OPERATOR

May 2016 Edition

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Newsletter of the WATER INDUSTRY OPERATORS ASSOCIATION OF AUSTRALIA

FROM THE MD'S DESK

The past couple of months have been amazingly busy and there have been a number of exciting developments that we are pleased to report to members. At the April meeting, the Water Industry Skills Taskforce (WIST), owner of the National Certification Framework for Operators in Drinking Water Treatment Systems, endorsed WIOA as the certifying body for the next five years. This decision allows us to concentrate on rolling out and promoting the benefits of the certification program nationally.

Updates to the Certification Framework were also confirmed at the WIST meeting with the main change being the reduction of the system complexity rating from three levels to two – Low and High. It is now a very simple process to determine the certification level required for any given treatment plant. Whilst mentioning certification, it was our great pleasure to host a presentation ceremony at our New South Wales conference in Newcastle where the certification credentials were presented to the first seven WIOA certified operators from New South Wales.

Our Annual General Meeting and weekend seminar were held in late February with Ryan McGowan again elected President, Adrian Rijnbeek as Vice President and we welcomed Colin Haynes and Jill Busch onto the Committee for the first time. Our thanks were also extended to outgoing Committee members in Marcus Boyd and Darren Lord. The special resolutions to change the constitution were adopted meaning from 2017, we will automatically have a representative from at least 5 States on our Committee, as well as the other elected members. The other change was the creation of the Associate Corporate members category allowing us to recognise the many Corporate nominees in our membership statistics. This has seen the member numbers at the end of 2015 increase from 2430 to 3938.

The Weekend Seminar itself was a resounding success with the assembled members treated to some excellent technical and product presentations, some "cat like" brain teasers and a bit of home made feuding at the dinner. A report on all the goings on appears later in this edition.

The Ixom Water Taste Test has reached new heights and now boasts an International flavour as well. Our congratulations are extended to Goulburn Valley Water for winning the silver medal in the Municipal Supply category at the "World Championships" in the USA. More about how this came about on Page 17.

In early April we staged our NSW conference in Newcastle. It was enormously successful with the second highest attendance on record at our NSW event. Our thanks are again extended to our excellent Hosts in Hunter Water Corporation and Veolia Water, along with all our sponsors, exhibitors and delegates. The award winners announced at the NSW conference also deserve our heartfelt congratulations. We now look forward to heading off to Rockhampton for the Queensland conference in June which also has a sell-out exhibition and a diverse line up of presenters covering a wide range of topics including input from operations staff from a number of Queensland Councils. Delegate and visitor registrations are still being accepted with registration forms available from the website.

A group of 8 Australian operators, including award winners from NSW, Queensland, Tasmania and Victoria, headed off to New Zealand in early May for the annual 8 day tour of NZ water and wastewater plants. This year, the tour visited plants on the top half of the North Island before joining our Kiwi cousins at their annual operations conference at Auckland. Once again the WIOG team did a fantastic job not only in organising and hosting the tour, but by running such a successful conference with 100% volunteer staff. One of the tour members will provide a report in the August edition of Operator.

Once again, the WIOA events calendar is rapidly filling courtesy of some great work and assistance by all our State based Advisory Committees. Apart from our three major conferences, there are a variety of interest days and tours either just completed or happening soon, along with some seminars and Water Taste Test events. Although we do understand that not everyone can go to every event, please make sure you support the work of your own members by participating whenever you can.

WIOA is once again on the organising committee for the second Biggest Ever (Laurie Gleeson) Dinner to be held on 26 June at Etihad Stadium in Melbourne. Last year more than $70,000 was raised from the event to support the excellent work of the Australian Prostate Cancer Foundation. We hope to do even better at this year's event which will include guest speakers, a charity auction and raffle. Tables of 10 can be booked from the IWA Victoria website or by contacting Lauren at Vic Water.

In 2015 COAG created the high level Australian Industry Skills Committee to take control of the management of all industry Training Packages. As part of the new structure, five Skills Service Organisations (SSO's) were established in January 2016 with each sector/training Package assigned to one of them. The Water industry, along with our Water Training Package (NWP) now resides with the Australian Industry Standards SSO. The first meeting of the Water Industry Reference Committee (IRC), comprising all the organisations formerly on the GSA Water Industry Advisory Committee, was held in Melbourne in April. John Harris from Wannon Water in Victoria was elected Chair of the Water IRC and myself as Deputy Chair. We look forward to working with the new SSO to provide a National Water Package that is appropriate and suitable for our diverse industry, taking into account the scope of metropolitan, regional and remote water service provision responsibilities.

Finally, thanks to the hard work and vision of some really committed and innovative WIOA Members, a new Networks Operator Development Program is being developed, ready to roll out in Victoria in 2017. There is a short article in this edition introducing what the Program is about and we are sure it will be a resounding success. The flexible nature of the program means there is no reason why it can't be extended successfully into other States as well.

Until next time, George Wall – WIOA Managing Director

PROFILE OF A MEMBER

Name: Raymond Sycamore

Position: ESW

Employer & Location:
Wujal Wujal Shire Council, Far North Queensland

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

21 YEARS - I was working in parks and gardens and the position in water came up. It was interesting so I started in the water and sewer team.

What do you enjoy most about your job?
Great comradery in the team and every day is different.

What are the major challenges in your current role?
Young people!

How long have you been a WIOA member? 3 years.

How do you relax?
Reading with a hot cup of coffee.

Where do you live and what's the best thing about it?
I live in Wujal Wujal valley it's a beautiful area with rainforest, rivers and waterfalls all around and the sea is only just up the road.

QUICK QUESTIONS

Age: 48

Nickname: Ray

Family Status: Single and looking!

Pets: None.

Favourite food: Everything.

Least favourite food: None.

Favourite TV show: News.

Worst TV show: Neighbours.

Favourite Movie: Westerns.

Favourite Musical artist/s: Slim Dusty.

Favourite book: Westerns.

Favourite team: Canterbury Bulldogs.

Ambition in life: Live as long as I can!

Hobbies: Reading.

Best Trait: Generous.

Worst Trait: Can't put up with slackers.

Four people to invite to dinner: I only have 2 -Slim Dusty and President Obama (they can have double the food and drink!)

DARREN'S OFF TO NZ

Congratulations to Darren Lord from TasWater who was announced as the winner of the 2016 PASS Award at the WIOA NSW Conference in Newcastle in April. The award creates an opportunity for water industry operational staff to share their in-the-field innovations and/or fixes to problems so that others in the water industry can benefit. This is the 6th year the PASS award has been presented and after needing to extend the closing date by a week or so, we received a record number of 8 entries from around Australia.

Darren came up with an innovative transfer stand to allow safe decanting of Sodium Hypochlorite from 15 L containers to a 200L chemical dosing tank at some of their dosing stations. The stand provides the benefit of reducing manual handling risks as there is now no need to lift the 15 L drums up to chest height, as well as reduced chemical spill risks and avoiding splashes onto the operator.

At the Tasmanian Interest Day in Oatlands in April, Darren commented that "there are many inventions or fixes out there where the operator thinks he hasn't done anything that special. Sometimes, the simple ideas are the ones most often overlooked and sharing them through the PASS award is a great concept. The PASS award application itself was very easy to fill in and it only took an hour or so to put the whole thing together".

For his efforts he joined the WIOA team on the annual operational tour of New Zealand, which included attendance at the New Zealand WIOG operations conference in Auckland. The award is made available through the kind sponsorship of Aqualift Project Delivery. WIOA celebrates the sharing of good ideas by publishing and distributing all of the entries received in a booklet.

PASS Award Winner Darren Lord, with David Barry (L) and Jill Busch (R) from Aqualift Poject Delivery

NEW IDIOTS INDUCTEES

We have recently inducted two very committed WIOA members into the IDIOTS fold. The first was Marcus Boyd at the Queensland Charity Bowls Day in Yandina in March and the other was Lindsay Walsh at the WIOA NSW Conference in Newcastle in April. Our organisation needs more committed members just like these two, if it is to continue to prosper.

Marcus joined WIOA in July 2006 and has been a member for almost 10 years. He has attended all except one WIOA conference in the 10 years since 2006. He presented a paper in 2007 in Rockhampton which picked up 2nd prize in the Operator paper category.

In 2011, he was instrumental in bringing the conference to his home town of Toowoomba and was the main go-to man between WIOA and Council to get everything sorted out. To cap off an extremely successful event, he was awarded the best Operator paper for his presentation titled "Toowoomba 2011 – from drought to flood". For winning Marcus got to travel to Bendigo to do his paper all over again.

In August 2011, when WIOA created the Qld Advisory Committee, Marcus was one of the inaugural Members who attended the meeting and put his hand up to help out. He took on the role of Chair of the Advisory Committee from Sep 2012 to June 2015. He was also elected to the WIOA General Committee by members in the years 2013 through 2015.

Marcus against the Qld scrum

He presented another paper at the 2014 Logan conference on the Toowoomba Wastewater Infrastructure Project. We know that he has also been instrumental in encouraging many other Toowoomba operators to have a go at either a paper or poster over the years.

He did an enormous amount of work in 2015 when the conference returned to Toowoomba, but he couldn't attend as much of the event as he wanted due to his exams. He has been a regular at the Charity Bowls Day, has organised and participated in a number of the Queensland interest days and when no-one else volunteered, he has produced many reports and articles for Operator.

He has been doing things hard for the last few years and fitting in time for his family, job, study and still making time for WIOA is an amazing effort. Through his contribution, Marcus has played an important role in allowing WIOA to expand and gain the acceptance we now enjoy in Queensland.

Marcus reaches his goal

As a keen rugby player, but also someone that enjoys a beer or three, we combined these themes for the obligatory IDIOTS challenge. After donning his NSW guernsey to a chorus of boos from the parochial Qld crowd, his task was to move the "Queensland scrum"consisting of all the big blokes we could find, back far enough to be able to get at the six pack.

John Granzien (R) presenting Marcus his award

The competitive juices got flowing in all of them and after a fair bit of grunting and feet digging into the bowling green, the scrum relented and Marcus reached his reward.

