

# OPERATOR

August 2016 Edition



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Con Pelekani doing the paperwork for the SAWater entries in the taste test.  
More on page 6.



Josh Tickell from NSW Health presenting at the NSW Interest Day.  
More on Page 8.

Vern Atkinson, Queensland Operator of the Year.  
Read more on page 9.



Newsletter of the WATER INDUSTRY OPERATORS ASSOCIATION OF AUSTRALIA

## FROM THE MD'S DESK

Hello to all our Members and welcome to the third edition of Operator for 2016.

It is really exciting to look back over the past few months and see the amazing results coming through the efforts of the whole WIOA team – staff, Committee, Board and volunteer helpers alike.

As we move into the second half of the year, the Advisory Committees in all States are ramping up their activities, with a range of Interest Days and other events planned. Engagement, ownership, contributions and participation by members in all States is a vitally important part of our future plans. We hope that members will support the efforts of the Advisory Committee members, attend the events and participate in all the other opportunities on offer to network and share knowledge.

As part of our advocacy role, WIOA has a position on a number of national Committees and project steering groups to represent the operational side of the industry. Due to the diverse nature and skills of our members, we are increasingly being requested to provide expertise to a wide range of projects on behalf of the industry. There is a growing list of examples where we have been able to enlist the skills and experience of members to participate on our behalf. Peter Tolsher from North East Water currently sits on the Standards Australia Committee looking into management of BioSolids (WS-039) and our Vice President, Adrian Rinjbeek from Xylem sits on the Standards Australia mirror Committee (WS-041) - Working Group 10 which is looking into Flushables and Microproducts in sewer systems. We have also had Jill Busch from Aqualift Project Delivery representing us through the development and stakeholder investigation stages of a Water RA project looking at the potential to develop a process to effectively manage the repair of burst water mains. The input provided by members and their employers is fantastic and there is likely to be even more opportunities like these in the future, so please help out when and if you can.

Our Queensland conference in June was a success with attendance numbers similar to those of 2010 when we were last in Rockhampton. The support from our hosts Fitzroy River Water and the members of the Queensland Advisory Committee was outstanding, with a large workforce at the event sharing the workload around. A full report on the conference and all the award winners appears from Page 4 in this edition.

Our WIOG cousins raised the bar to a new level in May this year in hosting the annual Operators tour to New Zealand. The trip into the Northland region of the North Island was a first for the WIOG/WIOA tour. Apart from being shown around a wide range of plants from small to extremely large, this trip allowed the Australian participants to experience some very special and memorable cultural activities that developed a real bond between all the participants.

As usual, a bunch of Kiwi operators are coming over to attend the Victorian WIOA conference in September. We have arranged a reciprocal tour to the central and northern areas of Victoria and our thanks are extended to the water

businesses and members who will be hosting the Kiwis at their plants.

Later in this issue there are reports on the very successful Taste Test and Operations Interest Days held recently in South Australia and Tasmania. A big thank you is extended to Ian Johnson for sharing his own inspirational story at each of these events. It is great to have someone so generous and committed to WIOA and keeping operators informed. I am sure that everyone who hears him speak leaves with a renewed safety commitment.

Once the Victorian Taste Test is completed at the Bendigo Conference, we will know the 5 State based Taste Test winners for 2016. Just like 2015, we will be staging a national grand final at the Water Interest Day to be held in Marysville in October, organised as part of Water Week celebrations. The sample judged the best in the nation will then represent Australia in the International Taste Test competition in the USA in February 2017. In the midst of all the Olympic hype, it's appropriate to exclaim "may the best drop win and bring back the GOLD!"

In what we hope will be the first of many joint events, we teamed up with **qldwater** and the AWA Queensland Branch to stage a day in Townsville in July. Being held the day before the AWA FNQ Regional Conference allowed us all to collaborate and bring together an excellent program of speakers, primarily showcasing the management of operational issues in a tropical environment.

The roll out of water treatment operator Certification has continued with the number of certified operators Australia wide now reaching 80. It is exciting that we will be presenting the credentials to our first certified operator from South Australia in late August. Also on certification, in conjunction with **qldwater** and a number of Councils in the South East Queensland area, we will be undertaking a pilot of the Wastewater Certification Framework developed in 2015. With the pilot being undertaken in the next couple of months, we hope to be able to certify the first batch of wastewater treatment operators at our 2017 Queensland Conference.

The other exciting news is that we are about to start a project to develop a certification Framework for recycled water operators with support and assistance from the Australian Water Recycling Centre for Excellence. The plan is to make both these Frameworks robust enough to allow them to be used by all states and territories in the future.

Finally, our attention has now moved over to finalising the arrangements for the Victorian conference. There is an outstanding and diverse platform and poster paper program and the sell-out exhibition will provide attendees access to 158 of the world's leading water industry companies showcasing their latest products and services. All this makes the WIOA conference a "must not miss" event for Victorian based operational people and we look forward to a strong turnout.

Until next time,

**George Wall** – WIOA Managing Director

## PROFILE OF A MEMBER



**Name:** Maddison McCarthy

**Position:** Assistant Water Treatment Operator

**Employer & Location:**

Toowoomba Regional Council - Mt Kynoch Water Treatment Plant

**How long have you worked in the water industry and what attracted you to it?**

I began working for the Water Industry in February 2014 undertaking a 2 year Traineeship with Toowoomba Regional Council. Before starting my traineeship, I had absolutely no knowledge about Water Treatment and its processes. But I did know I was unhappy with the current job I was in and wanted to try something different, so when the opportunity arose for the traineeship I took it with an open mind and leaped into the unknown. I have now been working for the Toowoomba Regional Council for 2 and a half years, have completed my traineeship, have a full time role and I am now a fully qualified Assistant Water Treatment Operator. I never thought that I would be in the type of career I am today but I find myself being excited to get up in the morning and go to work and that is something you don't get often.

**What do you enjoy most about your job?**

I love the variety I have with my work. I hardly ever find myself sitting in an office (apart from when entering data), but most of the time I get to spend out and about like at the Dams – Cooby, Perseverance and Cressbrook – which are Toowoomba's 3 main water supplies. I get to assist the Dam Operators with daily duties such as treatment of the water for campers and onsite personal and Pump Station maintenance.

I enjoy being out on 'Town Run' where I am the eyes and the ears of the System Control Operators conducting multiple tests of the water from Reservoirs, Bores and Sample Taps all over Toowoomba and maintain all Pumping Stations and Bore sites operating correctly.

Working at the Water Treatment Plant, I conduct multiple tests on all types of water quality to ensure they are at their correct levels and to ensure all water leaving the plant is with the correct guidelines of HACCP and the ADWG.

**What are the major challenges in your current role?**

The most major challenge is to provide Toowoomba City with Safe Clean Drinking Water. We receive all different types of water qualities so treating the water correctly is vital.

**How long have you been a WIOA member?**

I have been a member for only a few months now after joining before going to the Queensland Conference in Rockhampton. This was my second time going to the WIOA conference. Both experiences have been wonderful to find out about new products and to attend the presentations and posters. I love hearing about different people's experiences and their outcomes. I participated this year, talking about my experiences starting out as a Trainee into an industry I didn't know much about and my challenges along the way. I really enjoyed sharing my experiences.

**How do you relax?**

I enjoy spending time with my family watching movies, hanging out around home together, spending time with my friends out for a bite to eat or spending time with my boyfriend hanging out and doing fun things like going for a bike ride or going bowling. Other than that, I am constantly on the go from work to trainings in Brisbane and back again, so when it comes to having down time I like to do nothing but relax with good people.

**Where do you live and what's the best thing about it?**

I live in Toowoomba and the best thing about Toowoomba would have to be that it is a lot smaller and quieter than the big cities like Brisbane and the Gold Coast. It is an upcoming City that is expanding into the culture of Brisbane with unique Café's, Bars and Boutiques opening up everywhere. I like living in Toowoomba because it's easy enough to holiday somewhere like the Gold Coast but there is no better feeling than coming home to where everything slows down a bit.

### QUICK QUESTIONS

**Age:** 20.

**Nickname:** Maddi or Mads.

**Family Status:** Eldest child of two, little sister 14y/o (Ella).

**Pets:** 2 Dogs – Staffy named Kosta (for Kost a lot of money) and a Bullmastiff x Wolf Hound named Benson.

**Favourite food:** Garlic Bread.

**Least favourite food:** Snow Peas.

**Favourite TV show:** Game of Thrones or Orange is the New Black.

**Worst TV show:** Big Bang Theory.

**Favourite Movie:** Too many to choose from...

**Favourite Musical artist/s:** Florence and the Machine, Angus and Julia Stone, Lorde, Sticky Fingers, Lana Del Rey & Meg Mac.

**Favourite book:** Don't really have one.

**Favourite team:** The Australian Rugby 7's women's team. I have known most of them from growing up with them in Toowoomba and playing rugby 7's alongside them. They are such inspirational and amazing and now "golden" girls.

