

GOULBURN-MURRAY  
**WATER**



# **Safe Drinking Water Act 2003**

## **Water Storage Manager**

### **2012/2013 Annual Report**

October 2013

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## 1 Introduction

Goulburn-Murray Water (GMW) is defined as a Water Storage Manager under the *Safe Drinking Water Act 2003*. This 2012/13 Annual Report to the Secretary of the Department of Health (DH) has been prepared to satisfy the annual reporting requirements of the *Safe Drinking Water Act 2003* and *Safe Drinking Water Regulations 2005 (SDWA&R)*. The report also demonstrates GMW's ongoing commitment managing risks to the quality of the water the corporation supplies to water suppliers.

The report contains the following sections:

Section 2 Roles and responsibilities of GMW under SDWA&R

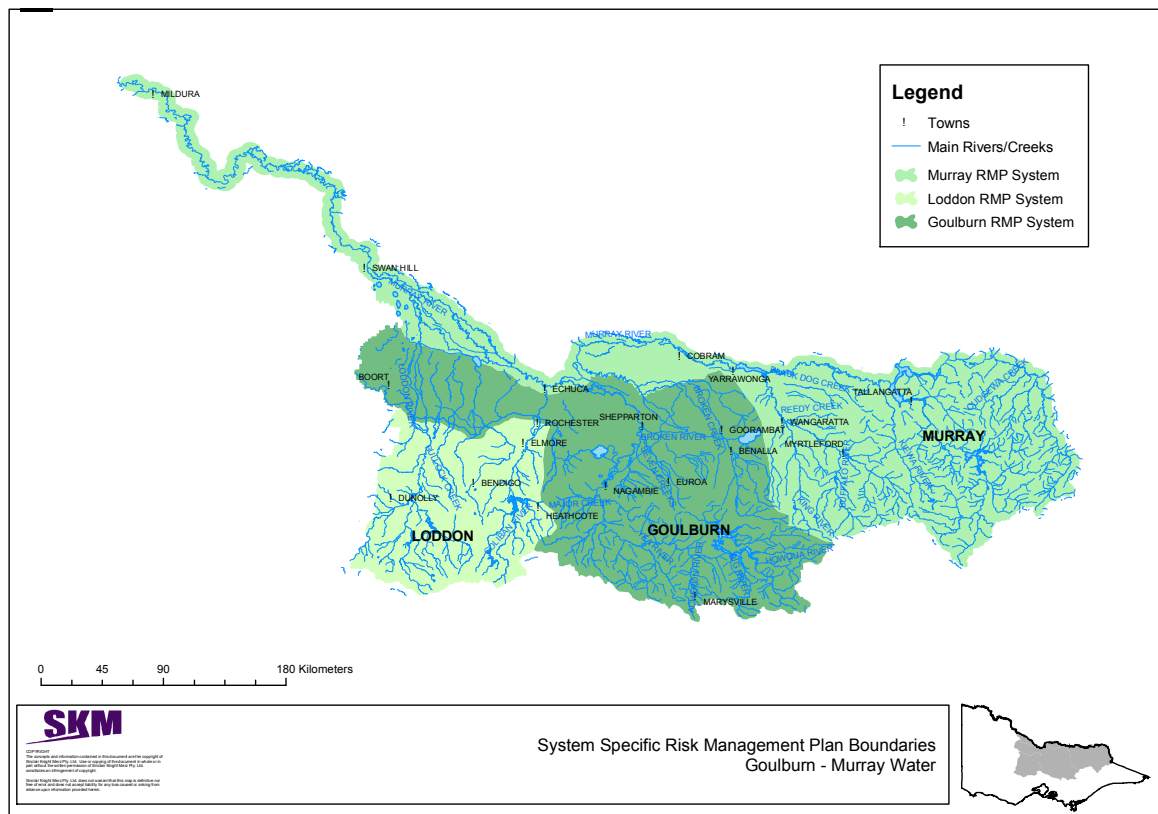
Section 3 Regulations component report

Section 4 Other relevant information and activities

Further information regarding matters relevant to this report can be obtained by contacting Anne Graesser, Manager Natural Resource Services, during business hours on (03) 5826 3500 or by email [anne.graesser@gmwater.com.au](mailto:anne.graesser@gmwater.com.au). Water quality data collected by GMW is available to the public via the Victorian Water Resources data warehouse site at [www.vicwaterdata.net](http://www.vicwaterdata.net) or by contacting Greg Smith [greg.smith@gmwater.com.au](mailto:greg.smith@gmwater.com.au).

