Water Quality Report

2025-26



CENTRAL HIGHLANDS WATER

MORE THAN WATER

At a Glance

192,952	total population serviced
81,948	total water supply connections
15,442 ML	total potable water supply volume
15	water treatment plants
30	reservoirs
13	diversion weirs
35	groundwater bores
17	bulk water entitlements held
2,680 KM	of water mains
47	service basins and tanks
41	water pumping stations

Traditional Custodians Acknowledgement

We respectfully acknowledge the Traditional Custodians of the region we operate within, the Dja Dja Wurrung, Wadawurrung, Wurundjeri, Djab Wurrung, Wotjobaluk, Jaadwa, Jadawadjali, Wergaia and Jupagulk peoples and pay our deepest respect to their Elders past and present.

We acknowledge their role as custodians of land and water for thousands of years. Their continuing culture, contribution and connection to Country is vital to the life of this region.

Central Highlands Water is committed to supporting Traditional Custodians and local Aboriginal community groups on their journey to self-determination and the implementation of Healthy Country Plans.

It remains our intention that our ongoing actions will deepen these partnerships to better understand how we can support the desired objectives and work together to achieve shared outcomes that enhance Country and communities.

Central Highlands Water recognises and values the contributions that Aboriginal and Torres Strait Islander peoples make in our society. Sovereignty has never been ceded. It always was and always will be, Aboriginal land.

Cover image: Beales Reservoir, Bungaree

Additional copies: This water quality report is available for viewing or download from Central Highlands Water's website, www.chw.net.au

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Lal Lal Reservoir

Message from our Managing Director

At Central Highlands Water (CHW), we recognise the importance of delivering safe and high-quality drinking water to our customers and communities. As a water business, our water quality performance is fundamental to our existence. It is my pleasure to present our Annual Water Quality Report 2025-26.

This year, we maintained our investment in proactive preventative maintenance programs, along with asset improvement and renewal programs. Throughout 2025-26, we continued to conduct water mains cleaning, tank and basin cleaning, treatment plant asset maintenance and replacement programs. We also continued planning key capital projects designed to invest in water infrastructure and enhance water quality to our customers. This planning is integral to our approximate $250 million investment into high-quality customer-centric services across the Central Highlands region, as outlined in our 5-year pricing submission (2023-28) approved by the Essential Services Commission.

We have successfully implemented ultraviolet (UV) disinfection treatment at the White Swan and Learmonth Water Treatment Plants (WTPs) and are currently delivering water treatment plant upgrades at the Daylesford and Landsborough WTPs. These significant investments in critical water infrastructure will ensure our treatment systems continue to meet microbial health-based water quality targets, supporting the ongoing provision of safe, reliable drinking water for our communities.

Ongoing system auditing, compliance monitoring and verification programs have continued to be a major focus throughout 2025-26 as part of our Water Quality Risk Management Plan continuous improvement journey. During the year, we completed over 57,000 water quality tests across our drinking water supply systems. We continued to operate our National Association of Testing Authorities (NATA) accredited independent laboratory which has provided outstanding service to the Victorian water industry for over 40 years.

Our More Than Water 2040 Strategy reaffirms our commitment to exceptional customer and community value, ensuring water services are safe, dependable, and affordable, now and into the future. Water quality is integral to our commitment of being a trusted and reliable provider of safe and secure drinking water. Our 2040 Strategy underpins everything we do, bringing together core business obligations and the opportunity to innovate and deliver better outcomes for our customers and communities.

Looking ahead, we continue to prepare for the challenges of more extreme weather events and increased growth in customer connections across our region. We have a highly skilled and committed team who are supported by our systems and plans to meet these challenges and continue to provide high-quality drinking water. We value the feedback we receive from our customers and continually explore opportunities to improve the way we work and effectively manage risk. We are passionate about our communities and to placing our customers at the centre of our thinking, as we continue to deliver quality drinking water across our region.





Jeff Haydon
Managing Director



Landsborough Water Treatment Plant

Part 1

Introduction

About us

Central Highlands Water (the Corporation, CHW) supplied 15,442 megalitres of potable water to customers throughout the Central Highlands region of Victoria during 2025-26.

Operating across 9,275 square kilometres, we supply water to more than 192,900 customers through a complex network of 30 reservoirs, 15 treatment plants, 41 pump stations and 2,680 kilometres of water mains in the local government areas of Ballarat, Central Goldfields, Golden Plains, Hepburn, Pyrenees, Northern Grampians, Moorabool and Corangamite (Skipton).

Summary

In accordance with the *Safe Drinking Water Act 2003*, this report provides an overview of our supply system, the risk management and monitoring processes in place and water quality performance for the 2025-26 financial year.

Guidance regarding the structure of this report has been provided by the Department of Health (DH) in accordance with the *Safe Drinking Water Act 2003* and the current Water Quality Annual Report Guidance document, July 2026.

Drinking water quality policy

This policy is periodically reviewed and outlines our commitment to managing our water supply systems effectively, in order to provide safe and high-quality drinking water that satisfies the needs of our customers, community and regulators.

We are committed to:

- implementing and maintaining a Water Quality Risk Management Plan in accordance with the *Safe Drinking Water Act 2003*, the Safe Drinking Water Regulations and other regulatory guidance that utilises a considered risk management approach to ensure the supply of safe water and to protect public health
- implementing, maintaining and adequately resourcing a drinking water quality management system consistent with the framework described in the Australian Drinking Water Guidelines (ADWG)
- utilising a 'catchment to tap' multiple barrier approach, to ensure adequate consideration is given to both the protection of water sources and treatment controls to manage risks to safe drinking water
- aligning drinking water quality risk management with CHW's Risk Management Framework, including the business Risk Appetite Statement
- managing drinking water aesthetics to meet the 'good' criteria as defined in the Australian Drinking Water Guidelines (ADWG)
- integrating the needs and expectations of our consumers, stakeholders and regulators into our planning
- establishing regular monitoring of the quality of drinking water and effective reporting mechanisms to provide relevant and timely information on the management of the water supply
- continually improving our practices by assessing performance against corporate commitments and regulatory requirements
- ensuring all managers and employees involved in the supply of drinking water are aware of their responsibility for understanding, implementing, and maintaining our drinking water quality management system
- ensuring this policy is highly visible, periodically reviewed, continually communicated, understood and implemented by all employees.

Drinking water regulatory framework

Safe Drinking Water Act 2003

The purpose of the Victorian *Safe Drinking Water Act 2003* ('the Act') is "to make provision for the supply of safe drinking water".

The Act defines drinking water as: "water that is intended for human consumption or for the purposes connected with human consumption, such as the preparation of food or the making of ice for consumption or for the preservation of unpacked food, whether or not the water is used for other purposes".

Safe Drinking Water Regulations 2025

The Victorian Safe Drinking Water Regulations 2025 ('the Regulations') are made under section 56 of the *Safe Drinking Water Act 2003* and came into operation on 6 July 2025.

The objective of the Regulations is to provide further for the supply of safe drinking water.

The Regulations detail the management of the supply of safe drinking water by:

- setting out further matters to be addressed in the risk management plan and risks to be addressed in that plan
- specifying the documents to be made available for inspection in a risk management plan audit
- prescribing drinking water quality standards
- specifying the issues relating to the quality of drinking water and regulated water that are to be dealt with by a water supplier in an annual report

Established to protect public health, the Regulations are administered by the Department of Health (DH). CHW must meet all requirements specified.

Australian Drinking Water Guidelines

The purpose of the Australian Drinking Water Guidelines ('the Guidelines') is to "provide the authoritative Australian reference for use within Australia's administrative and legislative framework to ensure the accountability of drinking water suppliers".

While the Guidelines are not mandatory standards, they set out the framework for management of drinking water quality. The framework includes the following elements:

- commitment to drinking water quality management (by the organisation)
- assessment of the drinking water supply system
- preventative measures for drinking water quality management
- having operational procedures and process control in place
- verification of drinking water quality
- management of incidents and emergencies
- employee awareness and training
- community involvement and awareness
- research and development
- documentation and reporting
- evaluation and audit
- review and continual improvement.

We have adopted these 12 elements when managing our drinking water supply systems.

Undertakings, exemptions and determinations under the Act

No undertaking or exemptions were in place in 2025-26.

Regulated water determination

In accordance with the *Safe Drinking Water Act 2003* the Minister for Health may declare certain water supplies 'regulated water' to protect public health. Regulated water is classified as water that is not intended for drinking, but which could be reasonably mistaken for drinking water.

We operate three regulated water supply systems – Amphitheatre, Raglan and Redbank. The Minister for Health declared these water supplies 'regulated' in 2006 (Government Gazette numbers G31 and G35).

We are required to keep customers in regulated water systems informed that the water supply is not intended for drinking water purposes.

We achieve this by:

- sending bi-annual reminders that the water is not supplied for drinking purposes (see Table 6)
- providing notifications on water bills
- providing advice to new owners, and for property transfers
- displaying signage at publicly accessible taps.

Community information

Consistent with Section 23 of the *Safe Drinking Water Act 2003*, we provide our customers with all available information about the quality of our drinking water. A water quality performance report is produced monthly and can be viewed at chw.net.au

Our annual drinking water quality report is available to customers via chw.net.au or by contacting our Customer Service team, during business hours, on 1800 061 514.



Evansford Reservoir

Part 2

Drinking Water Supply Systems

Overview

We service customers in 15 distinct water supply systems, which include 38 specific water sampling localities and three regulated water supplies.

The water supply systems are:

Amphitheatre

The Amphitheatre system is supplied with non-potable (untreated) water and has been declared as regulated water. The water is not provided for drinking purposes or other human consumption, such as food preparation or ice making. To indicate this, signs are displayed at publicly accessible taps throughout this supply.

This system sources water from the Amphitheatre Reservoir. A groundwater bore is available as a supplementary supply.

Avoca

The Avoca water supply system sources water from the Bung Bong Bore groundwater supply.

Ballarat and District

The Ballarat and District supply is the largest water supply system in the Central Highlands region and includes the townships of Ballarat, Ballan, Creswick, Linton, Smythesdale and Skipton. The Ballarat and District system has several major sources of water supply including White Swan Reservoir, Lal Lal Reservoir, Goldfields Superpipe and the Ballarat West groundwater supply.

Beaufort *(including Raglan)*

The Beaufort water supply system is sourced from Musical Gully Reservoir and has a supplementary groundwater supply, if needed.

Raglan is supplied with non-potable (untreated) water and has been declared as regulated water. The water is not provided for drinking purposes or other human consumption, such as food preparation or ice making. To indicate this, signs are displayed at publicly accessible taps throughout this supply.

The Raglan water supply system is supplied upstream of the Beaufort Water Treatment Plant.

Blackwood and Barrys Reef

The Blackwood and Barrys Reef water supply system is sourced from stream diversions and has a supplementary groundwater supply, if required.

Clunes

Clunes receives a high-quality treated groundwater supply.

Daylesford

Daylesford sources water from Wombat, Bullarto and Hepburn reservoirs. Additional sources of supplementary water include the Goldfields Superpipe and the Coomoora groundwater bore.

Dean

Dean is the smallest water supply system in the Central Highlands region, serving 22 connections. The water supply for Dean is sourced from local groundwater.

Forest Hill

Forest Hill receives a high-quality treated groundwater supply.

Landsborough–Navarre

The Landsborough–Navarre water supply system receives a high-quality treated groundwater supply.

Learmonth

Learmonth draws its water from a local groundwater source which provides high-quality water.

Lexton

Water for the Lexton township is obtained from groundwater at Gordon Hill which provides high-quality water.

Maryborough and District

The Maryborough and District water supply is the second largest system we manage. Providing treated water to Maryborough and several surrounding towns, the water is sourced from Tullaroop Reservoir, Evansford Reservoir and/or Talbot Reservoir, prior to being diverted and stored in Centenary Reservoir. Moolort and Stoney Creek groundwater are also available as supplementary supply sources.

Redbank

The Redbank system is supplied with non-potable (untreated) water and has been declared as regulated water. The water is not provided for drinking purposes or other human consumption, such as food preparation or ice making. To indicate this, signs are displayed at publicly accessible taps throughout this supply.

This system is supplied from local groundwater sources.

Waubra

Waubra draws its water supply from local groundwater sources.

Sources of water

Our supply systems are supplied from stream diversions, on-stream storages and groundwater bores as detailed in Table 1.

Most of the headworks systems (reservoir storage and groundwater assets) are owned and operated by CHW; however, some assets are shared with, or owned by, other authorities, including:

- Lal Lal Reservoir, shared with Barwon Water. We are responsible for operation and maintenance activities. There is also an environmental reserve component of this storage managed by the Corangamite Catchment Management Authority, on behalf of the Victorian Environmental Water Holder
- a delivery entitlement for Newlyn and Tullaroop reservoirs, which are owned and operated by Goulburn-Murray Water
- shared sections of the Goldfields Superpipe with Coliban Water. This asset is used to source water from the Northern Victorian systems (Goulburn and Campaspe systems).

We have bulk entitlements for our surface water supplies which specify the volume of water and relevant conditions for extraction. These entitlements were negotiated with the Department of Energy, Environment and Climate Action (DEECA), rural water authorities and catchment management authorities.

We also own water shares in the Northern Victorian systems. Water allocations from these shares can be supplied to Ballarat and Daylesford, via the Goldfields Superpipe.

Groundwater extraction licences for our groundwater supply systems specify extraction volumes, rates and particular conditions. Groundwater licences are issued and administered by rural water corporations, including Goulburn-Murray Water, Southern Rural Water and Grampians Wimmera Mallee Water.

We also work closely with relevant catchment management authorities to improve land management and river health.

Service area

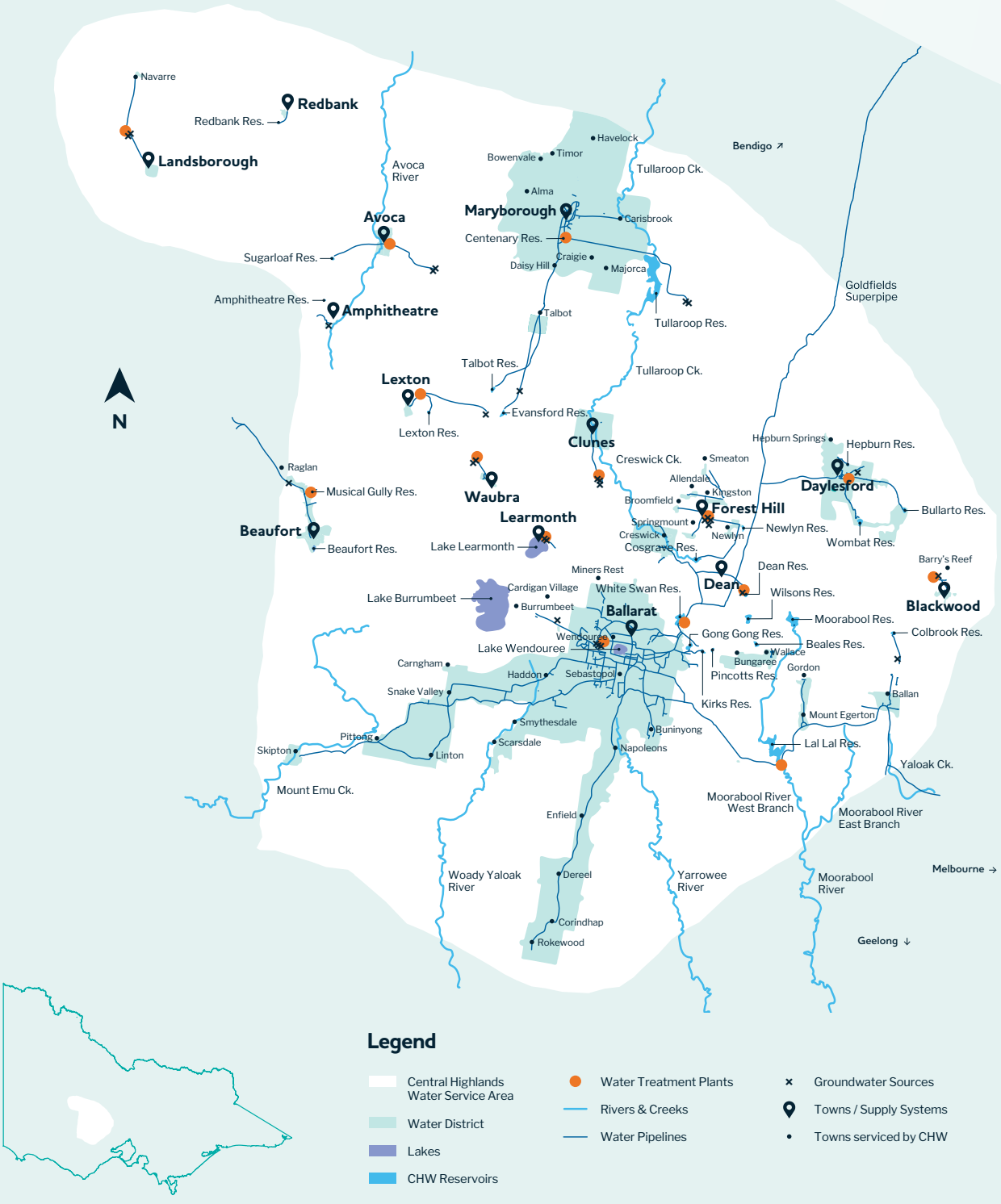


Table 1

Sources of water

Water supply systems Water sampling locality	Population serviced #	Source water	Storage	Treatment plant
DRINKING WATER SUPPLY SYSTEMS				
Avoca	1,656	Bung Bong Bore 2 Bung Bong Bore 3	-	Avoca WTP
Ballarat		Kirks Reservoir ^ Gong Gong Reservoir Pincotts Reservoir Cosgrave Reservoir Bungaree Bore Goldfields Superpipe Newlyn Reservoir	White Swan Reservoir	White Swan WTP
Ballan	4,032			
Ballarat Central	61,380			
Ballarat North/Nerrina	4,343			
Bungaree/Wallace	429			
Buninyong/Mt Helen	10,496			
Cardigan Village	2,155			
Creswick	3,876			
Enfield	626	Wilsons Reservoir Beales Reservoir Moorabool Reservoir	Lal Lal Reservoir	Lal Lal WTP
Fiskville/Glenmore	101			
Gordon/Mt Egerton	1,441			
Haddon	12,819			
Lal Lal	185	Ballarat West Bore 1 ^ Ballarat West Bore 2 ^ Ballarat West Bore 3 ^		Ballarat West Disinfection
Linton	702			
Napoleons	928			
Sebastopol	14,353			
Skipton	813			
Smythesdale	1,251			
Wendouree	40,265			
Beaufort	2,114	Cave Hill Creek ^ Troys Reservoir ^ Side Spring Creek ^ The Glut Raglan Bore	Musical Gully Reservoir	Beaufort WTP
Blackwood/Barrys Reef	853	Kyneton Creek Long Gully Creek Blackwood Bore	Blackwood Basin 1 and 2	Blackwood WTP
Clunes	2,534	Bore 1 Bore 2 Bore 3	-	Clunes WTP
Daylesford		Wombat Reservoir Bullarto Reservoir Hepburn Reservoir ^ Coomoora Bore Goldfields Superpipe	-	Daylesford WTP
Daylesford High Level	3,128			
Daylesford Low Level/Hepburn	4,353			
Dean	53	Dean Bore	-	Dean Disinfection
Forest Hill	1,306	Bore 1 ^ Bore 1A Bore 2 Bore 3	-	Forest Hill WTP
Landsborough	352	Landsborough Bore 2	-	Landsborough WTP
Learmonth	395	Bore 1 Bore 2	-	Learmonth Disinfection
Lexton	256	Gordon Hill Bore	-	Lexton WTP
Maryborough		Tullaroop Reservoir Evansford Reservoir ^ Talbot Reservoir ^ Moolort Bore 1 ^ Moolort Bore 2 ^ Stoney Creek Bore ^	Centenary Reservoir	Maryborough WTP
Alma	434			
Bet Bet	700			
Carisbrook	1,496			
Daisy Hill	453			
Majorca	228			
Maryborough	10,820			
Talbot	676			
Timor	249			
Waubra	283	Bore 2	-	Waubra Disinfection
REGULATED WATER SUPPLY SYSTEMS				
Amphitheatre *	151	Amphitheatre Reservoir Amphitheatre Bore	-	-
Raglan *	161	Cave Hill Creek ^ Side Spring Creek ^ The Glut Raglan Bore	-	-
Redbank *	110	Redbank Bore 1 Redbank Bore 2	-	-

Calculated using ABS Census population data (2021) and adjusted for connections.

^ Not used in 2025-26.

* Non–potable water supply system.

Table 2

Reservoir capacity and current levels

Reservoir	Capacity (megalitres)	Percentage full as at 30 June 2025	Percentage full as at 30 June 2026
DRINKING WATER SUPPLY SYSTEMS			
Avoca			
(Groundwater source)	-	-	-
Ballarat			
Beales Reservoir	415	4	40
Cosgrave Reservoir	680	22	39
Gong Gong Reservoir	1,902	15	32
Kirks Reservoir	400	86	93
Lal Lal Reservoir	59,549 (CHW share 35,670) [1]	53 (CHW share 58)	41 (CHW share 50)
Moorabool Reservoir	6,192	33	39
Newyln Reservoir	500 (CHW entitlement) [2]	-	-
Pincotts Reservoir	218	50	100
White Swan Reservoir	14,107	37	45
Wilsons Reservoir	1,010	4	26
Beaufort			
Musical Gully Reservoir	253	73	100
Troys Reservoir [3]	68	15	13
Blackwood/Barrys Reef			
Blackwood Basin 1	22	81	10
Blackwood Basin 2	16	3	46
Clunes			
(Groundwater source)	-	-	-
Daylesford			
Bullarto Reservoir	219	20	100
Hepburn Reservoir	28	49	100
Wombat Reservoir	548	36	100
Dean			
(Groundwater source)	-	-	-
Forest Hill			
(Groundwater source)	-	-	-
Landsborough			
(Groundwater source)	-	-	-
Learmonth			
(Groundwater source)	-	-	-
Lexton			
(Groundwater source)	-	-	-
Maryborough			
Centenary Reservoir	180	72	70
Evansford Reservoir	1,346	53	79
Talbot Reservoir	846	36	32
Tullaroop Reservoir	2,100 (CHW entitlement) [2,4]	-	-
Waubra			
(Groundwater source)	-	-	-
REGULATED WATER SUPPLY SYSTEMS			
Amphitheatre *			
Amphitheatre Reservoir	70	14	48
Raglan *			
(Cave Hill to Musical Gully Reservoir Pipeline)	-	-	-
Redbank *			
(Groundwater source)	-	-	-

[1] 7,086 ML Lal Lal Reservoir Environmental Reserve.

[2] CHW entitlements are determined by Goulburn-Murray Water allocations for these storages, Tullaroop capacity 72,950 ML.

[3] Not in use.

[4] CHW Bulk Entitlement 1200 ML annual allocation and carryover of unused allocation from previous year of 900 ML.

* Non–potable water supply system.

Water treatment plants

We have 15 water treatment plants. A water treatment services agreement with Veolia Water is in place for the operations and maintenance of the following seven water treatment facilities:

- Beaufort Water Treatment Plant
- Blackwood Water Treatment Plant
- Clunes Water Treatment Plant
- Forest Hill Water Treatment Plant
- Lal Lal Water Treatment Plant
- Maryborough Water Treatment Plant
- White Swan Water Treatment Plant

Treatment processes

We use a number of different processes and technologies to treat water. The process used depends on the characteristics of the water to be treated. The treatment process and added substances are summarised in Table 3, and the processes are described below.

Coagulation/flocculation

Coagulation/flocculation is a complex process where a controlled amount of chemical coagulant is added into the water to de-stabilise particles, allowing clumps to form (flocculation) and settle out of suspension. This occurs in a mixing tank prior to the filtration process. The particles are then easily removed during the sedimentation and filtration stage. The type of filtration process used to remove the particles depends on the weight of the particles formed.

The coagulation/flocculation process is utilised at water treatment plants at White Swan, Lal Lal, Beaufort, Blackwood, Daylesford and Maryborough.

Chemicals used for coagulation/flocculation at the water treatment plants include aluminium sulphate, aluminium chlorohydrate, poly electrolyte and polyaluminium chloride.

Sedimentation/filtration

Where the raw water quality allows large heavy particles (floc) to be formed during the coagulation/flocculation process, the water is further treated by the sedimentation process. The floc forms a blanket which continues to trap more suspended particles. The particles sink to the bottom of the sedimentation tank and are drawn off to waste. The clear water which flows to the surface of the sedimentation tank is collected and then passed through sand filters. Any particles not removed in the sedimentation process are filtered out by the sand filter. The filters are washed regularly to remove the collected material to waste. Filtration of the water removes naturally occurring particulate material from the water prior to disinfection. The process improves the efficacy of disinfection, assists with clarity, reduces the risk of taste and odour, and ensures a consistent quality of supply.

This process is utilised at the Maryborough Water Treatment Plant.

Dissolved Air Flotation and Filtration (DAFF)

Some waters contain coagulated matter which is lighter and will not easily sink. For these supplies, dissolved air flotation and filtration is used. DAFF relies on the injection of microscopic air bubbles into the water stream, causing the flocculated particles to float to the surface of the filtration tank. The particles are drawn off the surface of the filtration tank and removed to waste. Clear water then passes down through filtering material in the bottom of the filtration tank, capturing any fine particles that were not removed by the air.

This process is utilised at the White Swan, Lal Lal, Beaufort, Blackwood and Daylesford water treatment plants.

Ultrafiltration

Ultrafiltration is used to remove suspended solids and some colloidal matter from the source water. The water is pumped through a filter membrane trapping suspended solids in the process. The concentrate (material that does not pass through the membrane) is periodically removed to waste to prevent the blocking of the membrane filters.

The Lexton Water Treatment Plant utilises membrane ultrafiltration technology.

Water softening

Water softening, or dealkalisation, is a process used to remove calcium and magnesium salts from the water to reduce the hardness and hence the 'scaling' effect of the water.

This process is utilised at the Clunes and Forest Hill water treatment plants.

Ozonation

Ozone pre-treatment is used specifically at the Clunes Water Treatment Plant to reduce the levels of iron and manganese that can be present in the groundwater source. The process involves oxidation of soluble iron and manganese from the water, and removal during the filtration process. The oxidising process also assists in minimising colour and odour causing sulphides.

Reverse osmosis

Reverse osmosis is used to remove dissolved salts from the source water. Pre-treated water is pumped at high pressure through spiral wound membranes, trapping dissolved salts in the process. The concentrate (material that does not pass through the membrane) is periodically removed to waste. The water passing through the membranes is extremely pure and is blended to maintain an acceptable salt balance in the water.

The Avoca and Maryborough water treatment plants utilise reverse osmosis membrane technology.

Electrodialysis reversal

Electrodialysis is used to remove dissolved salts from the source water. Water is transferred to a treatment unit and an electrical DC voltage is applied, removing dissolved salts through special ion exchange membranes. The concentrate (material that passes through the membranes) is periodically removed to waste by reversing the charge, or polarity, across the membranes. This treatment process has the advantage of being robust, flexible and results in high product recoveries.

The Landsborough Water Treatment Plant utilises electrodialysis reversal membrane technology.

Added substances

Lime, soda ash or sodium hydroxide

To assist the water treatment process, and to ensure the pH level in filtered water is within a desirable target range, high-quality lime, soda ash or sodium hydroxide is automatically added to the water in the treatment plant. Maintaining pH in the desired range optimises the efficacy of treatment and disinfection, minimises the risk of corrosion/scaling and improves taste.

This process is utilised at the Avoca, White Swan, Lal Lal, Beaufort, Blackwood, Clunes, Daylesford, Forest Hill, Landsborough and Maryborough water treatment plants.

Potassium permanganate

Potassium permanganate can be added to the water supply, as required, to reduce iron and manganese levels. When present in higher concentrations, these metals can cause staining of laundry and plumbing fixtures and contribute to 'dirty water' events.

Potassium permanganate dosing capability is currently available at the Beaufort, Blackwood, Daylesford, White Swan, Lal Lal and Maryborough water treatment plants.

Powdered activated carbon

Powdered activated carbon can be added to the water supply, as required, to remove compounds that contribute to taste and odour issues, usually associated with higher levels of certain algae in raw water.

Powdered activated carbon dosing capability is currently available at the Beaufort, Blackwood, Daylesford, White Swan, Lal Lal and Maryborough water treatment plants.

Disinfection

Chlorination

Chlorine is widely used throughout the world to disinfect drinking water and control disease-causing organisms. The type of chlorine used at our plants is either chlorine gas or sodium hypochlorite.

Chlorination is utilised at the Avoca, Beaufort, Clunes, Daylesford, Dean, Forest Hill, Landsborough, Learmonth, Lexton and Waubra water treatment plants.

Chloramination

Chloramination is used throughout the world as a means of disinfecting drinking water to control disease-causing organisms. Small amounts of chlorine gas and ammonia are added to the water to form chloramines, providing a relatively long-lasting process to safely disinfect water.

Chloramination is utilised at the White Swan, Lal Lal and Maryborough water treatment plants.

Ultraviolet light

Ultraviolet (UV) light is an effective means of disinfection; however, efficacy is only at the point of application, as UV treatment has no lasting residual. Effectiveness also relies on the water having low turbidity as particulates minimise the amount of UV light penetration, hence potentially shielding micro-organisms that could be present in the water.

UV disinfection is utilised at the Blackwood, Dean, Forest Hill, Learmonth, Maryborough and White Swan water treatment plants.

Fluoridation

In accordance with DH requirements, the Ballarat and District and the Maryborough and District water supplies are fluoridated. All other systems are currently non-fluoridated. Any fluoride present in these non-fluoridated systems is due to naturally occurring sources.

Fluoridation occurs at the Lal Lal, White Swan and Maryborough water treatment plants.

Distribution

After water is filtered and disinfected, it is relayed to customers through a vast network of tanks, basins, pumps and pipes.

We use positive pressure and backflow prevention to ensure safe drinking water. Positive pressure directs contaminants away from the water supply system if leaks occur. We require high-risk properties install a testable backflow prevention device before connecting to the water supply network.

