

# *Appendices*

# Appendices

## Appendix A1 Bulk Entitlement (Eildon – Goulburn Weir) Reporting

This appendix is included in the Goulburn-Murray Water 2008/09 Annual Report in compliance with the requirements of clause 17.3 of the Bulk Entitlement (Eildon - Goulburn Weir) Conversion Order 1995 ("BE"), which obliges the Authority to report on certain matters as specified in clause 17.1 of the same Order. The period of reporting is 1 July 2008 to 30 June 2009.

BE Clause	Item	Report	Notes
17.1(d)	Diversions at Goulburn Weir offtake channels		See Note 1
	Cattanach Canal	132,617 ML	
	Stuart Murray Canal	373,662 ML	
	East Goulburn Main Channel	126,282 ML	
	<b>Total Goulburn Weir offtake diversion</b>	<b>632,561 ML</b>	
17.1(e)(i)	Diversion by primary entitlement holders licenced under Section 51(1) (a) of the Water Act 1989	8,331 ML	
17.1(e)(ii)	Diversion by other corporations	22,305 ML	
17.1(g)	Storage contents		
	Lake Eildon	432,874 ML	Vol 30/06/09
	Goulburn Weir	25,228 ML	Vol 30/06/09
	Waranga Basin	71,940 ML	Vol 30/06/09
	Greens Lake	16,162 ML	Vol 30/06/09
17.1(h)	Target filling releases	No	
17.1(i)	Credits	No	
17.1(j) & 17.1(k)	Net Water Share and Allocation transfers of this BE	Water Share Trade: See appendix B5 Allocation Trade: 39,875 ML	See Note 2
17.1(l)	Goulburn Weir releases for supplement or environmental purposes	25,783 ML	See Note 3
17.1(m)	Alterations to Schedule 1 entitlements		
	Water Shares in Irrigation Areas	Decreased by 54,639 ML	See Note 4
	Water Shares of Diverter Licences	Decreased by 5,996 ML	See Note 5
17.1(n)	Transfers of primary entitlements	See Appendices B2 to B7	
17.1(o)	Supply to primary entitlements	See Appendix B8	
17.1(p)	Amendments to this BE	Yes	See Note 6
17.1(q)	New BE granted	No	
17.1(r)	Environmental Management and Metering programs	Programs implemented	See Note 7
17.1(s)	BE compliance failures	No	
17.1(t)	BE compliance difficulties	Yes	See Note 8

### Notes

- Volumes were obtained from hydrographic data collected by Thiess Services:
  - Cattanach Canal SI No 405702
  - Stuart Murray Canal SI No 405700
  - East Goulburn Main Channel SI No 405704
- Net Allocation transfers including transfers to areas not covered by this BE.
- Water released from the Goulburn Water Quality Reserve and water released to meet inter valley trade requirements.
- Alteration of BE due to transfers of High-Reliability Water Shares from Irrigation Areas including transfers to Non Water Users.
- Alteration of BE due to transfers of High-Reliability Water Shares from diversion licence holders including transfers to Non Water Users.
- Bulk Entitlement (Eildon-Goulburn Weir) Conversion Further Amending Order 2009 came into effect on 28 May 2009.
- Programs are coordinated with Goulburn-Murray Water's Environmental Management System (ISO 14001 certified) and the Regional Water Monitoring Partnership.
- Qualified Rights, which reduced minimum passing flow requirements due to low water availability, were in place from the start of July to the end of November.

## Appendix A2 Bulk Entitlement (Eildon – Goulburn Weir) Reporting

### Diversions by Other Authorities with Bulk Entitlements

Authority	Town	BE Volume (ML)	Diversion (ML)	Notes
Goulburn Valley Water	Alexandra	916	376	
	Bonnie Doon	112	45	
	Eildon	480	123	
	Euroa	1,990	818	
	Mooroopna	300	160	See Note 1
	Murchison	350	196	
	Nagambie	825	605	
	Seymour	5,340	2,200	
	Shepparton	17,970	11,566	See Note 1
	Colbinabbin (channel supply)	89	25	
	Corop (channel supply)	44	10	
	Dookie (channel supply)	160	110	
	Girgarre (channel supply)	100	50	
	Katandra West (channel supply)	64	46	
	Kyabram and Merrigum (channel supply)	2,000	1,222	
	Rushworth (channel supply)	530	315	
	Stanhope (channel supply)	200	85	
	Tatura (channel supply)	2,600	2,108	
	Tongala (channel supply)	1,404	746	
<b>TOTAL</b>		<b>35,474</b>	<b>20,806</b>	
Coliban Water	Boort (channel supply)	425	163	
	Pyramid Hill (channel supply)	300	162	
	Lockington (channel supply)	130	79	
	Mitiamo (channel supply)	60	19	
	Dingee (channel supply)	50	8	
	Rochester (channel supply)	1,400	978	
	Macorna (channel supply)	40	7	
	Mysia (channel supply)	15	1	
	<b>TOTAL</b>		<b>2,420</b>	<b>1,417</b>
GWMWater	Quambatook	100	82	
	<b>TOTAL</b>	<b>100</b>	<b>82</b>	
<b>TOTAL ALL AUTHORITIES (ML)</b>		<b>37,994</b>	<b>22,305</b>	See Note 2

#### Notes

1. Shepparton, Mooroopna and Toolamba all share the same supply Bulk Entitlement.
2. All Goulburn urban bulk entitlements were allocated 100% of their Bulk Entitlement.

## Appendix A3 Bulk Entitlement (River Murray – Goulburn-Murray Water) Reporting

This appendix is included in the Goulburn-Murray Water 2008/09 Annual Report in compliance with the requirements of clause 22.3 of the Bulk Entitlement (River Murray – Goulburn-Murray Water) Conversion Order 1999 (“BE”), which obliges the Authority to report on certain matters as specified in clause 22.1 of the same Order. The period of reporting is 1 July 2008 to 30 June 2009.