## 2 Goulburn-Murray Water

GMW manages the bulk water delivery and transfer for around 30% of Victoria, or approximately 68,000 km<sup>2</sup>. For the purposes of managing risks to water quality under the SDWA&R, GMW's area is divided into three operational areas (Figure 1). GMW operates 16 bulk water storages and an extensive network of water distribution channels, pipelines and natural carriers to deliver raw water to its customers. Customers use their own infrastructure to take water from these supply systems via a pump or gravity irrigation outlet.



**Figure 1: GMW's area of operation**

Water supplied by GMW is not chlorinated or treated to improve its quality and should never be considered fit for human consumption without being properly treated.

GMW provides bulk water in accordance with Bulk Water Entitlement Agreements to urban water corporations for treatment and supply to their customers in 113 towns across northern Victoria and along the River Murray as far downstream as Merbein (See Appendix 1 for a list of towns supplied). The Bulk Water Entitlements deal with quantity of supply rather than quality. GMW does not operate the reticulated supply systems within these towns. There are some settlements, e.g. Goulburn Weir and Kirwans Bridge, where residents may hold a water entitlement with GMW but this use is not for human consumption.

GMW recognises that water is supplied to regional urban water corporations for treatment and distribution for drinking water purposes. Our commitment to drinking water quality management is reflected in the corporate drinking water quality policy. This Policy requires GMW to address threats to safe drinking water by *the preparation and implementation, as resources allow, of Water Storage Manager Risk Management Plan.*

The SDWA&R requires water storage managers such as GMW to prepare, implement, review and revise risk management plan (RMP) in relation to its supply of water to any party who treats water for human consumption. Water corporations and other parties who treat water for human consumption are known as *water suppliers* under the SDWA.

For the purposes of the SDWA, a Victorian water corporation is a water storage manager if it releases water from the storage it manages to a water supplier; or permits the water supplier to take water directly from the water storage.

A Victorian water corporation may also be deemed to be a water storage manager if the water supplier has a right to take water from the water storage or from any point downstream of the water storage; and the water storage manager is aware that the water supplier may exercise that right.

Given that water from most GMW storages is used to supply drinking water across northern and western Victoria and along the River Murray, the spatial scope of the RMP is enormous.

## **2.1 Water Storage Manager Role**

GMW manages the supply of water in a number of different ways to regional water suppliers (Coliban Water, Central Highlands Water, North East Water, Goulburn Valley Water, Grampians Wimmera Mallee Water and Lower Murray Water). These Water Suppliers in turn treat and distribute potable water to 113 towns (Appendix 1).

GMW provides raw (untreated) water to Water Suppliers in four ways:

1. Storages directly e.g. Nagambie from Goulburn Weir
2. Outlet works of storages e.g. Bendigo from Lake Eppalock
3. Indirectly from rivers supplied by storages e.g. Shepparton from Goulburn River supplied by Eildon
4. Channel systems e.g. towns in the Central Goulburn Irrigation Area.

GMW is required to consider risk management for all of the mechanisms that the corporation provides water suppliers. This includes risks associated:

- With the catchment to the storage;
- With the storage itself;
- With the supply of water downstream of storages using natural carriers such as rivers and creeks; and
- With the supply of water from channel systems to each drinking water off take point.

A *Safe Drinking Water Act* Water Storage Manager Risk Management Plan (RMP) has been prepared in accordance with the SDWA&R and is regularly reviewed by GMW. Copies of the RMP are available to the public upon request to GMW. The plan includes general requirements and considers GMW activities to manage the risk to water quality. In addition there is a section that specifically focuses on risks in and around GMW's storages.

GMW meets regularly with the urban water suppliers to discuss any issues arising from the above RMP including: incident response, blue green algae warnings, sharing of information and water resource management.

### 3 Regulation Components Report

#### 3.1 Emergency, incidents or events

15(2)(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;

In order to understand incident information below, it should be noted that the catchments in northern Victorian where water may be harvested are open to a variety of land and water based activities and are not, for example, closed to access and/or use such as Melbourne's catchments. These land use activities may include agriculture, aquaculture, forestry, industry, regional urban centres, townships, major transport infrastructure and recreation.

