

Mid-Loddon Groundwater Management Area Local Management Rules

Annual Report

For year ending 30 June 2022

Document Number: A4427679
Version: FINAL



Excellence



Honesty



Accountability

OFFICIAL



Courage



Caring

Document History and Distribution

Versions

Version	Date	Author(s)	Notes
Draft v1	12 September 2022	Jock Richardson	Document creation and drafting
Draft v2	14 October 2022	Scott Ridges	Document review and edits
Draft v3	8 November 2022	Jock Richardson	Document edits post review
Final	29 November 2022	Matthew Pethybridge	Document review and approval

Distribution

Version	Recipient(s)	Date	Notes
Draft v1	Scott Ridges <i>Groundwater & Streams Coordinator</i>	20 September 2022	Peer review
Draft v3	Matthew Pethybridge <i>Groundwater & Streams Manager</i>	22 November 2022	Review and approval

Foreword

Goulburn-Murray Water (GMW) is pleased to present the annual report for the *Mid-Loddon Groundwater Management Area Local Management Rules* (the Rules) for the 2021/22 water year.

GMW is responsible for implementation and administration of the Rules which was endorsed by the Board of GMW in 2009.

This report provides an overview of the groundwater management activities administered under the Rules during between 1 July 2021 and 30 June 2022. A copy of the report is available for inspection at GMW's Tatura office, or for download from the GMW website.



Matthew Pethybridge
GROUNDWATER AND STREAMS MANAGER

Date: 29 November 2022

Executive summary

The *Mid-Loddon Groundwater Management Area Local Management Rules* (the Rules) was endorsed by the Board of Goulburn-Murray Water in July 2009. The 2021/22 water year marks the thirteenth year of operation under the Rules.

A groundwater allocation of 100 per cent of licence entitlement volume was available for the Mid-Loddon Groundwater Management Area (the GMA) for the 2021/22 water year. Recorded use was 14,018.5 ML, or 41 per cent of the total licence entitlement volume. This is 11 per cent less than the volume used in 2020/21. A total of 9,742.3 ML has been carried over for use in the 2022/23 water year.

Licence transfer activity during the 2021/22 water year was relatively subdued; five temporary transfers, totalling 722.3 ML, and one permanent transfers (500.7 ML/yr), were completed.

A total of 525 millimetres (mm) of rain was recorded at Bridgewater, during the 2021/22 water year – that is 82 mm more than the 2020/21 total and the highest total since 2016/17. The combination of reduced groundwater extraction and increased rainfall during 2021/22 was associated with a reduced seasonal decline and increased seasonal recovery of groundwater levels, compared to the previous three water years.

Groundwater monitoring and metering programs continue to support the objectives of the Rules.

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1 Introduction

1.1 Purpose

This report has been prepared to meet requirements of the *Mid-Loddon Groundwater Management Area Local Management Rules* (GMW, 2009) (the Rules). It provides an overview of groundwater resource status and summarises the groundwater management activities undertaken in accordance with the Rules during the 2021/22 water year (1 July 2021 to 30 June 2022).

1.2 Groundwater Management Area

The Mid-Loddon Groundwater Management Area (the GMA) extends from Tullaroop Reservoir in the south to Mitiamo in the north and includes the townships of Carisbrook, Bridgewater and Serpentine.

The GMA incorporates groundwater resources to all depths and contains three management zones – Moolort Zone (1011), Laanecoorie-Serpentine Zone (1012) and Jarklin Zone (1013) – as shown in Figure 1.

1.3 Local Management Rules

The Rules was endorsed for implementation by the Board of Goulburn-Murray Water (GMW) on 1 July 2009. It aims to ensure groundwater resources in the GMA are managed in an equitable and sustainable manner. More specifically, the Rules seeks to:

1. Provide all groundwater users with access to the resource, including domestic and stock users;
2. Enable development of the groundwater resources to realise the potential for its use in the region;
3. Provide environmental benefits through management of groundwater resources and maintain the integrity of the aquifer system, including its structure and groundwater quality;
4. Manage groundwater interference and intensively pumped areas to protect existing authorised users and the environment from unacceptable drawdown levels;
5. Establish transparent trigger levels and restrictions;
6. Provide mechanisms such as transfer of licence entitlement and carryover to allow flexible and adaptive management in response to changing demands, such as climatic conditions; and
7. Establish an effective monitoring program and provide periodic communications that will inform groundwater users of the status of the resource.

An assessment of GMW's activities against the Rules is presented in [Appendix A](#).

A copy of the Rules can be downloaded from the GMW website, at www.gmwater.com.au/midloddongma

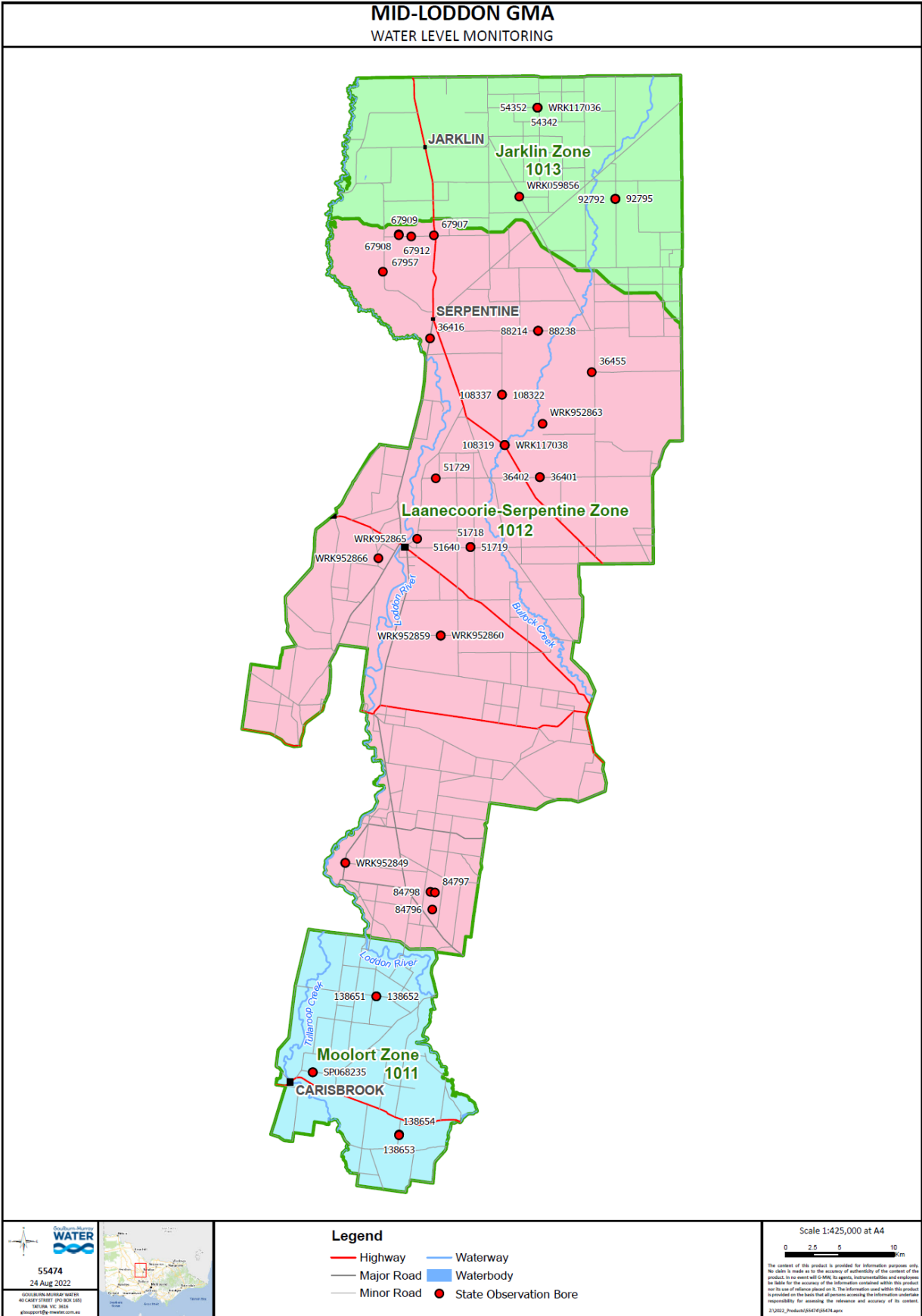


Figure 1 Mid-Loddon Groundwater Management Area

2 Groundwater Management

2.1 Licence entitlement volume

The Minister for Water declared a permissible consumptive volume of 34,037 megalitres per year (ML/yr) for the GMA in March 2013 (Victorian Government, 2013).

