



Operator

May 2021 The Water Industry Operators Association of Australia Magazine

USING FRP PRODUCTS
IN WTP

55ML/DAY WTP
COMMISSIONED IN
WAGGA WAGGA

BIRDS EYE VIEW
NABIAC INLAND DUNE
AQUIFER SYSTEM

WATER SECTOR ON
TRACK FOR NET-ZERO
EMISSIONS



QUEENSLAND BOWLS
DAY - COVID SAFE
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President's Message - Mark Samblebe



Hello members. Being my first term as President of WIOA, I'd like to thank you for this opportunity and acknowledge Presidents, Committee members, volunteers and staff, past and present for their great work. I really look forward to a great year ahead.

For those who might not know me, I have been in the water industry for 25+ years, since completing a Bachelor of Aquatic Science. My introduction into practical wastewater treatment came when I was awarded a Master of Science Scholarship studying fish growth in tertiary wastewater treatment lagoons. After arriving to site and finding significant fish kills, I began to investigate root causes of process failures and provide input into solutions.

Since those early days, I have worked in both the public and private sectors across most aspects of water and wastewater operations from catchment, treatment, biosolids and organics recycling. In 2017, I began MBS Water providing niche consultancy and project management services investigating process improvements and solutions to regional and remote communities throughout Australia.

It has offered me great friendships, experiences, and amazing locations that I would have not had the opportunity to visit, let alone assist in achieving safe, clean and reliable water supplies which is something I'm proud to do.

During my career, I have met many great people most of whom are part of the WIOA community. I became a WIOA member in 2001, when I presented my first paper. Now 20 years on, in my 7th year as a committee member and now President, I have seen WIOA grow and develop as a key industry body, providing opportunities for professional development, knowledge sharing and supporting fellow industry staff in operations and beyond. It is a truly diverse industry, incorporating a plethora of skill sets, talents, technologies and know how that contribute to an efficient and reliable system.

The WIOA conference and exhibitions are a great opportunity for all to see what's available and emerging in the services and technology space at the trade display, while providing a space to share common and sometimes uncommon problems where effective solutions have been found.

As I ponder the year just gone, I am excited at the prospect of returning to more normal times. The disruption caused by the COVID-19 pandemic was significant and WIOA was not immune, with the cancellation of all conferences in 2020. Despite the disruption, I am proud of the efforts of the WIOA community who supported each other and the staff who adapted to the changing circumstances. The development of the Virtual Water platform enabled WIOA to continue providing opportunities for knowledge sharing where participants from all over the country, and the world, presented their challenges, findings and solutions. A fantastic outcome stimulated by need and showcasing the resilience of the team. Well done!

I look forward to the 2021 conferences and seeing some new and interesting papers. I certainly hope that the industry gets on board and allows staff to attend the scheduled events for the year, beginning with the Queensland Conference in Toowoomba on 2 & 3 June. I look forward to seeing you there!

May 2021

Cover Riverina Water WTP construction incorporates fibreglass reinforced plastic (FRP) products to protect the screens and offtake structure from debris during flooding.

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Managing Editor George Wall

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Member Profile - John Granzien



Operations Supervisor Somerset South

Employer Seqwater

Nickname Johnny G

Favourite team Penrith Panthers (NRL) and Richmond Tigers (AFL)

Favourite food Potato Fritters

Least favourite food Boiled Cabbage

Favourite TV show Hogan's Heroes

Worst TV show Any Reality TV or Soap Opera

Favourite Movie Braveheart

Favourite Musical artist/s AC/DC, Redgum

Ambition in life To assist anyone where practical

Hobbies Reading Phantom Comics, local history

Best trait Easy going.

Worst trait Hard of Hearing

Who do you admire? Anyone with common sense

Favourite saying or quote You have to be serious about what you do, but you don't have to be serious in doing it, have fun along the way.

Four people you would invite to dinner Carl Barron, Mel Gibson, Elle Macpherson and Justine Schofield

How long have you been a WIOA member? Almost 16 years, love being involved in whatever events I can attend, conferences, bowls and interest days. Being inducted as an IDIOT a few years ago.

Your involvement with WIOA, what contributions are you hoping to be able to make? Continue to promote the organisation as best as I can, so as to grow awareness of the ever-changing technologies becoming available. Encourage others to present papers at conferences etc.

How long have you worked in the water industry and what attracted you to it? 39 years I did a Plumbing/Drainage Trade, and ended up in the Water and Sewerage maintenance team and then the treatment fields of both Water/Sewage. No attraction I don't think, I just rolled with the flow and enjoyed making a difference where I could.

What do you enjoy most about your job? Being part of a great team at present who all fit in with my favourite saying. Having a say into the progress and improvements of all of my sites. Passing on my knowledge and experiences within our organisation.

What are the major challenges in your current role? Recently the ongoing drought and the stress of doing our best to keep up with demand, also our plants are ageing and require a shipload of operator intervention to keep them working.

Thoughts on the water industry at the moment Finally, great to see a traineeship program within our organisation after discussions at a WIOA conference in Toowoomba in 2011. Expectations of Water Quality to a significant higher standard than 10-15 years ago has been a huge improvement to the way we think and do things.

How do you relax? With a cold beer and a glass of port.

Where do you live and what's the best thing about it? Toogoolawah Queensland, been here all my life so I have a lot of ties in the community and enjoy helping community organisations where possible. We are close enough to from the Sunny and Gold Coasts, Brisbane and Toowoomba. Quiet, plain and easy-going atmosphere of a small country town and not City BS.

Look-a-Like

We think John has a remarkable resemblance to the character who is the main protagonist in the kids film Up, Carl Fredrickson. John informs us that he inherited that Conk from his Fathers side, lucky hey!



John Granzien is the top one!

Vale - Roland Passuello

Roland Passuello joined the water industry on 13 March 1990. While he was previously working in the timber mill in Mount Beauty, he obviously had a good insight about which industry would have a better future.

The then Kiewa Valley Water Authority looked after Mount Beauty and was yet to join with Yackandandah. History has shown that this was the team that eventually took over Wodonga in 1994 and Ovens Water in 1997 to form North East Water.

