

DO₂E

WASTEWATER TREATMENT LLC

Product Catalogue



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

REVOLUTIONARY CHANGES IN AERATION & MIXING

VISIT US ON THE WEB AT WWW.DO2E.COM



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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!

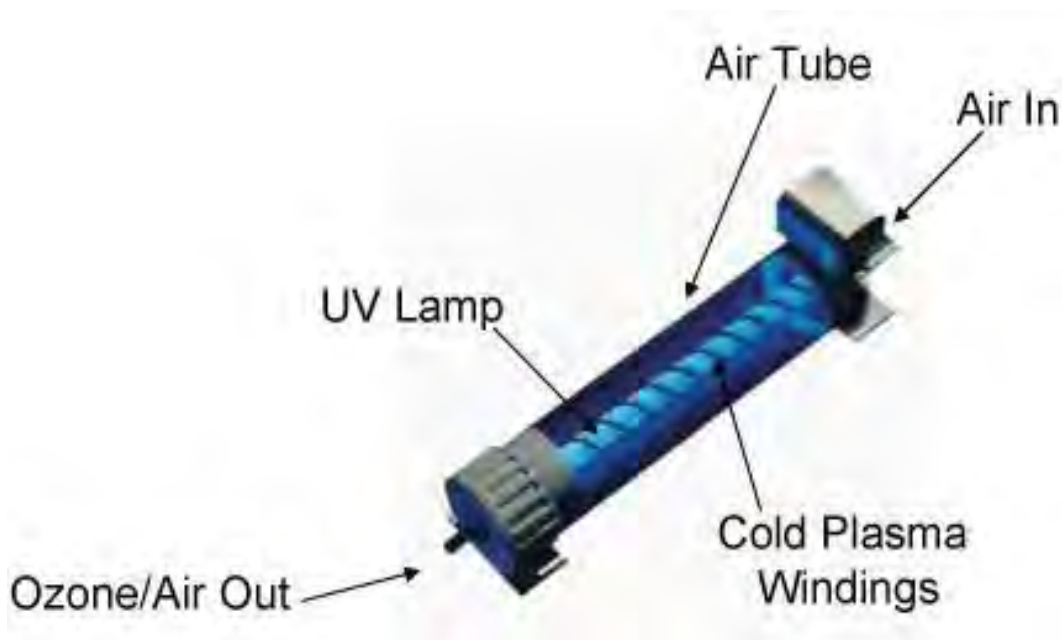
Advanced Oxidation Processing Technical Information

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 seconds.

**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's Grease & Oil Aeration Tank "G.O.A.T."

Our Grease Oil Aeration Tanks are designed for the permanent oxidation and removal of F.O.G. (Fats, Oils & Grease) and H₂S gas in commercial and industrial applications. The G.O.A.T. is a compact stainless steel tank located in close proximity to a sink or dishwasher for the treatment of "Gray Water" effluent. The G.O.A.T. incorporates **Aqueous Ozone** with **Hydroxyl Radicals (A.O.P.)**. A.O.P. oxidizes F.O.G. and H₂S gas on contact. DO₂E's G.O.A.T. achieves the optimal oxygen transfer required for the breakdown and permanent removal of F.O.G. particulates.



