

Lead in Drinking Water & Lead Safe™ Tapware Solutions

AHSCA Presentation Vic– 23rd October 2019



Water Solutions for a Healthier Environment



PERTH | SYDNEY | MELBOURNE | BRISBANE | ADELAIDE
www.galvinengineering.com.au

Snapshot of the presentation

1. Why we do what we do
2. What's been happening with lead?
3. What 0.01 means?
4. Infield testing methods
5. What affects lead in water?
6. Lead levels in plumbing materials
7. What have we been up to lately?
8. A few new Lead Safe™ taps

1. Why we do what we do

We are passionate about providing **Water Solutions for a Healthier Environment.**

Our key markets are:



Mental Health



Education



Clinical Health



We design and supply specialised taps, water management systems and fixtures for better and safer communities

2. In the press in WA, it's been like this since June 2017

The West Australian

Thursday, February 1, 2018

thewest.com.au



SCORCH TROUBLE

8 NEWS Taxpayers hit in new kids' hospital water fight

EXCLUSIVE
By Daniel Emerson

Taxpayers have shelled out \$160,000 to replace hundreds of ceiling water valves at Perth Children's Hospital in a fresh dispute between the State Government and builder John Holland Group.

About 515 ceiling valves throughout the hospital's vast network of water pipework have been replaced since November. The State wants to recoup the costs from the heat contractor, arguing the original contractor, Holland, was defective, but John Holland disagrees.

A Department of Finance spokeswoman said the valves, which allow sections of pipework to be isolated and drained for maintenance purposes, were supposed to be stainless steel for increased durability but brass components were installed instead.

She said replacing them with stainless steel also eliminated any future source of lead, preventing the Government's ambitious plan to combat the well-publicised contamination of the hospital's drinking water supply.

The hospital, which was supposed to open in November 2015, has delayed significantly due to annual, maintenance and construction costs from the public works before treating a single patient.

It will cost taxpayers per \$700,000 a review revealed \$224 million would be spent this financial year alone to replace the ceiling valves, which the Government hopes to finally open in May.

December's mid-year Budget revealed \$224 million would be spent this financial year alone to replace the ceiling valves, which the Government hopes to finally open in May.

THIRD WORLD PROBLEMS
School kids given bottled water after lead tests

WATER CRISIS



Sue Ellery
Prime Minister

PERTH 15-30 Becoming cloudy, Tomorrow: Cloudy, 21-30, Yesterday: 16.8-31.2. Weather details P48



Builder John Holland Group and the State Government are at loggerheads over the completion of PCH in April.

Health Minister floor Cook said the delay is covered by a two-year warranty period.

"Like building a house, there is a warranty period included on the build of the new hospital and we expect to be covered for a range of substantial work which John Holland Group man-

Despite accepting practical completion of PCH in April, the Health Minister floor Cook said the delay is covered by a two-year warranty period.

"Like building a house, there is a warranty period included on the build of the new hospital and we expect to be covered for a range of substantial work which John Holland Group man-

6 NEWS SUNDAY, JULY 1, 2018 PERTHNOW.COM.AU

What they kept secret

DOCUMENTS REVEAL GOVT KNEW - BUT DIDN'T DISCLOSE - WATER CONTAMINATION



The West Australian
Monday, February 5, 2018

OPINION 47 Water woes are everywhere



Bill Murray

Water woes are everywhere. In Perth, the lead contamination of the city's drinking water supply has become a major public health concern. The contamination was discovered in late 2017, and the government has since taken steps to address the issue. However, the contamination has not been fully resolved, and the government has been criticized for its handling of the crisis.

The contamination was discovered in late 2017, and the government has since taken steps to address the issue. However, the contamination has not been fully resolved, and the government has been criticized for its handling of the crisis.

2. NSW has had studies & media coverage since July 2016



Widespread copper and lead contamination of household drinking water, New South Wales, Australia

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 Brass
 Leaching
 Exposure

ABSTRACT

This study examines arsenic, copper, lead and manganese drinking water contamination at the domestic consumer's kitchen tap in homes of New South Wales, Australia. Analysis of 212 first draw drinking water samples shows that almost 100% and 56% of samples contain detectable concentrations of copper and lead, respectively. Of these detectable concentrations, copper exceeds Australian Drinking Water Guidelines (ADWG) in 5% of samples and lead in 8%. By contrast, no samples contained arsenic and manganese water concentrations in excess of the ADWG. Analysis of household plumbing fittings (taps and connecting pipework) show that these are a significant source of drinking water lead contamination. Water lead concentrations derived for plumbing components range from 108 µg/L to 1440 µg/L (n=28, mean = 328 µg/L, median = 225 µg/L). Analysis of kitchen tap fittings demonstrates these are a primary source of drinking water lead contamination (n=9, mean = 63.4 µg/L, median = 59.0 µg/L). The results of this study demonstrate that along with other potential sources of contamination in households, plumbing products that contain detectable lead up to 2.84% are contributing to contamination of household drinking water. Given that both copper and lead are known to cause significant health detriments, products for use in contact with drinking water should be manufactured free from copper and lead.

