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International Business Review Presents: **RECYCLE Water2019**

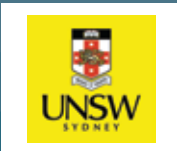
NATIONAL WATER RECYCLING & REUSE TECHNOLOGY 2019 CONFERENCE

"MAKING EVERY DROP COUNT"

15th-16th October, 2019 | Bayview Eden Melbourne

Hear about latest developments in water recycling, best practices in water reuse, future of Potable reuse, stormwater management, innovative technologies & applications

CONFERENCE CHAIR:



Stuart Khan
Professor of Civil & Environmental Engineering,
UNSW



HEAR FROM INDUSTRY EXPERTS:



STUART KHAN
Professor of Civil & Environmental Engineering, UNSW



DR JOHN RADCLIFFE
Honorary Research Fellow, CSIRO Land & Water, a Chair, Research Advisory Committee, Australian Water Recycling Centre of Excellence



JOHN POON
Regional Solutions Director Drinking Water, and Reuse, Asia Pacific Middle East, Jacobs



STACEY HAMILTON
Sr Tech Adv - Membrane Treatment, Water Quality, Water Corporation



TED GARDNER
Scientist at Arris Water



NEIL PALMER
Principal – Water, Tonkin. Former CEO, National Centre of Excellence in Desalination



PIERRE LE-CLECH
Assoc Professor, University of New South Wales



IOURI VAISMAN
Director, iVWater Solutions Pty Ltd



RHYS ANDERSON
Water Business Leader, Arup



DOUG HALLORAN
Coordinator Zero Waste Planning, Barwon Water



TOM STEPHANOU
Strategic Project Engineer, IWM & Liveability Strategy and Planning, City of West Water



ERIN CINI
Manager Liveable Communities, Water Services Association of Australia (WSAA)



ROD CURTIS
Manager Water Systems and Solutions at Western Water (invited)



IAN LAW
Chief Executive, IBL Solutions, Adjunct Professor, University of Queensland



NAUSHEEN OBAID
Water Officer, City of Casey



GEMMA KEANE
Technical Director, Water, Aurecon



ROB CATCHLOVE
Director, Wave Consulting



DR ANNA HURLIMANN
Senior Lecturer in Urban Planning, The University of Melbourne



KATHY NORTHCOTT
Research Manager, Water Research Australia



NAREN NARENTHIRAN
Senior Applied Scientist - Water Technology, Environmental Solutions, Environment Protection Authority Victoria



MIRANDA TAYLOR
Senior Hydrogeologist, Rockwater Pty Ltd

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NATIONAL WATER RECYCLING & REUSE TECHNOLOGY 2019 CONFERENCE 15th-16th October, 2019. Bayview Eden Melbourne

"MAKING EVERY DROP COUNT"



Exhibitors



"For Australia to really grow and to have competitive cities and liveable cities, we have to embrace potable reuse as one of our supplies going forward."

Source: ABC News

HEAR ABOUT LATEST DEVELOPMENTS IN WATER RECYCLING, BEST PRACTICES IN WATER REUSE, FUTURE OF POTABLE REUSE, STORMWATER MANAGEMENT, INNOVATIVE TECHNOLOGIES & APPLICATIONS

- Future directions for water recycling & reuse in australia: Where will we be in 2030?
- Vic epa recycled water guidelines: Discussion on proposed key changes
- Hydrogen economy — the key role of recycled water in a resource constrained and decarbonised world
- Potable water reuse – what can australia learn from global experience
- Potable reuse – current state and emerging trends:
- The importance of process validation
- Integrating long term urban subdivision to create
- Recycled stormwater business and researching its
- Potential for potable supply – the 50 year salisbury story
- Potable reuse: is australia ready for it?
- Perth’s groundwater replenishment scheme from concept to reality
- Drivers & impediments for water recycling in australian agriculture

PERSPECTIVES ON WATER REUSE & RECYCLING – WHAT’S ARE THE LEADING ISSUE FACING THE WATER SECTOR TODAY?

Discussion 1: Use of Recycled Water: Public perception, engagement, and Trends in public acceptance

Discussion 2: Guidelines, Regulation & Compliance

Discussion 3: Water Security for future – Do we have a plan in place?

