



Safe Drinking Water Act 2003

# Water Storage Manager 2022-23

## Water Quality Annual Report

Document Number: A4653343



Excellence



Honesty



Accountability



Courage



Caring

# 1. Acknowledgement of Country

Goulburn-Murray Water respectfully acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Owners and custodians of the land and water on which all Australians rely. We pay our respects to their Elders past, present and future, as Traditional Owners and the custodians of the land and water on which we operate.

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Front cover photo: Lake William Hovell

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Document Number: A4653343

## 2. Foreword

Goulburn-Murray Water (GMW), as a Water Storage Manager, is required under Section 26 of the Safe Drinking Water Act 2003 (the Act) to provide an annual report to the Secretary of the Department of Health. This report covers the period 1 July 2022 to 30 June 2023 and was completed in accordance with the Guidance note issued in 2017.

The past year was one of the wettest on record in GMW's region and this presented many challenges to managing water systems. Raw water quality declined in many waterways for long periods due to extensive flooding, but there was little that could be done to improve it. Our strong relationships with urban Water Suppliers ensured essential information could be readily shared and actions taken to help maintain safe drinking water supplies.

Despite these challenges, GMW remained focused on our role under the Act and the independent audit undertaken in 2023 confirmed this.

Charmaine Quick

Managing Director

## 3. Introduction

Goulburn-Murray Rural Water Corporation, trading as Goulburn-Murray Water (GMW), is defined as a Water Storage Manager (WSM) under the *Safe Drinking Water Act 2003* (the Act). This 2022/23 Annual Report to the Secretary of the Department of Health (DH) has been prepared to satisfy the annual reporting requirements of the Act and Safe Drinking Water Regulations 2015 (Regulations).

This report demonstrates GMW's ongoing commitment to managing risks to the quality of the water the corporation delivers to urban Water Suppliers.

### 3.1 Water Supply Systems

GMW manages the bulk water delivery and transfer for around 30 per cent of Victoria's land area, or approximately 68,000 km<sup>2</sup> (Figure 1). GMW operates 22 storages in its region, including Murray-Darling Basin Authority storages managed by Victoria. GMW's area of operation includes the Upper Murray, Mitta Mitta, Kiewa, Ovens, King, Broken, Goulburn, Campaspe and Loddon river basins as well as the River Murray. These catchments contain a mix of land uses including native and plantation forests, a range of agriculture, mines, quarries, cities, townships and alpine resorts.

GMW also operates an extensive network of water distribution channels, pipelines and natural carriers to deliver raw water to its customers, who take water from these supply systems via a pump or a gravity-fed outlet. Customers include irrigators, domestic users (not for human consumption), stock water users, the environment and regional water corporations (urban Water Suppliers).

Water supplied by GMW is **not** treated to improve its suitability for any particular use and should never be considered fit for human consumption without first being properly treated.

GMW provides water to six urban Water Suppliers in accordance with bulk entitlements granted under the *Water Act 1989*:

- Coliban Water (CW)
- Central Highlands Water (CHW)
- North East Water (NEW)
- Goulburn Valley Water (GVW)
- Grampians Wimmera Mallee Water (GMMWater)
- Lower Murray Water (LMW)

At times water may also be supplied to the three metropolitan water corporations via Melbourne Water infrastructure known as the Sugarloaf (North-South) Pipeline (see Section 3.3). This pipeline was not used for transfers in 2022/23, however water is taken at times for maintenance and routine testing of the infrastructure.

The bulk entitlements provide for quantity of supply but make no guarantee of quality. Raw (untreated) water is supplied by GMW to urban Water Suppliers for treatment and distribution



The objective of this policy is to ensure that GMW meets its obligations as a WSM under the Act and Regulations. It requires GMW to *address threats to safe drinking water as a WSM by preparing and implementing a risk management plan in relation to its supply of water to an urban Water Supplier.*

GMW is required to apply risk management for all the water supply mechanisms it uses to provide water to urban Water Suppliers. This includes risks associated with:

- the catchment leading to each storage
- each storage itself
- the supply of water downstream of storages using natural carriers such as rivers and creeks
- the supply of water via channel and pipeline systems.

A Risk Management Plan (RMP) has been prepared and implemented in accordance with the Act and Regulations and is regularly reviewed by GMW. The plan outlines GMW activities to manage the risks to water quality and includes a section that focuses on risks in and around GMW's storages and within GMW's irrigation districts.

### 3.3 Communications

GMW communicates regularly with urban Water Suppliers to share information and discuss any issues arising from the RMP and operations, including incident response, blue-green algae risk and water resource management. Engagement with each urban Water Supplier includes two scheduled meetings per year and additional communication when required.

Urban Water Suppliers are also invited to participate in GMW's risk identification and review process for the storages and irrigation systems relevant to their town offtakes. This involves participation in a workshop to ensure that all hazards to water quality are identified and appropriately rated, which helps to ensure a consistent understanding of hazards amongst the organisations. The risk assessment reviews are scheduled every two to five years, with the frequency dependent on a calculated overall risk rating for each location. During 2022/23 risk assessments were reviewed for three storages and one irrigation area (see Section 3.1).