**Ambition in life:** Stay Gold – stay true to yourself don't try to be anyone else but yourself

**Hobbies:** Playing sports like Touch Football and Rugby 7's, spending time with friends, family and the boyfriend, and being crafty.

**Best Trait:** I'm very independent, confident, outgoing and happy.

**Worst Trait:** Stubborn and a control freak.

**Four people to invite to dinner:**

1. A family ancestor that dates back to the early centuries so I could ask questions about how we came to live in Australia.
2. I'd like to invite my mum when she was my age of 19.
3. My future self when I am 60 y/o.
4. My Nana on my mums side – she passed away a day before my first birthday so I was too young to remember her.



The 41st Queensland Water Industry Operations Conference and Exhibition was held at the Central Queensland University Sports Centre in Rockhampton on 1 & 2 June 2016.

Delegates were officially welcomed by the Mayor of Rockhampton, Councillor Margaret Strelow.



Adam Lovell from WSSA presents the opening address in Rocky.

Adam Lovell from the Water Services Association of Australia (WSAA) engaged all in attendance with his presentation on the challenges that will be present in managing more complex water systems in the future.

The Keynote Address by Richard Petterson from Queensland Urban Utilities on their Innovation Centre was well received.

The event concluded with the official Awards Dinner and presentations, which saw Vern Atkinson from Cairns Regional Council win the Leon Henry Memorial 2016 Queensland Operator of the Year, and Ben Pennell from the City of Gold Coast being awarded the 2016 Young Operator of the Year Award.

The Award for the Queensland Operator of the Year (Civil/All Rounder) could not be split which required two awards to be presented. Congratulations to both Kent Weeden from City of Gold Coast and Matthew Weeks from Banana Shire Council on being recognised for the contributions they make to the industry.

A number of other operational employees were recognised at this event including Gary Fenwick from Queensland Urban Utilities who won the Best Paper by an Operator as well as the Brian Davis Award for Best Paper Overall.

Once again the event included a comprehensive exhibition with over 100 sites where companies exhibited the latest in equipment, services and process technologies available to the water, wastewater and liquid conveyancing industries. Glacier Filtration, a first time exhibitor, was awarded the Ron Bergmeier Award for the Best Exhibition Site at this year's event.

The conference again hosted the Ixom Water of Origin Taste Test that saw the Queensland entry from the Barcaldine Regional Council defeat the sample from Nambucca Shire Council in NSW. Queensland now holds a 3 to 1 winning record over NSW and will no doubt be back to take them on again in 2017.

After running a Charity Bowls Day earlier in the year and a raffle at the conference, WIOA presented a cheque for \$2,500 to Capricorn Animal Aid to assist with the good work it provides for the community. Thanks to all the members and supporters who helped raise these funds.

## Award Winners

Congratulations to all the award winners from the Queensland Conference and Exhibition.

### Queensland Operator of the Year

**Vern Atkinson** from Cairns Regional Council

### Queensland Young Operator of the Year

**Ben Pennell** from City of Gold Coast

### Queensland Operator of the Year (Civil/All Rounder)

**Kent Weeden** from City of Gold Coast  
& **Matthew Weeks** from Banana Shire Council

### Brian Davis Award for Best Paper Overall

**Gary Fenwick** from Queensland Urban Utilities

### Nalco Water Prize for Best Paper by an Operator

- 1st **Gary Fenwick** from Queensland Urban Utilities  
2nd **James Castle** from Unity Water  
3rd **Aron Smith & Peter Wallace** from Cairns Regional Council

### Best Poster Paper by an Operator

- 1st **Scott Nichols** from Toowoomba Regional Council  
2nd **Mark Swadling** from Toowoomba Regional Council  
3rd **Kristy Walker** from Banana Shire Council

### IXOM Water of Origin Taste Test

Queensland (Barcaldine Regional Council) v NSW (Nambucca Shire Council)

Won by **Queensland, Barcaldine Regional Council**

### Ron Bergmeier Award - Best Exhibition Site Glacier Filtration

### WIOA Conference Charity

\$2,500 Presented to **Capricorn Animal Aid**



Queensland Conference Images 2016.

# CONFERENCE REPORT



Winner Best Paper Overall - Gary Fenwick (R) from QUU with Shane Wholsen from Iwaki Pumps.



Winner Best Poster by an Operator Scott Nichols (L) from Toowoomba Regional Council with Jim Martin from WIOA.



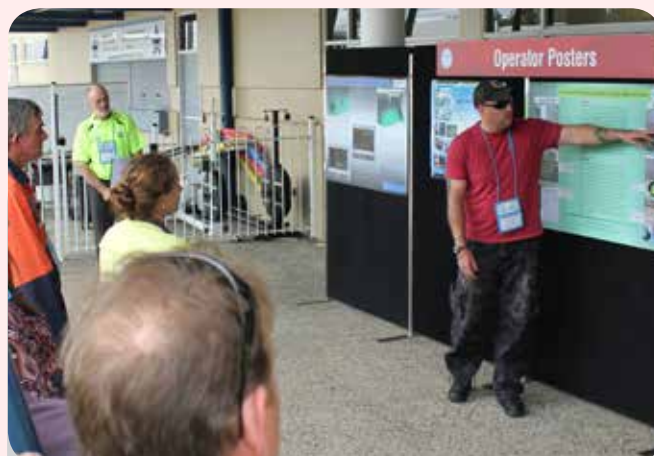
The team from Glacier Filtration took out the Ron Bergmeier Award for Best Exhibition Site.



Winner Best Paper by an Operator, Gary Fenwick (L) with Veronica Watson from Nalco Water.



Divided loyalties on Water of Origin night.



The posters held outdoors was a great success.



# COUNTRY WATER SA'S BEST

Around 30 operators gathered at the TAFE SA, Tonsley Campus on Wednesday 6 July 2016 for the WIOA Operations Interest Day and second annual IXOM South Australian Water Taste Test competition.

Bob Arnold from IXOM provided an overview of operations explaining that IXOM is not just about providing chemicals but operations service as well.

Keynote speaker Ian Johnson delivered on his own personal experiences from a workplace accident. Ian's powerful messages really hit the spot and gave all attendees plenty to take back to the workplace and more importantly to their homes. It is a real credit to his character that Ian is able to speak so candidly and openly about his experiences, and his determination to succeed in the face adversity just has to be admired.



*Ian Johnson presenting in South Australia.*

Other speakers on the day included Helen Beard who explained Allwater's energy management system, Adam Williams from AWQC who reviewed the importance of calibrating field equipment and Paul Beauchamp of TAFE SA who reviewed current disinfection technologies in SA.

Then came the pointy end of the day - the second IXOM South Australian Water Taste Test. There were 16 samples submitted from different plants across the state. Four tables were set up with each having 4 samples randomly allocated in a blind sample format. Attendees at each table were given the opportunity to taste their 4 samples and have their say on appearance, odour and taste.



*South Australia Taste test grand final judging.*

The heats were not taken lightly, and looking around the room you could have easily mistaken that the panellists were judging Barossa Valley, McLaren Vale, Clare Valley, Adelaide Hills or Coonawarra wines, instead of water from around SA.

The sample judged as best from each table went on to the Grand Final and they were: Penneshaw, Morgan-Peterborough, Mount Pleasant and Summit Storage.

While WIOA's MD George Wall did a run down on activities in the past year, an independent panel tasted and evaluated the four Grand Final samples.

Bob Arnold from IXOM announced that the winner of the Best Tasting Tap Water in South Australia was Morgan-Peterborough. The day concluded with a tour of the local Oaklands Wetland Scheme designed as part of Adelaide's future waterproofing project to harvest stormwater, remove contaminants then ASR injection and extraction for irrigation and third pipe water reuse.

The day provided a great deal of relevant information to the attendees and we look forward to even more support for future events.

***Contributed by Neil Crossing, WIOA SA Advisory Committee Chair.***



*Attendees at the IXOM 2016 South Australian Water Taste Test held at TAFESA Tonsley Campus.*



*The serious business of taste testing.*

## MORGAN WATER TREATMENT PLANT FROM MORGAN TO WHYALLA

The Morgan Water Treatment Plant was the winner of the Ixom 2016 South Australian Water Taste Test with a sample that came from a customer's tap in Peterborough, 250km north of Adelaide. The Morgan Water Treatment/Filtration Plant is a Conventional Treatment Plant that sources its water from the Murray River. The plant treats between 800 L/s in winter and up to 2300 L/s in summer in response to fluctuations in demand. It is a Chloraminated system using Chlorine and Ammonia for prolonged disinfection retention.

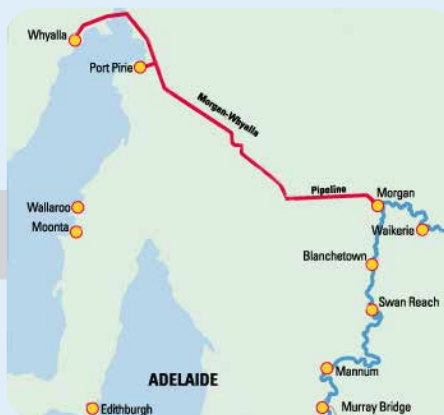
The plant was designed to provide safe, clean drinking water to the local and wider communities of the Iron Triangle, Port Pirie, Port Augusta and Whyalla steel works smelters. It also services the Mid Northern regions such as Peterborough, Burra, Clare, a hospital at Eudunda and the Yorke Peninsula with a section of pipeline that is submerged under the sea and links across the Spencer Gulf.