At 30 June 2022, the total licence entitlement volume in the GMA was 33,927.1 ML/yr. This has remained unchanged from 30 June 2021. The number of licences in each management zone is summarised in Table 1, as well as the total number of licensed bores and the total licence entitlement volume.

Table 1 Groundwater licences by management zone in 2021/22

Management zone	Licences	Licensed bores	Licence entitlement volume (ML/yr)
Moolort Zone (1011)	23	31	3,875.4
Laanecoorie-Serpentine Zone (1012)	66	81	27,204.7
Jarklin Zone (1013)	14	17	2,847.0
Total	103	129	33,927.1

Note: Data extracted from the Victorian Water Register 1 July 2022.

2.2 Groundwater allocations

Annual groundwater allocations are determined by comparing the average of annual maximum groundwater recovery levels recorded in observation bore 88214 (referred to as the 'trigger bore') across three water years (the current and the two preceding), against a trigger level outlined in the Rules (11.5 metres below the natural ground surface).

On 15 July 2021, an allocation of 100 per cent was announced for all groundwater licence holders in the GMA for the 2021/22 water year (Figure 2).

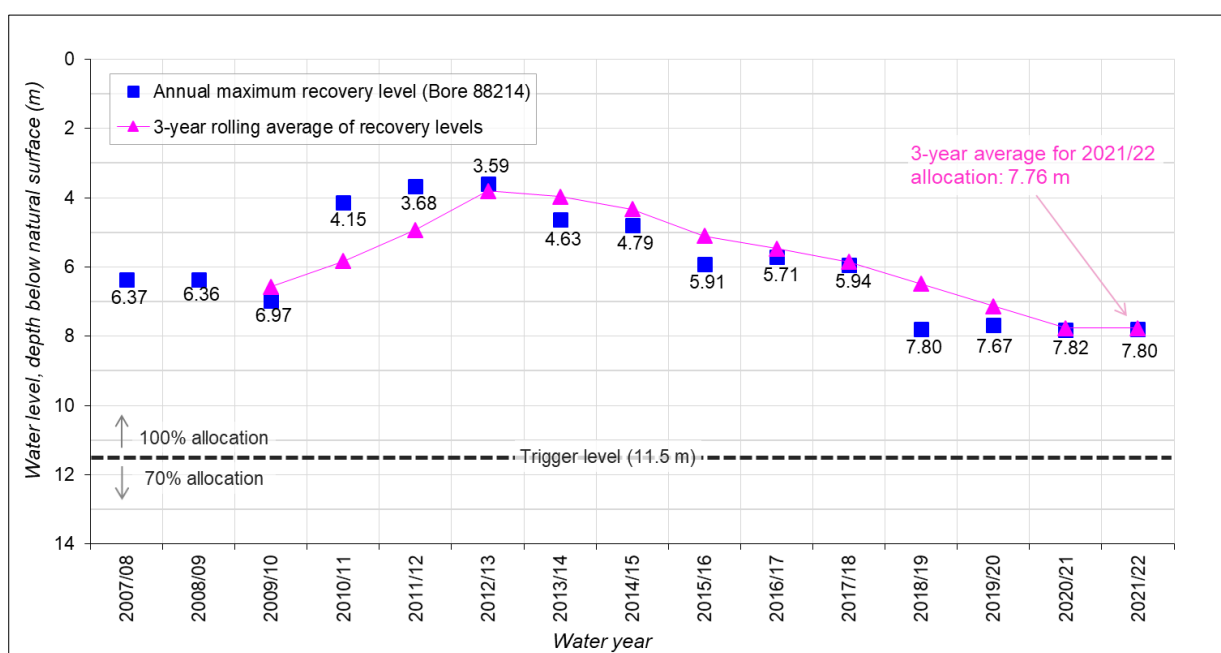


Figure 2 Allocations trigger graph showing annual maximum recovery levels and the three-year rolling average of those levels, from 2007/08 to 2021/22

2.3 Rainfall

Rainfall data, recorded at the Bureau of Meteorology weather station at Bridgewater (BOM, 2022), is presented in Figure 3 as an indicator of climate trends across the GMA. The data indicate that annual rainfall totals have mostly been below the long-term average since the Rules was implemented. Notable exceptions include the 2010/11 water year, when widespread flooding occurred as a result of significant rain events, as well as 2016/17. The predominantly-drier conditions are associated with reduced recharge to the groundwater system.

A total of 525 millimetres (mm) of rain was recorded at Bridgewater during the 2021/22 water year – that is 82 mm more than the 2020/21 total, and the highest total since 2016/17 (Figure 3).

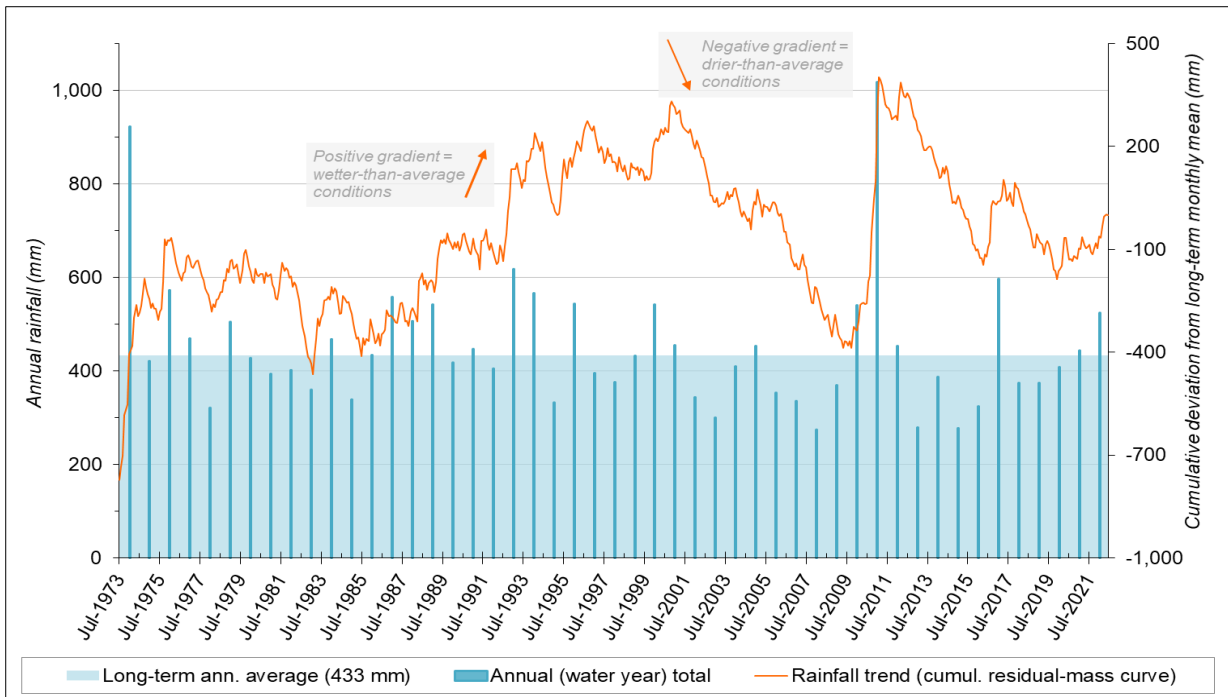


Figure 3 Rainfall recorded at Bridgewater, July 1973 to June 2022 (BOM, 2022)

2.4 Groundwater use

Recorded use in the GMA in 2021/22 was 14,018.5 ML, or 41 per cent of the licence entitlement volume (Figure 4). This is approximately 3,500 ML less than the volume used in 2020/21.

