

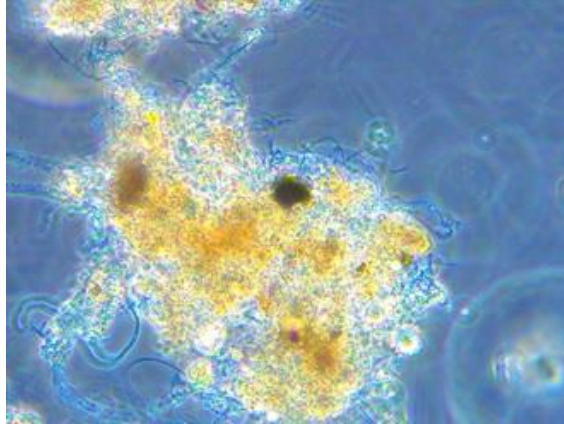
SBR Wastewater Treatment Plant, Chile

A **S::Select® plant** was successfully commissioned on a SBR-plant in Chile in early March 2019. The existing WWTP had huge problems with the sludge properties. This became evident as a massive layer of floating sludge on the aeration tank. Furthermore, the sludge settling velocity was extremely low, and the plant was considerably overloaded. The plant had been designed for 60,000 PE, but further increase in load was due to increasing the number of collection catchments and septage flow brought by septic tankers.

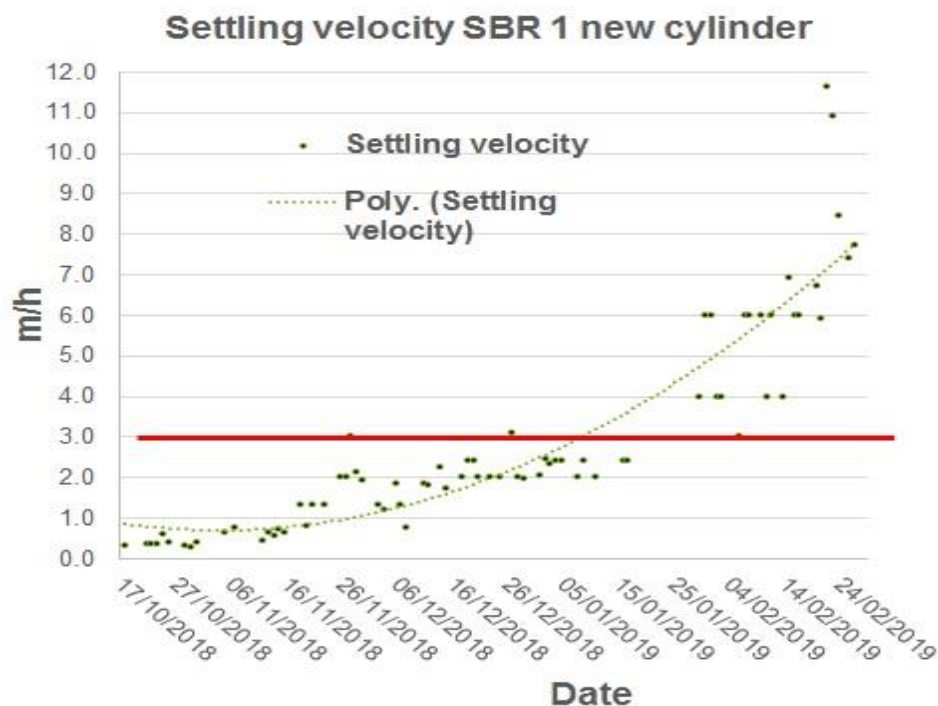
Accordingly, it had been planned to increase the biological treatment from four (4) to six (6) SBR tanks (increase by 50 % to treat 90,000 PE, calculated as load) to manage the problems in load and with floating sludge. The preliminary treatment, all the conveying systems, the sludge thickening and the sludge dewatering units were expanded together with site services.



The **S::Select® technology** achieves significantly better sludge settling velocity by granulation of the sludge. The guaranteed settling velocity is 3 m/h as a minimum. Furthermore, the selectors or hydro cyclones, which are characteristic for this technology, keep the granular sludge in the aeration tank system, and this will stabilize and increase the performance of the aeration tank system. The selectors will also separate the fast-growing bacteria, which are forming the floating sludge, as surplus sludge. Thus, the technology prevents the formation of floating sludge layers.



During commissioning, a specially designed test cylinder imitating realistically the sludge settling behaviour in the SBR tank was used. It clearly showed a huge improvement in the **sludge settling velocity**. Starting with values of 0.2 - 0.4 m/h under the previous process, **values of 7 - 8 m/h were achieved continuously with S::Select®**.



Due to the continuously high values of the sludge settling velocity, **the cycle times of the SBR system were significantly shortened**. Thus, the capacity of the SBR system in total was increased accordingly. Furthermore, the metabolic rate of the sludge is significantly higher in the granular form. This fact helped increase the capacity additionally.

The installation of the S::Select® technology achieved the intended expansion of the WWTP by 50%. The plant could treat the load of 90,000 PE in the existing tanks, which had been designed for only 60,000 PE. Additionally, it overcomes the problems with floating sludge clearly.