BE Clause	Item	Report		Notes
22.1(b)	<b>Offtake points</b>			
	Cobram pump station		3,411 ML	See Note 1
	Yarrawonga Main Channel		140,955 ML	
	Torrumbarry diversions			
	National Channel		263,733 ML	
	Ashwin's pump		15 ML	
	Pental Island pumps		120 ML	
	Swan Hill No 9 channel offtake from Little Murray (if Fish Point Weir open)		0 ML	See Note 2
	Swan Hill pumps		5,041 ML	
	Nyah pumps		4,889 ML	
	Woorinen pumps		9,142 ML	
	Private diversion points		30,025 ML	
	<b>Total diversions at offtake points</b>		<b>457,331 ML</b>	
22.1(c)	New offtake points		No	
22.1(d)	<b>Return points</b>			
	Broken Creek		25,296 ML	
	Yarrawonga Main Channel outfall		3,981 ML	
	Torrumbarry returns			
	Koondrook spillway		1,772 ML	
	Loddon River at Kerang Weir		4,319 ML	
	Sheepwash Creek Weir		0 ML	
	Little Murray Weir (if Fish Point Weir closed)		529 ML	See Note 2
	6/7 channel outfall (if Fish Point Weir open)		0 ML	See Note 2
	Lake Boga outfall channel		0 ML	
	Barr Creek at Capel's Crossing		386 ML	
	<b>Total returns</b>		<b>36,284 ML</b>	
22.1(e)	<b>G-MW supplies to other corporations</b>	<b>BE Volume</b>	<b>Supplied</b>	
	Coliban Water			
	Cohuna	677 ML	603 ML	
	Gunbower	131 ML	66 ML	
	Leitchville	422 ML	338 ML	
	Lower Murray Water			
	Kerang	2,100 ML	927 ML	
	Murrabit	60 ML	22 ML	
	Goulburn Valley Water			
	Katamatite	84 ML	49 ML	
	Nathalia	652 ML	402 ML	
	Numurkah/Wunghnu	1,206 ML	834 ML	
	Picola	44 ML	22 ML	
	DSE environmental allocation	27,600 ML	10,026 ML	
	<b>Total supplies to other corporations</b>		<b>13,107 ML</b>	
22.1(f)	Supply to primary entitlements	See Appendix B8		
22.1(g)	Metering program	Program implemented		See Note 3
22.1(h) & 22.1(i)	Net water share and allocation transfers of this BE	Water Share Trade: See appendix B5		See Note 4
		Allocation Trade: -5,742 ML		
22.1(j)	Amendment to this BE	Yes		See Note 5
22.1(k)	New BE granted to G-MW	No		
22.1(l)	BE compliance failures	No		
22.1(m)	BE compliance difficulties	No		

### Notes

- Cobram pump station became operational in August 2006, but is not yet recognised as a new offtake point in the BE.
- Recognition of offtake diversions and returns depends on status of Fish Point Weir (as indicated).
- The program is coordinated with Goulburn-Murray Water's Environmental Management System (ISO 14001 certified) and the Regional Water Monitoring Partnership.
- Net Allocation transfers of entitlement, including transfers to areas not covered by this BE.
- Bulk Entitlement (River Murray - Goulburn Murray Water) Amending Notice 2009 came into effect on 9 April 2009.

## Appendix A4 Bulk Entitlement (Campaspe System – Goulburn-Murray Water) Reporting

This appendix is included in the Goulburn-Murray Water 2008/098 Annual Report in compliance with the requirements of clause 18.3 of the Bulk Entitlement (Campaspe System – Goulburn-Murray Water) Conversion Order 2000 (“BE”), which obliges the Authority to report on certain matters as specified in clause 18.1 of the same Order. The period of reporting is 1 July 2008 to 30 June 2009.

BE Clause	Item	Report		Notes
18.1(e)	G-MW share of Lake Eppalock annual inflow	3,815 ML		
18.1(f)	G-MW share of diversion to primary entitlements	2,098 ML		
18.1(g)	G-MW share of annual evaporation losses	1,297 ML		See Note 1
18.1(h)	Internal spills from or to G-MW’s share of storage	No		
18.1(i)	Minimum passing flows	<b>Required</b>	<b>Actual</b>	
	Campaspe River d/s Lake Eppalock	870 ML	6,467 ML	
	Campaspe River d/s Campaspe Siphon	1,417 ML	3,513 ML	
18.1(j)	Credits granted	No		
18.1(k) & 18.1(l)	Net Water Share and Allocation transfers of this BE	Water Share Trade: See Appendix B5		See Note 2
		Allocation Trade: 2,177 ML		
18.1(m)	Seasonal allocations in any month	No Allocation to High or Low Reliability Water Shares was possible in the Campaspe System during 2008/09.		
18.1(n)	Alterations to Schedule 1 entitlements			
	Water Shares in Irrigation Areas	Decreased by 1,552 ML		See Note 3
	Water Shares of Diverter Licences	Decreased by 300 ML		See Note 4
18.1(o)	Transfers of primary entitlements	See Appendices B2 to B7		
18.1(p)	Supply to primary entitlements	1,766 ML		See note 5
18.1(q)	Amendments to this BE	No		
18.1(r)	New BE granted	No		
18.1(s)	Environmental Management and Metering programs	Programs implemented		See Note 6
18.1(t)	BE compliance failures	No		
18.1(u)	BE compliance difficulties	No		
18.1(v)	Interruptions to minimum passing flows	Yes		See Note 7

### Notes

- Gross evaporation based on measured evaporation at Lake Eppalock.
- Net High-Reliability Water Share and Allocation transfers of entitlement, including transfers to areas not covered by this BE.
- Alteration of BE due to transfers of High-Reliability Water Shares from Irrigation Areas including transfers to Non Water Users.
- Alteration of BE due to transfers of High-Reliability Water Shares from diversion licence holders including transfers to Non Water Users.
- Volume supplied from Campaspe system to meet primary entitlements.
- Programs are coordinated with Goulburn-Murray Water’s Environmental Management System (ISO 14001 certified) and the Regional Water Monitoring Partnership. Additional water quality monitoring was undertaken in cooperation with the North Central Catchment Management Authority.
- Qualified Rights, which reduced minimum passing flow requirements due to low water availability, were in place for the entire year.