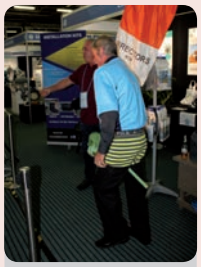
Lindsay joined WIOA on 28 July 2006 and has attended all except two of the 10 conferences WIOA has staged in NSW since 2006. He doesn't just come along to make up the numbers. He is always helping set up, chairing paper sessions, presenting awards, selling raffle tickets and anything else that needs doing.

Lindsay starting the lap on the "horse".

At the 2009 conference in Tamworth he presented a paper on "Denitrification problems after the upgrade of the Old Bar STP" which was awarded 2nd prize in the best Operator paper category.

In 2012, he presented a Poster paper on the "Manning Point STP Upgrade" and in 2014, he teamed up with Pat Welsh also from MidCoast Water to do another poster on the "Modifications to the lifting racks of diffused aerators". The boys won second prize in the poster section.

Lindsay had another win in 2011 at the conference in Newcastle. He picked up the signed Bradman print by winning the charity raffle and shocked half the audience with his enthusiastic outburst when his name was called out.



In his NSW & Tigers "silks".

In July 2013, when WIOA created the NSW Advisory Committee, Lindsay was one of the inaugural Members who attended the meeting and he took on the Chair role of the Committee, a position he still holds today. In 2013, Lindsay was also elected to the WIOA General Committee and has been re-elected each year since. Having great support from his employer, Lindsay has hardly missed a meeting and he always contributes his own pearls of wisdom in his own inimitable style.

Enjoying a quiet beer or two.

He has helped organise and has participated in a number of the NSW Interest Days and has travelled great distances to attend nearly all of them, often in his own time. He has provided lots of reports and articles for Operator.

We know that he has also been instrumental in encouraging many other MidCoast Water operators to have a go at either a paper or poster over the years and he certainly encourages everyone he talks with to be a member.

Lindsay's friendly and down to earth demeanor has effectively portrayed the message about what can be achieved by being an active participant with WIOA and he is an excellent role model for all members in NSW.

In setting Lindsay's challenge, we found out that is a keen Balmain Tigers supporter, loves a punt and a beer or two and helps out at the local footy club as well. Holding the conference at the Newcastle Jockey Club was a great lead in for a challenge for someone that enjoyed a punt. Lindsay was required to mount the WIOA dinohorse (we couldn't find just a horse) and do a lap of the racetrack around the meals area collecting additional props from the other assembled IDIOTS until he eventually reached the finish line. True to his nature, Lindsay completed everything thrown at him and was truly humbled in his acceptance speech.

The finishing post.

OPERATORS CORNER - THE LAST GASP

Common Failures of Wastewater Treatment Plants

What is the one common operating issue with almost every activated sludge treatment plant? Poor designs (never!), bad process engineering (surely not) or "unfavourable sewage characteristics" (seems to show up a lot after Bio P plants are built and rarely detected beforehand). Although these could be possible candidates (bad process engineering aside), they are, hopefully, not common to most activated sludge plants.

My answer is; poor dissolved oxygen monitoring!

Dissolved oxygen monitoring is the key to both performance and energy consumption; two of the most important factors in the optimum operation of a treatment plant. Well, I hear you say, we have dissolved oxygen probes in every cell of our aeration tank and we calibrate our Dissolved Oxygen probes every fortnight so we are okay. Bet you're not!!!

Most dissolved oxygen probes are calibrated in air to give a saturation reading of about 10 mg/L. However, unless you own a power plant running on free energy, you will be operating your plant at dissolved oxygen concentrations of the order of 2 mg/L or less. So, checking that the speedo in your car is 100% accurate at 200 kph won't help you when get a speeding ticket in a school zone because your speedo is 10 km out at 40 kph. Same with the dissolved oxygen probes. I often challenge people to get a bucket of return activated sludge (or some other guaranteed zero dissolved oxygen liquid-don't use sodium metabisulphite solutions as this can contaminate some probes) and see what the "dissolved oxygen" reading is. I have personally seen probes give readings of 1.5 mg/L or more in a zero dissolved oxygen environment. Effectively, for a dissolved oxygen set point of say 2 mg/L, you are actually operating your plant at 0.5 mg/L!

So why do we need accurate DO measurement. First off, if the measurement is "optimistic" you will probably get ammonia bleed through or spikes in the effluent. This will be compensated for by increasing the DO Set Point. So you end up chasing your tail trying to compensate for continual "drift" in the dissolved oxygen zero. What is worse is that you never really know what the best or optimum dissolved oxygen concentration set point is. So when you finally replace the probe itself or the sensor head, you don't know what set point you should use and the whole process starts again.

Furthermore, during an energy audit, the expert consultant will confidently tell you that by reducing your dissolved oxygen concentration from the current set point of 3 mg/L to 2 mg/L you will reduce your plant power consumption by 50%. You can't achieve this (as you are actually aerating at a "real" set point of 1.5 mg/L and going down 1 mg/L to 0.5 mg/L will cause all sorts of headaches) and you will need to answer a lot of difficult questions when you don't realise the power savings!

However, I hear you say, "we use an ammonia probe on the effluent as a "watchdog" to automatically adjust the dissolved oxygen set point". My comment; be careful when implementing this sort of feedback dissolved oxygen control. You can easily reduce the dissolved oxygen set point too far despite the dissolved oxygen "measurement" appearing satisfactory and whilst still getting reasonable ammonia results.

If you go too far, then other aspects of the biomass can be impacted and this can lead to increased sludge production and poor settling solids with subsequent elevated Suspended solids in the effluent amongst other things.

As a final word, make sure that your Dissolved Oxygen probes are in the correct place and giving representative readings. I have seen probes located in tanks where they effectively measure the dissolved oxygen in a stagnant pocket or in the flow from the preceding tank. Don't assume that the design engineer has picked the best spot. I haven't always (really!), and I now allow for a few metres of spare cable and hold back on riveting the local panel to the handrails until I am a bit more confident.

So, my recommendations on almost every plant have been;

1. Get a good DO probe with minimal drift in the zero. Do the research, check with operations staff (not engineers) as to the best ones around. I have my favourites however, like the ABC-no product placement.

2. Check that you have the probe in the right place for at least most of the time.

3. Regularly calibrate the probe at both ends of the dissolved oxygen scale. All probes eventually need replacement no matter how good they are.

4. Get a microscope and check the higher life forms in the sludge (you can easily see them with a $100 student microscope). These need dissolved oxygen to survive so they monitor your plant 24 hours a day seven days a week for free and don't require calibration. You can actually calibrate your dissolved oxygen set points based on the higher life forms present!!

If you can't do these things, then, hold your breath. It won't help, but at least you will know how the bugs feel!

Contributed by Peter Griffiths

MY FIRST WIOA WEEKEND SEMINAR & AGM

I have been a Member of WIOA for a couple of years but this year was the first time I attended the Weekend Seminar & Annual General Meeting. This year it was held at the Parkside Motel in Geelong. With Geelong being the home of the Cats, the whole theme of the weekend was about cats.

After the almost 2 hour drive from Melbourne, I arrived at the venue and checked into the room. About midday the participants started coming in and Registration commenced with lunch. Whilst having lunch Craig walked up and gave me an envelope, which I happily shoved into my pocket thinking that it was some gift vouchers. The meeting was called to order at 12.45pm and while the usual housekeeping announcements were going on, I decided to check the envelope. On opening it, I was quite surprised to see it was some instructions for me as a newbie to the seminar. I was given a task to complete over the course of the weekend. Later I found that I was not alone, as there were a few others who were behaving in a queer way which initially I thought was due to having 'one too many'. Having got away with that satisfactorily, I believe, next year I won't be under any pressure as I have finished my Initiation as a newbie.

Jon-Paul Marrow demonstrating some sealing products

The assembled members

Our own version of Grant Denyer (David Rae) in charge of WIOA Feud

At Registration, we were grouped into 8 Cat Teams with different names. The AGM finished close to 2.00pm and the Team Challenges were undertaken in between the other presenters during the day. I cut a sorry figure as my contribution to our team was zero during the 3 Team Challenges, all about cats. However, our team was eventual Runners-up due to the brilliance of all the other team members.

During the two days, we were fortunate to listen to some very informative and interesting presentations and see how some of the products and equipment function. There were five presentations, in addition to the Operator Forum. We saw some interesting products demonstrated by Jon-Paul Marrow from Aeramix and Graham Smith (another newbie) from Fluidquip Australia. The dinner was a highlight with WIOA's own version of Family Feud. The weekend program ended with a site visit to Barwon Water's Northern Water Reclamation Plant. We were given a very informative briefing about the site by David Greaves and I wish to thank Mark Thomas, the operator on duty that day, who accompanied us on the site tour.

I must admit that a lot of careful planning and time would have gone in to arranging this weekend as everything was precise according to the Program. All credit to the organisers from WIOA,well done. I have no doubt that everyone had a lot of fun and a great time. The dinner and entertainment was excellent. The Motel staff made us feel at home and the food was of top quality. I strongly encourage others who are related to Water or Wastewater in some way to become Members of this very friendly and professional Association. I will definitely attend future WIOA events.

The winning Feudsters - Neil, Heidi and Paulus - team Sylvester

Contributed by Peminda Jayasinhe from Melbourne Water

Weekend Seminar Reflections

A smarter person than me (which narrows it down to almost every person on the planet) once told me at an event I attended "If you learn just one thing from this event then you have succeeded and will be better off for it". Recently after many years of procrastination, bad timing and the like, I attended the WIOA AGM and Weekend Seminar in Geelong.

Arthur (R) and Jon-Paul

I can tell you that person was right! As a first timer I heard the V description bandied around but I prefer to just call myself a newbie.

I learnt in depth how the organisation that I am a small part of works.

- It reaffirmed my thoughts of what a great bunch of dedicated people come together to support this industry we are involved in.
- I shared the pride, excitement and anticipation of the whole group getting live messages as the winner of the WIOA Water Taste Test was taking on the world that very weekend.
- I made new friends of people whose faces I instantly recognised from all the WIOA Conference & Exhibitions I've attended, but for one reason or another had never had the opportunity to talk to.
- I learnt that there are many others like me that share the same common goals and passion for our industry.
- I shared in the experience of teamwork and fun with new people.
- I discovered what can be achieved under truly adverse situations helping others less fortunate and the personal satisfaction that comes from this in the end (great presentation David!)