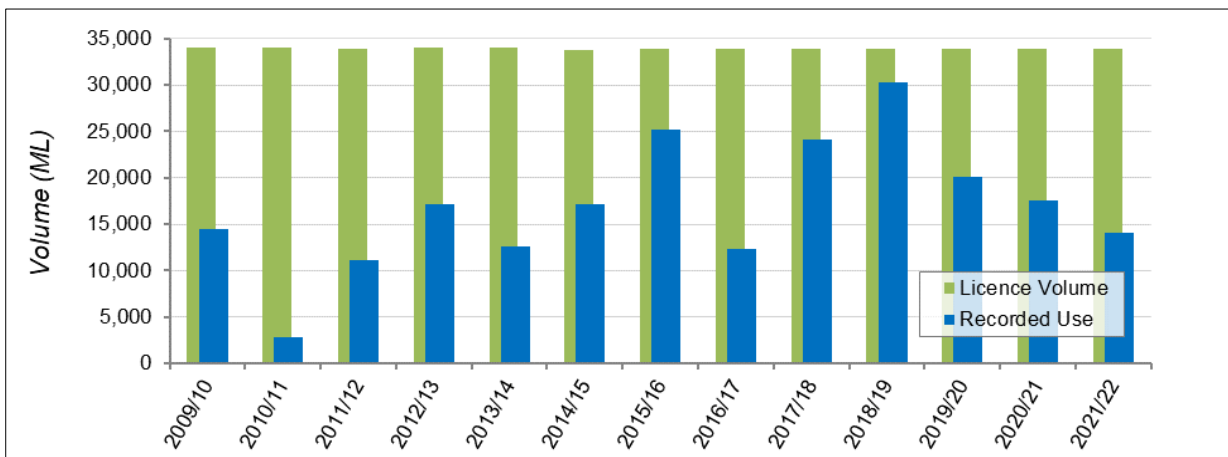


Figure 4 Annual recorded use compared to licence entitlement volume, since 2009/10

Note: 'recorded use' refers to metered and deemed use.

In 2021/22, the volume of recorded use was greatest in Laanecoorie-Serpentine Zone, where the majority of the licence entitlement volume was held. The highest recorded use, as a percentage of licence entitlement volume, occurred in Moolort Zone (Table 2).

Table 2 Recorded use by management zone in 2021/22

Management zone	Licence entitlement volume (ML/yr)	Recorded use (ML)	Proportion of licence entitlement volume used
Moolort Zone (1011)	3,875.4	1,758.4	45%
Laanecoorie-Serpentine Zone (1012)	27,204.7	11,325.4	42%
Jarklin Zone (1013)	2,847.0	934.7	33%
Total	33,927.1	14,018.5	41%

Note: Data extracted from the Victorian Water Register on 1 July 2022.

2.5 Licence transfers

The Rules allows groundwater licence holders to temporarily or permanently transfer (sell or purchase) licence entitlement. During the 2021/22 water year there were five temporary transfer transactions for a total of 722.3 ML and one permanent transfer transaction of 500.7 ML/yr (Figure 5).

Of the six transfers completed, five were between licence holders within the same management zone. One temporary transfer of 288.0 ML/yr was from Laanecoorie-Serpentine Zone to Moolort Zone (Table 3).

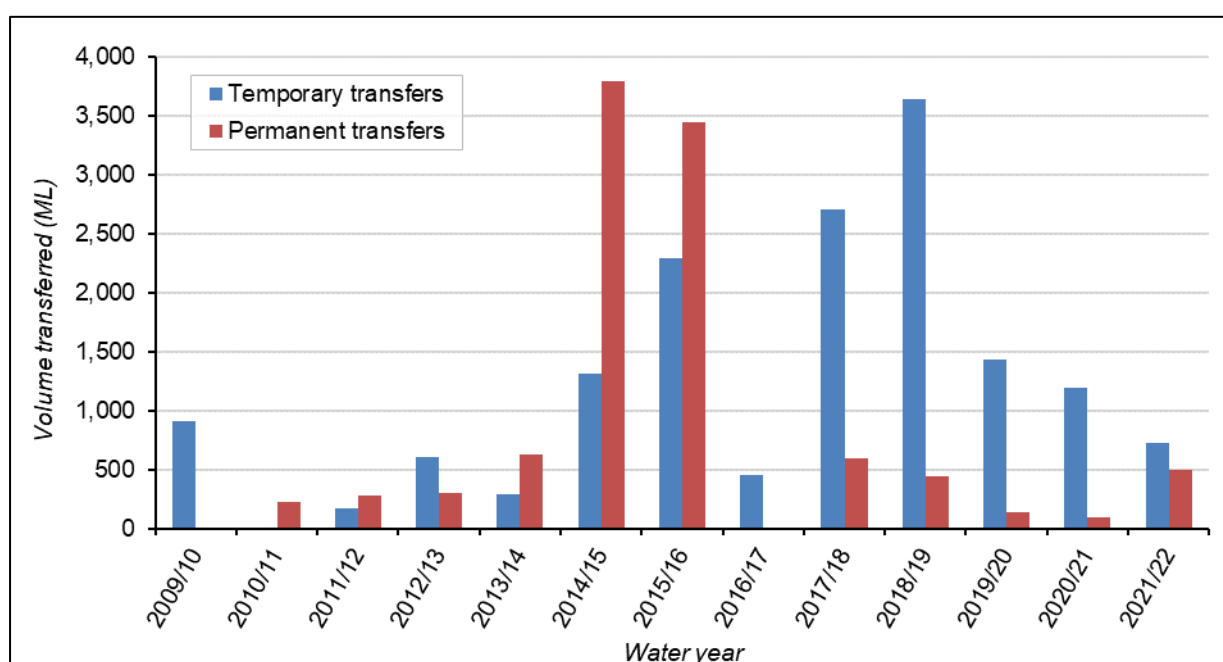


Figure 5 Volume of licence transfers completed each water year since 2009/10

Table 3 Licence transfers by management zone, completed in 2021/22

Management zone	Permanent				Temporary			
	Transfer from		Transfer to		Transfer from		Transfer to	
	No. of transfer	Volume (ML/yr)	No. of transfer	Volume (ML/yr)	No. of transfer	Volume (ML/yr)	No. of transfer	Volume (ML/yr)
Moolort Zone (1011)	-	-	-	-	-	-	1	288.0
Laanecoorie-Serpentine Zone (1012)	1	500.7	1	500.7	4	618.3	3	330.3
Jarklin Zone (1013)	-	-	-	-	1	104.0	1	104.0
Total	1	500.7	1	500.7	5	722.3	5	722.3

2.6 Carryover

Under the Rules, licence holders in the GMA are permitted to carryover up to a maximum of 30 per cent of their unused licence entitlement from one water year to the next.

A total of 9,914.2 ML was carried over to the 2021/22 water year by licence holders in the GMA. At the conclusion of 2021/22, 9,742.3 ML was able to be carried over for use in the 2022/23 water year.

2.7 Metering

At 30 June 2022, there were 130 active service points associated with the 129 licensed bores in the GMA. These comprised 126 metered service points, three deemed service points and one unmetered service point. All meters were read at least twice (where possible) during the 2021/22 water year. Other meter-related activities undertaken in 2021/22 included 41 inspections and one meter installation.

2.8 Licence compliance

The Victorian Government and GMW have a zero-tolerance approach to unauthorised take of non-urban water. GMW is responsible for ensuring water users in northern Victoria comply with their licence conditions. All incidents of non-compliance are investigated by GMW and action is taken in accordance with GMW's Risk-Based Compliance and Enforcement Framework.

More information can be found on GMW's website, at www.gmwater.com.au/water-resources/water-use-compliance.

In 2021/22 there were two reports of alleged, unauthorised take of water (i.e., allocation volume exceedance) in the GMA; there were no prosecutions or convictions relating to groundwater matters.