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1. Introduction

Metal contamination of drinking water and its potential health effects has impacted human populations for centuries (Bellinger, 2016). Perhaps most famously, albeit controversially, ancient Rome's use of lead in water supply infrastructure has been argued to have caused lead poisoning that contributed to the fall of the empire (Delile et al., 2014; Evans, 1997; Scarborough 1984; Waldron, 1973). Better understanding of the health impacts and consequent corrosion control measures followed the identification of elevated lead and copper concentrations in drinking water resulting from the use of lead service lines in Boston, United States of

Michigan, in Michigan USA, a public health catastrophe has unfolded after 100,000 residents received drinking water via the reticulated town supply contaminated with lead (example of water testing: n=271 samples, mean = 10.0 µg/L, max = 1050 µg/L, Flint Water Study, 2015) due to the absence of corrosion control measures (US EPA 2016).

Global research of contaminated drinking water supplies has revealed that some contaminants derived from the local environment, such as arsenic and manganese from bedrock, are widespread and pose a persistent problem (Das et al., 1995; Khan et al., 2011, 2012; Lu et al., 2014; Oulhote et al., 2014). The World Health Organisation described the contamination of Bangladesh ground water supplies by the regional bedrock as a 'public health emer-



2. Aldi was in the news in Qld back in July 2017



The screenshot shows an ABC News article from July 10, 2017, at 4:41 PM. The article is titled "Aldi lead contamination: Consumers warned against drinking from taps, amid ACCC investigation" and is written by Kathryn Perrott. The main headline reads: "Taps sold at supermarket chain Aldi may be contaminating drinking water with lead at up to 15 times the maximum allowable level, tests by Queensland Health Forensic and Scientific Services show." The article text states: "The Australian Competition and Consumer Commission (ACCC) has warned people to avoid drinking or cooking with water from the Easy Home spiral spring mixer tap, advertised in Aldi's June 10 catalogue, 'until more is known about the health risks that may be posed'." A photograph of the tap is shown with a price tag of \$79.99. The article includes a "Key points" section: "Traces of lead were found in Easy Home spiral spring mixer taps." A "TOP STORIES" sidebar on the right lists other news items, including RBA interest rate cuts, a man arrested in Sydney, and a husband who helped terminally ill wife.

2. In Vic lead issues surfaced in Geelong in May 2018



BREAKING NEWS ANZ is the first major bank to pass on the RBA's rate cut in full to its variable mortgage rates. Read more...



Print Email Facebook Twitter More

Water flows from Geelong drinking fountain

Posted 6 Jul 2018, 4:40am

Plumbing materials are believed to be the source of the lead found in Geelong drinking fountains.

ABC News: Cameron Best

Topics: lead, water-pollution, water, water-supply, maternal-and-child-health, infant-health, health-policy, healthcare-facilities, environmental-health, geelong-3220, east-geelong-3219, geelong-west-3218, north-geelong-3215

TOP STORIES

- RBA cuts interest rates to historic low to boost Australia's faltering economy
- Three arrested in terror raids, police stop alleged plot to attack Sydney landmarks
- Husband who helped terminally ill wife 'have a quick and painless' death cleared
- Kids aged 5 and 3 test positive for THC after eating brownie served at local cafe
- Trump's 'U-turn' on Huawei ban



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2. Recently the federal government recognized the issue



CHIEF MEDICAL OFFICER

Sunday 25 November 2018

Statement from Australia's Chief Medical Officer, Professor Brendan Murphy, on lead in drinking water from some plumbing products and the enHealth Guidelines

The Community should be reassured that our drinking water is safe.

There is no evidence of adverse effects on human health from the consumption of lead in drinking water in Australia. However, lead is not considered to be beneficial or necessary for humans; therefore public health experts recommend Australians take every opportunity to limit potential exposure from all sources.

The concentration of lead set in the drinking water guidelines is very conservative so that it can be sure to protect the most vulnerable people, such as very young children and pregnant women.

There have been instances of detection of lead levels above Australia's drinking water guidelines and, as a precautionary approach, enHealth has issued household good practice guidelines to assist Australians in minimising their exposure to lead in drinking water, particularly when drinking water from old taps.

enHealth have suggested these simple precautionary measures to ensure that lead levels in drinking water are as low as possible.

Elevated blood lead levels are rarely found to be related to lead exposure from drinking water and it is extremely unlikely that lead from drinking water, even over a lifetime, would cause clinical lead toxicity.

I welcome work being undertaken by the Australian Building Codes Board to examine the issue of the level of lead in plumbing fixtures in line with international best practice.

