



Vertex Water Features

Lake Aeration Systems & Floating Fountains

The **Technology**
Leader in
Lake Aeration!

Energy
Efficient
Lake Aeration

Healthy Lakes
Created **Affordably**
& **Naturally**



Recommended by
Fishing Legend
Bill Dance

Lake Dynamics — The Importance of Aeration

During certain times of the year a lake's water column usually becomes "stratified" — layers of water form one above another. Warmer, oxygen-rich water develops near the surface while cooler, nutrient laden and oxygen deficient water forms near the bottom. Vertex aeration breaks this cycle of stratification to lower nutrient levels and restore dissolved oxygen to levels safe for fish and other desirable organisms.

Symptoms of Lake Stratification

- ◆ Excessive plant and/or algae growth
- ◆ Large and/or chronic fish kills
- ◆ Muck accumulation along the bottom and shoreline
- ◆ Foul odors (hydrogen sulfide gas) bubbling to the surface
- ◆ Cloudy or murky water leading to a loss of water clarity
- ◆ Poor fishing with fewer desirable species

"Vertex builds the most energy efficient aerators available on the market today!"

Lakes Restored Naturally

Vertex, the industry's leader in lake aeration systems and floating fountains, has continued to extend aeration value by strengthening its AirStation™ line of bottom diffusers.

Vertex introduces its high-efficiency CoActive AirStation™ and AirStationXL™ — the first membrane bottom diffusers with MicronBubble™ technology.

This advanced diffuser design creates bubbles as small as 500 microns in diameter that form an ultra-wide column of upward moving water — this action dramatically increases oxygen transfer efficiency and water movement toward the surface.

Vertex diffusers break the cycle of stratification by constantly lifting bottom water to the surface where poisonous gases are expelled and oxygen is absorbed. Stratification and all its resulting problems are



The Vertex CoActive AirStation™ provides the perfect solution for improving water quality in golf course water hazards, retention ponds and larger bodies of water.

eliminated. Colonies of beneficial bacteria once again flourish along the bottom while nutrient levels decline and water clarity increases. Oxygen related fish-kills are eliminated and sport fisheries are improved — fish can expand their territory into the formerly oxygen-deprived portions of the lake.

Our Mission

With the introduction of the CoActive AirStation™ and AirStationXL™, Vertex maintains its diffuser technology leadership and the ability to offer complete water quality solutions to golf courses, lake communities and other waterways seeking improved water quality. This reflects Vertex's strong commitment and vision to provide the best equipment for high-efficiency and low-cost lake aeration systems.

Key Features

Vertex CoActive AirStation™ and AirStationXL™ aeration systems consist of a small shore mounted compressor (1/3hp-2/3hp) feeding a configuration of self-cleaning AirStation™ diffusers.

Vertex's aeration systems are the perfect solution for improving water quality in golf course water hazards, retention ponds and larger bodies of water.

"We can custom build any aeration system to suit your lake needs!"



Typical fountain aerator

Floating Fountains vs. Bottom Aeration Water Quality or Aesthetics?

Vertex, the manufacturer of both floating fountains and bottom aeration systems, would like to clarify a common misconception. In lakes more than a few feet deep, bottom aeration is by far the most energy efficient aeration system available for raising oxygen levels throughout the water column. Real world data illustrates how much more horsepower, equipment and electricity aerating fountains require than Vertex aeration systems to raise oxygen levels. See the case study on the back cover for more information. Vertex systems have four distinct advantages over most aerating fountains:

- 1) Oxygenation of the critical bottom waters
- 2) Much higher oxygen transfer efficiency
- 3) Far lower installation and monthly electrical costs
- 4) Self cleaning diffusers and a simple, accessible compressor that requires little maintenance

The larger the lake the greater the savings!

Aerating fountains vs. Vertex diffuser system Comparison Chart for a Typical Five-Acre Lake

These numbers are approximate and will vary, contact us for specific savings for your lake. Most fountain manufacturers recommend 2hp per acre for aeration purposes.

	Total Amp Draw	Purchase Price	Monthly Electrical Costs	Yearly Electrical Costs
(5) 2hp Aerating Fountains	67	\$20,000+	\$238	\$2,856
Vertex Air3™ System	4.5	\$2,600	\$30	\$360
VERTEX SYSTEM SAVINGS	62.5	\$17,400	\$208	\$2,496

Warranty

Compressor: 2 yrs
Diffuser: 5 yrs



Vertex Advantages

Aeration Systems — Unmatched in the Industry

“AirStation™ & AirStationXL™ Bottom Diffusers”

- ◆ Self-cleaning discs for maintenance-free operation, no acid cleaning required
- ◆ Five-year “No Questions” warranty
- ◆ Industry leading design produces the largest lifting column per CFM in the industry
- ◆ MicronBubble™ technology for highest oxygen transfer efficiency and lifting rates
- ◆ Longer compressor life through lower diffuser backpressure
- ◆ Not damaged or fouled by extreme pH levels
- ◆ Self-weighted base design — no antiquated brick weighting
- ◆ Base sinks upright every time
- ◆ Unique lipped base prevents settling into bottom sediments