## Appendix A5 Bulk Entitlement (Campaspe System – Goulburn-Murray Water) Reporting

### Diversions by Other Authorities with Bulk Entitlements

Authority	Town	BE Volume (ML)	Diversion (ML)	Notes
Coliban Water	Axedale/Goornong	215	60	See Note 1
	Part Rochester	134	0	See Note 2
	<b>TOTAL</b>	<b>349</b>	<b>60</b>	
<b>TOTAL ALL AUTHORITIES (ML)</b>		<b>349</b>	<b>60</b>	

### Note

- Axedale and Goornong have a combined maximum annual entitlement volume of 215 ML. The entitlement was reduced by 50% to 108 ML based on Qualification of Right.
  - All of the Rochester usage for the year was supplied via the Waranga Western Channel on the Goulburn system.
- \* Includes supplementary supplies to Lower Goulburn River for transfer arrangement for supply of Goulburn Water to the Tungamah domestic & stock system and Snowy Inter-Valley Transfer.

## Appendix A6 Bulk Entitlement (Broken System - Goulburn-Murray Water) Reporting

This appendix is included in the Goulburn-Murray Water 2008/09 Annual Report in compliance with the requirements of clause 20.3 of the Bulk Entitlement (Broken System - Goulburn-Murray Water) Conversion Order 2004 ("BE"), which obliges the Authority to report on certain matters as specified in clause 20.1 of the same Order. The period of reporting is 1 July 2008 to 30 June 2009.

BE Clause	Item	Report		Notes
20.1(d)	Storage contents			
	Nillahcootie		4,812 ML	Vol 30/06/09
	Mokoan		0 ML	Vol 30/06/09 See Note 1
20.1(e)	Diversion to primary entitlements		7,889 ML	
20.1(f)	Annual evaporation losses from storages			See Note 2
	Nillahcootie		1,885 ML	
	Mokoan		20,543 ML	
20.1(g)	Environmental minimum flows	Required	Actual	
	Broken River at Moorngag	2,212 ML	9,250 ML	
	Broken River d/s Broken Weir	2,001 ML	8,403 ML	
	Holland's Creek d/s Diversion Weir	2,272 ML	2,727 ML	
	Broken River at Gowangardie Weir	6,609 ML	12,425 ML	
20.1(h)	Credits granted		No	
20.1(i) & 20.1(j)	Net Water Share and Allocation transfers of this BE	Water Share Trade: See Appendix B5 Allocation Trade: 0 ML		See Note 3
20.1(k)	Alterations to Schedule 1 entitlements			
	Water Shares		Decreased by 102 ML	See Note 4
20.1(l)	Transfers of primary entitlements	See Appendices B2 to B7		
20.1(m)	Supply to primary entitlements		4,283 ML	
20.1(n)	Amendments to this BE		No	
20.1(o)	New BE granted		No	
20.1(p)	Environmental Management and Metering programs	Programs implemented		See Note 5
20.1(q)	BE compliance failures		No	
20.1(r)	BE compliance difficulties		Yes	See Note 6
20.1(s)	Interruptions to minimum passing flows		Yes	See Note 6

### Notes

- Level on 30 June 2009 was below measurable limit.
- Gross evaporation based on measured evaporation at each storage.
- Net allocation transfers, including transfers to areas not covered by this BE.
- Alteration of BE due to transfers of High-Reliability Water Shares from diversion licence holders including trade to Non Water Users.
- Programs are coordinated with Goulburn-Murray Water's Environmental Management System (ISO 14001 certified) and the Regional Water Monitoring Partnership.
- Qualified Rights, which reduced minimum passing flow requirements due to low water availability, were in place for the entire year.

## Appendix A7 Bulk Entitlement (Ovens System – Goulburn-Murray Water) Reporting

This appendix is included in the Goulburn-Murray Water 2008/09 Annual Report in compliance with the requirements of clause 19.3 of the Bulk Entitlement (Ovens System – Goulburn-Murray Water) Conversion Order 2004 (“BE”), which obliges the Authority to report on certain matters as specified in clause 19.1 of the same Order. The period of reporting is 1 July 2008 to 30 June 2009.

BE Clause	Item	Report		Notes
19.1(e)	Diversion to primary entitlements	See Appendix B8		
19.1(f)	Annual evaporation losses			
	Lake Buffalo	2,498 ML		See Note 1
	Lake William Hovell	705 ML		
19.1(g)	Environmental minimum flows	Required	Actual	
	Ovens River at Wangaratta	31,944 ML	343,586 ML	
	Buffalo River downstream of Lake Buffalo	16,954 ML	134,532 ML	
	King River at Docker Road and Hurdle Ck at Bobbinawarrah	8,753 ML	120,301 ML	
	King River at Cheshunt	8,757 ML	107,354 ML	
	Ovens River at Rocky Point	25,191 ML	357,185 ML	
	Ovens River at Peechelba	31,990 ML	432,407 ML	
19.1(h)	Credits granted	No		
19.1(i) & 19.1(j)	Net Water Share and Allocation transfers of this BE	Water Share Trade: See Appendix B5 Allocation Trade: 0 ML		See Note 2
19.1(k)	Alterations to Schedule 1 entitlements			
	Water Shares	Decreased by 104 ML		See Note 3
19.1(l)	Transfers of primary entitlements	See Appendices B2 to B7		
19.1(m)	Supply to primary entitlements	See Appendix B8		
19.1(n)	Amendments to this BE	No		
19.1(o)	New BE granted	No		
19.1(p)	Environmental Management and Metering programs	Programs implemented		See Note 4
19.1(q)	BE compliance failures	Yes		See Note 5
19.1(r)	BE compliance difficulties	Minor		See Note 6
19.1(s)	Interruptions to minimum passing flows	No		