Discussion 4: Global Trends & Opportunities

- Integrated urban water management
- Operational experiences with recycled water plants
- Water quality management plan
- Water recycling at melbourne olympic park - 7 years of operation. Sustainability, cost savings and future opportunities."
- Alternative water supply for drought proofing casey’s recreational reserves
- Case study: increasing water reuse practices through improved risk management: the case study of mbr in australia
- Industrial recycled systems and particularly managing emerging contaminants such as pfas
- Melton stp and gisborne stp projects where the water is reused for the community
- Membrane technology in water reuse
- Case study on a large-scale managed aquifer recharge (mar) south of perth for a local council
- Storm water management challenges

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NATIONAL WATER RECYCLING & REUSE TECHNOLOGY 2019 CONFERENCE

"MAKING EVERY DROP COUNT"

15th-16th October, 2019
Bayview Eden Melbourne

DAY-1

15th October 2019

8:20 DELEGATE REGISTRATION & COFFEE

8:55 OPENING REMARKS FROM CHAIR



Stuart Khan, Professor Of Civil & Environmental Engineering, UNSW

PANEL DISCUSSION

9:00 FUTURE DIRECTIONS FOR WATER RECYCLING & REUSE IN AUSTRALIA: WHERE WILL WE BE IN 2030?

- Current state of the water recycling
- Water recycling future in Australia
- Technology developments
- Potable reuse



PANEL CHAIR
Stuart Khan, Professor of Civil & Environmental Engineering, UNSW
PANEL MEMBERS:
John Poon, Regional Solutions Director - Drinking Water and Reuse, Asia Pacific Middle East, Jacobs
Ted Gardner, Scientist at Arris Water
Doug Halloran, Coordinator Zero Waste Planning, Barwon Water
Gemma Keane, Technical Director, Water, Aurecon

9:40 HYDROGEN ECONOMY — THE KEY ROLE OF RECYCLED WATER IN A RESOURCE CONSTRAINED AND DECARBONISED WORLD

Outline the key findings of the white paper on sustainable hydrogen and what it means for the water industry and other sectors such as transportation. The paper is a cross-sector and collaborative effort between water, power, transport, energy and strategic consulting at Jacobs by national and international teams. The paper gives new and profound insights into the future role of recycled water and water utilities in a sustainable hydrogen future. There are major opportunities to decarbonise operations, create new revenue streams, use recycled water and forever change energy consumption in treatment plants. Other deep insights that could not fit into the paper are to be highlighted. Many of these are to do with cities of the future and circular economy.



John Poon, Regional Solutions Director - Drinking Water and Reuse, Asia Pacific Middle East, Jacobs

10:10 POTABLE WATER REUSE –WHAT CAN AUSTRALIA LEARN FROM GLOBAL EXPERIENCE

- Potable reuse is an increasingly important strategy in the USA
- Major regulatory developments have occurred to support it
- Australia has made important progress on process validation
- There are numerous drivers for potable reuse in Australia
- Numerous Australian cities are now identifying the opportunities



Stuart Khan, Professor Of Civil & Environmental Engineering, UNSW

10:40 MORNING COFFEE

11:10 "POTABLE REUSE – CURRENT STATE AND EMERGING TRENDS: THE IMPORTANCE OF PROCESS VALIDATION



Ian Law, Chief Executive, IBL Solutions, Adjunct Professor, University of Queensland

11:40 INTEGRATING LONG TERM URBAN SUBDIVISION TO CREATE A RECYCLED STORMWATER BUSINESS AND RESEARCHING ITS POTENTIAL FOR POTABLE SUPPLY – THE 50 YEAR SALISBURY STORY

- Over a 50 year period, Salisbury, South Australia, expanded from 4160 to over 140,000 people,
- Early subdivisional planning of the expanding city included the management of stormwater
- Stormwater and groundwater were integrated with use of wetlands and managed aquifer recharge.
- Local and other governments contributed with developers and industry to build the infrastructure including a link main joining the managed aquifer recharge locations.
- The City of Salisbury established a commercial business with over 500 external customers, supplying recycled water for non-potable amenity and industrial use.
- Research has shown that with little additional water treatment, water originally treated through wetlands, and aquifer storage could be safely withdrawn for a range of uses including as a potential potable water source.

Dr John Radcliffe AM FTSE, Honorary Research Fellow, CSIRO Land and Water



12:20 POTABLE REUSE: IS AUSTRALIA READY FOR IT?