G.O.A.T Front View

G.O.A.T Top Down View



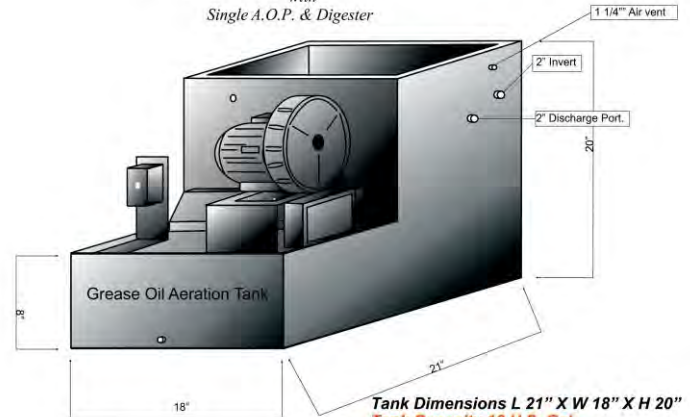
DO₂E's "G.O.A.T." technology is designed to provide a cost effective and state of the art means for the complete oxidation and removal of F.O.G. and H₂S gas from "Gray Water." By utilizing the latest in "Green Technology" and "A.O.P." [Advanced Oxidation Processing / Hybrid Ozone], DO₂E's "G.O.A.T." treats the "Gray Water" prior to entering the Grease Traps / Grease Interceptor. DO₂E's patent pending G.O.A.T. employs advanced "Airlift Technology, and Aqueous Ozone."

G.O.A.T. Available IN Three Sizes

Sizes	Tank Capacity	Flow Rate	H.P.
Mini G.O.A.T.	16 Gallons	20.1 GPM	.10
Medium G.O.A.T.	22 Gallons	30 GPM	.33
Big G.O.A.T.	26 Gallons	45.3 GPM	.50

DO2E SMALL "G.O.A.T."

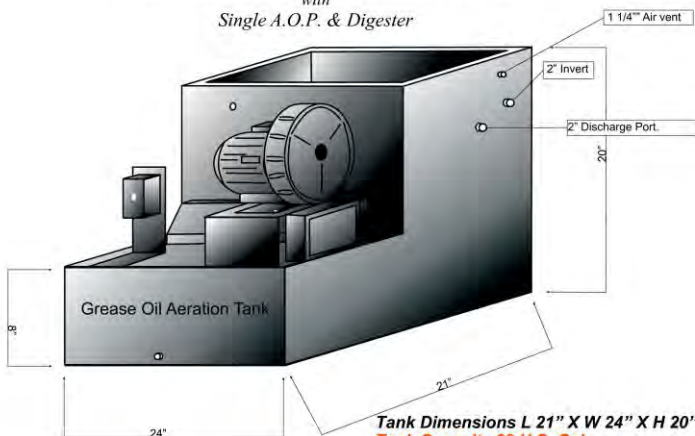
Grease Oil Aeration Tank
Heavy Duty **Light** Volume For Commercial Use
with
Single A.O.P. & Digester



Tank Dimensions L 21" X W 18" X H 20"
Tank Capacity 16 U.S. Gal.
Flow Rate 20.10 GPM
Power supply 115/208/230 volts
.10 hp blower
Single Digester
Single High Output Hybrid Ozone

DO2E MEDIUM "G.O.A.T."

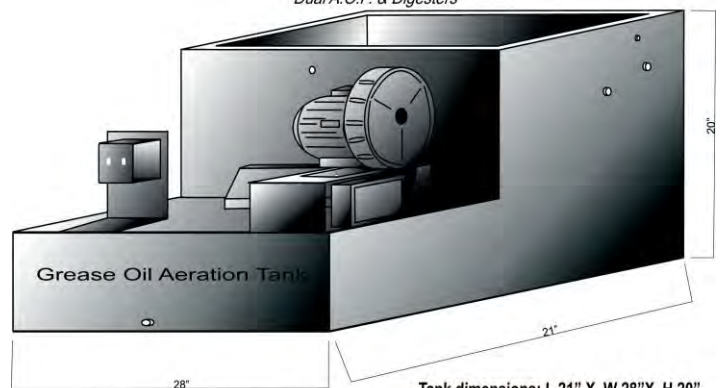
Grease Oil Aeration Tank
Heavy Duty **Medium** Volume For Commercial Use
with
Single A.O.P. & Digester



Tank Dimensions L 21" X W 24" X H 20"
Tank Capacity 22 U.S. Gal.
Flow Rate 30 GPM
Power supply 115/208/230 volts
.33 hp blower
Single Digester
Single High Output Hybrid Ozone

DO2E LARGE "G.O.A.T."

