

New Sulzer agitators improve digester mixing at wastewater treatment plant

Ballarat is a city located at the Yarrowee River in the Central Highlands of Victoria, Australia, with around 101'600 inhabitants. In terms of population, Ballarat is the third largest inland city in Australia and one of the fastest growing cities in regional Victoria with its population expected to reach 139'600 people by 2031. The Ballarat South Wastewater Treatment Plant (BSWWTP) has undergone an AUD 10 million upgrade. A new aeration system was also completed as part of this upgrade and it has helped optimize biological nutrient removal and reduce energy consumption.

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Sulzer's highly efficient Scaba agitators are an optimum fit for sludge digestion. VFA (volatile fatty acids) decreased from 90% down to 65-70%. After the installation of the Scaba agitator, gas production has increased by 100%. Achieving this mixing energy with a 1.5 kW motor is remarkable.

Fawzi Saldin, Process Engineer, Ex Central Highlands Water

The Sulzer difference

- Long and trusted experience in all industrial segments
- Excellent performance and efficiency
- Suitable for the most demanding industrial applications
- Unique and superior design features minimize life-cycle costs
- Standardization available within the Scaba TreatX concept
- Quick and easy installation, safe operation, easy maintenance and service

The challenge

The operator of the wastewater treatment plant, Ex Central Highlands Water, aimed at improving the sludge mixing in the digester and at minimizing foaming in the tank. There was an initial preference to use jet mixers because this would have been straightforward with standardized spare parts and maintenance. The challenge was to convince the operator that Sulzer's radically different thinking could dramatically reduce energy consumption and improve process outcomes at the same time.

The solution

Sulzer offered a Scaba agitator option, which was very competitive and economical. The capital investment was smaller, the mixing efficiency higher and the installed power much lower compared to jet mixing. In addition to the energy saving, the maintenance requirements, noise levels and footprint of the Scaba agitators were superior to the jet mixing system.

Scaba top-mounted vertical agitators are used for mixing and agitating process liquids in many industries, including wastewater and industrial applications. They ensure homogenous mixing results, high process reliability, high efficiency, low operating costs and low environmental stress.

The Scaba agitators were factory tested and field tested. They have given excellent mixing results, which in turn has improved the sludge digestion. The gas production increased by 100% versus compressed gas mixing.



Customer benefit

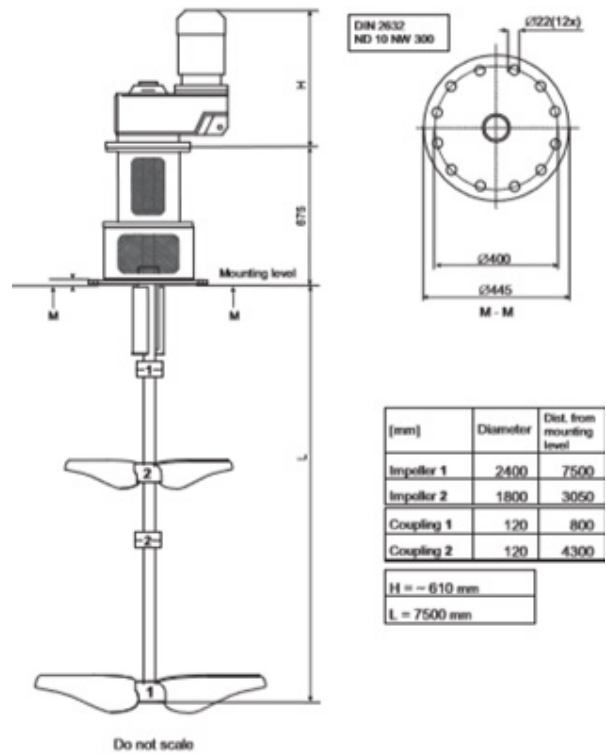
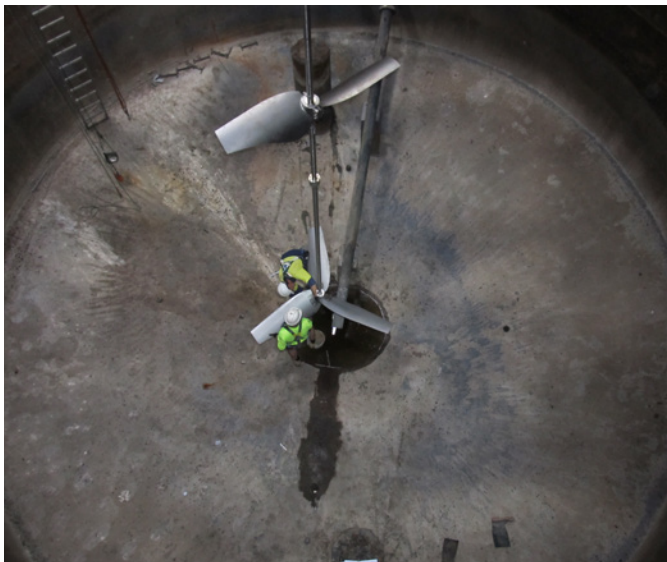
- Increased gas production versus old system with compressed gas mixing
- Reduced footprint, noise and maintenance costs
- Sulzer's catalogue-claimed performance was achieved in site testing
- Easy installation of the Scaba system
- Less vibration

Product data

| Sulzer Scaba 60FVPT-Lbb | |
|-------------------------|-----------------------------------|
| Motor | ABB 1.5 kW 1'500 rpm |
| Gearbox | NORD 16 rpm |
| Tank diameter | 10.67 m |
| Tank height | 8.0 m |
| Fluid | Incoming solids 5% DS |
| Purpose | Prevent sedimentation of organics |

A comprehensive range of standardized agitators are available within the Scaba TreatX concept, especially suitable for selected applications in the water and wastewater industries.

For more information on our products and solutions for wastewater treatment, please visit sulzer.com.



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