Further information on lead in plumbing products is available on the enHealth Statement on Lead in Plumbing Products available from the department's web page at:
[http://www.health.gov.au/internet/main/publishing.nsf/content/A12B57E41EC9F326CA257BF0001F9E7D/\\$File/Lead-plumbing-products-Guidance-Statement-July2018.pdf](http://www.health.gov.au/internet/main/publishing.nsf/content/A12B57E41EC9F326CA257BF0001F9E7D/$File/Lead-plumbing-products-Guidance-Statement-July2018.pdf).

enHealth Guidance Statement - Lead in drinking water from some plumbing products - Good practice for householders – July 2018

Householders can proactively **reduce their potential exposure** to lead in drinking water through the following measures:

- flushing cold water taps used for drinking and cooking for about 30 seconds first thing in the morning.....
- choosing plumbing products that have been certified to WaterMark and AS/NZS 4020:2005; and/or have low lead content or are lead free...

There is no need for households to have their water tested for lead.

2. And some state governments are acting - Vic in Jan 2019



BUILDING QUALITY STANDARDS HANDBOOK

May 2019



Only approved playground equipment may be erected in school grounds. In general, approved equipment includes:

- sandpits
- slides
- horizontal and vertical ladders
- horizontal bars
- gymnastic combinations
- jungle combinations
- climbing nets and frames, and
- climbing ropes (fixed).

All equipment design and installation **must** conform to AS 4685.

The following items are not approved for use in schools:

- seasaws
- swings (including log swings, but excluding liberty swings)
- maypoles
- merry-go-rounds
- roundabouts, and
- flying foxes.

The design and installation of play equipment areas **must** be considered within the context of the whole site development, including provision of other locations for organised and free play, and sports and activities.

Existing built environment and infrastructure can also be utilised in creative ways to supplement the role traditional play equipment has in encouraging physical activity and recreational learning. /School spaces can be 'activated' through simple and cost effective interventions that inspire free or more structured play. Some examples include:

- lines, targets, grips or routes installed on the sides of buildings for handball, tag games, or climbing, respectively
- coloured ground markings for multiple uses in the same space / i.e. basketball variations, other games / sports
- landscapes activated through simple games' equipment, paths, or panels suggesting exploratory activities

Shade **should** be provided externally to cover all play equipment, and designed to offer the greatest protection during peak UV radiation times and peak periods of use. In Victoria, UV Index levels are highest from September to April, with about 60% of daily UV radiation reaching the earth's surface during the middle of the day. Therefore, sites with high usage at that time have a higher priority for shade provision. Shade **should** also be provided externally to cover the play equipment area for all facilities.

When planning for shade, refer to the SunSmart Shade Guidelines, available on the SunSmart [website](#). In addition, please refer to [Shade areas](#) and [Drinking fountains](#) for more information.

IRRIGATION SYSTEMS

Appropriate water reticulation **should** be provided to enable maintenance of grassed and garden areas. Systems **should** be carefully chosen using expert advice where appropriate.

Where available, irrigation water **must** be sourced from mains-supplied non-potable water.

At sites where mains non-potable water is not available, irrigation water may be from water harvested from site surfaces such as roofs and impermeable pavements or other sustainable sources, noting that these water sources may also be used for toilet flushing. To maintain turf areas during times of drought, irrigation water may need to be supplemented by mains supply when harvested rainwater is exhausted (subject to water restrictions).

DRINKING FOUNTAINS

Accessible, potable water is a health and safety requirement. Drinking water **should** be provided on the basis of one tap per 30 students. Drinking fountains **must** be dispersed throughout the school in convenient areas, ensuring all students can access them when needed.

Project consultants **must** select and satisfy drinking fountains that meet the following requirements:

- accessible to all users, including specific fountains dedicated for wheelchair accessibility
- be made from **lead-free or lead-safe** products
- appropriate to the age and height of users (ages 5-12 in primary schools, 13+ in secondary schools)
- be placed near locations where physical activities occur, such as active play and sports areas
- be designed to allow students to fill water bottles.

Consideration **should** also be given in the design process to locating fountains in a way that minimises damage and vandalism.

