

AQUATALK



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VISIT US AT OZWATER 2011

OZWATER'11, 9-11 May 2011 in Adelaide is the key event on the water industry calendar. AWQC in conjunction with SA Water is a partner for this event.

The program includes over 170 platform presentations, six eminent keynote speakers, workshops, electronic posters, technical tours including an opportunity to tour the AWQC

Dear Aquatalk Subscriber

Welcome Message

Expansion of our services to meet the ever growing challenges faced by the water industry continues to be a key focus for the Australian Water Quality Centre. The quest for analytical methods that provide faster, robust and more sensitive means of assessing water quality is an ongoing endeavour. In this month's issue we share with you two key developments for the analysis of algal toxins and particulate matter. OZWATER'11 is fast approaching, and AWQC will be holding laboratory tours and a special networking event – stay tuned!

Karen Simpson, Manager Laboratory Services and Chris Saint, Manager RDI



NEW METHOD !! Particle Size Distribution via Liquid Optical Particle Counting

laboratories. Visit us at the extensive trade exhibition and register for AWQC's Networking Event. To find out more about Ozwater go to ([Ozwater '11](#)).



AWQC Runners up in the Wateraid volleyball competition

AWQC Team, the Sludge Pots were runners up for the Wateraid fundraiser - Mixed Beach Volleyball Tournament held on the 18th February. The AWQC team competed with 20 other teams from organisations supporting Wateraid.

WaterAid is an international development agency and charity. WaterAid's vision is of a world where everyone has access to safe water and sanitation. Safe water and sanitation are fundamental to life and everyone has a right to these basic services. For more information on WaterAid in Australia [click here](#).



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Traditionally turbidity has been used as a simple measure to monitor levels of particulate matter in source and treated waters. While effective, turbidity provides limited information in regards to the composition of the particulate matter. AWQC is experienced in analysing samples from membrane processes (microfiltration to reverse osmosis), surface water, conventional treatment processes involving coagulation, sedimentation and filtration, MIEX treatment and distribution systems. This data can provide extra information to assist with design of new, or trouble shooting existing treatment plants, evaluation of particle removal capabilities of different treatment processes, distribution system management and much more. The test is applicable for a variety of liquids including, but not limited to, raw source water, seawater, treated water and recycled water.

Two different counters are used for different size ranges (0.5 to 20 micron or 2-125 micron) depending on requirements. To view a fact sheet with further information on Particle Size Distribution [click here](#).

UPDATED METHOD !! Comprehensive Toxin analysis

Saxitoxins, also known as paralytic shellfish poisoning (PSP) toxins, are produced by cyanobacteria in fresh and brackish waters. They often contaminate source waters and cause the death of wildlife and domestic animals throughout the world.

The Organic Chemistry Laboratory at AWQC has recently released a new test method: **LC/MS/MS — a screening method for 13 STX analogues**. This new analysis provides comprehensive set of test results, which can be precisely correlated to cell speciation and counts, and hence to provide the detailed toxin profiles and an early indication of the toxicity of an algal bloom.

This method is the fastest and the most reliable analytical method to date for the screening of PSPs. It can be used to analyse any type of surface waters which contain cells and well suited to monitoring algal blooms in rivers and reservoirs. To view a fact sheet on Cyanobacterial Toxins [click here](#).

COLLABORATION with Metropolitan Water District of Southern California is “blooming”

As we mentioned in our November issue, two researchers from AWQC recently attended the American Water Works Association's annual Water Quality Technology Conference in Savannah, Georgia. Gayle Newcombe and Peter Hobson presented five of the six presentations at a special topic session on cyanobacteria organised by the major water research funding body in North America, the Water Research Foundation (WaterRF). Gayle is principal investigator on a project co-funded by the WaterRF which aims to determine the optimum conditions in conventional treatment plants for removal of toxic cyanobacteria. The MWDSC was keen to collaborate on this project as, although they have long-standing expertise in cyanobacteria and tastes and odour compounds, the issue of

cyano blooms producing toxic compounds is new to their research group. As a result, Gayle took the opportunity to stop over in Los Angeles to collaborate and learn a bit more about the MWDSC and water quality problems in Southern California.



ON-LINE MONITORING of Stormwater for Rapid Hazard Detection and Improved System Performance

Stormwater entering the River Murray close to the water supply pipeline offtake can have negative impact on river water quality. The implementation of a real-time monitoring system to assess potential water quality risk would assist the water quality and water treatment plant managers by providing an early warning system and triggering of operational responses. Recently, an on-line monitoring UV-Vis absorption spectrometry (S::CAN) was employed to facilitate the detection of contamination based on spectral examination. This advanced instrument is purposely designed for the water industry with built-in algorithms to determine water quality parameters, such as nitrate, turbidity, colour, UVabs, total and dissolved organic carbon.

Two sets of the latest real-time monitoring systems including the S::CAN Spectro::lyser equipped with carousel sampler were installed in Mannum (SA) at the stormwater drain and river offtake sites. Preliminary monitoring of a rain event during November 2009, revealed good agreement between laboratory analyses of stormwater samples with those of the S::CAN absorbance peaks, indicating the potential application of the real-time monitoring system for detection of chemical contaminants present in the stormwater discharges. AWQC will continue to investigate and validate this application.



Water Quality Solutions

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