



Backflow Group
WATER NEW ZEALAND



Backflow Group Newsletter

The Water New Zealand Backflow Group monthly e-Newsletter

Kia Ora!

The Backflow SIG of Water NZ has reconvened activities after a much needed Christmas break and we're straight back into it. So welcome back everyone and we hope you enjoy this newsletter where you can read about what the group has been involved in and why this industry is so important to us.

Precision cutaway



This picture was provided by one of our members as an example of the types of installations they come across. While you have to admire the attention to detail and the time it must have taken to create this precise cutaway you have to wonder what it's going to look like after some inevitable maintenance.

WHAT'S NEW

PRECISION CUTAWAY

VIEW FROM THE CHAIR

OBITUARY: MIKE DEVINE

MEETING REPORT

WS-014 MEETING REPORT:
RICHARD AITKEN

NEVER TO OLD TO LEARN

COMMITTEE SPOTLIGHT: HUGH
CHAPMAN

UPCOMING EVENTS

View from the Chair

As we leave Summer and look into the eyes of Autumn and Winter, it's fair to say that past few months have been a mixed bag of positive and negative outcomes. Whilst we as an industry have made great inroads into the knowledge gap analysis, the ongoing challenge is finding effective ways to pass the knowledge on to the people who need it the most.



We are building towards our 2025 Conference, and we will be focused on some exciting training and education outcomes for all sectors of the water industry. Our conference committee is hard at work behind the scenes, with the challenge to better our last very successful conference and lift the bar once again.

The message behind all of this is that the industry is desperately short of Subject Matter Experts (SME), the simple fact is that we can't effect change if we don't have the right skills in the right place.

Therefore, continuous engagement with our group, industry partners and wider associations are very important to get training and education into place and deliver it in manner that suits the intended audience.

As reminder to our wider group and water / plumbing industries, if you have any queries / questions you would like to put forward to the group for discussion or resolution, please contact technical@waternz.org.nz we will add it to our meeting agenda.

Richard Aitken
Chair
Backflow Group

Obituary: Mike Devine

The Backflow Special Interest Group Committee wish to acknowledge the passing of Mike Divine. Sadly, we recently lost Mike to illness.

Mike Divine was a quiet, calm, and compassionate person. Mike was a career plumber and business owner. Over the years Mike developed a passion for protecting human life and potable water networks and systems with best practice plumbing. Mike's vast experience has been amassed from many years in the plumbing industry during which he kept up with the trends and legislation relevant to business.

Mike was a valuable committee member of the of the National Backflow Special Interest Group and his knowledge and commitment will be greatly missed. The passion Mike had was always evident and just one way that he demonstrated this was that he self-funded his committee involvement, including travel to committee meetings and conferences. Mike was a dedicated member of the committee for many years and provided a cross connection perspective from the plumbing industry. Mike always contributed to the committee discussions with critical comment, and these were always based on his wide experience and practical knowledge.

Mike will be greatly missed from all those that knew him and the Backflow committee especially.

Group Meeting Reports

Backflow Committee meeting 07 December 2023

11:00 – 16:00 at the Hydroflow offices, Penrose, Auckland and Online

- Attendance: **In person:** Richard Aitken, Wayne Shields, Hugh Chapman, Brian Brown, Andrew Booth (arrived 10 minutes late), Kevin Smith, Paul van den Burg (left at 12.30), Steve Harwood (left at 12.30), Erica Roberts, Noel Roberts. **Apologies:** Master Plumbers representative Jon Lewis.
- Paul van den Burg is stepping down from the committee
- G12 feedback discussed regarding rural farm domestic supply.
- Conference Planning Update – email sent out to group members for theme, sponsors, and location recommendations. Potential joint conference with BPAA targeted for 2025.
- Working Group Updates:
 - WS014 (AS/NZS 3500) – Meeting to be held in the new year. AS/NZS 3500 document viewed by group.
 - WS-023 (AS/NZS 2845) – Review scheduled to start in March 2024. Chairs submission to MBIE to rejoin this was accepted.
 - ASSE 1004 – Review scheduled to start in the new year.

- Review of Unit Standards – 2 plumbing unit standards discussed that require a review. Te Pukenga is to be disbanded by the new government.
- Boundary Backflow Code of Practice - Emails sent to stakeholders, project on hold until the new year.
- General Business – Hugh Chapman asking for training to be revisited, approvals for standards discussed.

Backflow Committee meeting 13 February 2024

09:00 – 12:00 Online only.