I learnt a lot from the WIOA AGM so I HAVE succeeded and am better off for the experience!

Contributed by Arthur Kokolekos from Royce Water Technologies

WATER INDUSTRY
SKILLS TASKFORCE

Water Industry Skills Taskforce Communique April 2016

Certification Framework for Operators within Drinking Water Treatment Systems 2016

The Water Industry Skills Taskforce (WIST) met on the 15th April to approve a number of amendments to the Proposed National Certification Framework 2012 (Operators within Drinking Water Systems) and formally appoint a Certifying Body.

Amendments to the Proposed National Certification Framework 2012 for Operators within Drinking Water Systems

The amendments to the Framework relate primarily to issues that have been raised through the Queensland and New South Wales certification implementation pilots and industry feedback received through the amendment consultation process. The key amendments to the Framework include:

- A new name, '*Certification Framework for Operators within Drinking Water Treatment Systems 2016*'
- Inclusion of specific requirements and conditions around appointment and operation of 'Certifying Bodies'.
- Recognition of the 'Framework Coordinator' role.
- Adoption of 2 System Rating levels for treatment plants (instead of the previous 3):
  - Low Complexity for plants with one barrier, or treatment process, or less, and
  - High complexity for plants with two or more barriers, or treatment processes.
- Inclusion of a procedure for certification of contractors.
- Updated unit requirements to reflect the new National Water Training Package (NWP). Units from NWP01 that have equivalence to NWP07, are also deemed acceptable in the Framework.
- Alternative to completion of the ADWG unit (previously NWP279A) – may now be attained by another 'Framework Owner and Certifying Body-approved training course.'
- Addition of details around continuous improvement/ review.
- A number of editing and other minor amendments.

The new Framework document is available on the WIOA website.

Formal Appointment of a Certifying Body

At the meeting on the 9th October 2015, the WIST agreed to set specific requirements and conditions around Certifying bodies and that it would appoint Certifying bodies based on them meeting these criteria. The criteria for initial selection included:

- Establishment of a Quality Assurance System
- Industry expertise
- Viable business model
- Capacity for data management
- Documented future direction for their Certification activities
- Capacity to service the industry nationally

In February 2016, the WIST invited current and previous organisations that have acted as certifying bodies to apply for appointment as a 'Certifying Body' by addressing the above criteria.

The WIST is pleased to announce that WIOA was formally appointed as the national Certifying Body at the WIST meeting on the 15th April. WIOA will initially be appointed for a period of 5 years.

Further information on how to apply for certification through WIOA is available at www.wioa.org.au, and progress updates on the program will be published from time to time.

Contributed by Dave Cameron, Chair - Water Industry Skills Taskforce.

LOOK A LIKE

Graham Smith
(FluidQuip)

Ryan Stiles
(Actor, comedian, director)

WINNERS ARE GRINNERS

A delighted George recieves his bat from Noel Southem from McBerns

Amid cries of "rigged" and "redraw" none other than WIOA MD, George Wall had the winning lucky Charity Raffle ticket that was drawn out of the box at the NSW conference. Thanks to our generous sponsor in McBerns, George made his way back to Shepparton with a framed cricket bat signed by current Australian Captain Steve Smith.

"This is going straight to the pool room" George was heard to say quite a few times during the night. He'll just have to hurry up and build his pool room, given he's just moved into a new house.

The raffle raised $1,075 for charity.

The 10th Annual WIOA NSW Water Industry Operations Conference and Exhibition was staged at the Newcastle Jockey Club on 6 & 7 April 2016. In total, 750 people attend the conference and exhibition that was well supported by Hunter Water Corporation and Veolia who jointly hosted the event. Attendees were present from just on 40 NSW Councils and service providers as well as 6 Interstate service providers.

Delegates were officially welcomed by Paul Coffee from Veolia Water representing both Hosts and the conference keynote address was delivered by Carmel Krogh, Director of Shoalhaven Water who described their amazing workforce development project. To round out the Opening Session, the first seven Operators from NSW were presented their national Certification credentials by Josh Tickell representing NSW Health and George Wall from WIOA.

The conference culminated in the Awards Dinner on Thursday evening where Mark Gogala from Orange City Council was named winner of the 2016 NSW Operator of the Year. The team from Nambucca Shire Council were awarded bragging rights for having the Best tasting Water in NSW for the next 12 months after winning the IXOM taste test.

NSW Conference 2016 Winners

NSW Operator of the Year

Mark Gogala from Orange City Council

Nalco Prize for Best Paper by an Operator

1st **Paul Gregg** from Cowra Shire Council
2nd **Nathan Bakewell** from MidCoast Water
3rd **Benjamin Freeman** from Port Macquarie Hastings Council

NSW Operator of the Year Mark Gogala (L) with Gary Mitchell from NSW Water Directorate.

WATER DIRECTORATE

Paul Gregg (L) winner of Best Paper by an Operator with George Wall Representing Nalco.

NALCO Water
An Ecolab Company

Paul Gregg (L) from Cowra SC with Ross Waterhouse from Iwaki Pumps - Best Paper Overall.

IWAKI

Conference Hosts

HUNTER WATER

VEOLIA

WIOA Prize for Best Poster by an Operator

1st **Eric Nielsen** from Icon Water
2nd **Troy Bostock** from Kempsey Shire Council
3rd **Prakashbabu Radhakrishnan** from Dubbo City Council

IWAKI PUMPS AUSTRALIA for Best Paper Overall

Paul Gregg from Cowra Shire Council

WIOA Conference Charity

$1,500 presented to **Cancer Council**

Ron Bergmeier Award for Best Exhibition Site

Won by **Vega**, with honourable mentions to Cadia Group and Thermo Fisher Scientific

PASS Award 2016

Darren Lord from TasWater

IXOM NSW 2016 Water Taste Test – Winner

Nambucca Shire Council

IXOM NSW 2016 Water Taste Test – Finalists

- Hunter Water Corporation
- Nambucca Shire Council
- Orange City Council
- Walcha Council

Eric Nielsen (L) winner of Best Operator Poster with Peter Tolsher from WIOA.

W-I-O-A Australia
EXCELLENCE IN OPERATIONS

The team from Vega, winners of Best Exhibition Site.

UTILITY
Engineering, Construction & Maintenance

NSW IXOM 2016 Water Taste Test Winner, Nambucca Shire Council.

IXOM

ERENCE REPORT

Feedback from Delegates

I would like to thank the organisers for the conference I was only able to attend the Wednesday due to work commitments on the next day but what I saw was well presented and the show was great. Overall it was a really good experience and well done to the organisers, staff & volunteers. ***Gary Perrin from Singleton Council***

The WIOA Conference is a great chance for Operators to interact and share knowledge away from the stresses of their day to day workplace. I always send as many of my Operators and Reticulation supervisors as I can because of the benefits they derive from talking to each other and the suppliers present.
Stewart McLeod from Dubbo City Council

As a trainee and not long in the industry I found it very insightful and helpful and would recommend if you get a chance to attend a conference to do so. ***Ashley Steadman from MidCoast Water***

Impressive! This was the biggest WIOA conference that I have attended and I enjoyed it thoroughly. The quality of the papers delivered was very relevant to my work as a Water Quality Officer and I benefited greatly from those who were able to share their experiences and knowledge. Big thanks to WIOA and all involved in putting together a great event.
Brock Stone from Gunnedah Shire Council

This is a great opportunity for operators to share their experience and knowledge with peers. Especially the operators in rural/regional councils wouldn't get much opportunity to meet contractors/ suppliers & to get to know about their products & services.
Vipuli Narangoda from Nambucca Shire Council

It was great to experience a wide range of up to date technologies available within the industry.
David Hardy from Wingecarribee Shire Council

Exhibitor Perspective

Very happy with the "traffic" to our site, the fact there were no "tyre kickers" and time wasters was great. Managed to speak to and catch up with many existing and prospective new clients.
Phil Rothheudt from Hydro Innovations.

We found this year's event to provide a good level of quality inquiries from the number of delegates and visitors attending the show. ***Kevin Johns from Life & Rescue International.***

We are very pleased that the WIOA conference generated us some very good leads. In fact, a firm order came through from a visitor few days after the conference. ***Andy Adina from GF Piping Systems.***

Babu from Dubbo presents his poster to the crowd of onlookers

Babu - happy that it is over!

Michael Hodge from EcoCatalysts up on stage with Syd Heylan Jnr on Thursday night - scary but funny!

The conference exhibition is always a highlight of the event.

Paul Gregg delivers his award winning presentation.

WIOA stalwart Pat Davis playing ticket collector on Wednesday night.

Rod Wellings gets in on the act with Joel Ozborn.

NETWORKS OPERATOR DEVELOPMENT PROGRAM

Network Operations and Maintenance (O&M) can be viewed by many in the water sector as the 'little brother' to the water and wastewater treatment functions. This 'little brother' status possibly emerges as a result of there being less recent investment in network improvements, perceptions of lower complexity than treatment processes, and less direct interest from regulators. The level of interest in certification for treatment operators, but not necessarily for networks operators, is a good example.

As a result, there are less professional development opportunities for network operators. However, the overall value of the network assets is magnitudes larger than treatment assets, opportunities for improved network operations are significant, and link directly to the experience of customers. The importance of network O&M through the efficient delivery of healthy water and provision of sewerage services are critical and fundamental aspects of the water industry.

Wannon Water's Mick Mahoney and Mike Rankin from Water Training Australia had been discussing the idea of a Networks Operator Development Program for some time. With the full support of Wannon Water's MD Andrew Jeffers, a meeting with WIOA staff was held in early 2016 to discuss whether the program would fit in with WIOA's existing programs. After listening to Mick's passionate pitch and checking out the excellent concept work already completed, it was a no-brainer that WIOA would fully support the project.

