



# EUROPEAN WASTEWATER MANAGEMENT CONFERENCE & EXHIBITION

12-13 July 2022

The Hilton Birmingham Metropole / Online

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TUESDAY 12<sup>TH</sup> JULY

## PLENARY KEYNOTE

### Upgrading our wastewater network to protect our waterways – the scale of the challenge

Singer, A., UK Centre for Ecology & Hydrology

## NET ZERO CARBON & THE CIRCULAR ECONOMY

### Measuring Seasonal Variations in Nitrous Oxide Emissions from the Activated Sludge Process

Wild, R., Carliell-Marquet, C., Srinamasivayam, B., Vale, S., Severn Trent, UK

### Process optimisation to meet wastewater net zero air quality targets

Lewis, C.<sup>1</sup> and Kelly, R.<sup>2</sup>, Suez Smart & Environmental Solutions, <sup>1</sup>UK & <sup>2</sup>France

### AMBI-ROBIC – Cold anaerobic treatment for UK Sewages – how NetZero Solution to implement before 2030

Rogers, A. and Holohan, C., NVP Energy, UK

### Methane recovery at Spenal Sewage Treatment World – a world-first application of technology

Bolton, C.<sup>1</sup>, Dulgheru, T.<sup>1</sup>, Jackson, R.<sup>2</sup>, Sprague, A.<sup>1</sup>, Madeley, N.<sup>1</sup>, Smith, R.<sup>3</sup>, <sup>1</sup>Mott MacDonald Bentley (MMB), <sup>2</sup>MMBC, <sup>3</sup>Severn Trent, UK

### Lessons for Process emissions we can (and must) learn today

van Voorthuizen, E.<sup>1</sup>, and Lake, A.<sup>2</sup>, <sup>1</sup>Royal HaskoningDHV, UK, <sup>2</sup>Jacobs, UK

### Yes, how advanced aeration control contributes to NetZero in many other ways than energy!

Hazard, B.<sup>1</sup>, Bouchy, L.<sup>2</sup>, Froom, M.<sup>1</sup>, <sup>1</sup>Te-Tech Process Solutions, UK, <sup>2</sup>CreaTech360, Spain

### The basics of 50% energy saving

Newman, J., Kirkham, D., Puckering, O., Xylem Inc, UK

### Key drivers and barriers to circular economy in the wastewater treatment sector

Samberger, C., Stantec, UK

### Delivering a low carbon, circular water sector

Lake, A.<sup>1</sup>, Boere, J.<sup>2</sup>, Katsou, E.<sup>3</sup>, <sup>1</sup>Jacobs, UK, <sup>2</sup>Allied Waters, The Netherlands, <sup>3</sup>University of Brunel, UK

### **Use locally produced effluent to combat drought: wastewater is an eternal water resource**

Lavender, P. and Kerstens, S., Royal HaskoningDHV, UK

### **Application of Circular Economy concept towards a sustainable wastewater management: case study of a Full-scale UASB reactor in a Developing Country**

Arthur, P.M.A.<sup>1</sup>, Konate, Y.<sup>1</sup>, Sawadogo, B.<sup>1</sup>, Sagoe, G.<sup>2</sup>, Ahmed, I.<sup>3</sup>, Dwumfour-Asare, B.<sup>4</sup>, <sup>1</sup>Institut International d'Ingénierie de l'Eau et de l'Environnement (2iE), Burkina Faso, <sup>2</sup>Waste Landfills Co. Ltd, Ghana, <sup>3</sup>Sewerage Systems Ghana Ltd, Ghana, <sup>4</sup>AAM – University of Skills Training and Entrepreneurial Development, Ghana

## **NATURAL SOLUTIONS**

### **Industrial Phycology: Harnessing the natural power of microalgae as a multi-benefit nature-based solution for the wastewater industry**

Ekins-Coward, T., Ho, F., Baldry, M., Industrial Phycology, UK

### **Exploiting urban wastewater: sustainable production of the new superfood *Galdieria phlegrea* with low-consumption reactors**

di Cicco, M-R., Ciniglia, C., Palmieri, M., Lovinella, M., Lubritto, C., University of Campania Luigi Vanvitelli, Italy