- Attendance: **Online:** Richard Aitken, Brian Brown, Erica Hobbs, Steve Harwood, Noel Roberts, Hugh Chapman, Kevin Healy. **Apologies:** Andrew Booth, Glenn Burr, Wayne Shields, Master Plumbers representative Jon Lewis.
- Conference Planning – Still looking towards a joint Australia Pacific conference in 2025.
- World Backflow Day – Options discussed for event for this day.
- Working Group Updates:
 - WS-014 (AS/NZS 3500) – Australia has different class of water “rainwater” which is not considered drinking water until it’s been treated. Stormwater section of AS/NZS 3500 needs to be rewritten to include definitions.
 - WS-023 (AS/NZS 2845) – Review is scheduled to start in March 2024
 - ASSE 1004 – Meeting pending
- Work Plan – Business case write ups for conference funding costs to be approved for immediate submission.
 - Support for Richard to attend American Backflow Conference.
 - Workplan document viewed and discussed, Richard proposed its approval seconded by Kevin.
- Backflow IQP Review – Proposal to review Backflow Testing Qualifications for acceptance to registers, ongoing proof of competence for IQP renewals and Air Gaps to be included on compliance schedules.
- Boundary Backflow Code of Practice Review – On hold until the new year.
- Regional Backflow Groups – Proposal to create regional groups discussed.
- General Business – Taumata Arowai webinar on 20 February to explain authorisations and other updates. Group to hold workshop at Water NZ conference discussed with Hugh Chapman offering to organize. SS7 vs SS6 vs SS1, there’s no 12a covering backflow devices.

Backflow Committee meeting 20 March 2024

09:00 – 16:00 at the Hydroflow offices, Penrose, Auckland and Online

- Attendance: **In Person:** Brian Brown, Wayne Shields, Hugh Chapman, Andrew Booth. **Online:** Richard Aitken, Erica Hobbs, **Apologies:** Glen Burr, Steve Harwood, Noel Roberts, Master Plumbers Representative Jon Lewis.
- Conference Planning

- Water NZ will support a local conference for 2025, discussions to continue regarding combined Pacific conference in 2026.
- 2025 Drinking Water Protection Conference 2025 – Discussion underway around format, theme, location, fees, and sponsorship. Decision to hold in Christchurch with venue to be confirmed.
- World Backflow Day Event (August 16) – Keep it low key this year, promote existing resources etc.
- Water NZ Conference Workshop – Application form has been started, workshop topic to be decided on and possible presenters to be approached.
- Working group/Committee Updates
 - WS-014 (AS/NZS3500) – Committee chair attended meeting in February you can read his report later in the newsletter.
 - WS-023: (AS/NZS 2845) – Review is scheduled to start this month.
 - ASSE 1004 – Report to come, rainwater definitions need work and air gaps on compliance schedules.
- Work Plan
 - Workplan priorities discussed, and rankings accepted (moved by Brian, seconded by Hugh). Top priorities for 2024 have been identified and leads assigned.
- Regional Backflow Groups – Strategy to create growth in the backflow area through regional groups in the main centres or where committee members are situated. Committee members available to lead this in Northland, Tauranga/BOP, Wellington, and Christchurch.
- AGM Date – Proposal to hold later in the year. Looking to hold in November 2024.
- Chair Position – At the AGM the current chair will stand down with Brian Brown to assume this role, new deputy chair to be elected.
- General Business – Question put to the group for information on the percentage of dual check valve failures on manifolds within the first year, Brian Brown to look into availability of Tauranga City Council test reports. Funding approved to attend ABPA conference in April.

Our upcoming meetings are:

- Thursday 02 May 2024 – 9:30 – 16:00 – Western BOP (venue TBC).

Group members are welcome to attend the committee meetings. If you wish to attend any of the meetings, please contact the Chair at richard@telfordconsulting.co.nz.

Meeting Report:

WS-014: AS/NZS 3500 Working Group

Our committee chairperson Richard Aitken recently attended the WS-014 meeting held in Sydney from 6 – 9 February 2024. You can read his report below:

Day 1/4

9am – 5pm

Rainwater Tank Working Group – review of public comments.

Introductions, acknowledgment of the land, health and safety protocols, times of breaks

Scope and purpose of meeting outline

15.2.2 Tank access clauses being discussed, included size of access

15.3.2 Safe tray installation requirements discussion, many scenarios here and a robust discussion on the variables, size of overflow, where to discharge, multi-story building

15.2.3 Rainwater tank access lids shall not have sanitary plumbing directly above access, protracted discussion around the possibility of sewer entering the rainwater tank from above

15.2.3 Galv tanks – requiring linings

15.3 Remove note from 15.2.1 clause 1.3 – other materials as deemed by relevant authority

15.2.1.1 interconnection of tanks – should not put stress on connection or pipework

Balancing of water levels of interconnected tanks – as opposed to cascading tanks - rejected

Rainwater - drinking water or non-drinking water... Huge discussion on this

- NZ position: Until treated rainwater is NOT drinking water
- No definition for rainwater exits – however it is only from roof areas on domestic dwellings

Notes:

Conversation now PARKED – new project proposal to be looked at around water quality, the definition of Rainwater (which is missing from AS/NZS 3500.0)

Dual supply toilet cistern and laundry taps – not a backflow hazard apparently, and standard practice in Queensland.