Mick and Mike approached some other WIOA members they believed would be interested in contributing and a program Advisory Committee comprising the following people and organisations was established:

- Mick Mahoney – Wannon Water
- Neville Whittaker – Goulburn Valley Water
- Dean Barnett – Western Water
- Russell Bates – East Gippsland Water
- Neil Morrison – GWM Water
- Mike Rankin – Water Training Australia
- George Wall – WIOA.

The program aims to expand knowledge and skillsets of Network Operators, exposing them to strategic and technical excellence, delivering an improved customer focus and provide the opportunity to build a network of colleagues within their field of expertise throughout the industry.

There is a belief that by utilising the WIOA forum to open up this pathway for Network Operators, the profile of the network O&M sector will increase. Employees involved will learn how to identify and implement best practice approaches, increase productivity and enhance a professional culture within their respective organisations.

The framework of the proposed Networks Operator Development Program is as follows:

- Three areas of focus; Technology, Business and Leadership.
- Involve a range of structured workshops, projects and comparative analysis of practices within the industry.
- Each participant will receive a mentor for guidance and support.
- During the course of the program, each participant will present a paper on one of the three areas of focus with the best three papers being included into the WIOA Conference program annually.
- A Networks Operator of the Year will be awarded to one of the participants annually and presented at the WIOA Conference.
- The program will be managed by the small Advisory Committee as noted above.
- Will use a range of training delivery techniques including workshops, field days, technical and other sessions, conference attendance and project management options.

The concept was presented to a recent meeting of the MD's of the Victorian Water Corporations and they indicated their support for the initiative. It is expected that participating organisations will sponsor individuals with time from their normal work commitments, and costs associated with training, travel, accommodation.

Networks Operator Development Program Advisory Committee members.

The finer details of the program are being put together at present with nominations for the first group of participants being received in October with the program proper kicking off in February 2017. More details will be posted to the WIOA website in due course and we will keep everyone updated in coming WIOA publications.

Contributed by Mick Mahoney, Wannon Water on behalf of the Advisory Committee.

KWATYE (WATER) AWARD

Thanks to the generosity of sponsors Thermo Fisher Scientific, the Kwatye Award was first presented in 2005. It was originally designed to encourage creativity, recognise innovation and celebrate passion within the water industry. It had a very broad focus and was centred on completing a project of benefit to the Australian water industry. There have been some outstanding projects completed, but the level of interest in submitting potential projects on an annual basis was not as strong as originally anticipated.

New Focus on Professional Development

From 2016, the focus of the Award has been amended to one which encourages water industry operational practitioners to nominate to undertake a professional development activity, project or opportunity.

The Kwatye Award is open to all financial INDIVIDUAL WIOA Members. The Award funding of up to $6,600 is available for undertaking the development activity and can be spent on:

- Course or program fees
- Texts or resource materials required
- Travel, accommodation and living expenses
- Other costs associated with the activity, project or opportunity.

Applications will be accepted from individuals or teams, provided all members of a team are individual WIOA members. An independent judging panel will review the applications and determine the Award winner.

This award is presented annually at the Victorian conference but applications are accepted from any WIOA Member regardless of their location. Closing date for applications is 20 July annually. Entries are currently being received for the 2016 award, so visit the WIOA website, download a copy of the application form and submit it today!

ThermoFisher SCIENTIFIC

NAMBUCCA SHIRE HAS BEST TASTING WATER IN NSW

The Nambucca Shire Council was announced as the winner of the IXOM 2016 NSW Water Taste Test at the Awards Dinner held on the Thursday night of the WIOA NSW Operations Conference. The sample was collected from Council's kitchen tap in Macksville having been supplied from the Bowraville Water Treatment Plant.

The finalists were chosen using a "Masterchef" style tasting on Tuesday evening by delegates at the conference welcome reception. The four finalists were: Orange City Council (defending their 2015 title), Hunter Water, Nambucca Shire Council and Walcha Shire Council.

The Bowraville Water Treatment Plant sources Bore Water that is drawn from an aquifer through bores located beside the Nambucca River to the north of Bowraville. The facility is featured in the Birds Eye View on page 12 and 13.

The water is naturally filtered as it flows through the gravel deposits in the aquifer. Raw water is treated with the addition of lime, Chlorine, Fluoride and carbon dioxide before it is distributed to around 14,300 consumers from over 6,000 connections.

Nambucca Shire Council Mayor Rhonda Hoban said the acknowledgement came hot on the heels of the Engineering Excellence Award for the Bowraville Off River Water Storage facility.

"The shire can also now boast that we have the best tasting tap water in NSW. It's no longer a myth - we do have the best drinking water. We are fortunate to have a good quality water source for our residents and this award is for all the staff involved with the work behind the scenes delivering the water and sewerage services to our residents." Cr Hoban said.

The Nambucca Shire sample will now represent NSW in the Ixom Water of Origin Taste Test against the Barcaldine Regional Council, winners of the ***qldwater*** Best of the Best Water Taste Test. The water of Origin will take part at the WIOA Queensland Conference in Rockhampton in June.

Queensland lead the Water of Origin 2-1, and by all reports they are feeling pretty confident about their chances in 2016 - they reckon they've got it stitched up.

The serious business of water taste testing at the heats.

The taste test judges had the tough job of selecting the winner.

The excited team from Nambucca Shire Council.

Peter Ryan accepts the award on behalf of the Nambucca Shire Council team.

BIRDS EYE VIEW - Facilities Members Operate

Bowraville Water Treatment Plant, NSW

The Nambucca District water supply is drawn from an aquifer through 10 bores located beside the Nambucca River to the north of Bowraville. The water is naturally filtered as it flows through the gravel deposits in the aquifer and water is treated with the addition of lime, fluoride, chlorine and carbon dioxide. The treated water is pumped to a pair of balance tanks which are located on high ground to the east of Bowraville. From this location and elevation the water is able to be gravity fed to all reservoirs in the Shire. The annual water consumption is about 1500 ML.

Council has recently constructed an off river storage with a capacity of 5,000ML to secure the Shire water supply during times of drought. Once commissioned, water will be released from the ORS to augment the system at times when the supply from the bores cannot cope or when the water quality in the bores does not meet drinking water standards.

1 Treated Water Collection Tank

2 Lime Plant

3 Fluoride Plant
Chlorine Plant
Laboratory

4 Carbon Dioxide Storage

5 High Lift Pump Station

6 New Raw Water Pump Station

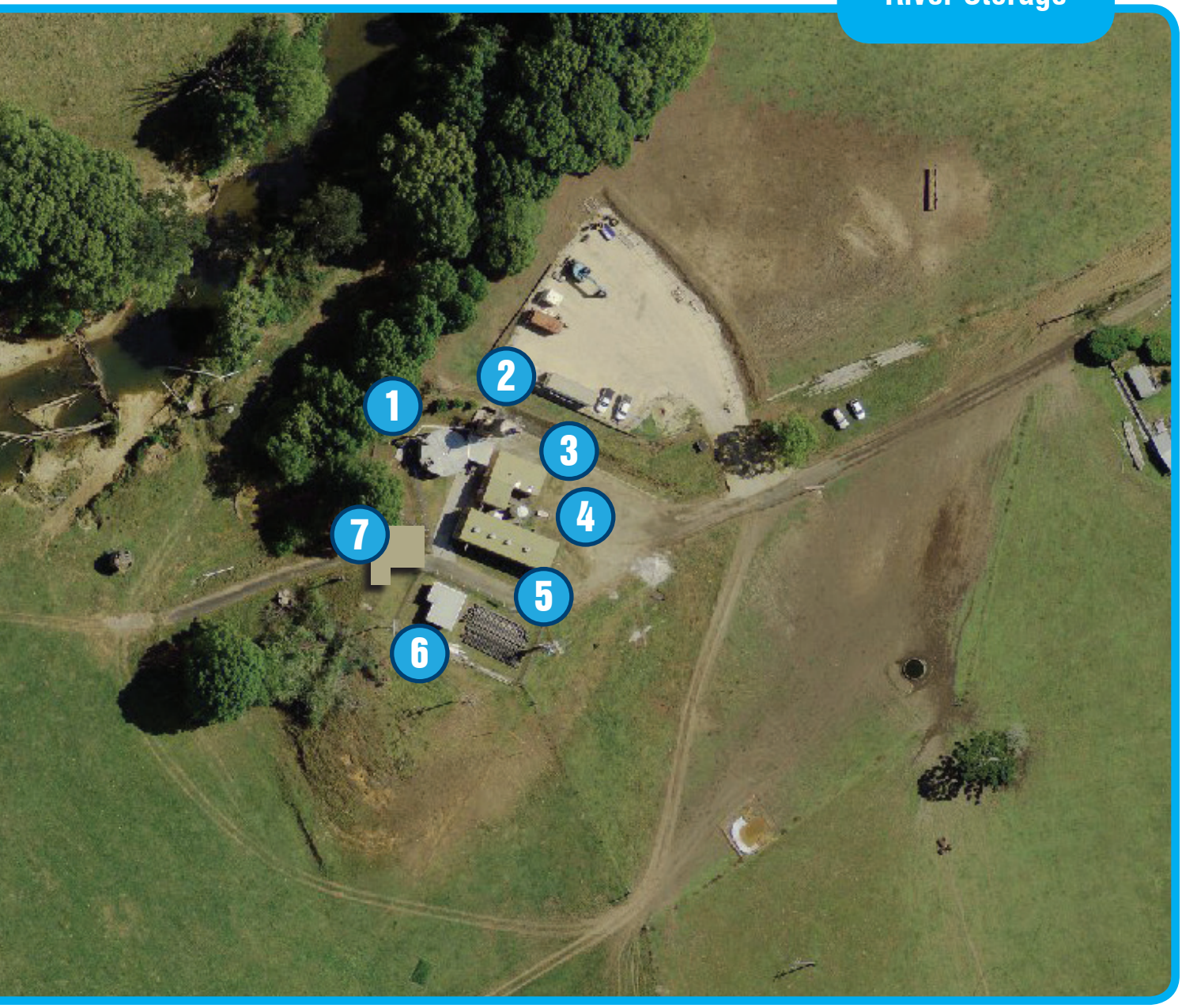
7 New Raw Water Collection Tank and Valve Cluster

8 Nambucca River

9 Borefield

Nambucca Shire Council award winning water team.
From left: Liam Williams, Geato Ramunno, Steven Banks, Ken Welsh, Lindsay Cooper, Peter Ryan and Kyle Bankier.

