



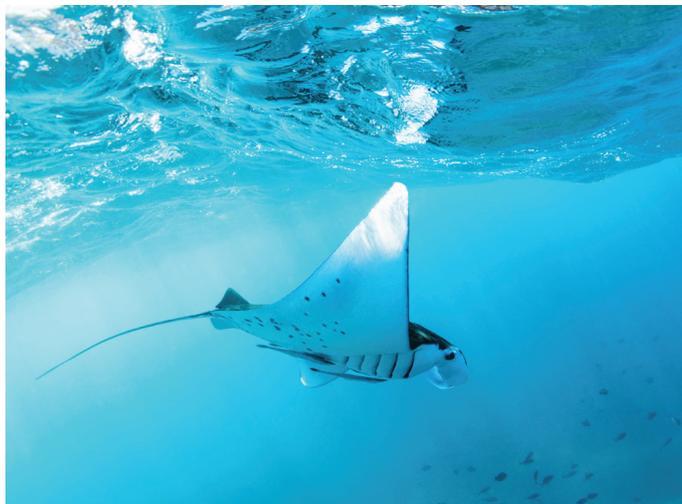
ECO-RESORT KEEPS OCEAN AND BEACHES PRISTINE

CLIENT:	Mantaray Island Resort
LOCATION:	Fiji
TREATMENT TYPE:	Sewage + Greywater + Grease trap
CAPACITY:	20m ³ per day
SYSTEM SIZE:	2 x BioGill bioreactors

SITUATION

Mantaray Island opened its doors to travellers as an eco-resort in 2004. Renowned to have one of the best house reefs in Fiji with manta rays visiting the island's waters every year, protecting the natural environment and marine reserve was a key priority.

With new accommodation facilities to be built, an upgrade of the existing septic tank system was required to cater for the additional wastewater, grey water and sewage. Being far from the mainland as well, meant the treatment system had to be easy to install, operate and maintain.



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SOLUTION

In 2013, two BioGill bioreactors were installed to treat sewage, commercial kitchen and grease trap wastewaters.

The modular design of the bioreactors also made transportation and installation easier for the resort staff.



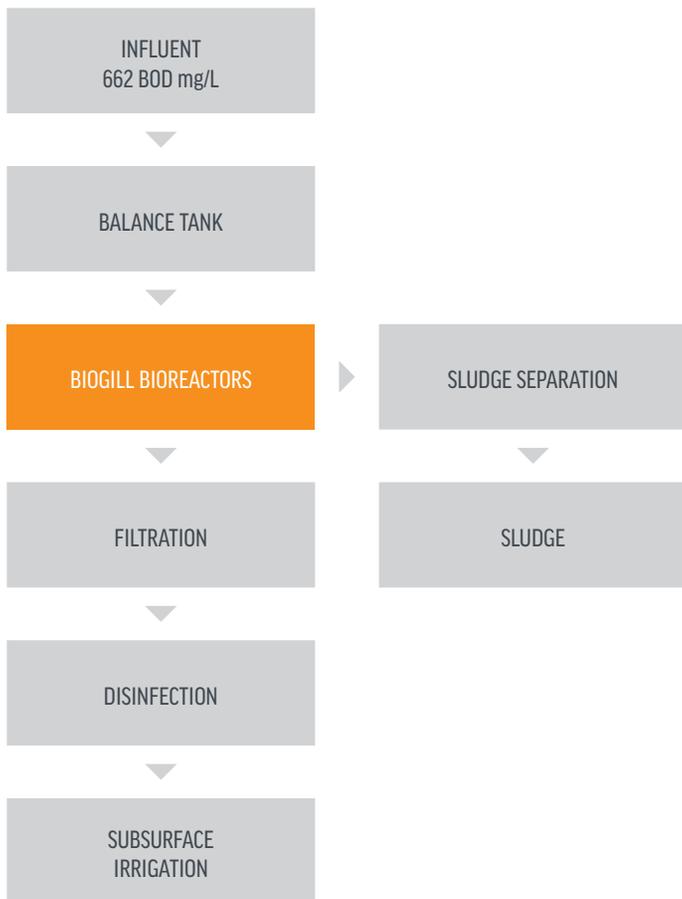
The BioGill system treating wastewater at the island resort.



DESIGN

Sewage and wastewaters from the commercial kitchen are all fed into the balance tank. A submersible pump carries the wastewater to the top of the two treating BioGill bioreactors, where gravity takes over. Wastewater travels down through the gills where the microorganisms feed off the nutrients in the liquid stream. Sludge is collected in an in-ground sludge tank.

Following treatment, the wastewater is disinfected then fed into a subsurface irrigation system for reuse on the island.



Resort staff are impressed with the wastewater treatment results.



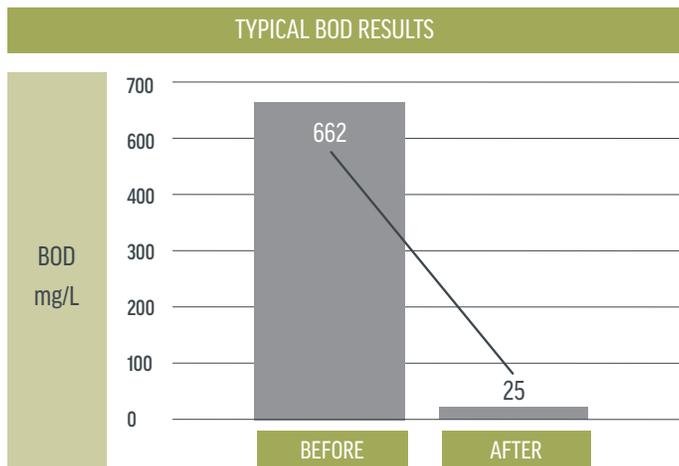
RESULTS

Independent testing from The National Water Quality Laboratory, Suva, has shown that the BioGill units on Mantaray Island are achieving a reduction of up to 96% in Biochemical Oxygen Demand – a widely used indication of the organic quality of the water.

High-load sewage, rich in oils from a commercial kitchen with an average BOD of 662mg/L was reduced to an average BOD of 25mg/L (96% removal efficiency) in a 24 hour cycle. Chemical Oxygen Demand (COD) of 998mg/L was reduced to 58mg/L, a 94% reduction.

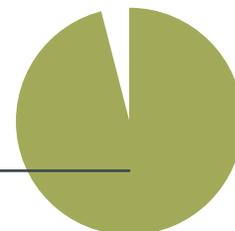
Total Nitrogen was reduced on average from 112mg/L to only 24mg/L (79% efficiency). The system generates wastewater for subsurface irrigation for the resort's gardens that have grown into a beautiful, lush jungle.

By using BioGill technology, the island is one of the most environmentally friendly resorts in Fiji.



96%

REDUCTION IN BOD



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Case studies and technical reports are available at biogill.com