On site is a 12 ML storage tank with 4 pumping stations between Morgan and Whyalla. Outside of Whyalla, the system is connected to the largest gravity fed pipeline in the Southern Hemisphere from the Hanson Storage Tanks of 134 ML.

**Contributed by Brett Hill, Morgan Water Treatment Plant Operator.**



2016 Winner Morgan WTP  
Brett Hill (L) with Con  
Pelekani from SAWater.



Morgan to Whyalla  
Pipeline.

## ROAD BOSS "SUPER ADDITION" OUTBACK CHALLENGE

McBerns General Manager, Noel Southern and his driving partner Don Reed will be joining the Road Boss "Super Addition" Rally for the challenge, camaraderie and excitement with the added benefit knowing that they will be helping Australians who are doing it tough.

Starting off from Port Macquarie, the Rally will embark on an incredible 7000 km 'cross country' adventure to the West Coast of Australia, all for a good cause "GIVIT" Charity. This rally will be long, tough and will go where most people say it is just too damn hard.



*We hope they don't get into any deeper water than this!*

Noel & Don will encounter amazing country and scenery from beginning to end. The 'Super Addition' will use plenty of tough tracks through private properties and little used or known by-ways. There'll be overnight camps at tiny communities and towns in the heart of the Australian bush or just a bush camp in the scrub under the stars.

The highlight and feature of the trip to the west will be traversing the famous Anne Beadell highway from Cobber Pedy to Neale Junction and onto Laverton. This leg of the journey will be long, tough and logistically challenging. Some may even say impossible.



*Noel from McBerns driving the car affectionately known as Old Snooty.*

McBerns and WIOA are helping out by sponsoring Noel and Don's vehicle, a 1999 AU Ford Falcon Ute that has been lovingly converted so it will handle the rough terrain.



# NSW WATER INTEREST DAY

MidCoast Water welcomed a wonderful turnout of more than 50 to the WIOA, MidCoast Water interest day held at the Tea Gardens water treatment plant on Wednesday 27 July.

Great presentations were delivered by Belinda Green from Aquagreen Project Solutions on review of chemical dosing interlocks, Krista Hazelett from Pall Corporation on membrane filtration technology and Josh Tickell from NSW Health on incident monitoring, management and response.



*Krista Hazelett from Pall Corporation presenting.*

We cannot thank the presenters enough for donating their time and expertise to this event. It is important for operators to network and be exposed to new and exciting technologies and systems and hopefully we all came away with something new to take back to our councils.

An open forum /workshop on Standard Operating Procedures was then conducted by Jill Busch, Dave Bowland, Josh Tickell and Murray Thompson. This session saw operators working together and exchanging ideas for the benefit of the industry.

Pall Corporation sponsored the day and generously provided lunch for the attendees and without this support, these interest days would not happen. Thanks Pall Corporation.

After lunch there was a presentation by Craig Smith on the town's water supply and the difference the new water treatment plant has made.

Shannon Dougherty and Corey Bates then conducted a tour of the plant.



*Murray Thompson presenting training certificates to the Kempsey boys.*



*Tour of the Tea Garden membrane plant.*

Special thanks must go to Jill Busch and Craig Smith. Jill and Craig organised most of the event with the assistance of Craig at WIOA. Overall it was a very interesting day and another example of great people doing great things for our industry.

If anyone has any ideas for future events please do not hesitate to contact the team at WIOA.

**Contributed by Lindsay Walsh from MidCoast Water**

## WIOA look-alikes



**Stephen Walters**  
Logan City Council



**Felonius Gru**  
Dispicable Me



**Mark Samblebe**  
Aeramix



**Officer Coates**  
Orange is the New Black

**If you know of a WIOA member who has a look-alike send us a photo.**



# VERN TAKES HOME THE QUEENSLAND OPERATOR OF THE YEAR AWARD

Vern Atkinson, Team Leader Northern Wastewater Treatment Plant (WWTP), from Cairns Regional Council has been awarded the prestigious Queensland Operator of the Year for 2016.



AUSTRALIAN  
WATER  
ASSOCIATION

*Vern (R) being presented the award by AWA Qld President, Matt Dawson.*

Vern commenced working with Council in 1984 as a casual surveyor's assistant. He started working as a wastewater treatment plant operator in 1986 at Southern WWTP. Throughout his time as an operator, he has steadily worked up the ranks from assistant plant operator until now where he is currently employed as the Team Leader of Northern Wastewater Treatment Plant.

Vern moved from Southern WWTP to Marlin Coast WWTP to take the role of Senior Operator in 1997. He continued this role from 2001 to 2002 when he moved to Northern WWTP. During this time he obtained his Certificate 2 in Water Industry Operations.

From 2002 to 2007, Vern was Team Leader of both Northern and Marlin Coast WWTP's. A separate Team Leader role was then created at Marlin Coast due to the increase in workload. During this time he obtained his Certificate 3 in Water Industry Operations.



*Vern cleaning turbidity meter.*

Vern was also Team Leader of Northern WWTP during the Cleaner Seas Alliance upgrade that occurred from 2006 to 2009. At the conclusion of this, Northern went from a conventional oxidation ditch plant to a state of the art Membrane Bioreactor plant (MBR).

Vern has been involved as a fill in operator at all the wastewater treatment plants across Council at some time or another during his career.

The first plant that he worked on (Southern WWTP) was a Tricking Filter plant which was a largely manual process. This is in stark contrast to the state of the art, fully automated Membrane Bioreactor plant which Northern has become.



*Vern doing some lab testing.*

He is currently responsible for the day to day operation of Council's largest wastewater treatment plant, Northern. Northern WWTP has been designed for 22.5 ML/day ADWF and currently runs at 17 ML/day during the dry season. This can increase to as high as 95 ML/day during the wet season before bypass occurs. Vern is responsible for 4 staff as well as ensuring the day to day operation of the plant conforms to its environmental licence.

Vern is an experienced and knowledgeable water industry operator, well respected by his peers within Council. He enjoys training new operators, conducting tours and sharing his knowledge with other people. He also enjoys problem solving and troubleshooting the plant, as well as working on ways to make it run more efficiently. His desire is to see the industry move to more advanced wastewater treatment systems, such as MBR's, due to the increased effluent water quality produced and the reduction in chemicals required in the treatment process. He also would like to see the public made more aware of the impact illegal dumping has on wastewater treatment plant processes and release quality along with the resulting cost to rate payers and man hours involved to bring the plant back to normal operation.



*Vern monitoring plant.*

## QUEENSLAND OPERATOR OF THE YEAR (CIVIL/ ALL-ROUNDER)

The judges were unable to separate the achievements of two great assets to our industry, so this year they elected to present this award to two operators.



QLD Operator of the Year (CivilAllrounder) Matthew Weeks (L) with Dave Cameron and Kent Wedon (R).

Our first recipient was Matthew “Tractor” Weeks from Banana Shire Council. Matthew has been in his current role for only a few years, having previously worked with Council as a labourer, plumber and privately as a plumber. Matthew has, among his many achievements in his current role:

- Introduced new technologies including a valve exercising trailer which led not only to a great proactive maintenance program but job crew redesign and efficiencies
- Changed procedures to improve council’s customer service and visibility in the community and led by example in completing jobs with a significant impact on customers
- Implemented new safety procedures including working with asbestos.

Our other award winner was Kent Weeden, from City of Gold Coast, whose attention is normally focussed on the achievements of his colleagues than his own. His achievements in council are too many to list, so consider this a highlights reel:

- He has led cultural change in driving safety improvements as well as improving safety procedures
- He is a pragmatic technical expert sought out for his experience in new initiatives like the development of new manhole lids, and council’s sewer relining program
- He is a role model for ongoing professional development, operating at both the strategic and operational level, particularly with the Water Industry Worker program. His advocacy has seen this initiative transform from training which was seen as an impost to a mature program where there is a constant waiting list, and he has persisted through a crazy amount of organisational change to keep the initiative going from strength to strength.

The award is sponsored by **qldwater**, provides Tractor and Kent a contribution towards professional development which could be used for opportunities such as training or to attend another conference.

## QUEENSLAND YOUNG OPERATOR OF THE YEAR

Ben Pennell from the City of Gold Coast took out the 2016 Young Operator of the Year (sponsored by **qldwater**) that was presented at the WIOA Conference Awards dinner in Rockhampton.



QLD Young Operator of the Year - Ben Pennell (L) with Dave Cameron, CEO qldwater.

Ben receives an all-expenses paid trip to join the WIOA tour of water and wastewater facilities in New Zealand in 2017 which will include attendance at the Water Industry Operations Group NZ conference.