Grease Oil Aeration Tank
Heavy Duty **High** Volume For Commercial Use
with
Dual A.O.P. & Digesters



Tank dimensions: L 21" X W 28" X H 20"
Tank Capacity 26 U.S. Gal.
Flow Rate 45.30 GPM
Power supply 115/208/230 volt
.50 hp blower
Dual Digesters
Dual High Output Hybrid Ozone
Timer Switch

G.O.A.T.

Grease & Oil Aeration Tank

**Removes Fats, Oil & Grease on Contact with A.O.P.
(Advanced Oxidation Processing)**



- Removes Fats, Oils & Grease (F.O.G.s) In Greywater On Contact
- Reduces Costly Pumping of Grease Traps & Lift Stations
- No Moving Parts
- No Chemicals
- Fits Under Sink / Small & Compact
- Quick & Easy Installation / No Retrofit Required
- Environmentally Safe
- Disinfects & Sanitizes
- No Messy Tanks To Drain
- Kills E-Coli Bacteria & Hepatitis Viruses
- Eliminates Odor

100% Green Technology

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



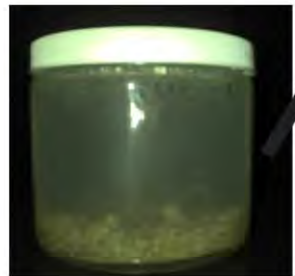
FOG 5 Days After
Aeration
01/13/12



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 HIGH VOLUME Floating Aerator / Mixer

For
Heavy Duty Industrial & Municipal
Aeration & Mixing

Benefits of the DO₂E Floating Aerator / Mixer

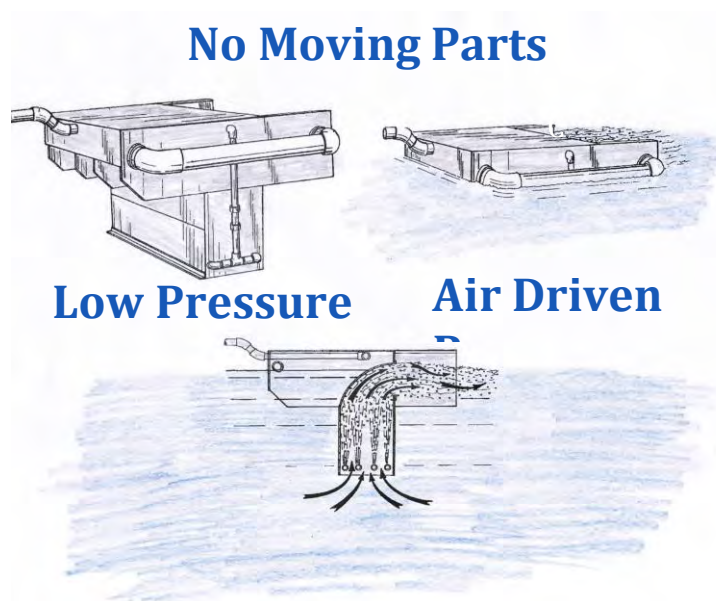
- Removes Blue Green Algae
- Increases Dissolved Oxygen
- High Volume Water Flow
- Reduces BOD & COD
- Reduces H₂S Gas
- Reduces Ammonia Levels
- Oxidizes Hydro-Carbons
- De-stratifies the Water Column
- Reduces Energy Usage By Up to 80%
- Reduces Maintenance Costs By Up to 85%
- Replaces Outdated Commercial Mixers & Aerators
- Reduces Sludge Build Up By Up to 80%

The DO₂E High Volume State of the Art “Patented Aerator/Mixer System” injects High volume low-pressure air through a specially designed multi chambered air manifold located at the bottom of the unit. This unit creates a surface current up to 4 knots for a distance up to 100 ft. Using a unique combination of coarse air and fine air bubble aeration, we are able to maximize oxygen transfer throughout the water column. The fine air bubbles maximize the oxygen transfer while the coarse air bubbles provide the waters velocity.