2.9 Domestic and stock bore licences

The volume of groundwater taken for domestic and stock (D&S) use is not required to be licensed as it is a private right under section 8 of the Act, provided that water is used in accordance with the constraints imposed by the Act and is not regulated by the Rules.

The installation of a bore for D&S use requires a bore construction licence, in accordance with section 67 of the Act. Upon completion of a bore, a 'bore completion report' is required to be submitted to GMW and details are recorded in the Victorian state groundwater database, currently referred to as the *Water Measurement Information System (WMIS)*.

According to the Victorian Water Register, seven D&S bore construction licences, for locations within the GMA, were issued during the 2021/22 water year.

3 Monitoring Program

3.1 Groundwater levels

During the 2021/22 water year a total of 48 State observation bores, located within the GMA, were monitored by GMW and the Department of Environment, Land, Water and Planning (DELWP) – refer Figure 1 for locations. This total includes the 25 key bores specified in the Rules, where practicable. Of the 48 bores, 37 were monitored remotely using telemetry equipment, with measurements recorded hourly, and 11 were monitored manually, with measurements recorded at either one-month or three-month intervals. Water level data for these bores are presented as hydrographs in Appendix B.

Monitoring data, obtained from the State groundwater database, indicate that the groundwater resource position across the majority of the GMA has improved compared to recent years. Recovery levels¹ in most bores were similar in 2021/22, compared to the previous year; however, the combination of increased rainfall and reduced groundwater extraction, during 2021/22 (Figure 4, Figure 3), resulted in drawdown levels² that were notably higher compared to the previous two years.

During the 2021/22 water year, the magnitude of drawdown³ in the Deep Lead aquifer was between eight and 11 metres in areas of intensive groundwater extraction, such as Moolort and Pompapiel, and typically less than 1.5 m in areas with less-intensive groundwater development, such as Eastville, Yarraberb and Prairie (Figure 6).

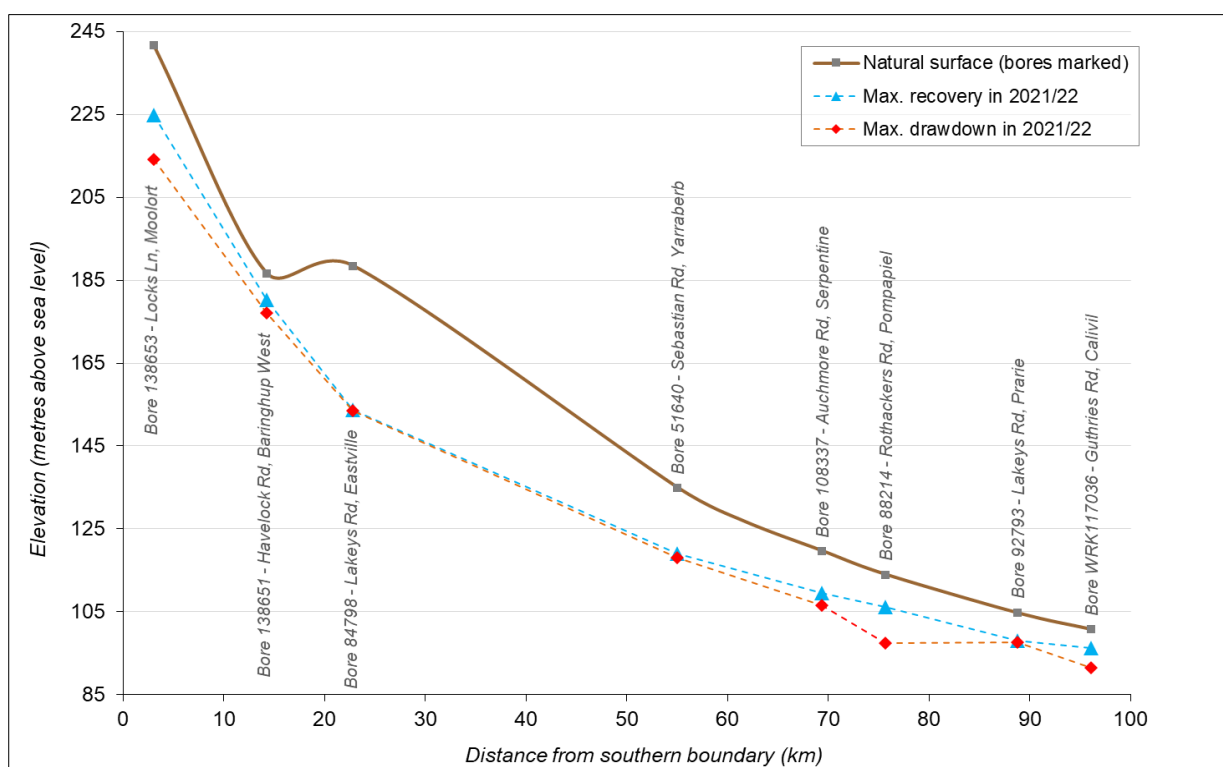


Figure 6 Groundwater levels in the Deep Lead aquifer along a south-to-north transect of the Mid-Loddon GMA

¹ 'Recovery level' refers to the highest water level (i.e., closest to the ground surface) recorded during a water year – this typically occurs between August and November, when rainfall is higher and groundwater extraction is lower.

² 'Drawdown level' refers to the lowest water level (i.e., furthest from the ground surface) recorded during a water year – this typically occurs between December and March, when extraction is higher and there is less rainfall.

³ The 'magnitude of drawdown' is the difference in depth between the maximum and minimum water levels recorded during the same water year.

Moolort Zone

At Moolort, the groundwater level in Deep Lead observation bore 138653 recovered to a level 2.6 m higher (i.e., closer to the surface) in 2021/22, compared to 2020/21 (16.9 m, up from 19.5 m depth). The magnitude of drawdown was comparable across the two years – 10.6 m in 2021/22, compared to 10.4 m in 2020/21 (Figure 7).

At Baringhup West, the groundwater level in Deep Lead observation bore 138651 recovered to a slightly higher level in 2021/22 than it did in 2020/21 (6.39 m depth, compared to 6.56 m). The magnitude of drawdown was also slightly less in 2021/22 which resulted in levels falling to 9.56 m depth in January 2022, compared to 10.66 m during the 2020/21 water year (Figure 7).

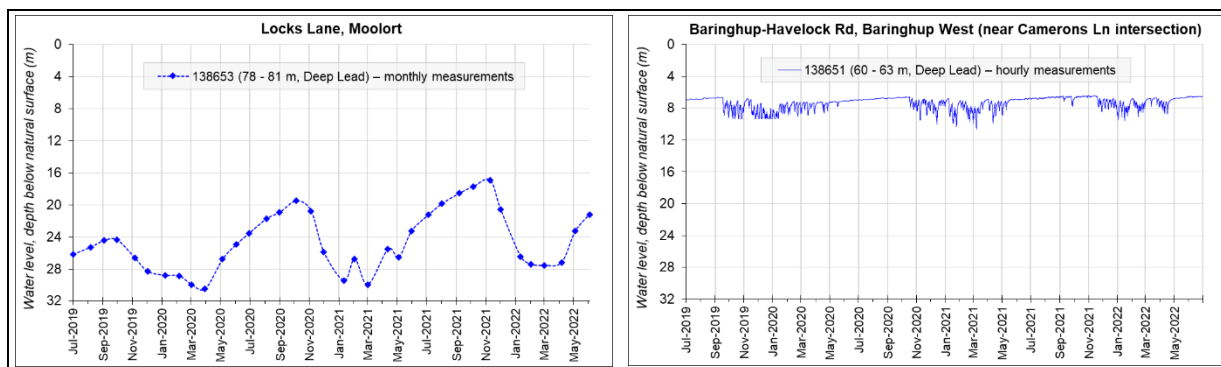


Figure 7 Groundwater level monitoring in the Moolort Zone – all records between 1 July 2019 and 30 June 2022 (DELWP, 2022)

Laanecoorie-Serpentine Zone

In 2021/22 the maximum groundwater recovery level recorded in the allocations trigger bore (ID 88214), located in Pompapiel, was 0.17 m lower (i.e. deeper) than the maximum of 2020/21 (7.82 m, compared to 7.65 m depth); however the magnitude of drawdown was notably less (8.94 m, compared to 12.05 m in 2020/21) (Figure 8).