New Off River Storage



VICTORIAN ASSET MANAGEMENT INTEREST DAY AT BENDIGO

On Wednesday the 20th of April, WIOA and Veolia hosted an interest day at the Bendigo Water Treatment Plant. The purpose of the interest day was to examine various approaches and facets of asset management, along with an overview of how Wannon Water, Central Highlands Water and Veolia are addressing this crucial task. Approximately 50 WIOA members were present on the day, with the venue being in the filter building at the Bendigo WTP. This was a logical choice considering the number of attendees and the topic being discussed. The day began with a welcome by Anthony Evans, followed by an update on the latest WIOA happenings by Craig Mathisen.

Over 50 people attended the Victorian Day on Asset Management.

The first topic was presented by Ben Van Zeyl from the Veolia Victorian Asset & Maintenance team. Ben provided an in-depth overview of the Veolia approach to asset management. A key focus of Ben's presentation was the importance of not falling for the trap of carrying out maintenance unnecessarily (just for the sake of it). He also discussed the importance of utilising maintenance resources and finances in a prudent manner. I seem to recall "getting the best bang for your buck" was one of the technical terms used during Ben's presentation!

Mick Mahoney provides an insight into Wannon Water's maintenance excellence program at the Interest Day.

The second speaker was Mick Mahoney from Wannon Water, who provided an insight into the asset maintenance approach adopted by Wannon Water. During 2015, they took the decision to competitively "bench-mark" their in-house capabilities against the "open market". This resulted in Wannon Water retaining and re-structuring their "in-house" maintenance capabilities. It was particularly refreshing to hear that Wannon Water have taken the approach that field maintenance and networks operations roles are being promoted as a professional career path. These diverse, skilled and unheralded roles are too often treated as the "Cinderella" of the water industry; however this is one of the areas of the water industry where knowledge and expertise is quietly leaching away on a daily basis.

The third speaker for the day was Maggie Sheehan from Central Highlands Water. Maggie gave an overview on the journey CHW has adopted in their approach to asset management. Of particular interest was the outcome from arranged team meetings in relation to asset "ownership". Rather than the historic focus that various assets are "owned" by individual managers and departments, the new approach is that Central Highlands Water is the asset owner, however all staff have an active role in asset management.

We then took a break for a bit of lunch, with a tasty BBQ and refreshments courtesy of the Victorian Veolia team.

The Veolia team cooked up a mean BBQ as hosts of the day in Bendigo.

Last, but certainly not least, Konrad Mueller from Veolia gave an insight into the AQUA 2000 "BOOT" scheme covering the Bendigo, Castlemaine and Kyneton WTP's. Into the 14th year of a 25 year contract, Konrad discussed the "nut's and bolt's" of the daily operation and maintenance of the 3 sites. The Bendigo WTP (126 ML/day capacity) utilises CMF-S micro-filtration technology, whilst Castlemaine (18 ML/day) and Kyneton (8 ML/day) both utilise conventional CMF micro-filtration.

A special thanks goes out to the Veolia operations team, who not only cooked up a storm on the BBQ's, but then followed up with a series of interesting and informative plant tours.

Contributed by Steve Hunter from Veolia

Site tours are a great way to network with other WIOA members.

UNBELIEVA-BOWL DAY ON THE GREEN IN YADINA

In the native tongue, Yandina means “to go on foot”, which is fitting given the humble hinterland town played host once again to the annual WIOA Queensland Charity Bowls Day.

38 bowlers put their best foot forward – some with more success than others – in pursuit of meeting new people, catching up with old mates, raising funds for a great cause, and ultimately, attaining lawn bowling glory.

There was finesse and success along with a healthy dose of fumbling and humbleness as bowlers tried their best to get one over on the green and their rival teams. As always, clever captains, skilful shot-making and lashings of luck separated the winners from the losers.

Cameron holds the Tradies Cup aloft for Team Xylem.

This year, it was the Xylem team of Cameron Gilchrist from Xylem (captain), Sean Wainwright from Unity Water and Marcus Boyd from Toowoomba Regional Council, who reigned victorious, claiming victory in a nail-biting final game. The Bilfinger team, comprising Zac Floyde Smith from Bilfinger (captain), John Haviland from KSB and John Granzien from SEQWater, put up a good fight, coming in a close second.

The individual with the greatest bowling prowess was Keith Payton from Unity Water who claimed the single draw shot with a marvellous bowl. Unfortunately, it was a hoppy ending for the team from Thermo Fisher Scientific who took out the now infamous Bunny Ears for finishing in last place. Better luck next year, guys!

Great to see John Granzien front up on his 50th birthday and thanks to an early tip off from a little birdy, WIOA was able to roll out a very tasty cake to celebrate the occasion.

Khristina from Pensar bowls one down.

Of course, the real winners of the day are the recipients of the more than $1,600 that was raised by the generous attendees. The money will be donated to a Queensland Charity announced at the WIOA Queensland Conference to be held in Rockhampton on 1-2 June 2016.

All in all, it was a successful day on the green for everyone involved.

Hope to see you all again next year!

Contributed by Ian Cuthbertson, seqwater

Competition was fierce in preparation for the Grand Final.

Happy 50th John Granzien at the bowls day.

Tradies Cup winners Sean Wainwright (Unitywater) Cameron Gilchrist (Xylem, Captain) and Marcus Boyd (Toowoomba RC).

CERTIFICATION NEWS

First NSW Operators

WIOA has recently celebrated the certification of the first 7 operators from NSW. Operators from the Riverina Water County Council and Veolia were certified in Newcastle, under the National Framework.

In Victoria a cohort of 17 operators from Goulburn Valley Water also received their credentials as certified operators, having demonstrated they have met the training requirements, and have also been endorsed by their employer as being competent and experienced.

As the Water Industry Skills Taskforce (WIST) appointed national Certifying Body, WIOA continues to promote certification as a driver in the continual protection of public health for our communities.

The water treatment operator is the final and most important cog in the supply of safe drinking water to our communities. We should never look on the role of the operator as just a job - the operators are protectors of public health and must act accordingly.

While drinking water regulation in Australia remains the responsibility of individual states and territories, it is hoped that the national certification program will drive improved standards in training and portability of skills for the operators across Australia.

Josh Tickell from NSW Health addresses attendees at the certification presentation.

Phillip McAllister, George Wall, Dan Slocombe, Josh Tickell and Luke Prowse at the NSW Certification presentations.

Goulburn Valley Water recognises the benefits for the individual and the business

In 2010 Goulburn Valley Water (GVW) embarked on the journey of undertaking compliance with the Victorian Framework for Water Treatment Operator Competencies and in 2016, 17 operators were certified under the framework. GVW is a strong supporter of this scheme and the ongoing intent of the framework.

As a business they have worked closely with WIOA to ensure their operators are appropriately recognised for the skills and commitment that they show. The benefits that moving forward for the operators is an ongoing commitment to professional development and a guarantee to customers that the staff are highly skilled with the necessary knowledge and experience to effectively manage the water treatment systems to minimise public health impacts.

GVW congratulates the 17 successful operators on this achievement and look forward to working with WIOA into the future to further embed this worthwhile initiative in the Industry.

GVW Certification presentation group shot.

Mark Putman addresses the operators from GVW at the presentation ceremony.

NSW OPERATOR OF THE YEAR

Mark Gogala from Orange City Council was awarded the prestigious NSW Operator of the Year for 2016 at the WIOA NSW conference in Newcastle. The annual award is presented to reward excellent performance, initiative and all round attention to detail by an operator of a water or wastewater treatment facility.

Mark is Orange City Council's Water Treatment Team Leader responsible for operating the city's Icely Road Water Filtration Plant and the smaller bore system at Spring Hill.

Mark co-ordinates the work of 3 operators and works closely with other staff in producing some of the best quality water in the State.

Mark Gogala from Orange City Council, NSW 2016 Operator of the Year.

In his role as Team Leader over the past two years, Mark has demonstrated an ability to extend upon his operator skills in taking on new challenges and delivering outcomes by leading and working effectively with others.

Orange City Council noted in their nomination that "Mark demonstrated personal growth in completing a Cert IV in Frontline Management. He stepped up to a public speaking challenge as a part of the course and extended himself in representing Orange City Council in the 'Water Taste Test' at the 2014 WIOA Conference. Mark has played a major role in the development and implementation of Council's Drinking Water Management System."

In addition to his trophy, Mark received funding by the NSW Water Directorate to join the WIOA New Zealand trip in May 2016. The trip includes a study tour of various water and wastewater treatment plants as well as attending the WIOG NZ conference. The judges were very impressed with the high quality of operators in regional NSW and the Water Directorate would like to congratulate this year's other nominees: Ken Keliher from Cowra Shire Council, Paul Metta from Nambucca Shire Council and Bob Palmer from Port Macquarie Hastings.

Mark with the other Orange City Council operators.

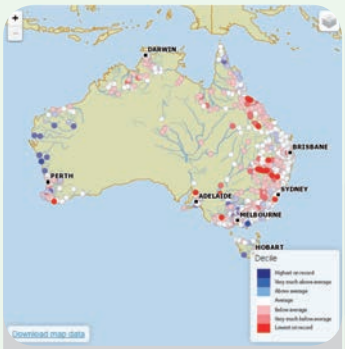
BOM NEWS - SIMPLIFYING STREAMFLOW REPORTING

Analysis and evaluation of streamflow patterns over time is a vital component of the *State of the Environment* report by the Department of the Environment.

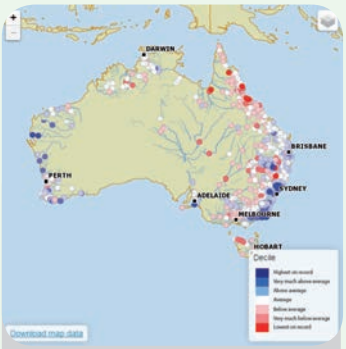
A new web visualisation tool from the Bureau of Meteorology makes this task much easier. Regional Water Information provides annual and monthly information on water resource condition, availability and use at various spatial scales, compared to historical conditions.

