WISA 2020 CONFERENCE
Water Institute of Southern Africa
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WATER RESEARCH COMMISSION

WORKSHOP

NATSURV: National Surveys of Water and Effluent Management in the Pelagic Fishing, Fruit and Vegetable Processing and Power Generating Industries

BACKGROUND

The management and regulation of industrial water use and effluent production present many challenges, but also significant opportunities for cleaner production and recoverable resources in South Africa.

The Natsurv series of publications were developed by the Water Research Commission of South Africa from the mid-1980's onwards. By conducting national industrial water and wastewater surveys of all classes of industry, water and effluent management and best practice within different important industrial sectors in the South African economy was documented. Due to sector demand, reviews to the series began in 2013. This workshop will focus on recently completed and current Natsurv studies. The aim of the research was to evaluate the industrial processes the specific industries in terms of current practice, best practice and cleaner production, as pertaining to water and effluent management. The regulatory environment within which these industries operate also received specific attention. Natsurv 19: Water and wastewater management in the fruit and vegetable processing industry and Natsurv 16: Water and wastewater management in the Power Generating Industry are revisions of previous editions, whereas Natsurv 18: Water and wastewater management in the pelagic fishing and fish processing industry is the first edition, with this industry not being included in the past.

The workshop will include a presentation of each industry by a specialist and will share research results in terms of a detailed overview of each industry, i.e. its history, growth, economic profile, challenges and opportunities in water and effluent management., as well as each industry's specific water consumption, effluent production, recycle and reuse trends, and appropriate technology application. The industries' adoption of concepts such as cleaner production, water pinch, energy pinch, life cycle assessments, and water footprints will also form part of the workshop.

OBJECTIVE

The intended outcome is to inform the target audience of new concepts of water and wastewater management in the relevant industries that can be used to benchmark their practices, and allowing regulators and industries to engage in informed discussions. Consultants working in the various industrial fields will also be informed of the current status quo and potential opportunities.

CONFERENCE SUB-THEMES

The workshop involves aspects of two of the subthemes, namely:

1. Reduce water demand and increase supply, and
4. Govern and regulate the sector.

The aim of the NATSURV series is to define the current status quo in the specific industry in terms of water and wastewater management, but also to provide an opportunity for benchmarking and highlighting industry best practice. This highlights opportunities for industry role players to improve efficiency thereby reducing demand and increasing supply, and provides benchmarking information for regulators in the sector.

SDGs

The following SDGs link to this workshop:
SDG 6: Clean water and sanitation
SDG 9: Industry, infrastructure and innovation
SDG 11: Sustainable cities and communities
SDG 12: Responsible consumption and production
SDG 13: Climate action

PROVISIONAL PROGRAMME

Thursday 10 December 2020: 9h15 – 11h15

Activity	Presenter	Time (min)
Welcome and introduction to the Natsurv Series	Dr John Zvimba (Water Research Commission)	10
Natsurv 19: Water and wastewater management in the fruit and vegetable processing industry (Edition 2)	Mr Chris Swartz (Chris Swartz Engineering)	20
Natsurv 16: Water and wastewater management in the Power Generating Industry (Edition 2)	Dr Gina Pocock (Waterlab)	20
Natsurv 18: Water and wastewater management in the pelagic fishing and fish processing industry (Edition 1)	Mr Bertie Steytler (Watergroup)	20
Open Discussion	Facilitated by Dr Marlene van der Merwe-Botha	20
Conclusion and Close of Workshop	Dr Gina Pocock	10

Presenters:

Dr John Zvimba: Natsurv Series Research Manager

Dr John Ngoni Zvimba (formerly with Mintek and CSIR) is currently with the South African Water Research Commission as Research Manager responsible for the sustainable integrated wastewater resource futures research portfolio. He has over 20 years of research experience focusing on sustainable municipal, industrial and mining wastewater treatment and management. His experience covers research and development on technology and innovation for treatment, volarization beneficiation of wastewater streams and sludges. He holds a doctorate degree in Physical Chemistry and has postdoctoral research experience in Bioprocess Engineering. Dr Zvimba has authored/co-authored over 20 peer reviewed publications, 1 book, 2 patents, several conference presentations, technical reports and supervised/co-supervised several postgraduate students. He is currently a member of the Water Institute of Southern Africa and International Water Association.

