Water Quality Annual Report

2016-17

Melbourne Water

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VICTORIA State Government

Melbourne Water is owned by the Victorian Government. We manage Melbourne's water supply catchments, remove and treat most of Melbourne's sewage, and manage rivers and creeks and major drainage systems throughout the Port Phillip and Westernport region.

Melbourne Water
Enhancing Life and Liveability

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This report is provided by Melbourne Water to the Secretary to the Department of Health and Human Services (DHHS) in accordance with Section 26 of the *Safe Drinking Water Act 2003* for the 2016-17 financial year.

Melbourne Water makes a vital contribution to the famous Melbourne lifestyle by underpinning human health, enhancing community well-being, supporting economic growth and balancing the natural and man-made environment.

The organisation is responsible for the supply of affordable, high-quality water, reliable sewerage, healthy waterways, integrated drainage and flood management services and outstanding natural community spaces, helping make greater Melbourne a fantastic place to live.

With a strong commitment to understand and deliver to the needs of its customers and the community, Melbourne Water has a solid history of foresight, ingenuity and best practice and is a leader in the delivery of an outstanding integrated system that is secure, efficient, affordable and sustainable.

Our key stakeholders are customers, government, regulators, other water businesses, land developers, the community and suppliers. These stakeholders and our other strategic partners, including our construction and maintenance partners and research organisations, help us achieve our objectives. We consider social, environmental and financial effects and short-term and long-term implications in all our business decisions.

We are owned by the Victorian Government, with an independent Board of Directors responsible for governance. The responsible Minister is the Minister for Water.

EPA Victoria and the Department of Health and Human Services regulate the environmental and public health aspects of our business. The Essential Services Commission regulates prices and monitors service performance. We work across several arms of the Victorian Government, including the Department of Environment, Land, Water and Planning (DELWP) and the Department of Treasury and Finance.

Our customers include Melbourne's metropolitan retail water companies (City West Water, South East Water and Yarra Valley Water), regional water companies (South Gippsland Water, Gippsland Water, Westernport Water, Western Water and Barwon Water), local councils, land developers and businesses that divert river water.

We are committed to providing high quality and reliable drinking water that meets or exceeds regulatory and customer service standards.

Melbourne Water and Melbourne's retail water companies have developed risk management systems for drinking water quality using the principles of HACCP (Hazard Analysis and Critical Control Point) and the quality management system standard ISO 9001. The HACCP process systematically analyses hazards and establishes measures for their control in order to ensure product quality and safety.

Water supply system

We manage the harvesting of water from catchments, the major transfer, storage and treatment of water, and the delivery of treated water to numerous interface points with City

West Water, South East Water, Yarra Valley Water, Western Water and Barwon Water (Gippsland Water receives untreated water). We supplied 428,363 million litres of water in 2016-17, which included directly connected customers supplied by retail water companies from our aqueducts (untreated water).

Source water

Melbourne's drinking water is sourced from a combination of protected surface water catchments, unprotected surface water catchments, and seawater. Each of these source waters requires a different type of treatment to ensure that the treated water is appropriate for human consumption.

The majority of Melbourne's water is sourced from forested, protected catchments. The catchment system consists of 11 water supply catchments and five water holding storages. The catchments located within National Parks are co-managed with Parks Victoria, with management arrangements outlined in a National Parks Agreement. The catchments located within State Forest are co-managed with DELWP. A Memorandum of Understanding details the arrangements to effectively manage human activity and land use for the purposes of protecting water resources in State Forest. The five water holding storages are solely managed by Melbourne Water. Most of Melbourne's water is supplied via Silvan Reservoir which receives inflows from Thomson Reservoir, Upper Yarra Reservoir, O'Shannassy Reservoir and other small tributaries to the Yarra River. Cardinia and Greenvale Reservoirs are supplied by the Silvan system. These sources are supplied to Melbourne's retail water companies unfiltered because of the high quality of water drawn from the protected catchments and large storages.

A smaller proportion of Melbourne's source water comes from open catchments. These areas contain farmland, rural properties and state forests that are open to activities such as camping, four-wheel driving and small amounts of timber harvesting, and as such require additional treatment barriers to ensure the safety of the drinking water supply.

The Tarago water supply catchment contains land that is privately owned, with a variety of agricultural uses. Melbourne Water has an interest in the protection and improvement of water quality on this private land and has worked with stakeholders including the Baw Baw Shire Council and the Neerim District Landcare Group to develop a Tarago Catchment Management Plan.