When Roland first joined the water industry, the workplace looked very different to what it did 25 years later when he finished up in 2015. Roland was a master at learning new skills and technologies including wastewater treatment, water treatment, SCADA systems and computers in general. All of these skills were essential, as the Mount Beauty system shifted from being the remains of an SEC construction camp (you will have to google the Victorian State Electricity Commission) to a major tourist destination with modern treatment systems.

A classic Roland moment is recalled when the then Minister, Tim Holding came to open the controversial water treatment plant. It was controversial because it used chlorine. Roland always loved to put on a show and entertained the Minister with a blow by blow account of how the new plant worked. To illustrate how much gunk the plant was pulling out of the 'pristine' water, Roland dipped his finger into the DAFF scum. Almost as if it was what you were supposed to do, the Minister also took a big scoop of scum onto his finger. Roland didn't even draw a breath as he wiped his finger on his pants. The Minister on the other hand (in his nice suit), looked very awkward trying to flick the sticky substance off the end of his finger. Gold.



Roly is the third from left (under the WIOA banner) in this photo of the 2004 Committee in Wodonga.

There was never a dull moment with the big hearted Roland, whether you were agreeing with him or not. He made everyone at North East Water proud when he took out the WIOA Victorian Operator of the Year in 2001, a worthy recognition for a great all-rounder.

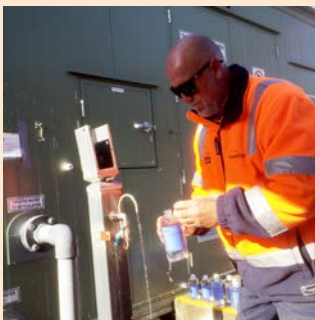
Roland was a fantastic contributor to WIOA as well. He served on the Committee from 2002 to 2004 and was always ready to put his hand up to help out. His smile, enthusiasm and bubbly character ensured he was liked and appreciated by everyone, particularly at the WIOA conferences. He was regularly seen driving the forklift, doing all sorts of odd jobs and always with a big smile on his dial. Despite his outgoing personality, public speaking was not something that Roly was comfortably with. It was great to see him conquer his fears and present a paper on issues with the Ozoane GAC plant at the Victorian conference in 2001.

Roland will be sorely missed by his loving wife and two sons who are now young men. Thanks for the memories Roland.

Rossarden Sample to Represent Australia

IXOM

Our fingers are crossed for another great result in the 2021 Berkeley Springs International Water competition. The TasWater/TRILITY sample from the Rossarden WTP will represent Australia and hopefully be in medal contention. The photos below show the care and pride of the operators as the sample is carefully collected and packed, ready to be sent to the USA.



TasWater's Dean Glover (L) takes the Aussie sample and Kelly Hill safely loads the box of samples ready to take on the world.



Queensland Charity Bowls Day

It was a hot and humid morning on Friday 5th March, that brought 14 teams of bowlers together for another great day of the Charity Bowls Day at Yandina Bowls Club in Queensland. It was the first 2021 event for the Queensland Committee, since the COVID-19 restrictions were eased, allowing the day to go ahead.

This year we had to run the event without the help of the WIOA's Craig and George, but we soldiered on. With John Granzien and myself on the registration desk, we were off to a sluggish start, but managed to get the 14 teams on their way. At the end of a competitive morning session, we retired to the cool air of the clubhouse to have a great BBQ lunch and recharge with a cold refreshment or two.

This did not help all of the bowlers, as many were just as bad after lunch as they were before. Many claiming heat stroke as an excuse, but this is the same excuse they have rolled out every year!

In the end, it came down to 4 teams. Play off for 3rd and 4th was the Pensar and SEQ Water teams with SEQ Water team of Rick, Glenn and Ross taking bronze.

The Grand final play off for The Tradies Cup was between McBern's Gold and the Xylem teams. Two of the best Bowls were to feature in the final tussle for the Tradie's Cup.

First one from the McBern's team, who rested their bowl against the Jack perfectly and looked like the final was in their grasp. But then the Xylem team pulled out all stops and knocked the jack away, taking the Grand Final win and bragging rights with the Tradies Cup in their possession until next year.

We then moved onto the single draw competition, and after plenty of wild shots, and the heat stroke excuse thrown around again, it was taken out by Shane McLachlan from Amiad.



Tradies Cup Winner Xylem represented by Peter Thompson, Richard Horrocks, (c) and Brad Demczuk.

Presentations were then held, with the 3 top teams receiving their awards, and then we hit the Raffle Draws, with Orange tickets being the colour of the day. (Let's just say that Peter Granzien featured well amongst the winners of the Raffle prizes, again!) Bowlers then started making their way home after another great day.

A huge thanks to the McBerns Team (Major Sponsors) for organising the Bowls and Raffle prizes, and to Stuart Derby who helped in the preparation and conduct of the day.

WIOA Queensland Committee members, John Granzien and George Bellizia are also to be thanked for their assistance in registrations and selling raffles tickets. It was great to have the support of dedicated WIOA members that ensured another great fun and day.

Contributed by Colin Haynes from UnityWater.



Single draw winner Shane McLachlan from Amiad.



Thanks to the following sponsors for the charity bowls day.

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WSAA Climate Change Position

WSAA recently released their climate change position for the urban water industry. The industry is uniquely positioned to mitigate our impact on our climate, respond and adapt to the impacts of a changing climate on the delivery of our services, and improve the resilience of our communities and the environment in adapting to a changing climate.

The urban water industry will achieve net zero greenhouse gas emissions by 2050. We are achieving net zero sooner where it aligns with customer expectations.

Through collaboration and partnership with our customers, communities, Aboriginal and Torres Strait Islander peoples, the Maori people, government stakeholders and other sectors, the urban water industry also commits to:

- Reduce water loss in our networks and encourage efficient water use by our customers.
- Build resilience in water infrastructure through holistic adaptation to climate change, including diversifying water sources and improving treatment processes.
- Recognise the importance of cultural flows and benefits of integrating Indigenous knowledge and practice in water management.
- Support green, cool and healthy environments.
- Implement circular economy principles in our management of water, waste and energy.
- Support healthy waterways to protect and restore ecological and community values.
- Engage with customers and communities to achieve a balance between climate change action costs and outcomes, including respecting the needs of current and future generations.