Within the 2012/2013 year, GMW recorded 55 incidents that were regarded as having the potential to affect the quality of water supplied to a regional water corporation or potentially posed a risk to human health. None of these incidents were classed as emergencies. Each incident was handled using GMW's incident response procedure which includes formal processes for communicating about, responding to and reviewing the incidents. Details of these incidents are listed in Appendix 2.

#### 3.2 Blue Green Algae Management

Management of Blue Green Algae (BGA) by GMW is key program/process that manages a key risk to the safe supply of water to water suppliers.

High levels of BGA (cyanobacteria) regularly occur across GMW's region and have the potential to affect drinking water supplies. GMW is the Local Water Manager (LWM) for BGA risk management in its storages, channels and drains; and the Regional Coordinator (RC) for widespread BGA incidents that involve multiple interconnected waterbodies. BGA in the River Murray is managed by New South Wales authorities with input from GMW and other Victorian agencies.

GMW prepared BGA Response Plans for all GMW managed water bodies and river basins, in accordance with the protocols set out in the Department of Sustainability and Environment (DSE) Blue-Green Algae Circular for 2012-13. These plans provided guidance on the preparation for and response to BGA incidents, including notification of relevant stakeholders.

BGA Response Plans include an alert level framework to assist staff and stakeholders recognise the significance of BGA levels (see Table 2).

**Table 1** GMW's blue green algae alert level framework

Alert Level	All species	Toxic species
No Alert	Nil - <0.04 mm <sup>3</sup> /L	Nil - <0.04 mm <sup>3</sup> /L
Alert Level 1 - Low	0.04 - <0.4 mm <sup>3</sup> /L	0.04 - <0.4 mm <sup>3</sup> /L
Alert Level 2 - Medium	≥0.4 - 10 mm <sup>3</sup> /L	≥0.4 - 4 mm <sup>3</sup> /L
Alert Level 3 - High	≥10 mm <sup>3</sup> /L	>4 mm <sup>3</sup> /L

A BGA Status Report is regularly circulated to a broad range of stakeholders including the Department of Health (DH), Department of Environment and Primary Industries (DEPI), other water corporations, catchment management authorities (CMA) and local government. The report contains the latest BGA laboratory results for GMW's storages and key water supply assets.

In accordance with the 2012/13 BGA response plans, GMW advised DSE/DEPI and DH of any BGA levels that had the potential to affect public health through drinking water or recreational contact via the BGA status report. BGA warnings were issued and DH and DSE/DEPI were notified via telephone and email when the total biovolume of known toxic BGA species exceeded 4mm<sup>3</sup>/L and/or widespread BGA scums were observed.

### **Warnings in GMW's Major Storages**

There were no BGA warnings in any of GMW's major storages during 2012/13.

### **Warnings in Irrigation Areas**

The only BGA warnings in 2012/13 were in Torgannah Lagoon and parts of the Torrumbarry Irrigation Area (including Lake Boga, Kow Swamp and Reedy Lake).

No debrief was required due to there being no major warnings or regional blooms.

GMW continued to engage with relevant stakeholders, including via a pre-season meeting held in November 2012.

No Section 22 notifications were required by GMW to DH.

Further information regarding GMW's responsibilities for BGA monitoring and reporting can be found on GMW's website [www.gmwater.com.au](http://www.gmwater.com.au). The BGA factsheets and information on the current status of GMW's storages and irrigation areas can be found on the BGA webpage <http://www.g-mwater.com.au/bluegreenalgae-alert/>. In addition, the public can access warning information by calling GMW's BGA Hotline on (03) 5826 3785 or by contacting GMW directly during business hours on 1800 013 357 or [reception@gmwater.com.au](mailto:reception@gmwater.com.au).

### **3.3 Issues arising from emergencies, incidents or events**

*15(2)(b) any issues that may have arisen out of the taking of the actions referred to in paragraph (a);*

GMW continues to work with the regional water suppliers to improve their stakeholder and public notification protocols for emergency discharges from wastewater treatment plants.