Ben has demonstrated exceptional customer service going above and beyond in the interests of customers and promoting a positive image for his employer.

He is the Workplace Health and Safety representative for an operations team of approximately 50 field staff, drives implementation of new procedures and effectively represents the team’s issues with management.

He developed new processes to support the roll out of iPads within the Works Management System and actively helped his team both adapt to the new technologies and the technologies to be relevant for the team. He has completed Cert II, III and IV in water operations amongst others and will soon commence a Cert IV in construction supervision.



Ben Pennell (R) at work.



## QUEENSLANDERS PREVAIL AGAIN!

It was a great night for Queenslanders at the WIOA Conference in Rockhampton in June with a win over NSW in the first of the 2016 State of Origin games. The night was made even better for Queenslanders when the sample from Barcaldine Regional Council was announced as the winner of the Ixom Water of Origin Taste Test held at the Conference. Queensland has now beaten NSW three years in a row and holds a 3-1 lead over its southern neighbour.



**IXOM**

Glyn Parry (L) from Ixom presents the 2016 Water of Origin trophy to Allan Luyt from Barcaldine Regional Council.

The Barcaldine Regional Council delivers its Great Artesian Basin water services to five small towns including Alpha, Aramac, Barcaldine, Jericho and Muttaborra. Their sample took on the NSW winner, Nambucca Heads, in the fourth Ixom Water of Origin Taste. Voting was close but it was the Queenslanders who again got into celebration mode!

Barcaldine Mayor Rob Chandler said he is extremely proud of Council's staff and the Taste Test was a great opportunity for them to be recognised for the superb job they do in providing top quality water to its residents.

"To win yet another award for our water is proof of the consistent efforts of the team in Barcaldine. The Outback Regional Water Alliance has assisted many outback Councils with their water services and Council is thankful for its help."

Mayor Chandler said the Award showed that Western Queensland has great water and encouraged tourists to venture west to try for themselves what the Great Artesian Basin has to offer.

The Barcaldine Water Supply Scheme sample, along with all of the other water taste test state winners, will be invited to join the National championship to be held in Marysville, Victoria in October, where WIOA will announce which utility provides the Best Tasting Tap Water in Australia.

The Barcaldine Water Supply Scheme is also featured in this edition's "Birds Eye View" centre spread.



Celebrating Queensland's three-peat in the Water of Origin, Dave Cameron, Allan Luyt and WIOA's Col Haynes.



A bunch of proud Queenslanders on stage.

## CULTURAL EXCHANGE

The participants on the WIOA Operators tour to New Zealand were fortunate to spend a couple of very special nights at Waipoua where they got to experience much of the Maori culture first hand.

To commemorate the visit, a special plaque celebrating our Kwaty Award and the linkage between WIOA and our Kiwi Cousins from WIOG NZ was presented to the Te Roroa community. The plaque was well received and we are told will have pride of place in the community centre for many years to come.



Sonny Nesbit with the commemorative plaque

# BIRDS EYE VIEW - Facilities Members Operate

Barcaldine Regional Council - Queensland

## Barcaldine Water Supply Scheme

The Barcaldine water supply is composed of two sub artesian bores. Pomona is pumped into ground level reservoirs and then pumped directly into the reticulation system. The water meets Australian Drinking Water Guidelines without any treatment required.

Barcaldine has a current population of 1,440 permanent residents and has a current population of 1,440 permanent residents and has a current population of 1,440 permanent residents.

The sample from Barcaldine was the winner of the 2016 Ixom Water of Origin Taste Test.





## Great Artesian Basin (GAB)

The Great Artesian Basin (GAB) covers approximately one-fifth of the Australian continent and contains  $8.7 \times 10^6$  GL of groundwater in the Jurassic sandstone aquifers. It is the largest groundwater and artesian basin in the world. The basin is located under mostly arid and semi-arid landscapes to the west of the Great Dividing Range. In the Barcaldine area the capping of existing free flowing aquifers has improved the pressure in the main town aquifers.

Barcaldine is located in the Eromanga Basin. The GAB is recharged by rainfall and stream flow infiltrating into the exposed sandstone on the edges of the basin. One of the first drilling of the GAB occurred in 1887 in Barcaldine, comprising of a free flowing artesian Bore. Currently there are two bores in Barcaldine (Pomona and Acacia Street). Pomona Bore has an annual allocation of 446 ML and the Acacia Street Bore has an annual allocation of 904 ML.

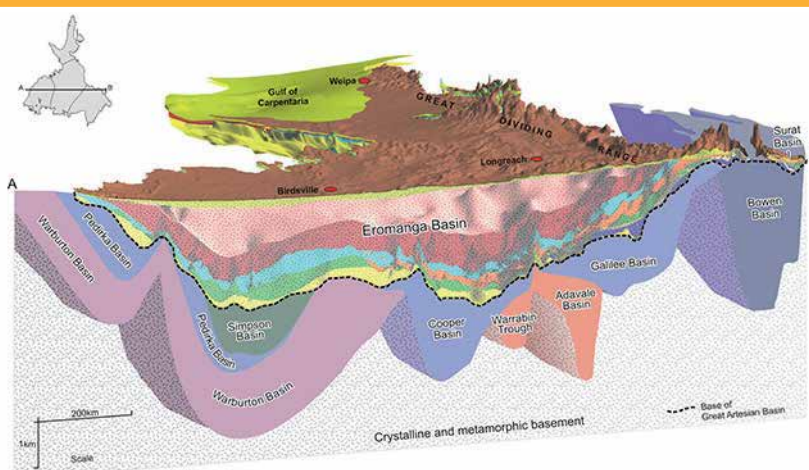
and Acacia Street bores are  
tion. Water quality meets the

nt demand of 2.012 ML/day.

Test representing Queensland.



Recharge, discharge and flow of the GAB and Barcaldine's relative location in relation to the GAB.



The bores are 460m and 465m deep and yield 37 L/s and 40 L/s respectively. The Acacia Street Bore has a free flowing pressure of 5m and free flowing yield of 21 L/s.

On the 29th April a group of eight adventurers began an epic journey to Aotearoa. This group of people came from all parts of Australia with different backgrounds and interests, however we all had one common interest, this being water and wastewater.

The following day by day account hopefully captures the interesting places we visited and the extraordinary people we met along the way.

## Day 1

With everything hopefully packed, part of the group met at the Melbourne Airport, the others were coming from Sydney and Brisbane. It's always interesting that initial meeting with people you haven't met before. The nervousness, trepidation, awkward hello's? Thankfully we are quickly placed in different areas of the plane which in hindsight we should have appreciated more, the solitude and quiet time was remarkable.

We arrive in Auckland around 5.00pm their time and have the usual extraction problems that happen at airports. We meet up with the other members of the trip, so more nervous hellos and awkwardness. We also meet for the first time our tour guide for the week, Damien Lawsen. Once we have located our rooms we all meet up at the bar for refreshments and snacks.

## Day 2

After a good night's sleep the trip has an early start. Our first plant visit is the Rosedale WWTP which is the 2nd largest WWTP in Auckland where we meet up with Sanjay. This plant caters for a population of 232,000 and has primary, secondary and tertiary levels of treatment. First impression of the plant is great with manicured lawns and terrific site layout. I still find it hard to believe that 80% of the plants energy requirements are provided via methane from the digesters. Final effluent is disinfection by UV treatment and discharged 3 kilometres out to sea from Mairangi Bay.



Sanjay showing the group around.

Back in the bus and heading to Whangarei WWTP. At this stage by popular demand a

DJ is nominated for music selection for the rest of the trip. As Julia Roberts once quoted, **Big Mistake**. We meet up with Andy at the WWTP who proudly shows off his plant consisting of mechanical screens, primary clarifiers, trickling filters, anoxic/aeration basins, digesters, rotating disc filters and U/V. The Archimedean screw pump was a sight to behold. The final water is then discharged to a huge landscaped wetland.

Next stop is the Whangarei WTP to catch up with Steven. Apparently Steven sounds the same as Chris over in Tassie, who would have thought? This plant is your typical sedimentation, filtration process with age issues which we can all relate to in our own areas. It was interesting to see some of the clarifiers



UV system at Whangarei WWTP.

empty, allowing us to better understand their layout and functions.

Right about this time the group senses some urgency from the Tour Leaders and everyone is corralled back in the bus and the trek continues. At this stage everyone in the group would have understood that some involvement relating to the Maori culture would be a given however, the extent of this interaction was an unknown. We arrive at Waipoua in the dark and after some detailed whispering commence the welcoming ritual. Not a soul in our group desired to offend this greeting, so everyone was on their best behaviour and listening intently to their life story as they accepted us into their family. Mind you if it was in English it may have been easier to understand.