Dr Marlene vd Merwe-Botha: Facilitator and Natsurv 18 Leader

Dr Marlene van der Merwe-Botha is registered as a Professional Natural Scientist with the South African Council for Natural Scientists. She is managing director of her company, Water Group Holdings (Pty) Ltd, since 2006. She holds a Doctorate in Industrial Bacteriology from the University of the Free State in Bloemfontein in the field of treatment of high-strength industrial effluent. She has 22 years' experience in the wastewater and energy industry. She is a Past President of the Water Institute of Southern Africa, was Chair of the Anaerobic Sludge Process Technical Division, and is a Senior Fellow member of WISA. She has several publications and books to her credit including energy auditing, waste-to-biogas, risk assessment, feasibility studies, process optimisation, energy efficiency optimisation, as well as the operation and training of wastewater technical persons. She is the main author of several NATSURV studies, including paper and pulp, iron and steel, and pelagic fishing industry.

Mr Chris Swartz: Natsurv 19 Leader

Chris Swartz is a consulting water utilisation engineer in his consulting engineering firm Chris Swartz Water Utilisation Engineers. He obtained his B.Eng, B.Eng (Hons) and M.Eng degrees in Water Utilisation Engineering at the University of Pretoria in South Africa. He is a registered professional engineer and established his consulting engineering practice Chris Swartz Water Utilisation Engineers in 1991, with offices in Cape Town and Mossel Bay. He has been involved with research and capacity building projects in water treatment and water reclamation and reuse. These projects include evaluation of technologies and treatment systems, compiling manuals and training material on operation and maintenance of water treatment plants, wastewater treatment plants, industrial effluent treatment plants and water reclamation and reuse plants. He was recently involved in the updating of the NATSURV Manuals for the tannery and leather finishing industries, and the laundry industry, and currently the NATSURV for the food and vegetable processing industry. In the food and beverage industry market he has also done consultation and studies for the dairy industry, edible oil and cheese production industries.

Dr Gina Pocock: Natsurv 16 Leader

Gina is a water treatment and water quality specialist with 12 years' experience working in the South African water industry. She holds a PhD degree in Microbiology and a BSc Honours degree in Applied Science (Water Utilisation Engineering). She is passionate about the research and development of innovative and sustainable water treatment technologies and their successful implementation through the innovation chain. Gina has experience in the development of water treatment processes and products, which includes treatment processes for mine and industry impacted water, assessments and refurbishment of waste and potable water treatment plants, technology due diligence, water quality monitoring and compliance, water supply feasibility studies, climate change resilience planning, technical report writing, project

implementation and project management. She has been the principle researcher and project leader on numerous Water Research Commission (WRC) funded projects. She was the project leader for the Poultry Industry NATSURV and is currently completing the NATSURV for the Power Generating Industry. She serves as an independent reviewer of proposals for the WRC and has sat on various project reference committees.

Mr Bertie Steytler: Natsurv 18 Researcher

Bertie Steytler is a chemical engineer, having graduated from the University of Natal in 1985. He is registered as a professional engineer with the Engineering Council of South Africa. He is the managing director of Prodromos Technologies (Pty)Ltd, dealing with the development of solutions in the water, wastewater, and waste to energy sectors. He also holds a B Com degree from UNISA and a masters degree in Engineering Management from the University of Pretoria, majoring in technology management. Bertie has been the lead design engineer and/or project manager on many engineering projects, amongst others on several membrane plants, zero liquid discharge facilities, membrane bioreactors and mineral waste beneficiation. He is currently leading the development of a novel salt splitting technology to produce caustic soda from sodium sulphate waste. Bertie has been involved in the compilation of three of the Natsurv reports and is a strong supporter of systems optimisation and the circular economy.