Table 3

Treatment processes and added substances for supply systems

Water supply system	Water sampling locality	Treatment process/ disinfection	Added substances
DRINKING WATER SUPPLY SYSTEMS			
Avoca	Avoca	Reverse Osmosis Chlorination	Sodium Hydroxide Sodium Hypochlorite Antiscalant
Ballarat	Ballan Ballarat Central Ballarat North/Nerrina Bungaree/Wallace Buninyong/Mt Helen Cardigan Village Creswick Enfield Fiskville/Glenmore Gordon/Mt Egerton Haddon	Coagulation + Flocculation Dissolved Air Flotation Granular Media Filtration Ultraviolet Light Chloramination Fluoridation	**White Swan Treatment Plant** Soda Ash Aluminium Chlorohydrate Poly Electrolyte Chlorine Gas Aqueous Ammonia Fluorosilicic Acid Sodium Hydroxide ^ Powder Activated Carbon ^ Potassium Permanganate ^
	Lal Lal Linton Napoleons Sebastopol Skipton Smythesdale Wendouree	Coagulation + Flocculation Dissolved Air Flotation Granular Media Filtration Chloramination Fluoridation	**Lal Lal Treatment Plant** Soda Ash Aluminium Chlorohydrate Poly Electrolyte Chlorine Gas Aqueous Ammonia Fluorosilicic Acid Sodium Hydroxide ^ Powder Activated Carbon ^ Potassium Permanganate ^
		Chloramination Fluoridation	**Ballarat West Disinfection Plant** Chlorine Gas Aqueous Ammonia Fluorosilicic Acid
Beaufort	Beaufort	Coagulation + Flocculation Dissolved Air Flotation Granular Media Filtration Chlorination	Polyaluminium Chloride Sodium Hydroxide Sodium Hypochlorite Powder Activated Carbon ^ Potassium Permanganate ^
Blackwood	Blackwood/Barrys Reef	Coagulation + Flocculation Dissolved Air Flotation Granular Media Filtration Ultraviolet Light	Sulphuric Acid ^ Aluminium Chlorohydrate Poly Electrolyte ^ Sodium Hydroxide ^ Powder Activated Carbon ^ Potassium Permanganate ^
Clunes	Clunes	Ozonation Cartridge Filtration Dealkalisation (Ion Exchange) Chlorination	Sodium Hydroxide Chlorine Gas Ozone Gas
Daylesford	Daylesford High Level Daylesford Low Level/Hepburn	Aeration Coagulation + Flocculation Dissolved Air Flotation Granular Media Filtration Chlorination	Polyaluminium Chloride Sodium Hydroxide Chlorine Gas Poly Electrolyte ^ Potassium Permanganate ^ Powder Activated Carbon ^
Dean	Dean	Ultraviolet Light Chlorination	Sodium Hypochlorite
Forest Hill	Forest Hill	Dealkalisation (Ion Exchange) Ultraviolet Light Chlorination	Sodium Hydroxide Chlorine Gas
Landsborough	Landsborough/Navarre	Pressure Filtration Electrodialysis Reversal Chlorination	Sodium Hydroxide Sodium Hypochlorite Hydrochloric Acid Antiscalant
Learmonth	Learmonth	Ultraviolet Light Chlorination	Sodium Hypochlorite
Lexton	Lexton	Membrane Ultrafiltration Chlorination	Sodium Hypochlorite
Maryborough	Alma Bet Bet Carisbrook Daisy Hill Majorca Maryborough Talbot Timor	Prechlorination Coagulation + Flocculation Sedimentation/Clarification Granular Media Filtration Reverse Osmosis Ultraviolet Light Chloramination Fluoridation	Soda Ash Aluminium Sulphate Poly Electrolyte Chlorine Gas Aqueous Ammonia Fluorosilicic Acid Sodium Hypochlorite ^ Antiscalant ^ Powder Activated Carbon ^ Potassium Permanganate ^
Waubra	Waubra	Chlorination	Sodium Hypochlorite
REGULATED WATER SUPPLY SYSTEMS			
Amphitheatre *	Amphitheatre	No treatment	
Raglan *	Raglan	No treatment	
Redbank *	Redbank	No treatment	

* Non–potable water supply system.

^ Added substance if required.



Choose Tap Hydration Station



Landsborough Water Treatment Plant

Part 3

Customer Feedback

Complaints

During 2025-26, we experienced a decrease in the number of customer complaints compared to the previous reporting year. All water quality contacts are recorded as complaints in accordance with the requirements of the Essential Services Commission (ESC).

Our Customer Experience team members triage contacts relating to water quality and report via a service request to our Works Management Centre for immediate action. All customer complaints are recorded and tracked in a corporate database. Our Customer Resolutions team is notified simultaneously to ensure all contacts are followed through to a satisfactory resolution.

Complex complaints are managed directly by our Customer Resolutions team and/or the Team Leader Water Quality. These complaints, which may relate to public health, are managed in accordance with our business escalation processes.

In some circumstances, we obtain water samples for testing in our National Association of Testing Authorities (NATA) independent accredited laboratory, which has been servicing the Victorian water industry for more than 40 years.

Monthly complaints data is reported to senior management, and systemic matters are addressed at several levels. As a result, we can interrogate and analyse data to better manage, prevent and minimise the number of customer complaints on an ongoing basis through improved policy/procedures, asset management, community engagement and team member training.

Contacts that are investigated and are conclusively found to be unrelated to our water infrastructure, operations or service delivery are excluded from reporting figures.

During the first month of 2025-26, the Daylesford system experienced a significant increase in complaints pertaining to discolouration. This was a continuation of the elevated manganese issue from June 2025 in the last reporting period.

No other significant trends in either the category, or location, of water quality complaints were evident over the period.

Table 4

Complaints comparison 2025-26 to previous reporting periods

Type of complaint	Number of complaints 2025-26	Number of complaints 2024-25	Number of complaints 2023-24	Comparison with previous year 2024-25 (% change)
Colour	40	45	26	-11
Taste or odour	10	10	10	0
Other	4	7	4	-43
Total	**54**	**62**	**40**	**-13**

Table 5

Complaints by water supply system 2025-26

Water supply system	Colour	Taste or odour	Other	Total complaints	Complaints per 100 population serviced
Amphitheatre #	2	0	0	2	1.32
Avoca	0	0	0	0	0.00
Ballarat	14	6	3	23	0.01
Beaufort	4	0	0	4	0.19
Blackwood	0	0	0	0	0.00
Clunes	1	2	0	3	0.12
Daylesford	17	1	0	18	0.24
Dean	0	0	0	0	0.00
Forest Hill	0	0	0	0	0.00
Landsborough	0	1	0	1	0.28
Learmonth	0	0	0	0	0.00
Lexton	0	0	0	0	0.00
Maryborough	0	0	1	1	0.01
Raglan #	2	0	0	2	1.25
Redbank #	0	0	0	0	0.00
Waubra	0	0	0	0	0.00
Total	**40**	**10**	**4**	**54**	**0.03**

Non-potable water supply system

Complaints categories and response

Colour

Discoloured water can be caused by sediment and naturally occurring organic matter in the water mains. These sediments can be resuspended during high flow events, such as main breaks. Sediments can be cleared through systematic flushing of the water mains or other targeted mains cleaning programs.

Discolouration may also be caused by corrosion of galvanised iron or copper in a customer's internal plumbing system. Brown water, caused by rusting pipes, can be managed by customers through replacing the affected pipes, flushing within the property and/or seeking advice from a reputable, licensed plumber. Blue or green water is caused by the corrosion of internal copper piping and generally the water discolouration is accompanied by a metallic taste.

White water (milky or cloudy appearance) is typically due to fine air bubbles dispersed in the water. This can occur when air is trapped in the pipes after repair works and can be rectified by flushing.

Taste or odour

Taste and odour may vary depending on which catchment the water is sourced. We ensure that the water treatment strategies applied aim to minimise taste and odour impacts for customers.

A factor contributing to taste and odour acceptability is disinfection, which is an essential part of the treatment process to deliver safe drinking water. The goal is to ensure adequate disinfection while minimising chlorinous taste and odour. Some customers are more perceptive of chlorine, and we provide advice to assist these customers.

Other taste and odour impacts may arise in customer's internal pipework due to rusting, corrosion, sediment build-up or stagnant water.

Other complaints

Other water quality complaints vary but may include those relating to skin irritation or alleged illness, effects on hair, water leaving deposits or stains, and effects on aquariums.

Customer engagement

We connect with our customers and community every day through four key focus areas: customer care, equity, sustainability, and service reliability. Our community engagement programs help shape how we deliver greater value and better understand what matters most to the people we serve.

By placing customers at the centre of our planning and decision-making, we ensure our services remain high-quality, dependable, and affordable. This approach supports the goals of our More Than Water 2040 Strategy and reinforces our commitment to being a trusted provider of safe and secure water services.

Our Water Quality Rebate program continued during 2025-26 for Amphitheatre, Raglan and Redback customers. Following community feedback and suggestions, an additional one-off opportunity to fill rainwater tanks was made available from 22 April 2026.

As part of our efforts to improve customer communications around planned mains cleaning activities in the Hepburn, Blackwood and Barrys Reef network, we use a variety of communication channels including direct mail, digital platforms, social media, and SMS to keep our community informed.

In January 2026 we implemented Stage 3 water restrictions for the Forest Hill region to safeguard the drinking water supply and ensure there is sufficient water to meet essential needs until groundwater levels recover.

To assist customers and the community within the Forest Hill region to understand water use requirements, we provided guidance and support during the introduction of water restrictions. We adopted a multi-channel approach to distribute regular updates via our website, Facebook groups, direct mail and local press advertising. We also engaged with local stakeholders, including the Hepburn Shire Council, local businesses, community groups and landowners.

Customer communications

This section provides a summary of customer or regulatory body notifications that relate to water quality. Notifications issued can include:

- water quality notices
- reminder water quality notices
- water supply update notifications (includes water quality, permanent water saving rules, restrictions and follow-up information).

Table 6

Customer communications issued

Water supply system	Notification type	Date issued	Action
Amphitheatre (regulated)	Customer letter	1 December 2025	Bi-annual reminder that water is not supplied for drinking purposes
	Customer letter	5 June 2026	Bi-annual reminder that water is not supplied for drinking purposes
Ballarat and district	Customer letter	19 December 2025	Notice of temporary disinfection change for Enfield, Dereel, Corindhap and Rokewood
	Customer letter	16 February 2026	Notice of temporary disinfection change for Linton, Pittong and Skipton
Blackwood and Barrys Reef	Customer letter	11 November 2025	Notice of mains cleaning program
	SMS customer communications	25 November 2025	Notice of mains cleaning program
Hepburn (Daylesford system)	Customer letter	09 September 2025	Notice of mains cleaning program
	SMS customer communications	10 September 2025	Notice of mains cleaning program
Raglan (regulated)	Customer letter	1 December 2025	Bi-annual reminder that water is not supplied for drinking purposes
		5 June 2026	Bi-annual reminder that water is not supplied for drinking purposes
Redbank (regulated)	Customer letter	1 December 2025	Bi-annual reminder that water is not supplied for drinking purposes
		5 June 2026	Bi-annual reminder that water is not supplied for drinking purposes
Amphitheatre, Raglan and Redbank (regulated)	Customer letter	22 April 2026	Water Quality Rebate Update letter re: Water Quality System Rebate Program
Supply By Agreement raw water customers (various systems)	Customer letter	1 December 2025	Bi-annual reminder that water is not supplied for drinking purposes
		5 June 2026	Bi-annual reminder that water is not supplied for drinking purposes
CHW website notifications	Live map	2025-26 year	Planned and unplanned maintenance works highlighted on website for customers
	Website page		Permanent Water Saving Rules including FAQs and Water Use Plan information.



Wombat Reservoir



Daylesford Raw Water Supply Pipeline Project

Part 4

Water Quality Management

Overview

We continually strive to improve the integrity of our water supply catchments, water supply systems and associated infrastructure. Independent research and development into drinking water quality is also undertaken.

Team members maintain an awareness of developments in the water industry and use research findings to further improve the quality and safety of our water supply.

Risk management

The *Safe Drinking Water Act 2003* specifies that a risk management plan must be developed to address any risk to human health that arises from the presence in water of:

- pathogenic micro-organisms
- inorganic chemicals, including inorganic disinfection by-products
- organic chemicals, including pesticides, pesticide residues and organic disinfection by-products
- radiological parameters
- algal toxins.

The Australian Drinking Water Guidelines is a technical reference document which we utilise to assess the microbiological, chemical, physical and radiological performance of the drinking water it supplies to consumers.

If a parameter is detected at concentrations above specified guideline values in any sample, then any of the following protocols may be initiated, subject to long-term and short-term impacts:

- immediate operational corrective actions undertaken in close consultation with DH and associated regulatory guidance material, when required
- referral to standard operating procedures and/or incident response plans
- consideration to water quality improvement programs through capital investment.

The Safe Drinking Water Regulations 2025 also specify the need for the Corporation to develop steps and initiatives to address aesthetic variations to water quality including taste, odour or clarity.

We have a formal group that meets regularly to assess taste and odour for a number of water supply systems, and undertakes a routine water quality monitoring program to consider turbidity and colour (refer to Tables 11-13 and 23).

Risk management plan

In 2025-26, we continued to regularly review and update our risk management plan for all water supply systems as required by the *Safe Drinking Water Act 2003*. This included any updates required by new requirements that were effective from the 2025 update to the Safe Drinking Water Regulations.

We have invested resources into the continued development, review and improvement of standard operating procedures, and associated forms and checklists designed to assist in the management of water quality. All these documents become auditable elements under the Act.

Audit of risk management plan

A regulatory audit was not required to be carried out during the reporting period.

System auditing

We completed an ongoing program of self-audits during the reporting period to ensure continual performance improvement as part of routine business operations.

Verification and monitoring program

We are required to undertake water quality compliance monitoring in accordance with the *Safe Drinking Water Act 2003* and Safe Drinking Water Regulations 2025.

Regulatory testing requirements

Regulation 14 of the Safe Drinking Water Regulations 2025 specifies the following mandatory testing of drinking water quality standards in water sampling areas:

- *Escherichia coli (E. coli)* is a subgroup of coliforms, which are a group of organisms that cannot reproduce outside the intestinal tract of warm-blooded animals, but can survive better than other pathogens in water. The presence of *E. coli* is a reliable health indicator of the presence of contamination from human or animal waste. Its presence most likely indicates a breach of a water quality barrier, or contamination during distribution of the water.
- Trihalomethanes (THMs) are a range of organic compounds formed when chlorine reacts with naturally occurring organic matter in water supplies.
- pH level which measures the acidity or alkalinity of the treated water.
- Turbidity describes the cloudiness of the water and is caused by the presence of suspended material such as clay, silt and finely divided organic material. Levels less than 1 NTU (nephelometric turbidity units) are desirable for effective disinfection.

Algae monitoring

We complete an algae monitoring program across all reservoirs. It is a comprehensive and flexible program that facilitates early detection and has sufficient capacity to escalate matters accordingly. The program consists of three key activities:

- visual observations, conducted at least weekly
- operational observations, where team members utilise microscope techniques to identify algal species and relative abundance. This monitoring is undertaken at various frequencies depending on the time of year and the potential for algae issues
- laboratory testing, where algal species are identified and abundance is quantified at various frequencies, depending on the time of year, and to confirm potential algal detections. We also have the ability to undertake targeted toxin testing to determine the toxicity of algal species.

Notifications to DEECA and DH are made in accordance with the Statement of Obligations and as per the Blue-Green Algae (BGA) Circular. We also updated our BGA Risk Management Plan during 2026.

Despite favourable conditions, the 2025-26 algae season continued to pose only minor operational issues. Dry conditions meant very little inflow entered the reservoirs and nutrient loads were not readily increased. The Maryborough system experienced minor source water supply challenges, with BGA warnings issued for long periods at Tullaroop Reservoir, however pumping regime changes enabled us to harvest water without transporting significant volumes of algae. A small BGA bloom in Evansford Reservoir was proactively treated, and algaecide dosing was undertaken at Centenary Reservoir. Small blooms in offline reservoirs required signage for recreation but posed no risk to drinking water supplies.

Reporting to DEECA was undertaken as required. No reporting to DH was necessary.

Sampling

Our 38 water sampling areas are tested at the source, at treatment facilities, at tanks throughout the distribution system and at specified customer taps, for microbiological, physical, chemical, radiological, health related organic compounds and pesticide parameters.

The actual testing regime at each of these four key locations varies, depending upon the requirements of the monitoring program, which is reviewed annually.

Testing at customer taps within the water sampling areas is conducted on a structured, but random, basis in accordance with the specified regulations.

The frequency of testing varies for each area, according to population and risk. The geographic locations of designated customer sampling taps are selected to ensure representative samples are collected across the water sampling area.

Monitoring program review

We completed a review of our water quality monitoring program in 2025-26.

This incorporated any changes to the *Safe Drinking Water Act 2003*, Safe Drinking Water Regulations 2025 and the Australian Drinking Water Guidelines, as well as any identified risks to water supply systems.

The review included the number and location of monitoring sites, sampling frequencies and inclusion of additional monitoring for specific health and aesthetic parameters, making for a more robust system and ensuring the water quality supplied to customers is safe to drink.

Laboratory testing

We have within our resources a National Association of Testing Authorities (NATA) registered laboratory to perform the majority of routine and non-routine testing.

NATA accreditation ensures testing is conducted according to strict guidelines using quality assurance systems, and provides a high level of independence. The data supplied by the accredited laboratory is used for all compliance reporting.

In addition to this independent monitoring, we conduct operational testing to further extend the monitoring of water supplies.

Control measures

Critical control points

In line with the Australian Drinking Water Guidelines and required under the Safe Drinking Water Regulations 2025, we have identified critical control points at our water treatment plants, and water disinfection plants, to manage critical operational activities that eliminate or reduce hazards in drinking water to safe and/or acceptable levels.

Trained team members

Key operational team members underwent water quality risk management training enabling internal development, assessment and ongoing review of water quality risk management plans and systems.

Trained and skilled team members are vital to protecting and maintaining high-quality water, therefore improving employee skills and contractor awareness remain high priorities. We are committed to improving employees' awareness and involvement in drinking water quality management issues.

Key operational team members participated in Verification of Competency (VoC) observations. The pilot was launched with our top five highest risk teams which included Water Treatment. The 2-3 highest risk activities were identified as:

1. Respond to a chemical spill
2. Use and maintenance of self-contained breathing apparatus
3. Respond to a SCADA chlorine alarm

On the job observations were facilitated by the subject matter expert in Water Treatment to verify competency in alignment with our competency matrix, and in alignment with workplace policies and standard operating procedures.

Competency and awareness-based training for relevant team members in 2025-26 included:

- in-house training on coagulation, flocculation and clarification
- in-house workshop on climate resilience
- in-house training on water quality management
- in-house training on reverse osmosis
- in-house training on membrane filtration (micro and ultra)
- in-house training on ozone
- Australian and New Zealand Cyanobacteria Workshop
- Emerging Chemical and Microbial Concerns in Water Workshop
- commissioning operations and maintenance training on new water treatment assets
- development and familiarisation of visual-based operational procedures for water treatment team members, including enhanced access through an online mobile platform
- environmental awareness (erosion and sediment control) refresher
- water sampling for water resource operators internal training
- Certificate III in Water Industry Operations Water Treatment specialisation for new water treatment operators
- chemical handling course
- handling dangerous goods training – hazardous substances, including spill kits
- assessing, implementing and reporting environmental procedures training course
- training related to treated water tank inspections; both for routine inspections and inspections after extreme weather events
- water quality awareness online internal training module for catchments and water resources completed by existing and additional team members
- water quality awareness online internal training module for reactive maintenance and networks completed by existing and additional team members
- water quality complaint handling online internal training module developed and delivered to customer contact teams (including contractors), and proactive and reactive maintenance team members
- general water quality online training module completed by existing and additional key team members
- Water Industry Operators Association conference
- Water Industry Operators Association Network Operator Development Program
- Australian Water Association Ozwater exhibition and conference
- team based internal presentations on water quality and regulations
- water quality procedural updates and procedure awareness training
- corporate induction presentations for new team members to provide an overview of water quality and environmental impacts.

Maintenance programs

We carried out maintenance programs on our assets to maintain and improve water quality. These include programmed mains flushing and air scouring, tank and basin cleaning, and treatment plant asset maintenance and replacement programs.

Continual improvement

A review of our risk management plan resulted in further additions to the water quality improvement plan in a continued effort to improve performance in future years.

Part 5

Water Quality Results and Analysis

Performance monitoring and compliance criteria

During 2025-26, we scheduled specified microbiological and chemical performance monitoring, in accordance with the Safe Drinking Water Regulations 2025 (SDWR).

We undertake a comprehensive water quality monitoring program, including collecting treated water samples from entry points to the distribution system. Samples are also collected from the water treatment plants, from network treated water storage tanks that exist within the system, and from a number of customer tap sites at the point of supply to the customer. Customer tap site samples are taken at customer properties from dedicated sampling points, prior to their water meter.

Sampling can be summarised into two parts: treated water from any storage/entry point, and customer taps. Most parameters listed in Tables 7-44 are tested at customer tap locations (unless otherwise specified) and the data does not include non-routine monitoring programs.

A review of aesthetic and health-related testing and monitoring needs is completed annually, across all systems. The monitoring frequency is determined through an understanding of the actual or potential risk to consumers. We determine the frequency of testing, which is representative of the water supplied to customers, on a case-by-case basis for each water sampling area.

We also conduct organic compound, pesticide, radiological and PFAS sampling. Results feature in Tables 41-44.

Water testing analysis

Included in the *Safe Drinking Water Act 2003*, and the Safe Drinking Water Regulations 2025, is mandatory National Association of Testing Authorities (NATA) accreditation for laboratories. This includes a requirement to maintain qualified team members who are competent in the relevant field of analysis.

Laboratory services are provided by our onsite independent laboratory. The laboratory service holds NATA accreditation in the chemical and biological field.

We and our laboratory are signatories to a service level agreement which specifies the provision of laboratory services.

Compliance with drinking water quality standards

We endeavour to maintain a high and consistent level of compliance with all standards in the Safe Drinking Water Regulations 2025 and guideline values in the Australian Drinking Water Guidelines. Details of performance are available in Tables 7-44 of this report.

Compliance performance summary

During 2025-26, two non-compliance notifications were submitted to DH from our drinking water supplies. Any non-compliances are dealt with in accordance with established procedures and regulatory requirements. This may include site investigations, re-sampling, consideration of disinfectant levels, flushing, identifying areas for operational or capital improvements, and informing DH.

Non-compliant results with the water quality standards as defined in Regulation 16 of the Safe Drinking Water Regulations 2025 required two notifications for the following supply system:

- *E. coli* – Fiskville/Glenmore water sampling area

Details of these non-compliance notifications can be found in the Emergency and Incident Management section of this report.

The following parameters did not meet the 'good' range defined in the Australian Drinking Water Guidelines (ADWG) for the following water supply systems:

- Total dissolved solids – Waubra
- Hardness – Waubra

Details of all results can be found in Tables 7-44.

The new Safe Drinking Water Regulations came into effect on 6 July 2025, which means the 2015 Regulations were still in effect for the first five days of the reporting period. There were no exceptions relevant to the 2015 Regulations for this five day period.

Understanding concentration and limits

In most cases, standard limits are expressed as concentrations, which is the amount of substance dissolved in a certain volume of water. This allows for meaningful comparisons between different samples.

For example, the symbol 'mg/L', widely used in this report, means milligrams per litre and indicates how many milligrams (a thousandth of a gram) of the substance is dissolved in every litre of water. Another way of expressing mg/L is parts per million. Similarly, the symbol 'µg/L', means micrograms per litre and indicates how many micrograms (a millionth of a gram) of the substance is dissolved in every litre of water. Another way of expressing µg/L is parts per billion.

As is evident, water quality is concerned with measuring minute concentrations of substances.

The symbol '<' is used to denote 'less than'. As an example, < 0.05 mg/L means that the concentration of a parameter tested in water should be less than 0.05 milligrams per litre (0.05 parts per million).

Note that the following tables generally do not contain source water data, unless explicitly stated.

Table 7

Escherichia coli (E. coli) – customer taps

Standard All samples of drinking water collected do not contain *E. coli* (SDWR).

Description *Escherichia coli (E. coli)* is a subgroup of coliforms which are a group of organisms that cannot reproduce outside the intestinal tract of warm blooded mammals, but can survive better than other pathogens in water. The presence of *E. coli* is a reliable health indicator of the presence of recent contamination from human or animal waste. Its presence most likely indicates a breach of a water quality barrier or contamination during the distribution of the water.

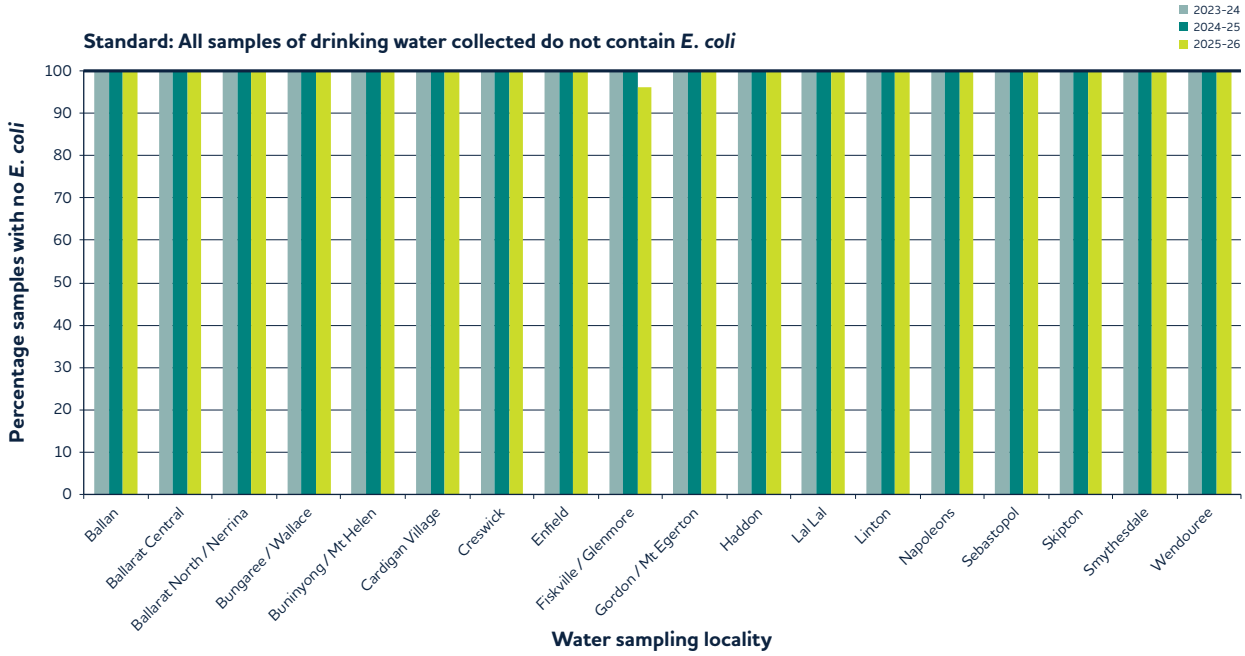
Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max result (orgs/100 mL)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Avoca	Weekly	52	0	0
Ballarat	Ballan	Weekly	52	0	0
	Ballarat Central	Weekly #	195	0	0
	Ballarat North/Nerrina	Weekly	52	0	0
	Bungaree/Wallace	Weekly	52	0	0
	Buninyong/Mt Helen	Weekly #	73	0	0
	Cardigan Village	Weekly	52	0	0
	Creswick	Weekly	52	0	0
	Enfield	Weekly	53	0	0
	Fiskville/Glenmore	Weekly	52	1	2
	Gordon/Mt Egerton	Weekly	52	0	0
	Haddon	Weekly #	72	0	0
	Lal Lal	Weekly	52	0	0
	Linton	Weekly	52	0	0
	Napoleons	Weekly	53	0	0
	Sebastopol	Weekly #	85	0	0
	Skipton	Weekly	52	0	0
	Smythesdale	Weekly	52	0	0
	Wendouree	Weekly #	145	0	0
Beaufort	Beaufort	Weekly	53	0	0
Blackwood	Blackwood/Barrys Reef	Weekly	52	0	0
Clunes	Clunes	Weekly	52	0	0
Daylesford	Daylesford High Level	Weekly	52	0	0
	Daylesford Low Level/Hepburn	Weekly	52	0	0
Dean	Dean	Weekly	52	0	0
Forest Hill	Forest Hill	Weekly	52	0	0
Landsborough	Landsborough/Navarre	Weekly	52	0	0
Learmonth	Learmonth	Weekly	53	0	0
Lexton	Lexton	Weekly	53	0	0
Maryborough	Alma	Weekly	52	0	0
	Bet Bet	Weekly	52	0	0
	Carisbrook	Weekly	52	0	0
	Daisy Hill	Weekly	52	0	0
	Majorca	Weekly	52	0	0
	Maryborough	Weekly #	73	0	0
	Talbot	Weekly	52	0	0
	Timor	Weekly	52	0	0
Waubra	Waubra	Weekly	53	0	0
REGULATED WATER SUPPLY SYSTEMS					
Amphitheatre *		Twice monthly	24	3	NA
Raglan *		Twice monthly	24	140	NA
Redbank *		Twice monthly	24	0	NA

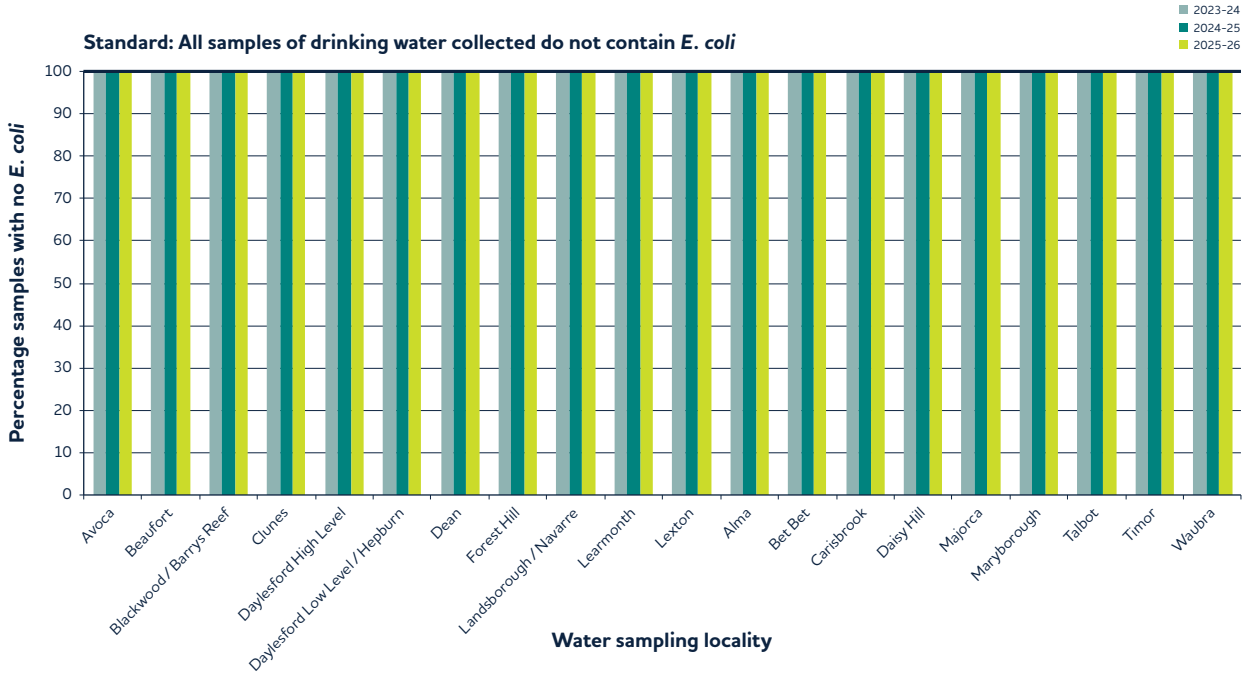
* Non-potable water supply system.