At Yarraberb, the maximum groundwater recovery level in Deep Lead observation bore 138653 was 0.27 m lower in 2021/22 (compared to 2020/21); and the magnitude of drawdown was also smaller (1.13 m, compared to 1.35 m in 2020/21) (Figure 8).

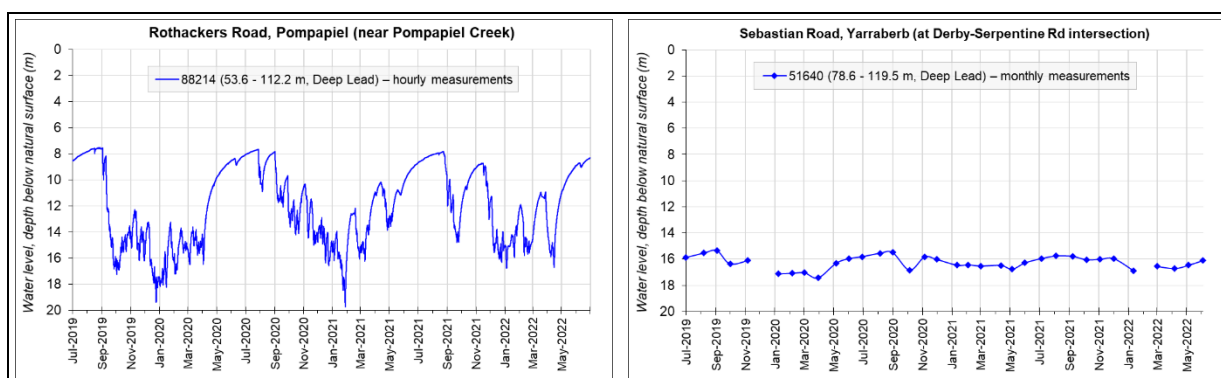


Figure 8 Groundwater level monitoring in the Laanecoorie-Serpentine Zone – all records between 1 July 2019 and 30 June 2022 (DELWP, 2022)

Jarklin Zone

At Calivil, the highest groundwater level recorded in Deep Lead observation bore WRK117036 (which replaced bore 54343 in August 2020) during 2021/22 was 4.50 m depth; 0.31 m higher than the highest level recorded in 2020/21. The lowest recorded level was 9.14 m depth, up from 11.34 m in 2020/21 and 16.97 m in 2019/20 (Figure 9).

At Prairie, the highest groundwater level recorded in Deep Lead observation bore 92793 during 2021/22 was 5.99 m, 0.77 m higher than the highest level recorded in 2020/21; and the magnitude of drawdown was 1.06 m, compared to 1.72 m in 2020/21 (Figure 9).

Lower groundwater levels can provide improved drainage and reduced waterlogging and land-salinity problems in this area.

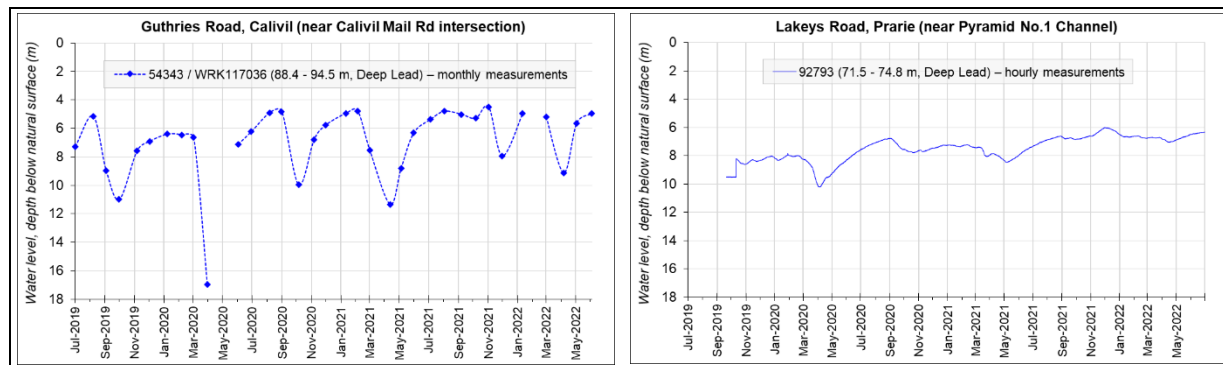


Figure 9 Groundwater level monitoring in the Jarklin Zone – all records between 1 July 2019 and 30 June 2022 (DELWP, 2022)

3.2 Groundwater quality

Sampling of State observation bores

During the 2021/22 water year two State observation bores, located within the GMA, were sampled by GMW and DELWP. These comprised bore 88214, in the Laanecoorie-Serpentine Zone, and bore WRK059856 (an alternative for bore 54343) in the Jarklin Zone. Both bores are screened in the Deep Lead aquifer.

Groundwater samples collected from these bores were sent to an accredited laboratory (*ALS Water and Hydrographics*) for analysis. The full suite of results are tabled in [Appendix C](#).

Groundwater salinity results, presented in Figure 10, indicate that groundwater salinity levels have been relatively stable since 2009; and were at similar levels in the 1970s. Continued annual sampling of these key bores will enable trends in groundwater quality to be observed.

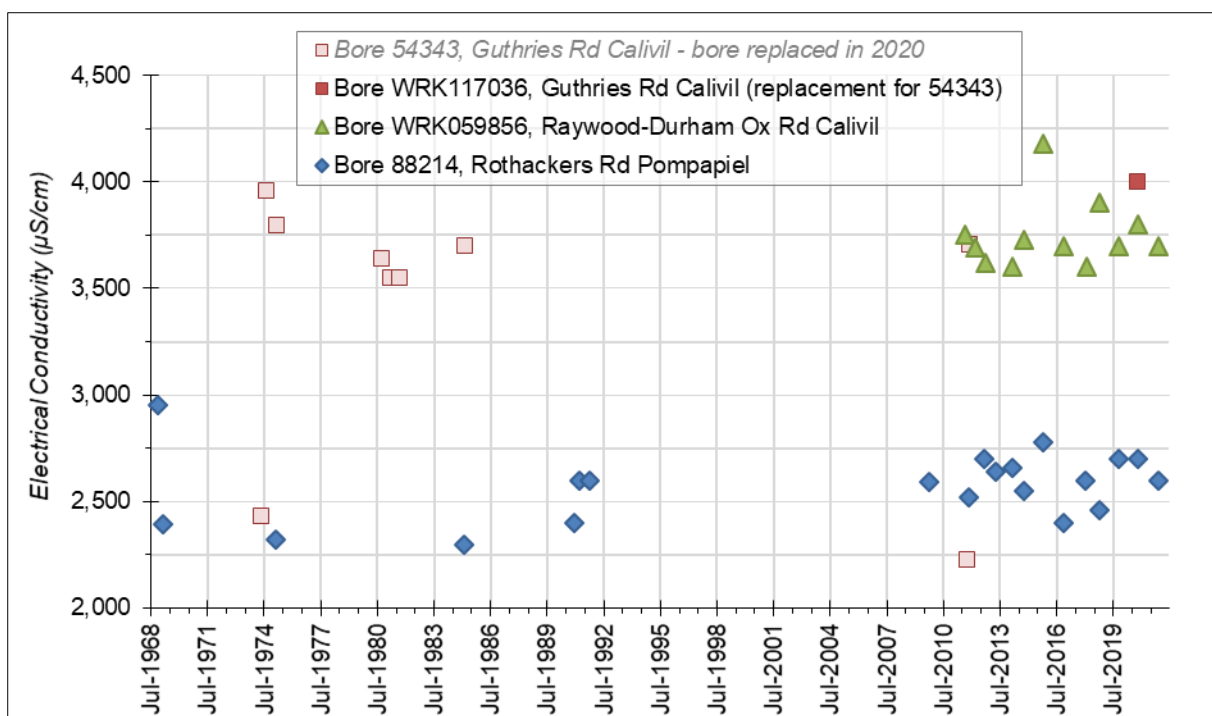


Figure 10 Salinity of groundwater in key monitoring bores in the Mid-Loddon GMA, between July 1968 and June 2022 (DELWP, 2022)

Sampling of private bores

Each year GMW provides all groundwater licence holders in the GMA with a sample bottle (one per bore) and a reply-paid envelope to submit a groundwater sample for salinity analysis.