The urban water industry's commitment to the 17 Sustainable Development Goals provides the framework for achieving these commitments.

Water utilities face different circumstances, capacity and capabilities to achieve these commitments.

The industry will continue to work together and collaborate with our stakeholders to meet the challenges of a changing climate.

More information is available on the WSAA website.



<https://tinyurl.com/wcw4dczz>



WIOA TALKS

Women of Water Conversation and Coffee

The WIOA diversity & inclusion group conducted a WIOA Talks Webinar, Women of Water on 25 March 2021. Shannon Thomas from Unitywater shared her experiences as a young woman who has found her way into the water industry, which opened discussions for all attendees in small break out rooms. Some of the takeaways included:

- It was a great forum to hear personal experiences with a good balance of presentation and participation
- Shannon's presentation was honest and confronting but described a journey that many would be able to relate to in some way
- Simple actions can impact how others feel included, supported, respected - intentional or not
- Be thankful for a mentor or supporter who pushes individuals out of their comfort zone - sometimes as a mentor it is hard to know how hard to push someone
- The breakout conversations quickly found common ground and experiences of diverse leadership and personal support
- It was a great way to connect quickly with common interests in the industry



Shannon Thomas.

Contributed by Frances Smith from TasWater.



diversity & inclusion

Becoming a Supervisor May Not Match Your Expectations



Caution: curves ahead.

Keep that in mind when moving from a performance-level position to a supervisor.

One of my clients offers a New Supervisor/Manager Orientation Program, and I was included in a follow-up briefing about how to improve the next series of classes. One fascinating conversation focused on the participants' expectations about their new management positions before they were promoted, compared to after they became supervisors and completed the training.

Each participant in the orientation program was surprised at how radically their expectations of supervision differed from their actual experience. Below are some of the realities they discovered during their transition into supervision.

- It is difficult to shift from being a team member to supervising your former peers.
- Supervisors require additional and different skills than they relied on as a performance-level professional.
- Being a new supervisor provides the opportunity to learn and experience much outside of your comfort zone.
- It is difficult to live up to your own and your staff's expectations.
- It is a change to be responsible for work that you no longer personally perform, even though you have the skills and expertise to do that work.
- You are responsible for encouraging others to help meet goals that you negotiated with them.

The keys to becoming a successful supervisor may seem straightforward, but they can be difficult to implement. Here are some tips for being effective.

- Although you are responsible for setting the goals for your group, encourage your employees' input on how to achieve them. Your job is to listen to their ideas, not dominate the discussion. If you show you care about their ideas, they'll continue to offer them.
- Employees work harder, smarter and longer for supervisors who encourage them to think for themselves and ask for their suggestions, rather than telling them what to do. When a member of your team is losing focus or floundering, use phrases like "have you considered" or "might it be helpful" to start a productive conversation.
- Your group's goals should be SMART – Specific, Measurable, Achievable, Realistic and Timely. As supervisor, your focus is on the outputs or solutions, rather than the details of the process.
- Keep your eye on long-term goals. Think of a shepherd keeping a flock moving forward as one. You need to be present in the moment, but a few steps ahead in planning.
- Cultivate a trusting and safe work environment. Encourage your team to "storm positively and effectively" and "conform collegially." Encourage each member to use their unique strengths and skills.
- Hold your staff responsible and accountable for meeting their individual goals and do the same with your own goals. Successful completion, and failure to complete, both have real consequences.

Being an effective supervisor is challenging and hard work. When done correctly, it also is rewarding and allows you and your staff to grow and succeed professionally.

Contributed by Stuart Karasik, Ph.D.

This column was originally published in 2019. We're sharing it again to support the career growth and success of water professionals. Reprinted with permission from American Water Works Association. Copyright 2021. All rights reserved.



WIOA Team of the Year Award

Recognise a Team's Contribution to Workplace/Community

This new award will recognise teams of employees working in any part of the water industry that have made an outstanding contribution to their workplace or community. The award will focus on those who have gone above and beyond their normal roles and recognise their dedication, initiative, talent, enthusiasm and contribution.

Teams may be recognised for a range of activities, with the winning team to receive copies of the WIOA Practical Guides for the use of the winning business, to the value of \$2,000.



wioa.org.au/awards/national-awards/team-year

Program Saves Schools Water and Dollars

Intelligent meters are on the cards for a number of Goulburn Valley Water (GVW) serviced towns, including Kilmore, Broadford, Mansfield and Kialla Lakes. It's exciting that GVW is heading in this direction, but some of our schools have already had intelligent metering since 2012.

The School Water Efficiency Program (SWEP) is a Victorian Government initiative available to any Victorian school. It involves having a data logger fitted to the school's water meter to track how much water is being used by the school. Each data logger measures water usage every 15 minutes. The information is sent to the SWEP website where the school can see a graph of how much water they have used in a day, week, month or year. The website also provided educational resources for students to do activities based around real time data relevant to their school.

Some schools have old pipes, taps and toilets which can sometimes leak. The benefit of the program is that leaks can be easily identified and the school alerted as they occur. In some cases, schools have been alerted to constant water usage in the school holidays and have discovered a tap left on or a jammed button on a toilet which could have used a heap of water over the school holiday period.



Some may have found they had a leak in the toilet.

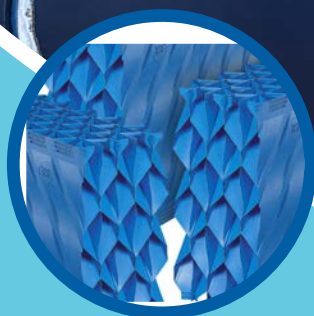
SWEP has the potential to save schools a large amount of money on their water bills. Since 2012 SWEP have predicted that 46 schools in the Goulburn Valley have saved a total of 384 megalitres and \$674,123. For the 2019/20 financial year, those savings were 33.88 megalitres at a cost of \$65,984.

