

TECHNOLOGY OVERVIEW

Lagoon Master Aerator (LMA)

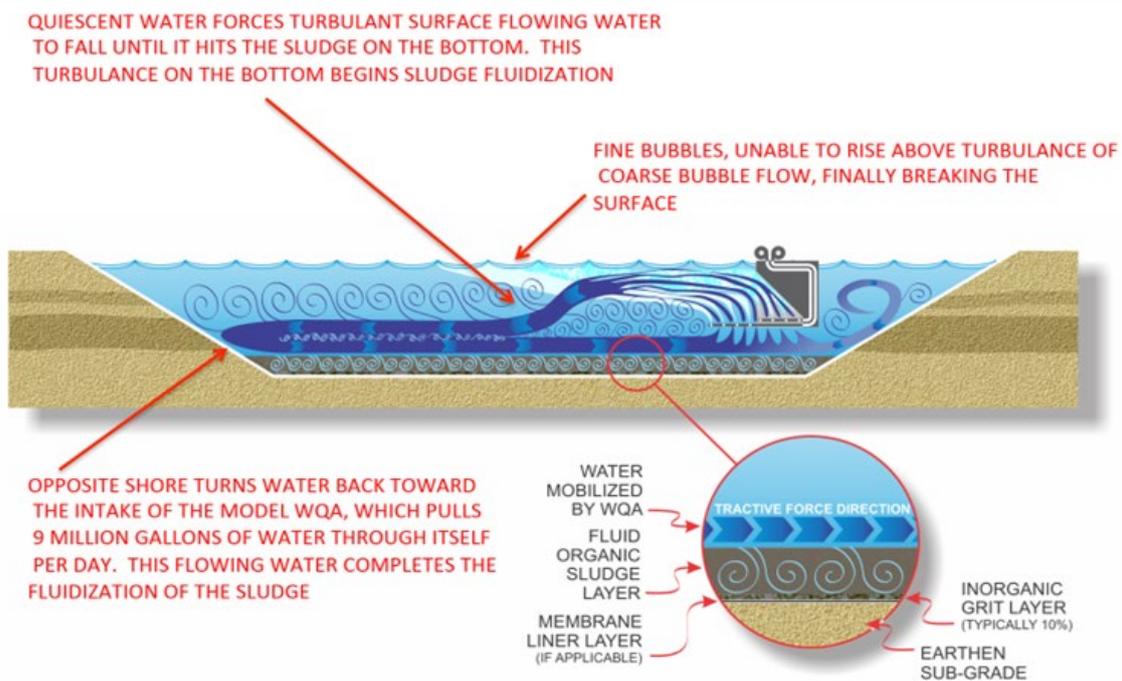
water | wastewater | sewage



OVERVIEW

The Lagoon Master Aerator is very well suited to treating in shallow ponds and lagoons, especially where odours are of concern, and where limited power supply is available at the site. The Lagoon Master Aerator has no moving parts, no underwater propellers or shafts that can foul, and uses no belts that need replacement, or gearboxes that require oil changes. The ONLY maintenance on a Lagoon Master Aerator is to clean the two (2) blower air filters occasionally. The Lagoon Master Aerator offers a high value-for-money solution, with low initial investment cost, it is simple to install and operate, has very low power input requirements, and requires very little maintenance, which can be carried out by any operator.

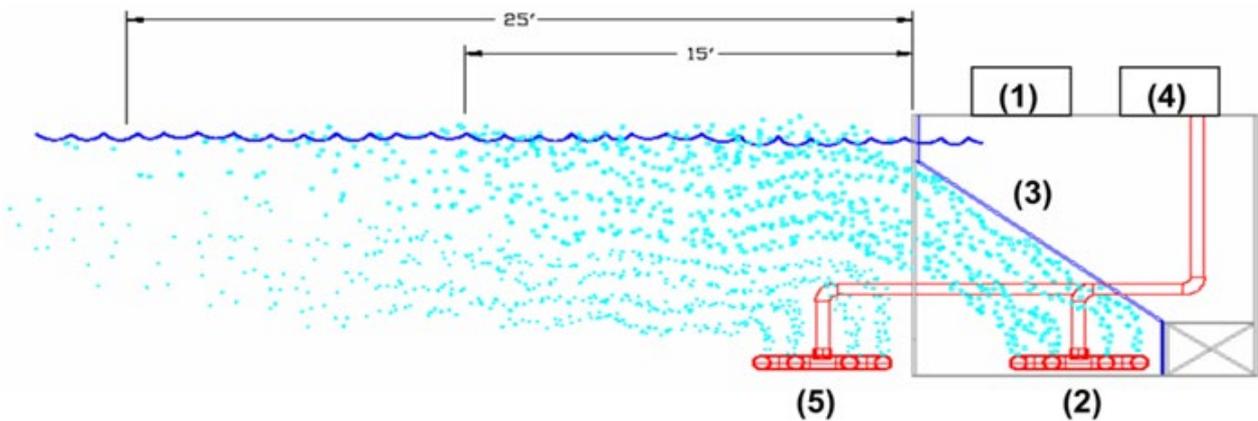
The Lagoon Master Aerator is not just an aerator, but it continuously and slowly moves water along the bottom of a pond/lagoon delivering large amounts of dissolved oxygen (DO) using very low energy. The schematic below shows how the operation of the Lagoon Master Aerator is different from any other type of aerator.