## Key points recognised:

- *The Maori people are a friendly welcoming and culturally enriched race.*
- *When rubbing noses with the males judge distances carefully as they have very hard heads.*
- *With the ladies DO NOT RUB NOSES, touch cheeks only. Repeat DO NOT RUB NOSES.*
- *Thanks to Sonny, Snow and Jane for accepting us.*

## Day 3

After a restful night sleep dreaming about little red headed people who apparently spirit you away if you stray from the path (Maori folklore) we all meet for breakfast. Jane then takes us to visit a tree. I was a bit of a sceptic relating to this, really? A tree? How special can that be? Don't you love it when you're proven wrong. Tane Mahuta is a 2000 year old Kauri tree. Its trunk girth is 14 metres and total height 52 metres, truly impressive and so important to the Maori culture.



The tour group with Tane Mahuta.

After this Sonny and Snow organise to take us beach fishing after snapper? Is that possible? One thing that is brutally obvious by this stage is that time is different over in NZ which makes it hard to keep to a timetable.



# T SCOOTERS) NZ TOUR 2016

For your benefit, if over there use a fudge factor of 6. Hence if locals say only 5 minutes to get there, multiply by 6 = 30 minutes.

And yes you can catch snapper off the beach with most people being successful. It's not fair to mention the people who didn't catch a fish but better luck next time John from WIOA.

After this it's back to clean up and have a traditional hangi along with some of the fish we caught that day. After this there was a ceremony and gift exchanging where George presented Sonny and Snow with a plaque designed by our own aboriginal people.

## Key Points of the Day:

- *How do you lose or miss a 6' 4" fellow named Mark and then have to go back and get him?*
- *Contrary to beliefs Heidi didn't get the biggest fish, Wayne won this honour and deservedly became named as Russell, please don't ask why.*
- *Wooden fishing rods are highly overrated.*
- *No, we haven't spotted a kiwi as yet.*



Wayne, AKA Russell  
catching snapper off  
the beach.

## Day 4.

Early rise and after breakfast we say our official goodbyes to our Maori friends with everyone richer for the experience. As a group we can't express the gratitude to Sonny, Snow, Jane and family for providing us this opportunity.

Back on the road again and heading from the West Coast to the East Coast with everyone on board this time!! There has been a configuration change within the bus with Crocodile Dundee (Geoff) sitting up the front to help Damien with directions. Another

thing learnt whilst in NZ is when the GPS indicates turn right (or left), apparently you must do the opposite, which we did religiously.

We meet up with Peter who showed us the Rawene WWTP (Lagoon and the smallest step screen ever built) and the WTP (In house Clarification/Filtration) and then head to Kaikohe WTP where we meet Jason. I think someone must have phoned ahead and warned Jason about our group because he certainly wasn't taking any nonsense when showing us his Clarification/membrane plant. A few members of our group walked away from this tour with their tails between their legs. Popular comment was "Jason had eyes in the back of his head."

Paihia WTP is our next destination which to our surprise is just upstream from the Paihia waterfall. Sorry Peter and Terry for sight seeing and making you wait. This is a Clarification and Pressure Filtration plant with a spectacular backdrop. We next catch the Ferry over to Russell to look at the WWTP with Chris, which interestingly discharges the treated effluent back to the underground aquifers. Finally we make our way back to Paihia for our overnight stay.



Chris showing us around the Russell WWTP.

## Day 5.

Slower start today apart from George who looked very sprightly! We visit the Waitangi Treaty Grounds and tour the museum which is surprisingly enriching considering the groups state.

We head back to Auckland for the Conference however, we couldn't resist stopping and visiting Sheepworld, really? Some members of the group thought this was a different sort of establishment and were surprised to find it wasn't what they thought. However, a certain member of the group quickly adapted to suit (Tasmanians!).

Nearly forgot to mention Ben's input at this stage once everyone is back on the bus. Ben generously shared something he had obviously been storing for the whole trip which everyone was thankful for, THANKS BEN!!

We all attended the Chairman's Dinner, no thanks to Damien and his astute aeroplane spotting whilst driving, and have a great night meeting our colleagues from across the water.

## Day 6 & 7.

The WIOG conference takes up the next two days with technical papers and trade displays. The interaction and networking over the two days was extraordinary. Thanks to our neighbours for making us feel welcome and congratulations to Elysia Butler for winning Best Paper.

## Day 8.

Toured the Mangere WWTP in the morning. This plant is huge and treats an average inflow of 300,000 m3/day. To be honest the size and complexity of this plant was personally a little daunting. Fully recommend to anyone who has the opportunity to visit this complex to do so. The afternoon was assigned to sightseeing in Auckland and included the waterfront walk, thrill seeking rides (never again), casino, and the Sky Tower.

## Day 9.

Travel home today and looking forward to some quiet time on the plane. Then the Goodbyes. It is amazing how attached you can get with a group of strangers in a short period of time.

Special thanks to George (WIOA), Damien Lawson (Tour Guide and entrepreneur), Sonny, Snow, Jane and family, WIOG, John and Denise Clemens and all our NZ counterparts for going out of their way to make this trip so memorable.

**Contributed by Brian Scobie from North East Water**

## COTTER DAM FULL TO THE BRIM

Canberra is rejoicing right now as the newly constructed Cotter Dam sits at 100% full now holding 79.4 gigalitres and has been spilling since early July. The new enlarged Cotter Dam was opened in October 2013 bringing with it a promise to bolster the long-term water security for the region and support the economic growth of Canberra for generations. The construction of the Cotter Dam was one of the major water security projects delivered following the drawn-out millennium drought. When the dam was opened, it was expected that it would take between 2 and 5 years to fill.



*Cotter Dam 99.6 full on 6 July 2016.*

The Cotter Dam has a rich history in the nation's capital, being a frequently visited attraction. The original Cotter Dam, a concrete gravity dam, was completed in 1915 and built to a height of 18.6m. It was raised from 1949 – 1951 to a height of 28.5m to accommodate a growing population. It served as Canberra's primary water source until the 1960s, when Bendora and Corin Dams were constructed.

The Cotter Dam construction statistics alone are impressive with a reservoir capacity of 79.4 gigalitres (increased from 4); 341 metres in width and 87 metres high. Construction saw 42 abutment blasts, 34 quarry blasts, 361,000 cubic metres of roller compacted concrete; and 1,845 rock bolts installed.



*Cotter Dam spilling.*

There were more than 3,000 workers, providing more than 2.5 million people hours on the job which averaged to 212 people on site per day across the project. Nearly 12,000 hours of formal safety training was undertaken with over 220,000 hours of identifiable safety specific activities delivered.

Over the time of the project, the safety aspects of the Cotter Dam project were heavily monitored with 67 regulatory visits to the site, with some taking two inspectors all day to complete. During the four year construction period, workers experienced temperatures ranging from -10 to 42 degrees. The ACT also recorded its heaviest rainfall period in recorded history with rain recorded on 19.6% of days worked, with an average fall of 13mm recorded on rain days.

The project was recognised through the receipt of ten industry awards including two Engineering Excellence Awards; two institute of Public Works Engineering Australasia awards; an Australian Water Association National Program Innovation Award; an Environmental Excellence Award from the International Erosion Control Australasia.

Canberra's water storage is now healthy and brimming, holding more water in the Cotter catchment than ever before, preparing the city as it embraces urban intensification, and the broadening of its regional footprint.

***Contributed by Angie Drake from Icon Water.***

## WHAT HAPPENS ON THE BOAT, STAYS ON THE BOAT

I recently took my lovely wife on a cruise to New Caledonia out of Sydney.

Some of the entertainment involved the passengers, and one was about the secret of marriage and knowing the other sex.

Three couples raised their hands to participate on stage: a pair of newlyweds, a 25 year old couple and a middle aged couple representing the 40 year upwards.



*Bernd and wife enjoying the dress up night on his cruise.*

The middle age male somehow rang a bell but I just couldn't slot him in.

The show was funny as and the entertainer and his volunteers certainly went for it, but that's enough of that, as what happens on the boat stays on the boat.

About a day later, sitting at the roulette table that middle aged fellow comes up to me and says: Is it Bernd? It's me, Graham (Rusty) Smith – we met at the WIOA weekend seminar. What can I say, what a small world we live in. My wife had actually prompted me at the start of the cruise to see how many people you know on the ship.

As would have it, apart from Graham, I also ran into two former 'us' Utility Services colleagues.

***Contributed by Bernd Vetter from Evoqua Water Technologies.***



# TASMANIAN WATER TASTE TEST

Another successful water taste test was held in Launceston on the 3rd August with 12 entries from across the state. The samples were all put under scrutiny by all those that attended the day with the four finalists chosen. The finalists were Burnie, Gawler, Yolla and Barrington.



*The Warratah WTP team were confident they would defend their title in the Tassie Taste Test.*

The grand final judges were chosen from our guest speakers, venue staff and last year's winner who was so

confident in going back to back they had already had a plaque with their name on placed on the perpetual trophy. In the end they had to eat humble pie as their plant did not even make the final. The samples were consumed and judged and it was Barrington who came out in front and was declared the winner for 2016.