The below is a consideration from NZ, although in NEDS and not legislation. NEDS was created from existing council documents, so it is the prevailing thought From NEDS – not in WSA or DWQAR.

1.1.1 Dual water supply systems

These are not in the scope of this NEDS as this situation will require engineering design. However, developments that include a second water supply source shall use design criteria from sections 2.4.3 and 2.4.4 to calculate peak and average residential and non-residential demands.

Where a property has a second water supply system the property shall be considered high hazard for backflow prevention and require a RPZ backflow preventer at the point of supply from the Three Waters Entity network. This applies irrespective of if the additional source is reticulated, a rainwater tank, a private bore or other source.

Rest of lines discussed and resolved to complete part 1 review through to 5.30 syd (7.30 NZT)

Day2/4

9am – 3pm

Day 2 of Rainwater Storage meeting (carried on from day 1)

Commence at 1pm

- Part 3 public comment resolution to work through, taking trouble to align with part 1 as previously discussed
- Screens to be added to inlet / outlet and vermin flap to external outlet
- Deign parameters for charged systems – increase HGL from 150mm to 300mm agreed on, many editorials added to note as deeper explanation approved

Day 3/4

AVB Working Group – review of public comments

9am – 1pm

Introductions, acknowledgment of the land, health and safety protocols, times of breaks

Scope and purpose of meeting outline

106 4.4.1 rejected – 3500.1 is not a performance standard

107 4.4.1 hcvb note around backpressure (Jon)

108 AVB not testable – incorrect as it's an inspectable device (in 2845.3 appendix K)

109 out of scope

110 editorial changes proposed

111 hcvb to be reviewed in the future

112 nis

113 Accepted – editorial on testing note

114 nis

115 rejected 4.4.1 out of scope

116 rejected out of scope

117 out of scope

118 not accepted – alignment with 2845.3 visual test

119 out of scope – qld related comment only

120 out of scope

121 out of scope – hose tap related

Meeting concluded as most comments out of scope.

Day 4/4

Introductions, acknowledgment of the land, health and safety protocols, times of breaks

Scope and purpose of meeting outline

WS-014 Full committee meeting for Public Comment Resolution Meeting

9am – 5pm

Working through full list of out-of-scope comments to determine outcomes, each comment is considered and then author notified.

The new format of having the specific project groups consider the public comments, then put forward to full committee for ratification was a great success.

The week's meetings in review:

- The emerging importance of the significance of rainwater storage tanks and the definition of rainwater as non-potable (not for drinking) is key, rainwater harvesting is well advanced in Australia but there is still a lot of gaps in the definitions and the importance of rainwater being treated before it can be used for drinking water. With the importance of network protection in New Zealand trying to over hazards within the boundary and the risk to the network, it's fair to say that dwellings with these systems cannot be classified as a low hazard. This is currently the current level of recognition in New Zealand, with all residential connections automatically assumed to be a low risk.
- AVB's and SPVB are still under utilised within New Zealand and Australia, the classification of them to be considered for high hazard situations is a good step as they are widely used in the US for irrigation systems and other scenarios where they can be installed to meet manufacturers installation requirements. More work is to be done with this section and future projects were identified, the next revision of the standard will resolve these in conjunction with AS/NZS2845.

Never Too Old to Learn

My name is Kevin Healy and have I been heavily involved in the Backflow Industry since way back in 1988. I started the Institute of NZ Backflow in the early 1990's and joined Water NZ as an SIG. I have been Chairmen for 2 years and a committee member of both since inception. I am writing this article in an attempt to defend my actions for which I've paid a heavy price.

Years ago, I attended a seminar where I was speaking the speaker after me was a Water Engineer who had just returned from installing water treatment plants in third world countries, he pushed the opinion that we over treat our water in NZ and as a result of that we have less immunity than third world countries. This always remained in the back of my mind however I was under the impression our immunity was still strong despite the water treatment.

How wrong I was!

I was recently very unwell with dysentery for six long hard weeks. I won't go into the gory details but if any of you have had this problem and for that length of time you will know how debilitating (and disgusting) it is. Not to mention how you lose all your strength, mobility, and freedom.