In the 2021/22 water year, 130 sample bottles were sent out and 21 samples, or 16 per cent, were returned for analysis. On average, the salinity of groundwater samples collected in 2021/22 were slightly lower than previous results (Table 4).

Continued sampling of private bores, particularly those that have a sampling history, will assist with identifying trends in groundwater salinity. A greater return rate would further improve the spatial and temporal understanding of groundwater salinity in the GMA. Groundwater users are strongly encouraged to participate in this program so that they can identify any changes in groundwater salinity at their bore that might impact on their business.

Table 4 Summary of salinity results for private bore-water samples returned in 2021/22

Management zone	Samples returned	Salinity range, as electrical conductivity (µS/cm)	Average of differential from previous salinity result
Moolort Zone (1011)	6	1,490 – 1,860	+ 3%
Laanecoorie-Serpentine Zone (1012)	14	675 – 11,530	- 7%
Jarklin Zone (1013)	1	3,780	no change

4 Administration and Engagement

4.1 Groundwater Reference Committee

GMW met with the Mid-Loddon Groundwater Reference Committee via video-conference 16 February 2022. This was the fourteenth meeting of the committee since its establishment.

Key items of discussion included:

- Plan implementation and administration, including a summary of the 2020/21 water year
- Resource condition and outlook for the remainder of the 2021/22 water year
- Interest to develop deep lead groundwater resources in unincorporated areas, north of the GMA
- GMW's zero tolerance approach to unauthorised take of non-urban water
- The provision of technical work by applicants to support groundwater applications, including consideration of groundwater dependent ecosystems and groundwater-stream interaction.
- Groundwater management planning in the lower Loddon groundwater catchment, including stakeholder engagement challenges

5 References

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Appendix A – Assessment of activities against the Rules

Rule	Activity	Compliant?
1. Cap on licence entitlement	The Minister for Water declared a Permissible Consumptive Volume of 34,037 ML/yr for the Mid-Loddon GMA in March 2013.	Yes
2. Managing groundwater interference	GMW processed all groundwater licence applications in accordance with section 40 of the Act.	Yes
3. Managing intensity of groundwater extraction	GMW processed all groundwater licence applications in accordance with the conditions outlined in Rule 3.	Yes
4. Managing groundwater levels	On 15 July 2021, GMW announced an allocation of 100% of licence entitlement volume for all management zones for the 2021/22 water year. GMW announced the allocation by listing it on their website, sending letters to all licence holders and placing public notices in local newspapers.	Yes
5. Transfer of groundwater licence entitlement	GMW processed one permanent- and five temporary transfer transactions in 2021/22. All transfers were carried out in accordance with conditions outlined in Rule 5.	Yes
6. Carryover	Carryover up to 30% of licence volume was available to all licence holders in the Mid-Loddon GMA.	Yes
7. Monitoring groundwater levels	Of the 25 key bores identified for monthly monitoring in Schedule 1 of the Rules: <ul style="list-style-type: none"> • six bores were monitored remotely, with <u>hourly</u> measurements recorded; • nine bores were monitored manually, on a <u>monthly</u> basis; • four bores were monitored manually, on a <u>quarterly</u> basis; and • five bores were not monitored at all. 	No
8. Monitor groundwater salinity	State observation bores 88214 and WRK059856 were sampled in November 2021 and analysed for salinity at a NATA-accredited laboratory run by <i>ALS Water and Hydrographics</i> . All water quality data from these samples is was entered into the State groundwater database within 60 days). <i>Note: bore WRK059856 has been used as an alternative to bore 54343 since 2011/12. Bore 54343 was replaced in April 2010 (now called WRK117036), however GMW intends to continue sampling bore WRK059856 for data-continuity purposes.</i> GMW sent sample bottles and reply-paid envelopes to all licensed groundwater users (one per licensed bore) in December 2021. GMW measured the salinity of returned samples, advised licence holders of their result and recorded the results in a database. <i>Note: licence holders were not advised of their results until after 30 June 2022.</i>	Yes

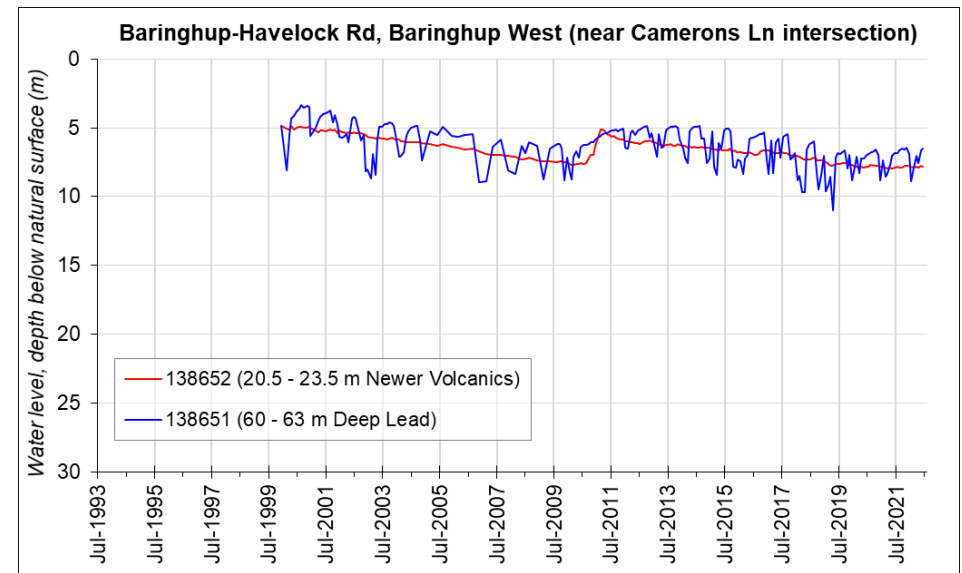
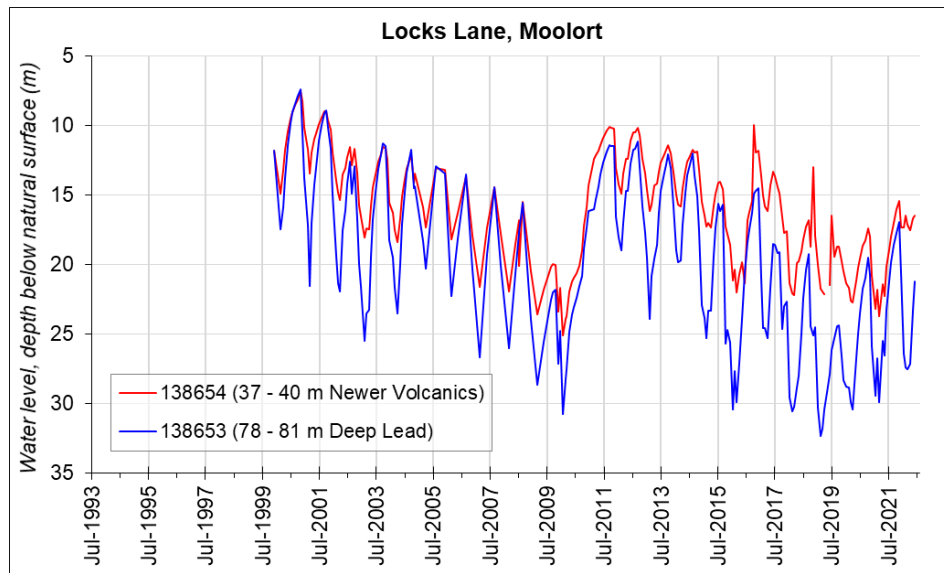
Rule	Activity	Compliant?
9. Record meter readings	<p>As at 30 June 2022, meters were fitted to 126 of 129 licensed bores in the Mid-Loddon GMA. GMW ensured that groundwater use was accounted for each operational licensed bore and read each meter at least twice (where practicable) during 2021/22. Six meters were read three times or more.</p> <p>All meter reads were entered into GMW's metering database called <i>Irrigation Planning Module</i>.</p> <p><i>Note: the Rules states that GMW will "read each meter at least three times each season on average"; nevertheless GMW has maintained the flexibility to vary the frequency depending on seasonal climatic conditions since gaining support on this from the Mid-Loddon Groundwater Reference Committee on 31 August 2011.</i></p>	Yes
10. Annual reporting	<p>In September 2021, GMW prepared an annual report summarising the groundwater management activities under the Rules for the year ending 30 June 2021. The report was published on the GMW website on 22 October 2021.</p>	Yes
11. Provide effective communication	<p>GMW's communication activities during 2021/22 included:</p> <ul style="list-style-type: none"> • met with the Mid-Loddon Groundwater Reference Group on 16 February 2022; • prepared an annual newsletter in September 2021, and mailed a copy to all licence holders in the GMA; • published on its website: the 2020/21 annual report, the 2021 annual newsletter and hydrographs for key bores (including the allocations trigger bore). <p><i>Note: hydrographs were updated on a monthly basis, with the exception of May and June.</i></p> <p>A copy of the Rules, and other supporting documents, have been available on the GMW website since approval.</p>	Yes
12. Review of local management rules	<p>In 2018, GMW undertook a formal review of the Rules in consultation with DELWP and the Mid-Loddon Groundwater Reference Group.</p> <p>GMW met with the Mid-Loddon Groundwater Reference Committee on 16 February 2022. GMW discussed its future intentions to expand the Mid-Loddon GMA (to include unincorporated areas to the west, east and north of the existing boundary) and to amend the Rules accordingly. GMW consult with all relevant stakeholders, including the Groundwater Reference Committee, as part of this process.</p>	Yes