QuietAir™ Cabinets

- ◆ Powdercoated aluminum construction
- ◆ Rustproof
- ◆ Class A GFCI protection
- ◆ Forced ventilation design for cooler, quieter operation
- ◆ Integral cooling fans for longer compressor life: Up to 580 CFM
- ◆ Oversized, angled opening for easy access to components
- ◆ Barrel lock standard for increased security



Bottomline™ Supply Tubing

- ◆ Self-weighted: no labor-intensive bricks & ties required every few feet
- ◆ Super flexible under the coldest conditions
- ◆ Less expensive than other weighted tubing
- ◆ Durable PVC composite construction — no lead weighting in the lake
- ◆ Rugged 1/4" thick wall diameter — will not kink, fish-hook resistant



The Vertex Commitment

- ◆ Excellent customer service
- ◆ Continuous research and development program
- ◆ Highest quality components available
- ◆ Free design assistance — each system matched to individual site requirements
- ◆ Complete technical support from our experienced staff

CaseStudy

Heron Cay / Vero Beach, FL

The residents of Heron Cay were experiencing a number of problems in their 21-acre lake which is the central focal point of their community. Maximum depth ranged from 14 to 21 feet with an approximate volume of 190 acre-feet of water.

- 1) Stratification had resulted in severely low oxygen levels at lake bottom.
- 2) Muck accumulation and foul odors from hydrogen sulfide gases were increasing. Beneficial bacteria required to break down organics were not present.
- 3) Excessive nutrient levels from fertilizer runoff were worsening conditions. The lake's Biological Oxygen Demand (BOD) was dangerously high.
- 4) A highly negative Redox potential was releasing phosphorus from the bottom sediments.
- 5) Water clarity had slowly decreased in recent years.

Conditions were set for a serious fish kill. Action needed to be taken — and residents chose Vertex's expertise and equipment to restore their lake.

A Vertex aeration system consisting of 11 AirStations™ was installed. Compressors totaling only 2-1/4hp for the entire 21-acre lake fed the aeration system.

“I've never seen the lake look better!”

Mark Sanderson, Heron Cay HOA President

Results over the monitoring period were dramatic!

- ◆ Oxygen levels: Increased throughout the entire water column from 0.0 to 8.0 ppm at 12 feet of depth and bottom oxygen levels increased from 0.0 to 7.5 ppm.
- ◆ Water clarity improved: Seechi Disc readings increased from 3 feet to 6.5 feet.
- ◆ Nitrogen levels dropped from 0.28 ppm to 0.06 ppm.
- ◆ Phosphorus levels dropped from 0.71 ppm to 0.33 ppm.
- ◆ BOD decreased from 13.4 to <2.0, therefore demand for oxygen no longer exceeded the supply of oxygen.
- ◆ Redox potential increased from -288 to +168 preventing further phosphorus recycling.



Vertex Water Features

Lake Aeration Systems & Floating Fountains

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Technician placing Vertex AirStation™ into Heron Cay's lake.



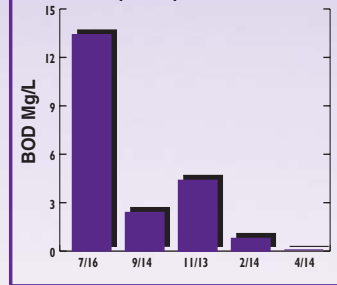
Aquatic technician gathering water samples. The lake was regularly monitored to determine water quality. See charts.



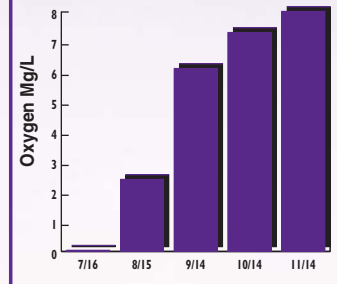
Aeration system at work!
Vital oxygen is being absorbed at the lake's surface.

Statistics at Heron Cay

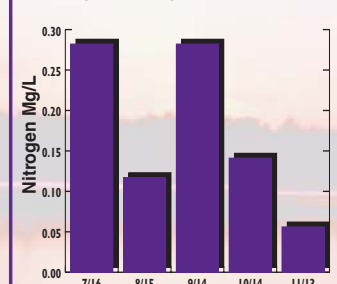
Average Biological Oxygen Demand (BOD)



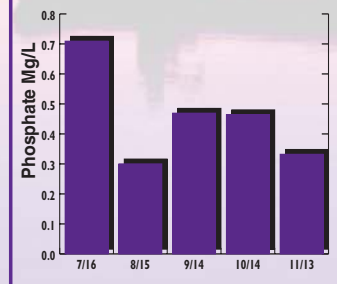
Average Dissolved Oxygen Levels at 12ft.



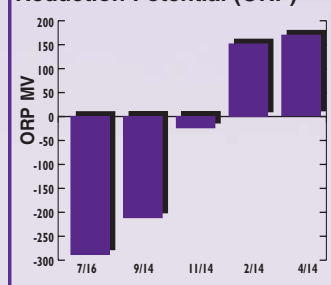
Average Nitrogen Levels



Average Total Phosphate Levels



Average Oxidation-Reduction Potential (ORP)



Average Seechi Disc Levels