After two weeks of being unwell, samples were taken and cultures grown, but the laboratory reports we're all fine, but the symptoms continued. After many

consultations with my local Northland GP, he finally gave me an antibiotic that worked to ease the symptoms somewhat – a big relief.

Not long after this however, as a result of the chronic weakness in my body and light headedness (not drunkenness), I tripped and fell on my back injuring myself in the same place I had cracked two vertebrae in December 2020 when go-cart racing. I ended up in an ambulance off to Whangarei Hospital, unable to move – thank goodness for that lovely green whistle in the ambo on the way there considering the terrible state the Northland roads are currently in! While in hospital I ate normally again for the first time in 6 weeks, and it felt very good. Even just cornflakes and skim milk were fantastic, apple crumble and custard were heavenly! And best of all, no sign of dysentery for four whole days – yahoo, I'm fixed!

No, not so fast mister! I got home 5pm on Monday 31 July and 18 hours later the dysentery was back with the added ailment of an excruciating sting – Johnny Cash's Ring of Fire springs to mind! Of course, this chain of events made me think less about medical issues causing it and more about the environmental factors that could be at play. And guess what, we're on tank water – BINGO!

Timeline after return from Hospital.

31 July – Home from hospital 5pm.

02 August – Tank and spouting cleaned.

04 August – Water sample taken to WDC laboratory.

05 August – Results are in and showing e-coli count at more than 60 times what it should be for healthy drinking water. E-coli in water is a strong indicator of sewage or animal waste contamination. No wonder I felt so bad – I was being poisoned! On advice from the lab, I tipped 1.33L of bleach into the tank.

16 August – New UV Filter installed which was kindly provided by Hydroflow and Watts after they learned of my situation, now I feel like we're getting somewhere.

Some big lessons learned.

1. Don't try this at home!
2. Science does know what it is talking about, and our immunity is not strong!
3. Keep your roof, spouting and downpipes clean when on tank water.
4. Ensure you have adequate filtration.
5. Get your tank cleaned and tested regularly.
6. This NOT the way to lose weight 96kg down to 86kg in 6 weeks.
7. Be grateful for generous companies like Hydroflow and Watts.

The really ironic part of all this is that I was supposed to be attending the backflow SIG Drinking Water Protection Conference while this was going on. That level of E-coli would be hard to any immunity to handle however it makes me wonder whether it is time for our water treatment programme, and the affect it has on our herd immunity, to be assessed?

Committee Spotlight – Hugh Chapman

Hailing from Counties Manukau rugby country in South Auckland Hugh started his plumbing career around 50 years ago with T Osborne Ltd who were based where the Rydges Hotel now sits in Auckland City. It was in 1992 that Hugh attended Unitec on a Saturday morning backflow journey, and he to this day.



Common tools from when Hugh started out.

While the plumbing industry has since then Hugh is still as ever, especially around the he is particularly passionate around the IQP process and the need for more adequately trained professionals.

Auckland City. It a meeting at which started his continues learning

changed a lot passionate as Backflow space,

As well as being heavily involved with all things Backflow Hugh also does a lot of work with leak detection. 25 years ago, he started doing leak detection mainly in Australia identifying leaks in the reticulation mains, at the time a drought was in full swing so preventing water loss was imperative.

Hugh's son now works in occasionally asks "the old hand. On a recent trip to town called Penguin they was recorded at 6 litres a this leak was non-visual find.



this space and man" to lend a Tasmania, in a found a leak that second. The fact made it a great

These days Hugh isn't he used to and mainly backflow devices and all paperwork that goes with grandchildren who think enjoys spending time with president of the Counties Union and can still be seen Pukekohe supporting his team even if the current rule changes are making the sport less enjoyable to watch.

doing as much as focuses on testing the associated it. He has four he's great and he them. He is a past Manukau Rugby on the sideline at

Upcoming Events - 2024

- April 10 - 12 [NZ Plumbing Conference 2024](#) Pōneke Wellington
Master Plumbers
- April 22 – 24 [ABPA 39th Annual Conference](#) Charlotte, North Carolina, USA
American Backflow Prevention Association
- May 15 - 17 [WIOG Conference](#) New Plymouth
Water Industry Operations Group
- May 20 - 22 [BOINZ Annual Conference & Expo](#) Wellington
Building Officials Institute of New Zealand
- Jul 31 - Aug 2 [ABC Conference 2024](#) Nelson
Association of Building Compliance
- Aug (likely) [BPAA](#) Conference possibly Perth, Western Australia
Backflow Prevention Association of Australia
- Sept (usually) [PWWA](#) Conference and Expo
Pacific Water & Waste Association
- Oct (possibly) [FPANZ](#) Conference & Tradeshow
Fire Protection Association of New Zealand