5.14 SHADE AREAS

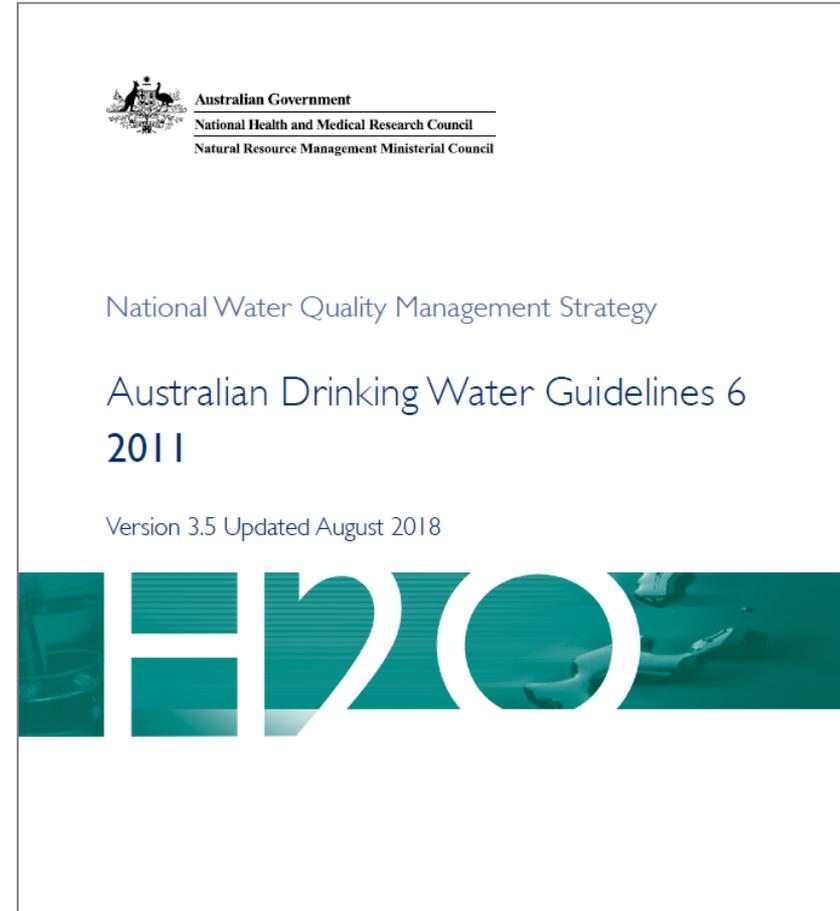
Project consultants **should** select and satisfy shade areas that meet the following requirements:

3. What does this number mean?

0.01

0.01mg/L = The **maximum allowable** concentration of **lead** in drinking water.

- ❖ Taken from the Australian Drinking Water Guidelines (ADWG).
- ❖ Based on a World Health Organisation (WHO) assessment and was determined by the need to protect the groups most at risk - young children, infants and pregnant women.



3. What does this number mean?

The value was determined as follows:

$$0.01\text{mg/L} = \frac{0.0035 \text{ mg/kg body weight per day} \times 13\text{kg} \times 0.2}{1 \text{ L/day}}$$

where:

- *0.0035 mg/kg body weight per day is the lead intake which, based on metabolic studies with infants, does not result in an increase in lead retention (Ziegler et al. 1978. Ryu et al. 1983).*
- *13 kg is the average weight of a child at 2 years of age.*
- *0.2 is the proportion of total lead intake attributable to water consumption. Sufficient data are available to indicate that 80% of intake is from food, dirt and dust.*
- *1L/day is the average amount of water consumed by a young child."*

3. What does this number mean?

There is **agreement** that lead exposure is a **health issue**.

The Lead Poisoned Brain



Image courtesy of Kim Cecil

Key Facts – WHO

- Lead is a **cumulative** toxicant that affects multiple body systems and is particularly harmful to **young children**.
- Lead in the body is distributed to the brain, liver, kidney and bones
- There is no known level of lead exposure that is considered safe.
- Lead exposure is **preventable**.

3. What does this number mean?

Ancient Rome's use of lead in water supply infrastructure has been controversially argued to have caused lead poisoning that contributed to the **fall of the empire** (*Delile et al., 2014; Evans, 1997; Scarborough 1984; Waldron, 1973*).



3. What does this number mean?

But there are **different views** amongst experts, authorities and media over:

- whether an individual test finding of > 0.01 means there is an actual health risk,
- or, whether it is more of a **lifetime measure**

To answer this you really need to consider:

- ❖ The **typical users** and their **usage patterns**
- ❖ WHO says **water is only 20%** of average lead intake
- ❖ The long-term **health findings**

enHealth says that in Australia, elevated blood lead levels in people are **rarely found** to be related to lead exposure from **drinking water**.

4. Confusion over in-field water testing methods?

Some of the testing being done in the field in Australia is creating **public concern** about elevated levels of lead in drinking water.

This has the potential to **impact opinion** regarding the possible effects on public health, and the suitability and safety standards of plumbing products & practices.

The testing methods used vary dramatically, and it is possible that some techniques may **not be adequate** in generating accurate data on metal levels in water.



4. Confusion over in-field water testing methods?

Opposing sides both claim to use the methods set-out in the Australian Standard

- AS/NZS 5667.5:1998 – Water Quality – Sampling.

So who is right?