### Notes

- Gross evaporation based on measured evaporation at each storage.
- Net Allocation transfers of entitlement, including transfers to areas not covered by this BE.
- Alteration of BE due to transfers of High-Reliability Water Shares from diversion licence holders including trade to Non Water Users.
- Programs are coordinated with Goulburn-Murray Water's Environmental Management System (ISO 14001 certified) and the Regional Water Monitoring Partnership.
- 1 day in January at Docker Road where the flow was 3 ML/d below the 40 ML/d requirement.  
2 days in May downstream of Lake Buffalo where the flow was less than 4 ML/d below the 60 ML/d requirement.  
1 day in January at Wangaratta where the flow was 13 ML/d below the 140 ML/d requirement. 1 day in March at Wangaratta where the flow was 1 ML/d below the 100 ML/d natural flow requirement. 4 days in April at Wangaratta where the flow was between 8 and 10 ML/d below the natural flow requirement of between 80 and 118 ML/d.  
2 days in January at Peechelba where the flow was 2 ML/d below the 140 ML/d requirement. 1 day in April where the flow was 16 ML/d below the natural flow requirement of 87 ML/d.
- Due to the failure and subsequent relocation of Gauging Station 403217 (Rose River at Matong North) data was not available for this site between 22 January and 30 June. A method to estimate flows for the Rose River site was devised for this period. As this site is used to calculate natural flow requirements, estimations of flow for this site may have impacted on natural flow compliance.

## Appendix A8 Bulk Entitlement (Loddon System – Goulburn-Murray Water) Reporting

This appendix is included in the Goulburn-Murray Water 2008/09 Annual Report in compliance with the requirements of clause 21.3 of the Bulk Entitlement (Loddon System – Goulburn-Murray Water) Conversion Order 2005 (“BE”), which obliges the Authority to report on certain matters as specified in clause 21.1 of the same Order. The period of reporting is 1 July 2008 to 30 June 2009.

BE Clause	Item	Report	Notes
21.1(f)	Annual amounts of water taken from the system waterway	See Appendix B8	
21.1(g)	Annual evaporation losses from storages		
	Cairn Curran	1,867 ML	See Note 1
	Tullaroop	1,822 ML	
21.1(h)	Credits granted	No	
21.1(i) & 21.1(j)	Net Water Share and Allocation transfers of this BE	Water Share Trade: See Appendix B5  Allocation Trade: 28 ML	See Note 2
21.1(k)	Alterations to Schedule 1 entitlements		See Note 3
	Water Shares	Decreased by 103 ML	
21.1(l)	Transfers of primary entitlements	See Appendices B2 to B7	
21.1(m)	Supply to primary entitlements	See Appendix B8	
21.1(n)	Amendments to this BE	No	
21.1(o)	New BE granted	No	
21.1(p)	Environmental Management and Metering programs	Programs implemented	See Note 4
21.1(q)	BE compliance failures	No	
21.1(r)	BE compliance difficulties	Yes	See Note 5

### Notes

1. Gross evaporation based on measured evaporation at each storage.
2. Net Allocation transfers of entitlement, including transfers to areas not covered by this BE.
3. Alteration of BE due to transfers of High-Reliability Water Shares from diversion licence holders including trade to Non Water Users.
4. Programs are coordinated with Goulburn-Murray Water’s Environmental Management System (ISO 14001 certified) and the Regional Water Monitoring Partnership. Additional water quality monitoring was undertaken in cooperation with the North Central Catchment Management Authority.
5. Qualified Rights, which reduced minimum passing flow requirements due to low water availability, were in place for the entire year.

# Appendix B

## Appendix BI – Allocation Statistics

### GOULBURN MURRAY WATER – REGULATED TRADING ZONES

Inflows	Volume(ML)	Outflows	Volume(ML)
Net carryover at 1 July 2008	204,248	Carryover to next financial year	-200,833
Seasonal allocation	682,908	Water usage	-679,378
Advanced allocation	0	Write-off allocation	-48,032
Spill allocation	2,853	Trade – sellers	-301,688
Trade – buyers	338,021	Overuse	1,900
<b>Total inflows</b>	<b>1,228,031</b>	<b>Total outflows</b>	<b>-1,228,032</b>
<b>Closing balance</b>	<b>-1</b>		

  

Components of trade – buyers	Volume(ML)	Components of trade – sellers	Volume(ML)
Within authority	221,032	Within authority	221,032
From other authorities	2,673	To other authorities	56,286
From interstate	114,316	To interstate	24,370
<b>Total trade</b>	<b>338,021</b>	<b>Total trade</b>	<b>301,688</b>

\* refer to note 7 regarding variance

\* refer to note 7 regarding variance

#### Notes:

1. This table provides a summary of allocations made, trade in, trade out, usage, overuse, carryover and write-off.
2. The table shows statistics for ABAs with regulated trading zone sources only. This includes allocations made to all water shares and also some bundled entitlements, such as supply by agreements and urban bulk entitlements. Unregulated and groundwater entitlements are excluded because some are not metered and usage is not fully available.
3. This table excludes adjustments made this year to correct 2007/08 figures. Because of this use in this table differs from the "usage by delivery system" table.
4. Carryover at 1 July 2008 has been adjusted to take into account adjustments to carryover made during the year, overuse carried over and reinstatement of write-off.
5. Write-off reported in this table includes write-off for the Ovens and King systems (which have no ability to carryover) (19,155 ML) and write-off against bulk entitlements. Trade volumes here differ from the allocation trade summary as they include regulated trading zones only.
6. Inflows reported as "trade - buyers" and outflows reported as "trade -sellers" include journal adjustments and therefore the total inflow and outflow differs slightly to the "components of trade" table.

## Appendix B2 – Allocation Trade Summary

Allocation trade type		G-MW	Lower Murray Water	Total Northern Victoria
Interstate trade inbound	Number	1,400	2,033	3,433
	Volume (ML)	114,316	131,924	246,240
Interstate trade outbound	Number	333	101	434
	Volume (ML)	24,365	5,432	29,797
Trade within authority	Number	7,616	1,663	9,279
	Volume (ML)	221,032	44,547	265,579
Trade between authorities – buyer	Number	79	835	914
	Volume (ML)	2,673	56,286	58,959
Trade between authorities – seller	Number	835	79	914
	Volume (ML)	56,286	2,673	58,959
Total Victorian buyers	Number	9,095	4,531	13,626
	Volume (ML)	338,021	232,757	570,778
Total Victorian sellers	Number	8,784	1,843	10,627
	Volume (ML)	301,683	52,652	354,335
Total trades	Number	10,184	3,876	14,060
	Volume (ML)	415,999	184,576	600,575
Net Trade In	Number	311	2,688	2,999
	Volume (ML)	36,339	180,104	216,443