GMW has entered into a Memorandum of Understanding with each of the six regional urban Water Suppliers (since 2009), Melbourne Water and Melbourne's three retail water businesses (since 2011) that documents commitment by the parties to work together and share information relevant to the implementation of their respective RMPs. MoUs with each regional water supplier were renewed during the year for a further three years.

GMW also engages with representatives of the North East, Goulburn Broken and North Central Catchment Management Authorities (CMAs) and other organisations with a role in land and/or water management to enable strategic and operational planning, knowledge exchange and a coordinated approach to issues affecting water quality.

## 3.4 Monitoring

Regular water quality monitoring is undertaken at GMW storages for blue-green algae (BGA) and basic physico-chemical parameters including nutrients, pH, turbidity and electrical conductivity. The frequency of monitoring at each location is based on BGA risk, which is determined from the frequency of historical blooms and the consequence of high BGA levels. The consequence takes into consideration the presence of town offtakes, size of population supplied, the type of recreation permitted and popularity. All storages are monitored monthly at a minimum. Additional monitoring is usually undertaken at storages with a history of water quality issues during the warmer months. Water quality is generally better in the east of GMW's area of operation, so those storages are sampled monthly. In the western area, sampling is generally undertaken 18 times a year, biased toward the warmer months due to elevated BGA risk. As GMW uses a risk-based approach to monitoring, extra sampling is often initiated through the year in response to laboratory results and field observations. Regular testing for BGA is undertaken in other parts of GMW's system where it has been determined, based on historical records, that there is a likelihood of high algae counts.

All water quality results are reviewed when received. Anomalous results are investigated, documented and reported to relevant stakeholders, including urban Water Suppliers. GMW provides advice to urban Water Suppliers on BGA levels at locations with direct town water supply offtakes within 48 hours of receiving the results. Section 2.1 provides an overview of BGA management and warnings during 2022/23 related to water provided to urban Water Suppliers.



## 4. Regulation Components

### 4.1 Emergency and incident management

Safe Drinking Water Regulation 17 – Additional details to be included in annual reports of water storage managers:

- (a) information about actions taken by the water storage manager in respect of each emergency, incident or event that has arisen that has affected
  - i. the quality of the water supplied for drinking purposes generally; and
  - ii. the quality of the water supplied where that supply posed a risk to human health;
- (b) any issues that may have arisen out of the taking of the actions referred to in paragraph (a);

### Section 22 Notifications

There were no incidents that required GMW to report to DH under section 22 of the Act during 2022/23.

### Other emergencies, issues or events

The catchments in northern Victorian where water is harvested are open to a wide variety of land- and water-based activities and are not closed to public access or commercial use like some of Melbourne's water supply catchments. These activities include agriculture, aquaculture, mining, forestry, industry, regional cities and towns, transport infrastructure and recreation. The hazardous events are documented and reviewed in the storage and irrigation area risk assessments.

During October 2022, widespread rainfall and subsequent major flooding caused a significant deterioration in raw water quality in many waterbodies across the GMW region. In response, a general water quality warning was included in updates issued by regional incident control centres and individual agencies, including GMW.

During 2022/23 GMW recorded 14 incidents that had the potential to affect the quality of water delivered to an urban Water Supplier. All these incidents were for high levels of blue green algae and are described in the section below. GMW notified the relevant urban Water Supplier in each instance, in addition to regular sharing of laboratory results.

GMW continued to work with urban Water Suppliers and other catchment partners to minimise the impact to water quality from incidents and activities that occur within GMW's area of operation (see Section 3.1 for details).

### Blue-green algae management

Management of BGA by GMW is a key program that addresses a common risk to the supply of safe water. The Blue-green Algae Circular (the Circular) issued by DELWP/DEECA provides the main guidance for BGA preparedness and response. High levels of BGA regularly occur in waterbodies within GMW's region and have the potential to affect drinking water supplies.

In accordance with the Circular, GMW is the Local Water Manager for BGA risk management in its storages and water supply network and is also the Regional Coordinator for BGA preparedness and response. Algae in the River Murray is primarily monitored and managed by New South Wales authorities, in partnership with GMW and other Victorian agencies via the Murray Region Algal Coordinating Committee.

GMW updated the BGA Response Plans and reviewed monitoring programs for all GMW-managed water bodies and river basins in accordance with the protocols set out in the Circular. GMW continued to engage with a range of stakeholders on BGA management, including hosting the pre-season meeting on 15 November 2022, which is a requirement of the Circular.

Monitoring programs focus on those sites and parameters that can affect recreation and system operations, in particular at major storages and weirs. These assets are monitored at least monthly throughout the year, with frequency increasing during the summer and autumn months for many waterbodies when the risk of harmful BGA levels being reached is greater.

BGA warnings issued by GMW are communicated to urban Water Suppliers, stakeholder agencies, customers and the public via multiple mechanisms including phone, GMW's website and telephone hotline, letters, text messages, email, social media and the BGA Status Report.

