

Unbeatable alliance: tradition and progress!

Sustainable wastewater treatment during potato processing



Wernsing Feinkost GmbH is part of the Wernsing Food Family, a company that generates more €1 billion in sales annually across 11 production locations in Germany and further sites in Europe. The location in Addrup-Essen/Oldenburg, Germany is one of the region's most important employers. We are always looking beyond the horizon. Wernsing offers a fine selection of quality food products in a wealth of categories. Apart from variety, taste and a good price-performance ratio, our recipe for success is based on continuously charting new courses.

"With Endress+Hauser we found a reliable partner who charts new courses with us and helps us implement our demanding sustainability goals. We work together under the motto: 'Doing business sustainably – shaping the future'".

Wilfried Elberfeld
Disposal and treatment center
Wernsing Feinkost GmbH



Processing potatoes requires extensive amounts of water. Wernsing Feinkost GmbH places high value on the efficient and sustainable utilization of all resources. Wastewater is monitored, cleaned and filtered using advanced methods at the company's own disposal and treatment center. 20 percent can be reused for the cleaning and processing steps, a rate that continues to increase. Endress+Hauser helps Wernsing execute its demanding sustainability strategy by providing the measurement and automation technology.

Customer challenge

The Wernsing Food Family processes around 500,000 tons of potatoes each year, a significant share at the Addrup/Essen location in Oldenburg, Germany. Vast amounts of wastewater accumulate while cleaning and processing the potatoes. Wernsing reuses as much of the wastewater as possible as process water. The rest has to be discharged into the environment and sewage system in compliance with all regulatory restrictions.

Solution

Reliable instrumentation from Endress+Hauser ensures optimal cleaning during all treatment steps, even with fluctuating amounts and concentrations of wastewater, from pre-treatment and biological removal of organic compounds, to ultrafiltration for water recycling. The excellent collaboration between the industry experts at Wernsing and Endress+Hauser continuously leads to new process improvements that further optimize efficiency and sustainability.

Components

- Proline Promag P and W electromagnetic flowmeters
- Measurement of phosphate and ammonium with the Liquiline CA80 colorimetric analyzers
- Measurement of nitrate levels with the Viomax CAS51D optical sensor
- Measurement of oxygen content with the Oxymax COS61D optical sensors

Treatment system work flow

In terms of the cleaning capacity, the wastewater treatment system has a population equivalent (PE) of 210,000. The wastewater solids are filtered at the plant. All oils and fats are removed on the grounds of the disposal and treatment center after an initial mixing and balancing step. Floating matter is removed during preliminary treatment. A second mixing and balancing step is used to standardize the pH value and temperature, which is then followed by anaerobic

pretreatment of the wastewater. 80 percent of the contaminants is broken down here; the rest is removed during the activation and secondary treatment steps. Solids are then removed from the water with a sand filter. In a current project, this water is treated by means of ultrafiltration and reverse osmosis for further use in technical facilities.

Implementation



Proline Promag W50 electromagnetic flowmeters for aeration of the three activation tanks.



Proline Promag P: the robust electromagnetic flowmeter for demanding wastewater applications.



Complete monitoring of the activation tanks: ammonium and phosphate analyzers, as well as UV photometric measurement of nitrate with sample preparation.



Reverse osmosis for producing process water, including conductivity and redox measurements.

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