The Interest Day included a number of interesting topics ensuring that attendees came away from the day with some information and knowledge gleaned from the technical presentations. Bill from Ixom presented on chemical delivery and handling, Paul from Suez gave us an insight into ice pigging water and sewer mains, the team from Worksafe provided an insight into the role of the inspectors (what they can and can't do) and the availability to have knowledge based officers that can be invited onto site to assist in getting things right to help us perform our work SAFELY. Jon-Paul from Aeramix provided a great demonstration on different surface protections and sealants with some remarkable results.



*Jon-Paul Marrow demonstrating some of the Aeramix products to the TasWater team.*

I have left our guest speaker to last. It was a presentation that touched everyone in the room greatly and gave us all something to really think about. This was Ian Johnson. Ian was involved in a confined space explosion/fire and shared his story of how many people this accident actually affected. Not just himself and his immediate family, but some fifty people that were involved either during or after the accident. Ian highlighted how other people risked serious injury to themselves without thinking of the consequences in order to help him.

Thanks go to Kate Blizzard for making a huge effort (from her death bed with the flu) to come along and experience what attendees take away from these days. If the advisory committee can work to get Ian to present to the majority of TasWater staff it would be a great achievement for the committee for the benefit of all TasWater employees.

Our numbers were lower than in previous years so we need to work on this a bit more to try to boost numbers to these events. Congratulations to all our presenters and to all who provided water samples, especially to the winning team from Barrington. The next step is to knock off the mainland samples later in year and have Tassie pronounced as having the Best Tasting Water in Australia.

***Contributed by Darren Lord from TasWater.***

## BARRINGTON IS TASSIES BEST

Barrington Water treatment is situated in North West Tasmania approximately a half hour drive from Devonport. The Treatment Plant was commissioned in March, 1986. Raw water is drawn from Lake Barrington.

It is a DAF plant capable of processing 5ML of water per day. The Plant is currently operated for 3 days a week producing 4.5 to 5KL per week, with approximately one third going to Railton reticulation system & two thirds going to Sheffield reticulation system, servicing a combined total of 1,167 customers.

Aluminium Sulphate is used, in conjunction with Hydrated Lime, for flocculation without any coagulation aid (poly) required. Chlorine gas is used for disinfection, Sodium Fluoride is used for Fluoridation & Hydrated Lime is used for final pH correction.

John Grainger has been the primary Operator of this plant since commissioning and has trained Christine Cottee from Sheffield STP (Sewerage Treatment Plant) in the last 3 years as part of Taswaters' multi skilling / cross training for staff, as stand in / relief Operator at the Water Treatment Plant.



*John Grainger (L) and Christine Cottee cherish their win.*

Upon accepting the award Christine was proud to claim "I even made it myself!", having operated the plant in Johns' absence for the 2 weeks leading up to the taste test day.



*Bill Woods (L) from Ixom presents the award to Christine Cottee.*

**IXOM**

# MANAGING WATER QUALITY RISK IN ANTARCTICA

In Australia over the past decade, the adoption of a “whole-of-water-cycle” management approach to water security has seen the widespread implementation of a range of alternative water supply schemes. However, applying this same approach to small and remote communities greatly magnifies the obstacles and challenges to providing these types of services in an economically-viable way, which is also protective of human health.

This has been the experience of the Australian Antarctic Division (AAD) and their project partners, Victoria University, the University of Melbourne, Veolia, TasWater, Coliban Water and AECOM Australia. The project team worked in conjunction with the Australian Water Recycling Centre of Excellence (AWRCoE) to develop technologies, and with consultancy input from WaterQPlus, risk management strategies to improve the treatment of station wastewater at Davis Station, in Antarctica. The project was called the ‘Demonstration of Robust Water Recycling’.



*Davis Station, Antarctica. The location of the AWTP and recycled water scheme for which this water quality risk management strategy was developed.*

As part of its commitment of minimising impacts on the Antarctic environment, the AAD is installing a new state-of-the-art wastewater and Advanced Water Treatment Plant at Davis Station.



*Stephen Gray (Victoria University) standing in front of the Davis AWTP at TasWater's Self's Point Wastewater Treatment Plant. Self's Point, in Hobart, Tasmania, was the designated proxy site used for validation and robustness assessment of the AWTP.*

The new facilities will be capable of producing high quality treated water, and will significantly reduce the quantity and environmental impact of ocean discharges. The treatment facilities and associated reuse applications will also provide a demonstration of the water recycling and reuse capabilities for small scale and remote applications.

This project has provided an opportunity to demonstrate the strength of current policy and governance frameworks in the development, delivery and operation of these types of services. This is an approach that may be suitable for small and remote communities, where logistical obstacles exist to gaining large volumes of water quality data, and ready access to technical equipment and expertise.

## Key outcomes of the project

Arising from this project were four key focus areas in relation to the risk management approach, advocated by the national guidance documents:

1. Adoption of a strong, policy-based, risk management framework
2. Water supply system risk assessment
3. Process validation and verification
4. Robustness criteria and analysis.

This project has demonstrated that it is possible to develop a risk management framework in the absence of large water quality and process data sets. This example is based around the establishment of a safe water quality policy commitment. Importantly, the policy and management strategies are strongly focused on source water input control.

In contrast to a large urban or regional water utility supply risk assessment, the physical isolation and compactness of remote supply systems make them rather unique. AAD personnel, with first hand operational knowledge, provided the key information source required to construct a “catchment-to-tap” hazard and risk profile.

An essential element to a robust system is the validation and ongoing verification of plant performance. The approach used in this example was the use of a proxy site as a demonstration of the treatment plant performance, and high risk compound challenge tests to simulate performance of predicted poor water quality. This enabled the validation and performance verification to occur at a location which had full access to the resources required, and then for the validated plant to be relocated and installed at the remote site.

Finally, robustness criteria for the plant were developed based upon interviews/consultation with AAD operations staff and managers. This allowed the Robustness Assessment to be customised for the Davis Station plant, in order to address the specific needs of operation in a location as remote and isolated as the Antarctic.

**Contributors:** K Northcott – Veolia ANZ, S Bartlett – WaterPlus, D Sheehan – Coliban Water, I Snape – Australian Antarctic Division, P Scales – The University of Melbourne and S Gray - Victoria University.



## UNDERWATER CAMERA LAUNCHES AT MELBOURNE WATER

A new tool has literally been “launched” at Melbourne Water as part of an ongoing program looking at using remote technology to inspect our assets.

The **DTG2 Smart** is a small scale inspection class submersible – an underwater vehicle – from the Canadian manufacturer Deep Trekker. These remotely-operated vehicles are widely used in the petrochemical, power and technical diving industries, where the ability to remotely determine status and condition can eliminate the need for complex and dangerous diving operations.



*Gary Anderson driving Boaty.*

A field trial across Melbourne Water's Water Supply assets is being conducted to determine the usability of small scale submersibles to improve process efficiency and safety and obtain information on assets while they remain submerged. This enables staff to gather condition information and improve situational awareness while plant and assets remain in operation.

A report will follow the field trial, with recommendations as to future use of ROV submersibles at Melbourne Water.

### The DTG2

The DTG2 Smart is connected to the base station by a 75-metre tether and can dive to depths of 150 metres. It is equipped with an onboard video camera as well as internal and external lighting systems. A base station digital recorder allows images to be captured and shared for review and analysis.

### Naming our Submersible

As with the launch of any vessel, the DTG2 Smart needed a name before it could enter service. Naming suggestions for this new acquisition were sought from across the business.

Whilst there were many fine nominations received, a large groundswell of support for one particular nomination was received and votes were cast.



*Boaty McBoat Face.*

We now welcome MWV “**Boaty McBoatface**” to Melbourne Water.

***Contributed by John de Boer from Melbourne Water.***

## NOT ALL BUGS ARE BORING

When you combine the efforts of staff from SA Water and AWQC, a hydrogeologist with a passionate microbiologist, you know the outcome will be exciting.

The Water Security team is using the developing field of Microbial Source Tracking to locate the source of bacteria in bore water supplies. We have been able to successfully track these potentially disease-causing organisms and demonstrate the value of keeping bore infrastructure in good condition. This important information helps inform our risk assessments for protection of water quality.

The results of this work have recently been published in the international journal Water and the AWQC is offering this bacteria source service as another option to our customers.

The National Ground Water Association (US), sent this compliment to the team:

“On behalf of the National Ground Water Association, congratulations on your recently published paper, Review of Risk Status of Groundwater Supply Wells by Tracing the Source of Coliform Contamination. Thanks to you and your colleagues for all of your time and your effort to make our industry that much better.”

Please contact the team at the Australian Water Quality Center (AWQC) to request a copy of the paper or to discuss Microbial Source Tracking in more detail [www.awqc.com.au/home/contact-details](http://www.awqc.com.au/home/contact-details)



### COMPACT INLET WORKS IN A BOX!

VoR Environmental has recently completed commissioning of two combined inlet works incorporating screen and grit removal at the newly constructed wastewater reclamation facility for Toowoomba Regional Council in Pittsworth, Queensland.