\# Weekly sampling with increases for population (ADWG, Section 9.5.2).

Figure 1

Escherichia coli (E. coli) trending – customer taps





Compliance summary

Refer to Table 7.

Regulated (non-potable) water supply systems have not been included in analysis.

All potable systems have demonstrated compliance with the SDWR criteria, with the exception of the Fiskville/Glenmore water sampling area (Ballarat system). This area had two single *E. coli* detections within the 12-month period. Specific details of this detection can be found in the Emergency and Incident Management section of this report.

Table 8

Escherichia coli (E. coli) – entry points

Standard All samples of drinking water collected do not contain *E. coli* (SDWR).

Description *Escherichia coli (E. coli)* is a subgroup of coliforms which are a group of organisms that cannot reproduce outside the intestinal tract of warm blooded mammals, but can survive better than other pathogens in water. The presence of *E. coli* is a reliable health indicator of the presence of recent contamination from human or animal waste. Its presence most likely indicates a breach of a water quality barrier or contamination during the distribution of the water.

Water supply system	Entry point sampling location	Frequency of sampling	No. of samples	Max result (orgs/100 mL)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Avoca CWS	Weekly	52	0	0
Ballarat	Lal Lal CWS [1]	Twice weekly	72	0	0
	White Swan CWS Basins	Twice weekly	104	0	0
Beaufort	Beaufort CWS	Weekly	53	0	0
Blackwood	Blackwood CWS	Weekly	52	0	0
Clunes	Clunes CWS	Weekly	52	0	0
Daylesford	Daylesford Low Level Basin	Weekly	52	0	0
Dean	Dean CWS	Weekly	52	0	0
Forest Hill	Forest Hill CWS	Weekly	52	0	0
Landsborough	Landsborough CWS	Weekly	52	0	0
Learmonth	Learmonth CWS	Weekly	53	0	0
Lexton	Lexton CWS	Weekly	53	0	0
Maryborough	Maryborough CWS	Weekly	52	0	0
Waubra	Waubra CWS Tanks	Weekly	53	0	0

[1] Lal Lal WTP taken offline for maintenance from 18 June to 9 July 2025, from 27 July to 5 August 2025, from 26 November to 17 December 2025, and from 24 March to 17 June 2026.

Compliance summary

All potable entry point samples have demonstrated compliance with the SDWR criteria.

No significant trends from the previous two reporting periods are evident.

Table 9

Escherichia coli (E. coli) – network treated water storages

Standard All samples of drinking water collected do not contain *E. coli* (SDWR).

Description *Escherichia coli (E. coli)* is a subgroup of coliforms which are a group of organisms that cannot reproduce outside the intestinal tract of warm blooded mammals, but can survive better than other pathogens in water. The presence of *E. coli* is a reliable health indicator of the presence of recent contamination from human or animal waste. Its presence most likely indicates a breach of a water quality barrier or contamination during the distribution of the water.

Water supply system	Network treated water storage	Frequency of sampling [1]	No. of samples	Max result (orgs/100 mL)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS					
Ballarat	Ballarat North Tanks	Weekly	51	0	0
	Ballan Tank	Weekly	52	0	0
	Ballarat Road Basin	Weekly	51	0	0
	Buninyong Tank	Weekly [2]	12	0	0
	Cardigan Village Tank	Weekly	51	0	0
	Dereel Break Pressure Tank	Weekly	53	0	0
	Enfield Basin	Weekly	53	0	0
	Enfield Booster Tanks	Weekly	53	0	0
	Gordon Tank	Weekly	51	0	0
	Green Hill Tank	Weekly	52	0	0
	Hillview Road Tank	Weekly	51	0	0
	Lincoln Basin	Weekly	51	0	0
	Linton Basin	Weekly	51	0	0
	Mahers Road Tank	Weekly	51	0	0
	Mortchup Road Tank	Weekly	51	0	0
	Mount Egerton Tank	Weekly	51	0	0
	Mount Helen Tank	Weekly	52	0	0
	Mount Rowan Tank	Weekly	51	0	0
	Recreation Road Tank	Weekly	52	0	0
	Smythesdale Basin	Weekly	51	0	0
	Tinworth Avenue Tank	Weekly	52	0	0
	Wallace Tank (South) [3]	Weekly	0	NA	0
	Warrenheip Basin	Weekly	51	0	0
	Wilson Street Tank	Weekly	51	0	0
Beaufort	Jackson St Tank	Weekly	52	0	0
Daylesford	Daylesford High Level Basin	Weekly	52	0	0
Forest Hill	Smeaton Tanks	Weekly	51	0	0

[1] Samples not taken over the Christmas/New Year period in accordance with the documented monitoring program.

[2] Buninyong Tank is typically taken offline during low demand periods of the year.

[3] Wallace Tank (South) taken offline for maintenance from 13 April 2022.

Compliance summary

All potable network storage samples have demonstrated compliance with the SDWR criteria.

No significant trends from the previous two reporting periods are evident.

Table 10

Trihalomethanes

Standard Must not exceed 0.25 mg/L (SDWR).

Description Trihalomethanes (THMs) are a range of organic compounds formed when chlorine reacts with naturally occurring organic matter in water supplies.

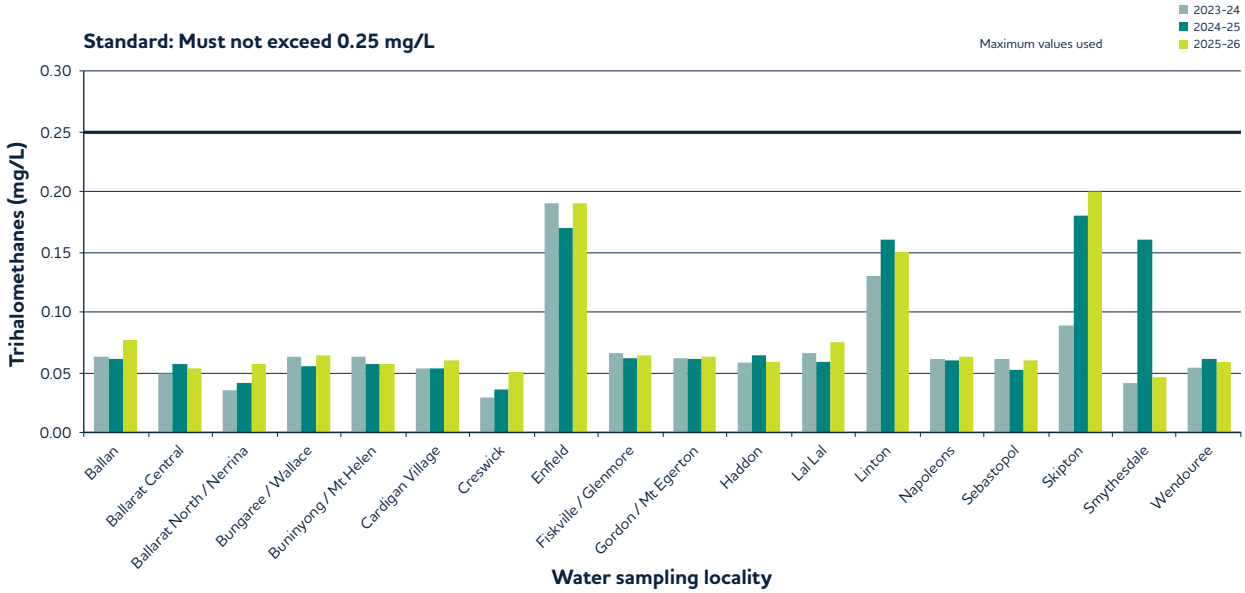
Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	Mean (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	Monthly	12	0.011	0.005	0
Ballarat	Ballan	Monthly	12	0.077	0.054	0
	Ballarat Central	Monthly	12	0.053	0.047	0
	Ballarat North/Nerrina	Monthly	12	0.057	0.047	0
	Bungaree/Wallace	Monthly	12	0.064	0.053	0
	Buninyong/Mt Helen	Monthly	12	0.057	0.049	0
	Cardigan Village	Monthly	12	0.060	0.049	0
	Creswick	Monthly	12	0.050	0.041	0
	Enfield	Monthly	12	0.190	0.088	0
	Fiskville/Glenmore	Monthly	12	0.064	0.053	0
	Gordon/Mt Egerton	Monthly	12	0.063	0.052	0
	Haddon	Monthly	12	0.059	0.048	0
	Lal Lal	Monthly	12	0.075	0.051	0
	Linton	Monthly	12	0.150	0.065	0
	Napoleons	Monthly	12	0.063	0.049	0
	Sebastopol	Monthly	12	0.060	0.049	0
	Skipton	Monthly	12	0.200	0.089	0
	Smythesdale	Monthly	12	0.046	0.036	0
	Wendouree	Monthly	12	0.059	0.047	0
Beaufort	Beaufort	Monthly	12	0.051	0.033	0
Blackwood	Blackwood/Barrys Reef	Monthly	12	< 0.001	0.001	0
Clunes	Clunes	Monthly	12	0.180	0.153	0
Daylesford	Daylesford High Level	Monthly	12	0.073	0.050	0
	Daylesford Low Level/Hepburn	Monthly	12	0.079	0.052	0
Dean	Dean	Monthly	12	0.044	0.019	0
Forest Hill	Forest Hill	Monthly	12	0.009	0.005	0
Landsborough	Landsborough/Navarre	Monthly	12	0.042	0.028	0
Learmonth	Learmonth	Monthly	12	0.010	0.005	0
Lexton	Lexton	Monthly	12	0.038	0.010	0
Maryborough	Alma	Monthly	12	0.053	0.047	0
	Bet Bet	Monthly	12	0.056	0.047	0
	Carisbrook	Monthly	12	0.054	0.047	0
	Daisy Hill	Monthly	12	0.057	0.049	0
	Majorca	Monthly	12	0.055	0.047	0
	Maryborough	Monthly	12	0.052	0.046	0
	Talbot	Monthly	12	0.054	0.049	0
	Timor	Monthly	12	0.058	0.049	0
Waubra	Waubra	Monthly	12	0.004	0.003	0
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		-	-	-	-	-
Raglan *		-	-	-	-	-
Redbank *		-	-	-	-	-

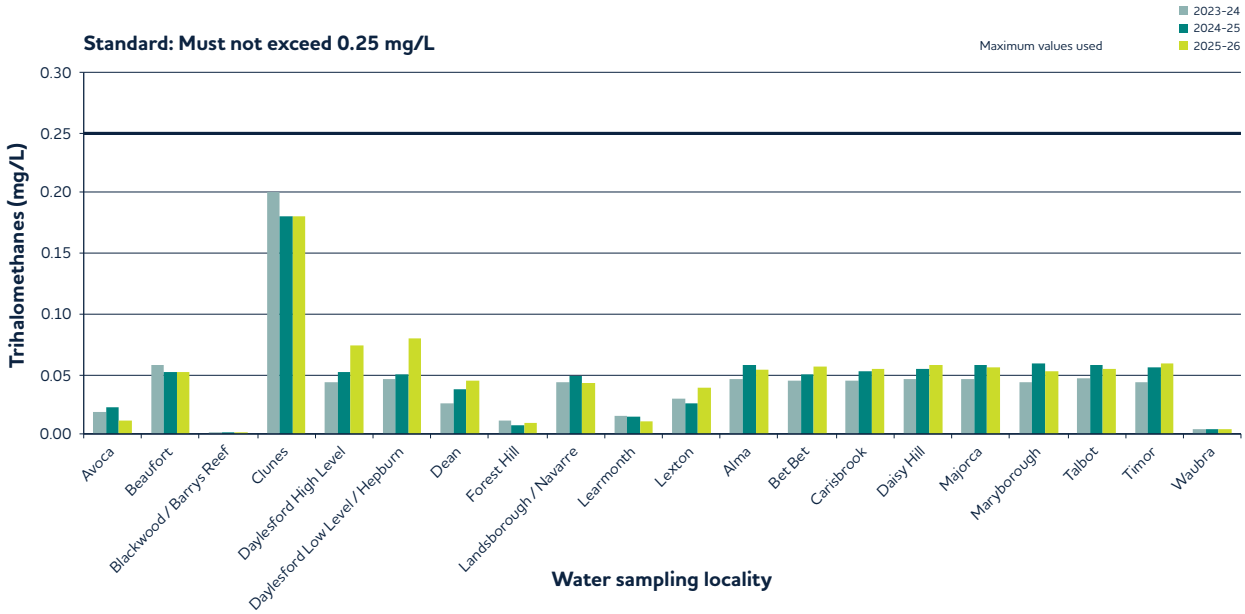
* Non-potable water supply system.

\- Not applicable.

Figure 2

Trihalomethanes trending





Trending summary

Elevated trihalomethane results from the 2023-26 period in the Enfield, Linton, Skipton and Smythesdale water sampling areas were due to the periodic use of chlorine booster stations in these locations to mitigate nitrification effects.

Compliance summary

Refer to Table 10.

All systems sampled for THMs have demonstrated compliance with the SDWR criteria.

Table 11

Turbidity – customer taps

Standard Ninety-fifth (95th) percentile of drinking water samples collected during a period of 12 months must not exceed 5 NTU (SDWR).

Description Turbidity describes the cloudiness of the water and is caused by the presence of suspended material such as clay, silt and finely divided organic material. Levels less than 1 NTU are desirable for effective disinfection.

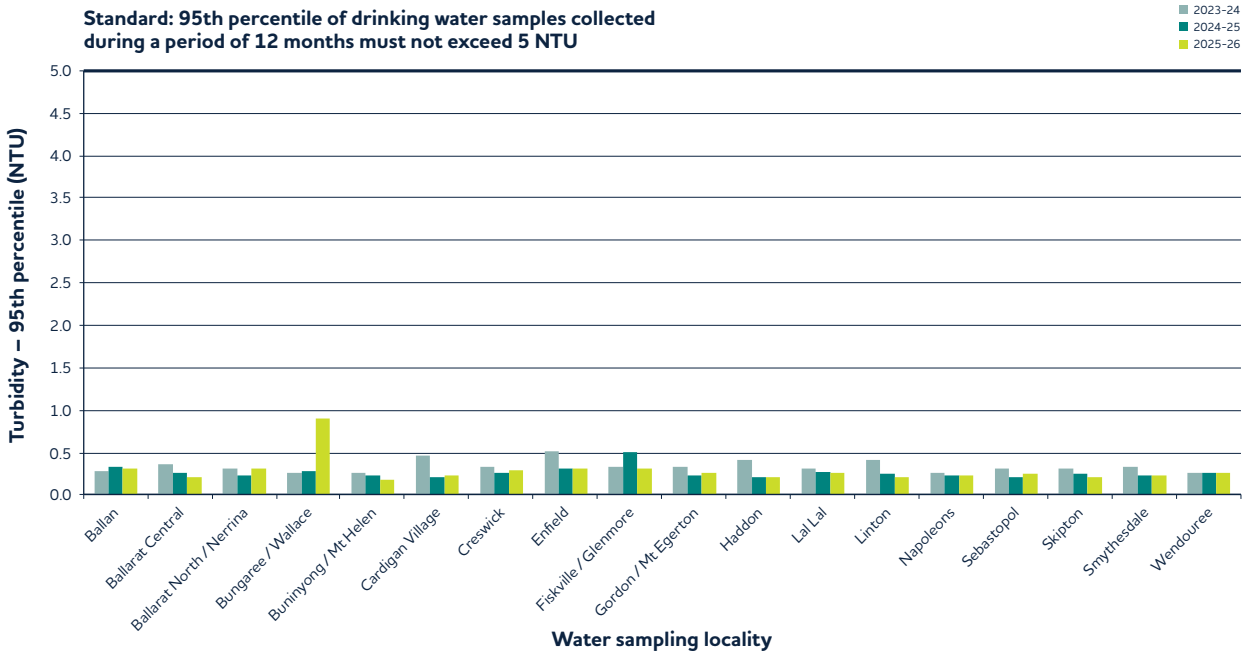
Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (NTU)	95th percentile (NTU)	Standard met (s. 18) Yes/No
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	Weekly	52	0.4	0.2	Yes
Ballarat	Ballan	Weekly	52	0.6	0.3	Yes
	Ballarat Central	Weekly #	195	0.4	0.2	Yes
	Ballarat North/Nerrina	Weekly	52	0.5	0.3	Yes
	Bungaree/Wallace	Weekly	52	4.4	0.9	Yes
	Buninyong/Mt Helen	Weekly #	73	0.5	0.2	Yes
	Cardigan Village	Weekly	52	0.4	0.2	Yes
	Creswick	Weekly	52	0.4	0.3	Yes
	Enfield	Weekly	53	0.4	0.3	Yes
	Fiskville/Glenmore	Weekly	52	0.5	0.3	Yes
	Gordon/Mt Egerton	Weekly	52	0.3	0.3	Yes
	Haddon	Weekly #	72	0.2	0.2	Yes
	Lal Lal	Weekly	52	0.3	0.3	Yes
	Linton	Weekly	52	0.3	0.2	Yes
	Napoleons	Weekly	53	0.3	0.2	Yes
	Sebastopol	Weekly #	85	0.6	0.2	Yes
	Skipton	Weekly	52	0.3	0.2	Yes
	Smythesdale	Weekly	52	0.3	0.2	Yes
	Wendouree	Weekly #	145	0.8	0.3	Yes
Beaufort	Beaufort	Weekly	53	0.3	0.2	Yes
Blackwood	Blackwood/Barrys Reef	Weekly	52	0.5	0.3	Yes
Clunes	Clunes	Weekly	52	0.3	0.3	Yes
Daylesford	Daylesford High Level	Weekly	52	0.9	0.4	Yes
	Daylesford Low Level/Hepburn	Weekly	52	1.8	1.2	Yes
Dean	Dean	Weekly	52	0.5	0.4	Yes
Forest Hill	Forest Hill	Weekly	52	0.5	0.3	Yes
Landsborough	Landsborough/Navarre	Weekly	52	0.3	0.1	Yes
Learmonth	Learmonth	Weekly	53	0.4	0.2	Yes
Lexton	Lexton	Weekly	53	0.7	0.2	Yes
Maryborough	Alma	Weekly	52	0.3	0.2	Yes
	Bet Bet	Weekly	52	0.3	0.3	Yes
	Carisbrook	Weekly	52	0.7	0.2	Yes
	Daisy Hill	Weekly	52	0.2	0.2	Yes
	Majorca	Weekly	52	0.6	0.3	Yes
	Maryborough	Weekly #	73	0.4	0.3	Yes
	Talbot	Weekly	52	0.4	0.3	Yes
	Timor	Weekly	52	0.3	0.3	Yes
Waubra	Waubra	Weekly	53	1.8	0.3	Yes
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		Twice monthly	24	7.6	7.4	NA
Raglan *		Twice monthly	24	32.0	25.5	NA
Redbank *		Twice monthly	24	2.1	2.0	NA

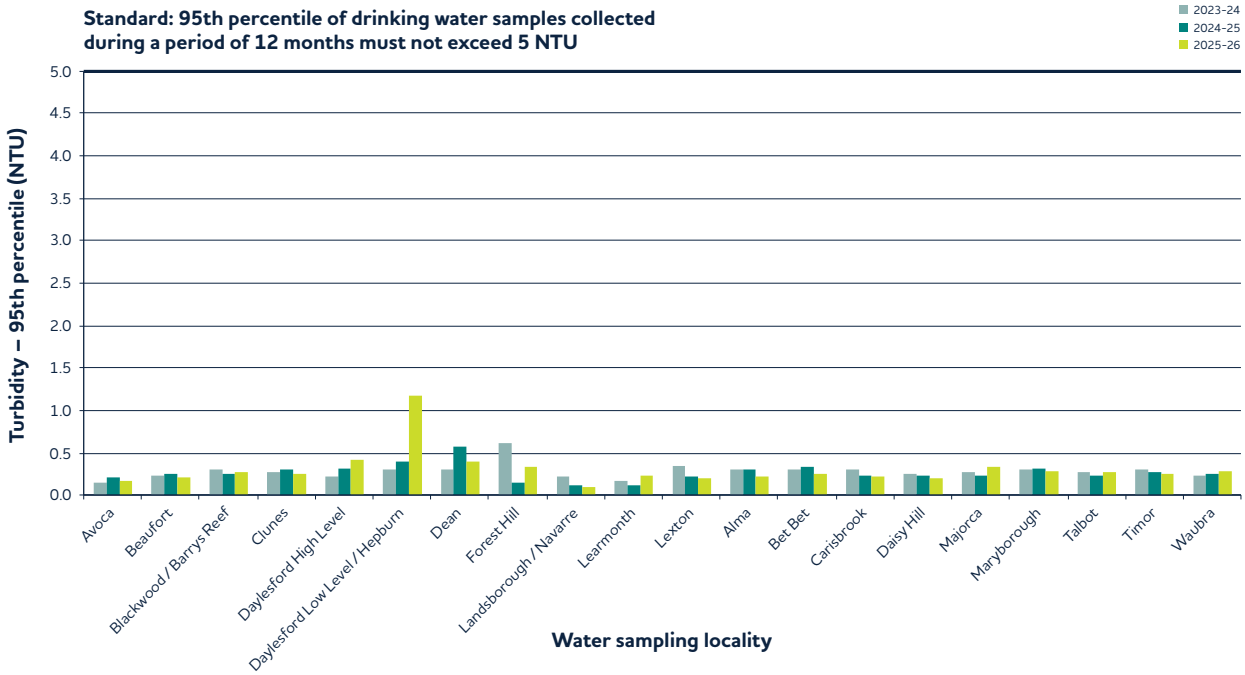
* Non-potable water supply system.

\# Weekly sampling with increases for population (ADWG, Section 9.5.2).

Figure 3

Turbidity trending – customer taps





Compliance summary

Refer to Table 11.

Regulated (non-potable) water supply systems have not been included in analysis.

All drinking water systems sampled for turbidity were compliant.

Table 12

Turbidity – entry points

Standard Ninety-fifth (95th) percentile of drinking water samples collected during a period of 12 months must not exceed 5 NTU (SDWR).

Description Turbidity describes the cloudiness of the water and is caused by the presence of suspended material such as clay, silt and finely divided organic material. Levels less than 1 NTU are desirable for effective disinfection.

Water supply system	Entry point sampling location	Frequency of sampling #	No. of samples	Max (NTU)	95th percentile ^ (NTU)	Standard met (s. 18) Yes/No
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca CWS	Weekly	52	0.2	0.1	Yes
Ballarat	Lal Lal CWS [1]	Twice weekly	72	0.5	0.3	Yes
	White Swan CWS Basins	Twice weekly	104	0.4	0.2	Yes
Beaufort	Beaufort CWS	Weekly	53	0.3	0.2	Yes
Blackwood	Blackwood CWS	Weekly	52	0.2	0.2	Yes
Clunes	Clunes CWS	Weekly	52	0.3	0.3	Yes
Daylesford	Daylesford Low Level Basin	Weekly	52	1.0	0.5	Yes
Dean	Dean CWS	Monthly	12	0.4	0.3	Yes
Forest Hill	Forest Hill CWS	Weekly	52	0.2	0.2	Yes
Landsborough	Landsborough CWS	Weekly	52	0.1	0.1	Yes
Learmonth	Learmonth CWS	Monthly	12	0.1	0.1	Yes
Lexton	Lexton CWS	Weekly	53	0.2	0.1	Yes
Maryborough	Maryborough CWS	Weekly	52	0.3	0.2	Yes
Waubra	Waubra CWS Tanks	Monthly	12	1.6	0.9	Yes

Groundwater systems are lower risk for turbidity, so are sampled less frequently in accordance with the documented sampling program.

^ For sample numbers over 18, an exclusive percentile function in a commercial software program is used, otherwise an inclusive function is used.

[1] Lal Lal WTP taken offline for maintenance from 18 June to 9 July 2025, from 27 July to 5 August 2025, from 26 November to 17 December 2025, and from 24 March to 17 June 2026.

Compliance summary

All drinking water systems sampled for turbidity were compliant.

No significant trends from the previous two reporting periods are evident.

Table 13

Turbidity – network treated water storages

Standard Ninety-fifth (95th) percentile of drinking water samples collected during a period of 12 months must not exceed 5 NTU (SDWR).

Description Turbidity describes the cloudiness of the water and is caused by the presence of suspended material such as clay, silt and finely divided organic material. Levels less than 1 NTU are desirable for effective disinfection.

Water supply system	Network treated water storage	Frequency of sampling	No. of samples	Max (NTU)	95th percentile ^ (NTU)	Standard met (s. 18) Yes/No
DRINKING WATER SUPPLY SYSTEMS						
Ballarat	Ballarat North Tanks	Monthly	12	0.5	0.4	Yes
	Ballan Tank	Monthly	12	0.2	0.2	Yes
	Ballarat Road Basin	Monthly	12	0.4	0.3	Yes
	Buninyong Tank	Monthly [1]	2	0.5	0.5	Yes
	Cardigan Village Tank	Monthly	12	0.6	0.4	Yes
	Dereel Break Pressure Tank	Monthly	12	0.4	0.3	Yes
	Enfield Basin	Monthly	12	1.3	0.8	Yes
	Enfield Booster Tanks	Monthly	12	0.4	0.3	Yes
	Gordon Tank	Monthly	12	0.2	0.2	Yes
	Green Hill Tank	Monthly	12	0.5	0.4	Yes
	Hillview Road Tank	Monthly	12	0.2	0.2	Yes
	Lincoln Basin	Monthly	12	0.3	0.3	Yes
	Linton Basin	Monthly	12	0.7	0.5	Yes
	Mahers Road Tank	Monthly	12	0.4	0.4	Yes
	Mortchup Road Tank	Monthly	12	0.6	0.5	Yes
	Mount Egerton Tank	Monthly	12	0.3	0.3	Yes
	Mount Helen Tank	Monthly	12	0.4	0.3	Yes
	Mount Rowan Tank	Monthly	12	0.9	0.6	Yes
	Recreation Road Tank	Monthly	12	0.2	0.2	Yes
	Smythesdale Basin	Monthly	12	0.2	0.2	Yes
	Tinworth Avenue Tank	Monthly	12	0.2	0.2	Yes
	Wallace Tank (South) [2]	Monthly	0	NA	NA	NA
	Warrenheip Basin	Monthly	12	0.2	0.2	Yes
	Wilson Street Tank	Monthly	12	0.2	0.2	Yes
Beaufort	Jackson St Tank	Monthly	12	0.3	0.3	Yes
Daylesford	Daylesford High Level Basin	Monthly	12	1.0	0.6	Yes
Forest Hill	Smeaton Tanks	Monthly	12	0.4	0.2	Yes

^ For sample numbers over 18, an exclusive percentile function in a commercial software program is used, otherwise an inclusive function is used.

[1] Buninyong Tank is typically taken offline during low demand periods of the year.

[2] Wallace Tank (South) taken offline for maintenance from 13 April 2022.

Compliance summary

All drinking water systems sampled for turbidity were compliant.

Table 14

Fluoride

Standard Less than 1.5 mg/L (ADWG-HEALTH).
Mean result must not exceed 1.0 mg/L *(Health [Fluoridation] Act 1973)*.

Description Fluoride is added to the Ballarat and District and Maryborough and District supplies. Fluoride detections in other systems are from naturally occurring sources only.