This unique combination of coarse and fine air bubbles released at a specific water depth within a confined space allows for a highly efficient aeration system.

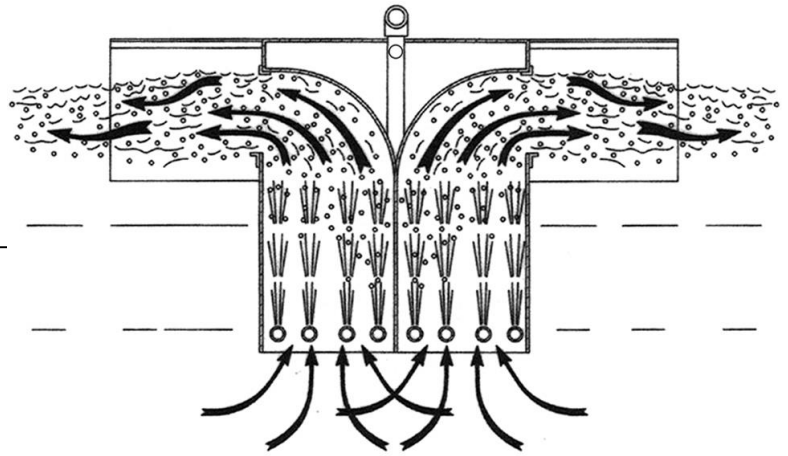
DO₂E's Floating Aerator/Mixer can operate in as little as 4 ft. of water, and can draw from depths of up to 16 ft. of water

DO₂E's High Volume Floating Aerator/Mixer is the ultimate delivery system for our new Advanced Oxidation Processing System (A.O.P.), a hybrid generator that combines Ozone with Hydroxyl Radicals.

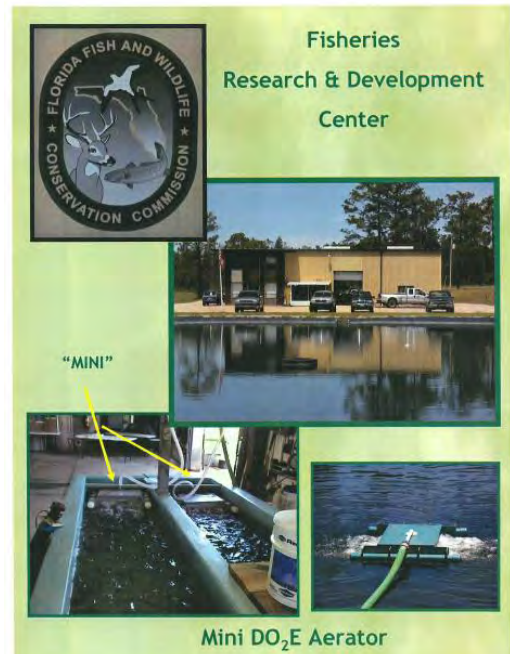


Features of the DO₂E Floating Aerator/mixer

- Produces high flow surface currents
- Oxidizes Hydrocarbons
- SOTR 1.75 - 5.10 lbs. of oxygen
- Moves up to 24.1 million gallons per day
- No Moving Parts
- Portable
- Reduces energy costs by up 80%
- Increases dissolved oxygen
- Removes most VOC's and heavy metals
- Reduces BOD & COD
- Low noise level (60dB)
- All green construction
- Fully self-contained
- Draws from a water depth of up to 16'
- Operates in as shallow as 4' of water
- Constructed of heavy duty, fully welded, marine grade PVC
- UV protected
- Uses no lubricants
- Designed to run 24/7
- Reduces sludge build up by up to 80%
- Total destratification of water bodies



Dual Flow Aerator / Mixer



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.

High Volume Floating Mixer System

for
Municipal & Industrial Waste Water Applications

DO₂E has developed a highly efficient Floating Mixer that not only mixes and de-stratifies water, but also transfers high rates of oxygen at the same time while drawing from up to 15' in depth.

