South Australian–Victorian Border Groundwaters Agreement Review Committee

Thirty-Ninth Annual Report to 30 June 2024

PREFACE

The Border Groundwaters Agreement Review Committee's Annual Report for 2023-24 fulfils the requirement under clause 30(1) of the Border Groundwaters Agreement to report on its activities during the year to 30 June 2024. This report has been compiled with reference to reports from South Australia and Victoria.

Clause 30(2) requires the Review Committee to forward a copy of the report to the appropriate Minister in each government.

Section 11 of the Victorian *Groundwater (Border Agreement) Act 1985* and section 13 of the South Australian *Groundwater (Border Agreement) Act 1985* provides that the relevant minister shall cause a copy of the annual report to be laid before the parliament within fourteen sitting days of the receipt of the report.

1. The year in summary

During the year, the Review Committee continued its oversight of groundwater trends in the Designated Area, with the objective of maintaining the ongoing sustainable and equitable use of groundwater along the South Australian-Victorian border.

Both signatory states have complied with their obligations under the Agreement, including the provision of their state annual reports in accordance with clause 27(1), and the Review Committee has considered the reports.

Extractions did not exceed the Permissible Annual Volumes (PAV) for any zone for the year ending 30 June 2024 (Table 1). In Sub-zone 1A South, the Allowable Annual Volume (AAV) of 15,000ML was exceeded by 2,096ML. The Review Committee has continued to work with South Australia to understand the risks to the resource from groundwater extraction in Sub-zone 1A South, supported by the technical work underway in this area (groundwater numerical modelling and monitoring of salinity along the coast). A relationship between groundwater extraction and rainfall has been observed in previous years, with higher extraction when rainfall is lower. South Australia's coastal monitoring program has not reported any significant increase in salinity, although groundwater levels have declined in the study area. South Australia continues to progress a new water management plan to address overallocation and the risk posed by extraction. The Review Committee will work with South Australia to ensure the new plan meets the management objectives of the Agreement and is keen to see seawater intrusion monitoring along the southern coastal area continue.

The Review Committee completed a review of Province 1 with no change to the management prescriptions.

The Review Committee provided recommended amendments to the Agreement to the relevant state Ministers who accepted the recommendations. The states are-progressing with making the amendments.

2. About the Agreement and the Review Committee

The South Australian–Victorian Border Groundwaters Agreement

The Border Groundwaters Agreement (the Agreement) was established to protect the groundwater resources adjacent to the border between South Australia and Victoria and to provide for the cooperative management and equitable sharing of those resources and to guard against their undue depletion or degradation. The Designated Area established by the Agreement is a 40-kilometre-wide strip centred on the border and extending for its full length. The Designated Area is divided into 22 zones, 11 in each state (Figure 1).

The Border Groundwaters Agreement Review Committee (the Review Committee) with membership from both states is established under the Agreement as the operating body for the effective implementation and administration of the Agreement. [1]

The Review Committee is required, at intervals of not more than five years, to review the management prescriptions in the Designated Area. and to provide recommendations for amendments to the Ministers. Clause 22 provides for the Committee to "review the Agreement and, if in its opinion amendments thereto are necessary or desirable, make recommendations to the Contracting Governments accordingly".

The members of the Review Committee comprised:

South Australia		Victoria	
Mr D Jordan	Member	Ms A May	Member
Ms K Burmeister	Member	Mr R Nott	Member
Ms E Perkins	Deputy member	Mr M Hudson	Deputy member

3. Prescriptions

In accordance with Clause 17(8) of the Agreement the Review Committee reviewed the management prescriptions for Province 1 and determined to leave them unchanged.

The next reviews of the management prescriptions are due as follows:

- Province 3 – February 2026
- Province 2 – December 2027
- Province 1 – Dec 2028.

[1] The Review Committee does not manage or control any public finances or assets.

Permissible Annual Volumes and Allowable Annual Volumes, allocations and use

The Permissible Annual Volumes (PAVs) for all zones and Allowable Annual Volumes (AAVs) for all sub-zones remained unchanged for the year ending 30 June 2024 and are shown in Table 1 (Tertiary Limestone Aquifer), Table 2 (Tertiary Confined Sands Aquifer) and Table 3 (Pliocene Sand Aquifer) respectively, along with allocations and use.