The cost of the program to a school is \$300 for the first three years and \$150 per ongoing year. Some water corporations pay for their schools to participate in the program, so EMT approved a business case for us to pay for the first three years for 34 new schools across a two year period. We currently have 34 schools in the program, with more to be recruited soon.

Contributed by Kristy Elrington from Goulburn Valley Water.



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SEDVAC

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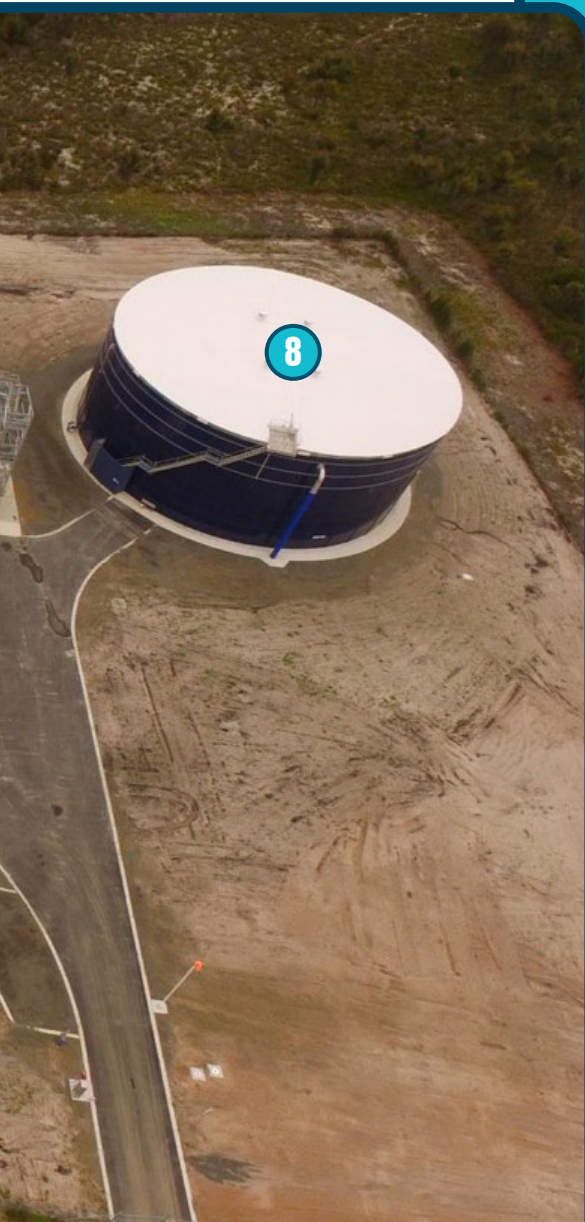
BIRDS EYE VIEW - Facilities Members Operate

Nabiac Inland Dune Aquifer Water Supply System



- 1 Lime Dosing Room
- 2 Chlorine Gas Storage & Dosing Room
- 3 ACH Storage & Dosing Room
- 4 Packed Aeration Tower
- 5 Pre Treatment Tank
- 6 Membrane Filtration Gallery
- 7 Transfer Pump Station to Retic
- 8 Treated Water Reservoir





The Nabiac Inland Dune Aquifer Water Supply System project was a long term goal of MidCoast Council Water Services aimed to provide the community with water security into the future.

The system provides a supplementary and/or alternative to the Manning Water Supply Scheme, currently providing water to approximately 70,000 people in the Manning and Great Lakes areas.

The Nabiac System is centred on the extraction of groundwater from the Nabiac Inland Dune Aquifer. The scheme includes:

- The Nabiac groundwater extraction borefield including 14 groundwater bores and 10 monitoring bores.
- The Nabiac Water Treatment Plant, which is a pressure membrane plant with capacity to treat up to 10ML of water per day
- Over 16km of pipes, electrical and telecommunication services which link these components to the existing Manning District Water Supply Scheme.
- The Nabiac Inland Aquifer is located within a generally flat to low lying inland dune containing wetlands in the east and elevated dunes in the west.
- The aquifer is positioned 6km south east of Nabiac and 4km northwest of Tuncurry
- The total catchment surface area extends over 44 square km.
- The shallow aquifer contains approximately 22GL, the indurated sand layer approximately 20GL and the deep aquifer approximately 154GL.



Borefield Hut

Using FRP Products in Wagga Wagga Water Treatment Plant

Riverina Water County Council undertook construction a new 55ML/day water treatment plant in Wagga Wagga to replace a 40ML/day plant which was constructed in 1938. Construction was completed in 2019.

The treatment plant sources water from the Murrumbidgee river with an extraction license limit of 7 GL per annum. The river offtake structure is in the form of a concrete channel in the lowest part of the riverbed which diverts flow past a set of Johnson screens which feed 3 submersible turbine pumps and motors.



Intake channel & Johnson screens

Being a riverine environment flooding is inevitable. The river flows are regulated so we always have some warning prior to flood events. To help protect the screens and offtake structure from debris during flooding, Riverina Water chose to incorporate fibreglass reinforced plastic (FRP) products from Treadwell in the form of trash screens and handrails.

Handrails were installed on the front of the channel. Due to their light weight, they can be easily removed by one employee prior to a flood event occurring.

The trash screens are constructed using architectural profiles (I beams) with a section of grating to allow access to the outer wall channel for maintenance if required. The offtake structure is located down a steep embankment so if any of the beams are damaged by debris it is a simple task to unbolt, remove and replace them without the need for heavy lifting equipment.

The treatment plant also uses FRP grating over in-ground bunds in the bulk chemical storage areas. All the grating has a non-slip surface and is in light enough sections to allow easy removal for inspection and maintenance. Our fitting team made some hooks with handles to allow removal without bending. Riverina Water is currently retrofitting this type of grating to the polymer dosing areas at the WTP to lessen the chance of slipping if there are spills.