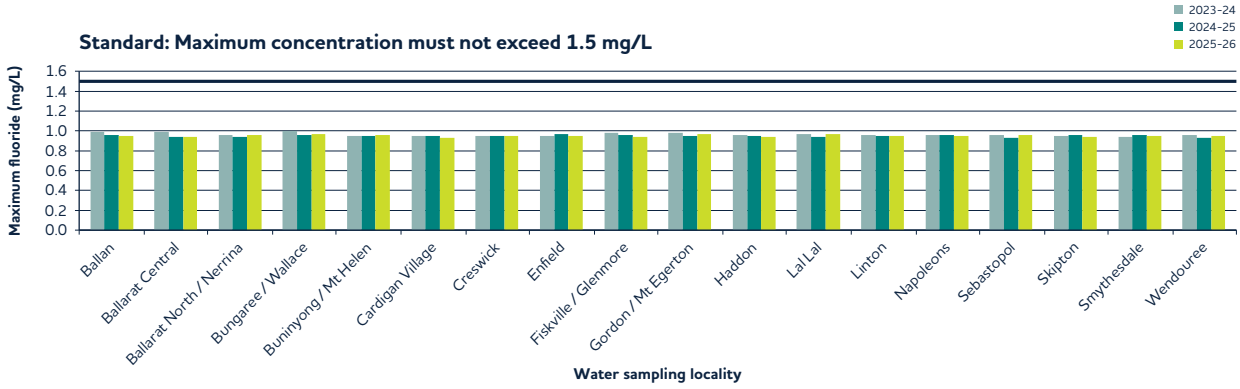
Water supply system	Water sampling area	Frequency of sampling	No. of samples	Operating target (mg/L)	Max (mg/L)	Mean (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS							
Avoca	Avoca	Annually	1	-	0.04	0.04	-
Ballarat	Ballan	Weekly	52	0.9	0.95	0.88	0
	Ballarat Central	Weekly	52	0.9	0.94	0.89	0
	Ballarat North/Nerrina	Weekly	52	0.9	0.96	0.89	0
	Bungaree/Wallace	Weekly	52	0.9	0.97	0.89	0
	Buninyong/Mt Helen	Weekly	53	0.9	0.96	0.89	0
	Cardigan Village	Weekly	52	0.9	0.93	0.89	0
	Creswick	Weekly	52	0.9	0.95	0.89	0
	Enfield	Weekly	53	0.9	0.95	0.89	0
	Fiskville/Glenmore	Weekly	52	0.9	0.94	0.88	0
	Gordon/Mt Egerton	Weekly	52	0.9	0.97	0.89	0
	Haddon	Weekly	52	0.9	0.94	0.89	0
	Lal Lal	Weekly	52	0.9	0.97	0.88	0
	Linton	Weekly	52	0.9	0.95	0.89	0
	Napoleons	Weekly	53	0.9	0.95	0.89	0
	Sebastopol	Weekly	53	0.9	0.96	0.89	0
	Skipton	Weekly	52	0.9	0.94	0.89	0
	Smythesdale	Weekly	52	0.9	0.95	0.89	0
	Wendouree	Weekly	53	0.9	0.95	0.89	0
Beaufort	Beaufort	Annually	1	-	< 0.05	< 0.05	-
Blackwood	Blackwood/Barrys Reef	Annually	1	-	0.04	0.04	-
Clunes	Clunes	Annually	1	-	0.34	0.34	-
Daylesford	Daylesford High Level	Annually	1	-	0.03	0.03	-
	Daylesford Low Level/Hepburn	Annually	1	-	0.03	0.03	-
Dean	Dean	Annually	1	-	0.03	0.03	-
Forest Hill	Forest Hill	Annually	1	-	0.04	0.04	-
Landsborough	Landsborough/Navarre	Annually	1	-	0.23	0.23	-
Learmonth	Learmonth	Annually	1	-	0.05	0.05	-
Lexton	Lexton	Annually	1	-	0.30	0.30	-
Maryborough	Alma	Weekly	52	0.9	0.98	0.90	0
	Bet Bet	Weekly	52	0.9	0.98	0.90	0
	Carisbrook	Weekly	52	0.9	0.98	0.90	0
	Daisy Hill	Weekly	52	0.9	1.00	0.90	0
	Majorca	Weekly	52	0.9	0.98	0.90	0
	Maryborough	Weekly	52	0.9	0.97	0.90	0
	Talbot	Weekly	52	0.9	0.98	0.90	0
	Timor	Weekly	52	0.9	0.98	0.90	0
Waubra	Waubra	Annually	1	-	0.10	0.10	-
REGULATED WATER SUPPLY SYSTEMS							
Amphitheatre *		-	-	-	-	-	-
Raglan *		-	-	-	-	-	-
Redbank *		-	-	-	-	-	-

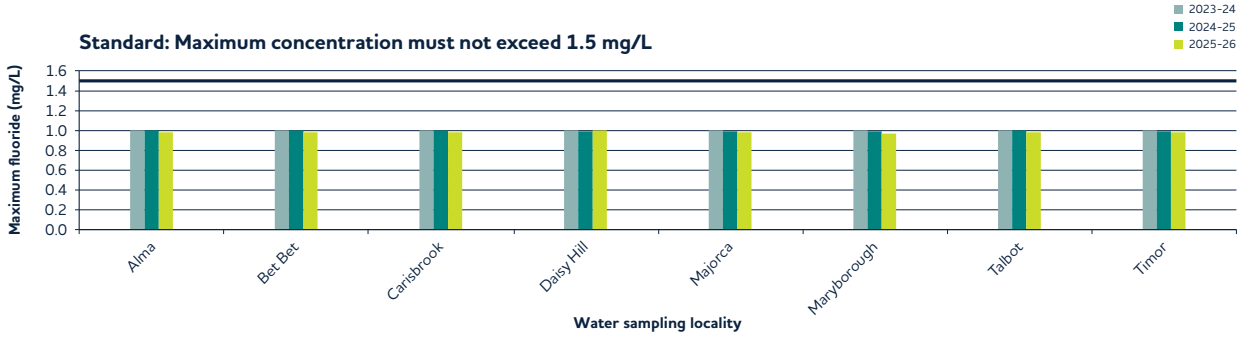
* Non-potable water supply system.

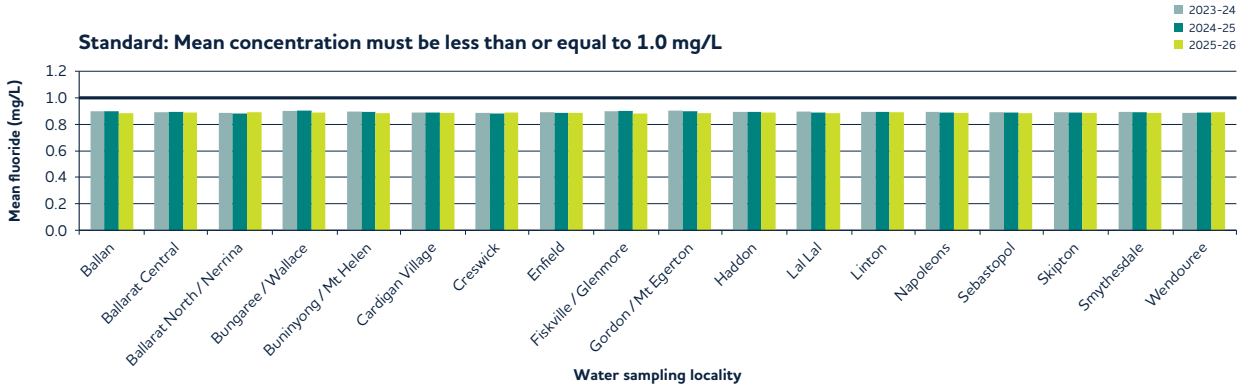
\- Not applicable.

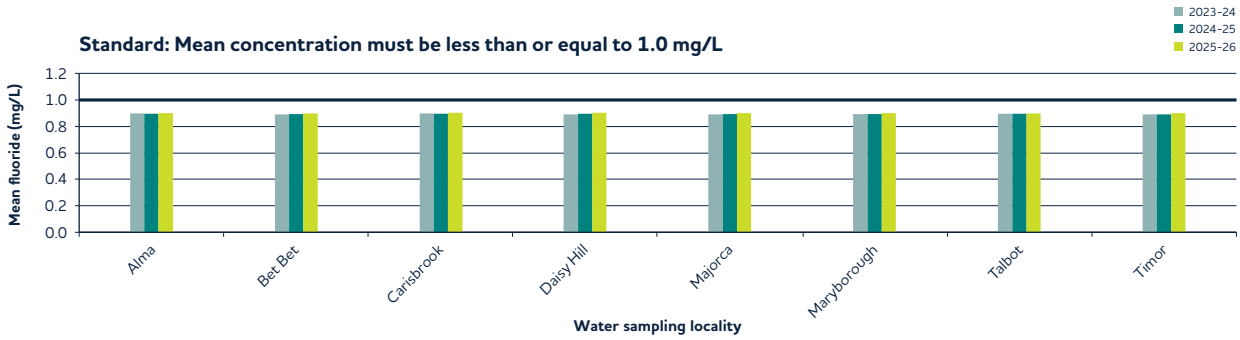
Figure 4

Fluoride trending









Compliance summary

Refer to Table 14.

Both the Ballarat and District and the Maryborough and District water supplies are the only CHW systems that are fluoridated.

All relevant drinking water systems sampled for fluoride were compliant.

Table 15

Chloroacetic acid

Standard Must not exceed 0.15 mg/L (ADWG).

Description Chloroacetic acids are produced in drinking water as a by-product of the reaction between chlorine and naturally occurring humic and fulvic acids.

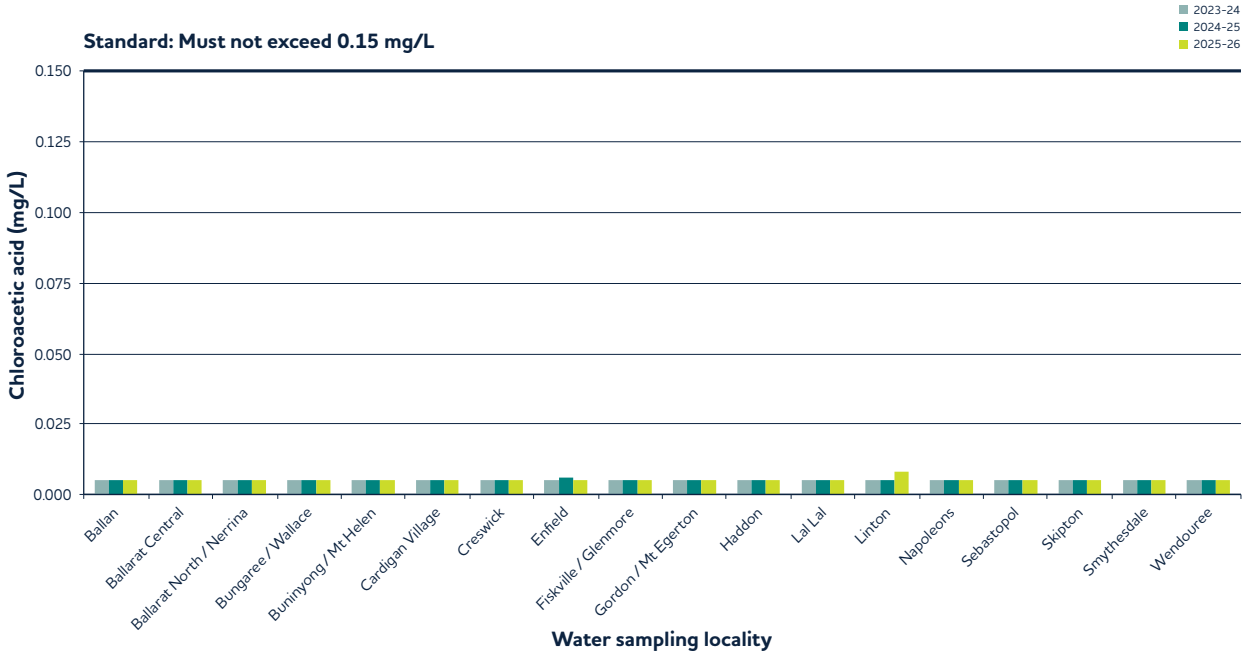
Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Avoca	Quarterly	4	< 0.005	0
Ballarat	Ballan	Quarterly	4	< 0.005	0
	Ballarat Central	Quarterly	4	< 0.005	0
	Ballarat North/Nerrina	Quarterly	4	< 0.005	0
	Bungaree/Wallace	Quarterly	4	< 0.005	0
	Buninyong/Mt Helen	Quarterly	4	< 0.005	0
	Cardigan Village	Quarterly	4	< 0.005	0
	Creswick	Quarterly	4	< 0.005	0
	Enfield	Quarterly	4	0.005	0
	Fiskville/Glenmore	Quarterly	4	< 0.005	0
	Gordon/Mt Egerton	Quarterly	4	< 0.005	0
	Haddon	Quarterly	4	< 0.005	0
	Lal Lal	Quarterly	4	< 0.005	0
	Linton	Quarterly	4	0.008	0
	Napoleons	Quarterly	4	< 0.005	0
	Sebastopol	Quarterly	4	< 0.005	0
	Skipton	Quarterly	4	0.005	0
	Smythesdale	Quarterly	4	< 0.005	0
	Wendouree	Quarterly	4	< 0.005	0
Beaufort	Beaufort	Quarterly	4	< 0.005	0
Blackwood	Blackwood/Barrys Reef	-	-	-	-
Clunes	Clunes	Quarterly	4	< 0.005	0
Daylesford	Daylesford High Level	Quarterly	4	< 0.005	0
	Daylesford Low Level/Hepburn	Quarterly	4	< 0.005	0
Dean	Dean	Quarterly	4	< 0.005	0
Forest Hill	Forest Hill	Quarterly	4	< 0.005	0
Landsborough	Landsborough/Navarre	Quarterly	4	< 0.005	0
Learmonth	Learmonth	Quarterly	4	< 0.005	0
Lexton	Lexton	Quarterly	4	< 0.005	0
Maryborough	Alma	Quarterly	4	< 0.005	0
	Bet Bet	Quarterly	4	< 0.005	0
	Carisbrook	Quarterly	4	< 0.005	0
	Daisy Hill	Quarterly	4	< 0.005	0
	Majorca	Quarterly	4	< 0.005	0
	Maryborough	Quarterly	4	< 0.005	0
	Talbot	Quarterly	4	< 0.005	0
	Timor	Quarterly	4	< 0.005	0
Waubra	Waubra	Quarterly	4	< 0.005	0
REGULATED WATER SUPPLY SYSTEMS					
Amphitheatre *		-	-	-	-
Raglan *		-	-	-	-
Redbank *		-	-	-	-

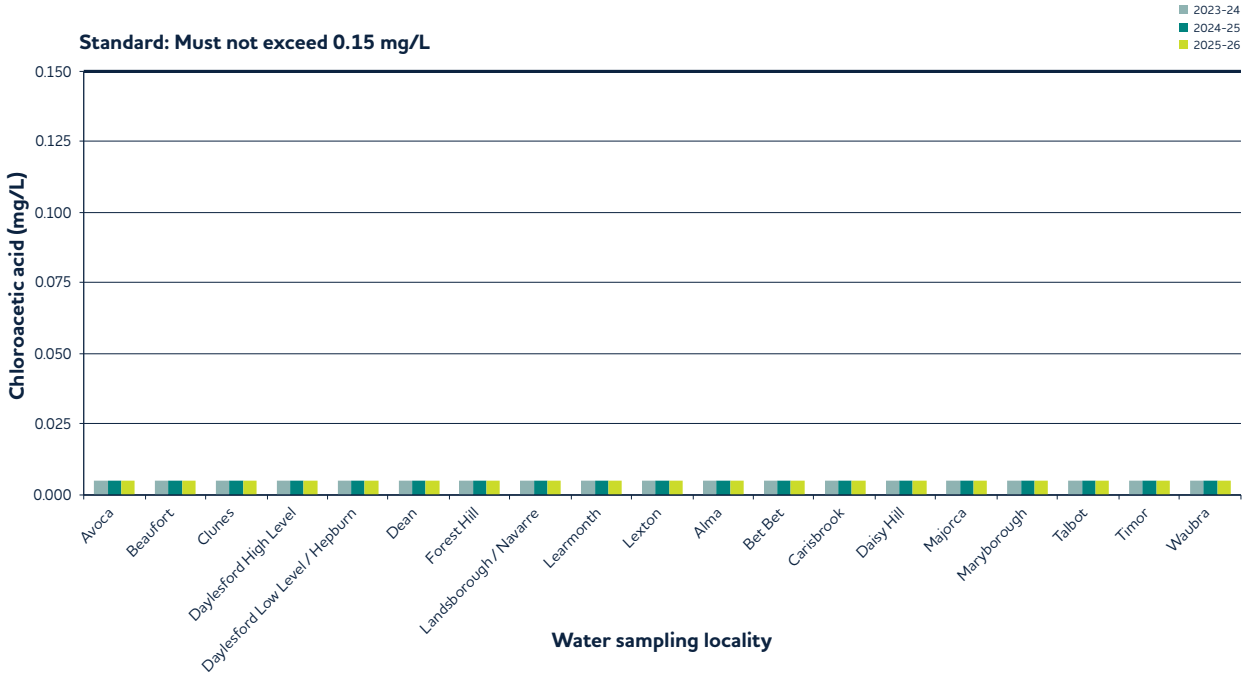
* Non-potable water supply system.

\- Not applicable.

Figure 5

Chloroacetic acid trending





Compliance summary

Refer to Table 15.

All drinking water systems sampled for chloroacetic acid were compliant.

No chloroacetic acid testing was conducted within the Blackwood system as chlorine disinfection is not used at the Blackwood Water Treatment Plant.

Table 16

Dichloroacetic acid

Standard Must not exceed 0.1 mg/L (ADWG).

Description Dichloroacetic acids are produced in drinking water as a by-product of the reaction between chlorine and naturally occurring humic and fulvic acids.

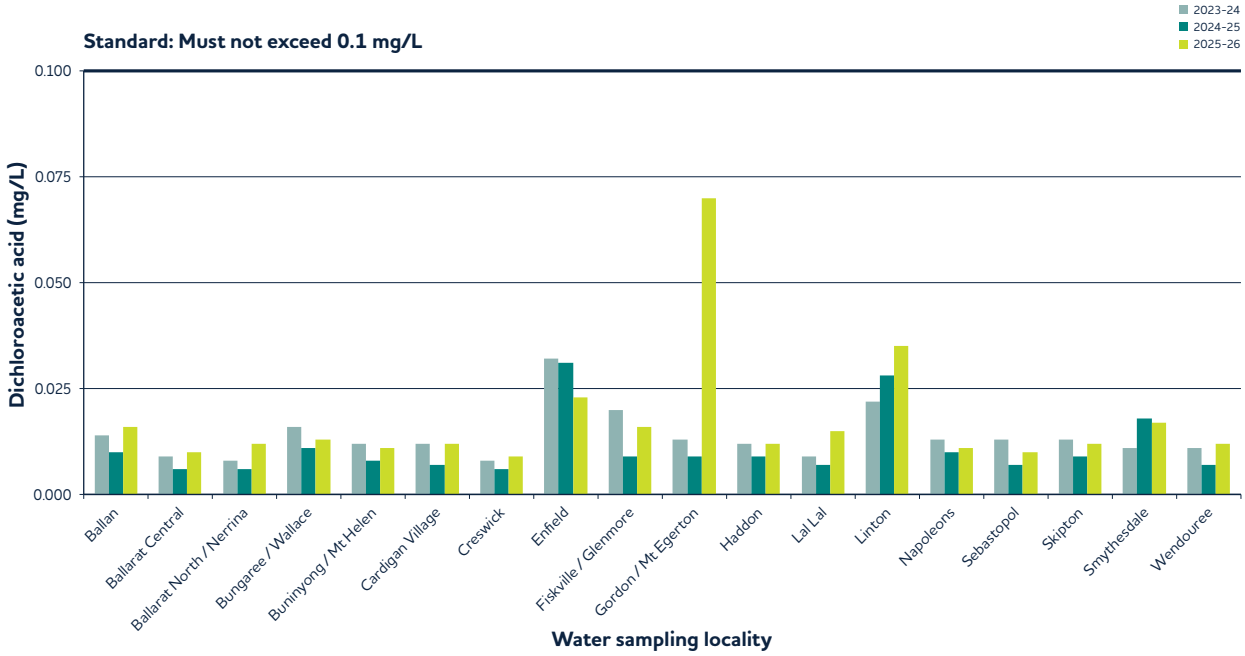
Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Avoca	Quarterly	4	< 0.01	0
Ballarat	Ballan	Quarterly	4	0.016	0
	Ballarat Central	Quarterly	4	0.010	0
	Ballarat North/Nerrina	Quarterly	4	0.012	0
	Bungaree/Wallace	Quarterly	4	0.013	0
	Buninyong/Mt Helen	Quarterly	4	0.011	0
	Cardigan Village	Quarterly	4	0.012	0
	Creswick	Quarterly	4	0.009	0
	Enfield	Quarterly	4	0.023	0
	Fiskville/Glenmore	Quarterly	4	0.016	0
	Gordon/Mt Egerton	Quarterly	4	0.070	0
	Haddon	Quarterly	4	0.012	0
	Lal Lal	Quarterly	4	0.015	0
	Linton	Quarterly	4	0.035	0
	Napoleons	Quarterly	4	0.011	0
	Sebastopol	Quarterly	4	0.010	0
	Skipton	Quarterly	4	0.012	0
	Smythesdale	Quarterly	4	0.017	0
	Wendouree	Quarterly	4	0.012	0
Beaufort	Beaufort	Quarterly	4	0.008	0
Blackwood	Blackwood/Barrys Reef	-	-	-	-
Clunes	Clunes	Quarterly	4	0.021	0
Daylesford	Daylesford High Level	Quarterly	4	0.012	0
	Daylesford Low Level/Hepburn	Quarterly	4	0.010	0
Dean	Dean	Quarterly	4	0.005	0
Forest Hill	Forest Hill	Quarterly	4	< 0.005	0
Landsborough	Landsborough/Navarre	Quarterly	4	< 0.005	0
Learmonth	Learmonth	Quarterly	4	< 0.009	0
Lexton	Lexton	Quarterly	4	< 0.005	0
Maryborough	Alma	Quarterly	4	< 0.005	0
	Bet Bet	Quarterly	4	< 0.005	0
	Carisbrook	Quarterly	4	< 0.005	0
	Daisy Hill	Quarterly	4	0.005	0
	Majorca	Quarterly	4	0.007	0
	Maryborough	Quarterly	4	0.009	0
	Talbot	Quarterly	4	0.006	0
	Timor	Quarterly	4	0.006	0
Waubra	Waubra	Quarterly	4	< 0.009	0
REGULATED WATER SUPPLY SYSTEMS					
Amphitheatre *		-	-	-	-
Raglan *		-	-	-	-
Redbank *		-	-	-	-

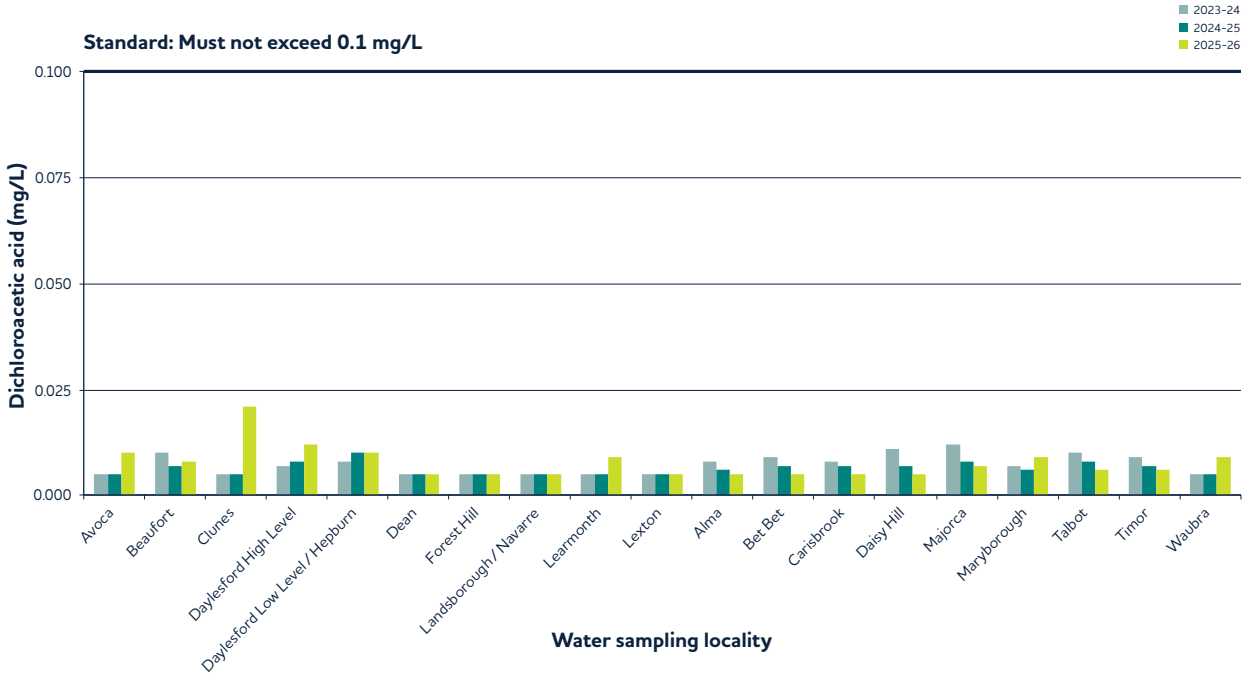
* Non-potable water supply system.

\- Not applicable.

Figure 6

Dichloroacetic acid trending





Compliance summary

Refer to Table 16.

All drinking water systems sampled for dichloroacetic acid were compliant.

No dichloroacetic acid testing was conducted within the Blackwood system as chlorine disinfection is not used at the Blackwood Water Treatment Plant.

Table 17

Trichloroacetic acid

Standard Must not exceed 0.1 mg/L (ADWG).

Description Trichloroacetic acids are produced in drinking water as a by-product of the reaction between chlorine and naturally occurring humic and fulvic acids.

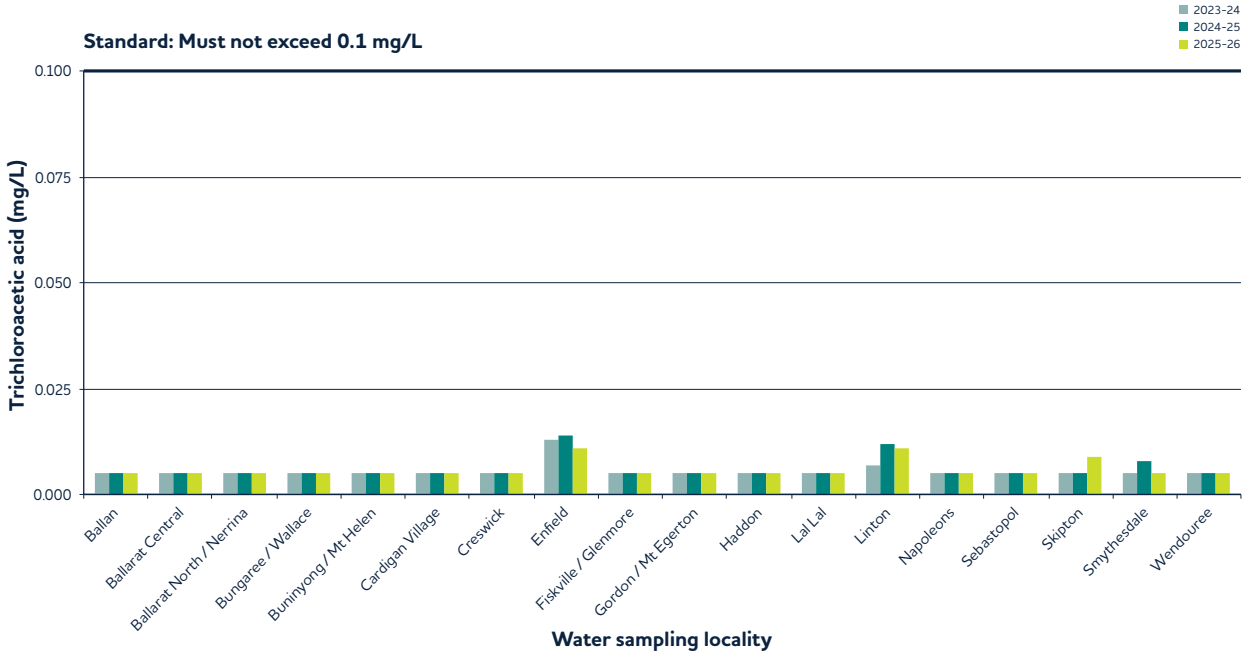
Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Avoca	Quarterly	4	< 0.005	0
Ballarat	Ballan	Quarterly	4	< 0.005	0
	Ballarat Central	Quarterly	4	< 0.005	0
	Ballarat North/Nerrina	Quarterly	4	< 0.005	0
	Bungaree/Wallace	Quarterly	4	< 0.005	0
	Buninyong/Mt Helen	Quarterly	4	< 0.005	0
	Cardigan Village	Quarterly	4	< 0.005	0
	Creswick	Quarterly	4	< 0.005	0
	Enfield	Quarterly	4	0.011	0
	Fiskville/Glenmore	Quarterly	4	< 0.005	0
	Gordon/Mt Egerton	Quarterly	4	< 0.005	0
	Haddon	Quarterly	4	< 0.005	0
	Lal Lal	Quarterly	4	< 0.005	0
	Linton	Quarterly	4	0.011	0
	Napoleons	Quarterly	4	< 0.005	0
	Sebastopol	Quarterly	4	< 0.005	0
	Skipton	Quarterly	4	0.009	0
	Smythesdale	Quarterly	4	< 0.005	0
	Wendouree	Quarterly	4	< 0.005	0
Beaufort	Beaufort	Quarterly	4	< 0.005	0
Blackwood	Blackwood/Barrys Reef	-	-	-	-
Clunes	Clunes	Quarterly	4	< 0.005	0
Daylesford	Daylesford High Level	Quarterly	4	0.009	0
	Daylesford Low Level/Hepburn	Quarterly	4	0.010	0
Dean	Dean	Quarterly	4	< 0.005	0
Forest Hill	Forest Hill	Quarterly	4	< 0.005	0
Landsborough	Landsborough/Navarre	Quarterly	4	< 0.005	0
Learmonth	Learmonth	Quarterly	4	< 0.005	0
Lexton	Lexton	Quarterly	4	< 0.005	0
Maryborough	Alma	Quarterly	4	< 0.005	0
	Bet Bet	Quarterly	4	< 0.005	0
	Carisbrook	Quarterly	4	< 0.005	0
	Daisy Hill	Quarterly	4	< 0.005	0
	Majorca	Quarterly	4	< 0.005	0
	Maryborough	Quarterly	4	< 0.005	0
	Talbot	Quarterly	4	< 0.005	0
	Timor	Quarterly	4	< 0.005	0
Waubra	Waubra	Quarterly	4	< 0.005	0
REGULATED WATER SUPPLY SYSTEMS					
Amphitheatre *		-	-	-	-
Raglan *		-	-	-	-
Redbank *		-	-	-	-

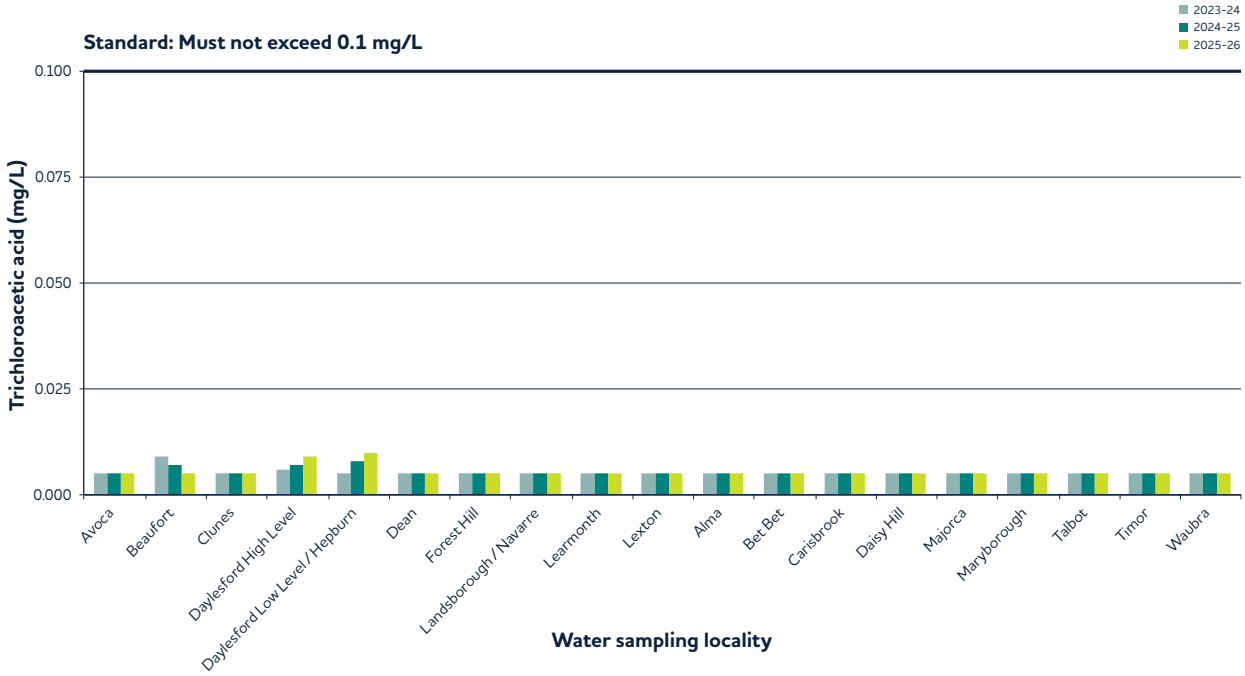
* Non-potable water supply system.