The combined inlet works form an integral portion in the construction of the new 4500 EP plant. The effective removal of large solids and grit provides much needed protection for the downstream processes, whilst improving plant efficiency and minimising maintenance associated with wearing.



*Combined Screen & Grit Removal Unit at Pittsworth.*

Housed in a stainless steel box, the inlet works system features a spiral sieve screen with an overflow bypass manual rake screen and integrated with a horizontal grit removal chamber. The spiral screen offers a fully automatic screening process with washing and compaction prior to disposal. Similarly in the grit chamber, grit is constantly aerated to provide washing and improve the quality of grit discharge.



*Overview of VoR's Combined Screen & Grit Removal Unit.*

The combined inlet works system is a significant step forward from the previous equipment on site where only a manually raked bar screen was used with no grit removal system in place. Installation of the inlet works is easy and straight forward as the combined units take up a small foot print and can be installed via adjustable support legs on a flat concrete surface. Additionally, all openings are equipped with sealed lids to minimise odours and with limit switches to improve operational safety of these equipment.

More information on the VoR range of products and equipment is available from their website at [www.vor-env.com/](http://www.vor-env.com/)

### THE CASE FOR PUBLICALLY AVAILABLE POTABLE WATER ANYWHERE, ANYTIME



*Car using water dispensing station.*

Only now are Credit Card operated potable water dispensing stations available. Previously only account card, token or coin operated systems existed.

**BUT** should these systems be for tanker filling only, or should the public have

access to water as well?

Why should recreational vehicles not be able to buy water instead of scrounging from wherever they can 'steal' water? Or why should the farmer needing a small amount of water for his chickens or house cow not be provided for?

The owner of Abberfield, the manufacturing company for these Water Dispensing Stations, also owns a small vineyard for weekend visits. Chemicals sprayed on vines could drift to the house roof; hence the tank water is for general use, not drinking. So drinking water is carted from Sydney to the Hunter Valley, just because it cannot be obtained from a Water Dispensing Station.

Some Councils recognise the issue and have coin payment at Visitors Centres for RV vehicles or wash down facilities for weed seed control or boat engine flushing on boat ramps. These Abberfield double acting locking systems, deter serious vandals and there are many security upgrades. However with Card usage, vandalism is not an issue. With Credit Card, water can be sold **anywhere and accessed at any time.**



*Boat Wash at Roseville Bridge.*

Systems can be made to suit any pipe size 100mm down to 20mm, either dual or single outlet pipe size. One standard configuration is 80mm cam lock for tanker drivers and 25mm tap for the general public. Another is 50mm cam lock and 25mm tap.

Made of painted stainless steel and with inbuilt quality self-evident, these latest Water Dispensing Systems will keep selling water for decades. Australian designed and manufactured means that service support will also match the equipment's long life. More information at [www.abberfield.com.au/](http://www.abberfield.com.au/)



*Tanker using water dispensing station.*



### COLOUR CODED HOSE NOZZLES



Tecpro Australia has released a range of colour coded, Heavy Duty Hose Nozzles. Designed and manufactured in Europe, the Blue and Red Hose Nozzles allow workers to easily distinguish between

hot vs cold water hoses. As a result, workers can effortlessly identify which hose is the most appropriate for the job while alerting them to be extra vigilant when using hot water.

Extremely heavy duty, the Red and Blue Hose Nozzles are available in both brass and 316L Stainless Steel. The Stainless Steel model is ideal for specialised industries where hygiene is critical – such as food, beverage and pharmaceutical industries. Some companies associate the colour white with cleaning equipment so Tecpro Australia also supplies a heavy duty White Rubber version of the Hose Nozzle which has a 316L Stainless Steel body.

We think this concept could be invaluable in wastewater treatment plants where potable water supplies are often used for washdown or other purposes. Having different coloured nozzles may reduce the chance of cross contamination.

Tecpro Australia's Heavy Duty Hose Nozzles will fit ½", ¾" and 1" hoses and are suitable for any high volume wash-down application. In fact Tecpro Australia has the widest range of wash-down guns and nozzles in both Australia and New Zealand.

For more information on Hose Nozzles and Spray Guns to suit your requirements, visit the Tecpro Australia website, [www.tecpro.com.au](http://www.tecpro.com.au).

### A CRUSADE FOR EARTH

**Shane McKibbin from For Earth** has been working in Fiji with Water Authority of Fiji and was invited to the first ever Super Rugby match played in Fiji between the Crusaders and Chiefs. At the after match function Shane was able to catch up with the NZ and Crusaders captain Kieran Reed. It was a fantastic night and event for Fiji. The game was classified as a home game for the Chiefs but the 20,000 locals that turned up at ANZ stadium, Suva, barracked for both teams with much enthusiasm. A very memorable evening.



*Shane McKibbin (L) rubbing shoulders (sort of) with Kieran Reed.*

### JAR TESTING – IT'S ALL IN THE CHEMISTRY

The methods to conduct Jar Tests date back to the 1920's (Sacramento, USA), and have stayed relatively the same, but changes in the water industry processes and technology, chemicals, concepts, procedures, do nots, internet derived knowledge and the acquired understanding of treatment today has changed markedly.

It is fair to say that using a jar tester today is a sophisticated, scientifically based experimental procedure. It takes skill, a knowledge of chemistry, a facility with chemical solutions and a comfort level with dosage rate calculations in order to learn the 'language of the tests'.

In a laboratory or mobile test environment, jar testing simulates a full-scale water treatment process to provide a reasonable idea of the way a treatment chemical will behave and operate with a particular type of raw water. Essentially, it mimics full-scale operation, and can assist systems operators to determine which treatment chemical will work best with their system's raw water or waste water stream.

From a practical perspective, by means of jar testing, the technologist will gain an intimate knowledge of the water supply or waste activated sludge sample, or inorganic sludge stream, that will in time reflect the full range of its characteristics and treatability.

#### Practical chemistry at work.

The Water industry has over the past decade has seen a widespread acceptance of dissolved air flotation process (DAF and DAFF) as an efficient and robust clarification/filtration process particularly well suited for the removal slow settling colloids, algae, hydroxides and turbidity.

In the Australian context, the worsening presence of algae and related implications that confront operations personnel when addressing how treatment might proceed.

Newly developed *Platypus 4G® DAF Test Accessories* (DAFTA) used in conjunction with a *Platypus 4G® Jar Tester* provide unique bench top tools to comprehensively address the treatment of DAF and DAFF processes.

Jar testing has come a long way over the last decade - to provide the ability to maximise plant management and performance while minimising operating costs.

Regular jar testing provides *competitive edge*. Jar Testing - *There is no better time, or better time spent.*

For more information contact Robert Waddell at Microfloc or visit the website at [www.microfloc.com.au](http://www.microfloc.com.au)



*Platypus Jar Tester with DAF Test Accessories.*

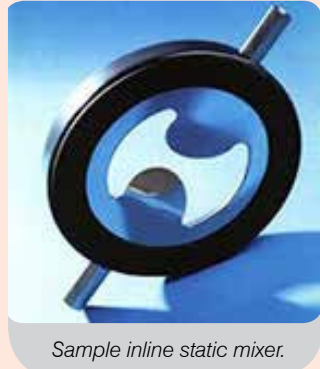
## CHEMICAL MIXING IN MAINS

When it comes to ensuring chemicals are well dispersed in your main, most of us will contemplate the turbulence created by elbows and pipe fittings, retractable and non-retractable chemical injection quills, and some might consider the Reynolds number.

All of these are significant for chemical dispersal, but they pale in significance compared to one piece of equipment designed for this purpose - inline static mixers.

So how do you choose an inline static mixer?

There are two main areas you should look at when choosing a static mixer – the functionality of the mixer and your confidence in both the mixer and the expertise of the company providing the mixer.



Sample inline static mixer.

### 1. The Functionality of the static mixer

The main functionality parameters to look at are:

Efficacy in mixing – does the mixer you are choosing have a published and guaranteed CoV (Coefficient of Variance)? Is this sufficient for your requirements?

Headloss – again, does the mixer you are choosing have a published and guaranteed Headloss Coefficient – so that you can calculate what the headloss will be?

Installation considerations – can you fit the static mixer in the location that it needs to go including any distance after the mixer required for efficient mixing? Is installation simple and lowers Health and Safety risks? Do you have the option of incorporating the injection points into the mixer or elsewhere depending on your application? Have you looked at wafer-style static mixers?

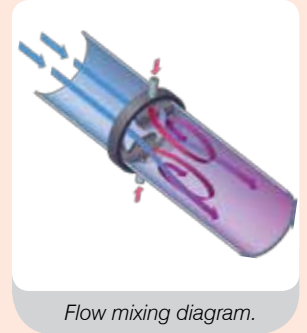
Longevity with regards to material selections – are the static mixers available in a range of materials to suit the chemicals and process fluids (including liquids and gases) for each application?

Costs – have you considered all the cost elements such as freight of the mixer, capital costs, energy costs (headloss), installation costs, health, safety and environment costs, and maintenance costs.