### Notes:

1. This table shows trade statistics for all trading zones (regulated, unregulated and groundwater). It therefore differs in G-MW's case from the ABA statement which is for regulated trading zones only.
2. Between authority trades are counted by each authority involved in the trade. Hence summing authority values will double count these trades. They are therefore counted on the seller side only when determining the total trade volume.
3. In a pool exchange, a number of sellers (say 20) sell to a number of buyers (say 15) at the pool price. Administratively, this is implemented in the water register as 20 trades to a clearing account and then 15 trades from that clearing account. To avoid double counting, only the seller side is counted (ie this is counted as 20 trades).
4. The clearing accounts are held by G-MW. In the register, a G-MW to LMW pool exchange will be recorded as a trade from G-MW to the G-MW clearing account and a second trade from the G-MW clearing account to LMW. In order to avoid double counting, this trade is only counted on one side, however, depending on which side is chosen it may be classified as either a within or between authority trade. To adjust for this it is assumed that all between authority trades are correct, therefore the number and volume of within authority purchases and sales is reduced and the number of between authority purchases and sales is increased proportionately.
5. In 2007/08 there was a 508 ML negative remaining balance in the clearing accounts at year end with some pool exchange trades yet to be submitted and approved. This resulted in a 508 ML difference between buyer and seller volumes within authority for G-MW. The transactions used to correct for this in 2008/09 are excluded from this table so that within authority buyer and seller volumes are equal.
6. This table is for approved trades only. Some trades were still in progress at year end and will be finalised in 2009/10.

## Appendix B3 – Trade of Allocation Matrix – Purchases by G-MW

		ALLOCATION TRADE (VOLUME (ML))														
		BUYER														
		1A Greater Goulburn	1B Boort	2A Broken – Nill to Casey's	2B Broken – Casey's to Goulb	3 Lower Goulburn	4A Campaspe – Eppalock to WWC	4C Lower Campaspe	5A Loddon – CC/Tull to LWP	6VIC Murray – Dart to Barmah	6B Lower Broken Creek	7VIC Murray – Barmah to SA	9A Ovens	9B King	Unregulated, groundwater, not tradeable	
SELLER	Goulburn-Murray Water	1A Greater Goulburn	78,169	7,406	0	0	1,436	2,193	0	0	6,516	433	12,175	0	0	0
		1B Boort	6,692	1,939	0	0	0	0	0	20	350	0	751	0	0	0
		2A Broken – Nill to Casey's	0	0	86	136	0	0	0	0	0	0	0	0	0	0
		2B Broken – Casey's to Goulb	0	0	82	1,262	0	0	0	0	0	0	0	0	0	0
		3 Lower Goulburn	10,895	87	0	0	1,054	142	0	0	804	43	116	0	0	0
		4A Campaspe – Eppalock to WWC	362	177	0	0	0	548	0	0	0	0	0	0	0	0
		4C Lower Campaspe	27	0	0	0	0	0	0	0	30	0	0	0	0	0
		5A Loddon – CC/Tull to LWP	0	0	0	0	0	0	0	70	8	0	0	0	0	0
		6VIC Murray – Dart to Barmah	8,339	3,029	0	0	20	0	0	8	17,920	859	2,242	0	0	0
		6B Lower Broken Creek	1,059	262	0	0	0	0	0	0	950	384	418	0	0	0
		7VIC Murray – Barmah to SA	7,113	1,253	0	0	4	134	0	8	1,208	48	25,101	0	0	1
		9A Ovens	0	0	0	0	0	0	0	0	0	0	0	1,083	0	0
		9B King	0	0	0	0	0	0	0	0	0	0	0	0	322	0
		Unregulated, groundwater, not tradeable	0	0	0	0	0	0	0	0	0	0	1	0	0	15,258
		Lower Murray Water	1A Greater Goulburn	0	0	0	0	0	0	0	0	0	0	0	0	0
		7VIC Murray – Barmah to SA	710	165	0	0	0	0	0	304	0	1,494	0	0	0	
	NSW State Water Corporation	10A NSW Murr U/S Barmah Choke	589	0	0	0	0	0	0	716	0	163	0	0	0	
		10B NSW – Murr Irrigation Ltd	7,104	104	0	0	0	0	0	1,524	0	746	0	0	0	
		11 NSW Murr D/S Barmah Choke	7,560	1,906	0	0	300	0	0	411	0	6,664	0	0	0	
		13 Murrumbidgee	49,122	7,363	0	0	120	305	0	7,988	328	19,218	0	0	0	
		14 Lower Darling	920	0	0	0	0	0	0	54	0	93	0	0	0	
	Dept of Water Land and Bio Con	12 South Australian Murray	528	0	0	0	0	0	0	59	0	434	0	0	0	
	TOTAL PURCHASED		179,189	23,690	167	1,398	2,935	3,322	0	106	38,841	2,095	69,615	1,083	322	15,259
	NUMBER OF TRADES		5031	333	15	48	34	52	0	21	1171	77	2056	25	12	220

Table continued over page

### Notes

- In a pool exchange, a number of sellers (say 20) sell to a number of buyers (say 15) at the pool price. Administratively, this is implemented in the water register as 20 trades to a clearing account and then 15 trades from that clearing account. To avoid double counting, only the seller side is counted (ie this is counted as 20 trades).
- The clearing accounts are held by G-MW. In the register, a G-MW to LMW pool exchange will be recorded as a trade from G-MW to the G-MW clearing account and a second trade from the G-MW clearing account to LMW. In order to avoid double counting, this trade is only counted on one side, however, depending on which side is chosen it may be classified as either a within or between authority trade. To adjust for this it is assumed that all between authority trades are correct, therefore the number and volume of within authority purchases and sales is reduced and the number of between authority purchases and sales is increased proportionately.
- In 2007/08 there was a 508 ML negative remaining balance in the clearing accounts at year end with some pool exchange trades yet to be submitted and approved. This resulted in a 508 ML difference between buyer and seller volumes within authority for G-MW. The transactions used to correct for this in 2008/09 are excluded from this table so that within authority buyer and seller volumes are equal.
- This table is for approved trades only. Some trades were still in progress at year end and will be finalised in 2009/10.

