

Press release

16/03/2017

Complex biological wastewater treatment plant expanded during normal operation

With its headquarters in the Lake Constance region, fruit processing company Fidel Dreher manufactures a range of juices, concentrates and purées. As a by-product of handling apples, the facility produces approximately 136,500 m³ of wastewater each year, which – until now – has been treated in batches by means of an aerobic biological cleaning process and discharged indirectly via a municipal sewage treatment plant.

The company had ambitions to expand its production capacity, which meant plans were put into place to extend the existing wastewater treatment plant. In addition to generating biogas from the wastewater to be treated, the aim here was to transition to a continuous wastewater treatment process. The new plant was kitted out to the highest quality standards with the latest technology in line with Fidel Dreher's company philosophy firmly in mind. Not only did the new features include a Biomar AHPx anaerobic high-performance reactor complete with innovative gas discharge system, but the entire facility came equipped with fieldbus technology and its own remote access system to two separate servers. This remote access system makes it possible to operate the plant remotely, not to mention manage information and alarms via e-mail and text message. What's more, the separate servers facilitate a clear distinction between the controls and data recording, thereby ensuring maximum plant security in the event of a server failure.

When it came to actually building the plant, the fact that space was at such a premium posed a real challenge. This meant that both the conversion and new construction work had to take place during normal operation, with old plant parts having to be dismantled before new ones could be built in their place. To ensure the safe treatment of the sewage water was not compromised, the new plant was built and put into operation over three construction phases within a time frame of just seven months. It was during this period that the plant controls were permanently adapted to suit the changing conditions.

"Time wasn't on our side, so we had to go without a hydraulic start-up using clear water," explained a Fidel Dreher employee. "As a result, the warm start-up took place directly with original wastewater during normal operation. The process proved successful and was completed on schedule."

The entire plant has now been in operation since October 2016. The wastewater pre-treatment takes place via drum screen and flotation,

Press release

before biogas generation and a COD breakdown of approximately 90% takes place in the anaerobic Biomar AHPx high-performance reactor.

Before being discharged into the sewerage system, the wastewater is treated via an aerobic activation stage with sludge separation until the requisite indirect discharger quality is achieved. The biogas obtained through this process is then desulphurised and dried. It is then used during operation to generate steam as well as energy and heat via a CHP. The innovative bioreactor allows up to 3600 m³ of biogas to be generated on a daily basis, which equates to an output of up to 1000 kW.

As the wastewater treatment plant borders directly on a residential area, great care was taken during the planning phase to ensure proper sound insulation and keep noise to a minimum. This involved all of the extracted air being treated via biofilters, and low-noise components – such as soundproof ventilators and gas flares – being used. And to top it all off, even the supply and exhaust air system for this plant building have been designed with soundproof technology.



Image: The wastewater treatment plant with biogas generation at Fidel Dreher was kitted out to the highest quality standards with the latest technology.

Contact:

EnviroChemie GmbH, Jutta Quaiser, Head of PR,
In den Leppsteinswiesen 9, 64380 Rossdorf, Germany ☎ +49 6154 6998 72,
jutta.quaiser@envirochemie.com, www.envirochemie.com