Suspended 8-10 inches below the surface of the water between 2 supporting sponsons is a device approximately 30" to 36" long with a specifically designed air manifold system and stationary diffuser head.



This unique air manifold system can move up to 3.8 million gallons of water a day with an SOTR of up to 2.4lbs. of oxygen per HP per hour. This unit has NO moving parts and requires NO maintenance. These units are Constructed of heavy-duty, non-corrosive, welded PVC. Driven by low pressure (1.5 psi) and high volume airflow, the mixer draws between 8-12 run amps.

This makes the DO₂E Floating Mixer one of the most energy efficient mixer / aerators available today.

Benefits of the High Volume Floating Mixer System

- Moves up to 3.5 Million Gallons of fluid per day
- No Moving Parts
- Heavy Duty Welded PVC Construction
- Reduces BOD & COD
- Installs in 5 Minutes
- Portable
- Air Driven
- Extremely Low Operating Cost
- Reduces High Cost Surface Mixers
- Operates in Shallow Water Depths (42in.)
- Reduces energy cost by up to 80%
- Reduces Maintenance Cost by up to 90%
- Supports and Promotes Aquatic Life
- Improves Water Quality
- Reduces Mosquito Breeding

DO₂E's High Volume Floating Mixer System is Ideal for:

Waste Water Plants, Retention Ponds & Lagoons, Canals, Creeks, Ponds, Marinas,



DO2E's Water Aeration Technology



Approved

Deployed During The 2010 Deepwater Horizon Oil Spill



DO₂E's Water Curtain **BP Approved Technology**

Designed To Protect & Restore:
Bays, Bayous, Creeks, Canals, Estuaries, & Marinas
From
Hydrocarbon Intrusion

Deployed During The 2010 Deep Water Horizon Oil Spill



DO₂E's, "State of the Art," Water Curtain creates a surface current up to 5 knots for a distance up to 150 ft.

Using a unique combination of coarse and fine air bubble aeration we are able to move high volumes of water, up to 27.3 million gallons per day, while at the same time transferring high volumes of dissolved oxygen throughout the water column. The fine air bubbles maximize the oxygen transfer while the coarse air bubbles provide the waters velocity.

This combination of coarse and fine air bubbles, released at a specific depth within a confined space allow for an extremely efficient and effective barrier against hydrocarbons while increasing the amount of oxygen in the environment.

The unit can operate in as little as 5 feet of water, and can draw from a water depth of 16 plus feet.

DO₂E's AERATION TECHNOLOGY

DO₂E's Water Curtain

- Produces High Flow Surface Currents Up To 5 Knots
- Oxidizes Hydrocarbons
- SOTR 1.75-5.1 lbs. Of Oxygen
- Moves Up To 24.1 Million Gallons Per Day
- NO MOVING PARTS
- Portable
- Extreme Energy Efficiency: Draws 4-16 Amps
- Increases Dissolved Oxygen
- Removes Most VOCs And Heavy Metals
- Reduces BOD & COD
- Low Noise Level (60db)
- All Green Construction
- Made In The U.S.A.
- Fully Self Contained
- Draws From Depths Up To 16 Plus Feet
- Operates In As Little As 4' Of Water
- Heavy Duty, All Welded Marine Grade PVC
- UV Protected
- Uses NO Lubricants
- Designed To Run 24/7
- Reduces Sludge Build Up By Up To 80%
- Total De-stratification Of Water Bodies