\- Not applicable.

Figure 7

Trichloroacetic acid trending





Compliance summary

Refer to Table 17.

All drinking water systems sampled for trichloroacetic acid were compliant.

No trichloroacetic acid testing was conducted within the Blackwood system as chlorine disinfection is not used at the Blackwood Water Treatment Plant.

Table 18

Bromate

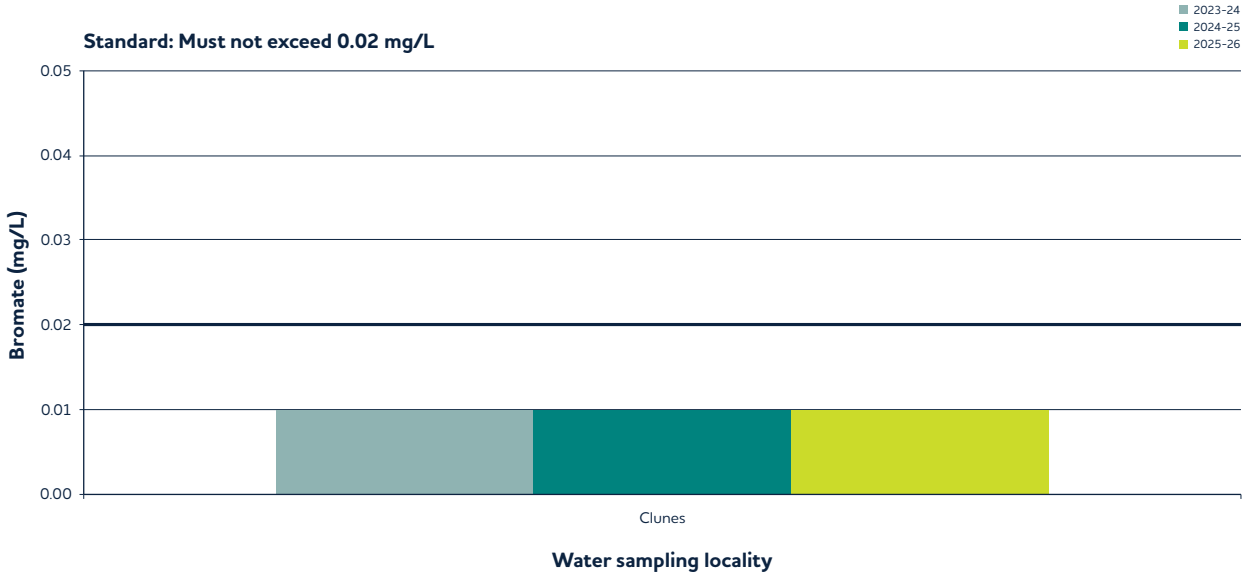
Standard Must not exceed 0.02 mg/L (ADWG).

Description Bromate is not a normal component of water, but may be formed from bromide during ozonation.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	No. samples where standard not met (s. 18)
Clunes	Clunes	Monthly	12	0.01	0

Figure 8

Bromate trending



Compliance summary

Refer to Table 18.

Clunes is the only CHW system to use ozonation.

The Clunes system was complaint for bromate.

No significant trends from the previous two reporting periods are evident.

Table 19

Formaldehyde

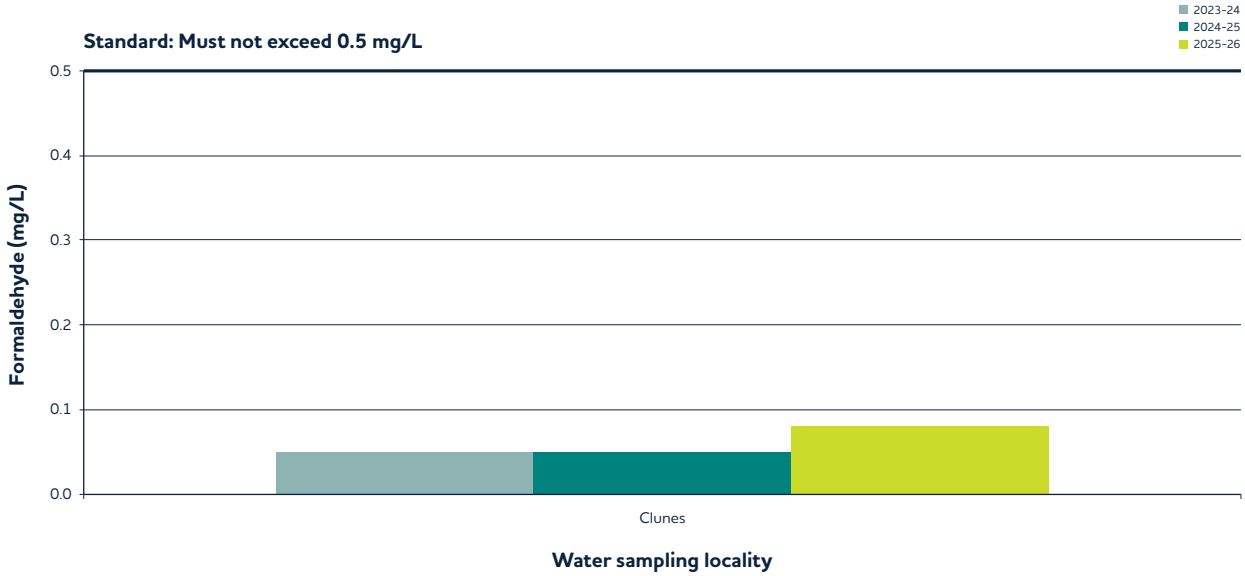
Standard Must not exceed 0.5 mg/L (ADWG).

Description Formaldehyde may be present in drinking water through ozonation of naturally occurring humic material, contamination by accidental spills or deposition from the atmosphere.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	No. samples where standard not met (s. 18)
Clunes	Clunes	Quarterly	4	0.08	0

Figure 9

Formaldehyde trending



Compliance summary

Refer to Table 19.

Clunes is the only CHW system to use ozonation.

The Clunes system was compliant for formaldehyde.

Table 20

Aluminium (acid soluble)

Guideline Must not exceed 0.2 mg/L (ADWG-AESTHETIC).

Description Aluminium may be present in water due to natural leaching from rock or soil. Aluminium is also used as a coagulant to assist filtration effectiveness, however is removed during the treatment process.

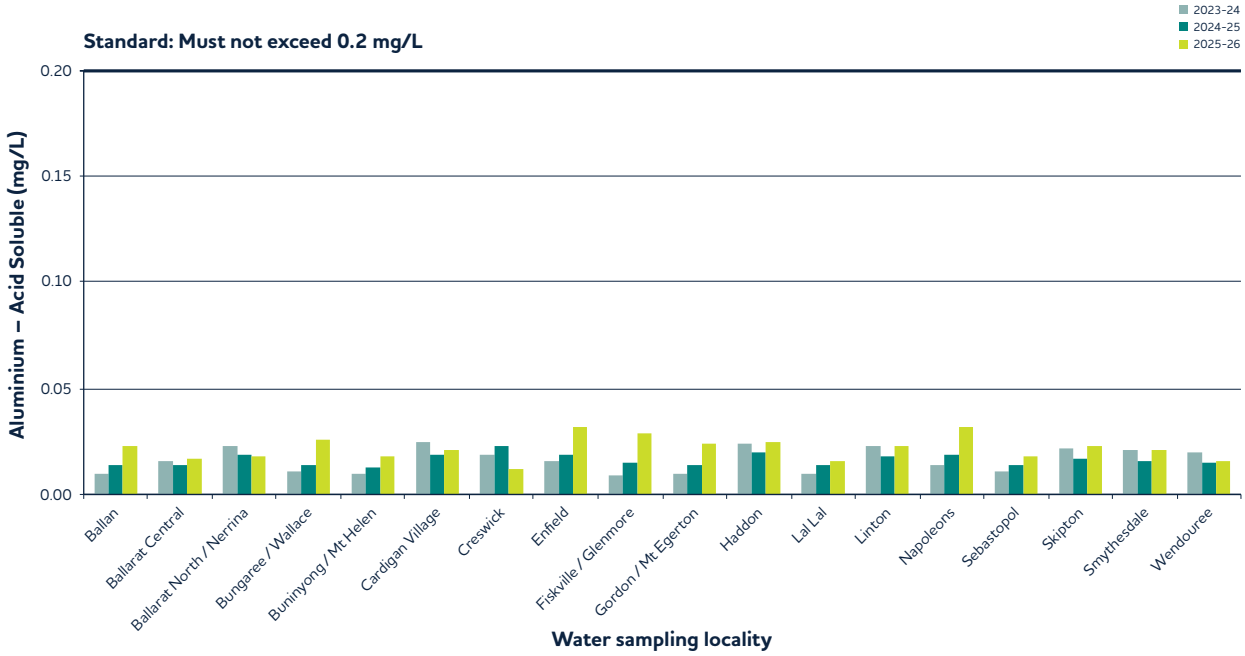
Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	No. samples above aesthetic guideline
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Avoca	-	-	-	-
Ballarat	Ballan	Quarterly	4	0.02	0
	Ballarat Central	Quarterly	4	0.02	0
	Ballarat North/Nerrina	Quarterly	4	0.02	0
	Bungaree/Wallace	Quarterly	4	0.03	0
	Buninyong/Mt Helen	Quarterly	4	0.02	0
	Cardigan Village	Quarterly	4	0.02	0
	Creswick	Quarterly	4	0.01	0
	Enfield	Quarterly	4	0.03	0
	Fiskville/Glenmore	Quarterly	4	0.03	0
	Gordon/Mt Egerton	Quarterly	4	0.02	0
	Haddon	Quarterly	4	0.03	0
	Lal Lal	Quarterly	4	0.02	0
	Linton	Quarterly	4	0.02	0
	Napoleons	Quarterly	4	0.03	0
	Sebastopol	Quarterly	4	0.02	0
	Skipton	Quarterly	4	0.02	0
	Smythesdale	Quarterly	4	0.02	0
	Wendouree	Quarterly	4	0.02	0
Beaufort	Beaufort	Quarterly	4	0.05	0
Blackwood	Blackwood/Barrys Reef	Quarterly	4	0.02	0
Clunes	Clunes	-	-	-	-
Daylesford	Daylesford High Level	Quarterly	4	0.12	0
	Daylesford Low Level/Hepburn	Quarterly	4	0.13	0
Dean	Dean	-	-	-	-
Forest Hill	Forest Hill	-	-	-	-
Landsborough	Landsborough/Navarre	-	-	-	-
Learmonth	Learmonth	-	-	-	-
Lexton	Lexton	-	-	-	-
Maryborough	Alma	Quarterly	4	0.03	0
	Bet Bet	Quarterly	4	0.04	0
	Carisbrook	Quarterly	4	0.04	0
	Daisy Hill	Quarterly	4	0.04	0
	Majorca	Quarterly	4	0.04	0
	Maryborough	Quarterly	4	0.03	0
	Talbot	Quarterly	4	0.04	0
	Timor	Quarterly	4	0.03	0
Waubra	Waubra	-	-	-	-
REGULATED WATER SUPPLY SYSTEMS					
Amphitheatre *		-	-	-	-
Raglan *		-	-	-	-
Redbank *		-	-	-	-

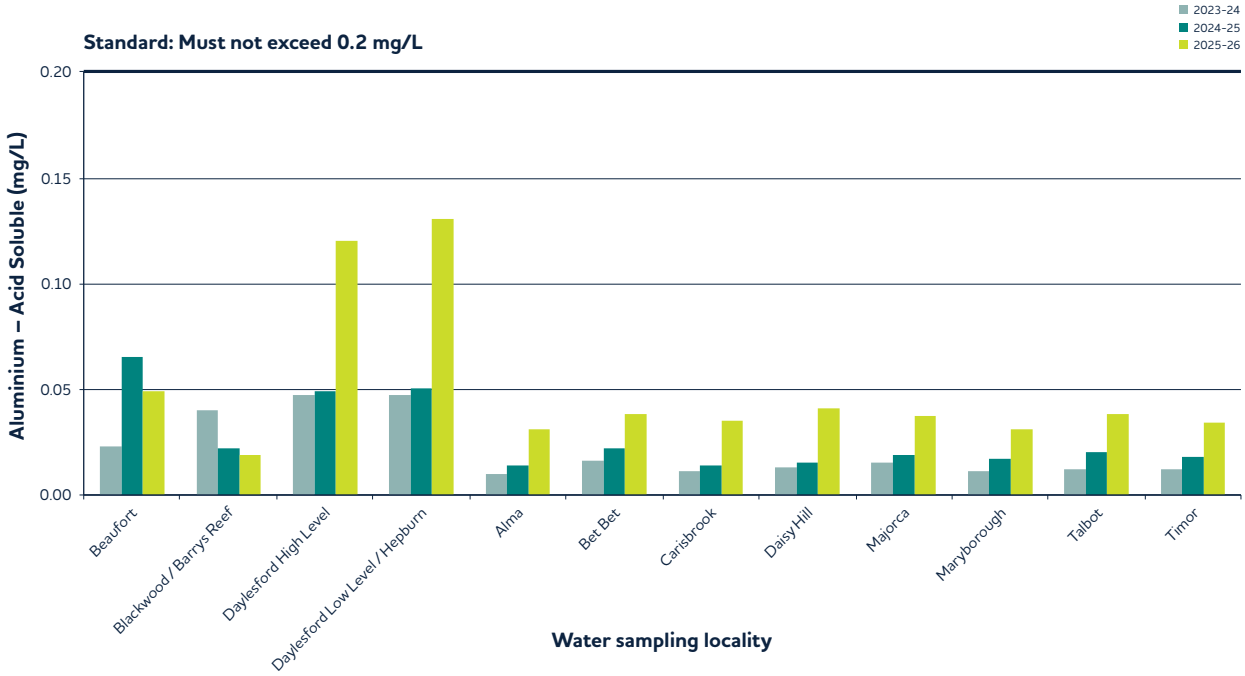
* Non-potable water supply system

\- Not applicable

Figure 10

Aluminium (acid soluble) trending





Compliance summary

Refer to Table 20.

All drinking water systems sampled for aluminium (acid soluble) were below the aesthetic guideline value.

Parameter only tested where an aluminium based coagulant is used as part of the treatment process.

Table 21

Aesthetic parameters – pH

Guideline Greater than 6.5 and less than 8.5 units desirable, up to 9.2 is acceptable provided microbiological performance is satisfactory (ADWG). Considered to meet guidelines if the mean is within the guideline values.

Description The pH of a water sample is an indicator of the acidity or alkalinity of the water. Water with a pH of 7 is considered neutral. Concrete tanks and cement mortar lined pipes can significantly increase pH. For aesthetic reasons, and to reduce the risk of corrosion, it is preferable that pH is maintained between 6.5 and 8.5 units. pH values up to 9.2 may be tolerated provided monitoring indicates no deterioration in microbial quality.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Mean	Max	Min	Locality meeting guideline criteria (Yes/No)
DRINKING WATER SUPPLY SYSTEMS							
Avoca	Avoca	Weekly	52	7.3	7.7	7.1	Yes
Ballarat	Ballan	Weekly	52	8.4	8.8	8.1	Yes
	Ballarat Central	Weekly #	195	8.2	8.4	7.9	Yes
	Ballarat North/Nerrina	Weekly	52	8.2	8.4	8.0	Yes
	Bungaree/Wallace	Weekly	52	8.4	8.8	8.1	Yes
	Buninyong/Mt Helen	Weekly #	73	8.2	8.4	7.8	Yes
	Cardigan Village	Weekly	52	8.3	8.6	8.0	Yes
	Creswick	Weekly	52	8.1	8.3	7.8	Yes
	Enfield	Weekly	53	8.4	8.6	8.0	Yes
	Fiskville/Glenmore	Weekly	52	8.4	8.7	8.1	Yes
	Gordon/Mt Egerton	Weekly	52	8.4	8.7	8.2	Yes
	Haddon	Weekly #	72	8.4	8.8	8.0	Yes
	Lal Lal	Weekly	52	8.2	8.6	8.0	Yes
	Linton	Weekly	52	8.5	8.7	8.2	Yes
	Napoleons	Weekly	53	8.3	8.7	8.0	Yes
	Sebastopol	Weekly #	85	8.2	8.3	7.9	Yes
	Skipton	Weekly	52	8.6	8.8	8.2	Yes
	Smythesdale	Weekly	52	8.3	8.5	7.9	Yes
	Wendouree	Weekly #	145	8.2	8.8	7.9	Yes
Beaufort	Beaufort	Weekly	53	7.5	8.7	7.0	Yes
Blackwood	Blackwood/Barrys Reef	Weekly	52	7.8	9.1	7.3	Yes
Clunes	Clunes	Weekly	52	7.9	8.0	7.7	Yes
Daylesford	Daylesford High Level	Weekly	52	7.4	7.7	7.1	Yes
	Daylesford Low Level/Hepburn	Weekly	52	7.4	7.7	7.2	Yes
Dean	Dean	Weekly	52	7.1	7.6	6.9	Yes
Forest Hill	Forest Hill	Weekly	52	7.9	8.3	7.6	Yes
Landsborough	Landsborough/Navarre	Weekly	52	7.4	7.8	7.2	Yes
Learmonth	Learmonth	Weekly	53	8.2	8.5	8.0	Yes
Lexton	Lexton	Weekly	53	7.9	8.0	7.7	Yes
Maryborough	Alma	Weekly	52	8.4	8.6	8.3	Yes
	Bet Bet	Weekly	52	8.6	8.8	8.4	Yes
	Carisbrook	Weekly	52	8.5	8.6	8.3	Yes
	Daisy Hill	Weekly	52	8.6	8.8	8.5	Yes
	Majorca	Weekly	52	8.6	8.8	8.5	Yes
	Maryborough	Weekly #	73	8.5	8.7	8.4	Yes
	Talbot	Weekly	52	8.6	8.7	8.4	Yes
	Timor	Weekly	52	8.6	8.8	8.5	Yes
Waubra	Waubra	Weekly	53	7.0	7.1	6.8	Yes
REGULATED WATER SUPPLY SYSTEMS							
Amphitheatre *		Twice monthly	24	7.1	7.7	6.7	NA
Raglan *		Twice monthly	24	7.4	7.9	7.1	NA
Redbank *		Twice monthly	24	7.0	7.2	6.8	NA

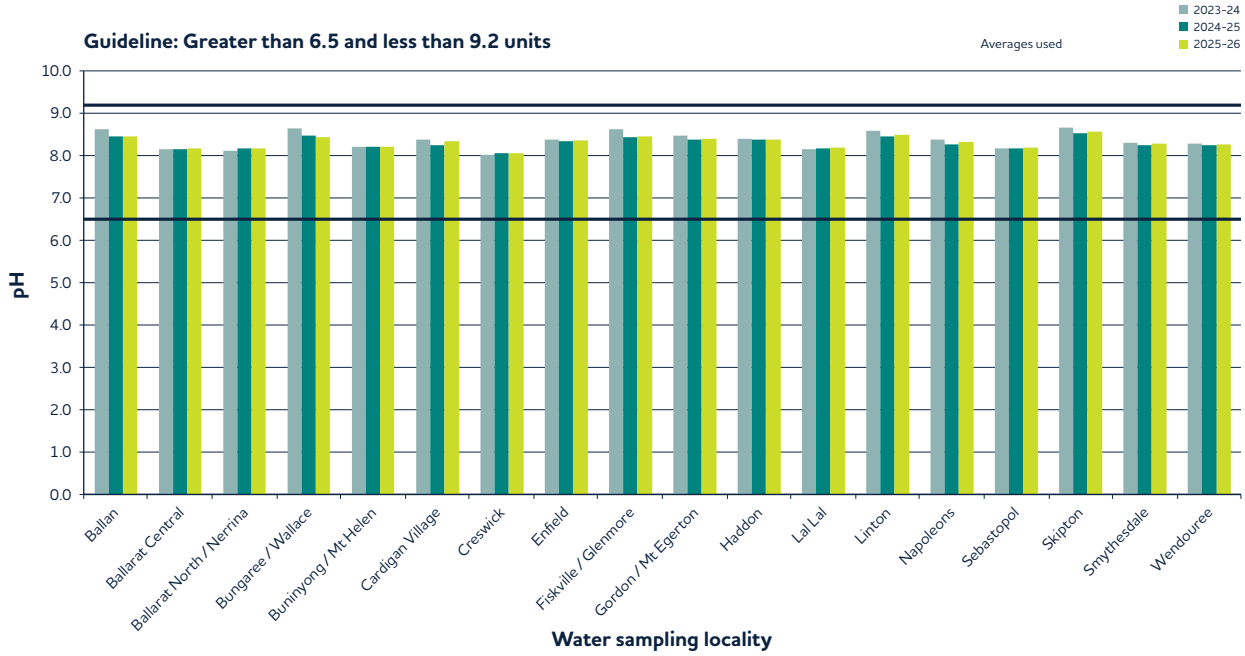
* Non-potable water supply system.

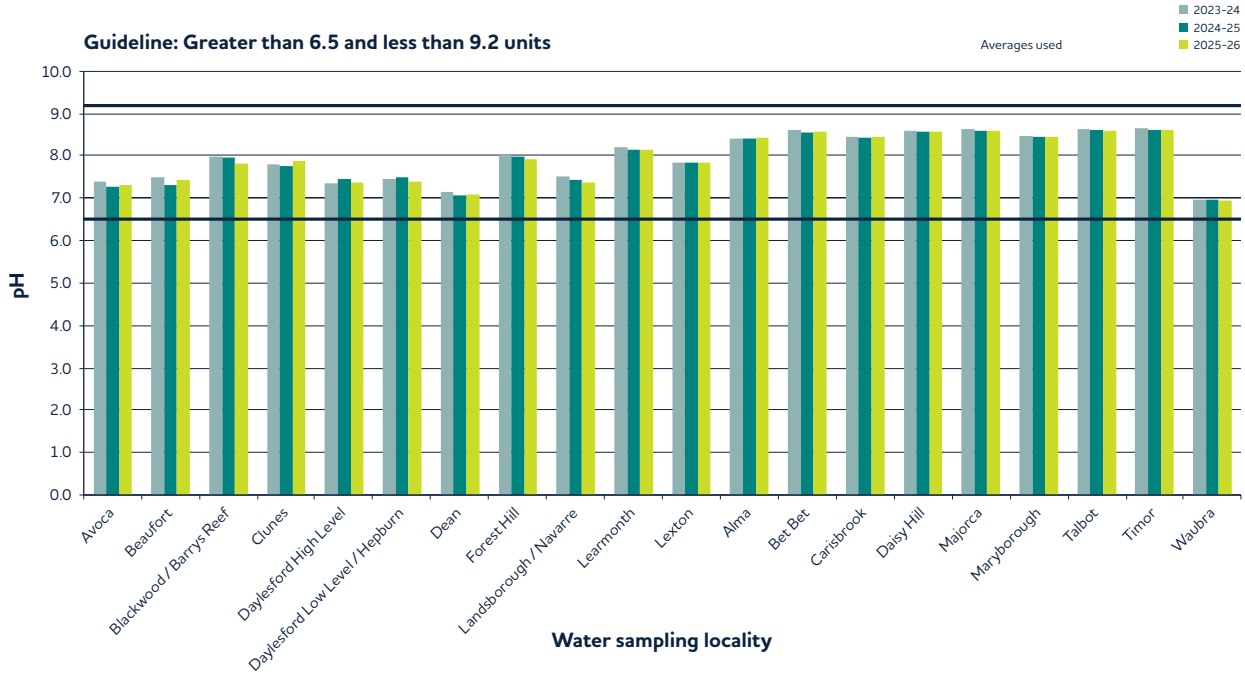
\# Weekly sampling with increases for population (ADWG, Section 9.5.2).

Considered to meet guidelines if the mean is within the guideline values of 6.5 to 9.2 (ADWG, Section 10.3.3).

Figure 11

pH trending





Compliance summary

Refer to Table 21.

Regulated (non-potable) water supply systems have not been included in analysis.

All systems sampled for pH were compliant.

Table 22

Aesthetic parameters – total dissolved solids

Guideline Less than 600 mg/L (ADWG). Considered to meet guidelines if the mean is less than the guideline value.

Description Total dissolved solids (TDS) represents the total amount of material dissolved in the water and includes materials such as carbonates, bicarbonates, chlorides and sulphates of calcium, magnesium, sodium and potassium. The palatability of drinking water may be affected with increasing TDS levels.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Mean (mg/L)	Max (mg/L)	Min (mg/L)	Locality meeting guideline criteria (Yes/No)
DRINKING WATER SUPPLY SYSTEMS							
Avoca	Avoca	Weekly	52	368	390	345	Yes
Ballarat	Ballan	Weekly	52	256	280	190	Yes
	Ballarat Central	Weekly #	195	235	275	180	Yes
	Ballarat North/Nerrina	Weekly	52	218	255	180	Yes
	Bungaree/Wallace	Weekly	52	256	285	190	Yes
	Buninyong/Mt Helen	Weekly #	73	250	280	185	Yes
	Cardigan Village	Weekly	52	229	260	180	Yes
	Creswick	Weekly	52	217	260	180	Yes
	Enfield	Weekly	53	253	295	205	Yes
	Fiskville/Glenmore	Weekly	52	254	280	185	Yes
	Gordon/Mt Egerton	Weekly	52	253	280	190	Yes
	Haddon	Weekly #	72	239	275	185	Yes
	Lal Lal	Weekly	52	252	280	190	Yes
	Linton	Weekly	52	244	270	185	Yes
	Napoleons	Weekly	53	245	280	190	Yes
	Sebastopol	Weekly #	85	241	275	185	Yes
	Skipton	Weekly	52	244	270	185	Yes
	Smythesdale	Weekly	52	239	270	185	Yes
	Wendouree	Weekly #	145	222	255	180	Yes
Beaufort	Beaufort	Weekly	53	73	235	65	Yes
Blackwood	Blackwood/Barrys Reef	Weekly	52	72	110	50	Yes
Clunes	Clunes	Weekly	52	340	350	325	Yes
Daylesford	Daylesford High Level	Weekly	52	114	135	70	Yes
	Daylesford Low Level/Hepburn	Weekly	52	113	140	70	Yes
Dean	Dean	Weekly	52	150	175	130	Yes
Forest Hill	Forest Hill	Weekly	52	249	260	240	Yes
Landsborough	Landsborough/Navarre	Weekly	52	462	500	430	Yes
Learmonth	Learmonth	Weekly	53	283	295	255	Yes
Lexton	Lexton	Weekly	53	422	435	410	Yes
Maryborough	Alma	Weekly	52	418	450	390	Yes
	Bet Bet	Weekly	52	418	450	390	Yes
	Carisbrook	Weekly	52	417	450	385	Yes
	Daisy Hill	Weekly	52	417	445	390	Yes
	Majorca	Weekly	52	419	450	390	Yes
	Maryborough	Weekly #	73	417	450	390	Yes
	Talbot	Weekly	52	417	455	395	Yes
	Timor	Weekly	52	418	450	395	Yes
Waubra	Waubra	Weekly	53	695	700	650	No
REGULATED WATER SUPPLY SYSTEMS							
Amphitheatre *		-	-	-	-	-	-
Raglan *		-	-	-	-	-	-
Redbank *		-	-	-	-	-	-

* Non-potable water supply system.