The open mid-Yarra River catchment feeds into Sugarloaf reservoir, where it mixes with water from the protected Maroondah catchment before being treated at the Winneke treatment plant. The Yarra Glen supply is also fed from the Maroondah catchment, however the transfer aqueduct is not protected, meaning that a greater degree of treatment is required prior to supply.

Yan Yean and Healesville supplies are nominally from protected catchments, however have some weaknesses relating to transfer aqueduct protection. These sites also have additional treatment barriers, which remove colour and turbidity as well as potential pathogens.

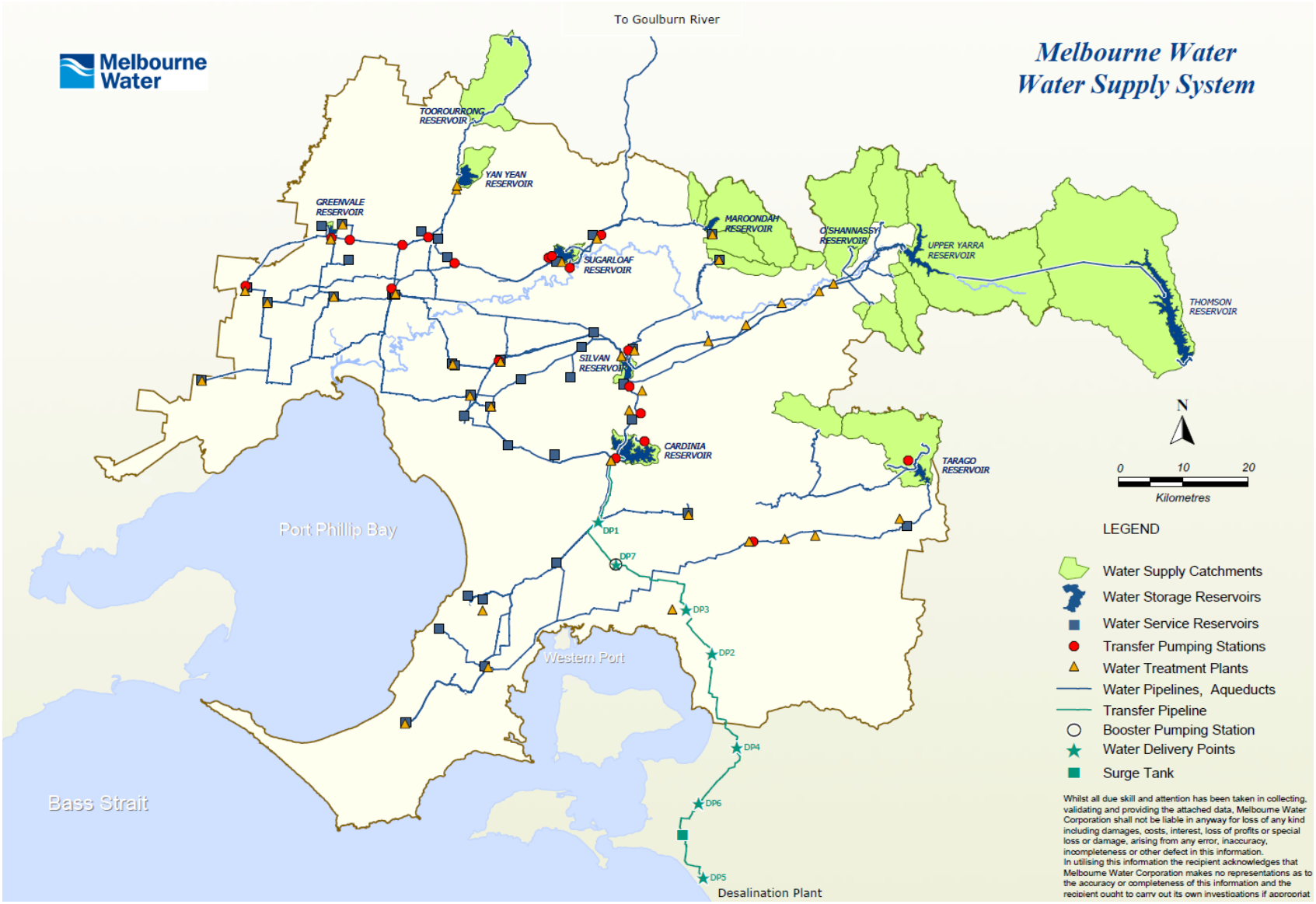
Depending on the volume of water stored in Melbourne's reservoirs, Cardinia Reservoir can also receive desalinated water. The Victorian Desalination Project consists of a 150 gigalitre reverse osmosis plant at Wonthaggi, an 84 kilometre underground two-way transfer pipeline to Berwick, and an 87 kilometre underground dedicated power supply from Cranbourne. The plant extracts seawater from Bass Strait near Wonthaggi. Water is fully treated via a series of processes (refer to Table 1; Table 2 and Table 3 for further details). Water enters an underground transfer pipeline which connects the plant to our existing water supply network, enabling supply to Cardinia Reservoir, directly into the water network at Berwick and to offtakes along the pipeline. The pipeline is two-way, so when the plant is not in use, the