DO₂E's Proprietary Technology Replaces High Maintenance & Costly Oil Boom



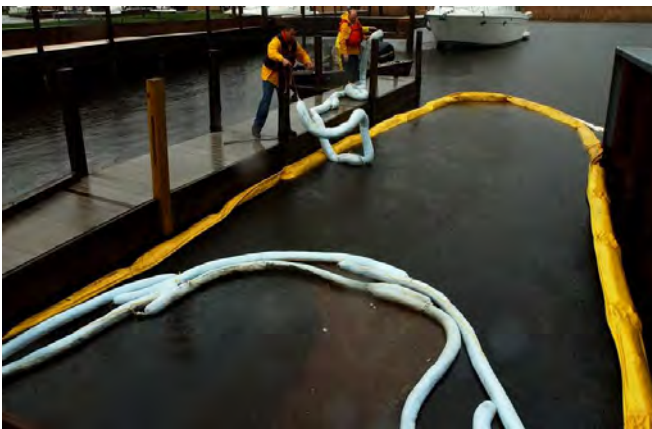
DO2E's Patent Pending Air Dock

Air Docks are designed to improve the water quality in marinas, creeks, canals, bays, bayou's, lakes, and ponds or where ever stagnated or poor water quality exists.

Air Docks are naturally aspired and operate using the patented DO2E Aerator technology. DO2E's patented technology injects low pressure high volumes of air into the water column through a specially designed manifold that maximizes oxygen transfer and raises dissolved oxygen levels.



These units are environmentally friendly, noninvasive, have no moving parts, air driven and operate at a noise level of less than 35 dB.



DO2E's Air Dock Systems Mitigate The Need For Costly Preventive Measures, Such As Boom



The Air Dock System Breaks Down Blue Green Algae Bloom

Advanced Oxidation Processing

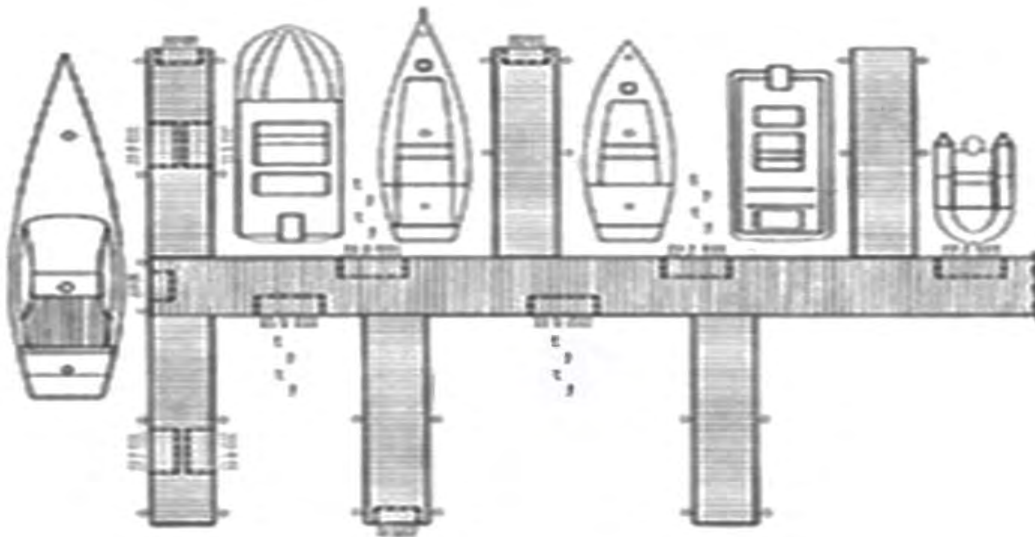
With our optional Advanced Oxidation Processing (A.O.P.) we can provide the ability to inject hybrid-ozone (ozone with hydroxyl radicals), creating Aqueous Ozone. This increases DO levels and reaction time with contaminants found in the water column by as much as 300%.

Reducing contact time is a tremendous advantage when treating for contaminants. This hybrid ozone has a half-life of 3-5 minutes and is environmentally friendly.

Ozone is approved for use by the following agencies: USDA, FDA, and the EPA.



Chemical & Oil Buildup Inside Marina



Some of the benefits of DO₂E's Green Technology for Environmental Remediation Include:

1. Increased Dissolved Oxygen
2. Improved water quality
3. Oxidizes; hydrocarbons, fecal-coliform, most heavy metals, pharmaceuticals, ammonia, hepatitis viruses, etc...
4. Reduces Turbidity and TSS
5. Improves Marine-Life Habitat



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***