\# Weekly sampling with increases for population (ADWG, Section 9.5.2).

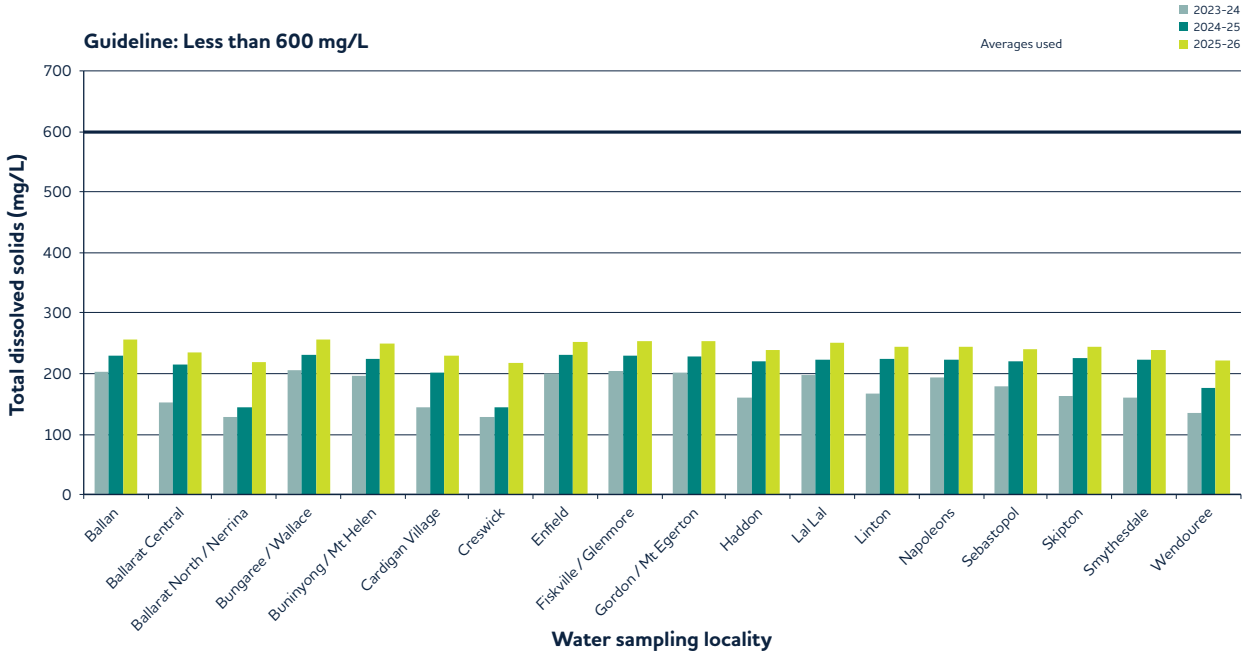
\- Not applicable.

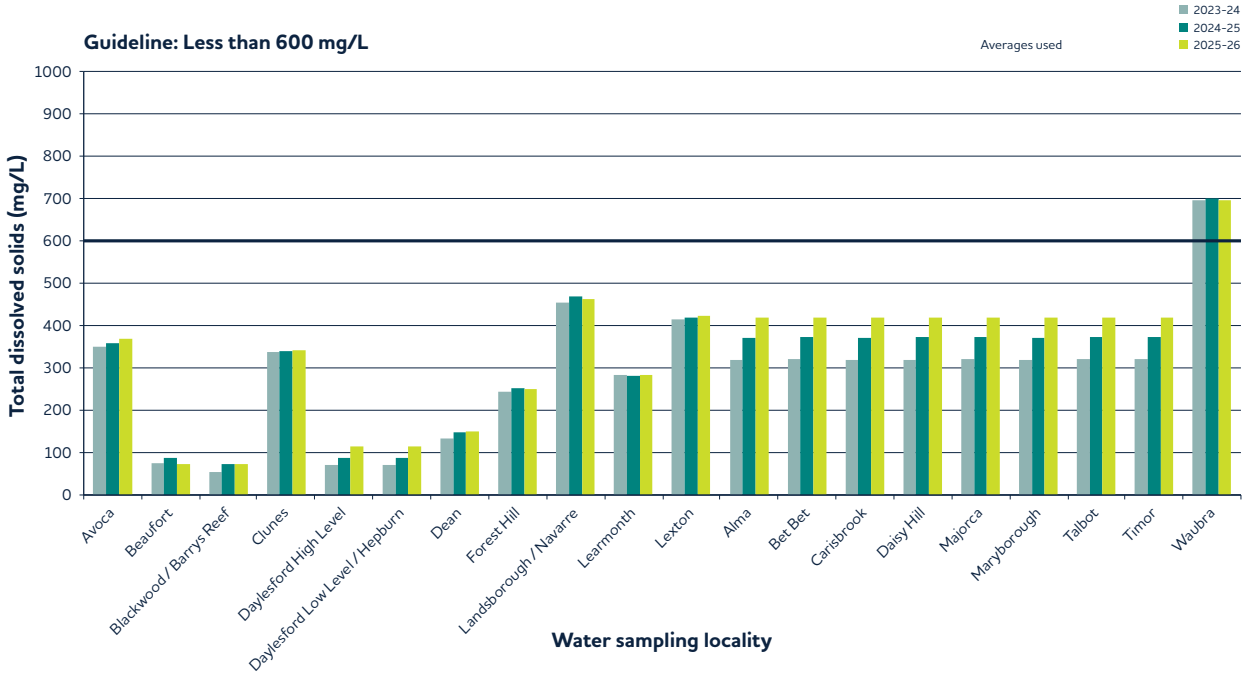
Considered to meet guidelines if the mean is less than the guideline value (ADWG, Section 10.3.3).

Total dissolved solids data derived from electrical conductivity data (x 0.5).

Figure 12

Total dissolved solids trending





Compliance summary

Refer to Table 22.

All systems sampled for TDS were compliant, with the exception of Waubra which sources its water from groundwater supplies, with increased TDS levels. CHW has consulted with the Waubra community on options to enhance the water quality for this community, with capital funds committed in the current ESC pricing period (2023-28).

Table 23

Aesthetic parameters – true colour

Guideline Less than or equal to 15 HU (ADWG), equivalent to platinum-cobalt (Pt.Co.) units.

Description Colour is the actual true appearance of the water with suspended material removed. Colour can result from organic matter, sources of algae or inorganic materials such as manganese, copper and iron.

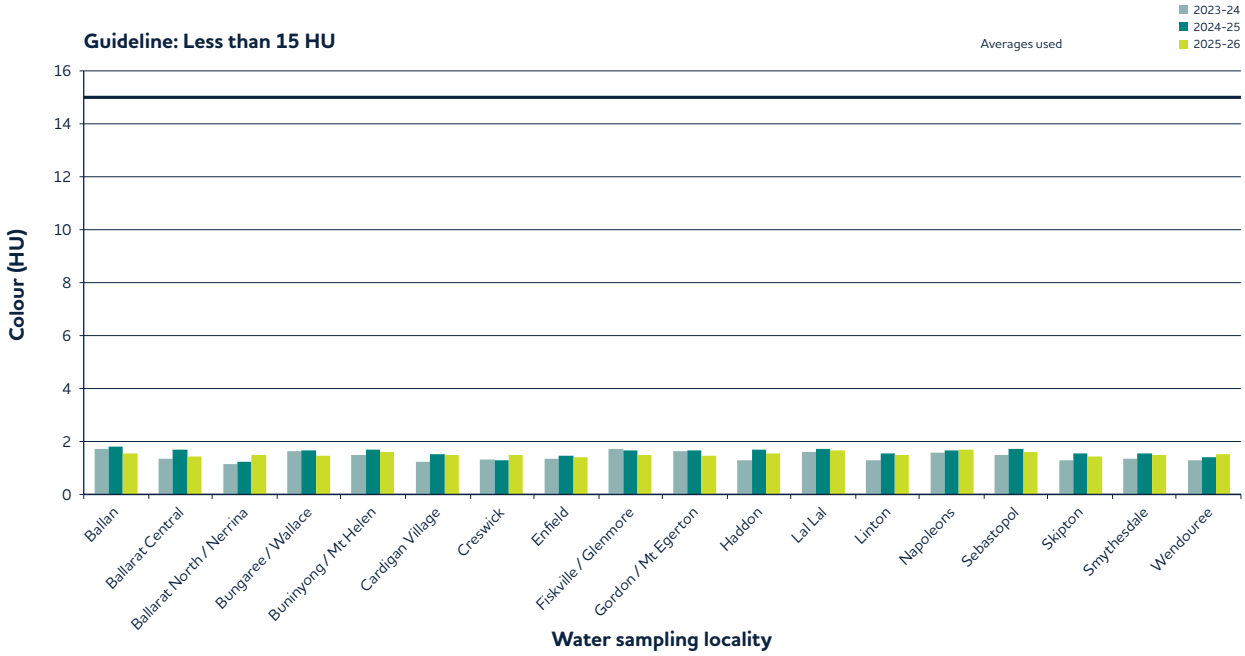
Water supply system	Water sampling area	Frequency of sampling	No. of samples	Mean (HU)	Max (HU)	Min (HU)	Locality meeting guideline criteria (Yes/No)
DRINKING WATER SUPPLY SYSTEMS							
Avoca	Avoca	Weekly	52	1	2	< 1	Yes
Ballarat	Ballan	Weekly	52	2	3	< 1	Yes
	Ballarat Central	Weekly #	195	1	4	< 1	Yes
	Ballarat North/Nerrina	Weekly	52	1	4	< 1	Yes
	Bungaree/Wallace	Weekly	52	1	3	< 1	Yes
	Buninyong/Mt Helen	Weekly #	73	2	4	< 1	Yes
	Cardigan Village	Weekly	52	2	4	< 1	Yes
	Creswick	Weekly	52	2	3	< 1	Yes
	Enfield	Weekly	53	1	3	< 1	Yes
	Fiskville/Glenmore	Weekly	52	1	3	< 1	Yes
	Gordon/Mt Egerton	Weekly	52	1	2	< 1	Yes
	Haddon	Weekly #	72	2	4	< 1	Yes
	Lal Lal	Weekly	52	2	5	< 1	Yes
	Linton	Weekly	52	2	4	< 1	Yes
	Napoleons	Weekly	53	2	3	< 1	Yes
	Sebastopol	Weekly #	85	2	3	< 1	Yes
	Skipton	Weekly	52	1	4	< 1	Yes
	Smythesdale	Weekly	52	2	4	< 1	Yes
	Wendouree	Weekly #	145	2	4	< 1	Yes
Beaufort	Beaufort	Weekly	53	1	2	< 1	Yes
Blackwood	Blackwood/Barrys Reef	Weekly	52	1	5	< 1	Yes
Clunes	Clunes	Weekly	52	1	4	< 1	Yes
Daylesford	Daylesford High Level	Weekly	52	1	3	< 1	Yes
	Daylesford Low Level/Hepburn	Weekly	52	1	3	< 1	Yes
Dean	Dean	Weekly	52	1	2	< 1	Yes
Forest Hill	Forest Hill	Weekly	52	1	3	< 1	Yes
Landsborough	Landsborough/Navarre	Weekly	52	1	4	< 1	Yes
Learmonth	Learmonth	Weekly	53	1	2	< 1	Yes
Lexton	Lexton	Weekly	53	1	2	< 1	Yes
Maryborough	Alma	Weekly	52	1	4	< 1	Yes
	Bet Bet	Weekly	52	1	4	< 1	Yes
	Carisbrook	Weekly	52	1	4	< 1	Yes
	Daisy Hill	Weekly	52	1	4	< 1	Yes
	Majorca	Weekly	52	2	4	< 1	Yes
	Maryborough	Weekly #	73	1	3	< 1	Yes
	Talbot	Weekly	52	1	4	< 1	Yes
	Timor	Weekly	52	1	4	< 1	Yes
Waubra	Waubra	Weekly	53	1	2	< 1	Yes
REGULATED WATER SUPPLY SYSTEMS							
Amphitheatre *		Twice monthly	24	19	35	5	NA
Raglan *		Twice monthly	24	32	80	15	NA
Redbank *		Twice monthly	24	1	3	< 1	NA

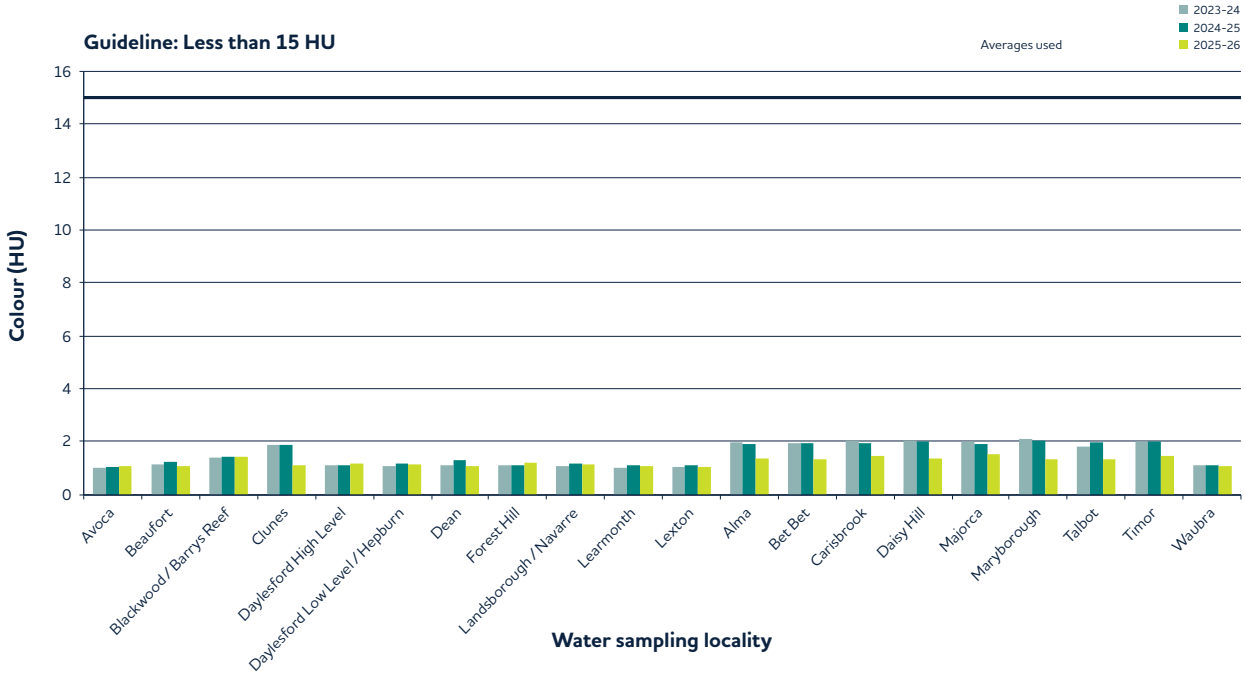
* Non-potable water supply system.

\# Weekly sampling with increases for population (ADWG, Section 9.5.2).

Figure 13

True colour trending





Compliance summary

Refer to Table 23.

Regulated (non-potable) water supply systems have not been included in trending analysis.

All systems sampled for colour were compliant.

Table 24

Aesthetic parameters – hardness

Guideline Less than 200 mg/L (ADWG). Considered to meet guidelines if the mean is less than the guideline value.

Description Hardness is predominantly caused by calcium and magnesium ions and is a parameter unique to the water source and does not normally vary significantly. Hard water sometimes causes difficulty in creating a lather with soap and it can also form a deposit on hot water pipes and fittings under certain conditions.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Mean (mg/L)	Max (mg/L)	Min (mg/L)	Locality meeting guideline criteria (Yes/No)
DRINKING WATER SUPPLY SYSTEMS							
Avoca	Avoca	Monthly	12	182	190	150	Yes
Ballarat	Ballan	Monthly	12	113	130	86	Yes
	Ballarat Central	Monthly	12	102	120	81	Yes
	Ballarat North/Nerrina	Monthly	12	93	110	80	Yes
	Bungaree/Wallace	Monthly	12	117	130	92	Yes
	Buninyong/Mt Helen	Monthly	12	108	130	89	Yes
	Cardigan Village	Monthly	12	97	110	80	Yes
	Creswick	Monthly	12	91	110	79	Yes
	Enfield	Monthly	12	112	130	99	Yes
	Fiskville/Glenmore	Monthly	12	112	130	85	Yes
	Gordon/Mt Egerton	Monthly	12	114	130	87	Yes
	Haddon	Monthly	12	102	110	79	Yes
	Lal Lal	Monthly	12	109	130	83	Yes
	Linton	Monthly	12	106	120	84	Yes
	Napoleons	Monthly	12	108	130	87	Yes
	Sebastopol	Monthly	12	105	120	83	Yes
	Skipton	Monthly	12	106	120	85	Yes
	Smythesdale	Monthly	12	104	120	83	Yes
	Wendouree	Monthly	12	95	120	80	Yes
Beaufort	Beaufort	Monthly	12	20	23	15	Yes
Blackwood	Blackwood/Barrys Reef	Monthly	12	32	54	18	Yes
Clunes	Clunes	Monthly	12	64	68	54	Yes
Daylesford	Daylesford High Level	Monthly	12	37	53	18	Yes
	Daylesford Low Level/Hepburn	Monthly	12	39	55	21	Yes
Dean	Dean	Quarterly	4	111	130	92	Yes
Forest Hill	Forest Hill	Monthly	12	104	120	88	Yes
Landsborough	Landsborough/Navarre	Monthly	12	34	44	28	Yes
Learmonth	Learmonth	Quarterly	4	128	130	120	Yes
Lexton	Lexton	Quarterly	4	170	170	170	Yes
Maryborough	Alma	Monthly	12	188	200	170	Yes
	Bet Bet	Monthly	12	190	200	170	Yes
	Carisbrook	Monthly	12	186	200	170	Yes
	Daisy Hill	Monthly	12	190	200	170	Yes
	Majorca	Monthly	12	188	200	170	Yes
	Maryborough	Monthly	12	183	200	160	Yes
	Talbot	Monthly	12	192	200	180	Yes
	Timor	Monthly	12	191	200	180	Yes
Waubra	Waubra	Quarterly	4	410	440	390	No
REGULATED WATER SUPPLY SYSTEMS							
Amphitheatre *		-	-	-	-	-	-
Raglan *		-	-	-	-	-	-
Redbank *		-	-	-	-	-	-

* Non-potable water supply system.

\- Not applicable.

Considered to meet guidelines if the mean is less than the guideline value (ADWG, Section 10.3.3).

Compliance summary

All systems sampled for hardness were compliant, with the exception of Waubra which sources its water from groundwater supplies, with increased hardness levels. CHW has consulted with the Waubra community on options to enhance the water quality for this community, with capital funds committed in the current ESC pricing period (2023-28).

Table 25

Aesthetic parameters – iron

Guideline Less than 0.3 mg/L (ADWG).

Description Iron occurs naturally in surface water, but is found in higher levels in oxygen-depleted groundwater. A change in taste may be noticed above 0.3 mg/L and higher levels may cause stained laundry and plumbing fittings. Iron does not pose a health risk at concentrations found in water supplies.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	Locality meeting guideline criteria (Yes/No)
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	Monthly	12	0.16	< 0.01	Yes
Ballarat	Ballan	Monthly	12	0.14	< 0.01	Yes
	Ballarat Central	Monthly	12	< 0.01	< 0.01	Yes
	Ballarat North/Nerrina	Monthly	12	0.07	< 0.01	Yes
	Bungaree/Wallace	Monthly	12	0.02	< 0.01	Yes
	Buninyong/Mt Helen	Monthly	12	< 0.01	< 0.01	Yes
	Cardigan Village	Monthly	12	< 0.01	< 0.01	Yes
	Creswick	Monthly	12	0.01	< 0.01	Yes
	Enfield	Monthly	12	0.01	< 0.01	Yes
	Fiskville/Glenmore	Monthly	12	0.02	< 0.01	Yes
	Gordon/Mt Egerton	Monthly	12	< 0.01	< 0.01	Yes
	Haddon	Monthly	12	< 0.01	< 0.01	Yes
	Lal Lal	Monthly	12	0.02	< 0.01	Yes
	Linton	Monthly	12	< 0.01	< 0.01	Yes
	Napoleons	Monthly	12	< 0.01	< 0.01	Yes
	Sebastopol	Monthly	12	0.02	< 0.01	Yes
	Skipton	Monthly	12	< 0.01	< 0.01	Yes
	Smythesdale	Monthly	12	< 0.01	< 0.01	Yes
	Wendouree	Monthly	12	0.01	< 0.01	Yes
Beaufort	Beaufort	Monthly	12	0.07	0.01	Yes
Blackwood	Blackwood/Barrys Reef	Monthly	12	0.03	< 0.01	Yes
Clunes	Clunes	Monthly	12	0.08	0.05	Yes
Daylesford	Daylesford High Level	Monthly	12	0.02	< 0.01	Yes
	Daylesford Low Level/Hepburn	Monthly	12	0.03	< 0.01	Yes
Dean	Dean	Monthly	12	0.02	< 0.01	Yes
Forest Hill	Forest Hill	Monthly	12	0.03	< 0.01	Yes
Landsborough	Landsborough/Navarre	Monthly	12	0.05	< 0.01	Yes
Learmonth	Learmonth	Monthly	12	< 0.01	< 0.01	Yes
Lexton	Lexton	Monthly	12	< 0.01	< 0.01	Yes
Maryborough	Alma	Monthly	12	< 0.01	< 0.01	Yes
	Bet Bet	Monthly	12	< 0.01	< 0.01	Yes
	Carisbrook	Monthly	12	< 0.01	< 0.01	Yes
	Daisy Hill	Monthly	12	< 0.01	< 0.01	Yes
	Majorca	Monthly	12	< 0.01	< 0.01	Yes
	Maryborough	Monthly	12	< 0.01	< 0.01	Yes
	Talbot	Monthly	12	< 0.01	< 0.01	Yes
	Timor	Monthly	12	0.01	< 0.01	Yes
Waubra	Waubra	Monthly	12	< 0.01	< 0.01	Yes
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		Monthly	12	1.8	0.06	NA
Raglan *		Monthly	12	1.8	0.05	NA
Redbank *		Monthly	12	0.12	0.03	NA

* Non-potable water supply system.

Compliance summary

All drinking water systems sampled for iron were below the aesthetic guideline.

No significant trends from the previous two reporting periods are evident.

Table 26

Aesthetic parameters – zinc

Guideline Less than 3 mg/L (ADWG).

Description Zinc is widely distributed and occurs in small amounts in almost all rocks, commonly as the sulphide. Tap water can contain zinc as a result of the corrosion of zinc coated pipes and fittings. The guideline value is based on aesthetic considerations.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	Locality meeting guideline criteria (Yes/No)
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	Quarterly	4	0.062	0.028	Yes
Ballarat	Ballan	Quarterly	4	0.023	< 0.001	Yes
	Ballarat Central	Quarterly	4	0.003	0.001	Yes
	Ballarat North/Nerrina	Quarterly	4	0.003	0.002	Yes
	Bungaree/Wallace	Quarterly	4	0.003	0.002	Yes
	Buninyong/Mt Helen	Quarterly	4	0.003	< 0.001	Yes
	Cardigan Village	Quarterly	4	0.016	< 0.001	Yes
	Creswick	Quarterly	4	0.004	0.001	Yes
	Enfield	Quarterly	4	0.004	0.002	Yes
	Fiskville/Glenmore	Quarterly	4	0.002	0.001	Yes
	Gordon/Mt Egerton	Quarterly	4	0.011	0.001	Yes
	Haddon	Quarterly	4	0.002	< 0.001	Yes
	Lal Lal	Quarterly	4	0.012	0.002	Yes
	Linton	Quarterly	4	0.005	0.001	Yes
	Napoleons	Quarterly	4	0.005	0.002	Yes
	Sebastopol	Quarterly	4	0.004	< 0.001	Yes
	Skipton	Quarterly	4	0.002	< 0.001	Yes
	Smythesdale	Quarterly	4	0.003	0.002	Yes
	Wendouree	Quarterly	4	0.005	0.002	Yes
Beaufort	Beaufort	Quarterly	4	0.008	< 0.001	Yes
Blackwood	Blackwood/Barrys Reef	Quarterly	4	0.003	< 0.001	Yes
Clunes	Clunes	Quarterly	4	0.006	0.003	Yes
Daylesford	Daylesford High Level	Quarterly	4	0.005	0.002	Yes
	Daylesford Low Level/Hepburn	Quarterly	4	0.004	0.002	Yes
Dean	Dean	Quarterly	4	0.011	0.006	Yes
Forest Hill	Forest Hill	Quarterly	4	0.005	0.002	Yes
Landsborough	Landsborough/Navarre	Quarterly	4	0.031	0.004	Yes
Learmonth	Learmonth	Quarterly	4	0.002	0.001	Yes
Lexton	Lexton	Quarterly	4	0.004	0.003	Yes
Maryborough	Alma	Quarterly	4	0.004	0.001	Yes
	Bet Bet	Quarterly	4	0.002	< 0.001	Yes
	Carisbrook	Quarterly	4	0.004	0.001	Yes
	Daisy Hill	Quarterly	4	0.004	< 0.001	Yes
	Majorca	Quarterly	4	0.003	< 0.001	Yes
	Maryborough	Quarterly	4	0.005	0.001	Yes
	Talbot	Quarterly	4	0.001	< 0.001	Yes
	Timor	Quarterly	4	0.004	< 0.001	Yes
Waubra	Waubra	Quarterly	4	0.012	0.004	Yes
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		-	-	-	-	-
Raglan *		-	-	-	-	-
Redbank *		-	-	-	-	-

* Non-potable water supply system.

\- Not applicable.

Compliance summary

All drinking water systems sampled for zinc were compliant.

No significant trends from the previous two reporting periods are evident.

Table 27

Aesthetic parameters – total alkalinity

Guideline There is no health or aesthetic limit for alkalinity.

Description Total alkalinity is a measure of the ability of the water to buffer changes in pH. Water alkalinity is dependent upon many factors including the nature of the source water and the type of treatment applied to the water. Alkalinity data in the table below is from water treatment plant clear water storages.

Water supply system	Frequency of sampling	No. of samples	Mean (mg/L)	Max (mg/L)	Min (mg/L)
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Monthly	12	60	68	57
Ballarat	Monthly [#]	19 [a]	82	94	70
Beaufort	Monthly	12	14	18	12
Blackwood	Monthly	12	26	50	13
Clunes	Monthly	12	104	120	91
Daylesford	Monthly	12	31	76	17
Dean	Quarterly	4	111	140	95
Forest Hill	Monthly	12	53	57	49
Landsborough	Monthly	12	161	170	150
Learmonth	Quarterly	4	158	160	150
Lexton	Quarterly	4	190	200	180
Maryborough	Monthly	12	115	130	110
Waubra	Quarterly	4	178	180	170

[#] Ballarat includes monthly samples at both Lal Lal and White Swan clear water storages.

[a] Lal Lal WTP taken offline for maintenance from 18 June to 9 July 2025, from 27 July to 5 August 2025, from 26 November to 17 December 2025, and from 24 March to 17 June 2026.

Compliance summary

There is no health or aesthetic limit for total alkalinity; the data displayed in the table is for information only.

Table 28

Other substances – free chlorine

Standard Less than 5 mg/L (ADWG-HEALTH).

Description Free chlorine is an essential component added to disinfect the water and protect from disease-causing organisms.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	Mean (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	Weekly	52	0.80	0.55	0
Ballarat	Ballan	-	-	-	-	-
	Ballarat Central	-	-	-	-	-
	Ballarat North/Nerrina	-	-	-	-	-
	Bungaree/Wallace	-	-	-	-	-
	Buninyong/Mt Helen	-	-	-	-	-
	Cardigan Village	-	-	-	-	-
	Creswick	-	-	-	-	-
	Enfield	-	-	-	-	-
	Fiskville/Glenmore	-	-	-	-	-
	Gordon/Mt Egerton	-	-	-	-	-
	Haddon	-	-	-	-	-
	Lal Lal	-	-	-	-	-
	Linton	-	-	-	-	-
	Napoleons	-	-	-	-	-
	Sebastopol	-	-	-	-	-
	Skipton	-	-	-	-	-
	Smythesdale	-	-	-	-	-
	Wendouree	-	-	-	-	-
Beaufort	Beaufort	Weekly	53	0.90	0.57	0
Blackwood	Blackwood/Barrys Reef	-	-	-	-	-
Clunes	Clunes	Weekly	52	0.80	0.52	0
Daylesford	Daylesford High Level	Weekly	52	0.80	0.48	0
	Daylesford Low Level/Hepburn	Weekly	52	0.90	0.49	0
Dean	Dean	Weekly	52	0.90	0.52	0
Forest Hill	Forest Hill	Weekly	52	0.80	0.67	0
Landsborough	Landsborough/Navarre	Weekly	52	1.0	0.62	0
Learmonth	Learmonth	Weekly	54	0.80	0.52	0
Lexton	Lexton	Weekly	53	1.0	0.69	0
Maryborough	Alma	-	-	-	-	-
	Bet Bet	-	-	-	-	-
	Carisbrook	-	-	-	-	-
	Daisy Hill	-	-	-	-	-
	Majorca	-	-	-	-	-
	Maryborough	-	-	-	-	-
	Talbot	-	-	-	-	-
	Timor	-	-	-	-	-
Waubra	Waubra	Weekly	53	1.1	0.70	0
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		-	-	-	-	-
Raglan *		-	-	-	-	-
Redbank *		-	-	-	-	-

* Non-potable water supply system.

\- Not applicable.

Compliance summary

All drinking water systems sampled for free chlorine were compliant.

No significant trends from the previous two reporting periods are evident.

Parameter only tested in free chlorine systems.

Table 29

Other substances – monochloramine

Standard Less than 5 mg/L (ADWG-HEALTH).