In Victoria the allocations do not exceed the PAVs. In South Australia, allocations from the Tertiary Limestone Aquifer exceed the PAVs for the majority of the zones, however, not all of this allocation is extracted.

Extractions did not exceed the Permissible Annual Volumes (PAV) for any zone for the year ending 30 June 2024. A history of total use in the Designated area from the Tertiary Limestone Aquifer since 2006 is shown in Figure 2.

Groundwater extraction from the Tertiary Limestone Aquifer in Sub-zone 1A South exceeded the AAV by 2,096ML during the year. A relationship between groundwater extraction and rainfall has been observed in previous years, with higher extraction when rainfall is lower, with the AAV for sub-zone 1A South not exceeded in 2022-2023 (when rainfall was above average) but exceeded in 2021-2022 when rainfall was below average.

Groundwater extraction in the Tertiary Limestone Aquifer exceeded the AAV in Sub-zone 9A South by 232ML. The increase in use can be attributed to below average rainfall requiring the use of carry-over volumes banked from the previous water use year.

Table 1. Permissible Annual Volumes, number of licences, allocations and annual volumes extracted for the Tertiary Limestone Aquifer at 30 June 2024

South Australia					Victoria				
Tertiary Limestone Aquifer				Zone	Zone	Tertiary Limestone Aquifer			
Permissible Annual Volume (ML/y)	Licensed Allocations					Permissible Annual Volume (ML/y)	Licensed Allocations		
	Licences[2]	Volume Allocated[3] (ML)	Volume Extracted[4] (ML)				No. of Licences	Volume Allocated (ML)	Volume Extracted (ML)
3,700	10	3,700	2,082	**11A**	**11B**	1,823	2	1,600	1,322
14,000	35	14,000	10,600	**10A**	**10B**	6,720	24	6,718	4,413
11,595	7	10,160	9,693	**9A**	**9B**	5,960	3	5,300	844
5,121	37	6,542	1,728	**8A**	**8B**	3,500	7	3,130	118
8,259	69	9,132	3,877	**7A**	**7B**	5,782	13	5,782	3,710
8,758	44	10,629	5,462	**6A**	**6B**	10,279	15	10,279[5]	4,809
18,943	122	23,696	13,093	**5A**	**5B**	12,833	35	12,833[6]	6,893
22,102	178	30,903	10,625	**4A**	**4B**	14,000	11	2,803	240
24,054	244	32,368[7]	12,048	**3A**	**3B**	16,500	3	515	89.5
25,000	110	26,899	13,711	**2A**	**2B**	25,000	37	24,979	7,387
31,812	311	45,374	30,993	**1A**	**1B**	45,720	20	4,457	3,445
173,344	**1,101**	**213,403**	**113,233**	**Total**	**Total**	**148,117**	**170**	**78,396**	**33,270**

Table 2. Allowable Annual Volumes, number of licences, allocations and annual volumes extracted for the Tertiary Limestone Aquifer at 30 June 2024

South Australia				
Tertiary Limestone Aquifer				
Allowable Annual Volume (ML/y)	Licensed Allocations			Sub-Zone
	Licences	Volume Allocated (ML)	Volume Extracted (ML)	
2,400	2	2,400	1,701	**9A North**
7,760	5	7,760	7,992[8]	**9A South**
4,658	19	5,308	2,340	**6A South**

[2] The variability in the number of licences between reporting years is due to licensed allocation consolidation or division from the transfer of entitlements or business entity restructuring. The changes in the number of licences do not reflect an increase in the volume of water allocated, as the water allocation plans preclude the allocation of additional water.

[3] The licensed allocations in South Australia include a vineyard frost mitigation groundwater use allowance as an average annual value of 1.55ML/ha. The granted allocation is a rolling average over three years of 4.65 ML.

[4] South Australia allocation data excludes the delivery supplements for flood irrigation. The groundwater extraction volume is the amount taken from the bores.

[5] In Zones 5B and 6B, Neuarpur licensees were restricted to 80% of licence entitlement volume which equated to 10,826 ML available for Zone 5B and 8,263ML for Zone 6B.

[6] As per 3 above.

[7] In Zone 3A a 40 ML irrigation allocation that was temporarily transferred to forestry from 2020-2023 has now returned to irrigation use

[8] All licensees extracted within their allocations. Extraction includes the use of carry-over volumes of unused allocation banked in the 2022-23 water use year, as provided for in the Tatiara Water Allocation Plan in South Australia.