Appendix B – Groundwater level data

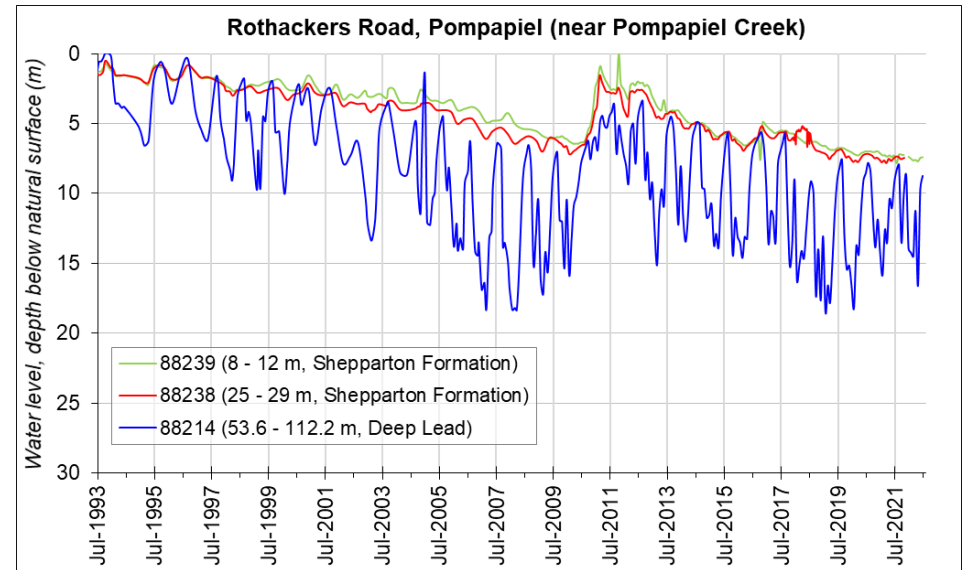
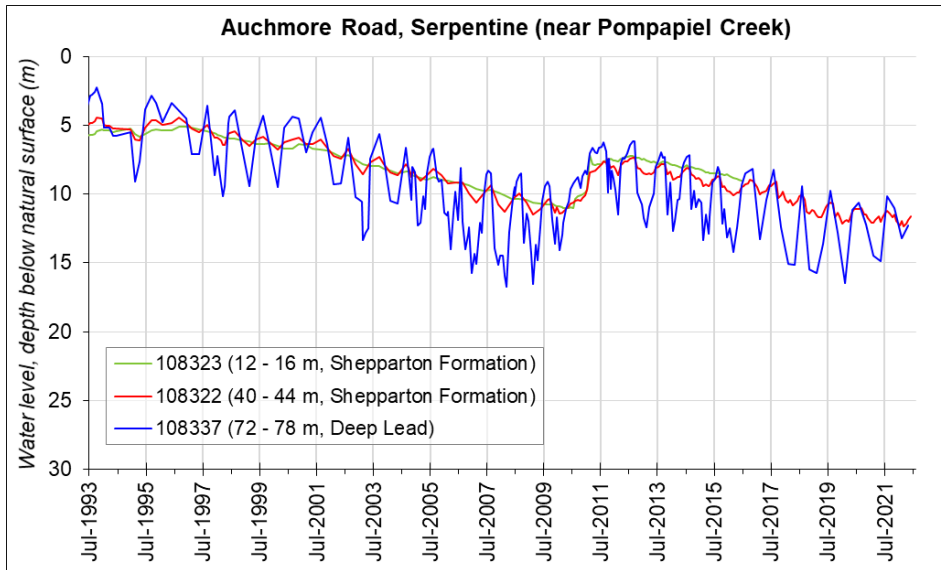
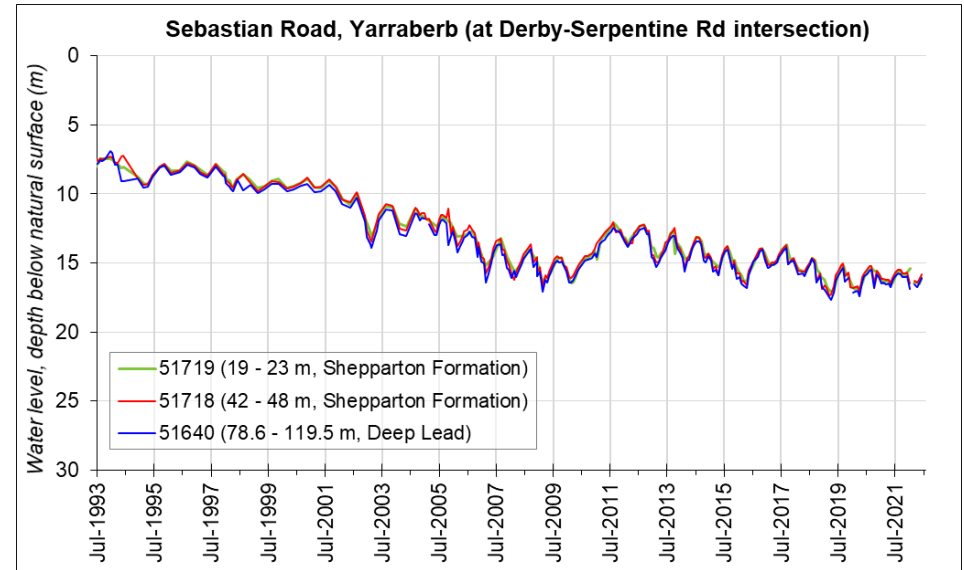
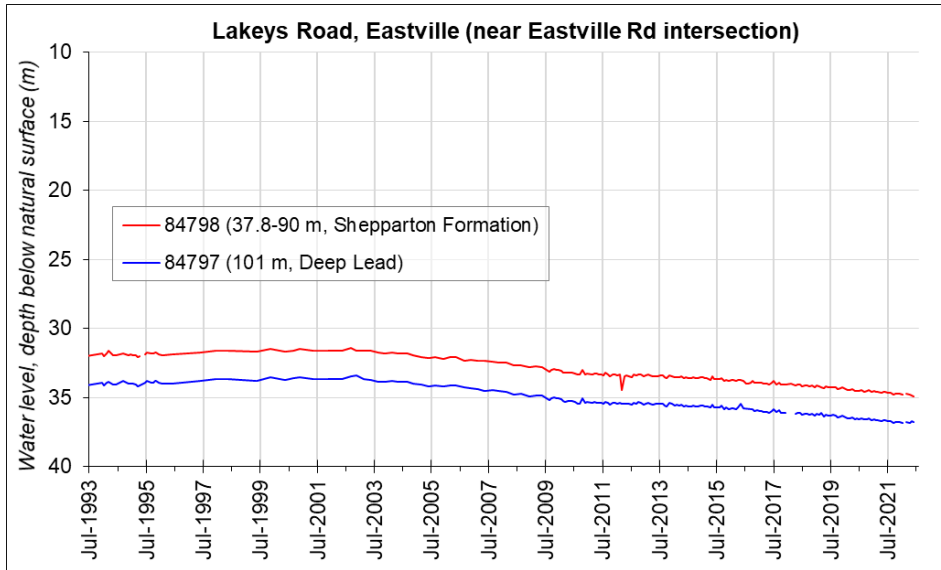
Hydrographs for key monitoring bores in the GMA. For sites that have hourly records, only one level per month is presented in the hydrographs – 12:00 PM on the 15th day (or the closest available).

