

Emergency Aeration to Oxidation Ditch Retrofit, Increasing Plant Capacity



Case
Study

OVERVIEW

The Schwartz Wastewater Treatment Plant at Myrtle Beach, South Carolina, treated approximately 4 million gallons of wastewater per day. Due to seasonal vacation goers and population growth, the original rotor discs installed in the 3-ring oxidation ditch had been having a hard time maintaining dissolved oxygen levels, which resulted in elevated levels of ammonia leaving the plant.

CHALLENGES

The plant was experiencing an above expected failure rate with its disc rotors. This re-duced the total aeration and mixing capability which led to an inability to maintain DO levels as well as sludge settling in areas of the rings. The failures were also generating plastic debris in the water which was affecting downline equipment. Moreover, the limited turndown of the system led to difficulty controlling DO levels in each ring. With increasing demands and difficulties maintain DO levels, plant operators started seeking options to improve treatment without major structural or electrical changes.

SOLUTION

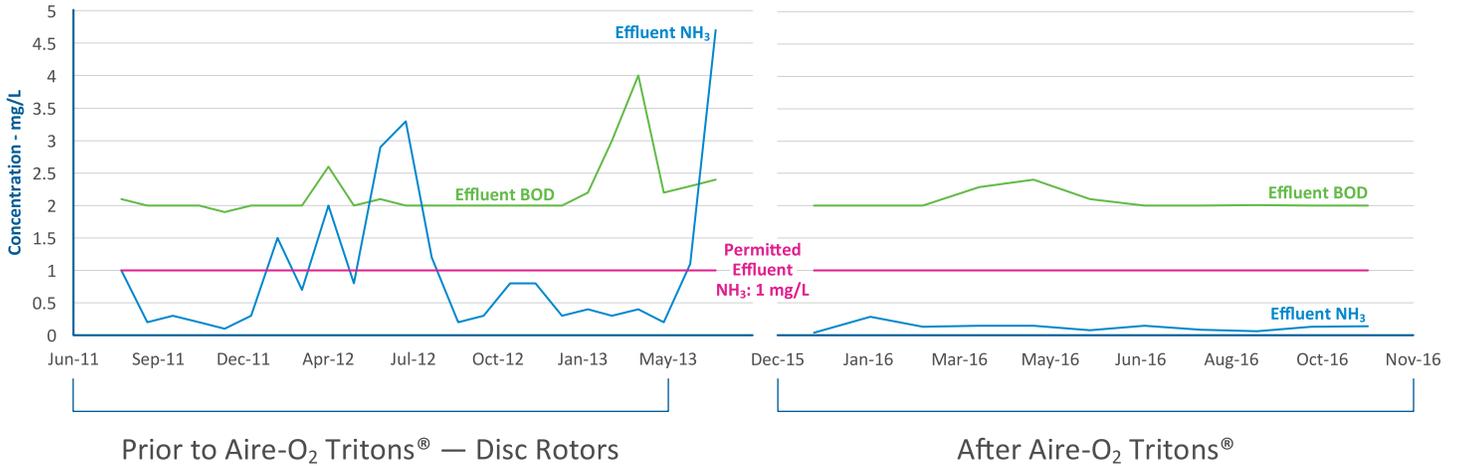
The plant operations group turned to Aeration Industry's Emergency Rental Program for help. Within a week, Aeration supplied 2 Aire-O2 Tritons to the site. The units were deployed on floats avoiding any changes to the basins or structural changes to the system. The customer did not have to remove the original disc rotors. The operator immediately saw drastic improvements in aeration, mixing, and reduced maintenance, leading to increased flow capacity of the system.



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3-Ring Oxidation Ditch Effluent Data

Permitted Effluent BOD: 10 mg/L



RESULTS

The results were so good that the customer decided to replace all the disc rotors with Aire-O₂ Tritons. After replacement, the original 3-ring oxidation ditch has seen a 42% biological capacity increase with only a 27% aeration horsepower increase. Tritons' dual-functionality of aeration plus mixing also gives the plant more flexible turndown. Most importantly, the ditch is reliably meeting the regulated ammonia standard.

IMPACT

By switching to Aire-O₂ Tritons, the wastewater plant can now maintain by maintaining sufficient DO and mixing, resulting in lower, more consistent NH₃ effluent values while attained increased aeration capacity. Plant capacity has increased from 4 MGD to 6 MGD. The Aire-O₂ Tritons provide higher oxygen uptake, higher turndown flexibility, less down-time and maintenance, better mixing, which reduced sludge buildup and increases available reactor volume.

SOLUTIONS PROVIDER

Questions on how we can help solve challenges you're facing? Contact us at [+1-952-448-6789](tel:+19524486789) for more information. Together, we can create innovative solutions for your wastewater challenges.