Description Monochloramine is an essential component added to disinfect the water and protect from disease-causing organisms. Small amounts of chlorine gas and ammonia are added to the water to form monochloramines, providing a relatively long-lasting disinfection residual.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	Mean (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	-	-	-	-	-
Ballarat	Ballan	Weekly	52	3.1	1.8	0
	Ballarat Central	Weekly #	195	2.7	2.3	0
	Ballarat North/Nerrina	Weekly	52	2.7	2.2	0
	Bungaree/Wallace	Weekly	52	2.2	0.7	0
	Buninyong/Mt Helen	Weekly #	73	2.7	2.0	0
	Cardigan Village	Weekly	52	2.5	2.0	0
	Creswick	Weekly	52	2.6	2.1	0
	Enfield	Weekly	53	1.8	0.7	0
	Fiskville/Glenmore	Weekly	52	2.8	1.6	0
	Gordon/Mt Egerton	Weekly	52	2.8	2.0	0
	Haddon	Weekly #	72	2.6	1.6	0
	Lal Lal	Weekly	52	3.3	2.3	0
	Linton	Weekly	52	2.1	1.2	0
	Napoleons	Weekly	53	2.4	1.3	0
	Sebastopol	Weekly #	85	2.8	2.2	0
	Skipton	Weekly	52	2.2	1.1	0
	Smythesdale	Weekly	52	2.4	1.4	0
	Wendouree	Weekly #	145	2.8	2.2	0
Beaufort	Beaufort	-	-	-	-	-
Blackwood	Blackwood/Barrys Reef	-	-	-	-	-
Clunes	Clunes	-	-	-	-	-
Daylesford	Daylesford High Level	-	-	-	-	-
	Daylesford Low Level/Hepburn	-	-	-	-	-
Dean	Dean	-	-	-	-	-
Forest Hill	Forest Hill	-	-	-	-	-
Landsborough	Landsborough/Navarre	-	-	-	-	-
Learmonth	Learmonth	-	-	-	-	-
Lexton	Lexton	-	-	-	-	-
Maryborough	Alma	Weekly	52	2.1	1.7	0
	Bet Bet	Weekly	52	2.0	1.6	0
	Carisbrook	Weekly	52	2.1	1.6	0
	Daisy Hill	Weekly	52	2.2	1.8	0
	Majorca	Weekly	52	2.0	1.7	0
	Maryborough	Weekly #	73	2.3	1.9	0
	Talbot	Weekly	52	1.9	1.6	0
	Timor	Weekly	52	2.0	1.5	0
Waubra	Waubra	-	-	-	-	-
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		-	-	-	-	-
Raglan *		-	-	-	-	-
Redbank *		-	-	-	-	-

In this table, results are expressed as mg Cl as Cl2/L. The standard equates to 3 mg/L when expressed as monochloramine.

\# Weekly sampling with increases for population (ADWG, Section 9.5.2).

* Non-potable water supply system.

\- Not applicable.

Compliance summary

All drinking water systems sampled for monochloramine were compliant.

No significant trends from the previous two reporting periods are evident.

Parameter only tested in chloraminated systems.

Table 30

Other substances – cadmium

Standard Less than 0.002 mg/L (ADWG-HEALTH).

Description Cadmium in drinking water potentially indicates contamination from industrial waste or impurities in galvanised (zinc) fittings, solders and brasses. The risk of cadmium contamination is considered very low.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	Quarterly	4	< 0.0002	< 0.0002	0
Ballarat	Ballan	Quarterly	4	< 0.0002	< 0.0002	0
	Ballarat Central	Quarterly	4	< 0.0002	< 0.0002	0
	Ballarat North / Nerrina	Quarterly	4	< 0.0002	< 0.0002	0
	Bungaree/Wallace	Quarterly	4	< 0.0002	< 0.0002	0
	Buninyong/Mt Helen	Quarterly	4	< 0.0002	< 0.0002	0
	Cardigan Village	Quarterly	4	< 0.0002	< 0.0002	0
	Creswick	Quarterly	4	< 0.0002	< 0.0002	0
	Enfield	Quarterly	4	< 0.0002	< 0.0002	0
	Fiskville/Glenmore	Quarterly	4	< 0.0002	< 0.0002	0
	Gordon/Mt Egerton	Quarterly	4	< 0.0002	< 0.0002	0
	Haddon	Quarterly	4	< 0.0002	< 0.0002	0
	Lal Lal	Quarterly	4	< 0.0002	< 0.0002	0
	Linton	Quarterly	4	< 0.0002	< 0.0002	0
	Napoleons	Quarterly	4	< 0.0002	< 0.0002	0
	Sebastopol	Quarterly	4	< 0.0002	< 0.0002	0
	Skipton	Quarterly	4	< 0.0002	< 0.0002	0
	Smythesdale	Quarterly	4	< 0.0002	< 0.0002	0
	Wendouree	Quarterly	4	< 0.0002	< 0.0002	0
Beaufort	Beaufort	Quarterly	4	< 0.0002	< 0.0002	0
Blackwood	Blackwood/Barrys Reef	Quarterly	4	< 0.0002	< 0.0002	0
Clunes	Clunes	Quarterly	4	< 0.0002	< 0.0002	0
Daylesford	Daylesford High Level	Quarterly	4	< 0.0002	< 0.0002	0
	Daylesford Low Level/Hepburn	Quarterly	4	< 0.0002	< 0.0002	0
Dean	Dean	Quarterly	4	< 0.0002	< 0.0002	0
Forest Hill	Forest Hill	Quarterly	4	< 0.0002	< 0.0002	0
Landsborough	Landsborough/Navarre	Quarterly	4	< 0.0002	< 0.0002	0
Learmonth	Learmonth	Quarterly	4	< 0.0002	< 0.0002	0
Lexton	Lexton	Quarterly	4	< 0.0002	< 0.0002	0
Maryborough	Alma	Quarterly	4	< 0.0002	< 0.0002	0
	Bet Bet	Quarterly	4	< 0.0002	< 0.0002	0
	Carisbrook	Quarterly	4	< 0.0002	< 0.0002	0
	Daisy Hill	Quarterly	4	< 0.0002	< 0.0002	0
	Majorca	Quarterly	4	< 0.0002	< 0.0002	0
	Maryborough	Quarterly	4	< 0.0002	< 0.0002	0
	Talbot	Quarterly	4	< 0.0002	< 0.0002	0
	Timor	Quarterly	4	< 0.0002	< 0.0002	0
Waubra	Waubra	Quarterly	4	< 0.0002	< 0.0002	0
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		-	-	-	-	-
Raglan *		-	-	-	-	-
Redbank *		-	-	-	-	-

* Non-potable water supply system.

\- Not applicable.

Compliance summary

All drinking water systems sampled for cadmium were compliant.

No significant trends from the previous two reporting periods are evident.

Table 31

Other substances – copper

Standard Less than 2 mg/L (ADWG-HEALTH); less than 1 mg/L (ADWG-AESTHETIC).

Description Copper is widely distributed in rocks and soils as carbonate and sulphide minerals. Principal sources in water supplies are from the corrosion of brass and copper pipes. High levels may cause a metallic taste and cause blue staining on sanitary fittings.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	No. samples where standard not met (s. 18) #
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	Quarterly	4	0.043	0.003	0
Ballarat	Ballan	Quarterly	4	0.250	0.003	0
	Ballarat Central	Quarterly	4	0.005	0.002	0
	Ballarat North/Nerrina	Quarterly	4	0.004	0.003	0
	Bungaree/Wallace	Quarterly	4	0.110	0.003	0
	Buninyong/Mt Helen	Quarterly	4	0.014	< 0.001	0
	Cardigan Village	Quarterly	4	0.003	0.002	0
	Creswick	Quarterly	4	0.042	< 0.001	0
	Enfield	Quarterly	4	0.003	0.002	0
	Fiskville/Glenmore	Quarterly	4	0.005	0.003	0
	Gordon/Mt Egerton	Quarterly	4	0.005	0.002	0
	Haddon	Quarterly	4	0.003	0.002	0
	Lal Lal	Quarterly	4	0.005	0.002	0
	Linton	Quarterly	4	0.006	0.002	0
	Napoleons	Quarterly	4	0.011	0.002	0
	Sebastopol	Quarterly	4	0.004	0.002	0
	Skipton	Quarterly	4	0.002	0.001	0
	Smythesdale	Quarterly	4	0.005	0.001	0
	Wendouree	Quarterly	4	0.008	0.002	0
Beaufort	Beaufort	Quarterly	4	0.006	0.002	0
Blackwood	Blackwood/Barrys Reef	Quarterly	4	0.009	0.001	0
Clunes	Clunes	Quarterly	4	0.004	< 0.001	0
Daylesford	Daylesford High Level	Quarterly	4	0.004	< 0.001	0
	Daylesford Low Level/Hepburn	Quarterly	4	0.009	< 0.001	0
Dean	Dean	Quarterly	4	0.038	0.005	0
Forest Hill	Forest Hill	Quarterly	4	0.004	< 0.001	0
Landsborough	Landsborough/Navarre	Quarterly	4	0.023	0.002	0
Learmonth	Learmonth	Quarterly	4	0.001	< 0.001	0
Lexton	Lexton	Quarterly	4	0.003	< 0.001	0
Maryborough	Alma	Quarterly	4	0.008	0.003	0
	Bet Bet	Quarterly	4	0.005	0.002	0
	Carisbrook	Quarterly	4	0.010	0.004	0
	Daisy Hill	Quarterly	4	0.007	0.001	0
	Majorca	Quarterly	4	0.010	0.003	0
	Maryborough	Quarterly	4	0.005	0.003	0
	Talbot	Quarterly	4	0.003	0.002	0
	Timor	Quarterly	4	0.006	0.003	0
Waubra	Waubra	Quarterly	4	0.023	0.004	0
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		Quarterly	4	0.680	0.018	NA
Raglan *		Quarterly	4	0.017	0.009	NA
Redbank *		Quarterly	4	0.010	0.004	NA

* Non-potable water supply system.

\# Standard relates to health limit.

Compliance summary

Regulated (non-potable) water supply systems have not been included in analysis.

All systems sampled for copper were compliant with the ADWG health and aesthetic guidelines.

No significant trends from the previous two reporting periods are evident.

Table 32

Other substances – lead

Standard Less than 0.005 mg/L (ADWG-HEALTH).

Description Lead occurs in water through dissolution from natural sources or rare occasions where household plumbing contains lead (eg. pipes, solder). Lead contamination in the reticulation is considered a low risk.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	Monthly	12	< 0.001	< 0.001	0
Ballarat	Ballan	Monthly	12	0.001	< 0.001	0
	Ballarat Central	Monthly	12	< 0.001	< 0.001	0
	Ballarat North/Nerrina	Monthly	12	< 0.001	< 0.001	0
	Bungaree/Wallace	Monthly	12	< 0.001	< 0.001	0
	Buninyong/Mt Helen	Monthly	12	< 0.001	< 0.001	0
	Cardigan Village	Monthly	12	0.001	< 0.001	0
	Creswick	Monthly	12	< 0.001	< 0.001	0
	Enfield	Monthly	12	< 0.001	< 0.001	0
	Fiskville/Glenmore	Monthly	12	< 0.001	< 0.001	0
	Gordon/Mt Egerton	Monthly	12	0.001	< 0.001	0
	Haddon	Monthly	12	< 0.001	< 0.001	0
	Lal Lal	Monthly	12	< 0.001	< 0.001	0
	Linton	Monthly	12	< 0.001	< 0.001	0
	Napoleons	Monthly	12	< 0.001	< 0.001	0
	Sebastopol	Monthly	12	< 0.001	< 0.001	0
	Skipton	Monthly	12	< 0.001	< 0.001	0
	Smythesdale	Monthly	12	< 0.001	< 0.001	0
	Wendouree	Monthly	12	< 0.001	< 0.001	0
Beaufort	Beaufort	Monthly	12	0.001	< 0.001	0
Blackwood	Blackwood/Barrys Reef	Monthly	12	< 0.001	< 0.001	0
Clunes	Clunes	Monthly	12	0.001	< 0.001	0
Daylesford	Daylesford High Level	Monthly	12	0.001	< 0.001	0
	Daylesford Low Level/Hepburn	Monthly	12	< 0.001	< 0.001	0
Dean	Dean	Monthly	12	0.001	< 0.001	0
Forest Hill	Forest Hill	Monthly	12	< 0.001	< 0.001	0
Landsborough	Landsborough/Navarre	Monthly	12	0.001	< 0.001	0
Learmonth	Learmonth	Monthly	12	< 0.001	< 0.001	0
Lexton	Lexton	Monthly	12	< 0.001	< 0.001	0
Maryborough	Alma	Monthly	12	< 0.001	< 0.001	0
	Bet Bet	Monthly	12	< 0.001	< 0.001	0
	Carisbrook	Monthly	12	< 0.001	< 0.001	0
	Daisy Hill	Monthly	12	< 0.001	< 0.001	0
	Majorca	Monthly	12	< 0.001	< 0.001	0
	Maryborough	Monthly	12	0.002	< 0.001	0
	Talbot	Monthly	12	< 0.001	< 0.001	0
	Timor	Monthly	12	< 0.001	< 0.001	0
Waubra	Waubra	Monthly	12	0.005	< 0.001	0
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		-	-	-	-	-
Raglan *		-	-	-	-	-
Redbank *		-	-	-	-	-

* Non-potable water supply system.

\- Not applicable.

Compliance summary

All drinking water systems sampled for lead were compliant.

No significant trends from the previous two reporting periods are evident.

Table 33

Other substances – manganese

Standard Less than 0.1 mg/L (ADWG-HEALTH); less than 0.05 mg/L (ADWG-AESTHETIC).

Description Manganese occurs naturally in surface water and groundwater. At concentrations exceeding 0.05 mg/L, manganese may impart an undesirable taste to water and stain plumbing fixtures and laundry.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	No. samples where standard not met (s. 18) #
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	Monthly	12	< 0.001	< 0.001	0
Ballarat	Ballan	Monthly	12	0.004	< 0.001	0
	Ballarat Central	Monthly	12	0.005	< 0.001	0
	Ballarat North/Nerrina	Monthly	12	0.001	< 0.001	0
	Bungaree/Wallace	Monthly	12	0.003	< 0.001	0
	Buninyong/Mt Helen	Monthly	12	0.006	< 0.001	0
	Cardigan Village	Monthly	12	0.001	< 0.001	0
	Creswick	Monthly	12	< 0.001	< 0.001	0
	Enfield	Monthly	12	0.002	< 0.001	0
	Fiskville/Glenmore	Monthly	12	0.007	< 0.001	0
	Gordon/Mt Egerton	Monthly	12	0.006	< 0.001	0
	Haddon	Monthly	12	0.002	< 0.001	0
	Lal Lal	Monthly	12	0.009	< 0.001	0
	Linton	Monthly	12	0.002	< 0.001	0
	Napoleons	Monthly	12	0.002	< 0.001	0
	Sebastopol	Monthly	12	0.004	< 0.001	0
	Skipton	Monthly	12	0.002	< 0.001	0
	Smythesdale	Monthly	12	0.002	< 0.001	0
	Wendouree	Monthly	12	< 0.001	< 0.001	0
Beaufort	Beaufort	Monthly	12	< 0.001	< 0.001	0
Blackwood	Blackwood/Barrys Reef	Monthly	12	< 0.001	< 0.001	0
Clunes	Clunes	Monthly	12	0.008	0.005	0
Daylesford	Daylesford High Level	Monthly	12	0.026	< 0.001	0
	Daylesford Low Level/Hepburn	Monthly	12	0.020	< 0.001	0
Dean	Dean	Monthly	12	0.011	0.003	0
Forest Hill	Forest Hill	Monthly	12	< 0.001	< 0.001	0
Landsborough	Landsborough/Navarre	Monthly	12	< 0.001	< 0.001	0
Learmonth	Learmonth	Monthly	12	< 0.001	< 0.001	0
Lexton	Lexton	Monthly	12	< 0.001	< 0.001	0
Maryborough	Alma	Monthly	12	0.005	0.002	0
	Bet Bet	Monthly	12	0.004	< 0.001	0
	Carisbrook	Monthly	12	0.005	0.002	0
	Daisy Hill	Monthly	12	0.005	0.002	0
	Majorca	Monthly	12	0.006	0.002	0
	Maryborough	Monthly	12	0.005	0.002	0
	Talbot	Monthly	12	0.005	0.002	0
	Timor	Monthly	12	0.004	0.002	0
Waubra	Waubra	Monthly	12	< 0.001	< 0.001	0
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		Monthly	12	0.120	0.002	NA
Raglan *		Monthly	12	0.055	< 0.001	NA
Redbank *		Monthly	12	0.018	< 0.001	NA

* Non-potable water supply system.

Standard relates to health limit.

Compliance summary

Regulated (non-potable) water supply systems have not been included in analysis.

All systems sampled for manganese were compliant with the ADWG health and aesthetic guidelines.

No other significant trends from the previous two reporting periods are evident.

Table 34

Other substances – nickel

Standard Less than 0.02 mg/L (ADWG-HEALTH).

Description Drinking water generally contains very low concentrations of nickel. Unusually high concentrations, up to 0.5 mg/L, have been reported where water has been in prolonged contact with nickel-plated tap and plumbing fittings.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	Quarterly	4	< 0.001	< 0.001	0
Ballarat	Ballan	Quarterly	4	< 0.001	< 0.001	0
	Ballarat Central	Quarterly	4	< 0.001	< 0.001	0
	Ballarat North/Nerrina	Quarterly	4	< 0.001	< 0.001	0
	Bungaree/Wallace	Quarterly	4	< 0.001	< 0.001	0
	Buninyong/Mt Helen	Quarterly	4	< 0.001	< 0.001	0
	Cardigan Village	Quarterly	4	< 0.001	< 0.001	0
	Creswick	Quarterly	4	< 0.001	< 0.001	0
	Enfield	Quarterly	4	< 0.001	< 0.001	0
	Fiskville/Glenmore	Quarterly	4	< 0.001	< 0.001	0
	Gordon/Mt Egerton	Quarterly	4	< 0.001	< 0.001	0
	Haddon	Quarterly	4	< 0.001	< 0.001	0
	Lal Lal	Quarterly	4	< 0.001	< 0.001	0
	Linton	Quarterly	4	< 0.001	< 0.001	0
	Napoleons	Quarterly	4	< 0.001	< 0.001	0
	Sebastopol	Quarterly	4	< 0.001	< 0.001	0
	Skipton	Quarterly	4	< 0.001	< 0.001	0
	Smythesdale	Quarterly	4	< 0.001	< 0.001	0
	Wendouree	Quarterly	4	< 0.001	< 0.001	0
Beaufort	Beaufort	Quarterly	4	< 0.001	< 0.001	0
Blackwood	Blackwood/Barrys Reef	Quarterly	4	< 0.001	< 0.001	0
Clunes	Clunes	Quarterly	4	< 0.001	< 0.001	0
Daylesford	Daylesford High Level	Quarterly	4	< 0.001	< 0.001	0
	Daylesford Low Level/Hepburn	Quarterly	4	< 0.001	< 0.001	0
Dean	Dean	Quarterly	4	< 0.001	< 0.001	0
Forest Hill	Forest Hill	Quarterly	4	< 0.001	< 0.001	0
Landsborough	Landsborough/Navarre	Quarterly	4	< 0.001	< 0.001	0
Learmonth	Learmonth	Quarterly	4	< 0.001	< 0.001	0
Lexton	Lexton	Quarterly	4	< 0.001	< 0.001	0
Maryborough	Alma	Quarterly	4	0.001	< 0.001	0
	Bet Bet	Quarterly	4	< 0.001	< 0.001	0
	Carisbrook	Quarterly	4	0.001	< 0.001	0
	Daisy Hill	Quarterly	4	< 0.001	< 0.001	0
	Majorca	Quarterly	4	< 0.001	< 0.001	0
	Maryborough	Quarterly	4	0.001	< 0.001	0
	Talbot	Quarterly	4	< 0.001	< 0.001	0
	Timor	Quarterly	4	< 0.001	< 0.001	0
Waubra	Waubra	Quarterly	4	0.002	0.002	0
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		-	-	-	-	-
Raglan *		-	-	-	-	-
Redbank *		-	-	-	-	-

* Non-potable water supply system.

\- Not applicable.

Compliance summary

All drinking water systems sampled for nickel were compliant.

No significant trends from the previous two reporting periods are evident.

Table 35

Other substances – chromium (total)

Standard Less than 0.05 mg/L (ADWG-HEALTH).

Description Chromium is derived from industrial contamination of raw water or corrosion of materials in the distribution system / plumbing. The risk of chromium contamination is very low.

Water supply system	Water sampling area	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Avoca	Quarterly	4	< 0.001	< 0.001	0
Ballarat	Ballan	Quarterly	4	< 0.001	< 0.001	0
	Ballarat Central	Quarterly	4	< 0.001	< 0.001	0
	Ballarat North/Nerrina	Quarterly	4	< 0.001	< 0.001	0
	Bungaree/Wallace	Quarterly	4	< 0.001	< 0.001	0
	Buninyong/Mt Helen	Quarterly	4	< 0.001	< 0.001	0
	Cardigan Village	Quarterly	4	< 0.001	< 0.001	0
	Creswick	Quarterly	4	< 0.001	< 0.001	0
	Enfield	Quarterly	4	< 0.001	< 0.001	0
	Fiskville/Glenmore	Quarterly	4	< 0.001	< 0.001	0
	Gordon/Mt Egerton	Quarterly	4	< 0.001	< 0.001	0
	Haddon	Quarterly	4	< 0.001	< 0.001	0
	Lal Lal	Quarterly	4	< 0.001	< 0.001	0
	Linton	Quarterly	4	< 0.001	< 0.001	0
	Napoleons	Quarterly	4	< 0.001	< 0.001	0
	Sebastopol	Quarterly	4	< 0.001	< 0.001	0
	Skipton	Quarterly	4	< 0.001	< 0.001	0
	Smythesdale	Quarterly	4	< 0.001	< 0.001	0
	Wendouree	Quarterly	4	< 0.001	< 0.001	0
Beaufort	Beaufort	Quarterly	4	< 0.001	< 0.001	0
Blackwood	Blackwood/Barrys Reef	Quarterly	4	< 0.001	< 0.001	0
Clunes	Clunes	Quarterly	4	< 0.001	< 0.001	0
Daylesford	Daylesford High Level	Quarterly	4	< 0.001	< 0.001	0
	Daylesford Low Level/Hepburn	Quarterly	4	< 0.001	< 0.001	0
Dean	Dean	Quarterly	4	< 0.001	< 0.001	0
Forest Hill	Forest Hill	Quarterly	4	< 0.001	< 0.001	0
Landsborough	Landsborough/Navarre	Quarterly	4	< 0.001	< 0.001	0
Learmonth	Learmonth	Quarterly	4	< 0.001	< 0.001	0
Lexton	Lexton	Quarterly	4	< 0.001	< 0.001	0
Maryborough	Alma	Quarterly	4	< 0.001	< 0.001	0
	Bet Bet	Quarterly	4	< 0.001	< 0.001	0
	Carisbrook	Quarterly	4	< 0.001	< 0.001	0
	Daisy Hill	Quarterly	4	< 0.001	< 0.001	0
	Majorca	Quarterly	4	< 0.001	< 0.001	0
	Maryborough	Quarterly	4	< 0.001	< 0.001	0
	Talbot	Quarterly	4	< 0.001	< 0.001	0
	Timor	Quarterly	4	< 0.001	< 0.001	0
Waubra	Waubra	Quarterly	4	< 0.001	< 0.001	0
REGULATED WATER SUPPLY SYSTEMS						
Amphitheatre *		-	-	-	-	-
Raglan *		-	-	-	-	-
Redbank *		-	-	-	-	-

* Non-potable water supply system.

\- Not applicable.

Compliance summary

All drinking water systems sampled for chromium (total) were compliant.

No significant trends from the previous two reporting periods are evident.

Table 36

Other substances – arsenic

Standard Less than 0.01 mg/L (ADWG-HEALTH).

Description Arsenic originates from natural sources, as well as mining, industrial and agricultural wastes. Data in the table below is from the water treatment plant clear water storage.

Water supply system	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Annually	1	< 0.001	< 0.001	0
Ballarat	Annually	2	< 0.001	< 0.001	0
Beaufort	Annually	1	< 0.001	< 0.001	0
Blackwood	Quarterly	4	< 0.001	< 0.001	0
Clunes	Annually	1	< 0.001	< 0.001	0
Daylesford	Annually	1	< 0.001	< 0.001	0
Dean	Annually	1	< 0.001	< 0.001	0
Forest Hill	Annually	1	< 0.001	< 0.001	0
Landsborough	Annually	1	< 0.001	< 0.001	0
Learmonth	Annually	1	< 0.001	< 0.001	0
Lexton	Annually	1	< 0.001	< 0.001	0
Maryborough	Annually	1	< 0.001	< 0.001	0
Waubra	Annually	1	< 0.001	< 0.001	0

Compliance summary

All drinking water systems sampled for arsenic were compliant.

No significant trends from the previous two reporting periods are evident.

Table 37

Other substances – cyanide

Standard Less than 0.08 mg/L (ADWG-HEALTH).

Description Cyanide can be present in drinking water primarily through the contamination of source water. Cyanide was traditionally used in the extraction of gold and silver from low-grade ores and is also used in the electroplating, steel and chemical industries. The risk of cyanide contamination is very low. Data in the table below is from the water treatment plant clear water storage.

Water supply system	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Annually	1	< 0.005	< 0.005	0
Ballarat	Annually	2	< 0.005	< 0.005	0
Beaufort	Annually	1	< 0.005	< 0.005	0
Blackwood	Annually	1	< 0.005	< 0.005	0
Clunes	Annually	1	< 0.005	< 0.005	0
Daylesford	Annually	1	< 0.005	< 0.005	0
Dean	Annually	1	< 0.005	< 0.005	0
Forest Hill	Annually	1	< 0.005	< 0.005	0
Landsborough	Annually	1	< 0.005	< 0.005	0
Learmonth	Annually	1	< 0.005	< 0.005	0
Lexton	Annually	1	< 0.005	< 0.005	0
Maryborough	Annually	1	< 0.005	< 0.005	0
Waubra	Annually	1	< 0.005	< 0.005	0

Compliance summary

All drinking water systems sampled for cyanide were compliant.

No significant trends from the previous two reporting periods are evident.

Table 38

Other substances – mercury

Standard Less than 0.001 mg/L (ADWG-HEALTH).

Description Mercury originates through industrial emissions and spills with very low concentrations occurring naturally. Mercury in drinking water is of inorganic form and is poorly absorbed. Data in the table below is from the water treatment plant clear water storage.

Water supply system	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Annually	1	< 0.0001	< 0.0001	0
Ballarat	Annually	2	< 0.0001	< 0.0001	0
Beaufort	Annually	1	< 0.0001	< 0.0001	0
Blackwood	Annually	1	< 0.0001	< 0.0001	0
Clunes	Annually	1	< 0.0001	< 0.0001	0
Daylesford	Annually	1	< 0.0001	< 0.0001	0
Dean	Annually	1	< 0.0001	< 0.0001	0
Forest Hill	Annually	1	< 0.0001	< 0.0001	0
Landsborough	Annually	1	< 0.0001	< 0.0001	0
Learmonth	Annually	1	< 0.0001	< 0.0001	0
Lexton	Annually	1	< 0.0001	< 0.0001	0
Maryborough	Annually	1	< 0.0001	< 0.0001	0
Waubra	Annually	1	< 0.0001	< 0.0001	0

Compliance summary

All drinking water systems sampled for mercury were compliant.

No significant trends from the previous two reporting periods are evident.

Table 39

Other substances – selenium

Standard Less than 0.004 mg/L (ADWG-HEALTH).

Description Selenium generally occurs at very low concentrations in water supplies.
Data in the table below is from the water treatment plant clear water storage.

Water supply system	Frequency of sampling	No. of samples	Max (mg/L)	Min (mg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Annually	1	< 0.001	< 0.001	0
Ballarat	Annually	2	< 0.001	< 0.001	0
Beaufort	Annually	1	< 0.001	< 0.001	0
Blackwood	Annually	1	< 0.001	< 0.001	0
Clunes	Annually	1	< 0.001	< 0.001	0
Daylesford	Annually	1	< 0.001	< 0.001	0
Dean	Annually	1	< 0.001	< 0.001	0
Forest Hill	Annually	1	< 0.001	< 0.001	0
Landsborough	Quarterly	5	< 0.001	< 0.001	0
Learmonth	Annually	1	< 0.001	< 0.001	0
Lexton	Annually	1	< 0.001	< 0.001	0
Maryborough	Annually	1	< 0.001	< 0.001	0
Waubra	Annually	1	< 0.001	< 0.001	0

Compliance summary

All drinking water systems sampled for selenium were compliant.

No significant trends from the previous two reporting periods are evident.

Table 40

Other substances – NDMA

Standard Less than 0.1 µg/L (ADWG-HEALTH).

Description N-Nitrosodimethylamine (NDMA) is a disinfection by-product primarily associated with chloramine disinfection. It can be formed due to the oxidation of natural organic matter by chlorine in the presence of ammonia. Data in the table below is from the water treatment plant clear water storage.

Water supply system	Frequency of sampling	No. of samples	Max (µg/L)	Min (µg/L)	Mean (µg/L)	No. samples where standard not met (s. 18)
DRINKING WATER SUPPLY SYSTEMS						
Ballarat	Quarterly	6 [a]	0.004	< 0.003	0.003	0
Maryborough	Quarterly	4	0.009	0.007	0.008	0

[a] Lal Lal WTP taken offline for maintenance from 18 June to 9 July 2025, from 27 July to 5 August 2025, from 26 November to 17 December 2025, and from 24 March to 17 June 2026.

Compliance summary

All drinking water systems sampled for NDMA were compliant.

Table 41

Health related organic compounds

Description A range of organic compounds are monitored for each supply on an annual basis to ensure that they remain below health limits. Risk assessment processes for each supply determine the likely presence of organic compounds in each catchment.