15,000	47	20,082	17,096	**1A South**

The Review Committee has continued to work with South Australia to understand the risks to the resource from groundwater extraction in Sub-zone 1A South, supported by the technical work underway in this area (groundwater numerical modelling and monitoring of salinity along the coast). The coastal monitoring program has not reported any significant increase in salinity, although groundwater levels have declined in the study area. South Australia continues to progress a new water management plan to address overallocation and the risk posed by extraction. The Review Committee will work with South Australia to ensure the new plan meets the management objectives of the Agreement and is keen to see seawater intrusion monitoring along the southern coastal area continue.

Table 3. Permissible Annual Volumes, allocations and annual volumes extracted for the Tertiary Confined Sand Aquifer at 30 June 2024

South Australia					Victoria				
Tertiary Confined Sand Aquifer				Zone	Zone	Tertiary Confined Sand Aquifer			
Permissible Annual Volume (ML/y)	Licensed Allocations					Permissible Annual Volume (ML/y)	Licensed Allocations		
	No. of Licences	Volume Allocated (ML)	Volume Extracted (ML)				No. of Licences	Volume Allocated (ML)	Volume Extracted (ML)
0	0	0	0	**11A**	**11B**	0	0	0	0
320	0	0	0	**10A**	**10B**	560	0	0	0
570	0	0	0	**9A**	**9B**	630	0	0	0
340	0	0	0	**8A**	**8B**	330	0	0	0
350	0	0	0	**7A**	**7B**	350	0	0	0
360	0	0	0	**6A**	**6B**	360	0	0	0
540	0	0	0	**5A**	**5B**	570	0	0	0
710	1	102	47	**4A**	**4B**	300	0	0	0
1,900	2	259	162	**3A**	**3B**	1,000	0	0	0
2,900	2	150	18	**2A**	**2B**	5,100	0	0	0
9,200	4	1,704	620	**1A**	**1B**	14,500	0	0	0

Table 4. Permissible Annual Volume, number of licences, volume allocated and annual volume extracted for the Pliocene Sands Aquifer at 30 June 2024

South Australia				
Pliocene Sands Aquifer				
Permissible Annual Volume (ML/y)	Licensed Allocations			Zone
	No. of Licences	Volume Allocated (ML)	Volume Extracted (ML)	
7,763	0	0	3,953	**11A**

Table 5. Permissible distances at 30 June 2024

South Australia			Victoria		
Tertiary Confined Sand Aquifer Distance (km)	Tertiary Limestone Aquifer Distance (km)	Zone	Zone	Tertiary Limestone Aquifer Distance (km)	Tertiary Confined Sand Aquifer Distance (km)
3	3	**11A**	**11B**	3	3
3	3	**10A**	**10B**	3	3
3	1	**9A**	**9B**	1	3
3	1	**8A**	**8B**	1	3
3	1	**7A**	**7B**	1	3
3	1	**6A**	**6B**	1	3
3	1	**5A**	**5B**	1	3
3	1	**4A**	**4B**	1	3
3	1	**3A**	**3B**	1	3
3	1	**2A**	**2B**	1	3
3	1	**1A**	**1B**	1	3

There were no applications within the permissible distance during 2023-24.

Permissible rate of potentiometric surface lowering

The permissible rate of potentiometric surface lowering (or drawdown) that must not be exceeded are detailed in Table 6. Groundwater levels over the year are at similar to levels in the previous year (Figure 3 and 4). There were no exceedances of prescriptions in the year ending 30 June 2024.

Table 6. Permissible rate of potentiometric surface lowering at 30 June 2024

South Australia		Victoria	
Rate (m/y)	Zone	Zone	Rate (m/y)
0.65	**11A**	**11B**	0.65
0.65	**10A**	**10B**	0.65
0.65	**9A**	**9B**	0.65
0.05	**8A**	**8B**	0.65
0.05	**7A**	**7B**	0.05
0.05	**Sub-zone 6A North**	**6B**	0.20
0.20	**Sub-zone 6A South**		
0.20	**5A**	**5B**	0.20
0.25	**4A**	**4B**	0.25
0.25	**3A**	**3B**	0.25
0.25	**2A**	**2B**	0.25
0.25	**1A**	**1B**	0.25

The Agreement

The Review Committee recommended amendments to the Agreement to the relevant state Ministers. On acceptance, the Ministers noted that the Review Committee would finalise the amendments and provide them to each state's Ministers and Premiers for consideration.

