

New Turbine Aeration Technology

FracCure's turbine aerator represents a state-of-the-art leap in aeration technology. It is a self-aspirating aerator which overcomes many of the shortcomings found in standard aerators. Notably, it can provide greater oxygen transfer efficiencies using much smaller motors. In wastewater applications the turbine is replacing other aerators on a one-for-one basis which have seven times or more horsepower.

The FracCure aerator can perform its amazing feats of aeration for two major reasons. First, it aerates by pushing air into water. In contrast, spray or fountain type aerators, which are common in wastewater lagoons, aerate by pushing water up into the air. Since water is much heavier than air, the motors on spray aerators are often 20 horsepower or more. Compare this horsepower to FracCure's 3 horsepower turbine aerators.

When air is injected into water, its oxygen content tends to stay, particularly if the air bubbles are small. When water is sprayed into the air, it has but a few seconds to entrain oxygen before it falls back into the lagoon. Because the water bubbles are large, there is insufficient exposure of the water droplets to pick up much oxygen. Consequently, the transfer efficiency is very low.

A recent inquiry specifically requested a quote for 16 aerators at 20 horsepower each to be placed into four lagoons. The total horsepower required is $16 \times 20 = 320$ horsepower. FracCure's quote shows 32 aerators at 3 horsepower each for a total of $3 \times 32 = 96$ horsepower. While the number of aerators is double (32 vs. 16), the actual horsepower is only one-third ($96 \div 320$). Due to FracCure's superior technology, it can achieve superior aeration with only a fraction of the horsepower.

Not only will FracCure's new turbine aerators provide superior oxygenation, they will also provide superior dispersal. With smaller, multiple aerators the zone of high intensity aeration is much larger. With proper placement of our recommended eight aerators per lagoon, the total volume of water including water along the edges will receive copious amounts of dissolved oxygen. Not only does the turbine push dissolved oxygen outward in a 360 degree pattern, but it also pushes it downward as much as twelve feet below the level of the turbine. Of importance, the turbine is virtually clog free.

Other benefits accrue from the use of the FracCure turbine aerators. The pontoons are made of foam-filled, high density polypropylene guaranteed not to sink. All peripherals are corrosion resistant. The air shaft is made of stainless steel and the turbine is made of corrosion resistant fiberglass resin. All parts except the motor are guaranteed for life. The motors are rated for industrial use. If needed and requested, the pontoons can be fitted with legs to keep the rotating turbine off the bottom of the lagoon during low water. Since water is NOT sprayed into the air, there is no danger of freezing. Plus, there is no chance of wind-blown, contaminated water being sprayed on people or equipment. All in all, FracCure's turbine aerator overcomes virtually every shortcoming of competing aerators.