pipeline can transfer water from the Melbourne Water distribution network to connected regional water businesses, thereby ensuring security of supply. For some regional water businesses, this is the first time they have been directly connected to the Melbourne Water distribution network.

Treatment processes are described in Table 1.

Figure 1 shows Melbourne Water's supply area to metropolitan Melbourne. A 50 gigalitre water order was placed from the Victorian Desalination Project for the first time in 2016-17. There were no major changes in the arrangements for water supply compared to last year. The relative contribution from each source was similar to the previous year. Melbourne Water continues to optimise which sources we harvest from to meet forecast demand and climate variability, as per regularly updated plans.

Figure 1: Melbourne Water's area supplied



Melbourne Water manages the catchments and source water storages used for the supply of drinking water to the Melbourne metropolitan area. Untreated and treated drinking water is supplied to consumers by the retail water companies. The water from catchments, through major storages and treatment plants to the interface points with the retail companies is monitored to ensure that it meets the requirements of relevant drinking water quality guidelines and agreements with these companies.

We prioritise our actions to protect source water from contamination using our drinking water quality risk assessment. The risk assessment covers catchments, storage reservoirs, treatment and bulk transfer to the interface with the retail water companies. Operational monitoring is used to provide early warning of issues which could affect drinking water quality, before critical limits are reached. Examples of this monitoring include catchment inspections, manual water quality sampling and online monitoring.

Melbourne Water routinely monitors the water quality within its catchments and distribution system through regular sampling and analysis according to a risk-based laboratory monitoring program. The sampling and analysis is contracted out to external National Association of Testing Authorities (NATA) accredited Laboratories. The level of monitoring is designed to complement risk management and HACCP systems, meet the requirements of the Bulk Water Supply Agreements, monitor treatment processes and assist Melbourne's retail water companies and regional water authorities' needs in meeting the Safe Drinking Regulations 2015.

Melbourne Water has a certified management system, Hazards Analysis and Critical Control Points (HACCP), for operation of the water treatment plants and supply system to ensure the delivery of safe drinking water. This risk based management system verifies that treatment processes are operating in accordance with design intent, and are achieving the required level of pathogen reduction.

The supply areas of Melbourne's retail water companies are divided into water quality zones and these zones can have one or more water sources during the day or year due to the demand, seasonal variation and complexity of the Melbourne water supply system. Melbourne's retail water companies must comply with the health aspects of the Safe Drinking Water Regulations 2015 at their customer's taps in these zones as part of their Licence agreement with the Essential Services Commission. During the year sanitary surveys of all the unfiltered drinking water supply catchments were undertaken to more systematically quantify microbial risk[1], in accordance with the requirements of the Safe Drinking Water Regulations 2015. The remaining catchments will continue to be surveyed, and findings used to direct future catchment management and treatment requirements.

Improvement initiatives

In 2016-17 several actions were undertaken to improve the quality of water delivered to customers. In 2016-17 a new, catchment-to-tap, Drinking Water Quality Strategy was developed. This 20-year strategy outlines how Melbourne Water will deliver safe, affordable and reliable drinking water in the face of increasing population and urbanisation, climate change and evolving customer expectations and regulation.

[1] According to the method of Baker, D. L. et al., 2016, 'Standardised survey method for identifying catchment risks to water quality.' in Journal of Water and Health, Vol 14, No 3, pp. 349-368.

Melbourne Water will:

- Effectively manage all water supply sources
- Implement health based targets in line with World Health Organisation Guidelines
- Continue to implement a multi-barrier approach to manage risks to drinking water quality
- Develop a robust decision support framework for effective future investment

Melbourne Water also collaborated with the Water Supply Association of Australia and Water Research Australia to help develop further guidance on undertaking sanitary surveys[2], and to better predict algal blooms in raw water storages.