Figure 1. Designated Area and zones, showing Hydrogeological provinces

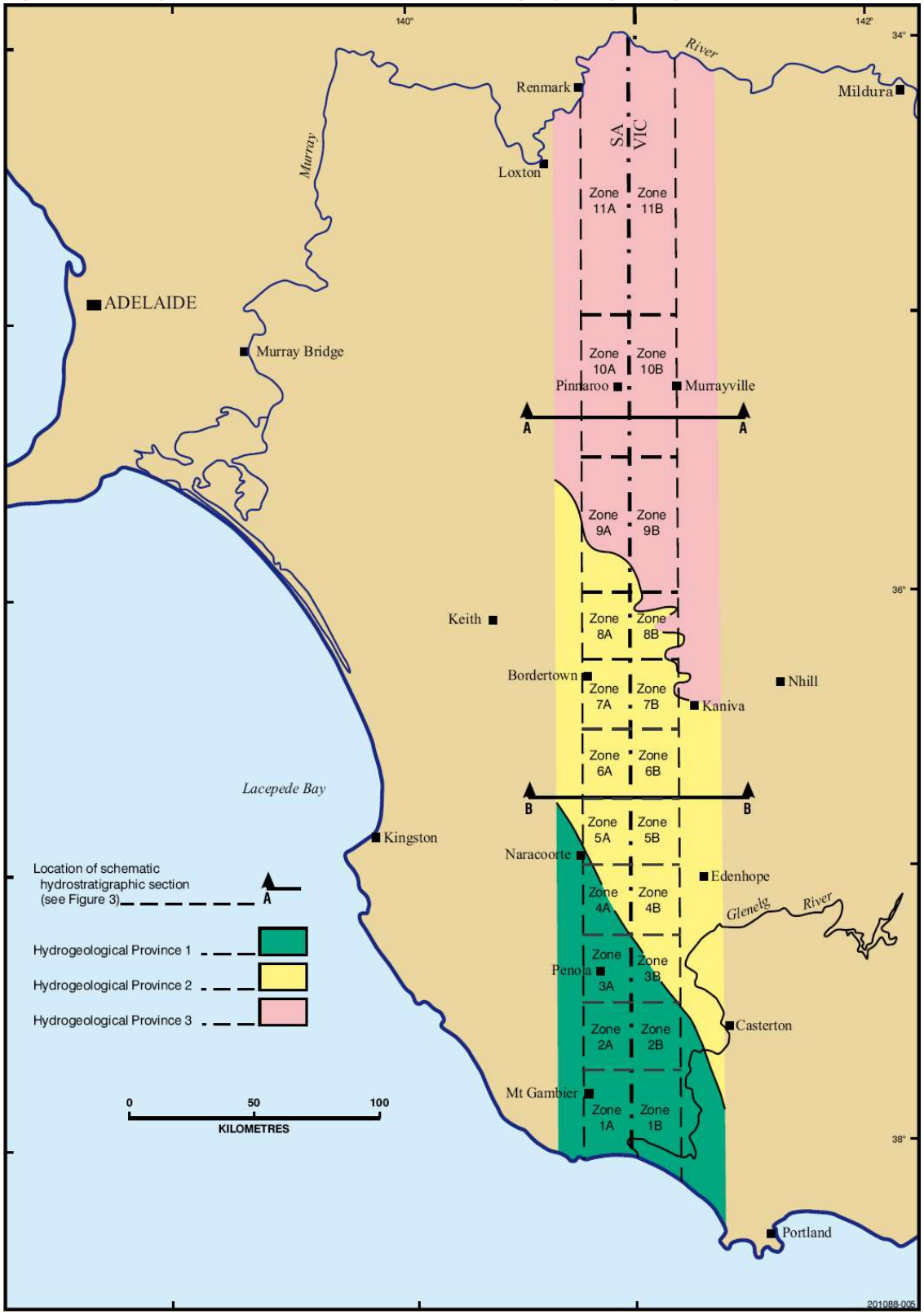