All data was sourced from the *Water Measurement Information System (WMIS)* in September 2022 (DELWP, 2022). All hydrographs show the time period July 1993 to June 2022 – further groundwater level information is available on the WMIS website, at <https://data.water.vic.gov.au>

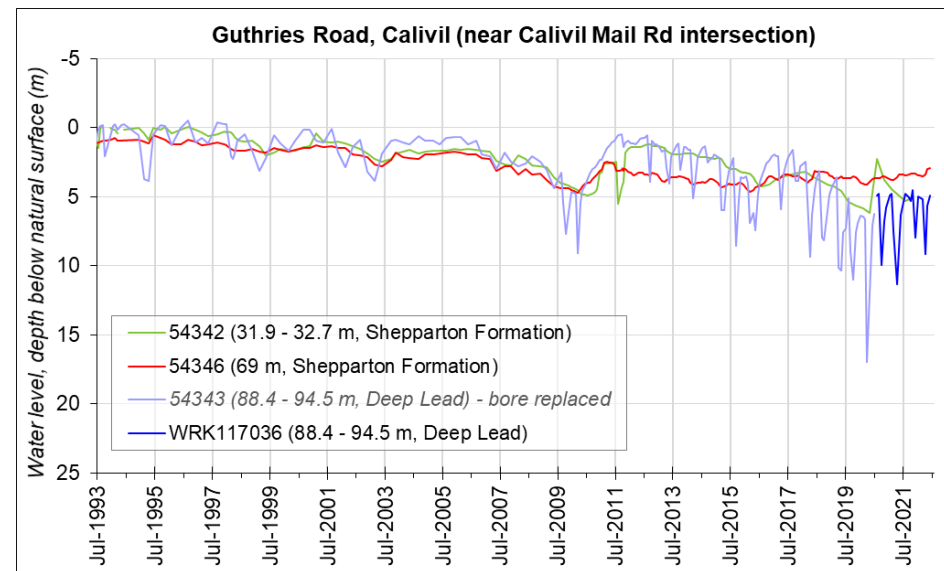
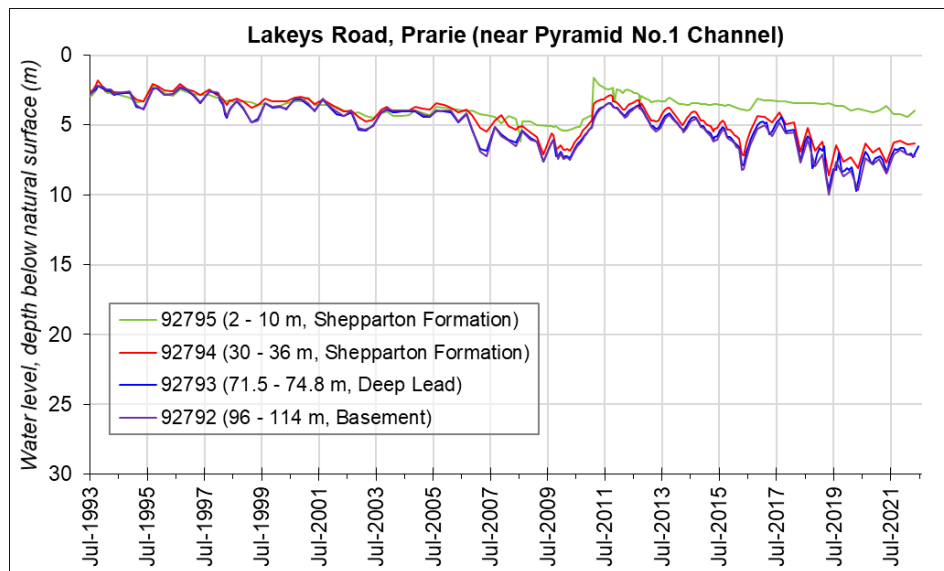
Moolort Zone (1011)



Laanecoorie-Serpentine Zone (1012)



Jarklin Zone (1013)



Appendix C – Groundwater quality results

Analytical chemistry results for key State observation bores sampled during the 2021/22 water year. All data sourced directly from laboratory reports completed by *ALS Water and Hydrographics* (ALS, 2022). Further information is available on the *Water Measurement Information System* website, at <https://data.water.vic.gov.au>.

		Bore:	88214	WRK059856
		Aquifer:	Deep Lead	Deep Lead
		Date:	24/11/2021	24/11/2021
Analyte	Unit			
Conductivity @ 25°C	µS/cm		2,600	3,700
pH	pH units		8.7	7.1
Ionic balance	%		3.45	0.25
Total Anions	meq/L		25	35
Total Cations	meq/L		23	35
Ion Balance - TDS (EC) vs TDS	mg/L		0.5	0.4
Total Alkalinity, as CaCO ₃	mg/L		180	190
Bicarbonate Alkalinity, CaCO ₃	mg/L		170	190
Calcium, as Ca	mg/L		13	51
Carbonate Alkalinity, as CaCO ₃	mg/L		13	<2
Chloride, as Cl	mg/L		720	980
Hydroxide Alkalinity, as CaCO ₃	mg/L		<2	<2
Potassium, as K	mg/L		9	10
Sodium, as Na	mg/L		410	570
Ammonia, as N	mg/L		0.2	<0.1
Nitrite, as N	mg/L		<0.01	<0.01
Nitrate, as N	mg/L		<0.01	0.02
Sulphate, as SO ₄	mg/L		<0.01	0.03
Total Kjeldahl Nitrogen, as N	mg/L		48	180
Total Nitrogen, as N	mg/L		0.2	<0.1
Arsenic, as As	mg/L		0.2	<0.1
Iron, dissolved as Fe	mg/L		<0.001	0.006
Mercury, as Hg	mg/L		<0.01	0.25
Magnesium, as Mg	mg/L		<0.0001	<0.0001
Manganese, dissolved as Mn	mg/L		55	90
Total Dissolved Solids, 180C	mg/L		0.047	0.062
Total Organic Carbon	mg/L		1300	1500
Turbidity, NTU	NTU		<0.5	<0.5
Phosphorus, total as P	mg/L		0.4	31
Lead, dissolved (ICP-MS)	mg/L		0.06	0.14
Nickel, dissolved (ICP-MS)	mg/L		<0.001	<0.001
Cadmium, dissolved (ICP-MS)	mg/L		0.004	0.008
Chromium, dissolved (ICP-MS)	mg/L		<0.0002	<0.0002
Copper, dissolved (ICP-MS)	mg/L		<0.001	<0.001
Zinc, dissolved (ICP-MS)	mg/L		<0.001	0.002

Note: Some results may be below detection limits, but these limits are not available from data source.