## Appendix B3 – Trade of Allocation Matrix Continued – Purchases by Other Water Corporations and States

		BUYER											
		1A Greater Goulburn	7VIC Murray - Barmah to SA	10A NSW Murr U/S Barmah Choke	10B NSW - Murr Irrigation Ltd	11 NSW Murr D/S Barmah Choke	13 Murrumbidgee	14 Lower Darling	12 South Australian Murray	TOTAL SOLD	NUMBER OF TRADES	NET SOLD	
SELLER	Goulburn-Murray Water	1A Greater Goulburn	973	17,446	0	80	1,631	97	0	5,762	134,316	4586	-44,873
		1B Boort	577	782	0	0	148	0	0	7,060	18,318	243	-5,372
		2A Broken – Nill to Casey's	0	0	0	0	0	0	0	0	222	12	54
		2B Broken – Casey's to Goulb	0	0	0	0	0	0	0	0	1,343	51	-54
		3 Lower Goulburn	0	124	0	0	0	0	0	40	13,304	153	10,370
		4A Campaspe – Eppalock to WWC	0	0	0	0	0	0	0	0	1,088	51	-2,234
		4C Lower Campaspe	0	0	0	0	0	0	0	0	57	3	57
		5A Loddon – CC/Tull to LWP	0	0	0	0	0	0	0	0	78	19	-28
		6VIC Murray – Dart to Barmah	891	4,503	132	0	70	50	0	2,404	40,467	1364	1,626
		6B Lower Broken Creek	20	280	0	0	0	0	0	17	3,390	137	1,295
		7VIC Murray – Barmah to SA	320	30,371	0	0	1,650	0	0	5,225	72,436	1908	2,821
		9A Ovens	0	0	0	0	0	0	0	0	1,083	25	0
		9B King	0	0	0	0	0	0	0	0	322	12	0
		Unregulated, groundwater, not tradeable	0	0	0	0	0	0	0	0	15,259	220	0
		Lower Murray Water	1A Greater Goulburn	150	491	0	0	0	0	0	641	3	-4,808
		7VIC Murray – Barmah to SA	1,942	41,964	0	0	3,049	249	0	2,135	52,011	1840	-175,296
	NSW State Water Corporation	10A NSW Murr U/S Barmah Choke	245	3,063	0	0	0	0	0	4,775	56	4,643	
		10B NSW – Murr Irrigation Ltd	0	3,482	0	0	0	0	0	12,960	120	12,880	
		11 NSW Murr D/S Barmah Choke	333	39,212	0	0	0	0	0	56,386	944	49,839	
		13 Murrumbidgee	0	78,333	0	0	0	0	0	162,776	2159	162,380	
		14 Lower Darling	0	4,927	0	0	0	0	0	5,993	91	5,993	
	Dept of Water Land and Bio Con	12 South Australian Murray	0	2,330	0	0	0	0	0	3,350	63	-19,292	
	TOTAL PURCHASED		5,450	227,307	132	80	6,547	396	0	22,642	600,575		0
	NUMBER OF TRADES		62	4469	2	1	121	9	0	301		14,060	

### Notes

- In a pool exchange, a number of sellers (say 20) sell to a number of buyers (say 15) at the pool price. Administratively, this is implemented in the water register as 20 trades to a clearing account and then 15 trades from that clearing account. To avoid double counting, only the seller side is counted (ie this is counted as 20 trades).
- The clearing accounts are held by G-MW. In the register, a G-MW to LMW pool exchange will be recorded as a trade from G-MW to the G-MW clearing account and a second trade from the G-MW clearing account to LMW. In order to avoid double counting, this trade is only counted on one side, however, depending on which side is chosen it may be classified as either a within or between authority trade. To adjust for this it is assumed that all between authority trades are correct, therefore the number and volume of within authority purchases and sales is reduced and the number of between authority purchases and sales is increased proportionately.
- In 2007/08 there was a 508 ML negative remaining balance in the clearing accounts at year end with some pool exchange trades yet to be submitted and approved. This resulted in a 508 ML difference between buyer and seller volumes within authority for G-MW. The transactions used to correct for this in 2008/09 are excluded from this table so that within authority buyer and seller volumes are equal.
- This table is for approved trades only. Some trades were still in progress at year end and will be finalised in 2009/10.

## Appendix B4 – Regulated Water Entitlements by Authority

Water Authority	Water SystemSource	Delivery system (grouped)	Number	Volume (ML)	
Goulburn-Murray Water	Broken	Env – Snowy	1	990	
		GMW – NWU	3	34	
		Broken River	302	26,378	
	Bullarook	Bullarook	31	849	
	Campaspe	Campaspe Irrigation District	162	18,112	
		GMW – NWU	15	2,327	
		Campaspe River	329	17,944	
	Goulburn	Central Goulburn Irr.Area	4,040	349,833	
		Env – Snowy	1	14,812	
		GMW –NWU	432	63,386	
		Murray Valley Irrigation Area	24	1,233	
		Pyramid-Boort	930	225,417	
		Rochester Irrigation Area	1,733	170,601	
		Shepparton Irrigation Area	2,485	161,997	
		Torrumbarry Irrigation Area	4	374	
		Goulburn – unregulated	2	0	
		Loddon River	30	631	
		Goulburn River	1,514	70,000	
		Murray River	4	5,025	
		Loddon	GMW – NWU	1	2
	Torrumbarry Irrigation Area		9	1,709	
	Loddon River		893	25,426	
	Murray	Central Goulburn Irr.Area	1	86	
		Env – Snowy	2	7,694	
		GMW – NWU	348	50,338	
		Murray Valley Irrigation Area	2,173	250,853	
		Nyah, Tresco and Woorinen	664	30,690	
		Rochester Irrigation Area	1	1	
		Shepparton Irrigation Area	1	238	
		Torrumbarry Irrigation Area	2,702	313,180	
		Murray River	1,121	110,636	
	Ovens	GMW – NWU	6	216	
		Ovens River	488	34,167	
	Source Not Identified	Goulburn River	402	658	
	Goulburn-Murray Water Total			20,450	1,955,178
	Lower Murray Water	Goulburn	LMW – NWU	5	729
			Murray	79	15,528
Murray		First Mildura Irr. District	2,096	76,124	
		LMW – NWU	90	7,906	
		Murray	1,227	358,862	
Robinvale, Red Cliffs and Merbein	2,411	101,713			
Lower Murray Water Total			5,908	560,940	
Southern Rural Water	Thomson/Macalister	Macalister	71	3,706	
		Macalister Irrigation District	1,153	124,118	
		SRW – NWU	4	443	
		Thomson	164	16,619	
	Werribee	Bacchus Marsh Irrigation Distr	123	3,818	
		Werribee	75	1,097	
Werribee Irrigation District	232	10,040			
Southern Rural Water Total			1,822	159,839	
<b>Regulated Total</b>			<b>28,180</b>	<b>2,675,957</b>	
<b>2007–08</b>			<b>25,118</b>	<b>2,515,772</b>	
<b>2008–09 Ex Southern</b>			<b>26,358</b>	<b>2,516,118</b>	