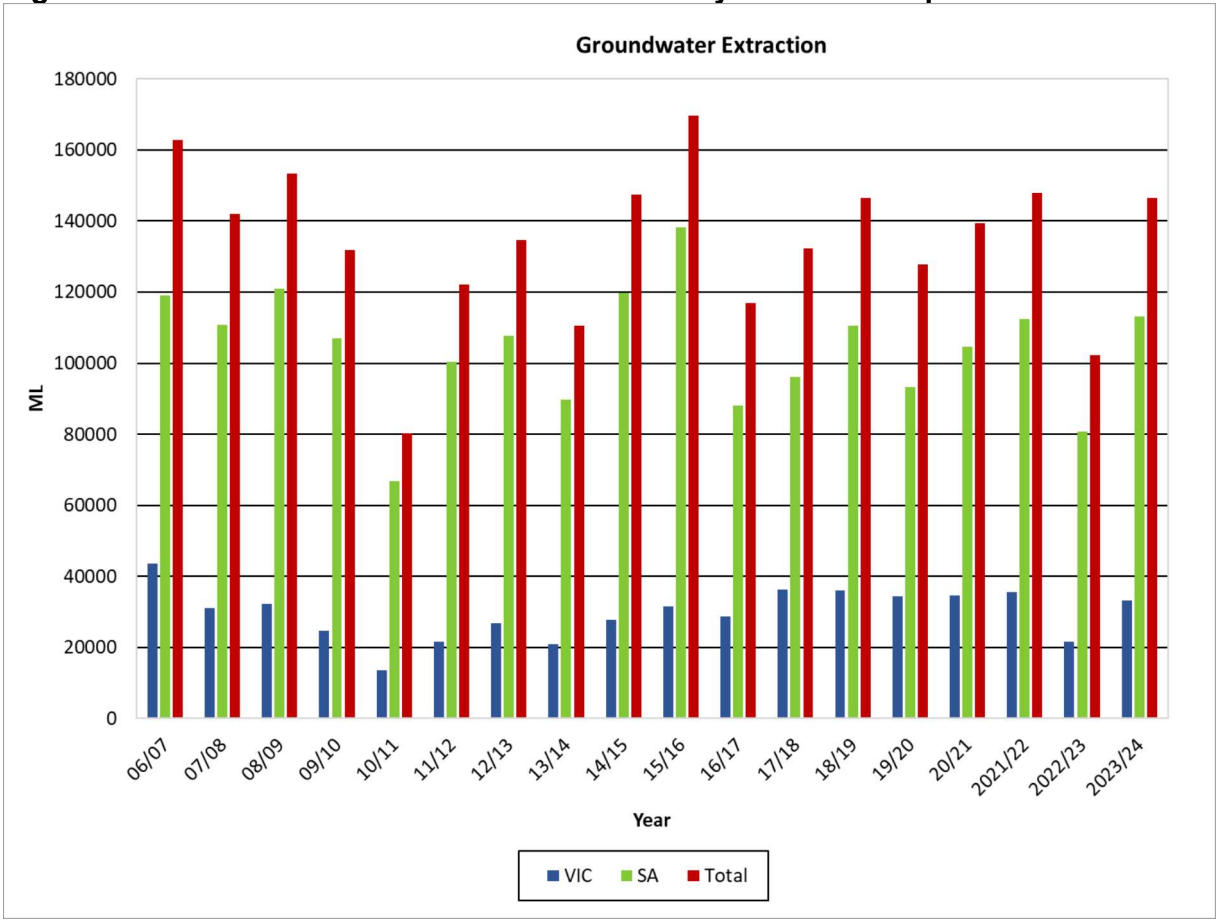
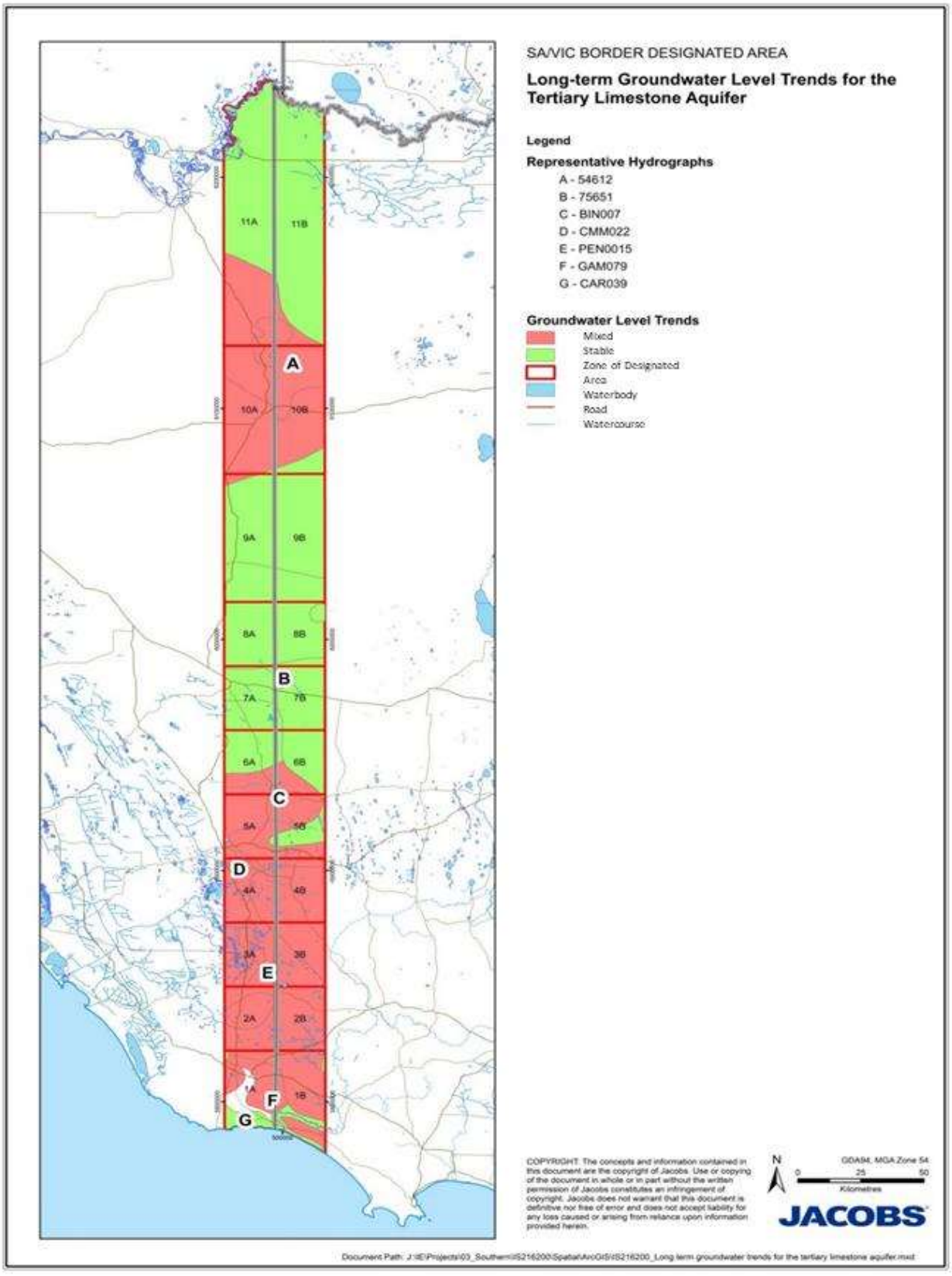