Non-Slip bund grating

Currently we have not had a flood to test the trash screens, but they have been submersed a number of times without any damage occurring.

The advantages of using FRP in the trash screens, bunding and handrails are as follows:

- Light weight
 - No requirement for large lifting equipment to be used.
- No corrosion
 - S/S fittings are used.
- UV resistant.
- Modular design.

Contributed by Peter Outtrim from Riverina Water County Council.





Southern Yorke Peninsula Water Tower/Tank Mural Trail

We are also installing picnic tables, an outdoor easels for your Members and budding water tower artists to enjoy the experience of the Water Journey and the mural even more.

The Port Vincent Water Tower has its own facebook page with hundreds of followers, please join us to grow this community.

We hope your Members, their families and friends will make the trip, be part of history and take a 'Water Tower Selfie' and post on the facebook page.

More information on all the paintings is available at:

 yorke.sa.gov.au/news/14933/

Contributed by Linda McCabe, Port Vincent SA.

Yorke Peninsula Council, in partnership with Yorke Peninsula Tourism and the Coobowie, Edithburgh, Stansbury and Yorketown Progress Associations, were successful in gaining funding through the Regional Tourism Bushfire Recovery Grant. This funding supports the Southern Yorke Peninsula (SYP) Water Tower/Tank Mural Trail project which will see the SA Water owned water towers in Edithburgh, Stansbury, Port Vincent and Yorketown and the water tank in Coobowie painted.

Through community consultation which commenced in September 2020, the Yorke Peninsula Community have shared their ideas and inspiration towards what they would like to see on each water tower/tank. Artists then had the opportunity to express interest in undertaking the project by pitching their concepts in line with community themes.

Stage three of the community consultation process, where community members voted on their favourite artist concept was then undertaken, with the successful artists commencing work in 2021. The painting of the majority of the towers are now complete.

An Invitation to Members

WIOA Members are invited to an experience (free) to share the rich history of water processing in Australia. A team of volunteers have created a water history pathway as part of an upcoming 360 degree mural to cover a 60 year old SA Water tower at Port Vincent South Australia and we want to extend an invite to all 'Water Geeks across Australia' to come and visit our Water Tower and share in its history.

The Water Tower Mural will have QR code story boards featuring the rich history of the water journey, processing and infrastructure, original tower drawings and the mural itself is strongly focused on water.

The Narungga people and local Port Vincent Community have decided on the images with a strong water focus from SA Artists Joel Van Moore and Elizabeth Close.



DAFFODIL COTTAGE CANCER CARE SERVICES

Dear George a staff of WIOA
On behalf of Daffodil Cottage please
accept our sincere appreciation for your
generous donation.

Please know that donations made to
Daffodil Cottage are used to support a
number of programs & projects delivered to
our patients with a diagnosis of cancer.

Daffodil Cottage Advisory Council (DCAC)
is the main body responsible for the
administration of donations made to
Daffodil Cottage.

In 1997 Daffodil Cottage was
established through the generosity &
donations provided by the community.

Daffodil Cottage continues to provide
outstanding care & this is only possible
due to the ongoing support of the
community.

Denise Fogarty (for DCAC)



Women in Construction a Promising Future Lies Ahead

Historically, many women have been deterred from 'male-dominated' fields such as civil construction or water services, due to underlying systemic cultural factors. However, the tides are fast changing. More women than ever are entering these fields with unbridled enthusiasm and passion for what they do – bringing with them potentially world-changing new ideas and innovations.

Promising careers in construction

The Workplace Gender Equality Agency reports that in Australia, the construction and utility sectors have remained two of the most male-dominated major industries for over 20 years.

While the gender gaps in other industries are closing, these fields have unfortunately not seen the same progress. This means few organisations are reaping the benefits that female participation in their workforce can bring. Similarly, many women are not realising the bountiful opportunities that can arise from a career in those fields.

For many women, deterrents include a lack of family role models, stereotypes around the nature of 'women's work', discouraging workplace cultures and structural problems within those organisations.

A business that acknowledges the importance of equality in the civil construction and water industries is leading pipeline infrastructure company, Interflow. The Company's success over its 80+ year history has been underpinned by its people, drawing from the strength and diversity of their ideas.

Interflow recognises the societal, organisational, and cultural benefits that female participation in the construction industry can bring, including increased employee engagement, productivity and profitability.

Breaking down the barriers to entry

One woman shaking up the industry is Interflow's Training Content Manager, Robyn Alderton.

Robyn is a strong advocate for equal opportunity and has championed women in construction at various stages throughout her career.

"I believe diversity is paramount to the long-term growth and prosperity of our industry," said Robyn.

"How can a business expect to become (or remain) an industry leader if the organisation does not welcome new ideas, perspectives or innovations?"

Robyn is a firm believer that to accomplish transformation across a national industry, cultural change must first take place at an organisational level. One key way to accomplish this is through leadership and mentoring programs.

Robyn has acted as a mentor to a diverse range of workers over the course of her career. Through these programs, she has sought to advise budding young professionals on the opportunities a career in construction can bring and guide them to broaden their skills and horizons simultaneously.

Paying particular attention to young women emerging into male-dominated fields, Robyn hopes to play her part in initiating large-scale change.

"Mentoring is a constructive way to attract and retain good people with ability and drive within a business," she said.

"All of the most valuable role models I've had throughout my career, whether they were male or female, acted with honesty, integrity, and led by example - I'm proud to do the same."

The power of education and leadership

Bringing over 13-years' experience in the construction industry, Interflow's HSE Business Partner, Mivvi Turner, has been on the other side, participating in a mentorship program run by the National Association of Women in Construction as a mentee in 2020. For her, the experience proved to be invaluable.



Mivvi Turner was a mentee of the National Association of Women in Construction program.

"It was great to receive guidance and support from someone completely impartial who had experience within the same industry," she said.

"I could bounce ideas off them or work through professional concerns... their experience and advice has had a profound impact on my work."

There are proven benefits to professional mentoring, particularly for women in male-dominated fields. These include identifying career goals, increasing confidence and opening doors to leadership.