In addition, Melbourne Water implemented a new database to store laboratory data, improve data integrity and consolidate and enhance processes, whilst improving the capability for data utilisation and analysis.

Drinking water treatment processes

Melbourne Water supplies treated drinking water to Melbourne's retail water companies, with the exception of:

- Gippsland Water. Untreated water from Melbourne Water's Tarago source is fed into Gippsland Water's treatment plants and then into supply for consumption by the customers.
- Supply by Agreement Customers – some customers directly connect to Melbourne Water's untreated water assets. The retail water companies have processes to ensure these customers are informed that their water is not suitable for drinking.

Water treatment plants are located where water from open storages first enters the distribution system. Whilst long retention times in storage reservoirs and primary disinfection plants help inactivate microorganisms such as pathogenic bacteria, protozoa and viruses in the untreated water, additional treatment barriers are required depending on the risk level of the water. Chlorination and ultraviolet (UV) irradiation are the methods of disinfection used by Melbourne Water. Chlorination is the most common form of disinfection used to treat Melbourne's water supply, with chlorination plants located at all of Melbourne's major water treatment plants. Chlorination primary disinfection is effective against viruses and bacteria, and also provides a residual to control biofilm growth in the downstream network. Melbourne Water also operates six UV irradiation disinfection plants, which provide effective initial disinfection, but do not provide a disinfection residual for protection against downstream biofilm growth. At Warburton (Martyr Road), Woori Yallock and Launching Place (Lusatia Park), East Warburton (Brahams Road and Lyrebird Avenue) and Yarra Junction, UV disinfection at each site provides primary disinfection, and sodium hypochlorite addition provides secondary disinfection to control biofilm growth.

Water from unprotected catchments is treated by filtration in addition to chlorine disinfection, to ensure protozoa removal. Melbourne Water operates two large filtration plants. Winneke water treatment plant is a sand filtration plant that treats water at the outlet of Sugarloaf Reservoir. The Winneke water treatment plant incorporates processes including coagulation, clarification, filtration and chemical addition for fluoridation, chlorination and pH correction. The Tarago water treatment plant at Drouin West is gravity fed from Tarago Reservoir, and

[2] Good Practice Guide to Sanitary Surveys and Operational Monitoring to Support the Assessment and Management of Drinking Water Catchments' (WRA Project No. 1109)

incorporates processes including permanganate pre-dosing, coagulation, Dissolved Air Flotation and Filtration (DAFF), UV irradiation and chemical addition for pH correction, fluoridation and chlorination. At the Tarago water treatment plant, UV irradiation is used as an additional barrier downstream of filtration to ensure the inactivation of protozoa.

There are three relatively small membrane filtration plants; two that supply Healesville (Frogley and Cresswell water treatment plants) and one that supplies Yarra Glen. These plants remove particles in the untreated water from their respective aqueduct sources to ensure that parameters such as turbidity and colour are reduced to acceptable levels, particularly during storm events. In addition, pathogens attached to the filtered particles are removed. Reducing the turbidity to below 1 nephelometric turbidity unit also ensures more effective chlorine disinfection of the filtered water.

Water from the Victorian Desalination Project is treated via a series of processes which include filtration, reverse osmosis, disinfection and fluoridation. Desalinated water entered Melbourne's supply network for the first time in 2016-17.

The Yan Yean water treatment plant is privately owned and operated and supplies treated water into the water supply system under direction from Melbourne Water. This plant did not supply treated water for consumption during 2016-17.

Ten fluoridation plants are operated at the direction of the Department of Health and Human Services to protect the dental health of the people of Melbourne. The operation of the fluoridation plants is a statutory requirement under the *Health (Fluoridation) Act 1973*. The ten plants are comprised of:

- Seven fluorosilicic acid plants operating at: Silvan (three plants), Cardinia (two plants), Winneke (one plant) and Tarago (one plant)
- One sodium fluoride solution plant operating at Monbulk
- The Yan Yean fluorosilicic acid plant which is privately owned and operated on behalf of Melbourne Water by Trility Pty Ltd
- The Victorian Desalination Project which uses fluorosilicic acid. AquaSure operates the Victorian Desalination Project under a Public Private Partnership Project managed by DELWP.