During the 2012/13 period, GMW was advised that three regional water businesses were granted emergency discharge licenses under Section 30A of the Environment Protection Act 1970 to discharge treated wastewater into waterways. These regional water businesses were unable to dispose of their treated wastewater through land irrigation and eventually filled their onsite wastewater storage lagoons to capacity because of the wet summer/autumn conditions. EPA required the regional water businesses to undertake water quality and quantity monitoring and to notify all downstream water users of the discharges. In some cases, monitoring results were provided to GMW.

### **3.4 Summary of exemptions and undertakings**

*15(2)(c) a summary of every—*

*(i) exemption under section 8 of the Act and any condition imposed in relation to every exemption; and*



*(ii) written undertaking by the water storage manager accepted by the Secretary under section 30 of the Act;*

During 2012/13 GMW did not require any exemptions under section 8 of the Act or enter into any undertaking with the Department of Health under section 30 of the Act.

### **3.5 Summary of processes to disinfect or treat water**

*15(2) (d) 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*

GMW does not disinfect, treat or process any water supplied to its customers, as all water supplied by GMW is not suitable for human consumption and customers are aware of this (see also Section 4.3).

### **3.6 List of chemical or substances**

*15(2) (e) 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; and*

While GMW does not treat or process any water for drinking water purposes, please note the following:

- GMW sometimes applies herbicides to vegetation adjacent to channels used to supply urban water and GMW notifies the relevant drinking water supplier before this occurs.
- GMW only uses pesticides that are suitable for use adjacent to waterways and in a manner consistent with current best management practices and regulations.

### **3.7 Risk Management Plan audit findings and issues raised**

*15(2) (f) 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.*

A regulatory audit was not required to be undertaken during this reporting period. GMW continues to develop and implement outcomes from previous internal and external audits.

## 4 Other Relevant Activities/Information

### 4.1 Statutory Planning

GMW assesses planning applications to meet a range of objectives, including the requirements of the SDWA&R to minimize risks to water quality within our catchments. Under Section 55 of the *Planning and Environment Act 1987*, GMW is a statutory referral authority for developments and subdivisions within any declared Special Water Supply Catchments. A list of the declared Special Water Supply Catchments can be found in Schedule 5 of the *Catchment and Land Protection Act* and there are several of these catchments in each of the system specific risk management plans. For all other areas, GMW is only notified of any development applications as an interested or affected party under Section 52 of the *Planning and Environment Act 1987*.

GMW's role in statutory planning is a key activity to manage the risks to water quality associated with various land uses and development within GMW's area of operation. This is achieved through ensuring that GMW receives appropriate applications, providing conditions to minimize the risk to water quality or in some instances objecting to applications where it is determined that the application poses an unacceptable risk to water quality. GMW receives planning applications from 25 local government authorities and the Department of Community Planning and Development (on behalf of Alpine Resorts) (Table 2). In 2012/13 GMW received a total of 1,235 applications. GMW also provided responses for 18 Work Plans from the Department of Environment and Primary Industries (DEPI) for developments such as mines and quarries.

In addition to GMW's role in statutory planning, GMW along with relevant water suppliers continues to be involved in the development of local government's Domestic Wastewater Management Plans (DWMPs). DWMPs are a key tool to manage the risks to water quality associated with onsite wastewater management for existing and new developments within GMW's region.

Table 2: Planning Permit Applications received from Municipalities from 2004/05 to 2012/13