Figure 2. Annual volume extracted from the Tertiary Limestone Aquifer since 2006–07

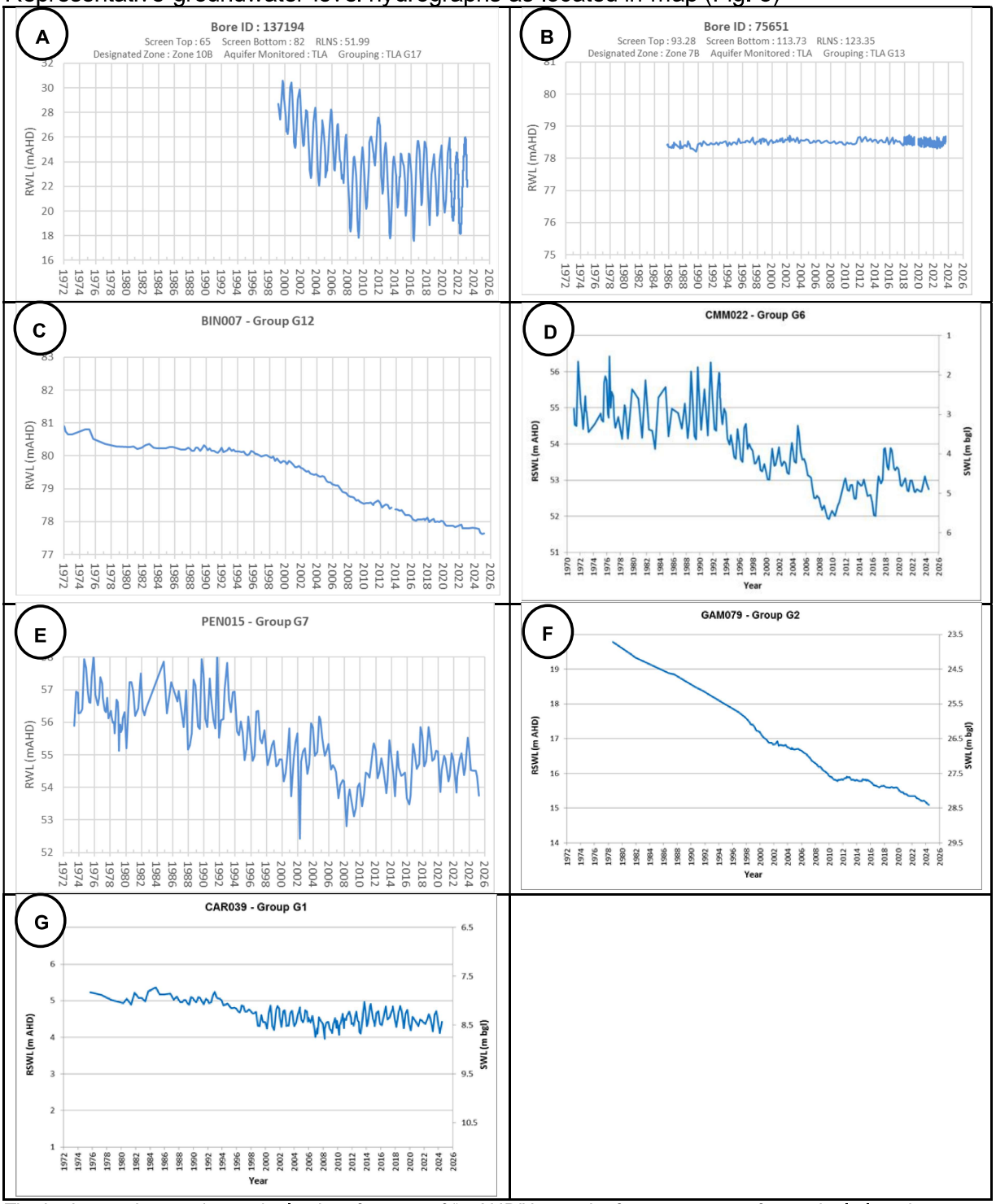


Note: 2006-07 was the first year that comprehensive metered groundwater extraction records were obtained.

Figure 3. Groundwater level trends for the Tertiary Limestone Aquifer with some representative hydrographs