PANEL DISCUSSION

PANEL CHAIR:
Stuart Khan, Professor of Civil & Environmental Engineering, UNSW
PANEL MEMBERS:
Ian Law, Chief Executive, IBL Solutions, Adjunct Professor, University of Queensland
Dr John Radcliffe, Honorary Research Fellow, CSIRO Land & Water, a Chair, Research Advisory Committee, Australian Water Recycling Centre of Excellence
Dr Anna Hurlimann, Senior Lecturer in Urban Planning, The University of Melbourne
Kathy Northcott, Research Manager, Water Research Australia

1:00 LUNCH

2:00 PERTH'S GROUNDWATER REPLENISHMENT SCHEME – FROM CONCEPT TO REALITY

- Groundwater replenishment is part of Water Corporation's long-term plan to secure water supplies
- Water Corporation carried out a three year trial from 2010-2012 and was a success
- Stage 1 of the full scale scheme is completed and can recharge up to 14 billion litres a year
- Expansion of the scheme is currently underway to increase capacity to 28 billion litres
- Approval for the expansion of the scheme expected late 2019

Stacey Hamilton, Snr Tech Adv - Membrane Treatment, Water Quality, Water Corporation



CASE STUDY

2:30 DRIVERS & IMPEDIMENTS FOR WATER RECYCLING IN AUSTRALIAN AGRICULTURE



Ted Gardner, scientist at Arris Water

3:00 AFTERNOON TEA

CASE STUDY

3:30 WATER RECYCLING, WATER SECURITY, AGRIBUSINESS AND ECONOMIC DEVELOPMENT

- The importance of water security to agribusiness
- The Northern Adelaide Irrigation Scheme (NAIS)
- High tech protected cropping
- International demand for healthy food
- Opportunity for a new export industry
- Recycled water helps stimulate jobs and growth

Neil Palmer, Principal – Water, Tonkin. Former CEO, National Centre of Excellence in Desalination



ROUND TABLE DISCUSSION

4:00 PERSPECTIVES ON WATER REUSE & RECYCLING – WHAT'S ARE THE LEADING ISSUE FACING THE WATER SECTOR TODAY?

- Discussion 1:** Use of Recycled Water: Public perception, engagement, and Trends in public acceptance
- Discussion 2:** Guidelines, Regulation&Compliance
- Discussion 3:** Water Security for future – Do we have a plan in place?
- Discussion 4:** Global Trends & Opportunities



MODERATOR:
Stuart Khan, Professor of Civil & Environmental Engineering, UNSW

5:10 CLOSING REMARKS FROM THE CHAIR

5:10-6.10 1 HOUR NETWORKING DRINKS

8:20 DELEGATE REGISTRATION & COFFEE**8:55** OPENING REMARKS FROM CHAIR**Stuart Khan, Professor Of Civil & Environmental Engineering, UNSW****9:00** INTEGRATED URBAN WATER MANAGEMENT

- Demand risk in recycled water investment
- The potential for decentralised systems to service growth
- Opportunities to overcome funding and pricing barriers
- Moving beyond reactive drought response to proactive resilience
- The role of water recycling in managing supply and demand cost effectively
- Customer insights and engagement around different end uses

9:30 VIC EPA RECYCLED WATER GUIDELINES: DISCUSSION ON PROPOSED KEY CHANGES

- Victorian Government recognizes the regulatory arrangements for recycled water and stormwater need to be clarified and improved
- Current guidelines are outdated and at times unclear and contradict one another
- Revised guidelines are expected to facilitate the government's objective of supporting the increased uptake of diverse water sources, particularly recycled water
- DELWP is leading the guideline review, in partnership with representatives from EPA, Department of Health and Human Services (DHHS), VicWater and Yarra Valley Water
- Objectives of the review are more efficient and proportional regulatory processes, clearer accountabilities of all stakeholders, harm prevention – human health and the environment, better system evaluation and performance and an adaptive regulatory framework
- Revised guidelines will support the new amended Environment Protection Act 2017 and General Environmental Duty which will come into operation on 1 July 2020.

Naren Narenthiran, Senior Applied Scientist - Water Technology, Environmental Solutions, Environment Protection Authority Victoria**EXCELLENCE IN OPERATIONS****10:00** OPERATIONAL EXPERIENCES WITH RECYCLED WATER PLANTS

A panel of industry experts will openly share their woes and lessons learnt.

- How much does it really cost to operate that plant
- What operator input is needed (not the marketing brochure spiel)
- Compliance – really?
- Inflow variations – what the client didn't tell you ("I just wanted a plant that meets my effluent criteria")
- Lessons learnt etc

PANEL CHAIR**Dr John Radcliffe AM FTSE, Honorary Research Fellow, CSIRO Land and Water****PANEL MEMBERS: TBA****PANEL DISCUSSION****10:40** MORNING COFFEE**11:00** WATER QUALITY MANAGEMENT PLAN

- Treatment, Disinfection and Processes
- Assessment of Risks & Mitigation
- Managing Risk

PANEL DISCUSSION**11:30** CASE STUDY " WATER RECYCLING AT MELBOURNE OLYMPIC PARK - 7 YEARS OF OPERATION. SUSTAINABILITY, COST SAVINGS AND FUTURE OPPORTUNITIES."