### **NBS and Reactive media for Phosphorus removal at Severn Trent as part of our rural strategy: characterisation, assessment, deployment**

Palmer, M., Sousa, J., Smith, R.A., Richards, A., Pitt, S., Severn Trent, UK

## **EMERGING CONTAMINANTS**

### **Innovations in new sustainable low TOTEX treatment technologies for micropollutant removal**

de Wilt, A.<sup>1</sup> and Lavender, P.<sup>2</sup>, Royal HaskoningDHV, <sup>1</sup>The Netherlands, <sup>2</sup>UK

### **Do process operational variables impact the fate of micropollutants in Activated Sludge Plants?**

Herron, D.<sup>1</sup>, Campo-Moreno, P.<sup>2</sup>, Monkhouse, C.<sup>1</sup>, Thornton, A.<sup>3</sup>, <sup>1</sup>Aqua Enviro, <sup>2</sup>Cranfield Water Science Institute, <sup>3</sup>Atkins

### **An evaluation of the approaches for managing microplastics in the post-Brexit era: a case study from the Thames River**

Khatri, S., University of Windsor, Canada

### **Microplastics in wastewater – Sampling, extraction and analysis – Chem 5 experiences**

Bugg, T.<sup>1</sup> and Johnson, A.<sup>2</sup>, <sup>1</sup>Aqua Enviro, <sup>2</sup>CEH, UK

## **POINT SOURCE POLLUTION CONTROL**

### **Effective and sustainable final effluent disinfection at Anglian Water using in-situ produced PFA oxidisation**

Morris, P.<sup>1</sup>, Hall, G.<sup>2</sup>, Aubeuf-Prieur, P.<sup>1</sup>, <sup>1</sup>Kemira, <sup>2</sup>Anglian Water Services, UK

### **Tertiary wastewater treatment, combining sand filtration and UV technology**

Wouters, H.<sup>1</sup>, Thege, C.<sup>2</sup>, Vermeeren, W.J.A.M.<sup>3</sup>, <sup>1</sup>Brightwork BV, <sup>2</sup>Van Remmen UV Technology, <sup>3</sup>Waterboard Brabantse Delta, The Netherlands

### **Treatment of emerging contaminants “An evaluation of the te-ion™ non-thermal plasma-based oxidation process”**

Hazard, B.<sup>1</sup>, Jabornig, S.<sup>2</sup>, Marinheiro, L.<sup>3</sup>, <sup>1</sup>T-Tech Process Solutions, <sup>2</sup>SFC Umwelttechnik, Austria <sup>3</sup>AST – Environmental Solutions and Services, USA

**Removing pharmaceutical compounds at the source and centralized to reuse wastewater effluent for irrigation purposes**

Broeders, E.<sup>1</sup>, Boelee, N.C.<sup>1</sup>, Kramer-Hoenderboom, A.<sup>2</sup>, Groot Kormelinck, K.<sup>3</sup>, <sup>1</sup>Nijhuis Saur Industries, <sup>2</sup>Waterschap Rijn en IJssel, <sup>3</sup>Van Remmen UV Technology BV, The Netherlands

**NETWORK MANAGEMENT**

**What to learn from your cousins in the US about storm overflow drivers**

Umble, A., Stantec, USA

**Eliminating harm from storm overflows: mission impossible?**

Gill, E., Stantec, UK

**SewerBall: A new concept to inspect sewers using a mobile device and to monitor fluxes at various locations**

Maruejols, T.<sup>1,2,3</sup>, Theias, H.<sup>2</sup>, La Iglesia, J.<sup>3</sup>, Minall, R.<sup>4</sup>, Khan, M.<sup>4</sup>, <sup>1</sup>LyRE – Suez Research Center, France, <sup>2</sup>AXEO TP, France, <sup>3</sup>Suez, France, <sup>4</sup>Aqua Enviro, UK