The use of this proven aeration technology will:

- provide better overall water quality through continual oxidation which leads to the reduction and even elimination of odours,
- eliminate the low oxygen zone at the bottom of the pond/lagoon to prevent anaerobic conditions that can lead to odours during the anaerobic decay of organic matter,
- provide constantly moving water to prevent sludge build-up, allowing for gentle sludge turn-over for continual degradation by indigenous bacteria,
- provide complete destratification of the water column which will reduce, and over time, eliminate algal growth,
- provide dissolved oxygen to the water column to oxidize waste gases that can escape from settled sludge.

HOW DOES THE LAGOON MASTER AERATOR WORK?



The key elements of the Lagoon Master Aerator are its two regenerative blowers, each connected to a set of bubble-forming diffuser grids. The Phase 1 blower (1) runs continuously and feeds the rear-most coarse bubble diffuser grid (2) which allows large 1-2 cm bubbles to rise quickly into a 45° baffle (3), pushing water at a velocity capable of moving over 34,100 m³/d of water. These large bubbles stay on the surface for up to 7.6 meters (25 feet) in front of the Lagoon Master Aerator.

When the Phase 2 blower (4) is initiated, either manually or automatically, it feeds air to the fine bubble diffuser grid (5) located forward of the base of the Lagoon Master Aerator. The bubbles emitted from the fine bubble diffusers are approximately 0.8 mm in diameter. These small bubbles are kept underwater for up to 10.7 meters (35 feet) due to their inability to rise above the larger, faster and horizontally moving bubbles caused by the coarse bubble diffuser grid. The 7.6 to 10.7 meters of residence for the small bubbles, allows for diffusion of oxygen into the water, which continuously increases of dissolved oxygen levels in the pond/lagoon.

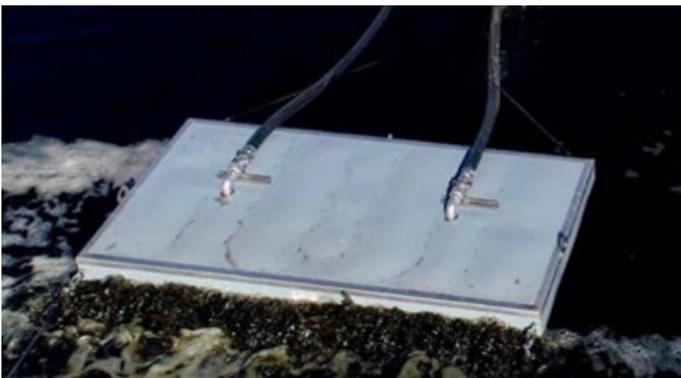
THERE ARE 2 VERSIONS OF LAGOON MASTER AERATOR

The original Lagoon Master Aerator Version 1 (V1) has the blowers mounted on top of the unit making it a compact system that can be anchored to the embankment with struts (mooring arms) or in the middle of the pond/lagoon with cable mooring. V1 utilizes two (2) 1.5kW blowers.



Lagoon Master Aerator V1

Version 2 (V2) has shore mounted blowers. The V2 design utilises two (2) 2.2kW blowers driving air through EPDM hoses to the unit installed in the pond/lagoon. The blowers are on the embankment where blower air intake filters can be easily cleaned without the use of a boat.



Lagoon Master Aerator V2



All Lagoon Master Aerators are manufactured using 316 stainless steel for the frame, and a combination of 316 stainless steel and HDPE for the main body. The coarse and fine bubble diffuser grids are in 316 stainless steel and HDPE respectively, and blower hoods are in HDPE. All blower hardware connections are in 316 stainless steel.

The Lagoon Master Aerator can be held in place in a pond/lagoon by using either 316 stainless steel struts (or mooring arms) that are fixed to the embankment, or by using 316 stainless steel cables fixed to concrete blocks on the floor of the pond/lagoon.

NEED A QUOTE?

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