With 11 topics including rainfall, evapotranspiration, soil moisture, runoff, streamflow, groundwater and water use, and 31 analysis types across various areas - in total over 350 datasets can be accessed.

The maps below showing streamflow patterns were generated in just a few simple steps with Regional Water Information.



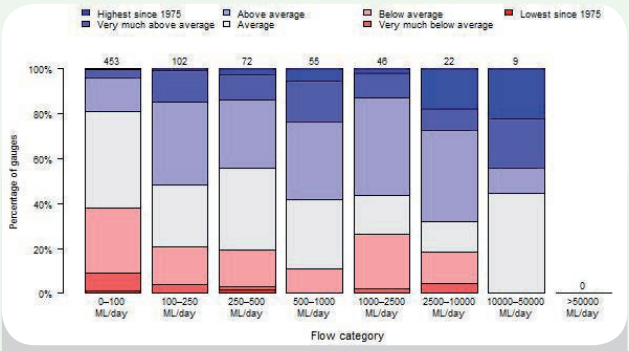
Streamflow deciles for March 2015.



Streamflow deciles for April 2015.

You can get statistics on the streamflow monitoring sites in each category for a given timeframe (April 2015) and area, as shown below.

Location Condition Statistics	
Occurrence of legend classes for sites in AUSTRALIA	
Class	**Number of sites**
Lowest since 1975	7 sites (1%)
Decile 1	41 sites (5%)
Decile 2 to 3	181 sites (24%)
Decile 4 to 7	280 sites (37%)
Decile 8 to 9	178 sites (23%)
Decile 10	58 sites (8%)
Highest since 1975	14 sites (2%)



Proportion of decile ranking classes for a range of flow categories (April 2015).

To explore the full range of information and download data for use in your own analyses check out Regional Water Information at www.bom.gov.au/water/rwi/

SILVER MEDAL FOR NATIONAL CHAMPION

Goulburn Valley Water's Marysville Treatment Plant wins the silver medal at an International Drinking Water Competition. After taking home the 2015 Ixom Best Tap Water in Australia competition last year, WIOA worked with the Goulburn Valley Water team to arrange the water's trip to West Virginia, USA. The sample form the Marysville Treatment Plant was placed second in the world in the Municipal Water category at the Berkeley Springs International Water Tasting competition.

The new Marysville Treatment Plant, which was commissioned in 2015, uses an improved micro-filtration treatment process to supply drinking water to the towns of Marysville and Buxton, with raw water for the plant sourced from the Steavenson River.

Goulburn Valley Water Manager Operations Steven Nash is thrilled with the result. "We had some issues with water quality in Marysville after the fires in 2009, so to hear that the new plant is creating water of a quality that is second in the world is a great achievement for GVW and a credit to our engineers and operators."

Marysville residents and businesses were waiting for the results of the competition and are justifiably proud of the water's international standing.

Goulburn Valley Water have provided a Water Refill Station to Marysville to acknowledge the town's award winning water and residents and visitors will have free access to the award winning drinking water once this is installed.

So remember to Choose Tap when visiting Marysville and Buxton to taste for yourself the best water in Australia and the second best tap water in the world!

Berkeley Springs International Water Tasting results

Best Municipal Water in the World 2016

1st – Clearbrook, Abbotsford, British Columbia, Canada

2nd – Marysville, Victoria, Australia

3rd – Independence, Missouri, USA

HELP THE WATER INDUSTRY ON CENSUS NIGHT

ANZSCO CODE

Census night will be Tuesday 9th August 2016, and we need all people employed in the water industry to use one of the 28 occupations that were established by the Australian Water Occupations Framework (AWOF) back in 2013-14. Currently the water industry is significantly under counted due to the lack of water specific occupational codes recognised by the Australian Bureau of Statistics (ABS).

The Australian and New Zealand Standard Classification of Occupations (ANZSCO), is a classification system that provides for the standardised collection, analysis, and dissemination of occupation data. The current data for the urban water industry that has been captured through previous Census' does not reflect the true size or importance of the water industry. Employment in the water industry is significantly under counted due to the lack of recognition of water specific occupational codes. The current numbers indicate there are only around 500 operators in the water industry but we know that there are many more across the country.

Why are ANZSCO codes important?

- To define the size & scope of the water industry
- Government funding opportunities
- Training & workforce development needs
- Statistical analysis (ABS)
- Licensing & certification

It is critical that sufficient industry occupational data is collected through the census, to identify urban water industry occupations. Recognition of these occupations will promote professionalism and provide more robust outcomes for public health and the environment.

Getting the water industry better represented in the ANZSCO codes is not easy to achieve as they are reviewed infrequently and there needs to be evidence of a significant number of employees in an occupation for a separate code to be created.

If an occupation like Production Officer or Maintenance Worker is reported in the census, the occupation is coded to a generic occupation code unrelated to the water industry.

It is recognised that many organisations have slightly different names for occupations that fundamentally perform the same roles.

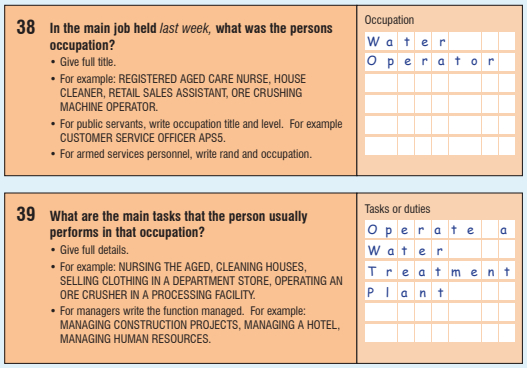
On Census Night

It is important for the industry that on census night, the generic occupation descriptor from the AWOF Occupations list is used instead of the job title used by the employer.

Questions 38 & 39 are important to have the water industry better recognised by the ABS.

By encouraging all water industry workers to use the generic occupations, this will improve the possibilities for all of the water occupations to be better represented to government and provides the ABS the opportunity to revise the ANZSCO codes for the benefit of the whole water industry.

Questions 38 & 39 are important to have the water industry better recognised by the ABS.



38 **In the main job held** *last week,* **what was the persons occupation?**
- Give full title.
- For example: REGISTERED AGED CARE NURSE, HOUSE CLEANER, RETAIL SALES ASSISTANT, ORE CRUSHING MACHINE OPERATOR.
- For public servants, write occupation title and level. For example CUSTOMER SERVICE OFFICER APS5.
- For armed services personnel, write rand and occupation.

Occupation: Water Operator

39 **What are the main tasks that the person usually performs in that occupation?**
- Give full details.
- For example: NURSING THE AGED, CLEANING HOUSES, SELLING CLOTHING IN A DEPARTMENT STORE, OPERATING AN ORE CRUSHER IN A PROCESSING FACILITY.
- For managers write the function managed. For example: MANAGING CONSTRUCTION PROJECTS, MANAGING A HOTEL, MANAGING HUMAN RESOURCES.

Tasks or duties: Operate a Water Treatment Plant

28 Occupations Identified in the Australian Water Occupations Framework	*Usual Qualification*
Source (catchment & bulkwater)	
Bore Fields Operator	CII
Bulkwater Operator	CIII
Catchment Operator (Compliance & Enforcement)	CIII
Catchment Operator (Land Management)	CIII
Catchment Operator (Technical)	CIII
Dams Operator	CIII
River Operator	CIII
Supervisor	CIV
Diversions Officer	CIII
Dam Safety Instrumentation Specialist	CIV
Salinity Interception Officer	CIV
Networks	
Assistant Networks Operator	CII
Networks Operator	CIII
Networks Supervisor	CIV
Treatment (water, wastewater & recycled)	
Assistant Operator	CII
Water Operator	CIII
Water Treatment Supervisor	CIV
Water Treatment Coordinator	Diploma
Water Treatment Technologist	CIV
Hydrography	
Assistant Hydrographer	CIII
Hydrographer	CIV
Senior Hydrographer	Diploma
Trade Waste	
Trade Waste Officer	CIV
Trade Waste Supervisor	Diploma
Irrigation	
Field Operator	CIII
Other	
Essential Services Operator	CII

WIN AN IPAD

Show us your bag photo competition

AUTOMATION GROUP

WIOA Individual members have the opportunity to win an amazing Wi-Fi 16GB – Silver iPad Air by sending in a creative photo of a WIOA conference bag in action. You may be on your bike, travelling to exotic places or just having a fish – we want to see some of the places the bags end up in this year. This year's bags are backpacks that double as drink coolers. They were well received by attendees at the NSW conference in Newcastle.

We thank our bag sponsor, Automation Group for putting up this wonderful prize and providing yet another way to get even more out of your WIOA membership.

The competition will end on 30 November 2016 with the winner hopefully receiving the prize in time for Christmas.

Photos can be sent to **craig@wioa.org.au**

Hannah and Cleo get ready for a big day of netball with their WIOA bag.

NEW WIOA COMMITTEE MEMBER

a minute with - Colin Haynes

Name – Colin Haynes

Position – Unit Leader Treatment Plants

Employer – Unitywater

Nickname – Col

Favourite food – Sushi/Sashimi

Favourite team – NRL Broncos and QLD team

Who do you admire?

My Dad. He always has had a common sense approach to life and as I get older, you realise how valuable his experiences and knowledge are in my everyday personal and work life.

Three people you would invite to dinner?

John Cleese, Shaun Micallef, Rowan Atkinson. That would be fun!

Thoughts on the water industry at the moment:

Good Planning for future sustainability of the Water Industry is the N0.1 priority. I am involved with Wastewater Treatment and we have come a long way in the past 10-15 years, but we have to keep that momentum going forward, by utilising the new technologies available to us, as well as ongoing development of our Operators.

Your involvement with WIOA , & as a new member on the WIOA committee, what contributions are you hoping to be able to make?

I was part of the original QLD Operators Interest Group that was formed in 1992 and have been an active member of WIOA QLD Advisory Committee since its induction 5 years ago. During the 2015 QLD Water Industry Workshop, held in Toowoomba, I was voted in as the Chairperson for the WIOA QLD Advisory Committee. With my experience in the Water Industry as a new member on the WIOA committee, I am looking to help keep communications flowing through WIOA's members and also collect ideas on how WIOA can evolve into the future.

