AQUATALK

In this edition

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AWQC staff supports WATERAID at WOMAD Festival

AWQC staff volunteered their time

Dear Aquatalk Subscriber

Welcome to our Winter Edition of Aquatalk

We have quite a number of activities and new initiatives at AWQC that we would like to tell you about.

Adelaide was the host city this year for the OzWater'11 national conference of the Australian Water Association (AWA) in May and we know that many of you were able to visit us both at the exhibition stand to discuss our business and services first hand. We were also pleased that we could welcome many delegates to a function and tour or our laboratory during the convention. This is a major industry event and our Research, Development and Innovation group were also well represented to give presentations on a range of their latest research findings.

We continue to focus on improving analytical test and services and recently we have made improvements to both the Iodide and Bromide techniques leading to improved limits of reporting. Bromide is an important constituent that is naturally found in seawater and can lead to the formation of bromate and other by-products in disinfected water.

Our newsletter covers other initiatives in the R&D area including a large study to assess the impact of water quality on the water supply distribution system performance.

Please enjoy our newsletter and we welcome feedback and opportunities to discuss any of these topics further.

to promote awareness of Wateraid at the four day WOMADdelaide Festival. The festival provides Wateraid with the opportunity to showcase what is being achieved around the world in providing safe water and sanitation. To find out more about Wateraid initiatives in Australia visit the Wateraid website.

Dr Lionel Ho receives AWA's prestigious Michael Flynn Award

Of the 160 papers presented at OzWater '11, Dr Lionel Ho, Senior Research Scientist in the Applied Chemistry Unit was awarded the Michael Flynn Award for his paper entitled, "Monitoring the Performance of Granulated Activated Carbon (GAC) Filters for the Treatment of River Murray Water". The Michael Flynn Award is presented to the author of the best paper or poster at each Ozwater Conference. The award aims to reward high quality oral presentations and poster presentations.

Congratulations and Well Done to Lionel!

A photo of Lionel (pictured right) receiving the award from John Flynn (Michael Flynn's son).

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Farewell to Dr Chris Saint

The AWQC sadly farewelled Dr Chris Saint, Research, Development and Innovation Manager in June.

Chris had a stellar 16 year career at SA Water where he commenced in the AWQC's Microbiology laboratory to eventually become the Principal Microbiologist and has very ably managed the Research, Development and Innovation Team for the past 5 years.

Notably, under Chris's leadership AWQC saw the development of the successful RDI focus groups to promote a more operationally aligned and strategic approach to research and the retention and further development of our excellent reputation for high quality water science .

While Chris is joining the academic staff of the University of South Australia in the SA Water Centre for Management and Reuse as Centre Director, he will remain very closely connected with us through our sponsorship and strategic alliance with the Centre.

Congratulations Chris and wishing you well in your future career.

Chris Saint pictured in the middle with Dr John Howard, Head of Water, Quality, and Enviornment on the right and Ms Annette Perryman, Executive Assistant to Dr John Howard, on the left.

AWQC presents papers at OzWater'11 Conference

SA Water was a major sponsor of the recent OzWater'11 national conference of the Australian Water Association (AWA) held on 9 – 11 May in Adelaide. We were pleased to welcome many of you at our stand, during networking at opening and closing ceremonies, gala dinners and especially to our very own

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'Best of SA Cocktail Event and Twilight Laboratory Tour' held in our state of the art laboratories at SA Water House.

The AWQC were well represented at the conference, with a total of 12 platform presentations delivered by AWQC staff, highlighting our reputation in the water industry and our diversity in the research and innovation sector.

AWQC's Research, Development and Innovation Group place a high importance for the delivery high quality research, consultancies and advice in the areas of chemistry, water treatment, microbiology and biology. Examples of our work that was presented included:-

- "Application of biofiltration processes for the removal of a suite of chemical contaminants from re-use water";
- "Biological filtration for the treatment of cyanobacterial metabolites";
- "Evaluation of novel methods for control of cyanobacteria";
- "Assessment and mitigation of salinity in the Lower River Murray under extreme low flows";
- "Using online monitoring to predict coagulant dosing"; and
- "Cryptosporidium oocysts, are they infectious? The tools and knowledge at hand".

All presentations were very well received with many follow up questions and discussions around topics of interest. The conference is an opportunity to focus on emerging water quality issues and challenges that we face as well as keeping abreast of the introduction of leading edge technologies in the water industry.

We would also like to acknowledge our very own AWQC staff on the OzWater'11 Organising Committee; Mary Drikas, Gayle Newcombe and Lionel Ho for their contribution and efforts and thank the AWA for a well organised event.

We look forward to seeing you at OzWater'12 which will be held in Sydney next year.

Photo of AWQC's Display Stand at OzWater '11 held at the Adelaide Convention Centre in May 2011.