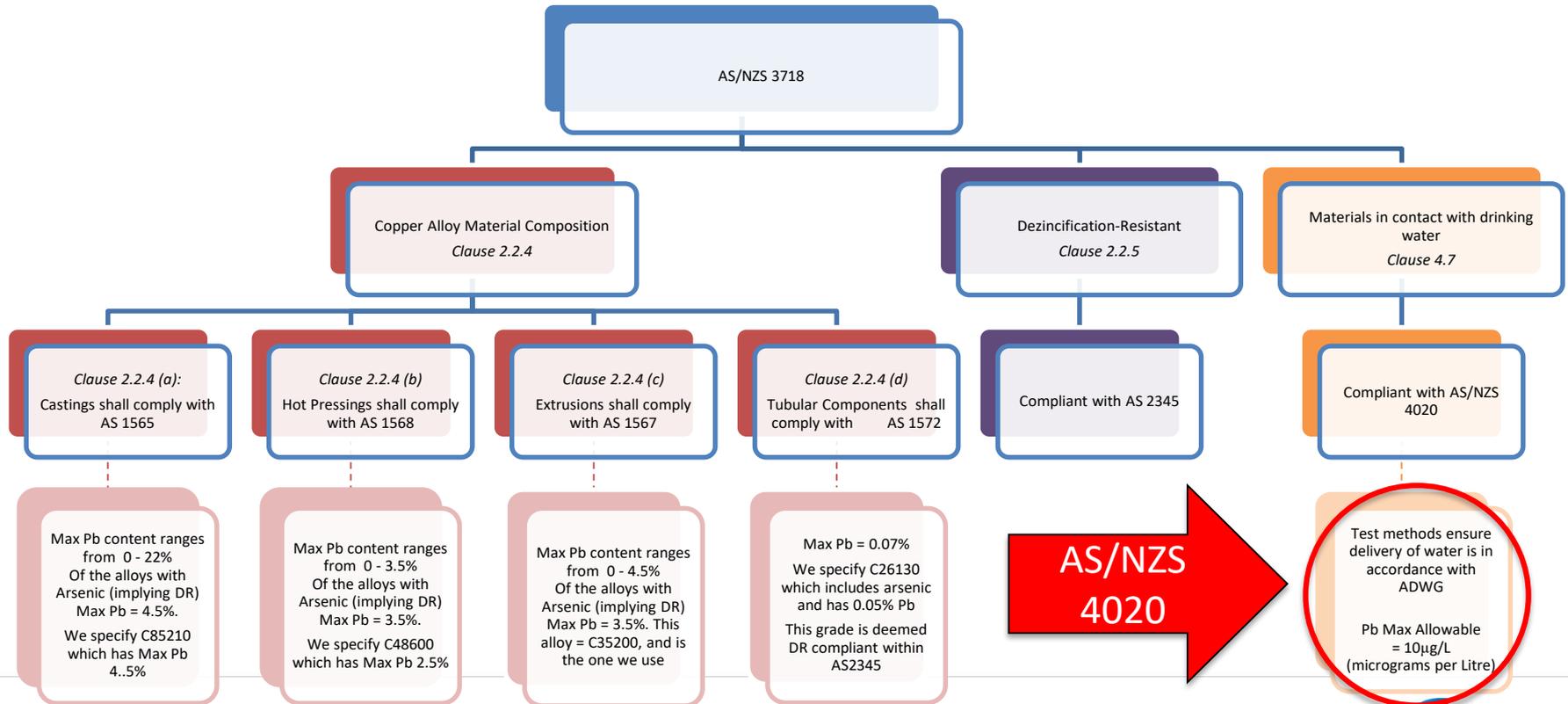
- ❖ PCH – WA Health or John Holland
- ❖ Aldi – QBCC or Aldi
- ❖ Perth Stadium – Sunday Times or WA Health



And **internationally** is it USA or Canada or Germany or Australia or.... is it somewhere in-between?

4. Confusion over in-field water testing methods?

What Australian plumbing product manufacturers do now is covered via the **WaterMark** scheme. This is **strictly controlled and audited** to ensure products meet the current levels in the ADWG.



4. Confusion over in-field water testing methods?

Unlike AS/NZS4020, **AS/NZS 5667.5** can be silent or **vague** on key sampling and testing processes. It needs to better address:

- ❖ The flushing and/or **stagnation periods**
- ❖ The **volume** of water extracts tested
- ❖ **Site** specific issues

Otherwise misinformed debate in the media will continue.

A more detailed and scientific method should be agreed and should align with AS/NZS4020. We **have submitted a proposal** to SA to have AS/NZS 5667.5 revised.