NEW WASTE WATER PUMPS "ERADICATE" DOWNTIME

Gorman-Rupp, the world leader in solids handling self priming centrifugal pumps, has just released the most advanced pumping system for handling solids laden wastewater, according to Australian distributors, Hydro Innovations.

Called the *ERADICATOR*™ Solids management System, the technology is ideal for the new challenges for solids handling pumps, including stringy solids that would normally choke pumps and cause stoppages.

The new system comes as an option on the Gorman-Rupp range of Super T series pumps, and is also available as a retrofit kit on existing Super T Series pumps already in service.

New Eradicator System.

The Eradicator™ system features an aggressive self-cleaning wear-plate incorporating a number of notches and grooves, as well as a patent pending lacerating tooth that helps break up stringy materials, scrape them off the impeller vanes and pass them through the pump - all without impacting performance or interrupting service. A special cover plate with the system includes a patented lightweight inspection cover that can easily be removed if necessary to inspect pump internals.

System benefits include improved and sustainable operational efficiency, increased uptime, reduced maintenance costs, lower life cycle costs and easier access to the impeller. Operators will also find that the lighter cover-plate is easier and safer to work with. As with all of Gorman-Rupp's self priming wastewater pumps, internal clearances can be adjusted externally without the need to disconnect pumps from the piping system. This can be done in minutes by one operator to keep the pump at peak efficiency.

Chopper Explosion.

Eradicator-equipped pumps do not require expensive chopper blades that need periodic replacement, but rely on passing large solids and stringy materials straight through the pump. The system is available with carbon steel or hardened alloy steel wear plates. Pumps can handle flows from 5L/s through to 200L/s and heads to 45m, and Gorman-Rupp Super T Series pumps are able to be mounted high and dry above the wastewater [up to 7.6 metres] so that operators gain easy access without the need for cranes or other lifting devices [unlike submersible pumps].

The pumps are expected to be popular with Water Authorities and Councils at their wastewater treatment plants and at sewage pumping stations, along with any industry where pumps are required to pump solids laden water. Pump blockages can really chew into on operator's time, so a more reliable pump equipped with the Eradicator™ system will leave operational staff to get on with other things instead of worrying about attending to constantly blocking pumps.

More information on these pumps and the Eradicator™ system can be obtained from Hydro Innovations at **info@hydroinnovations.com.au** or by calling 02 9898 1800.

CYCLONE WINSTON RELIEF INITITIVE - FIJI

For Earth South Pacific, based in Nadi, Fiji, recently reached out to Waves For Water Executive Director, Christian Troy, to assist in their aid visit to Fiji to provide clean drinking water to remote villages devastated by Cyclone Winston

With initial support from the World Surf League and intel from Yacht Aid Global and Aussie Health Abroad, Waves For Water will respond with clean water systems to help the people of Fiji. Aid workers have warned that potential outbreaks of viruses carried by mosquitos could further devastate the nation, with dirty stagnant water remaining in many areas. Executive Director, Christian Troy is spearheading the effort transporting water filtration supplies to the affected areas.

For Earth Australia and For Earth South Pacific donated 20L buckets that will have filters fitted to provide clean drinkable water. The filters are supplied by Waves for Water and funded by donations from the public and private enterprises. If you wish to get onboard and donate please visit **www.wavesforwater.org**

Harley Sofield from For Earth delivering buckets and water filters to the Lautoka Divisional Health Inspector, to be distributed to remote villages in the Yasawas Island Group

FUTURE FOR MUNICIPAL BIOSOLIDS DEWATERING IN AUSTRALIA

Each year in Australia over 85 million tons of biosolids (sludge) are dewatered at municipal Sewage Treatment Plants (STP's) into around 1.65 million tons of dewatered biosolids, also called wet biosolids, which is trucked offsite for mainly reuse in agriculture and composting.

Dewatering takes place via a variety of methods, with centrifuges being most commonly used at 39%, followed up closely by belt filter presses and drying beds at 24% and 23% respectively.

Biosolids dewatering takes place in most of the 2400 STPs in Australia.

Regionally there have always been trends in dewatering technology with centrifuges favoured by most large NSW utilities and belt filter presses being favoured in Queensland and Victoria, along with rural NSW. There is however a new trend emerging and it has become the primary choice of major utilities in Brisbane and Western Australia – dewatering via screw press.

Hydroflux Screw Press.

This is an interesting development, as like most of the dewatering technology used, screw presses are not new and in fact may well be one of the oldest technologies. Indeed whilst the first centrifuges were used to separate dairy products around 1860 and belt filter presses were originally used in Europe in the early 1900's for pulp and paper, screw presses were first used in Roman times for pressing wine.

This new trend is being driven by changes in our economy and concerns over the environment and sustainability as well as a need for municipalities to continually improve their efficiency and operating costs.

Large increases in operational and maintenance labour and power costs as well as the unsustainability of processes that use large quantities of washwater have certainly forced municipalities to look seriously at their current dewatering technology and search for better alternatives. Add odour generation, either around the dewatering process or in the dewatered biomass, noise and other environmental concerns and the reason for the trend away from belt filter presses and centrifuges to screw presses becomes patently obvious.

Add to this the major advances in screw press technology in the last 10 years, enabling screw presses to now successfully dewater Waste Activated Sludge (WAS) and the trend becomes one that is certainly here to stay.

In fact it is safe to say that we can expect that most medium to large municipal dewatering facilities will make the change to screw press based dewatering in the near future.

For more information email **info@hydroflux.com.au** or visit the Hydroflux website at **www.hydroflux.com.au**

HYDROFLUX
WATER | SCIENCE | TECHNOLOGY

Screw Press v's Belt Filter Press v's Centrifuge

Screw Press	Belt Filter Press	Centrifuge
Operating Labour	Operating Labour	Operating Labour
Minimal	*High*	*Medium*
Maintenance Cost	Maintenance Cost	Maintenance Cost
Very Low - In-house	*High – In-house*	*High – Manufacturer*
Power Costs	Power Costs	Power Costs
Very Low	*High*	*Very High*
Rotational Speed	Rotational Speed	Rotational Speed
< 1 RPM	*6-10 RPM*	*>2500 RPM*
Life Cycle Cost	Life Cycle Cost	Life Cycle Cost
Very Low	*High*	*Very High*
WHS - Guarding	WHS - Guarding	WHS - Guarding
Good	*Very Poor*	*Good*
WHS – Airborne	WHS – Airborne	WHS – Airborne
None	*Significant*	*None*
WHS – Contact	WHS – Contact	WHS – Contact
None	*Significant*	*None*
Operation Setup	Operation Setup	Operation Setup
Simple	*Complex*	*Complex*
Odour	Odour	Odour
Equip None	*Equip Very High*	*Equip None*
Odour	Odour	Odour
Cake Low	*Cake Low*	*Cake High*

Short comparison of some of the positives and negatives for the three biomass dewatering processes.

MULTI-PATH PICOFLY FLOWMETER

Sitelab have just announced the release of the SL3488D multipath ultrasonic transit time flowmeter.

The SL3488D has wetted face transducers that can be installed on existing pipes without the draining of the pipe. The transducers can be inserted and extracted under pressure. SL3488D also adopts the unique PICOFLY time measurement technology. With a resolution of 10 picoseconds (0.01 nanosecond) and a sampling rate of 1000 times/second it delivers rapid response and high accuracy flow metering via this unique form of transit time ultrasonic flow measurement technology. It can be applied to all sorts of industrial and commercial clean liquid flow applications.

Picofly Flowmeter.

The SL3488D can be also be supplied in calibrated certified spool pieces from 100mm to 3000mm with Australian Standard Flanges AS4087 or DIN or ANSI flanges. The spool piece has an accuracy of 0.2% error in reading of flow rate.

The SL3488 can be programmed to accommodate from 2 sets of transducers to 6 sets of transducers giving very accurate flow profile measurement.

More information on ultrasonic flowmeters is available from the MJK website at **www.mjkautomation.com/ultrasonic** or for more information on the Picofly Flowmeter contact MJK at **www.mjkautomation.com/contact-us**

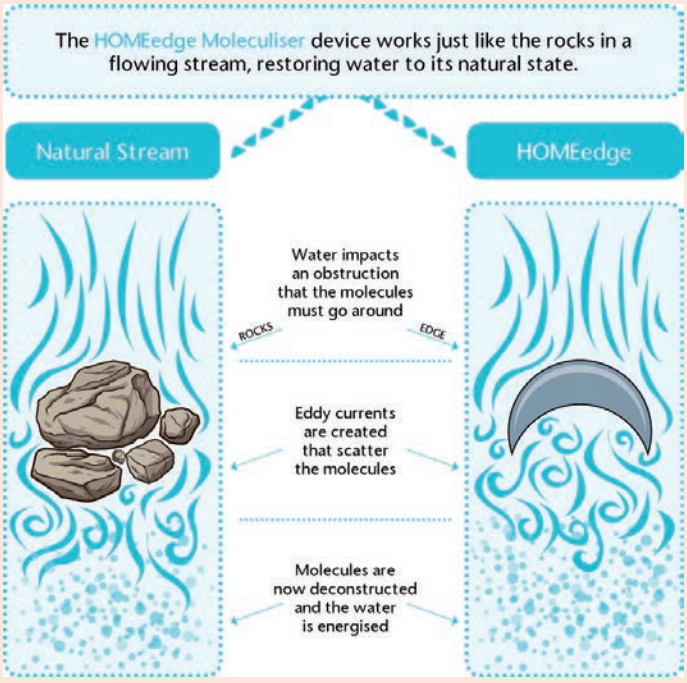
HOMEedge SYSTEM

We are fortunate in Australia that our local water Utilities provide good, clean drinking water but if you are wanting better tasting, Chlorine Free water with more rapid and efficient hydration, then Healthy Water Technologies Australia has the answer.

Home Edge, Travel Edge and Commercial Edge. And best of all they are Maintenance Free. There is never any expensive filters to be replaced.