"As the industry is exposed to an increasing number of women and societal attitudes towards gender polarisation in construction begin to shift, we will surely see more women take the leap into civil construction and utilities," Mivvi said.

Shaping the future of the industry

The more that organisations, industries, and society as a whole, break down the barriers that prevent women from seeking employment in 'male-dominated' fields, the more genuine choice women will be able to exercise over how they choose to participate in the workforce.

Creating a path for gender equality in the construction industry is undoubtedly the best way forward. This ensures that employers have access to a complete and representative pool of talent to ensure the best candidate is selected for the job.

Mivvi hopes her career as a HSE professional will help to pave the way for other ambitious and talented women to have a go in the construction industry.

"Upholding a strong culture of safety in any organisation is essential," she said.

"I do hope that my participation in this industry champions that fact, but also reinforces that organisational attitudes towards equality should be treated with the same rigor and respect as safety."

Robyn shares her vision for the future of the civil engineering and construction industries.



Robyn Alderton from Interflow.

"The future is looking bright," said Robyn.

"Together, we're striving towards an equitable construction industry where women feel empowered to engage, fully participate and thrive."

Contributed by Katie Mitchell from Interflow

300 Tonne Fatberg in Sewer

A giant fatberg thought to weigh about 300 tonnes is clogging a sewer in Birmingham, UK. The mass of oil, grease and "unflushable" items such as nappies and wet wipes is blocking the system in Hodge Hill.

Severn Trent said the fatberg was likely to be one of the biggest blockages it had dealt with. The firm said it is estimated to be 1m high and 1,000m long and could take until June to clear.



Staff working around the clock to clear the fatberg.

"It is a massive project and it is not resolved yet," operations manager Scott Burgin said. "This giant mass is the result of everyone occasionally washing and flushing the wrong things down the sewers and not realising the impact that it is having."

Severn Trent said it was alerted to the fatberg by sewer sensors and engineers were working around the clock to tackle it. The mass is thought to weigh the equivalent of 250 family cars. Severn Trent workers have dug into the ground to access the sewer pipe which is 8m deep and are using pumps to remove the sewage and clean the sewer.



Pumping and piping equipment tackle the fatberg.

In the last year, the firm said it has been called to thousands of blockages across the West Midlands with three-quarters caused by people "misusing the sewer system".

Extract from BBC West Midlands article.



[bbc.com/news/uk-england-birmingham-56952152](https://www.bbc.com/news/uk-england-birmingham-56952152)

Victorian Water Sector on Track for Net-Zero Emissions



The Board of Zero Emissions Water (ZEW) and 13 Victorian water corporations recently started to receive a solar energy offtake from the Kiamal Solar Farm at Ouyen, Victoria's largest solar farm.

This renewable energy will be a major contributor towards meeting the emissions reduction targets of net-zero by 2030 for Melbourne Metropolitan Water Corporations and 2050 for Victorian Regional Water Corporations.

To put the sector on the right path to achieving net zero emissions, each of the 13 water corporations has committed to, or agreed to exceed this target. ZEW came to life through the Intelligent Water Networks (IWN) program, a partnership between VicWater, 16 Victorian Water Corporations and the Department of Environment, Land, Water and Planning (DELWP). The IWN investigates new technologies and innovations to meet common challenges in a more efficient manner.

The partners first initiated a Large-Scale Renewable project which led to an assessment on ways to reduce energy costs and emissions that recommended water corporations aggregate their renewable energy requirements to access the wholesale generation market.

The outcome of the IWN Large-scale Renewable project is that the 13 participating water corporations are purchasing solar power together from the Kiamal Solar Farm under the ZEW umbrella.

Purchasing as one large organisation means the water corporations will procure energy at a cheaper rate compared to going it alone. The expected savings from this deal will help water corporations to offset rising energy costs, which in turn will help to keep customer bills down.

The ZEW partnership demonstrates that Victorian water corporations are leading the way to reduce operational costs and emissions. The innovative structure of this deal is the first of its kind in Australia and is a major step forward towards the sector being a leader in climate change mitigation in Victoria.

Paul O'Donohue, Chair of Zero Emissions Water, said "The limited liability company will purchase up to 78 gigawatt hours of renewable energy per annum (approximately enough energy to power 5000 houses) from Total Eren's Kiamal Solar Farm and distribute it to participating water corporations. The 13 water corporations will each take a percentage share of the total renewable energy ZEW purchases based on their local needs. The purchase agreement is set for 11 years and will be supplying each corporation up to 50% of their renewable energy requirement."

A full list of the ZEW partners is at:



www.zew.org.au



www.kiamalsolarfarm.com.au



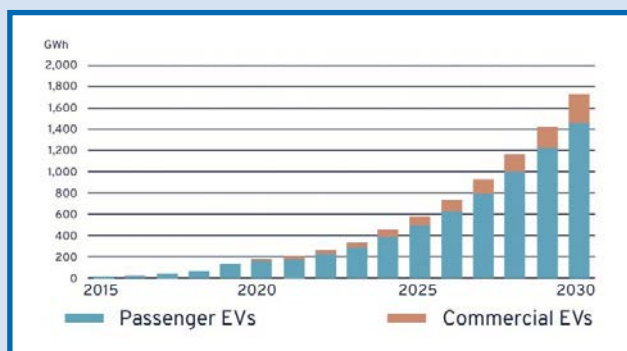
The Kiamal Solar Farm at Ouyen, Victoria's largest solar farm.

CORPORATE MEMBER NEWS

Making Better Batteries

The rapid growth in electric vehicles and renewable energy storage solutions is creating a global need for more efficient, cheaper, better-performing, and more sustainable energy storage options. Much of this growth has been enabled through the performance of lithium-ion (Li-ion) batteries, issues around the cost, capacity, safety, and sustainability will increasingly threaten this growth. There is a need for advanced materials for lithium-ion batteries that deliver superior performance and safety at lower cost while at the same time reducing environmental impact which is why Calix has embarked on an advanced battery material development program.