Availability – can the static mixers be supplied within a reasonable time or expedited in urgent cases?

### 2. Confidence in the static mixer and the expertise of the company providing it

Does the manufacturer openly publish and guarantee the CoV (Coefficient of Variance) and Headloss Coefficient with CFD reports and full scale laboratory testing – easily downloadable from their website and their distributors' websites?



Flow mixing diagram.

Does the company supplying the mixers provide engineering expertise in supporting customers to determine and customise the most appropriate static mixer for their application – mixing and headloss requirements - and site specific issues – laying lengths and space?

Does the company have experience in static mixers whose customers are happy to provide references for the company and efficacy of the static mixers on their sites?

So when choosing a static mixer, by considering these two main areas you will be well on the way to ensuring an effective and efficient solution for your project's chemical dispersal.

**Contributed by Maria Silk Young from H2O RX**  
[www.h2orx.com.au](http://www.h2orx.com.au)

## THE BENEFITS OF LOW COST SUPER

All super funds have fees, but if those fees are too high, all they do is eat into your retirement savings.

The average annual fee on a \$50,000 balance for someone who has chosen their own super fund (not their employer's default) is \$506 for industry funds, and \$876 for retail funds, according to SuperGuide.

For the same balance, a member of Vision Personal's new Sustainable balanced investment option would pay an annual fee of \$228, and what members save on fees, can make a huge difference to their future balance.

For example, Judy is 30, has \$20,000 in her super and earns \$50,000 per year. She switched to a fund that charges 1% less in fees, and as a result, she will have \$97,000 more in her super when she retires at age 65\*.

Find a breakdown of fees and other information about Vision Personal's low cost super option at [love.visionsuper.com.au](http://love.visionsuper.com.au).

\*Assumptions – calculated assuming 8% returns, no other fees, no insurance premiums and salary increases of 2.5% pa



### SUNGO SOLAR POWERED MIXER

Designed and developed over the last 10 years by the TECHSUB / AQUAGO Company in France, the SUNGO solar powered vertical circulator for use in water bodies, waste water ponds and lagoons may be of particular interest to Australian organisations.

The SUNGO is powered by solar panels while the SUBMIX model runs on AC (220 or 415 V 3 phase).



*Aquago TechSub Australia.*

Energy efficient, the working principle of the AQUAGO machines is to lift the deep water up to the surface. The water then spreads out on both sides of the machine and is re-oxygenated by the ambient air. The water then circulates back towards the bottom, creating cells of convection and allowing the regeneration of the water column.

Results from French tests show that SUNGO achieves an oxygen transfer rate of 0.123 mg/L/h with a throughput of 566.17 g/kW. In addition, the mixing volume is very large at 2500 m<sup>3</sup>/h, and it is very effective with a radius of 360 degrees of mixing.

On the surface, the flow velocity of the impeller output is about 0.5 m/s which is the equivalent of a river at its mouth, while 0.6 m below the impeller, the flow rates are less than 0.15m/s. These mixing speeds prevent the resuspension of sediments and the excavation of naturally watertight basins. The depth of mixing action of the SUNGO and SUBMIX is approximately 6 to 7 metres, while the radius of influence depends on the water quality and the required treatment. AQUAGO engineers can advise on the optimum number of machines required to address a particular water purification issue.

Completed projects around the world show that the SUNGO and SUBMIX machines are very effective at reducing algal blooms and odour issues in lakes and ponds, as well as to maximise the efficiency of wastewater lagoons by between 40 and 60%.

SUNGO and SUBMIX utilise a 550 W motor. This makes them simple, efficient, robust and reliable but most of all they are very energy efficient. In fact, the SUNGO costs nothing to run for the 20 years' service life of the solar panels!

SUNGO, the solar version, comprises innovative HDPE platforms that float. This enables installation of the panels on shore or on water. No wiring work required on site at installation as the SUNGO is supplied as a plug-in modular system. The installation is quick, requiring 2 men for ½ day.

SUNGO and SUBMIX are guaranteed for 2 years. The solar panels are guaranteed for 2 years by the manufacturer, with an additional 20-years guarantee of a minimum yield of 85%.

To find out more, contact AQUAGO in Australia: Xavier Delattre – Sales Manager Aust/NZ – [xavier.delattre@aquago.fr](mailto:xavier.delattre@aquago.fr)

### MAREEBA WWTP

The greatly anticipated construction of the new Mareeba Wastewater Treatment Plant has commenced with initial site works taking place to establish the construction and site compound areas earlier this month.

The site will become a hive of activity over the next year as work progresses. Mayor Tom Gilmore said the old Treatment Plant is more than 40 years old and is too small to cope with the size of the community, let alone allow for growth.

What will be achieved is a fully refurbished and modern treatment plant, capable of easily achieving environmental licence requirements for many years to come.

Minister for State Development and Minister for Natural Resources and Mines, Dr Anthony Lynham congratulated the Mareeba Shire Council on partnering the Queensland Government in such a significant community project funded under the Building our Regions program.



*Mareeba WWTP view from the North East.*

The \$1.5 million comes from the Palaszczuk Government's Building our Regions program, and is one of 42 projects statewide that are providing job opportunities and much-needed community infrastructure.

This project which will ultimately cost in the vicinity of \$16 million, is funded through a \$6 million grant from the Australian Government's National Stronger Regions Fund, a \$1.5 million grant from the Queensland Government, \$4 million from the Mareeba Shire Council existing reserves and borrowings of \$5 million.

***Contributed by Morris Hamill from the Mareeba Shire Council.***

### INGENIOUS IDEAS?

The portable dunny.



## NEW MEMBERS

Welcome to the following people and companies who have recently joined our Association as a Member or Corporate Supporter.

New **Individual Members** include:

Wayne Saldumbide, Darryl Smallman, Gavin White, Bill Anderson, Emily Christie, Matthew Ingle, Kevin Byers, Nathan Berry, Edward Davies, Chris Gavan, Stephen Wagner, Jeff Greely, Adam Nay, Peter McLennan, Nathan Litzow, Barry Barlow, Steve Posselt, Cliff Pancutt, Chris McLaughlin, Matthew Anderson, Gary Fenwick, Graham Stanford, Brendan Cutlack, Caroline Herman, David Lock, Michael Smith, Craig Bindoff, Steve Morton, Dean Lewis, Stevan Coleman, Max Ra'ah, Cody Prince, Tom Dippel, Jon Edge, Michael Barra, Wayne Devonshire, Jaymie Dawes, Brett Hill, Costas Pelekani, Michael Corena, Derek Hagger, Joseph Philips, Clinton Taylor, Corey Gregory, Derek Clarke, Christopher Trawn, Rodney Priest, Maria Xygekaki, Xiao Qiu, Jesse Wood, Jason Knight, Peter Gordon, Sam O'Neill, Ben Pohlner & Matthew Laguitton.

New **Utility Corporate Members** include:

Burdekin Shire Council, Isaac Regional Council, Barcaldine Regional Council.

New **Corporate Members** include:

Abberfield Industries, Bambach Wires & Cables, Inovin, Red White Group, ITS PipeTech, Pro Detec, Riverina Oils & BioEnergy, Australian Prestressing Structures, Viadux, M Tucker & Sons, Ecotech, Power Flex Cables, LRM Products, Advitech, TAFE Queensland East Coast, National Pump & Energy & All Compressor Services, H2ope, Oceanic Controls and Goulburn-Murray Water.



## JOIN NOW

## SHOW US YA BAG

Delegates at the 2016 WIOA conferences have an added opportunity to win by entering the **Show Us Ya Bag competition**.

All members are invited to take a photo incorporating this year's conference bag. The best, most original entry will win an iPad (valued over \$800) kindly donated by our bag sponsor Automation Group. The competition will close on **30 November 2016**. Entries can be emailed to [craig@wioa.org.au](mailto:craig@wioa.org.au)



## COMING EVENTS

**2016**

<b>24 August</b>	<b>Water Interest Day, Adelaide Aqua Desal Plant, Adelaide</b>
<b>31 Aug &amp; 1 Sept</b>	<b>79th WIOA Victorian Water Industry Operations Conference &amp; Exhibition, Bendigo</b>
<b>14 &amp; 15 Sept</b>	<b>qldwater Innovations Forum, Brisbane</b>
<b>6 October</b>	<b>Operations Interest Day and Charity Bowls, Cairns</b>
<b>9 - 14 October</b>	<b>World Water Congress, Brisbane</b>
<b>16 October</b>	<b>Victorian Charity Golf Day, Camperdown</b>
<b>19 October</b>	<b>Water Interest Day and National Taste Test Grand Final, Marysville Victoria</b>
<b>19 October</b>	<b>Water Interest Day, Bryn Estyn WTP, Hobart Tasmania</b>
<b>24 November</b>	<b>Wastewater Interest Day, QUU Luggage Point Innovation Centre, Brisbane</b>
<b>30 November</b>	<b>Show Us Ya Bag photo competition closes</b>

## 2016 Committee

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## NEXT EDITION

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