

AZZURO, INC.
PO Box 27590
Scottsdale, AZ 85255-0143, USA
11574 E Running Deer Trail
tel: +1.602.903.3918
email: info@azzuro.com

AZZURO

ADVANCED BIOLOGICAL SOLUTIONS FOR
EMISSION CONTROL

AT A GLANCE:

- Over 18 years of experience
- Nearly 400 systems in operation worldwide
- **No system failures!**
- Consistent and reliable performance
- **Up to 20 years Media Warranty**
- Low energy
- No chemical consumption
- Extremely low maintenance
- No downtime!
- In most applications, compressor-assist is not required

**UNRIVALED
and GUARANTEED
PERFORMANCE**

H₂S and Odor Removal

Sand Island WwTP, Honolulu, HI - USA



TORRENTA HIGH-PERFORMANCE BIOREACTORS – FOR ALL AEROBE APPLICATIONS

With the Torrenta range of High-Performance Bioreactors Azzuro has implemented significant process and performance improvements to provide the best emission removal technology in the world.

We first introduced this technology in the early 1990s, and we have been able to continuously improve the technology culminating in today's refined high-performance solution. Interpretation of field data and new developments in our media have lead to unparalleled knowledge and expertise, which results in a broad range of applications, varying from the municipal and industrial wastewater sectors to the chemical, F&B and petrochemical industries.

The Torrenta biotrickling reactors optimize the most efficient contact time with the highest contact area available in the market today. Clear stage segregation allows to create the perfect environment to remove the reduced sulfur compounds and VOC's while ammonia and H₂S are being removed at the first stage.

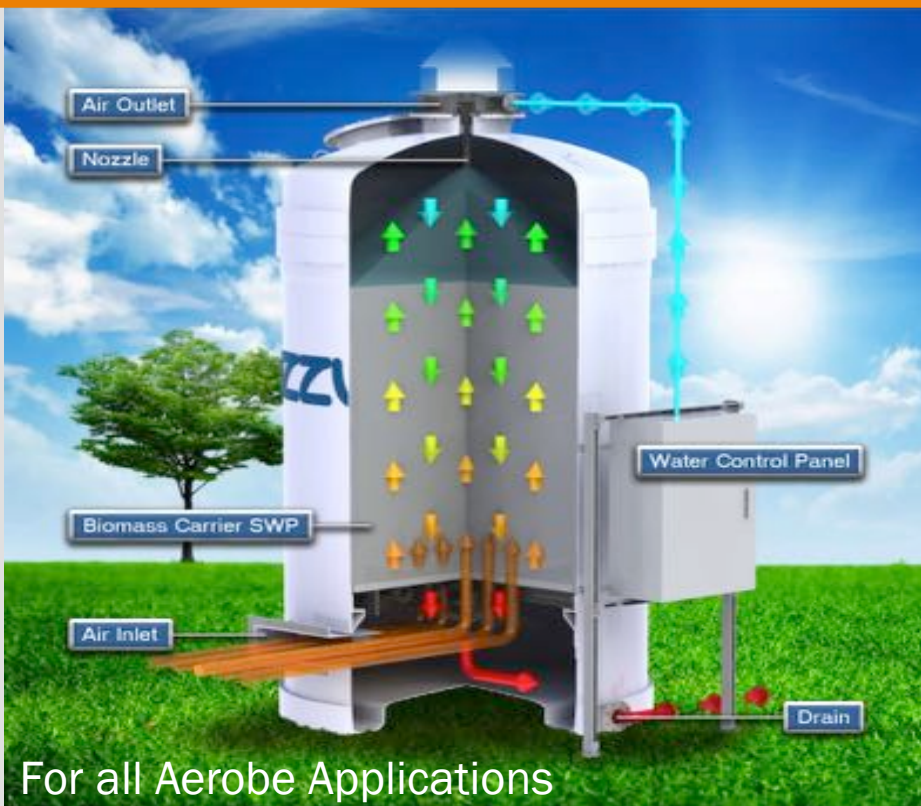
No redundancy is needed in these systems and no carbon back-up is necessary anymore to achieve the desired low odour emissions.

OPEX is close to zero – The lowest in the market place!



Sydney Water Wastewater Treatment Plant, Sydney - Australia

AZZURO



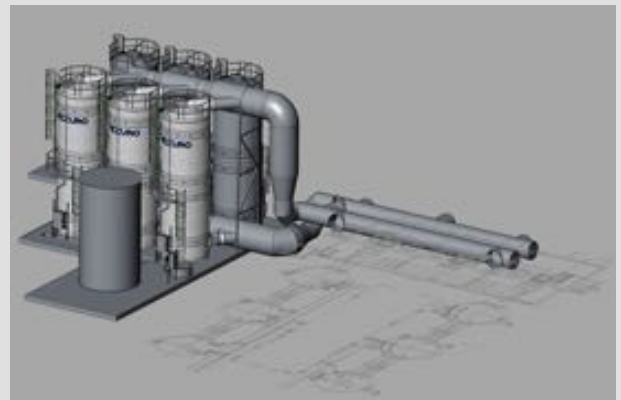
How does Azzuro's High-Performance Torrenta Bioreactor work?

Contaminated air is introduced at the bottom of the reactor.

The air passes upward through one or more microbial beds and clean air is discharged at the top of the unit.

Humidification is accomplished by way of an advanced water spraying system designed to maximize growth of the biomass.

Foul air/Odoriferous air compounds are quickly degraded by the microorganisms, eliminating the emission problem.



The Torrenta Series consist of a non-corroding standard modular design. This makes it easy to expand for future growth. The materials are locally sourced (to limit transportation time and cost). And it is simple to install and to operate.

Each model is available in a number of sizes, depending on various variables.

Azzuro recently introduced the Torrenta TR 42-9: One single bioreactor capable of treating an unparalleled 41,200 cfm (70.000 m³/h)!

Azzuro's design is exceptionally tolerant to loss of hydrocarbon or water flow, nutrient supply, or the simultaneous loss of all three due to power outages. Even in extreme cases, sulfur removal efficiency is recovered quickly without operator intervention. In nearly 400 installations, we have never experienced a bioreactor failure.

Current Applications:

Wastewater Treatment Plants and Lift Stations - H_2S , RSH and $VOCs$

Food Industry - off-gases from wastewater treatment and extraction process: H_2S and $VOCs$

Cellulose Processing (Viscose) - off-gases from wastewater and CS_2 recovery system: CS_2 , COS , H_2S and SO_2

Petrochemical - Removal of BTEX and other $VOCs$, H_2S , CS_2 and SO_2 from API Separators and SRUs (replaces Thermal Oxidizers and Scrubbers)