Customer case

Hampton Roads Sanitation District

At HRSD, the regional wastewater treatment utility that serves southeast Virginia, process engineers and researchers are working with the development of novel processes for nutrient removal from wastewater. One of the primary focuses is the application of the deammonification process directly in the mainstream. Currently, HRSD is operating a fully integrated pilot process and as part of the instrumentation, the N₂O Wastewater Sensor from Unisense Environment, Denmark, is used for online monitoring of dissolved N₂O. N₂O production is tightly linked to the level of oxygen (O₂) and nitrite (NO₂⁻), and due to these well established correlations, the N₂O sensor provides a unique and valuable parameter. Together with other online parameters, the engineers can monitor and control the main deammonification substrates, ammonium (NH₄⁺) and nitrite, and also the bacterial selection process needed to maintain the mainstream deammonification.

Where to meet us!

Meet us at booth 07.245B from November 3-6 in Amsterdam

New user at Waterschap Rijn en IJssel

The Waterschap Rijn en IJssel in the Netherlands has bought the N₂O Wastewater System from Unisense Environment to be installed in the Nereda plant in Dinxperlo. Understanding the complete nitrogen cycle and the production mechanisms for nitrous oxide have been instrumental in the decision to purchase the system.

Articles

Effect of influent COD/N ratio on performance and N₂O emission of partial nitrification treating highstrength nitrogen wastewater.

A recent scientific report by Zhang et al. demonstrate the effect of the COD/N ratio on the performance of partial nitrification processes. They show that despite the many benefits of the partial nitrification process, generation of significant N₂O needs to be controlled and minimized to advance this new and innovative process.

Recent advances in mathematical modeling of nitrous oxides emissions from wastewater treatment processes.

A new review paper compares and evaluates current N₂O models. The authors conclude that the mathematical modeling of N₂O production has reached a maturity that facilitates the estimation of site-specific N₂O emissions and the development of mitigation strategies. Development of mitigation strategies for full scale WWTP should focus on comparing the models to real N₂O data from full scale WWTPs to enhance their practical applications. Multiple-pathway based N₂O models can then be integrated directly into the online SCADA system to forecast, control, and mitigate the N₂O emission.

Contact us for a end of year offer!
salesenv@unisense.com