Municipality	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Alpine Shire	46	23	105	85	69	57	70	66	29
Ballarat	2	10	13	11	4	9	10	10	7
Benalla	2	4	6	11	20	8	15	3	5
Bendigo	64	33	58	58	51	36	64	73	47
Campaspe	27	27	131	106	108	99	91	52	93
Central Goldfields	20	11	10	11	7	14	12	13	6
DPCD (Alpine Resorts/ Mt Hotham)	16	0	2	0	2	1	3	2	1
Gannawarra	14	14	34	47	34	19	25	23	31
Hepburn	279	291	250	136	101	122	128	109	113
Indigo	43	30	18	8	5	8	5	19	22
Loddon	20	13	10	11	7	4	6	4	12
Macedon Ranges	142	95	87	101	124	114	35	216	155
Mansfield	38	18	30	46	74	49	105	99	87
Mildura	2	1	2	4	1	0	2	3	4
Mitchell	9	60	63	47	14	14	22	18	9
Moira	49	49	211	186	77	199	142	150	153
Moorabool			3	1		2	2	2	4
Mount Alexander	91	78	80	72	85	89	163	118	90
Murrundindi	60	34	49	52	24	35	52	37	21
Pyrenees	4	3	11	5	10	6	14	7	12
Shepparton	157	98	197	169	174	108	139	153	109
Strathbogie	46	64	42	62	62	59	92	77	86
Swan Hill	10	12	19	26	18	13	23	21	28
Towong	22	33	48	65	69	61	72	117	71
Wangaratta	1	4	4	3	9	3	7	32	27
Wodonga	16	9	8	10	12	13	26	23	13
<b>Total</b>	<b>1,180</b>	<b>1,014</b>	<b>1,410</b>	<b>1,333</b>	<b>1,161</b>	<b>1,142</b>	<b>1,325</b>	<b>1,451</b>	<b>1,235</b>

## 4.2 Land and On Water Management Plans

Land and On Water management is about managing community, recreational and environmental aspects of water storages and surrounding lands. The aim is to protect and enhance water quality, improve the ecological health of waterways and provide safe, sustainable public access. GMW storages are easily accessible by the general public and provide highly valued recreational opportunities for tourists and local communities.

GMW has completed the development of seven Land and On Water Management Plans (LoWMPs) and is working on plans for an additional eight water storages. These plans will guide how GMW and other agencies manage activities, facilities and development on and around water storages over a five year period. The plans focus on cultural, recreational, environmental and water quality management issues at storages, however they are not designed to make recommendations on storage operations such as water levels and releases.

Technical assessments of the risks to water quality have been undertaken for most GMW storages in accordance with GMW's obligations as a Storage Manager under the Safe Drinking Water Act. These assessments help to identify and prioritise actions required to maintain and/or improve water quality and assist with decision-making processes regarding actions and priorities in and around various storages. This risk assessment process links with the LoWMP process and although some risk assessments have been completed since the finalisation of LoWMPs, outcomes from the risk assessments will be incorporated into future versions of the plans. Table 3 below provides a summary of the LoWMPs that have been developed and information regarding which storages will have plans developed in the future.

**Table 3: Land and On Water Management Plan Status**

Storage	Status of Plan
<b>Murray Storages</b>	
Dartmouth Dam	No plan exists – currently no funding available.
Lake Hume	Completed - due for 5-yearly review.
Yarrawonga Weir	Completed - due for 5-yearly review.
Torrumbarry Weir	No plan exists – requirement for plan being considered.
Mildura Weir	No plan exists – requirement for plan being considered.
Kangaroo Swamp	Planned for future development.
Kow Swamp	Planned for future development.
Lake Boga	Completed - released November 2011.
Lake Charm	Planned for future development.
<b>Ovens Storages</b>	
Lake Buffalo	Draft plan available on GMW website. Draft plan in second round of consultation.
Lake William Hovell	Draft plan under review.
Lake Nillahcootie	Completed - released March 2011.
<b>Goulburn Storages</b>	
Lake Eildon	Completed - released 2012.
Goulburn Weir	Completed - released 2012.
Waranga Basin	Completed - released August 2011.
Greens Lake	Early stages of plan/risk identification work occurring.
<b>Campaspe Storages</b>	
Lake Eppalock	Final document awaiting agency endorsement prior to public release.
<b>Loddon Storages</b>	
Cairn Curran Reservoir	Final document awaiting agency endorsement prior to public release.
Tullaroop Reservoir	Plan to be developed in 2015/16.
Laanecoerie Reservoir	Plan to be developed in 2014/15.
<b>Bullarook Creek Storages</b>	
Newlyn Reservoir	Plan to be developed in 2013/14.
Hepburns Lagoon	No plan to be developed - this storage is not used for recreation purposes.

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### **4.3 Advising People about Non-potable Water Supplies**

All water supplied by GMW is not suitable for human consumption. Following liaison with the DH and Water Suppliers, GMW developed a management strategy to advise customers that water supplied is non-potable (non-drinking). This strategy was implemented in 2007, and is located on our website.