**Delivering Dynamic Network Management to deliver the ‘wastewater network of the future’**

Lavender, P., Royal HaskoningDHV, UK

**Network optimisation using AquAdvanced Urban drainage smart digital solution**

Gordon, M., Suez Advanced Solutions UK Ltd

**A low carbon approach to stormwater treatment**

Cooper-Smith, G. and O’Brien, L., Eliquo Hydrok, UK

**WEDNESDAY 13<sup>TH</sup> JULY**

**PLENARY KEYNOTE**

**The black, the green – the purple and yellow... shifting from wastewater to resource recovery**

Rogalla, F., FCC Aqualia, Spain

**PHOSPHORUS**

**From universal agreements to wild contradictions - the different approaches to chemical phosphorus removal across the UK wastewater industry**

Thompson, A. and Hernandez-Ramirez, O., Atkins

**Finding the right balance: Investigating Catchment Nutrient Balancing and delivering the benefits to phosphorous removal schemes**

Palmer, M.<sup>1</sup>, Cooke, A.L.<sup>1</sup>, Rettino, J.<sup>1</sup>, Gilbert, J.<sup>2</sup>, Smith, R.<sup>2</sup>, Davison, P.<sup>2</sup>, <sup>1</sup>Severn Trent, UK, <sup>2</sup>Stantec, UK

**Optimising phosphorus removal using FilterClear**

Huo, C. and Biddle, J., Bluewater Bio, UK

**Primary Sludge Fermentation – a natural step towards chemical-free phosphorus removal**

Hazard, B.<sup>1</sup> and Wutscher, <sup>1</sup>Te-Tech Process Solutions, UK, <sup>2</sup>SFC Umwelttechnik, Austria

**Full scale low phosphorus trials: challenging existing assets**

Sandalls, C. and Baloch, I., Southern Water, UK

### **Side-Stream Fermentation to achieve low-P permits by EBPR, Viable?**

Mendizabal, J., Severn Trent, UK

### **A scaling-up approach towards a VFA valorization of industrial wastewater**

Casero-Diaz T., Silva-Teira A., Parama V., Gonzalez A., Castro-Barros C.M., Carballa, M, Mauricio-Iglesias, M., CETQUA – Water Technology Centre, Spain

### **Treatment of tertiary solids removal return liquors**

Bullen, C., Florence, K., Davies, R., Siltbuster, UK

### **Innovative technology for achieving UK's lowest phosphorus levels**

Jarvis, S.<sup>1</sup>, Lea, G.<sup>1</sup>, Sandalls, C.<sup>1</sup>, Cooper, P.<sup>2</sup>, <sup>1</sup>Southern Water, <sup>2</sup>Veolia Water, UK

### **Recent developments in electrochemical wastewater treatment**

Cooper-Smith, G., Cowan, H., Jones, S., Matthews, Z., Power & Water, UK

### **Optimisation Strategy and Lessons Learned on AMP6 Low Phosphorus Sites**

Sandalls, C., Hossain, A., Pinheiro, M., Liang, S., Boyer, M., Jarvis, S., Lea, G., Baloch, I., Southern Water, UK

## **PROCESS OPTIMISATION**

### **Innovative Moving bed biofilm reactor (MBBR) media for total nutrient removal from municipal wastewater**

Parsotamo, A.<sup>1</sup>, Soares, A.<sup>1</sup>, Barrett, M.<sup>2</sup>, Hassan, J.<sup>2</sup>, <sup>1</sup>Cranfield University, <sup>2</sup>Warden Biomedica, UK

### **Membrane Aerated Biofilm Reactors: the simple and sustainable way to process intensification and enhanced nitrification in existing wastewater treatment plants**

Coutts, D.<sup>1</sup>, Pitt, S.<sup>1</sup>, Cariell-Marquet, C.<sup>2</sup>, Vale, P.<sup>2</sup>, Martin, I.<sup>1</sup>, Murphy, M.<sup>1</sup>, Guglielmi, G.<sup>1</sup>, <sup>1</sup>Suez Water Technologies & Solutions, UK, <sup>2</sup>Severn Trent, UK