### **Blue-green algae warnings**

In 2022/23, more than 30 separate BGA warnings were issued by GMW based on recreational guidelines, with 14 of these warnings for water sources also used by urban Water Suppliers. In addition, BGA warnings at Newlyn Reservoir and Tullaroop Reservoir first issued in 2021/22 extended into 2022/23. Table 1 summarises the BGA recreational warnings issued by GMW during 2022/23 where notification to urban Water Suppliers occurred. Actions undertaken for each warning included notification to affected urban Water Suppliers, customers and stakeholders via phone, email, SMS or letter; advice to public via signage, media release, website, telephone hotline and social media; and additional surveillance and monitoring.

In accordance with the BGA response plans, GMW advised DELWP/DEECA and DH via the BGA Status Report of any BGA levels that had the potential to affect public health. DH and DELWP were also notified via email when the BGA levels exceeded a recreational trigger and a warning was issued to customers or the public.

BGA factsheets and information on the current BGA warnings for GMW's storages and irrigation areas can be found on the BGA Warnings webpage [www.gmwater.com.au/bluegreenalgae-alert/](http://www.gmwater.com.au/bluegreenalgae-alert/).

In addition, the public can access warning information by calling GMW's BGA Hotline on (03) 5826 3785, contacting GMW directly during business hours on 1800 013 357 or emailing [reception@gmwater.com.au](mailto:reception@gmwater.com.au).

**Table 1: Blue Green Algae Recreational Warnings issued by GMW in 2022/23 for water sources used by urban Water Suppliers**

Basin / System	Location	Warning Dates (duration)	Urban Water Supplier Notified
Murray River Basin	Lake Hume*	12/08/22 to 1/09/22 20 days	NEW
Murray River Basin	Lake Hume*	11/10/22 to 7/03/23 147 days	NEW
Murray Valley Irrigation Area	All Irrigation Channels	24/01/23 to 13/02/23 20 days	GVW
Goulburn River Basin	Lake Eildon	21/04/23 to 18/07/23 88 days	GVW
Goulburn River Basin	Lake Nagambie/Goulburn Weir - confined to the Turners Island backwater west near Kirwan's Bridge	31/01/23 to 23/03/23 51 days	GVW
Campaspe River Basin	Lake Eppalock	11/01/23 to 20/06/23 160 days	CW, CHW
<i>Loddon River Basin</i>	<i>Newlyn Reservoir</i>	<i>17/11/21 to 6/7/22 231 days</i>	<i>CHW</i>
Loddon River Basin	Newlyn Reservoir	23/02/23 to 18/07/23 145 days	CHW
<i>Loddon River Basin</i>	<i>Tullaroop Reservoir</i>	<i>17/11/21 to 6/7/22 231 days</i>	<i>CHW</i>
Loddon River Basin	Tullaroop Reservoir	5/10/22 to 15/11/22 41 days	CHW
Loddon River Basin	Tullaroop Reservoir	25/01/23 to 05/05/23 100 days	CHW
Loddon River Basin	Laanecoorie Reservoir	25/01/23 to 09/06/23 135 days	CW

Basin / System	Location	Warning Dates (duration)	Urban Water Supplier Notified
Loddon Valley Irrigation Area	Tandarra Pondage	15/11/22 to 11/01/23 57 days	CW
Torrumbarry Irrigation Area	Various locations in the Kow Swamp system, Loddon River and No.7 Channel system	07/02/23 to 04/04/23 56 days	CW, LMW
Torrumbarry Irrigation Area	Little Murray River	17/02/23 to 04/04/23 46 days	LMW
Torrumbarry Irrigation Area	Various locations in the No.7 and No.9 Channel systems and Kangaroo Lake	21/02/23 to 04/04/23 42 days	LMW

*Italics* indicates warning periods that commenced in 2021/22 and continued into 2022/23.

\*BGA monitoring and warnings at Lake Hume is managed by WaterNSW. GMW undertakes actions for the Victorian side of the Lake based on information provided by WaterNSW.

## 4.2 Summary of exemptions and undertakings

Safe Drinking Water Regulation 17 –

- (c) A summary of every written undertaking by the water storage manager accepted by the Secretary under section 30 of the Act.
- (f) Details of any exemption granted to the water storage manager under section 8 of the Act and any condition imposed in relation to any exemption.

There were no exemptions or undertakings in place with DH during 2022/23

## 4.3 Risk Management Plan audit findings and issues raised

Safe Drinking Water Regulation 17 –

- (d) A summary of the findings of the most recent risk management plan audit and any issues that the approved auditor raised during the risk management plan audit.

The Secretary to the Department of Health required GMW to undertake an audit of its risk management plan during the 2022/23 reporting period, covering the period 1 January 2021 to 31 December 2022. It was the opinion of the auditor that Goulburn Murray Water was compliant with the obligations imposed by section 8(1) of the Safe Drinking Water Act 2003

during the audit period. There was one Opportunity for Improvement (OFI) identified in the audit, which is shown in Table 2. The audit certificate is provided in Appendix 3.