The Li-ion battery market has grown very quickly, and is predicted to accelerate further. Growth will be very fast over the next decade and will be driven by electric vehicles, with significant and growing contribution from stationary storage.



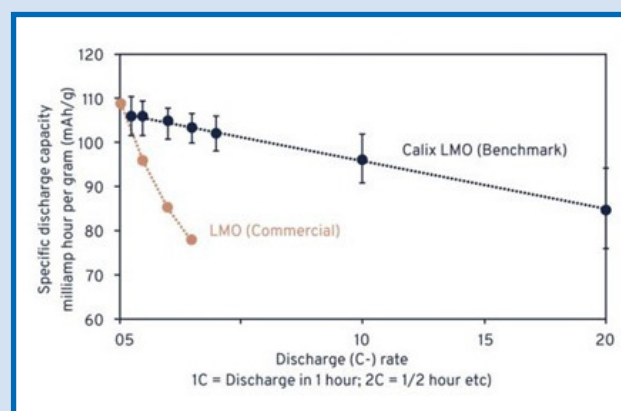
When charging lithium ion batteries, lithium (Li) ions flow from the cathode to the anode via an electrolyte, through a separator. During the discharge, they flow back to the cathode, generating a flow of electrons from the anode into the external circuit (eg. your phone, or car!) and back to the cathode.

The cathode, as the source of Li^+ ions, is the main determiner of the capacity and voltage of the battery. The cathode is also the most expensive component of a lithium ion battery.

As the discharge rate increases, more strain is put on the cathode material.

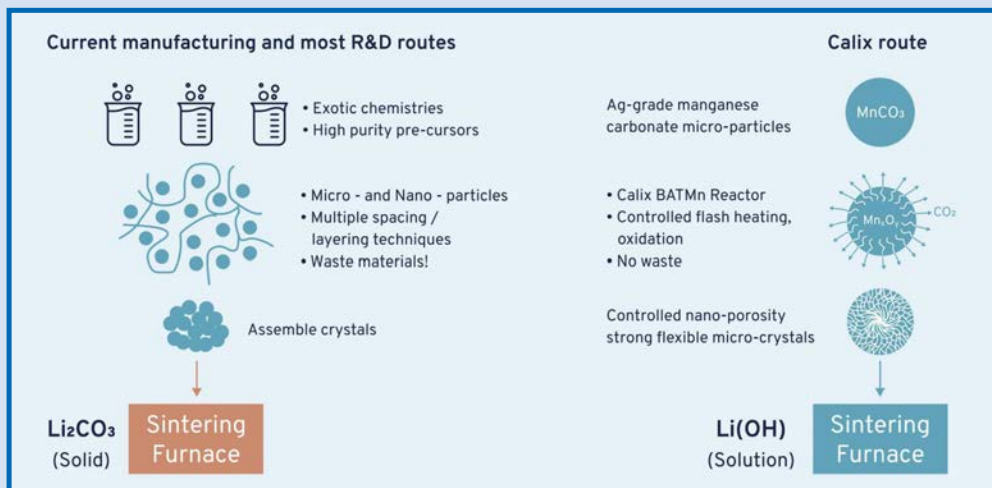
Tesla recently announced a move away from cobalt, in favour of manganese and nickel, in the interests of cost, safety and sustainability. Reference: Tesla battery day validates manganese for use in ev batteries - Marketwatch

tinyurl.com/yejdzk6t



Early test work has concentrated on cheap, agricultural, non-battery grade manganese. The unique structure of Calix's materials has resulted in good stability at a higher charge rate, above commercially available LMO (lithium manganese oxide).

Although it is early days, half-cell tests of Calix's LMO's at Deakin University have outperformed commercial benchmark LMO's and LFP's (lithium iron phosphate) and is in the mix of some high performing lab LMO's reported in the open literature.



“The adoption of new processes and exploitation of low-cost precursors will be essential in the effort to improve the sustainability of battery technologies.”

Dr Matt Boot-Handford, Calix

calix.global/creating-renewable-energy/calixs-advanced-battery-material-development-program/

CORPORATE MEMBER NEWS



Xylem's PipeDiver getting ready to be deployed.

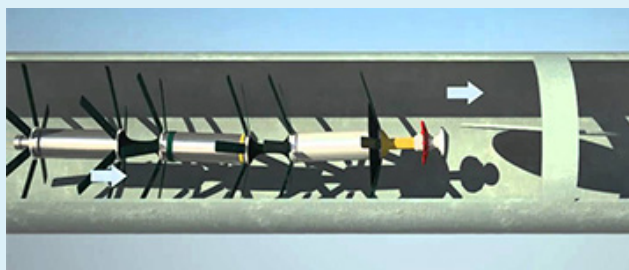
Assessing Pipelines Without Disrupting Service

When a critical water pipeline burst in Tarragona, a port city in Spain's Catalonia region, the local water consortium needed to quickly assess the pipeline's condition. Without disrupting service to customers, Xylem's SmartBall® and PipeDiver® technologies detected 12 leaks and targeted three pipe sections in need of repairs.

The Tarragona Water Consortium treats and distributes drinking water to more than 60 municipalities and 25 industries in the Tarragona region. In January 2020, the Consortium experienced a catastrophic failure on their critical 75-kilometre, 1600mm pipeline.

This pipeline failure caused widespread damage and had a major impact on the water supply to about 750,000 people and key industrial clients. If the failure occurred during the peak summer tourism season, it could have affected more than 1.5 million people.

Worried about another failure, the Consortium partnered with Xylem to perform a condition assessment using a combination of inline leak detection and electromagnetic technologies.



The PipeDiver in the pipe.

Xylem's acoustic SmartBall platform detects leaks and gas pockets and maps pipeline networks. In concrete pressure pipe, Xylem's PipeDiver platform detects broken wire wraps using electromagnetic technology. More broken wire wraps mean greater pipe distress.

Both platforms are free-swimming condition assessment tools that operate while the pipeline remains in service. These long-distance tools can assess pressurised water and wastewater pipelines in a single deployment. They provide utility owners with an easier, safer and less costly alternative to inspection methods that require shutdown or dewatering.