### **Retrofitting the Mobile Organic Biofilm (MOB™) Process as a hybrid fixed-film and granular sludge technology for full-scale WRFs**

Calhoun, J., Nuvoda, USA

### **Developments and expansions of a suite of trickling filters design models**

Pearce, P., Farmiloe Fisher Environment Ltd, UK

### **Optimising Nereda performance at Inverurie**

Oliver, B.<sup>1</sup>, Fox, R.<sup>2</sup>, Reid, G.<sup>2</sup>, <sup>1</sup>Royal HaskoningDHV, UK, <sup>2</sup>Scottish Water, UK

## **AMP8 DESIGN CHALLENGES**

### **Navigating The New World in AMP8**

Sunner, N., Stantec, UK

### **The challenges facing an SME in delivering innovation and value**

Cooper-Smith, G. and O'Brien, L., Eliquo Hydrok, UK

### **Is over design hindering carbon reduction?**

Jeavons, J.<sup>1</sup> and Jolly, M.<sup>2</sup>, <sup>1</sup>Stantec, UK <sup>2</sup>Yorkshire Water, UK

### **BEWISe wastewater research facility**

Davenport, R., Newcastle University, UK

## METAGENOMICS

### **Systems tools and systems analysis approaches for evaluating biotreatment intensification and optimisation**

Palmer, S., Stantec, UK

### **Metagenomics & Activated Sludge: Techniques, who's there, and the next steps**

Sheeran, K., Herron, D., Smyth, M., Aqua Enviro, UK

### **Catch me if you can: Are we really able to exploit new microorganisms to meet new and existing challenges in wastewater treatment**

Nair, A., Microvi Biotech, UK

### **Metagenomics: An innovative & practical tool to drive down Carbon, OPEX, Nitrogen & Phosphorus**

Smyth, M.<sup>1</sup>, Sheeran, K.<sup>1</sup>, Tillotson, J.<sup>2</sup>, <sup>1</sup>Aqua Enviro, UK, <sup>2</sup>Microbe Detectives, UK

## POSTERS

### **Designing a microplastics sampling procedure in Thessaloniki Wastewater Treatment Plant**

Lioumbas, I., Christodoulou, A., Papageorgiou, M., Papastergiou, F., Thessaloniki Water Supply and Sewerage Company SA, Greece

### **Recovery of nitrogen from sludge digestate polluted wastewater with advanced ammonium air stripping technology**

van den Broek, J. and Buffinga, G-J., Byosis Group BV, The Netherlands

### **Management and Control of Biofilms**

Morgan, E., KP2M Ltd T/A Power & Water, UK

### **Optimal storage sizing for indoor arena rainwater harvesting: Filton Airfield, UK**

Kim, J. and Hofman, J., University of Bath, UK

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### **Innovative technology to remove nitrogen and produce climate friendly fertilizers**

Lundbom, A., Högberg, C-J., Cohen, Y., EasyMining Services Sweden AB

### **MIL-100(Fe): Sorbent Material for Antibiotic Removal and Recovery**

Quinlivan, A., University of Nottingham, UK

### **Methane recovery at Sperial Sewage Treatment World – a world-first application of technology**

Bolton, C.<sup>1</sup>, Dulgheru, T.<sup>1</sup>, Jackson, R.<sup>2</sup>, Sprague, A.<sup>1</sup>, Madeley, N.<sup>1</sup>, Smith, R.<sup>3</sup>, <sup>1</sup>Mott MacDonald Bentley (MMB), <sup>2</sup>MMBC, <sup>3</sup>Severn Trent, UK

### **Process optimisation to meet wastewater net zero air quality targets**

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di Cicco, M-R., Ciniglia, C., Palmieri, M., Lovinella, M., Lubritto, C., University of Campania Luigi Vanvitelli, Italy

**Benefits of a design sprint – optioneering down from months to days**

Tokaryk, M., Mott MacDonald Bentley, UK

**Collaborative Problem Solving for Enhanced Biological Phosphorus Removal**

Murray, S., Mott MacDonald Bentley, UK

**Supporting Partners**