### Notes:

- This table shows the number and volume of active, regulated entitlements (excluding low and spill reliability) as at 30 June 2009.
- Delivery systems are grouped to reduce the complexity caused by small delivery systems.
- The volume of entitlements held by G-MW was reduced by 11,686 ML during 2008/09 due to the following:
  - Transfer of 13,800 ML of G-MW's River Murray Flora and Fauna entitlement to Lower Murray Water following amendment to the River Murray bulk entitlements
  - A net transfer and variation of 1,988 ML of entitlements from Lower Murray Water to Goulburn Murray Water systems through water trading
  - Issue of 122.1 ML of entitlement for G-MW to supply losses for the Normanville supply system in accordance with the Goulburn-Murray Water Eildon-Goulburn Weir Bulk Entitlement.
  - 4 ML of entitlement issued due to subsequent conversion errors during unbundling.
- 415.5ML of Normanville water allowances are recorded in the register at both individual level and at bulk level. This double counting has been corrected in the table above.





## Appendix B7 – Water Shares 4% Net Trade Out Limit by Irrigation District

Irrigation Area	Reliability Class	4% Trade out Limit (ML)	Net Water Traded Out (ML)	4% Trade out Limit Remaining (ML)
Campaspe Irrigation District High	High	751.9	817	-65.1
Central Goulburn Irrigation Area High	High	14,267.20	14,833.90	-566.7
Murray Valley Irrigation Area High	High	10,462.00	11,729.80	-1,267.80
Nyah, Tresco and Woorinen High	High	1,171.60	369.2	802.4
Pyramid-Boort High	High	8,176.10	8,169.40	6.7
Rochester Irrigation Area High	High	6,975.50	7,238.40	-262.9
Shepparton Irrigation Area High	High	6,712.40	6,822.90	-110.5
Torrumbarry Irrigation Area High	High	13,097.80	15,720.00	-2,622.20
Campaspe Irrigation District Low	Low	402.5	152.8	249.7
Central Goulburn Irrigation Area Low	Low	6,475.80	6,234.00	241.8
Murray Valley Irrigation Area Low	Low	4,826.90	4,974.30	-147.4
Nyah, Tresco and Woorinen Low	Low	225.9	99	126.9
Pyramid-Boort Low	Low	3,960.20	3,924.20	36
Rochester Irrigation Area Low	Low	3,152.50	3,235.20	-82.7
Shepparton Irrigation Area Low	Low	3,028.00	1,579.80	1,448.20
Torrumbarry Irrigation Area Low	Low	6,000.00	7,127.20	-1,127.20

### Notes:

The 4% trade-out limit was exceeded in some cases in 2008-09 due to –

- correction of delivery systems incorrectly converted during unbundling on 1 July 2007,
  - sale of water shares by a mortgagee (the Water Act does not currently require this to be subject to the 4%), or
  - incorrect outcomes from processing applications.
- (Taken from Victorian Water Register @ 30 June 2009.)

## Appendix B8 – Usage by Delivery System

Water Authority	Delivery System (grouped)	Volume (ML)
G-MW	Broken	4,283
	Bullarook	13
	Campaspe	578
	Campaspe Irrigation District	3,324
	Central Goulburn Irrigation Area	144,553
	Adjustments	200
	Goulburn	26,986
	Loddon	1,318
	Murray	28,772
	Murray Valley Irrigation Area	93,075
	Nyah, Tresco and Woorinen	16,757
	Ovens	10,492
	Pyramid-Boort	80,152
	Rochester Irrigation Area	74,782
	Shepparton Irrigation Area	64,884
	Torrumbarry Irrigation Area	113,432
	GMW – Outside GMA	14,271
Murray-Unregulated	1	
Goulburn-Unregulated	4	
<b>G-MW Total</b>		<b>677,875</b>

### Notes:

1. This table shows usage per delivery system for ABAs with regulated trading zone sources.
2. Delivery systems are grouped to reduce the complexity caused by small delivery systems.
3. Water shares in FMID include one water share which was incorrectly given the delivery system "Katunga Groundwater".