**Table 2: OFIs arising from 2023 audit**

Opportunity for Improvement and GMW response	Status
OFI 2023/1. Consider liaising with Department of Health to clarify the advice in the <i>Guidance Note – Drinking Water Quality Annual Reports</i> (DH June 2017) and the requirement for reporting water quality events in raw water sources.	To discuss at next liaison meeting with DH
Action: OFI accepted	N/A

## 4.4 Water treatment processes

Safe Drinking Water Regulation 17 –

(e) (i) a summary of the process by which the water supplied by the water storage manager is disinfected or treated and any other processes applied to the water by the water storage manager, and any issues arising out of the application of those processes; and

(e) (ii) a list of all the chemicals and other substances, and any processes, used by a water storage manager to disinfect or treat the water supplied, or to be supplied, by it for drinking purposes;

GMW does not disinfect, treat or process any water supplied to its customers. Water supplied by GMW is not suitable for direct human consumption and GMW customers are advised of this (see also Section 3.2).

## 5. Other Relevant Information

### 5.1 Other activities

GMW has completed individual risk assessments for each GMW storage and irrigation area, as well as a region-wide risk assessment. All assessments are regularly reviewed with input from relevant urban Water Suppliers. During 2022/23 risk reviews were undertaken for Dartmouth Dam, Yarrawonga Weir, Goulburn Weir, Lake Eppalock and the Rochester, Torrumbarry and Loddon Valley Irrigation Areas. All changes to risk level ratings and the overall risk analysis were documented in accordance with GMW's Risk Management Plan and communicated to urban Water Suppliers.

GMW continues to implement key programs to manage the identified risks to water quality. Examples of the types of activities undertaken by GMW during 2022/23 are provided in Table 3.

**Table 3: Key Program activities**

Program	2022/23 Activities & Achievements
Water quality monitoring	Water quality monitoring and analysis was undertaken for GMW's major storages and key channel locations. This data was regularly shared with urban Water Suppliers.
Blue-green algae management	The BGA risk was managed in accordance with the DELWP/DEECA BGA Circular, including issuing of recreational warnings, notification to relevant urban Water Suppliers and sharing of test results with stakeholders.
External stakeholder controls	Continued engagement with regional and state catchment partners including implementation of Regional Catchment Strategies, sub-strategies and programs. During 2022/23 this included continued involvement in the Tullaroop Catchment Restoration Project with CHW and North Central CMA, and an active member of the Goulburn Broken Regional Water Quality forum, which includes Goulburn Broken CMA and GVW. GMW also participated in studies of water quality data trends led by MDBA and DEECA.
GMW staff training	Training for SDWA awareness was conducted for new key program managers and staff. The SDWA staff factsheet was reviewed and published on the intranet with weekly staff news.
Statutory Planning	1,989 planning and development applications were referred to GMW for response under the Planning & Environment Act and other legislation.
Land Management	Approximately 60 Club Lease desktop audits were undertaken for sites around GMW water storages. An internal review of the lease audit process identified a number of ideas for improvement that are now being worked on to make it more effective.

Program	2022/23 Activities & Achievements
Land and On-water Management (at water storages)	<p>During the year GMW started a transition from Land &amp; On-water Management Plans to a new stakeholder engagement and delivery approach that is expected to be more effective and efficient. Alongside this, service plans are being developed for General Public Use &amp; Waterway Management, Commercial Services and Houseboat Services that will enable GMW to identify and prioritise projects across these parts of our business. Consultation with urban Water Suppliers and other key stakeholders has been a part of this transition.</p> <p>Consultation with DEECA and other agencies continued for the transition of GMW's Recreational By-Law No.1/2013 to the Water (Recreational Area) Regulations, due for implementation August 2023. This will improve GMW's ability to ensure recreational activities are undertaken with minimal impact on the environment and other users.</p> <p>Improvement works completed:</p> <ul style="list-style-type: none"> <li>• Waranga Basin embankment area picnic shelter, All ability BBQ and information signage.</li> <li>• Lake Hume - design and installation of car &amp; trailer parking at Kookaburra Point no.2 boat ramp.</li> </ul> <p>Improvement works in progress:</p> <ul style="list-style-type: none"> <li>• Laanecoorie Reservoir boat ramp and car &amp; trailer park improvements conceptual design.</li> <li>• Cairn Curran Reservoir - Toilet block to be installed at Picnic Point (currently no amenity facility). Also foreshore erosion works and boat ramp repairs at Picnic Point.</li> <li>• Tullaroop Reservoir – Design for realignment and concreting of gravel boat ramp.</li> <li>• Waranga Basin – fish habitat installation project</li> <li>• Continued effluent system improvement planning for Lake Eppalock club sites, including installation of effluent flow meters, undertaking geotechnical testing and development of an action plan.</li> </ul>
Lake Eildon houseboats and on-water services	<p>Ongoing management of on-water sewage facilities and rubbish collection. Continued involvement with the DEECA review of greywater management on houseboats that will inform the renewal of the sunseting <i>Water (Lake Eildon Recreational Area)(Houseboats) Regulations 2013</i>.</p>