5. Confusion over what affects lead levels in water?

Many factors contribute to the **variability** of lead concentration results from drinking water testing, including:

- ❖ type of **materials** used in the plumbing system
- ❖ **age & complexity** of the plumbing system
- ❖ **usage patterns** of inhabitants
- ❖ stability of **flow rates** in the system
- ❖ **stagnation** and dead-leg areas
- ❖ build up over time of a protective mineral crusting or **patina** on the inside of pipes
- ❖ **chemicals** introduced into the water supply (eg. chlorine vs chloramine)
- ❖ fluctuations in **water quality** (pH and alkalinity)



5. Confusion over what affects lead levels in water?

Many authorities and researchers from around the world speak on these topics:

- ❖ Health Canada
- ❖ USA's EPA
 - *Flint Michigan, April 2014*
- ❖ German Ministry of Health



In Australia, there is a lot of **good research** being done by groups we have dealt with below:

- ❖ Macquarie University – Harvey, Handley & Taylor
- ❖ University of NSW - Laws
- ❖ University of Western Australia - Ghadouani

6. What is happening with lead levels in plumbing materials?

enHealth is supporting efforts to reduce the level of lead in drinking water in Australia from plumbing products and is engaging with authorities to ensure plumbing products in contact with drinking water **do not adversely affect water quality & people's health.**

- ❖ This includes **research** to determine the extent that plumbing products may contribute to lead levels in drinking water in excess of the health-related guideline value in the ADWG.
- ❖ The installation of plumbing fittings in Australia is overseen by State and Territory plumbing regulatory agencies. These agencies are now collectively working to address the issue of lead in plumbing products at the national level, through the **Australian Building Codes Board (ABCB)**.
 - *The ABCB administers the **National Construction Code (NCC)***

6. What is happening with lead levels in plumbing materials?

Depending on the outcomes of the Regulatory Impact Statement (RIS), **changes may be made** by the **ABCB** to the **NCC (2022)** as to what levels of lead & other elements will be allowed in plumbing products:

- ❖ It is likely this would then cascade down into the relevant Australian Standards (eg. AS/NZS 4020) and WaterMarks (eg. AS/NZS 3718)
- ❖ Indications are that Australia is **likely to follow** something similar to the **USA's** Safe Drinking Water Act (SDWA) legislation (effective 2014), which defines lead free as:
 - ❖ *Not more than a weighted average of 0.25% when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures*
- ❖ Though... it is still possible Australia may opt for a zero level of lead

7. What have we been up to lately?



GalvinClear® = Lead Safe™ Technology

Whilst our traditional commercial taps are manufactured from quality DZR brass, meet strict Australian Standards, and are totally safe for potable water, we are offering our customers a **greater level of choice** due to the demand for Lead Safe™ taps in the community.

7. What have we been up to lately?

GalvinClear® Lead Safe™ = Quality + Safety

Products marked with our GalvinClear® Lead Safe™ logo have been redesigned and re-engineered to provide safer water delivery by utilising specialist materials such as **Stainless Steel** or plastic materials that are free of Lead, and **DZR brass that is low in Lead**.

Like with our traditional taps, our GalvinClear® Lead Safe™ taps are tested to **AS/NZS 4020**, have WaterMark certification, go through in-house testing in our Test Laboratory and rigorous infield testing.



7. What have we been up to lately?

What are GalvinClear[®] Lead Safe[™] products made of?

As 'lead free' is not currently defined by law or plumbing codes in Australia and New Zealand, we have based our definition of Lead Safe[™] on the USA's SDWA definition of lead free

- *Not more than a weighted average of 0.25% lead*

Depending on the commercial application, we are currently using several metallic materials:

- **316 Stainless Steel with 0% Lead - Lead Free**
 - *Used in drinking bubblers*
- **DZR Brass with $\leq 0.25\%$ lead - Lead Safe[™]**
 - *Used in thermostatic mixing valves & taps, drinking bubblers and push button taps*

7. What have we been up to lately?

Lead Testing at UWA



Anas Ghadouani

BSc MSc PhD

Professor and Programme Chair
for Environmental Engineering
Head, Aquatic Ecology and
Ecosystem Studies

