease Traps

The Little John Digester Features

- No Moving Parts / Air Driven
- No Chemical Additives
- No Petroleum Lubricants
- Low to No Maintenance
- Extremely Low Noise Level (50 DB)
- Eliminates Grease Build Up and Matting
- Reduces Pumping of Wet Wells & Lift Stations
- Pre-treats Raw Sewage Up to 65%
- Removes FOG (Fats, Oils, & Grease) Buildup
- Reduces Sludge build up
- Removes Most VOC's and Heavy Metals



Before Treatment
With the
Little John Digester

After 24 Hours
Of Treatment With
The Little John
Digester



The Little John Digester Is Available
In These Sizes And Configurations

Little John Model:	Single Phase	Three Phase	A.O.P. Available
1 HP	YES	YES	YES
2 HP	YES	YES	YES
3 HP	YES	YES	YES
4 HP	NO	YES	YES

How the Little John Digester Works: Mechanical, Chemical, and Biological Digestion Combined with A.O.P.

The Little John Digester is a state-of-the-art system that injects air through a specially designed manifold system constructed of heavy-duty non-corrosive material. Atop of this specialized manifold are stationary ridges or blades. As the air travels up and through the digester cylinder, a void is created. With this vacuum effect, solids are pulled in through the bottom of the digester and across the stationary blades or ridges at the top of the unit. At speeds up to 65 feet per second, the **solids are immediately emulsified** when they come in contact with the blades or ridges resulting in a high degree of breakdown of solids, which greatly increases the digestion process. Ozone can also be injected in this cylinder, which further facilitates the digestion process of raw sewage before it enters the wastewater plant. The Little John Digester uses THREE means of digestion: mechanical, chemical and biological.

Mechanical Digestion

The mechanical process works as described above by continuously moving the solids at speeds up to 65 feet per second, and accounts for approximately 70% of the digestion process.

Chemical Digestion

While we **do not add** any chemicals to our process, we **recycle** the existing cleaning chemicals found in grease traps and lift stations such as soaps, detergents, degreasers, stain removal solvents, drain cleaners, fabric softeners and all of the other house hold cleaners that are discarded down the drain. Once discarded, these unused household chemicals become stratified or separated in the water column within the lift station and have little to no effect in the digestion process. We have a unique way of blending all these existing chemicals / components together to further break down the grease and other matting, which occurs naturally, in lift stations. This is a key component of our Green Technology, recycling. It is estimated that the chemical digestion accounts for 20 to 25 % of the digestion that will be occurring in the lift station after the Little John Digester is installed.

Biological Digestion

Reducing the BOD and COD further enhances the biological digestion. By continuously injecting 45 to 50 cfm of warm fresh air into the water column, we are able to stimulate or enhance the activity of the microbes / Bugs. This enhancement of the aerobic environment further propagates good bacteria growth. It is estimated that this portion of the digestion process may account for 10 to 15% of the digestive process.

Advanced Oxidation Processing (A.O.P), Further Enhances the Process

A.O.P., Ozone with hydroxyl radicals is one of the most powerful and effective oxidation agents known to man. Aqueous Ozone / water entrained ozone is injected into the wastewater stream which accelerates the oxidation process. Hydroxyl radicals are much more potent than ozone. When hybrid ozone is combined with water to form Aqueous Ozone, reaction times are 300 - 500 times faster, 200-300% more effective with a half-life of 2 to 5 minutes.

Benefits Of The Little John Digester

- Effectively eliminates grease build up and matting
- Reduces pumping requirements for Wet Wells & Lift Stations
- Effectively Pre-treats raw sewage
- Breaks down F.O.G. on contact
- Reduces sludge build up
- Reduces H₂S gas
- Reduces odor
- Reduces labor cost by up to 90%
- Operates in as little as 24 in. of water
- No moving parts air/driven
- No chemical additives
- No petroleum lubricants
- Minimal Maintenance
- Low noise level (50db)
- Low operating cost
- Heavy duty, non corrosive construction
- No electrical connections in or near water
- Quick and easy to install
- Light weight and portable
- "Green Technology"
- Made in the U.S.A.