Secondary disinfection chlorination plants are also located at a number of points within the treated water network. The purpose of secondary disinfection is to prevent taste and odour problems, and to control biofilm growth within the closed distribution system where the water has already been treated by primary disinfection. Chlorine residual limits are also set to ensure that disinfection by-products do not exceed health limits specified in the *Australian Drinking Water Guidelines*.

Tables 1 – 3 describe the water treatment sources, treatment processes and substances added at each treatment plant. Changes to the water treatment processes this year compared to 2015-16 included that Tarago changed to aluminium chlorohydrate coagulant instead of alum and Greenvale, Monbulk and Kallista plants were upgraded to use sodium hypochlorite for disinfection instead of chlorine gas, as a less hazardous chemical in the vicinity of the community. Accordingly they no longer require pH adjustment of the water with sodium hydroxide.

Table 1: Summary of water supply system and areas serviced

Water Supply System	Source Water / Catchment	Storage	Treatment Process	Added Substances	Area Supplied *(Retail water company supplied)*
Cardinia	Transfer from Silvan Reservoir without being treated at Silvan water treatment plant	Cardinia Reservoir	Disinfection Fluoridation pH correction Secondary disinfection Secondary pH correction	Chlorine (gas) Fluorosilicic acid Lime Sodium hypochlorite Carbon dioxide	Mornington Peninsula and south eastern suburbs. Note: pump station at Cardinia can also pump water back to Silvan Reservoir *(South East Water, Yarra Valley Water)*
Desalination Plant	Desalination Plant offtake from the Bass Strait	Direct to supply or Cardinia Reservoir	Coagulation Filtration Reverse osmosis Remineralisation Fluoridation Disinfection Sludge thickening Membrane preservation	Ferric sulphate Sulfuric acid PolyDADMAC Antiscalant Sodium hydroxide Hydrated lime Carbon dioxide Fluorosilicic acid Sodium hypochlorite Ferric sulphate Polyacrylamide Sodium bisulfite	Capable of supplying primarily Mornington Peninsula, south eastern suburbs and South Gippsland area through direct delivery points and contributing to water businesses connected to the Melbourne Water supply through Cardinia Reservoir which is blended with catchment supplies. (*South East Water, Yarra Valley Water)*
Greenvale	Transfer from Silvan Reservoir following treatment process at Silvan or from Winneke water treatment plant. See Silvan and Winneke water supply systems	Greenvale Reservoir	Disinfection Secondary disinfection	Sodium hypochlorite Sodium hypochlorite	Western suburbs and Sunbury/Melton *(City West Water, Yarra Valley Water, Western Water, Barwon Water)*

Water Supply System	Source Water / Catchment	Storage	Treatment Process	Added Substances	Area Supplied *(Retail water company supplied)*
Lower Yarra Valley Townships	Maroondah Catchment	Maroondah Reservoir	Coagulation Membrane filtration pH correction Disinfection Secondary disinfection	Aluminium chlorohydrate Membrane cleaning: Hydrex 4709 Citric acid Hydrogen peroxide Sodium hydroxide Sodium hypochlorite Sodium hypochlorite	Yarra Glen *(Yarra Valley Water)*
Lower Yarra Valley Townships	Coranderrk and Graceburn Catchments		Coagulation Membrane filtration pH correction Disinfection	Aluminium chlorohydrate Membrane cleaning: Hydrex 4709 Citric acid Hydrogen peroxide Sodium carbonate Sodium hypochlorite	Healesville *(Yarra Valley Water)*
Silvan	Thomson Catchment Upper Yarra Catchment O'Shannassy Catchment Armstrong Catchment McMahons Catchment Starvation Catchment Coranderrk Catchment	Silvan Reservoir	Disinfection Fluoridation pH correction Secondary disinfection	Chlorine (gas) Fluorosilicic acid Lime Sodium hypochlorite	Eastern, central, northern and western suburbs, including Seville and Wandin *(City West Water, South East Water, Yarra Valley Water)*