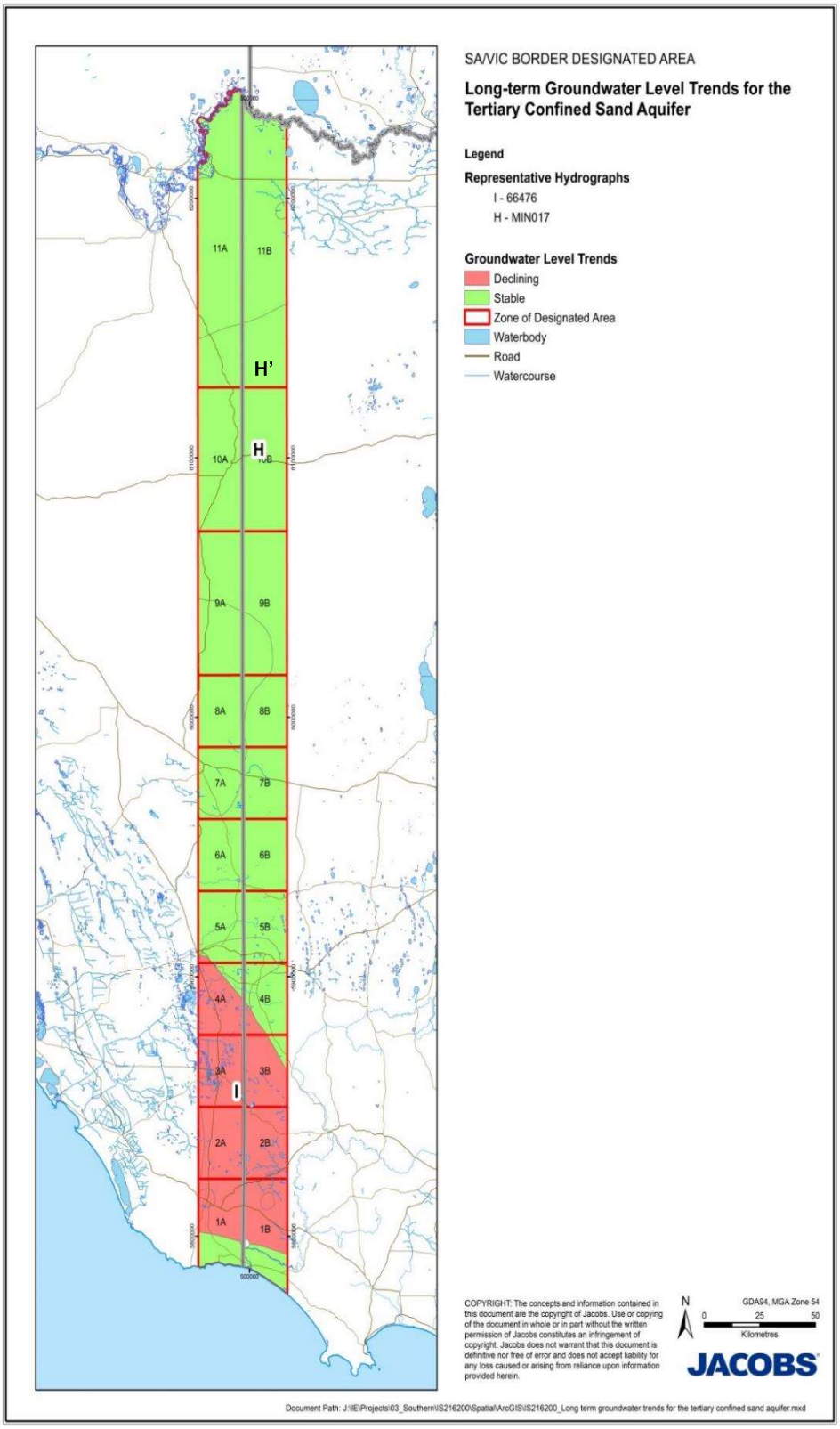


Representative groundwater-level hydrographs as located in map (Fig. 3)

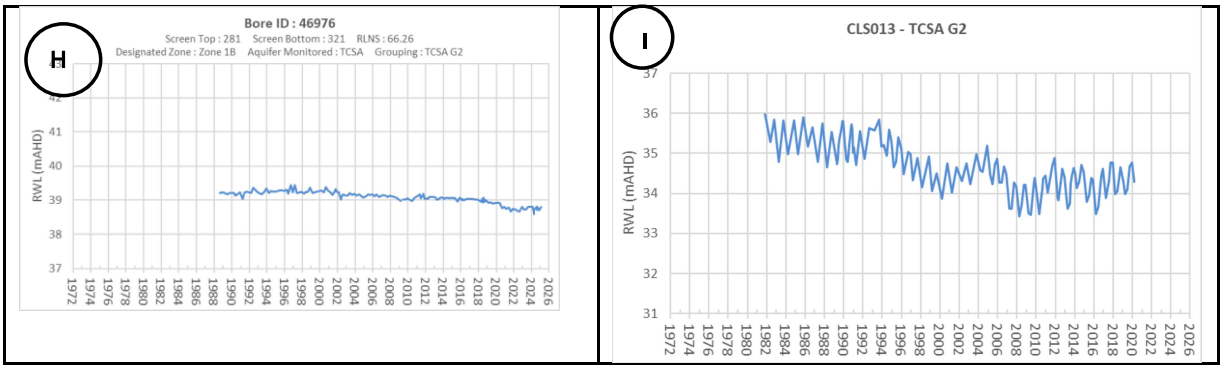


The hydrographs graphs vertical axis reference of “mAHD” is a unit of measurement for vertical elevation, specifically in relation to the Australian Height Datum (AHD), which is the official reference surface for elevation measurements in Australia.

Figure 4. Groundwater level trends for the Tertiary Confined Sand Aquifer with some representative hydrographs



Representative groundwater-level hydrographs as located in map (Fig. 4)



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