The Edge System works just like rocks in a flowing stream, restoring water to its pristine, natural state. In a stream, water impacts against the rocks and its molecules are forced to shift around. This creates eddy currents that scatter the molecules. The molecules are then de-constructed leaving the water fresh and energised.

The Edge System operates in the same manner. Water impacts the edge stators causing the molecules to shift around, creating eddy currents that scatter the molecules and resulting in de-constructed and fresh, energised water.



Griffith University lab tests have before and after testing showing a reduction of Chlorine by 99.2% and 29.7% of Fluoride. These additives are essential in the water up until the point where it enters the home. See summary below.

Healthy Water Technologies Australia's energised water and filtration systems are designed to return this precious resource to its natural state: just the way nature intended. Installed underground on the main water line to your property in-between the water metre on the footpath and the home. The whole house has healthier water coming from every tap with no maintenance needed.

For further information contact Matt at Healthy Water Technologies Australia on 07 3286 6866 or visit the website **www.hwta.com.aujan**

NEW NON-INTRUSIVE TEMPERATURE SOLUTION

Emerson Process Management introduces Rosemount X-well Technology, a surface sensing temperature measurement solution that eliminates the need for thermowell process penetration when measuring process temperatures in pipe applications. This solution provides an accurate and repeatable internal process temperature measurement, while eliminating possible leak points and simplifying specification, installation and maintenance.

Rosemount X-well Technology is available in the Rosemount 648 Wireless Temperature Transmitter and Rosemount 0085 Pipe Clamp Sensor Assembly. These components work together to calculate process temperature via the transmitter's thermal conductivity algorithm. Rosemount X-well Technology works by measuring the pipe surface temperature and ambient temperature, and combining this information with an understanding of the thermal conductivity properties of the installation and process piping. A major advantage of Rosemount X-well Technology is accurate process temperature measurement without requiring any intrusions or penetrations into the process, allowing for quicker and easier installation along with simplified long-term maintenance. Users do not have to design, size or maintain thermowells. Wake Frequency Calculations are eliminated, as well as time spent determining material compatibility, the right insertion length and the necessary profile.

Temperature Solution.

With Rosemount X-well Technology, users can also add temperature measurement points without having to shut down a process. X-well Technology can be installed with a standard pipe clamp procedure and ordinary hand tools, and does not require a skilled contractor. "Rosemount X-well Technology is the best of both worlds as it provides an accurate process temperature similar to a thermowell while maintaining the benefits of a non-intrusive surface measurement," said Jason Rud, senior principal design engineer at Emerson Process Management. "Current surface temperature sensing technology only provides a surface measurement that can be easily influenced by ambient temperature, while Rosemount X-well Technology corrects for external conditions to infer the process temperature." Applications that can benefit from Rosemount X-well Technology include pipelines, high velocity flows, slurries, heavy particulate fluids, wellheads, clean-in-place processes, high viscosity fluids and harsh processes in the oil & gas, chemical, refining, food and beverage, metals and mining and pulp and paper industries.

To learn more about the Rosemount X-well Technology, visit **www.EmersonProcess.com/Rosemount-Xwell**

GROUNDWATER RESEARCH - How old is stream water?

We are all very familiar with the fact that streams and rivers rise a few hours to a few days following rainfall. From this there is a general perception that the water contained within streams is probably relatively young, especially when the streamflows are high. However, there is mounting evidence that for much of the time, even when the streams are in flood, the water contained in streams may have been resident in the catchments for many years to decades. A series of studies being carried out at Monash University in collaboration with University of Queensland and GNS (New Zealand) are using a geochemical approach to understand the ages and stores of water that feed the stream systems in headwater catchments.

Perennial streams, especially in arid or semi-arid regions, are commonly sustained by groundwater inflows during low-flow periods. Where the lower and middle reaches of rivers are developed on alluvial sediments, these sediments provide a ready source of groundwater to sustain the river during low-flow periods. By contrast, headwater catchments (i.e., those in the upper reaches of the drainage systems) are developed on indurated or crystalline rocks and may not be linked to well-developed groundwater systems. The observation that many headwater streams continue to flow over prolonged dry periods indicates that these catchments do contain stores of water in soils, weathered rocks, or fractures with transit times of at least a few years. However, the transit times of water within these stores and whether different stores are more active at different times, for example during high vs. low rainfall periods, is not well known.

Understanding the timescales of water movement within headwater catchments is an essential part of water management. Headwater streams contribute a significant proportion of the total flow of many river systems. Thus the water provided by headwater streams is that which may be eventually used downstream for domestic use, recreation, agriculture, and/or industry. Many headwater catchments retain native vegetation; however, increasing population growth and economic development has seen progressive changes of land use, including plantation forestry, agriculture, and urban development. The impacts of such development on the headwater catchments, and consequently on the river systems as a whole, is currently poorly understood.

Tritium (3H), which has a half-life of 12.32 years, may also be used to determine transit times of relatively young (<100 years) water Rainfall 3H activities have a distinct peak in the 1950s to 1960s due to the production of 3H in the atmospheric nuclear tests (the so-called “bomb pulse”). Traditionally, the propagation of the bomb pulse has been used to trace the flow of water recharged during this period. However, because 3H activities during the bomb pulse were several orders of magnitude lower in the southern hemisphere than in the northern hemisphere, 3H activities of remnant bomb pulse water in the southern hemisphere have decayed well below those of modern rainfall. This situation allows 3H to be used in a more conventional manner and permits in unique transit times to be estimated from single 3H measurements.

In a series of related studies, Prof. Ian Cartwright & Dr Dylan Irvine (Monash University), Dr Harald Hofmann (University of Queensland), and Dr Uwe Morgenstern (GNS, New Zealand) together with their students have been making use of the unique opportunity afforded by southern hemisphere 3H to determine transit times of waters in several catchments in Victoria. Their results demonstrate that transit times are typically several years to decades. Additionally, while the water that contributes to streamflows, has a lower transit time at high flows, major ion geochemistry indicates that it is likely displaced from within the catchment (e.g. from the soils and regolith) rather than it representing a simple dilution of an older groundwater component with recent rainfall. Despite transit times in different sub catchments varying by several years, it is difficult to discern the first-order controls on the variation. In most of the catchments, there is no clear relationship between transit times and topography, soil type, or geology indicating that a combination of factors is probably important.

The observation that water contributing to the headwater streams has a mean transit time of years to decades implies that these streams are buffered against rainfall variations on timescales of a few years. However, impacts of any changes to land use in these catchments may take years to decades to manifest themselves in changes to streamflow or water quality. Ongoing studies are investigating the transit times of water that contribute to flood events in these catchments, investigating the degree to which the flood peak is composed of water displaced from within the catchment vs. direct input from rainfall. Additionally we are investigating the impact that different flow models has on the estimated transit times in order to more precisely determine the transit times.

www.hydrol-earth-syst-sci.net/19/3771/2015/

Source: National Centre for Groundwater Research and Training, April Newsletter.

WATERBORNE OUTBREAK IN PRAGUE

A major waterborne outbreak occurred in the capital city of the Czech Republic during May and June in 2015. It is estimated that over 30,000 people were exposed to contaminated water over one weekend in a section of the city, and around 12,000 developed gastrointestinal illness.

The outbreak was traced to sewage contamination of the drinking water supply during the course of planned repair work to the drinking water distribution system. The contamination originated from a section of old sewer pipe that ran above a drinking water main. It appeared that both pipes had been cracked by nearby construction work, permitting sewage to enter the drinking water main when it was isolated and drained for repairs. Although the drinking water pipe was flushed after completion of the repair work, the location of the flushing valve resulted in a small volume of sewage-contaminated water being retained in a hydraulic dead end. When the drinking water main was restored to service, the contaminated water entered the drinking water distribution system, resulting in the largest drinking water outbreak that Prague has experienced since the 1950s.

Source: Water Research Australia, Health Stream 80 - December 2015

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:
Sarah Wright, Dennis Pilkington, David McCullen, Ross Pendlebury, Mark Swadling, Scott Nichols, Ned Tobin, Maddison McCarthy, Maria Mischkulnig, John Lebowitz, John McAndrew, Hayley Colls, Stephen Remfry, Thomas Steel, Josef Rezabek, Geoff Miles, Alex Cheal, Nick Farrell, Sandeep Chugh, Pankaj Bali, Anthony Jones & Liam Tobin.

New **Utility Corporate Members** include:
Seqwater

New **Corporate Members** include:
Flottweg Australia, Healthy Water Technologies Australia, PPG Industries, Atlas Copco Compressors Australia, Process Pumps (Australia), John Morris Scientific, Andritz, DHI Water & Environmental, Atlas Engineering Group, RPC Technologies, Access Covers Australia, Centroc WUA, Water Research Australia Limited, Executive Media, Chisholm Insitutute, Research Laboratory Services, Nuflow, Pricam Automation, SVSR, Reaz Australia, Fuseco Power Solutions, AKS Industries, Kelair Pumps, 3M Australia & Aquago.

JOIN NOW

ROYCE MEMBERS DRAW

Congratulations to **Toby Spark** from Gippsland Water in Victoria on being the lucky winner of a $1,000 travel voucher, just for being a member of WIOA.

With generous support from Royce Water Technologies, the name of one financial individual member is drawn from the barrel at our NSW conference and receives this fantastic prize. Another good reason to maintain your WIOA membership.

Lucky member Draw Winner - Toby Spark (L) from Gippsland Water with Arthur Koeolekos for Royce Water Technologies

COMING EVENTS

2016

23 June	**Biggest Ever (Laurie Gleeson) Dinner, Melbourne, Etihad Stadium**
6 July	**Operations Interest Day & Ixom South Australian Water Taste Test, Adelaide**
3 August	**Water Interest Day & Ixom South Tasmanian Water Taste Test, Launceston**
1 Sept	**Ixom 2016 Victorian Water Taste Test, Bendigo**

2016 CONFERENCE AND EXHIBITION SCHEDULE

1 & 2 June	**41st WIOA Queensland Water Industry Operations Conference & Exhibition, Rockhampton**
31 August & 1 September	**79th WIOA Victorian Water Industry Operations Conference & Exhibition, Bendigo**

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NEXT EDITION

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