The inspections took place over two weeks in June 2020. The results showed that most of the pipeline is in excellent condition. However, the SmartBall platform detected 12 leaks that were later repaired. In addition, the PipeDiver platform identified three pipe sections with signs of deterioration.

The PipeDiver platform's precision enabled very targeted repairs on these three pipe sections. The Consortium excavated the pipes in November 2020, and their condition matched the damage reported by Xylem.

The Consortium immediately realised a return on investment by preventing the failure of these three pipe sections. The project also extended the remaining useful life of the pipeline.



xylem.com/en-au/

CORPORATE MEMBER NEWS

Customised Potable Water Tank Solution for in the ACT

Eductors are a game changer when it comes to mixing liquids in suspension because they eliminate the need for mechanical devices. But it can be challenging to find an eductor that's suitable for large tanks. That's where a bespoke designed and manufactured eductor solution may be required. But where do you start?

The developer of a new residential area in the ACT required custom designed and manufactured eductors to suit the requirements of their 900 kL potable water reservoir. As part of the design process, the eductors were required to accommodate precise specifications such as:

- Water velocity
- A flange to suit the pipework
- Capacity to mix liquids in such a large tank



Tecpro - giant cast 316 stainless steel eductors.

The custom manufactured eductors are mounted to the bottom of the potable water tank. Liquid is cycle pumped into the tank through the inlet of each eductor. "Veins" located part-way down the eductor, draw the surrounding liquid, mixing it and distributing it to the tank through the outlet of the eductor to ensure constant circulation.

As there are no moving parts, these eductors are maintenance free, while the pumps used to fill the reservoir are located outside the tank. Feedback from the client was positive with "everything performing well, looking good and final commissioning underway".

Tecpro can advise on the optimal size, location, orientation and number of eductors required for your application.



02 9634 3370



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Mobile Compressors

A sudden increase in production volume, maintenance work, temporary bottlenecks, unexpected production downtimes - there are many reasons why an existing compressed air solution in industrial production can suddenly no longer be sufficient. Mobile compressor solutions provide a remedy where an existing in-house system needs quick and uncomplicated support.

Kaeser Compressors presents its Mobilair range of portable compressors featuring electric drives. Not only are they quiet and usually require little space, but above all they are emission-free, so that they can also be set up inside buildings without hesitation.

The Kaeser Mobilair e-power series of portable compressors, have a whisper-quiet electric drive that works completely without exhaust gases. A 32 amp 3 phase socket is sufficient to connect the power pack to the necessary power supply. The compact system delivers 2.6 m³/min at 7 bar. This means that the mobile electric compressor is not only suitable for construction sites, but can also be used as a quick and flexible bridge in the event of a compressed air bottleneck in industry.



Mobile compressors are a sensible alternative if, for example, the compressed air requirement is higher for a certain period of time, if there are unexpected failures or for planned bridging.

Even in the case of planned maintenance of the entire station, mobile compressors are quickly brought to their destination and connected to the existing compressed air network.

Mobile compressors are available in different designs, different sizes and with different additional equipment, so that the right version for the operator can always be selected.



1800 640 611



kaeser.com

New Members

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

New Individual Members

Susan de Boer, Brett Allen, Ian Atkins, Derek Ayriss, Kane Beauchamp, Manny Bonfanti, Nathan Byrnes, Adam Carson, Jon Charlton, Jay Charnock, Josh Chester, Mitchell Davies, Gordon DeBoick, Paul Evans, Clive Gerrard, Simon Green, Scott Hammond, Robert Hawken, Jack Hazelton-Kelly, Mick Herron, Tom Hoskins, Ryan Hugo, Andrew Humby, John Ingram, Watren Johansson, Blake Keane-Navan, Ben Keen, Ty Kennedy, Graham Kennett, David King, Evan Lansdowne, Lee-Anne Lean, Ben Litchfield, Steve Lobston, Michael Loveridge, Gavin Lunn, Paul Matestich, Alex McCaffrey, Kyle McCarthy, David McDonald, Scott McDonald, Jason McIntyre, Dave Mead, Ben Moore, Travis Moore, Daniel Moss, Gary Mulley, Todd Penson, Mark Proctor, Mark Ready, Joe Rodrom, Dan Sala, Andrew Schmakeit, Clancy Slowey, Rod Sonogan, Peter Spaans, Wayne Stahlhut, James Stokes, Gavan Sulfus, Kye Taylor, David Thompson, Nigel Whittingham, Glen Williams, Rob Williams, Jeff Winnall, Peter Yerbury, Justin TodHunter, Jesse Stevenson, Joseph Borg, Cindy Houston, Adam Ansted, Mark Wilson, Christopher Blake, Lachlan McCulloch and Michael Holmes.

New Corporate Members

Nextep Miyama, Infinite Water, Interflow, Idexx, Mack Valves, All About Lifting & Safety, Fremantle Commercial Diving, Southern Generators & Electrical, Parkway Process Solutions, Software Ag Australia, Intman, Filtersafe Australia and New Zealand.



WIOA Coming Events

23 June	WIOA Talks - Catchment management & water quality issues - SA AC host
21 July	WIOA Talks - Anammox - Queensland AC host
19 May	WIOA Talks – Membranes including launch of Membranes Practical Guide
23 June	WIOA Talks - Catchment management & water quality issues - SA AC host
20 July	Kwatye Award Applications close
21 July	WIOA Talks - Anammox - Queensland AC host
19 August	WIOA Talks - UV Disinfection - Tasmania AC host

WIOA Conference & Exhibitions in 2021

We are monitoring the COVID-19 situation and Health Department advice across Australia and are hoping to be able to conduct face-to-face Conferences in 2021.

2 & 3 June	45th Queensland Conference & Exhibition Toowoomba
4 & 5 August	3rd South Australian Conference & Exhibition Murray Bridge
1 & 2 September	83rd Victorian Conference & Exhibition Bendigo
27 & 28 October	14th NSW Conference & Exhibition Tamworth

WIOA Committee



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