Water Supply System	Source Water / Catchment	Storage	Treatment Process	Added Substances	Area Supplied *(Retail water company supplied)*
Silvan Area	Thomson Catchment Upper Yarra Catchment O'Shannassy Catchment Armstrong Catchment McMahons Catchment Starvation Catchment Coranderrk Catchment	Silvan Reservoir	Disinfection	Sodium hypochlorite	Monbulk, Silvan, Sherbrooke, Sassafras, Ferny Creek, Olinda, Mount Dandenong *(Yarra Valley Water)*
			Fluoridation	Sodium fluoride	
			Disinfection	Sodium Hypochlorite	Emerald, Kallista, Menzies Creek, Cockatoo *(Yarra Valley Water)*
Tarago	Tarago Catchment	Tarago Reservoir	Reservoir aeration		Neerim South, Drouin/Warragul *(Gippsland Water)*
			Reservoir aeration		Mornington Peninsula, West Gippsland townships, southern suburbs *(South East Water)*
			Organics removal	Powdered activated carbon	
			Iron / manganese removal / algae control	Potassium permanganate	
			Coagulation / flocculation	Lime Carbon dioxide Aluminium chlorohydrate PolyDADMAC	
			Dissolved air flotation filtration (DAFF)		
			UV irradiation		
			pH correction	Lime Carbon dioxide	
			Fluoridation	Fluorosilicic acid	
			Disinfection	Chlorine (gas)	
			Sludge thickening / dewatering	Polyacrylamide	
			Secondary disinfection	Sodium hypochlorite	

Water Supply System	Source Water / Catchment	Storage	Treatment Process	Added Substances	Area Supplied *(Retail water company supplied)*
Upper Yarra Valley Townships	Thomson Catchment Upper Yarra Catchment		Reservoir aeration UV irradiation Secondary disinfection	 Sodium hypochlorite	Woori Yallock, Launching Place, Yarra Junction, Warburton, East Warburton *(Yarra Valley Water)*
Winneke	Transfer from Maroondah Reservoir Yarra River Goulburn River[3]	Sugarloaf Reservoir	Reservoir aeration Coagulation / flocculation Clarification / filtration Disinfection Fluoridation pH correction Sludge thickening / dewatering Secondary disinfection	 Lime Aluminium sulphate Polyacrylamide Chlorine (gas) Fluorosilicic acid Lime Polyacrylamide Sodium hypochlorite	Northern, eastern, central and western suburbs *(City West Water, South East Water, Yarra Valley Water)*
Yan Yean	Wallaby Creek Catchment Toorourrong Catchment Yan Yean Catchment Transfer from Silvan Reservoir	Yan Yean Reservoir	Reservoir aeration Coagulation / flocculation Filtration Disinfection Fluoridation pH correction Secondary disinfection	 Aluminium sulphate PolyDADMAC Polyacrylamide Chlorine (gas) Fluorosilicic acid Lime Carbon dioxide Sodium hypochlorite	Northern suburbs *(Yarra Valley Water)*

[3] *This source is only used when the relevant conditions specified in the Statement of Obligations (System Management) are met, and was not used during 2016-17.*

Table 2: Water treatment processes used at each drinking water treatment plant

		Brahams Road	Cardinia 1400 Cardinia 1700	Cresswell	Desalination	Frogley	Greenvale St Albans Greenvale Yuroke	Kallista	Lusatia Park	Lyrebird Avenue	Martyr Road	Monbulk	Silvan-Waverley Silvan-Olinda Silvan-Preston	Tarago	Winneke	Yarra Glen	Yarra Junction	Yan Yean
	Coagulation / flocculation			✓	✓	✓								✓	✓	✓		✓
	Clarification														✓			
Filtration	Rapid gravity media														✓			✓
Filtration	Dissolved air flotation filtration (DAFF)													✓				
Filtration	Membrane			✓		✓										✓		
Filtration	Drum screens, dual media pressure filters, cartridge filters				✓													
Disinfection	Chlorination	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Disinfection	Ultraviolet (UV) irradiation	✓							✓	✓	✓			✓			✓	
Other	Reverse osmosis				✓													
Other	Fluoridation		✓		✓							✓	✓	✓	✓			✓
Other	pH correction		✓	✓		✓							✓	✓	✓	✓		✓
Other	Remineralisation				✓													
Other	Membrane preservation				✓													
Other	Sludge thickening / dewatering				✓									✓	✓			
Other	Iron / manganese removal													✓				
Other	Odour removal													✓				