Water supply system	Frequency of sampling	No. of samples	Benzene (mg/L)	Benzo (a) pyrene (mg/L)	Carbon tetrachloride [a] (mg/L)	1,2 - dichloroethane (mg/L)	1,1 - dichloroethene (mg/L)	Penta chlorophenol [a] (mg/L)	Tetra chloroethene (mg/L)	Tri chloroethene (mg/L)	2,4,6 - trichlorophenol [a] (mg/L)	Complying (Yes/No)
DRINKING WATER SUPPLY SYSTEMS												
Avoca	Annually	2	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes
Ballarat	Annually	3	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes
Beaufort	Annually	1	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes
Blackwood	Annually	1	< 0.001	< 0.000002	-	< 0.001	< 0.0001	-	< 0.001	< 0.001	-	Yes
Clunes	Annually	1	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes
Daylesford	Annually	3	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes
Dean	Annually	1	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes
Forest Hill	Annually	3	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes
Landsborough	Annually	1	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes
Learmonth	Annually	2	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes
Lexton	Annually	1	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes
Maryborough	Annually	4	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes
Waubra	Annually	1	< 0.001	< 0.000002	< 0.001	< 0.001	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	Yes

Samples collected from untreated water locations except [a] carbon tetrachloride, pentachlorophenol and 2,4,6 – trichlorophenol analysed on chlorine-based disinfected treated water samples from the water treatment plant clear water storage (single samples).

Compliance summary

All systems sampled for health-related organic compounds were compliant.

No significant trends from the previous two reporting periods are evident.

No chlorine related organic compound testing was conducted within the Blackwood system as chlorine disinfection is not used at the Blackwood Water Treatment Plant.

Table 42a

Pesticides

Description A range of pesticides are monitored in untreated source water for each supply on an annual basis. Risk assessment processes for each supply determine the likely presence of pesticides in each catchment.

Water supply system	Frequency of sampling	No. of samples	OC Scan [a] (mg/L)	OP Scan [b] (mg/L)	Triazine Herbicides				Phenoxy AA					Carbamates		Complying (Yes/No)
					Atrazine (mg/L)	Simazine (mg/L)	Terbuthylazine (mg/L)	Other Triazine Herbicides [c] (mg/L)	2,4-D (mg/L)	Clopyralid (mg/L)	MCPA (mg/L)	Triclopyr (mg/L)	Other Phenoxy AA [d] (mg/L)	Benomyl (mg/L)	Other Carbamates [e] (mg/L)	
DRINKING WATER SUPPLY SYSTEMS																
Avoca	Annually	2	ND	ND	< 0.00001	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00001	< 0.00001	ND	< 0.00001	ND	Yes
Ballarat	Annually	3	ND	ND	0.00001	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00004	0.00001	ND	< 0.00001	ND	Yes
Beaufort	Annually	1	ND	ND	< 0.00001	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00001	< 0.00001	ND	< 0.00001	ND	Yes
Blackwood	Annually	1	ND	ND	< 0.00001	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00001	< 0.00001	ND	< 0.00001	ND	Yes
Clunes	Annually	1	ND	ND	< 0.00001	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00001	< 0.00001	ND	< 0.00001	ND	Yes
Daylesford	Annually	3	ND	ND	< 0.00002	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00001	< 0.00001	ND	< 0.00001	ND	Yes
Dean	Annually	1	ND	ND	< 0.00001	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00001	< 0.00001	ND	< 0.00001	ND	Yes
Forest Hill	Annually	3	ND	ND	< 0.00001	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00001	< 0.00001	ND	< 0.00001	ND	Yes
Landsborough	Annually	1	ND	ND	< 0.00001	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00001	< 0.00001	ND	< 0.00001	ND	Yes
Learmonth	Annually	2	ND	ND	< 0.00001	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00001	< 0.00001	ND	< 0.00001	ND	Yes
Lexton	Annually	1	ND	ND	< 0.00001	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00001	< 0.00001	ND	< 0.00001	ND	Yes
Maryborough	Annually	4	ND	ND	0.00006	0.00007	0.00002	ND	0.00003	0.00059	0.00003	0.00002	ND	0.00001	ND	Yes
Waubra	Annually	1	ND	ND	< 0.00001	< 0.00002	< 0.00001	ND	< 0.00001	< 0.00005	< 0.00001	< 0.00001	ND	< 0.00001	ND	Yes
Health limit *	**-**	**-**	**-**	**-**	**0.02**	**0.02**	**0.01**	**-**	**0.03**	**2**	**0.04**	**0.02**	**-**	**0.09**	**-**	**-**

* The health limit (ADWG) is only quoted where a pesticide was detected.

ND Not detected.

\- Not applicable.

[a] The Organo-Chlorine (OC) Scan includes the following parameters: Aldrin; BHC (alpha isomer); BHC (beta isomer); BHC (delta isomer); cis-Chlordane; trans-Chlordane; Chlordane; 4,4´-DDD; 4,4´-DDE; 4-4´-DDT; Dieldrin; Endosulfan I; Endosulfan II; Endosulphan; Endosulphan Sulfate; Endrin; Endrin Aldehyde; Endrin Ketone; Hexachlorobenzene; Heptachlor; Heptachlor Epoxide; Lindane (BHC gamma isomer); Methoxychlor; Oxy-Chlordane.

[b] The Organo-Phosphorus (OP) Scan includes the following parameters: Azinphos-ethyl; Azinphos-methyl; Bromophos-ethyl; Carbofenothion; Chlorfenvinphos; Chlorpyrifos; Chlorpyrifos-methyl; Coumaphos; Demeton-O & Demeton-S; Demeton-S-methyl; Diazinon; Dichlorvos; Dimethoate; Disulfoton; EPN; Ethion; Ethoprophos; Fenamiphos; Ronnel (Fenchlorphos); Fenitrothion; Fensulfothion; Fenthion; Malathion; Methidathion; Mevinphos; Monocrotophos; Omethoate; (Ethyl) Parathion; Methyl Parathion; Phorate; Pirimiphos-ethyl; Pirimiphos-methyl; Profenofos; Prothiofos; Sulfotep; Sulprofos; Temephos; Terbufos; Tetrachlovinphos; Triazophos; Trichlorfon; Trichloronate.

[c] The Triazine Herbicide group which did not have results above the test detection limit includes the following parameters: Ametryn; Cyanazine; Cyromazine; Irgarol; Prometryn; Propazine; Terbutryn.

[d] The Phenoxy Acetic Acid (AA) group which did not have results above the test detection limit includes the following parameters: 2,4,5-T; 2,4,6-T; 2,4-DB; 2,6-D; 4-CPA; Bentazon; Bromoxynil; Dicamba; Dichlorprop; Dinoseb; Fluroxypyr; MCPB; Mecoprop; Picloram; Silvex.

[e] The Carbamates group which did not have results above the test detection limit includes the following parameters: Aldicarb; Bendiocarb; Carbaryl; Carbofuran; 3-Hydroxy Carbofuran; Methiocarb; Methomyl; Molinate; Oxamyl; Thiobencarb; Thiodicarb.

Table 42b

Pesticides (continued)

Water supply system	Frequency of sampling	No. of samples	Dinitroan-ilines [f] (mg/L)	Fungi -cides [g] (mg/L)	Sulfonyl-urea Herbicides [h] (mg/L)	ESI Positive Pesticides [i] (mg/L)	Pyreth-roids [j] (mg/L)	Metsul-furon methyl (mg/L)	Triazinone Herbicides [k] (mg/L)	Diquat (mg/L)	Paraquat (mg/L)	Metola-chlor (mg/L)	Propa -chlor (mg/L)	Glypho -sate & AMPA (mg/L)	Complying (Yes/No)
DRINKING WATER SUPPLY SYSTEMS															
Avoca	Annually	2	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	-	-	< 0.00001	< 0.0001	< 0.03	Yes
Ballarat	Annually	3	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	< 0.00005	< 0.0001	< 0.00001	< 0.0001	< 0.03	Yes
Beaufort	Annually	1	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	-	-	< 0.00001	< 0.0001	< 0.03	Yes
Blackwood	Annually	1	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	-	-	< 0.00001	< 0.0001	< 0.03	Yes
Clunes	Annually	1	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	-	-	< 0.00001	< 0.0001	< 0.03	Yes
Daylesford	Annually	3	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	-	-	< 0.00001	< 0.0001	< 0.03	Yes
Dean	Annually	1	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	-	-	< 0.00001	< 0.0001	< 0.03	Yes
Forest Hill	Annually	3	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	-	-	< 0.00001	< 0.0001	< 0.03	Yes
Landsborough	Annually	1	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	-	-	< 0.00001	< 0.0001	< 0.03	Yes
Learmonth	Annually	2	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	-	-	< 0.00001	< 0.0001	< 0.03	Yes
Lexton	Annually	1	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	-	-	< 0.00001	< 0.0001	< 0.03	Yes
Maryborough	Annually	4	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	< 0.00005	< 0.0001	0.00002	< 0.0001	< 0.03	Yes
Waubra	Annually	1	ND	ND	ND	ND	< 0.0002	< 0.005	< 0.00002	-	-	< 0.00001	< 0.0001	< 0.03	Yes
Health limit *	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.3**	**-**	**-**	**-**

* The health limit (ADWG) is only quoted where a pesticide was detected.

ND Not detected.

\- Not applicable.

[f] The Dinitroanilines Scan includes the following parameters: Pendimethalin; Trifluralin.

[g] The Fungicide group includes the following parameters: Cyproconazole; Difenoconazole; Flusilazole; Hexaconazole; Paclobutrazole; Penconazole; Propiconazole; Cyprodinil; Pyrimethanil; Tebuconazole.

[h] The Sulfonylurea Herbicide group includes the following parameters: Diuron; Fluometuron; Tebuthiuron; Bromacil; Chlorsulfuron.

[i] The ESI Positive group includes the following parameters: Diclofop-methyl; Fenarimol; Oxyfluorfen, Thiamethoxam.

[j] The Pyrethroids Scan includes the following parameters: Bioresmethrin; Bifenthrin; Phenothrin; Lambda-cyhalothrin; Permethrin; Cyfluthrin; Cypermethrin; Fenvalverate & Esfenvalerate; Deltamethrin & Tralomethrin; Fluvalinate; Piperonyl Butoxide.

[k] The Triazinone Herbicide Scan includes the following parameters: Hexazinone; Metribuzin.

Compliance summary

Refer to Tables 42a and 42b.

All systems sampled for pesticides were compliant.

No significant trends from the previous two reporting periods are evident.

Improvements in the level of detection capability by the laboratory analysis have resulted in the low-level detection of some pesticides. In all cases, pesticide detections are significantly below health limits specified in the Australian Drinking Water Guidelines.

Table 43

Radiological parameters

Description The radiological quality of drinking water is assessed by screening for gross alpha and beta concentrations which should be below 0.5 Bq/L. The risk of radiological contamination is very low. Analysis is conducted on source waters.

Water supply system	Frequency of sampling	No. of samples	Gross alpha activity Bq/L	Gross beta activity * Bq/L	Complying (Yes/No)
DRINKING WATER SUPPLY SYSTEMS					
Avoca	Annually	2	< 0.05	< 0.1	Yes
Ballarat	Annually	3	< 0.05	< 0.1	Yes
Beaufort	Annually	1	< 0.05	< 0.1	Yes
Blackwood	Annually	1	< 0.05	< 0.1	Yes
Clunes	Annually	1	0.12	< 0.1	Yes
Daylesford	Annually	3	< 0.05	< 0.1	Yes
Dean	Annually	1	< 0.05	< 0.1	Yes
Forest Hill	Annually	3	< 0.05	< 0.1	Yes
Landsborough	Annually	1	0.12	< 0.1	Yes
Learmonth	Annually	2	< 0.05	0.15	Yes
Lexton	Annually	1	0.22	0.18	Yes
Maryborough	Annually	4	< 0.05	< 0.1	Yes
Waubra	Annually	1	< 0.05	< 0.1	Yes

* Corrected for potassium-40 by 27.6 Bq/g.

Compliance summary

All drinking water systems sampled for radiological parameters were compliant.

No significant trends from the previous two reporting periods are evident.

Table 44

Per- and poly-fluoroalkyl substances (PFAS)

Description A range of PFAS compounds are monitored for each supply on an annual basis to ensure that they remain below health limits. PFAS contamination is assessed as a very low risk in our water supplies, as there are no identified significant potential contributing sources in our catchment areas. Analysis is conducted on source waters.

Water supply system	Frequency of sampling	No. of samples	PFOA (µg/L)	PFOS (µg/L)	PFHxS (µg/L)	PFBS (µg/L)
DRINKING WATER SUPPLY SYSTEMS						
Avoca	Annually	1	ND	ND	ND	ND
Ballarat	Annually	2	ND	ND	ND	ND
Beaufort	Annually	1	ND	ND	ND	ND
Blackwood	Annually	1	ND	ND	ND	ND
Clunes	Annually	1	ND	ND	ND	ND
Daylesford	Annually	1	ND	ND	ND	ND
Dean	Annually	1	ND	ND	ND	ND
Forest Hill	Annually	1	ND	ND	ND	ND
Landsborough	Annually	1	ND	ND	ND	ND
Learmonth	Annually	1	ND	ND	ND	ND
Lexton	Annually	1	ND	ND	ND	ND
Maryborough	Annually	1	ND	ND	ND	ND
Waubra	Annually	1	ND	ND	ND	ND
Health Limit			**0.2**	**0.008**	**0.03**	**1**

ND (Not Detected) indicates that PFAS concentrations were below the laboratory limit of detection, which is typically less than 0.002 µg/L.

PFOA – perfluorooctanoic acid

PFOS – perfluorooctane sulfonic acid

PFHxS – perfluorohexane sulfonic acid

PFBS – perfluorobutane sulfonic acid

Compliance summary

All drinking water systems sampled for PFAS parameters were compliant.

Part 6

Emergency and Incident Management

The information reported below provides a summary of each incident, issue or event during 2025-26, which had a potential or actual impact on the quality of the drinking water.

Section 18 incidents

The objective of section 18 of the *Safe Drinking Water Act 2003* is to alert DH to potential issues in relation to the supply of drinking water that may not comply with specific standards, which requires further investigation or actions.

Table 45

Section 18 incident summary

Date of incident	Location of incident	Nature of incident	Potentially affected / affected drinking water supplies	Actions taken in response to incident
16 April 2026	Fiskville/ Glenmore water sampling area customer tap (Ballarat system)	*E. coli* – 1 org/100mL	Fiskville/Glenmore reticulation	Informed DH. Rapid risk assessment conducted and determined to be a low risk. Recent water quality data (including microbiological monitoring data) reviewed for the upstream reticulation network and confirmed to be within expectations. Location is at the extremities of the distribution network and had been experiencing a period of low disinfection residuals due to nitrification effects. Sample point inspected with no signs of degradation, however an opportunity to reconfigure the sample point to reduce the likelihood of sample contamination was identified. Location resampled along with other upstream reticulation sites with clear results. A preventative flushing program was implemented with the aim of maintaining disinfection levels. Notification reports submitted to DH and improvement opportunities related to the sample point location and flushing program actioned.
4 June 2026	Fiskville/ Glenmore water sampling area customer tap (Ballarat system)	*E. coli* – 1 org/100mL	Fiskville/Glenmore reticulation	Informed DH. Rapid risk assessment conducted and determined to be a low risk. Detection location was different to prior detection in April. Recent water quality data (including microbiological monitoring data) reviewed for the upstream reticulation network and confirmed to be within expectations. Location was continuing to experience a period of low disinfection residuals due to nitrification effects. Location resampled along with other upstream reticulation sites with clear results. Lal Lal Water Treatment Plant brought back into supply from hot standby to assist in boosting disinfection levels. Design changes made to upstream break pressure pits along with spot chlorine dosing as required. Notification reports submitted to DH and improvement opportunities actioned.

Section 22 incidents

The objective of section 22 of the *Safe Drinking Water Act 2003* is to protect public health. CHW must inform DH of any potential or actual contaminated water supplied for drinking purposes, or may cause widespread public complaint.

Table 46

Section 22 incident summary

Date of incident	Location of incident	Nature of incident	Potentially affected / affected drinking water supplies	Actions taken in response to incident
16 April 2026	Fiskville/ Glenmore water sampling area customer tap (Ballarat system)	*E. coli* – 1 org/100mL	Fiskville/Glenmore reticulation	See Table 45
4 June 2026	Fiskville/ Glenmore water sampling area customer tap (Ballarat system)	*E. coli* – 1 org/100mL	Fiskville/Glenmore reticulation	See Table 45



White Swan Reservoir

Part 7

Water Quality Improvement Projects

Source water improvements

Water resource planning

We utilise water resource planning processes at the regional, local and project scale to support the creation and implementation of water quality improvement initiatives. In our Price Submission 2023-28, we outlined a commitment to deliver a range of major projects related to water quality, as well as two key water quality equity outcomes.

Progress against the major water quality projects committed for delivery during the 2023-28 period has been:

- construction of the White Swan Water Treatment Plant UV upgrade was completed
- construction commenced for the Daylesford Water Treatment Plant upgrade
- investigations continued to inform the Waubra Water Quality Improvement project
- discussions continued with stakeholder partners to seek commitment and resources to implement the Tullaroop Integrated Catchment Management Plan.

Progress towards delivering the water quality equity outcomes has been:

- the detailed study of customer needs in Raglan, Amphitheatre and Redbank (towns without access to potable water) was completed
- the customer rebate program to assist in maintaining water quality in rainwater tanks used for drinking purposes was offered to Amphitheatre, Raglan and Redbank customers.

In addition to the above commitments, we were involved in the following strategic water improvements initiatives to derive future water quality benefits to communities within our region:

- a functional design, detailed business case and funding submission bid to the National Water Grid Fund was completed for the proposed connection of the Maryborough water supply system to the Goldfields Superpipe
- a functional design, site feature survey, geotechnical work and detailed business case for a pipeline connection to the Forest Hill water supply system was progressed to draft report status
- a preliminary business case for the Southern Wimmera Northeast Pyrenees pipeline proposal was completed in collaboration with our key stakeholder partners
- development of an updated Urban Water Strategy commenced and is due for completion in 2027.

Our key water resource planning documents such as the Urban Water Strategy, Price Submission 2023-28, Drought Preparedness Plan and Annual Water Outlook are publicly available on our website: chw.net.au

Town planning

Water quality can be affected by inappropriate development within catchments and incremental land use change from broad-scale agriculture to residential development. To protect against these risks, the Corporation actively participates in Victoria's planning policy framework by influencing planning at a state and local level.

At a state level, we influence planning by:

- providing input and recommendations during the development of government guidelines relating to planning permits and residential developments in water supply catchments
- ensuring water supply catchments are listed under Schedule 5 of the *Catchment and Land Protection Act 1994*, which establishes CHW as a referral authority

At a local level, we protect water supply catchments and influences planning by:

- ensuring that local planning policy frameworks include policy statements, zoning and overlays that protect water catchments
- actively exercising referral powers by not supporting inappropriate development and disputing planning permit decisions
- working with developers at the investigation stage, prior to formal planning applications, and discouraging inappropriate development from being further considered/applied for.

In 2025-26, we processed 53 planning permit applications for proposed developments within special water supply catchments (e.g. new dwellings and for uses such as sheds, subdivisions and dwelling extensions or replacements). Most referrals were from developments within the Tullaroop Catchment and the Lal Lal Catchment. Of these applications, all were eventually supported and included permit conditions necessary to manage the impact of the proposed development on water quality. In several cases, applicants were required to undertake additional investigations and/or resubmit applications with a higher level of wastewater management to receive our conditional approval.

We objected to a 2-lot subdivision in the Lal Lal Catchment based on the proposed lot being less than 0.4ha which is considered high risk, not complying with relevant guidelines and being inconsistent with numerous clauses in the Moorabool Planning Scheme. To date the applicant has not taken the matter further.

In addition, several developments deemed unsuitable by CHW did not proceed to a planning application. These did not proceed as a result of CHW, often in collaboration with local government, assessing risks and providing pre-application advice to prospective developers and purchasers. We continue to regularly receive queries from prospective purchasers regarding development within our catchments, with many of these queries concerning well known constrained sites.

To ensure a consistent approach in assessing planning permit referrals, we utilise our Water Catchment Protection – Assessment of Proposed Developments policy which is reviewed every two years. This policy outlines relevant objectives and policy standards for water catchment protection.

We also actively work with all relevant municipalities to develop and monitor progress of their Onsite Wastewater Management Plans. In urban areas, this has included assisting councils and landowners to eliminate onsite wastewater systems, when connection to sewer is feasible.

Water Catchment Protection Policy

We utilise the Ministerial guidelines (Planning Permit Applications in Special Water Supply Catchment Areas) for planning permit applications in open, potable water supply catchment areas in its role as a referral agency under the *Planning and Environment Act 1987*.

The guidelines require local government to review and update Onsite Wastewater Management Plans (OWMP) to ensure the incorporation of the requirements listed in the guidelines. In 2025-26, we have continued to constructively work with relevant municipalities, such as Hepburn Shire and Moorabool Shire, on the implementation of their OWMPs. This includes regular meetings and correspondence with these Councils to discuss their inspection programs and findings.

Health based targets – catchment assessments

Our drinking water catchments and groundwater systems continued to be evaluated for risks against the health-based targets model. Supplies were risk assessed with supporting water quality data to determine an appropriate source microbial risk category. We also reviewed and redrafted our Standard Operating Procedures (SOPs) relating to source water evaluations.

Catchment risk management

The SOP for Catchment Land Use Risk Assessment continued to be implemented. The Land Use Evaluation Tool is utilised to facilitate informed land use choices, based on a multi-criteria catchment risk assessment.

Regional catchment strategies

We continued to support the Victorian Government's *Our Catchments, Our Communities* strategy through Catchment Partnership Agreements and a formalised Memorandum of Understanding (MoU) with the Corangamite and North Central Catchment Management Authorities (CMAs).

Tullaroop Integrated Catchment Management Plan

The Tullaroop catchment supplies potable water for Maryborough, and neighbouring towns, while also meeting other significant environmental, urban and rural demands within and beyond the catchment. Integrated management will be essential in the long-term to allow the catchment to continue to meet these diverse needs amid increasing climatic, user and environmental pressures.

We continue to partner with the North Central Catchment Management Authority (NCCMA), Goulburn Murray Water (GMW) and Dja Dja Wurrung Clans Aboriginal Corporation to implement the Tullaroop Integrated Catchment Management Plan (TICMP).

This project continues to operate under state government EC6 funding until 2028. CHW has contributed $300,000 towards the project over the past 2 years and will continue with in-kind support of the project throughout this funding round.

Water treatment plant improvements

Several water treatment plant improvement programs, focusing on improved treatment and operational reliability, continued to be delivered across the region in 2025-26.

Avoca Water Treatment Plant

Further optimisation of the reverse osmosis process was conducted to improve the desalination recovery rate and treated water quality.

Ballarat Water Treatment Plants

Six UV disinfection treatment units were installed on each DAFF cell at the White Swan Water Treatment Plant for improved disinfection performance.

New chlorine, chloramine and ammonia analysers were installed at each plant to enhance monitoring of chloramination disinfection conditions.

Improvements were made to the fitment of the tank liner in the Lal Lal Clear Water Storage.

Treated water tank cleaning was carried out by divers to reduce the potential for dirty water events at high flows.

Beaufort Water Treatment Plant

Treated water tank cleaning was carried out by divers to reduce the potential for dirty water events at high flows.

Blackwood Water Treatment Plant

Improved mixing of the two raw water storage basins improved the treatability of the feed water to the Water Treatment Plant.

Treated water tank cleaning was carried out by divers to reduce the potential for dirty water events at high flows.

Clunes Water Treatment Plant

A source water bore was treated with a cleaning agent, and a variable speed drive was installed on the pump to improve efficiency and operability.

Treated water tank cleaning was carried out by divers to reduce the potential for dirty water events at high flows.

Daylesford Water Treatment Plant

The mixing chamber at the head of the plant, mixing boxes and DAFF filter beds were cleaned and inspected for ongoing efficient and effective operation.

The design and safety in design processes have been completed for the Goldfields Superpipe source water augmentation project. Works have now commenced with final delivery expected in late 2027.

Lexton Water Treatment Plant

The ultrafiltration unit was serviced and inspected to maintain operational reliability.

Learmonth Water Treatment Plant

UV disinfection has been added to the treatment train to complement the existing chlorine disinfection arrangement. Installation works and commissioning were completed in March 2026.

Landsborough Water Treatment Plant

The design has been completed to convert the current Electro Dialysis Reversal (EDR) treatment process that is coming to end of life, to Reverse Osmosis (RO), for greater operational flexibility and reliability. Delivery of the project is expected in late 2026.

Maryborough Water Treatment Plant

Due to low source water inflows, the RO plant continued to be operated over the reporting period (from June 2025) to manage the risk of higher hardness levels in the treated water.

The RO lead elements were sent for autopsy to determine the integrity of the membranes.

Treated water tank cleaning was carried out by divers to reduce the potential for dirty water events at high flows.

Distribution system improvements

Mains cleaning program

We undertake systematic mains cleaning through our water supply systems to improve the quality of drinking water supplied to customers.

The cleaning process used varies, involving either traditional flushing from hydrants or utilising air scouring techniques. Air scouring involves the controlled injection of filtered compressed air into the water mains, increasing the water flow above that of normal operation. The increased flow, together with a controlled mix of air and water, scours the pipe and removes a build-up of sediment. Sediment can potentially contribute to dirty water, taste and odour, and microbiological non-compliance. The process also conserves more water than traditional flushing.

We continue to clean the Blackwood reticulation system on a regular basis to complement the UV disinfection process utilised at the water treatment plant. The minimum maintenance regime consists of:

- air scouring of the reticulation system annually
- disinfection of the entire pipe network 6-monthly
- flushing of dead-end mains 2-monthly.

We also use an innovative technique for mains cleaning called ice-pigging. The process utilises an ice slurry that is injected into the water main and travels along the main using the existing water pressure, removing any natural accumulated sediments in the process.

This technique uses much less water than traditional mains cleaning processes and is more effective in removing fine sediments that can build up in the distribution mains over time.

In 2025-26, we utilised ice-pigging to clean a selection of water mains in the Hepburn area.

Mains renewal program

Our water network comprises of approximately 2,680 km of pipelines. For many reasons, water mains can burst, leak or cause dirty water. We monitor, record and analyse these events.

A program, focused on repeat problems with older pipes, is developed to replace a number of mains each year, which also assists in maintaining high water quality. During 2025-26, we replaced 2.37 km of water mains on this basis.

Treated water storage cleaning program

We maintain 47 water storage tanks and basins. Condition assessments are conducted on tanks which determine the tank cleaning program. Tanks may also be cleaned based on water quality results, or alternatively if tanks are taken offline or returned to service to meet operational or supply needs.

We have transitioned to utilising Remotely Operated Vehicles (ROVs) to conduct internal tank inspections as this alternative methodology has improved safety outcomes and is cost effective. A total of 18 treated water storages were inspected during the reporting period.

Treated water storage improvements

During the reporting period we completed an upgrade to the solar power installation at Linton Basin, which allows for consistent operation of the chlorine booster station to enhance water quality outcomes.

We installed temporary treated water storages at the Hillview and Greenhill Tank sites and installed a pressure reduction valve at Mt Helen Tank to facilitate a condition assessment of the assets, which will inform planning for upgrade requirements.

The Daylesford High Level Basin was taken offline in December 2025 to complete a condition assessment, and again from May 2026 for the installation of the new liner and minor roof repairs.

Other distribution water quality initiatives

- 'Auto scour' devices have been installed at key strategic sites to improve water quality by efficiently managing water age.
- Review of specific water quality Standard Operating Procedures.
- Regular scheduled audits are carried out on all activities involving water quality.

Appendix

Abbreviations used in this report

ADWG	Australian Drinking Water Guidelines
AGVET	Agricultural and Veterinary
AWO	Annual Water Outlook
AWA	Australian Water Association
BE	Bulk Entitlement
BGA	Blue-Green Algae
CCP	Critical Control Point
CFU	Colony Forming Unit
CHW	Central Highlands Water
CIP	Clean In Place
CLPA	*Catchment and Land Protection Act 1994*
CMA	Catchment Management Authority
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CT	Chlorine Contact Time
CWS	Clear Water Storage
DAFF	Dissolved Air Flotation and Filtration
DBP	Disinfection By-Product
DC	Direct Current
DEECA	Department of Energy, Environment and Climate Action
DH	Department of Health
DWMP	Domestic Wastewater Management Plan
EDR	Electrodialysis Reversal
EDRMS	Electronic Document and Records Management System
EPA	Environment Protection Authority Victoria
ESC	Essential Services Commission
GIS	Geographic Information System
GMW	Goulburn Murray Water
HFA	*Health (Fluoridation) Act 1973*
HU	Hazen Unit, a measure of the colour of water (=Pt. Co. units)
<	Less than
mg/L	Milligrams per litre
ML	Megalitres (one megalitre is equal to one million litres)
MoU	Memorandum of Understanding
NATA	National Association of Testing Authorities
NCCMA	North Central Catchment Management Authority
NHMRC	National Health and Medical Research Council
NOM	Natural Organic Matter
NTU	Nephelometric Turbidity Units, a measure of turbidity
OFI	Opportunity For Improvement
OWMP	Onsite Wastewater Management Plan
PAC	Powdered Activated Carbon
PLC	Programmable Logic Controller
PoU	Point of Use
PPP	Public Private Partnership
RCS	Regional Catchment Strategies
RMP	Risk Management Plan
RO	Reverse Osmosis
ROV	Remotely Operated Vehicle
RTU	Remote Terminal Unit
RWA	Rural Water Authority
SCADA	Supervisory Control and Data Acquisition
SDWA	*Safe Drinking Water Act 2003*
SDWR	Safe Drinking Water Regulations 2025
SOP	Standard Operating Procedure
TDS	Total Dissolved Solids
THM	Trihalomethanes
TICMP	Tullaroop Integrated Catchment Management Plan
µg/L	Micrograms per litre
UV	Ultraviolet
UVT	Ultraviolet Transmittance
UWS	Urban Water Strategy
VCAT	Victorian Civil and Administrative Tribunal
WHO	World Health Organisation
WIOA	Water Industry Operators Association
WSAA	Water Services Association of Australia
WSDS	Water Supply Demand Strategy
WTP	Water Treatment Plant



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