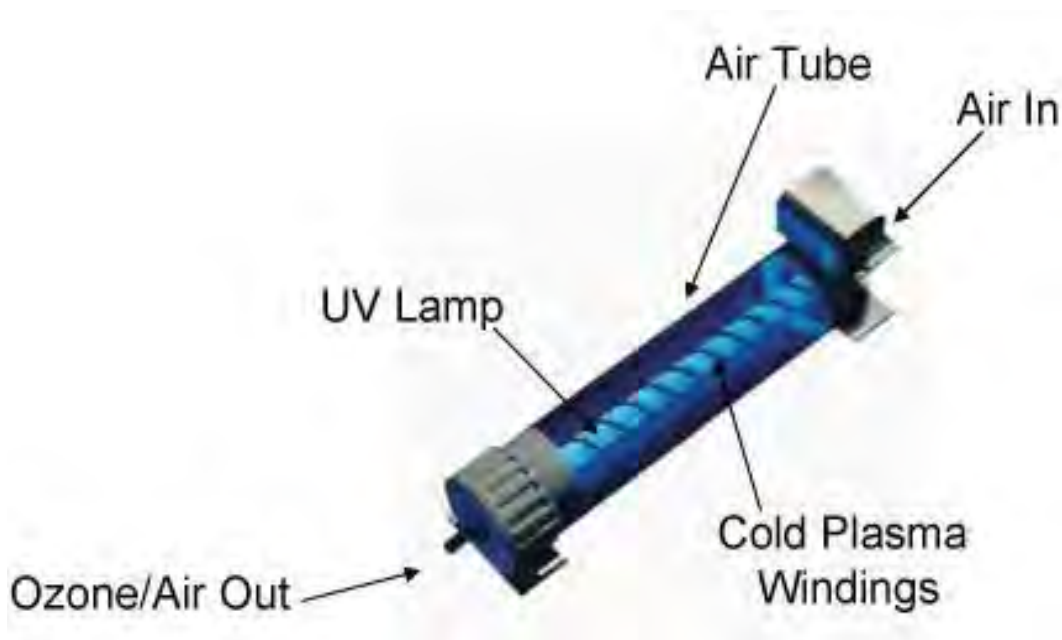
Advanced Oxidation Processing Technical Information

A.O.P. is the conversion of ozone, by ultraviolet radiation on the UVC wavelength, in the presence of water, to form high-energy hydroxyl radicals. Hydroxyls function in a manner similar to Hydrogen Peroxide, which is increasingly used as an additional oxidation shock.

Ozone is the most powerful oxidant and disinfectant readily available. Ozone is a form of oxygen that contains three atoms (O_3) rather than the normal two (O_2). Ozone acts as an oxidizer and disinfectant (sanitizer). Our equipment is designed primarily to provide oxidation and disinfection of the water, this water is known as **aqueous ozone** or ozone-enriched water. Ozone kills bacteria by rupturing the cell wall (similar to popping a balloon) and by destroying the virus' protective layer. Unlike most chemical disinfectants, microorganisms cannot develop a resistance to Ozone.

A.O.P. is an ideal solution for wastewater problems that must deal with high contaminant concerns, particularly in the areas where state or municipal laws require quick and effective treatment of these major issues.

A.O.P. Processing Tube



**Ozone is Approved
For Use By:**



Advanced Oxidation Processing (A.O.P.)

Advantages of A.O.P.

- Most powerful disinfectant & oxidant readily available
- Does not produce any harmful by-products
- Reduces many contaminants to inert compounds
- Oxidizes many heavy metals
- Kills most bacteria & viruses including Hepatitis
- Oxidizes pharmaceuticals in waste water
- Oxidizes H₂S gas and certain other Mercaptans
- Increases dissolved oxygen (DO levels)
- Eliminates F.O.G. (Fats, Oils & Grease)
- Reduces the use of other chemicals
- Provides a cleaner, more sanitary environment



A.O.P. Generator

Known as A.O.P., Ozone and hydroxyl radicals are combined to form one of the most powerful and effective oxidation agents known to man. Hydroxyl radicals are much more potent than ozone. When hydroxyl radicals are combined with ozone, reaction times are 300 - 500 times faster, 200-300% more effective and they have a half-life of 2 to 5 minutes.

**A.O.P. Is Compatible with All DO₂E Products and
Is Optionally Available.**

All G.O.A.T. Models Come Equipped With A.O.P.



DO₂E

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***For More Information On DO₂E's Proprietary
Aeration & Mixing Products Please Visit Us On The Web
At
WWW.DO2E.COM***