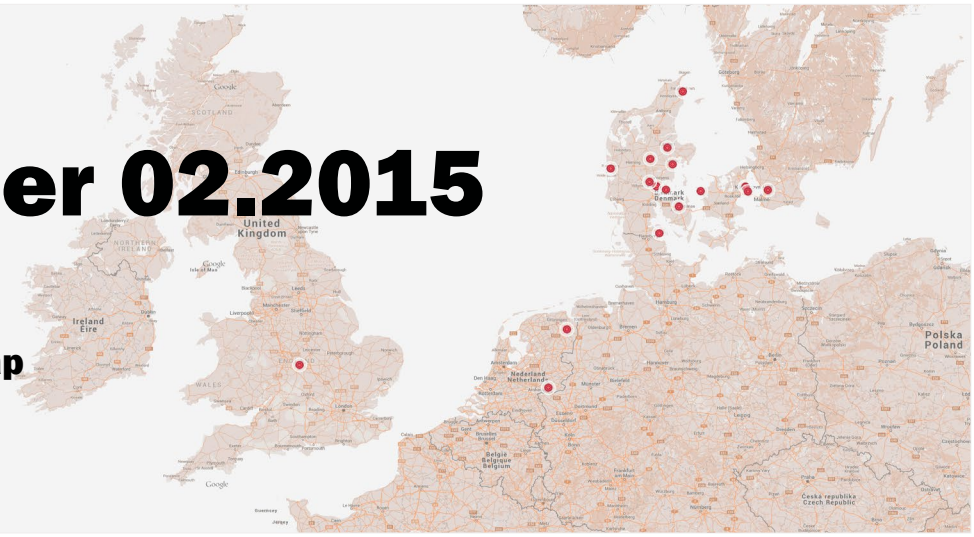
UNISENSE ENVIRONMENT

Direct Real-time N_2O monitoring

Newsletter 02.2015

- **Customer case: HRSD**
- **Where to meet us**
- **New user at Waterschap Rijn en IJssel**
- **Articles**



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 N_2O Wastewater Sensor from Unisense Environment, Denmark, is used for online monitoring of dissolved N_2O.
N_2O production is tightly linked to the level of oxygen (O_2) and nitrite (NO_2^-), and due to these well established correlations, the N_2O sensor provides a unique and valuable parameter. Together with other online parameters, the engineers can monitor and control the main deammonification substrates, ammonium (NH_4^+) and nitrite, and also the bacterial selection process needed to maintain the mainstream deammonification.

Photo curtesy of HDSD

Where to meet us!

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

AQUATECH AMSTERDAM
AMSTERDAM • NL
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2015

New user at Waterschap Rijn en IJssel

The Waterschap Rijn en IJssel in the Netherlands has bought the N_2O 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 N_2O 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 N_2O needs to be controlled and minimized to advance this new and innovative process.
Link to article!

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

A new review paper compares and evaluates current N_2O models. The authors conclude that the mathematical modeling of N_2O production has reached a maturity that facilitates the estimation of site-specific N_2O emissions and the development of mitigation strategies. Development of mitigation strategies for full scale WWTP should focus on comparing the models to real N_2O data from full scale WWTPs to enhance their practical applications. Multiple-pathway based N_2O models can then be integrated directly into the online SCADA system to forecast, control, and mitigate the N_2O emission.
Link to article!

Contact us for a end of year offer!

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