Table 3: Water treatment chemicals used at each drinking water treatment plant

	Brahams Road	Cardinia 1400 Cardinia 1700	Cresswell	Desalination	Frogley	Greenvale St Albans Greenvale Yuroke	Kallista	Lusatia Park	Lyrebird Ave	Martyr Road	Monbulk	Silvan Waverley Silvan Olinda Silvan Preston	Tarago	Winneke	Yarra Glen	Yarra Junction	Yan Yean
Hydrogen peroxide			✓		✓										✓		
Lime / hydrated lime / sodium hydroxide / carbon dioxide		✓		✓								✓	✓	✓			✓
Aluminium sulphate													✓	✓			✓
Chlorine (gas)		✓										✓	✓	✓			✓
Sodium hypochlorite	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓
Fluorosilicic acid / sodium fluoride		✓		✓							✓	✓	✓	✓			✓
Sodium carbonate			✓		✓												
Hydrex 4709 / citric acid			✓		✓										✓		
Ferric sulphate / Sulfuric acid / PolyDADMAC/ Polyacrylamide				✓									✓	✓			✓
Antiscalant				✓													
Sodium bisulfite				✓													
Aluminium chlorohydrate			✓		✓								✓		✓		
Potassium permanganate													✓				
Powdered activated carbon													✓				
Sodium hydroxide															✓		

Issues

In 2016-17 DHHS were notified of three issues under the reporting requirements of the *Code of Practice for Fluoridation of Drinking Water Supplies.* In these instances, online monitoring reported a brief spike in added fluoride concentration above the prescribed upper limit, however there was no impact on the concentration supplied to customers. The plants automatically ceased adding fluoride on each occasion and treated water concentration was verified to be within normal quality.

These occasions were:

Date	Treatment Plant	Description of issue
13.07.16	Tarago	Fluoride spike detected during manual flush of lines during maintenance. Dosing shut down immediately as intended. No impact on treated water concentration. New maintenance procedure and design standard developed.
18.07.16	Monbulk	Investigation to try and replicate an issue caused flow and pressure changes which resulted in a temporary higher concentration. Dosing shut down immediately as intended. No impact on treated water storage. Pressure relief valve settings adjusted as a result.
12.04.17	Silvan-Preston	Exceedance of fluoride critical limit in online monitoring shutdown the fluoridation as intended. Faulty transducer card replaced. No impact on treated water concentration.

For the event on 12 April 2017 fluoridation ceased at the plant for longer than 72 hours, and DHHS were advised accordingly that the required concentration under the *Code of Practice for Fluoridation of Drinking Water Supplies* was not provided. The proportion of supply from other water treatment plants was maximised during this period to ensure that fluoridated water continued to be provided to customers.

Investigations into the causes of fluoride dosing system blockages in 2015-16 have resulted in no further issues.

Emergency, incident and event management

Three incidents were reported to DHHS under section 22 of the *Safe Drinking Water Act 2003,* and were determined to have had no impact on public health.

Date	Treatment Plant	Description of issue
02 & 10.10.16	Yarra Glen, Frogley	Extreme winds caused large trees to fall on the treated water reservoirs at the water treatment plants. The water quality impacts were assessed as being minimal, and Yarra Valley Water and DHHS were notified and advised of our incident management. Both tanks were repaired and water supply continued into Yarra Valley Water's relevant Healesville localities (localities 22 & 23). To prevent recurrence, approval was sought from DELWP to remove other large trees in close proximity to these assets.

Date	Treatment Plant	Description of issue
12.04.17	Silvan-Preston	As noted in the section titled 'Issues', online monitoring results falsely reported a fluoride concentration exceeding the critical limit. The event was reported to DHHS under the requirements of the *Code of Practice for Fluoridation of Drinking Water Supplies* and DHHS also requested a notification under section 22 of the *Safe Drinking Water Act 2003*. There was no impact on water quality supplied to Yarra Valley Water.

Risk management plan audit results

In 2016-17, there was no requirement for a third-party audit of Melbourne Water's drinking water risk management plan.

At the previous audit in 2016 there were no non-conformances raised. The nine Opportunities for Improvement are being considered. Melbourne Water's Integrated Incident and Risk System (IRIS) database is also being updated to more effectively track and report on all audit findings.

Exemptions under Section 8 of the Act

No exemptions were in place during 2016-17.

Undertakings under Section 30 of the Act

No undertakings were entered into or completed during 2016-17 and there were none in place from previous years.

Further information

This report and further information regarding drinking water quality is available on the Melbourne Water website at www.melbournewater.com.au or by contacting the customer service team:

Telephone: 131 722
Translation Service: 131 450
Speak and Listen: 1300 555 727
Fax: (03) 9679 7099
Mail: Melbourne Water
PO Box 4342
Melbourne, Victoria 3001