Program	2022/23 Activities & Achievements
Weed Management	<p>Chemicals are used in and adjacent to water systems to control weeds. All herbicide applications are undertaken in accordance with GMW's operating guidelines, which include utilising trained staff, notifying the relevant urban Water Supplier and adherence to product labels and minor use permits.</p> <p>A large amount of channel weed treatment was again completed outside the irrigation season when channels were empty, limiting the impact on town water offtakes.</p> <p>A trial of weed spraying by drone was conducted along two storage embankments and relevant urban water suppliers were consulted.</p>
Environmental Management System (EMS)	<p>GMW began transitioning to an integrated Health, Safety and Environment Management System aligned with international standards. As efficiencies are identified through the integration process they will be implemented in a phased approach across the business.</p>
Incident Response Framework	<p>Online awareness training module created for GMW's Incident Response Framework.</p> <p>Continued reviews of GMW operational risks and strategic risks.</p> <p>Review and update of emergency management response documentation.</p>
GMW Operations including surveillance, fire management	<p>Various activities undertaken, including channel and storage erosion control and prevention works, fencing, and licensing and monitoring of activities on GMW land.</p>



## 5.2 Advising People about Non-potable Water Supplies

No water supplied by GMW is suitable for human consumption or related uses without first being properly treated. GMW has a Customer Information Statement to advise customers of the non-potable nature of the water supplied, which is provided to new customers and periodically to all customers via newsletters. It is also located on the GMW website [www.gmwater.com.au](http://www.gmwater.com.au).

Customer invoices, licences and leases include a statement about the non-potable nature of the water supplied by GMW. The public and stakeholders are also made aware via statements included in BGA media releases and signs on non-potable water taps at GMW sites.

## 5.3 Melbourne Water

The Sugarloaf (North-South) Pipeline was constructed to supply water from the Goulburn River downstream of Lake Eildon to Melbourne Water's Sugarloaf Reservoir (and subsequently to Yarra Valley Water, City West Water (now Greater Western Water), and South East Water) and was completed in February 2010. The pipeline has not been utilised for transfers since November 2010. Water has periodically been taken for maintenance and routine testing of the system. GMW's agreement with Melbourne Water and bulk entitlements with the three retail water businesses are still in place. GMW has continued to provide the opportunity for Melbourne Water to be involved in GMW's identification and management of risks to water quality within the Goulburn catchment.

## 6. Further Information

This report and further information is available from our website [www.gmwater.com.au](http://www.gmwater.com.au) or by contacting:

Goulburn-Murray Water

40 Casey Street

PO Box 165

Tatura VIC 3616

Free call: 1800 013 357

Standard call: (03) 5826 3500

Email: [reception@gmwater.com.au](mailto:reception@gmwater.com.au)

## 7. Appendix 1 – Towns supplied where GMW is the water storage manager

### 7.1 Urban Water Supplier Offtakes - GMW as Water Storage Manager<sup>1</sup>

#### Central Highlands Water (CHW)

Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
Loddon	Newlyn Reservoir on Birch's Creek	White Swan (Ballarat)	Ballarat District
Campaspe	Lake Eppalock on Campaspe River	White Swan (Ballarat)	Ballarat District
Rochester IA	Waranga Western Channel (Colbinabbin)	White Swan (Ballarat)	Ballarat District
Loddon	Tullaroop Reservoir on Tullaroop Creek	Maryborough	Maryborough District

#### Coliban Water (CW)

Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
Campaspe	Lake Eppalock on Campaspe River	Bendigo, Heathcote	Bendigo District, Heathcote, Tooborac
Rochester IA	Waranga Western Channel (Colbinabbin)	Bendigo, Heathcote	Bendigo District, Heathcote, Tooborac
Loddon Valley IA	PH channel no. 3	Boort	Boort
Loddon	Loddon River (Bridgewater offtake)	Bridgewater	Bridgewater, Inglewood

Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
Loddon Valley IA	Waranga Western Channel via South West Loddon Pipeline <sup>4</sup>	Bridgewater, Laanecoorie, Korong Vale	Bridgewater, Inglewood, Laanecoorie, Bealiba, Dunolly, Tarnagulla, Korong Vale, Wedderburn
Torrumbarry IA	Gunbower Creek (Cohuna offtake)	Cohuna	Cohuna
Loddon Valley IA	PH Channel no. 1	N/A – Regulated <sup>3</sup>	Dingee
Murray	River Murray (Echuca offtake)	Echuca	Echuca
Campaspe	Campaspe River (Goornong offtake)	Goornong	Goornong
Torrumbarry IA	Taylors Creek	Gunbower	Gunbower
Loddon Valley IA	East Loddon Pipeline	N/A – Regulated <sup>3</sup>	Jarklin
Loddon	Loddon River (Laanecoorie offtake)	Laanecoorie	Laanecoorie, Bealiba, Dunolly, Tarnagulla
Torrumbarry IA	Torrumbarry channel no. 1	Leitchville	Leitchville
Torrumbarry IA	Gunbower Creek (Leitchville offtake)	Leitchville	Leitchville
Rochester IA	Waranga Western Channel via RO channel no. 24 (piped)	Lockington	Lockington
Loddon Valley IA	PH channel no. 10/1	N/A – Regulated <sup>3</sup>	Macorna
Loddon Valley IA	Waranga Western Channel via Mitiamo	N/A – Regulated <sup>3</sup>	Mitiamo

Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
	stock and domestic pipeline		
Loddon Valley IA	Waranga Western Channel (Mysia offtake)	N/A – Regulated <sup>3</sup>	Mysia
Loddon Valley IA	PH channel no. 5/1	Pyramid Hill	Pyramid Hill
Rochester IA	Waranga Western Channel (Rochester offtake) – 2 locations	Rochester	Rochester
Rochester IA	Campaspe River (Rochester offtake)	Rochester	Rochester
Loddon Valley IA	East Loddon Pipeline	Serpentine	Serpentine

### Goulburn Valley Water (GVW)

Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
Goulburn	Goulburn River (Alexandra offtake)	Alexandra	Alexandra, Eildon, Thornton
Murray	River Murray (Barmah offtake)	Barmah	Barmah
Goulburn	Lake Eildon on Goulburn River	Bonnie Doon	Bonnie Doon
Goulburn	Goulburn River (Tallarook offtake)	Broadford	Broadford, Waterford Park
Murray	River Murray (Cobram offtake)	Cobram	Cobram, Strathmerton, Yarroweyah

Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
Rochester IA	Waranga Western Channel (Colbinabbin offtake)	Colbinabbin	Colbinabbin
Rochester IA	Waranga Western Channel (Corop offtake)	N/A – Regulated <sup>3</sup>	Corop
Shepparton IA	East Goulburn Main Channel	Dookie	Dookie
Central Goulburn IA	CG channel no. 12/9	Girgarre	Girgarre
Goulburn	Lake Nagambie/Goulburn Weir (Baxters Road offtake) on Goulburn River	N/A – Regulated <sup>3</sup>	Goulburn Weir (Baxters Road)
Murray Valley IA	MV channel no. 7/3	Katamatite	Katamatite
Shepparton IA	SH channel no. 2/24 (piped)	Katandra West	Katandra West
Goulburn	Lake Nagambie/Goulburn Weir (Kirwans Bridge offtake) on Goulburn River	N/A – Regulated <sup>3</sup>	Kirwans Bridge
Central Goulburn IA	CG channel no. 9	Kyabram	Kyabram, Merrigum
Goulburn	Goulburn River (Molesworth offtake)	N/A – Regulated <sup>3</sup>	Molesworth
Goulburn	Goulburn River (Murchison offtake)	Murchison	Murchison
Goulburn	Lake Nagambie/Goulburn Weir	Nagambie	Nagambie

Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
	(Nagambie offtake) on Goulburn River		
Murray Valley IA	Broken Creek	Nathalia	Nathalia
Murray Valley IA	MV channel no. 6/6	Numurkah	Numurkah, Wunghnu
Murray Valley IA	MV channel no. 9/9/6	Picola	Picola
Goulburn	Waranga Basin	Rushworth	Rushworth
Goulburn	Goulburn River (Seymour offtake)	Seymour	Seymour, Avenel, Tallarook, Trawool, Mangalore
Goulburn	Goulburn River (Shepparton offtake)	Shepparton	Shepparton, Mooroopna, Tallygaroopna, Toolamba, Congupna
Central Goulburn IA	CG channel no. 1/12/9	Stanhope	Stanhope
Central Goulburn IA	CG channel no. 3/5A	Tatura	Tatura
Central Goulburn IA	CG channel no. 2/5/6	Tatura	Tatura
Central Goulburn IA	CG channel no. 28/9	Tongala	Tongala

## Grampians Wimmera Mallee Water (GMMWater)

Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
Murray	River Murray (Nyah offtake)	N/A – Regulated <sup>3</sup>	Chillingollah, Chinkapook, Waitchie
Murray	River Murray - Pental Island	N/A – Regulated <sup>3</sup>	Lalbert, Culgoa, Nullawil, Berrivillock
Murray	River Murray - Piangil Pump Station	Manangatang	Manangatang
Murray	River Murray (Wemen offtake)	Ouyen, Underbool, and Regulated <sup>3</sup>	Ouyen, Underbool, Walpeup, Patchewollock, Speed, Nandaly, Tempy
Loddon Valley IA	Normanville no. 4/1 Pipeline	Quambatook	Quambatook

## Lower Murray Water (LMW)

Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
Loddon	Loddon River (Kerang alt. offtake)	Kerang	Kerang
Torrumbarry IA	Torrumbarry channel no. 14/2	Kerang	Kerang
Murray	River Murray (Koondrook offtake)	Kerang, Koondrook	Kerang, Koondrook
Murray	River Murray (Mildura offtake)	Mildura 7th Street + Mildura West	Mildura (inc Mildura West), Irymple, Merbein
Murray	River Murray (Mildura West offtake)	Mildura 7th Street + Mildura West	Mildura (inc Mildura West), Irymple, Merbein



Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
Torrumbarry IA	Torrumbarry pipeline 1/17/4	Murrabit	Murrabit
Murray	River Murray (Murrabit offtake)	Murrabit	Murrabit
Torrumbarry IA	Kangaroo Lake (Mystic Park)	N/A – Regulated <sup>3</sup>	Mystic Park
Murray	River Murray (Piangil offtake)	Piangil	Piangil
Murray	River Murray (Red Cliffs offtake)	Red Cliffs	Red Cliffs
Murray	River Murray (Robinvale offtake)	Robinvale	Robinvale
Murray	River Murray (Swan Hill offtake)	Swan Hill	Swan Hill, Lake Boga, Nyah, Nyah West, Woorinen South

### Melbourne Water (MW)

Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
Goulburn	Goulburn River (via Sugarloaf Pipeline at Killingworth)	Melbourne - various	Melbourne metropolitan region

## North East Water (NEW)

Water System/ Irrigation Area (IA)	Supply Source	Water Treatment Plant <sup>2</sup>	Towns Supplied
Murray	Lake Hume on the River Murray	Bellbridge	Bellbridge
Murray	Mitta Mitta River (Dartmouth offtake)	Dartmouth	Dartmouth
Murray	Mitta Mitta River (Eskdale offtake)	Eskdale	Eskdale
King	King River (Moyhu offtake)	Moyhu	Moyhu
King	King River (Oxley offtake)	Oxley	Oxley
Murray	Lake Hume on the Mitta Mitta River arm	Tallangatta	Tallangatta
Murray	River Murray (Wahgunyah offtake)	Wahgunyah	Wahgunyah, Rutherglen
Ovens	Ovens River (confluence with King River)	Wangaratta	Wangaratta, Glenrowan
King	Shallow bore adjacent King River	Whitfield	Whitfield
Murray	Wodonga Creek (anabranh of the Murray River)	Wodonga	Wodonga, Ebden, Baranduda, Chiltern, Barnawartha, Tangambalanga, Kiewa, Springhurst, Wodonga Logic Centre
Murray	Lake Mulwala/Yarrowonga Weir on the River Murray	Yarrowonga	Yarrowonga, Bundalong, Devenish, St James, Tungamah, Goorambat

<sup>1</sup> All water supplied by GMW is raw i.e. not treated

<sup>2</sup> Urban Water supplier's water treatment plant

<sup>3</sup> Regulated water as defined under the SDWA i.e. water supplied by urban Water Suppliers that is not intended for drinking but could be mistaken as drinking water

<sup>4</sup> South West Loddon Pipeline is managed by GWM Water

## 8. Appendix 2 – Safe Drinking Water Policy

Approved: 08 April 2021

Review due: April 2024

Reference: A3789792

### 1. Objective

To ensure that Goulburn-Murray Water (GMW) meets its obligations as a water storage manager (WSM) under the Safe Drinking Water Act 2003 and Safe Drinking Water Regulations 2015 (SDWA).

### 2. Scope

This Policy applies to all. The SDWA Risk Management Plan (RMP) assigns responsibility for specific activities to address risk to water quality across GMW's area of operation. This involves multiple GMW units

### 3. Policy

To address threats to safe drinking water and meet its legal obligations as a WSM GMW must:

- Prepare a risk management plan in relation to its supply of water to a Water Supplier (WS),
- Implement the plan and comply with requirements set out in the plan,
- Keep the plan under continuous review with a view to updating and improving it,
- Change any aspect of the plan that is found to need revision.

GMW must also provide a SDWA annual report to Department of Health by 31 October each year. The requirements of the report are specified in a guidance note issued by DH.

A major aspect of compliance with SDWA is effective communication with Water Suppliers (WS). GMW must notify a WS of any incident or circumstance that poses a risk of poor quality water being taken for treatment and distribution. Communication on other water quality issues occurs formally every six months either via a combined DH and WS meeting or individual WS meetings convened by GMW. These meetings foster relationships between the organisations that assist in the provision of safe drinking water.

To further ensure compliance with the SDWA, awareness training is delivered to GMW operations staff every two years. These staff perform tasks that can affect water quality in GMW storages and irrigation channels, so by raising their awareness of GMW's obligations risks to drinking water quality can be minimized.

The SDWA includes key programs that manage risks to water quality; these must also be continually reviewed to ensure their effectiveness.

DH can require an audit of GMW's SDWA Risk Management Plan. To date audits have been required every two years.

4. Responsibilities

Responsibility	Who
Approval	Managing Director
Endorsement	General Manager Water Delivery Services
Ownership and implementation	Water Delivery Services

5. Definitions

**DH** DH means the Department of Health; this organisation regulates compliance with the SDWA.

**GMW** GMW means Goulburn-Murray Water.

**RMP** RMP means Risk Management Plan required under the SDWA to address threats to water quality.

**SDWA** SDWA means Safe Drinking Water Act 2003 and Safe Drinking Water Regulations 2015.

**WS** Under the SDWA, WS means water supplier, defined as an authority that supplies drinking water or regulated water to the public.

**WSM** Under the SDWA, WSM means water storage manager, defined as an authority that supplies (raw) water to a water supplier.