## Appendix B9 – Unregulated Entitlements

Water System Source	Trading zone source	Licences	Volume (ML)
Broken	120 Broken Unregulated	157	1,536
	130 Lower Goulburn Unregulated	1	2
	170 Barmah to Nyah Unregulated	26	331
	6 VIC Murray – Dart to Barmah	1	5
	Not Tradable	413	8,213
Campaspe	1022 Campaspe Groundwater	1	2
	110 Goulburn Unregulated	9	350
	140 Campaspe Unregulated	139	934
	141 Coliban Unregulated	55	533
	Not Tradable	369	6,895
East Gippsland	5A Loddon – CC/Tull to LWP	1	0
Goulburn	110 Goulburn Unregulated	815	13,214
	111 King Parrot Creek Unregulated	309	2,026
	112 Yea River Unregulated	255	4,358
	130 Lower Goulburn Unregulated	141	2,660
	180 Ovens and King Unregulated	1	2
	1A Greater Goulburn	1	0
	Not Tradable	855	18,237
Kiewa	160 Upper Murray Unregulated	1	0
	190 Kiewa Catchment Unregulated	1	4
	191 Kiewa Main Stem Unregulated	462	14,606
	Not Tradable	192	3,908
Loddon	1011 Mid Loddon Groundwater	1	2
	150 Loddon Unregulated	219	6,034
	151 Lower Loddon Unregulated	123	9,302
	7 VIC Murray – Barmah to SA	41	179
	Not Tradable	679	14,878
Murray	151 Lower Loddon Unregulated	2	0
	160 Upper Murray Unregulated	546	12,771
	170 Barmah to Nyah Unregulated	24	2,346
	1A Greater Goulburn	1	26
	Not Tradable	645	13,278
Ovens	180 Ovens and King Unregulated	846	15,589
	9A Ovens	1	18
	Not Tradable	388	9,470
<b>Unregulated Total</b>		<b>7,721</b>	<b>161,707</b>
2007–08		7,704	161,751

### Notes

1. This table shows the number and volume of active, unregulated entitlements as at 30 June 2009.
2. Entitlements are grouped by trading zone source rather than delivery system due to the complexity of multiple small delivery systems in unregulated systems

# Appendix C

## Appendix C1 – Groundwater Use – Groundwater Management Areas and Water Service Protection Areas

Groundwater management unit	WSPA Plan (Approved / Draft)	Permissible Consumptive Volume (PCV)	Entitlements (ML)	Allocation limit as at 30 June 08	Licenses as at 30/6/09					Stock and domestic only		Total use
					No. Licenses	No. Metered Bores	Metered Use in Current Year (ML)	Est. Non-Metered Use in Current Year (ML)	Estimate Methodology	No. S&D Bores	S&D Estimated Use (ML)	
Campaspe Deep Lead WSPA	approved 2003	47,252	46,096	29,962	114	115	24,107	–	not applicable	84	174	24,281
Shepparton WSPA	approved 1997	–	241,033	241,033	1,445	993	57,154	–	not applicable	539	1,147	58,301
Spring Hill WSPA	approved 2001	5,062	4,909	3,239	55	59	2,041	–	not applicable	52	110	2,151
Katunga WSPA	approved 2006	59,780	59,539	41,677	190	132	32,849	–	not applicable	236	568	33,417
Mid Loddon WSPA	Draft Local Management Rules	37,200	34,014	34,014	97	99	19,422	–	not applicable	95	252	19,673
Upper Loddon WSPA	No Management Plan	13,648	13,264	13,264	115	135	5,066	–	not applicable	123	262	5,328
Alexandra GMA	No Management Plan	1,937	1,714	1,714	10	7	182	1,028	60% of entitlement	7	16	1,227
Barnawartha GMA	No Management Plan	2,100	635	635	5	–	–	381	60% of entitlement	10	20	401
Kinglake GMA	N/A	2,015	1,864	1,864	54	29	263	1,118	60% of entitlement	59	122	1,503
Mullindoolingong GMA	N/A	6,980	1,532	1,532	35	13	–	613	40% of entitlement	28	56	669
Upper Ovens GMA	N/A	4,010	3,658	3,658	102	–	–	1,463	40% of entitlement	62	133	1,596
Lower Ovens GMA	N/A	25,200	17,062	17,062	253	–	–	6,825	40% of entitlement	346	604	7,429
Mid-Goulburn GMA	No Management Plan	14,900	12,330	12,330	61	37	4,566	–	not applicable	50	100	4,666
Southern Campaspe Plains GMA	No Management Plan	8,850	8,307	8,307	24	20	3,509	–	not applicable	13	124	3,633
Unincorporated Areas	No Management Plan	–	42,201	42,201	747	379	33	16,880	40% of entitlement	1,460	3,032	19,946

### Comments

- The number of domestic and stock bores are those identified in the Water Register.
- The Upper and Lower Ovens GMA's were created in 2008 data is pending updates in the Water Register.
- The Upper and Lower Ovens GMA's have superseded the Murrumbidgee GMA. Metering records are based on the superseded Murrumbidgee boundary and are not currently available for the Upper and Lower Ovens GMA's.
- Unincorporated areas have now been added to this table rather than attached as a separate appendix.

## Appendix C2 – Urban Groundwater Use

Town Supplied	Urban authority	Licensed Entitlement (ML/yr)	Extraction (ML) 08'09
Strathmerton	Goulburn Valley Water	730	2
Katunga	Goulburn Valley Water	110	53
Barnawartha	North East Region Water	293	88
Chiltern	North East Region Water	25	107
Springhurst	North East Region Water	20	5
Wangaratta	North East Region Water	150	5
Moyhu	North East Region Water	15	0
Myrtleford	North East Region Water	75	0
Goorambat	North East Region Water	24	16
Elmore	Coliban Water	284	179
Trentham	Coliban Water	48	32
Smeaton	Central Highlands Water	48	–
Allendale – Clunes	Central Highlands Water	350	–
Clunes	Central Highlands Water	350	154
Springhill Supply System	Central Highlands Water	350	207
Waubra	Central Highlands Water	100	26
Learmonth	Central Highlands Water	100	0
Avoca (Bung Bong)	Central Highlands Water	200	0

## Appendix C3 – Groundwater Trades

Groundwater management unit	Permanent trade		Temporary trade	
	No. trades	Total volume (ML)	No. trades	Total volume (ML)
Campaspe Deep Lead WSPA	–	–	48	4,031
Shepparton WSPA	–	–	–	–
Spring Hill WSPA	–	–	13	325
Katunga WSPA	–	–	53	3,471
Mid Loddon WSPA	–	–	21	3,235
Upper Loddon WSPA	–	–	21	1,440
Alexandra	–	–	–	–
Barnawartha	–	–	–	–
Kinglake	–	–	2	33
Mullindoolingong GMA	–	–	–	–
Upper Ovens GMA	–	–	1	5
Lower Ovens GMA	–	–	2	44
Mid-Goulburn GMA	–	–	3	164
Southern Campaspe Plains GMA	–	–	–	–
Unincorporated Areas	–	–	3	500