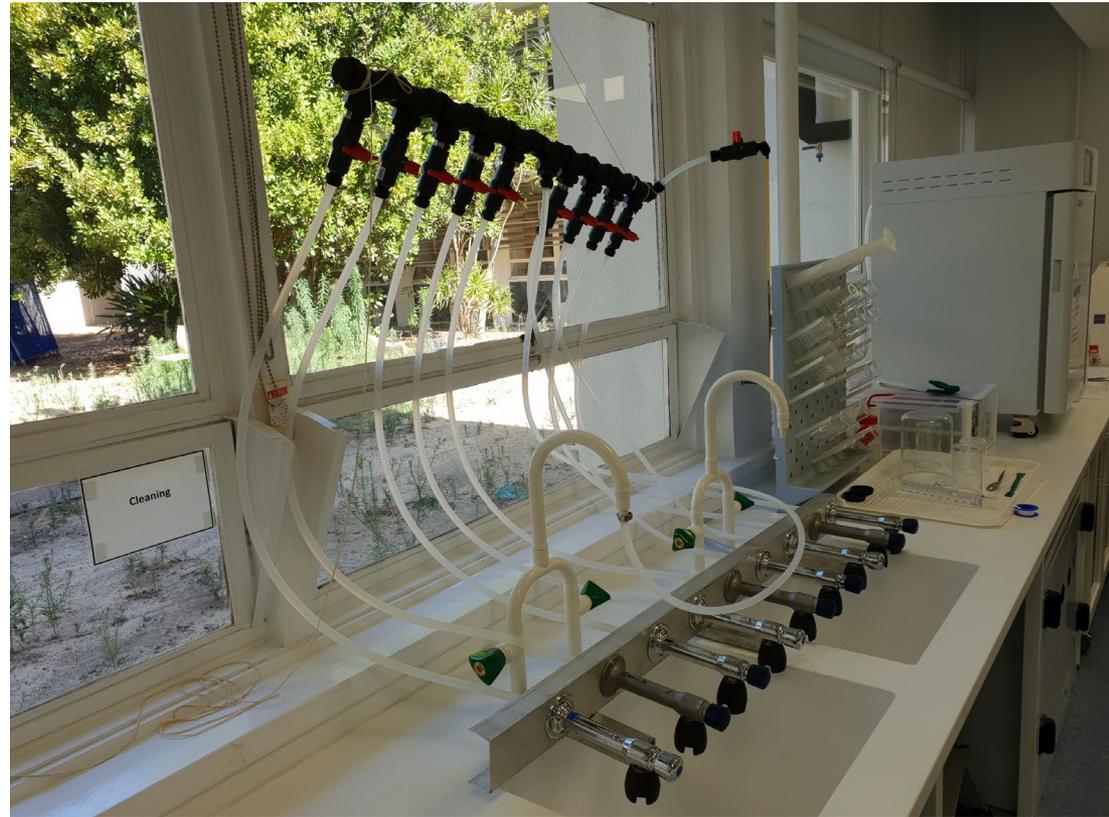


Image of Galvin Engineering taps being tested at UWA

7. What have we been up to lately?

Three testing rounds so far – Feb, July & Sept

Method:

The Deionised water supply was turned on and each tap was run individually for 3 minutes at which point the tap was then turned off and the inlet end of the PP pipe was capped with Parafilm and then tapped over to ensure a tight seal. A control sample was also prepared using a single length of PP Pipe and parafilm on each end

The test samples were then left for 24 hours before each tap was individually opened, and the water collected in the sample bottles. 3x 80ml samples were collected from each tap This method of collecting the water stopped any chance of cross contamination between the taps. The samples of water were then transported to the independent NATA approved laboratory for testing.

During the sample preparation, a new pair of gloves was worn for each tap.



| CERTIFICATE OF ANALYSIS | | | |
|-------------------------|---|-------------------------|---|
| Work Order | : EP1909279 | Page | : 1 of 5 |
| Client | : GALVIN ENGINEERING | Laboratory | : Environmental Division Perth |
| Contact | : PAUL DAVIS | Customer Services EP | : 26 Rigall Way Wangara WA Australia 6065 |
| Address | : 410 VICTORIA ROAD MALAGA WA 6090 09 5249 0011 | Address | |
| Telephone | : New LS product | Telephone | : +61-8-9406 1301 |
| Project | | Date Samples Received | : 12-Sep-2019 15:55 |
| Order number | | Date Analysis Commenced | : 17-Sep-2019 |
| O/C number | | Issue Date | : 19-Sep-2019 19:49 |
| Sampler | : PAUL DAVIS | | |
| Site | | | |
| Quote number | : EN/222/19 | | |
| No. of samples received | : 15 | | |
| No. of samples analysed | : 15 | | |

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories
This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| Signatories | Position | Accreditation Category |
|-------------|-----------------------|-------------------------------|
| Cenhuang Ke | Inorganics Supervisor | Perth Inorganics, Wangara, WA |



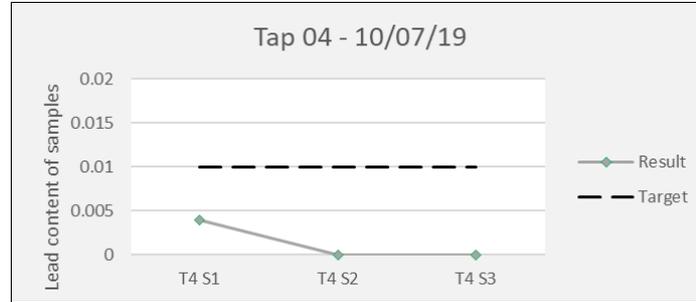
RIGHT SOLUTIONS | RIGHT PARTNER



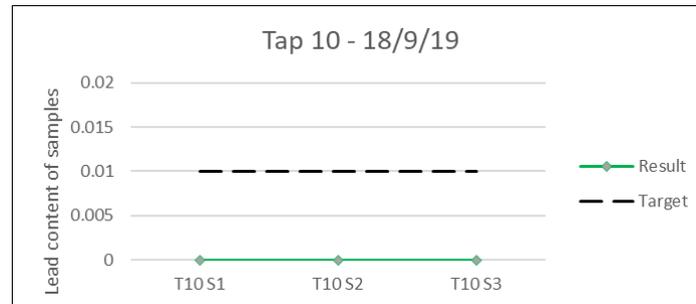
7. What have we been up to lately?