Best of South Australia's Produce at Cocktail Event and Laboratory Twilight Tour

In conjunction with OzWater'11, the AWQC held the 'Best of SA Cocktail Event and Twilight Laboratory Tour' event on Monday 9 May 2011, inviting delegates and customers for a taste of local (South Australian) produce, wines and a tour of our laboratories providing interstate and international visitors with analytical testing and research demonstrations.

These demonstrations included detection of ecoli in waters, how

products in contact with drinking water are tested against Australian Standards, green algal analysis, water treatment processes, taste and odour analyses, new methods and real live instrumentation on the go to demonstrate our techniques in analysis and testing in the chemistry areas.

Our event was well received...here is some of the feedback.....

“It was very good. Well done! A very enjoyable event. Thanks for sharing what you do”.

“The lab tours were very informative & professionally delivered.The staff we met were enthusiastic and well presented".

“I particularly enjoyed the opportunity to see the facilities and meet AWQC researchers".

If you would like to arrange a tour for you and/or for colleagues of AWQC’s state of the art laboratories, please email us at awqc@sawater.com.au to arrange a suitable time.

A photo of laboratory demonstrations in action at the Twilight Laboratory Tour - Ms Qiong Huang, Manager Organic Chemistry to international delegates.

Improvements to Iodide and Bromide Tests

The Iodide test is significant to customer drinking water as it is listed as part of the Australian Drinking Water Guidelines (ADWG). Iodide, naturally found in many different source waters, needs to be identified and removed before the water is safe to drink.

Bromide is naturally found in seawater and can lead to the formation of Bromate and other by-products in disinfected water.

To better service our customers we have made improvements to both the Iodide and Bromide techniques. For Iodide we have improved the limit of reporting (LOR) from 0.05mg/L to 0.01mg/L. This is an important improvement as the notifiable limit for iodide as set by the ADWG is 0.1mg/L.

We have also improved the Bromide LOR from 0.1mg/L to 0.025mg/L to further assist our customers in identifying the disinfection by products.

In implementing the above improvements, the AWQC has also significantly reduced the time taken by over a third for ensuring the timely turnaround of iodide and bromide results to customers.

AWQC's Scientists and the Water Industry collaborate in Research, Development and Innovation Workshop

The annual SA Water RDI Workshop was held on May 17-18 at the National Wine Centre. Each of the six workshop sessions (as listed below) showcased research activities in there defined areas. Each workshop session included a presentation from an operational expert to highlight knowledge gaps and key areas for further investigation or project development.

- Treatment & Distribution,
- Cyanobacterial Management,
- Sustainability & Environment,
- Infrastructure & Asset Management,
- Wastewater Stormwater & Reuse,
- Analytical Methods

Over 200 people registered, this included 48 external guests from six external water utilities, the Department for Water, CSIRO, the Goyder Institute, the Department of Health, Water Quality Research Australia, and three South Australian universities. This reaffirms that there is significant national interest in SA Water and AWQC's research and development program.

The RDI program reinforced the need for developing operationally focussed research that is beneficial to SA Water and that encourages more bilateral participation and interaction between researchers and operational personnel. Feedback gathered from the questionnaire and operational issues form will be fed back through the relevant Focus Groups for prioritisation and future project development.

Assessing impact of water quality on distribution system performance

AWQC is undertaking a challenging, complex project

investigating the impact of treatment on distribution system quality.

This encompasses four different treated water qualities; two supplied from two pilot treatment plants, one utilising conventional treatment, the other microfiltration followed by nanofiltration, and two utilising treated water from an operating treatment plant (MIEX coagulation process), one using the treated water and the last obtained by passing the MIEX/coagulated water through a granular activated carbon filter.

Each of these 4 treated waters then feeds 4 individual pilot distribution systems (PDS) comprising PVC and polyethylene pipe-work with detention time of 72 hours to simulate the ends of water supply systems.

The treatment and PDS have been operating for 9 months and bacterial and particle removal differences between the treatments are apparent. The impact of these differences on the PDS is currently being evaluated. To obtain further information or to participate in this project, please contact Mary Drikas by email mary.drikas@sawater.com.au

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Introduction of Black Plastic PET Bottles for Chlorophyll

From July 2011, all chlorophyll samples analysed by AWQC are to be collected in a 1.0L black plastic PET bottle. This is a change from the standard 1.25L clear plastic PET bottle and has been introduced to ensure that light is excluded from the samples from the time of sample collection to the time of sample filtration in the laboratory. Exposure to light may affect the stability of the sample such that the chlorophyll concentration at the time of sample processing may change significantly.

Samples were previously shielded from light by covering them with a black cloth in the laboratory, but the introduction of opaque bottles eliminates any chance that the samples will be inadvertently exposed. All algal samples, including chlorophyll, should continue to be chilled or refrigerated during transit and during storage prior to filtration. The recommended holding time for these samples is 24 hours, but no longer than 48 hours provided that they are chilled (to approximately 4 degrees C).

The new black plastic bottles will be used by the AWQC Field Services Team and provided to customers who collect their own samples.