- Water reuse at MOP
- Operation & maintenance - lessons learnt
- Economic and social impact
- Looking into the future

Iouri Vaisman, Director, IVWater Solutions Pty Ltd**12:00** ALTERNATIVE WATER SUPPLY FOR DROUGHT PROOFING CASEY'S RECREATIONAL RESERVES

The City of Casey is committed to reduce its potable water consumption. Council's Integrated Water Management Target requires Council to reduce its 2030 projected potable water consumption by 30%. Casey aspires to create "Australia's Most Liveable City". Green open space available to community all round the year for playing is essential for delivering adequate liveability and amenity benefits. Council reserves contributes to approximately 40% of Council total potable water consumption. An alternative source of supply for Casey's recreational reserves will:

- Reduce Council's potable water use
- Ensure reliable supply for Casey's recreational reserve
- Deliver improved health and amenity benefits for Casey community
- Create greener open spaces
- Reduce heat island effects
- The priority reserves (5) could together save up to 70 ML of potable water per year, if the stormwater harvesting assets supply nearby recreational centres.

The presentation will provide a summary on:

- How Council progressed with the project
- Matrix to identify Council's top five alternative water/ stormwater harvesting projects
- Key learnings

Nausheen Obaid, Water Officer, City of Casey**Rob Catchlove, Director, Wave Consulting****12:30** LUNCH & NETWORKING**1:20** CASE STUDY: INCREASING WATER REUSE PRACTICES THROUGH IMPROVED RISK MANAGEMENT: THE CASE STUDY OF MBR IN AUSTRALIA

- The potential loss of containment of pathogens by MBRs has rightly been considered as an important hazardous event, limiting significantly its log removal credit
- The reliability of MBRs in removing pathogens has been justified and demonstrated
- This resulted in a series of recommendations to health regulators and practitioners for the development of validation guidelines now available in Australia (waterval.com.au)
- The impact of eight hazardous events on key bulk water quality parameters, and on removal of indicator microorganisms during MBR operation has been systematically assessed
- The reliability of conventional online monitoring techniques, such as turbidity, has been demonstrated as appropriate membrane integrity monitoring

**Pierre Le-Clech, Assoc Professor, University of New South Wales****1:50** INDUSTRIAL RECYCLED SYSTEMS AND PARTICULARLY MANAGING EMERGING CONTAMINANTS SUCH AS PFAS**Rhys Anderson, Water Business Leader Vic, SA & Tas | Environment and Resources, Arup****CASE STUDY****2:20** MELTON STP AND GISBORNE STP PROJECTS WHERE THE WATER IS REUSED FOR THE COMMUNITY**Rod Curtis, Manager Water Systems and Solutions at Western Water- TBC****2:50** MEMBRANE TECHNOLOGY IN WATER REUSE

- Reviewing available membrane technologies for water reuse
- Drivers and challenges for membrane-based processes
- Recent developments and potential improvements in membrane-based processes, including novel membranes, fouling control, increased recovery, energy reduction and concentrate management
- Optimising membrane integrity and reliability vis-a-vis operating strategies and costs

3:20 AFTERNOON TEA**CASE STUDY****3:40** CASE STUDY ON A LARGE-SCALE MANAGED AQUIFER RECHARGE (MAR) SOUTH OF PERTH FOR A LOCAL COUNCIL**Miranda Taylor, Senior Hydrogeologist, Rockwater Pty Ltd****4:10** WATER FOR A GREENER WEST - PARTNERING WITH STAKEHOLDERS TO DELIVERY SWH SCHEMES

- CWW's journey thus far – presenting a timeline of events, the drivers and our past projects
- CWW's SWH Partnering fund – presenting our funding model, the eligibility criteria and the outcomes of our Round 1 submissions
- Projects in the pipeline - presenting the work we are doing to plan and delivery an integrated water systems

**Tom Stephanou, Strategic Project Engineer, IWM & Liveability Strategy and Planning, City West Water****PANEL DISCUSSION****4:40** STORM WATER MANAGEMENT CHALLENGES

- Stormwater Technologies
- Development of economic models to better understand the total community cost and benefits of complex stormwater systems
- More sophisticated governance frameworks for Managing multifunctional and decentralised stormwater assets
- Better linkage between stormwater management and urban planning process

PANEL MEMBER**Tom Stephanou, Strategic Project Engineer, IWM & Liveability Strategy and Planning, City West Water****ERIN CINI, Manager Liveable Communities, Water Services Association of Australia (WSAA)
Other Panel Members TBA****5:15** CLOSING REMARKS FROM THE CHAIR

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