Preliminary results – Max allowed 0.01 mg/L per ADWG and AS/NZS 4020

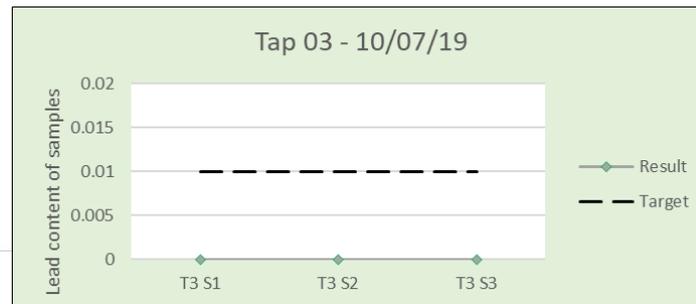
Std DR Brass Bubbler



316 St/St Bubbler



Low Lead Brass Bubbler



7. What have we been up to lately?

Preliminary Findings and Learnings

- 1. Std DR Brass bubblers deliver safe water** – lead levels are well below the current requirements of the ADWG
- 2. 316 St/St Bubblers and Low Lead Brass Bubblers deliver safer drinking water** – typically under the LOR for the NATA lab
- 3. Costs to manufacture new bubblers are higher but will decrease:**
 - 1. 316 St/St Bubblers – can be 20% to 30%*
 - 2. Low Lead Brass Bubblers – can be 10% to 20%*
- 4. As this is new ground, the actual Health benefits are still unknown but worldwide standards are changing**
 - 1. Canada - reducing acceptable lead from 0.01mg/L to 0.005mg/L*
 - 2. Germany – can only use low lead materials specified in 4MS*
 - 3. USA – can only use brass with not more than a weighted average of 0.25% lead*

8. Lead Safe™ Taps for Hospitals & Aged Care Facilities

CliniMix® Lead Safe™ Thermostatic Progressive Mixers

Hob Basin Taps



Wall Basin Taps



Shower Mixers



8. Lead Safe™ Taps for Hospitals & Aged Care Facilities

CliniMix® Lead Safe™ Thermostatic Progressive Mixers

- Hands Free Progressive Mixers include a **hygiene rinse** feature which can be set to activate at regular 12, 24 or 48 hour/s intervals to remove any stagnant water
 - *This will reduce the number of metals that may leach into the water from the plumbing system, and assist in minimising the growth of bacteria such as Legionella*
- Designed to provide **stable** mixed temperature and **rapid shut down** in the event of cold or hot water supply failures
- Enables water to be mixed **closer to the point of discharge**
 - *Minimising warm water which can provide an ideal condition for legionella bacteria to grow.*
- Smooth internal and external components and features a **hygienic laminar flow outlet**.
- The long lever sequential control handle is easy to access for users and provides more precise control of temperature
 - *Water flow always starts from cold for safe usage.*
- Unique **thermal disinfection** bypass feature
- All servicing and commissioning can be done without removing the device
 - *Easy to access isolators help to minimise the time of commissioning and maintenance.*

8. Lead Safe™ Taps for Schools & Child Care Facilities

Ezy-Drink® Lead Safe™ 316 Stainless Steel Drinking Bubblers

Horizontal Taps



Electronic Taps



Vertical Taps



8. Lead Safe™ Taps for Schools & Child Care Facilities

Ezy-Drink® Lead Safe™ Stainless Steel Drinking Bubblers

- The electronic piezo tap has a unique **hygiene rinse** feature which can be set to activate at regular 12, 24 or 48 hour/s intervals to remove any stagnant water
 - *This will reduce the number of metals that may leach into the water from the plumbing system, and assist in minimising the growth of bacteria such as Legionella*
- The electronic piezo tap requires **no manual pressure** to operate the taps
 - *This makes it ideal for small children or people with hand impairments*
- Taps include a unique rubber mouthguard which has been specially designed to **protect teeth** in the rough and tough environment of the schoolyard and playground.
- Unique rubber compound in the mouthguard offering high resistance to:
 - *fungus and bacterial attack*
 - *sunlight and environmental ageing*

8. Lead Safe™ Taps in Optus Stadium in Perth



Images of Galvin Engineering taps installed at the Optus Stadium

Thanks for listening and feel free to call

At Galvin Engineering, we are passionate about Water Solutions for a Healthier Environment, so give us a call to share your thoughts and ideas on this important issue. We also offer CPD courses on designs for mental health facilities and for schools.

Chris Galvin – 0413 620 794