6. Document history

Doc #	Date Approved	Approved by	Approval #
A3622239v1	23 October 2013	Board	A2235506
A2944234v1	31 May 2016	Board	A3237100
A2944234v2	1 March 2018	Managing Director	A2959188
A2944234v3		Managing Director	
A3789792	8 April 2021	Managing Director	A4029842

7. Associated documents

Document Name	Approval #
Procedure – Safe Drinking Water	A3789793
Procedure – Promoting awareness of non-potable water supplied by Goulburn-Murray Water	A3244832

Document Number: A4653343

## 9. Appendix 3 – Audit Certificate

Reference: A4628771

**Risk Management Plan Audit Certificate**  
***Safe Drinking Water Regulations 2015***

Certificate Number: 189

Audit period: 1 January 2021 – 31 December 2022

To:

Greg Smith

Water Quality Manager

Goulburn Murray Water

PO Box 165

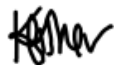
Tatura VIC 3616

Australian Business Number (ABN): 46 761 336 846

I, Karen Pither, after conducting a risk management plan audit of the water supplied by Goulburn Murray Water, am of the opinion that—

*Goulburn Murray Water has complied with the obligations imposed by section 8(1) of the Safe Drinking Water Act 2003 during the audit period.*

21 April 2023



## 10. Appendix 4 – Glossary of Terms

Term	Description
Blue-green algae (BGA)	Types of bacteria (cyanobacteria) found in water systems that can cause taste, odour and water quality problems, with some species capable of producing toxins harmful to humans and animals.
Catchment	Area of land over which water flows and is collected into a common water body (river, stream, dam etc.).
Catchment management Authority (CMA)	State government agency responsible for the integrated planning and coordination of land, water and biodiversity management in each catchment and land protection region.
Central Highlands Water (CHW)	Urban Water Supplier in central Victoria that services 9,000 km <sup>2</sup> including Ballarat, Maryborough, Daylesford and surrounding areas.
Coliban Water (CW)	Urban Water supplier in north-central Victoria that services 16,500 km <sup>2</sup> from Cohuna and Echuca in the north to Kyneton and Trentham in the south.
Department of Environment, Land, Water and Planning (DELWP)	Victorian Government Department responsible for matters including environment, land, water and planning. Changed name to Department of Energy, Environment and Climate Action (DEECA) on 1 January 2023.
Department of Health (DH)	Victorian Government Department responsible for matters related to the state's health and wellbeing as well as other aspects of social policy.
Drinking water	Water intended for human consumption or for purposes connected with human consumption. Also referred to as potable water.
Environmental Management System (EMS)	Set of processes and practices to manage an organization's impact on the environment.
Goulburn Valley Water (GVW)	Urban Water Supplier in north-central Victoria that services 20,000 km <sup>2</sup> including Cobram, Shepparton, Seymour and Alexandra.
Goulburn-Murray Water (GMW)	Statutory Authority of the Victorian Government operating over 68,000 km <sup>2</sup> in northern Victoria that provides water storage and supply services, operating Australia's largest irrigation delivery network.
Grampians Wimmera Mallee Water (GMMWater)	Urban Water Supplier in western Victoria that services 60,000 km <sup>2</sup> from Manangatang and Warracknabeal to Serviceton and Westmere.
Irrigation area (IA)	A geographic area with defined boundaries where water is distributed using pipes and channels, primarily for the purpose of irrigation of land for agriculture.

<b>Term</b>	<b>Description</b>
Lower Murray Water (LMW)	Urban Water Supplier in north-west Victoria that services 14,600 km <sup>2</sup> along the Murray River from Kerang to the South Australian border.
North East Water (NEW)	Urban Water supplier in north-east Victoria that services 20,000 km <sup>2</sup> bound by Corryong, Yarrawonga, Benalla and Dartmouth.
Safe Drinking Water Act (2003)	The legislation that regulates drinking water quality. It places obligations on water suppliers and water storage managers to provide safe, high-quality drinking water.
Raw water	Water found in the environment that has not been treated or filtered.
Regulated water	As defined under the SDWA i.e. water supplied by urban Water Suppliers that is not intended for drinking but could be mistaken as drinking water.
Risk Management Plan (RMP)	Document prepared by water agencies under the SDWA that contains a description of the water supply system, identifies and assesses risks to the quality of water and outlines steps to manage those risks.
River basin	Comprised of the catchment for one or more major rivers and their tributaries
Town offtake	Location on a water body where water is supplied to, or obtained by, an urban Water Supplier.
Treated water	Water that has undergone processing to serve a specific end use, such as to become drinking or potable water.
urban Water Supplier	Water agency as defined as a Water Supplier under the SDWA that supplies drinking water or Regulated water to the public.
Water Act 1989 (Victoria)	The legislation that governs the way surface water and groundwater entitlements are issued and allocated in Victoria. It defines water entitlements, establishes the mechanisms for managing Victoria's water resources and relates to the governance and operation of rural and urban water corporations.
Water Storage Manager (WSM)	Water corporation as defined under the SDWA that supplies raw water to an urban water supplier by releasing water to water supplier or permitting water supplier to take water from the water storage (directly or from any point downstream)