

Mixing of Activated Sludge

Sewage plant ARA Gäu, Gunzgen, Switzerland

"By using the OLOIDE we save electricity, we are very satisfied with the mixing."



ARA Gäu, Switzerland
www.ara-gaeu.ch

Operation

in 2 upstream mixing zones (each 28.5 m³; LxDxW: 5 x 3.8 x 1.5 m) with one OLOID Type 400 each before forwarding to biological treatment

Period

Since 2014 respectively 2015

Success

Better mixing of the activated sludge

Great energy savings: power reduction to a total of approx. 0.36 kW

Description of the waste water treatment plant:

The sewage treatment plant Gäu cleans waste water from 7 municipalities (with 25,000 pe) from the canton Solothurn, Switzerland. Its hydraulic design is 280 L / s, with a waste water volume of 3,500 m³ / day (dry weather inflow) or 15,000 m³ / day (rainy weather inflow) or 2 million m³ / year.

The cleaning procedure is as follows: Mechanical cleaning (rough rake, fine rake, sand trap, primary clarifier) and biological cleaning (biology basin, secondary clarifier). The purified wastewater is then introduced into the river Dünneren. From the primary clarifier, the sewage sludge is transported to the digester; The resulting sewage gas is sufficient for the power supply of at least 70% of the entire plant.

Goal of the OLOID operation:

The aeration tanks 1 and 2 are connected in parallel: The volume is 860 m³ each and consists of 3 adjoining interconnected basins in which the denitrification and nitrification processes take place. Prior to these 3 basins, the return sludge (TSS: 5 g/L) is continuously mixed with the inflow from the primary clarifier and held in suspension (without oxygen input). This takes place in each of the upstream basins (with 28.5 m³) by 1 OLOID type 400 before being forwarded to the main pools. The 2 OLOID require only about 75% of their maximum power, i.e. 180 W. Instead of floats, they are permanently mounted on rails, as the water level is kept at a constant level.

Success:

Previously, the mixing / levitation of the activated sludge was carried out with a pipe lying on the ground from which air was blown up through drilled holes. This consumed significantly more energy, and the holes also clogged constantly. This new solution is fully proven.