

Advanced biological wastewater treatment

BioGill is a biotechnology company that brings together the power of science and nature to help cleanse water for a healthier environment. We manufacture above ground, attached growth bioreactors that deliver highly effective, low cost and energy efficient water treatment systems.

By combining simple, yet smart technology and natural biological processes, BioGill units are highly effective in removing contaminants and pollutants from water. Our goal is to deliver water treatment solutions that are good for the environment and good for the bottom line.

SEWAGE



FOOD & BEVERAGE



AQUATIC



Boost performance of existing water treatment plants

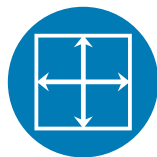
KEY FEATURES



Simple to install & operate



Easy to maintain



Modular & scalable



Low sludge output



Aerobic & anaerobic treatment in same pass

KEY BENEFITS



Effective & rapid treatment of soluble organics



Boost performance of existing plants



Resistant to shock loads, FOG & high organic waste streams



Low energy & operating costs



Low odour

WATER TREATMENT PROCESS

Pre-Treatment



BioGill Biological Treatment



Post Treatment

HOW BIOGILL WORKS

Biological water treatment relies on microorganisms to consume nutrients in the wastewater. Like all living things, microorganisms need the right habitat to flourish. The BioGill Tower is an above ground bioreactor that provides an ideal, oxygen rich habitat for microorganisms.

Patented nano ceramic media known as gills, provide the ultimate air and liquid interface for the microorganisms to grow, multiply and thrive. Arranged in suspended vertical loops, each gill is folded over a support, creating two distinct sides: one in contact with the water and the other in contact with the air.

By providing the perfect habitat, the microbes perform at their best, protected in the biofilm and effectively removing pollutants from the water. BioGill solves many of the shortfalls of other technologies by delivering effective treatment of high organic waste streams, Fat, Oil and Grease (FOG), as well as reducing odour.

Fig. 1 Gill Structure

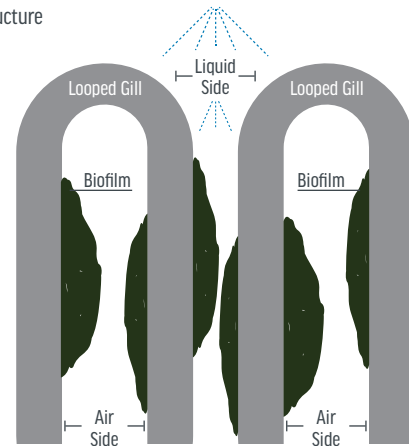
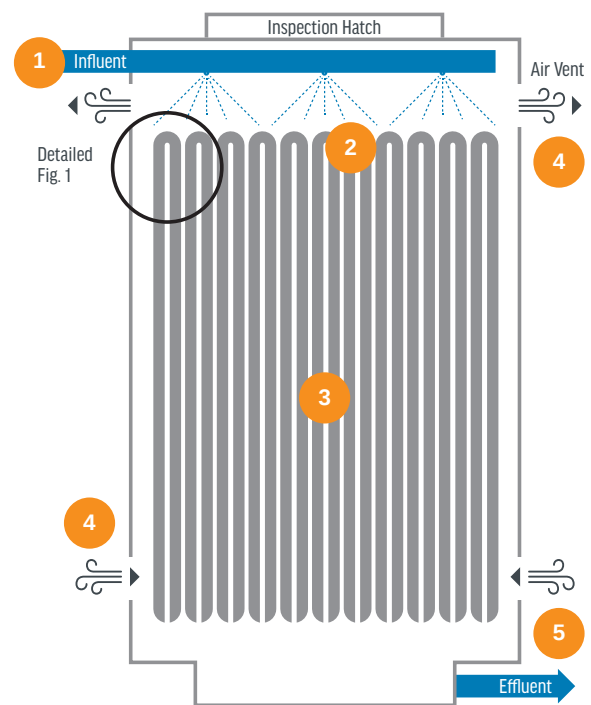


Fig 2. BioGill Tower Process Flow



STEP 1	Water is pumped to the top of the BioGill Tower and dispersed over the gills.
STEP 2	Water flows over the looped gills and is gravity fed down through the unit.
STEP 3	Biomass self-optimises, growing the most suitable microbes to feed on a given wastewater. The result is a robust biomass that is more resilient to shock loads, FOG and high organic wastewaters.
STEP 4	Natural air convection, resulting from the heat generated by the biomass, increases the supply of oxygen.
STEP 5	Treated water flows out from the BioGill Tower with reduced levels of BOD, TOC, Nitrogen and FOG.

PROJECT RESULTS

Brewery wastewater NORTH AMERICA <i>Up to 95% TOC mg/L removed per 24 hour cycle</i>	95%
High sugar wastewater / confectionery AUSTRALIA <i>Up to 96% BOD mg/L removed per cycle batch</i>	96%
Sauce / topping production JAPAN <i>Up to 91% soluble COD removed over a 24 hour cycle</i>	91%
Soda / soft drink AUSTRALIA <i>Up to 85% COD removed over a 24 hour cycle</i>	85%
Winery wastewater NORTH AMERICA <i>Up to 97% BOD removed per cycle batch</i>	97%
Performance boost to existing STP MIDDLE EAST <i>90%+ BOD reduction in 6 hour cycle</i>	90%
Reduced energy at existing STP PHILIPPINES <i>Reduction in energy demand by 80%. Up to 89% BOD reduction</i>	89%

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Case studies and technical reports are available at www.biogill.com