All GMW customers receive an Information Statement advising that the water supplied by GMW is untreated and is not suitable for drinking or food preparation. This includes GMW customers that provide a water supply to residential schemes, syndicates or cooperatives. This information is also included on GMW accounts, detailed on our website and when relevant, in our media releases.

### **4.4 Melbourne Water**

The Sugarloaf pipeline was originally constructed to supply water from the Goulburn catchment downstream of Lake Eildon to Melbourne Water's Sugarloaf Reservoir (and subsequently to Yarra Valley Water, City West Water, and South East Water). The pipeline has not been in operation since November 2010, and is not likely to be used in the short to medium term future. GMW's agreement with Melbourne Water and associated Bulk Entitlement is still in place. GMW has therefore continued to provide the opportunity for Melbourne Water to be involved in GMW's management of risks to water quality within the Goulburn catchment.

### **4.5 Other activities**

GMW continues to be involved in various activities to manage risks to water quality. This includes ensuring that there are appropriate procedures, monitoring, communication and associated agreements in place with relevant stakeholders in the event of an environmental incident.

A key achievement in June 2013 has been the amended houseboat regulations at Lake Eildon. Under the new regulations, all houseboats on Lake Eildon will need to be fitted with a greywater treatment system by 1 July 2020.

During 2012/13 there were no major emergencies, unlike previous years with drought, fire or flood.

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

Town Supplied	Supply Source	Supplier
<b>Goulburn System</b>		
ALEXANDRA	Goulburn River at Alexandra	Goulburn Valley Water
AVENEL	Goulburn River at Seymour	Goulburn Valley Water
AXEDALE	Waranga Western Channel	Coliban Water
BONNIE DOON	Lake Eildon	Goulburn Valley Water
BOORT	Channel No.3 (off Waranga Western Channel)	Coliban Water
BROADFORD	Goulburn River at Tallarook	Goulburn Valley Water
COLBINABBIN	Waranga Western Channel at Colbinabbin	Goulburn Valley Water
CONGUPNA	Goulburn River at Shepparton	Goulburn Valley Water
COROP	Waranga Western Channel (Corop offtake)	Goulburn Valley Water
DINGEE	Pyramid Hill Channel No.1	Coliban Water
DOOKIE	East Goulburn Main Channel	Goulburn Valley Water
EILDON	Goulburn River at Alexandra	Goulburn Valley Water
GIRGARRE	7/12/9 Channel	Goulburn Valley Water
GOULBURN WEIR (BAXTERS RD)	Lake Nagambie (Baxters Rd offtake)	Goulburn Valley Water
JARKLIN	Serpentine Creek (Jarklin offtake)	Coliban Water
KATANDRA WEST	3/25 Channel	Goulburn Valley Water
KIRWANS BRIDGE	Lake Nagambie (Kirwans Bridge offtake)	Goulburn Valley Water
KYABRAM	CG 9 Channel	Goulburn Valley Water
LOCKINGTON	Supply Channel off the Waranga Western Channel (No 24 Channel)	Coliban Water
MACORNA	Pyramid Hill 10/1 Channel	Coliban Water
MELBOURNE	Goulburn River (via Sugarloaf Pipeline at Killingworth)	Melbourne Water
MERRIGUM	CG 9 Channel	Goulburn Valley Water
MITIAMO	Mitiamo spur off the Pyramid Hill Channel No. 1	Coliban Water
MOLESWORTH	Goulburn River (Molesworth offtake)	Goulburn Valley Water
MOOROOPNA	Goulburn River at Shepparton	Goulburn Valley Water
MURCHISON	Goulburn River (Murchison offtake)	Goulburn Valley Water
MYSIA	Waranga Western Channel - Mysia	Coliban Water
NAGAMBIE	Goulburn River & Lake Nagambie	Goulburn Valley Water
NATHALIA	Broken Creek	Goulburn Valley Water
NUMURKAH	Broken Creek at Numurkah	Goulburn Valley Water
PYRAMID HILL	Pyramid Hill Channel No. 1 (12/5/1)	Coliban Water
QUAMBATOOK	Waranga Western Channel (via Normanville pipeline)	Grampians Wimmera Mallee Water
ROCHESTER	Waranga Western Channel (Rochester offtake)	Coliban Water
RUSHWORTH	Waranga Basin	Goulburn Valley Water
SEYMOUR	Goulburn River at Seymour	Goulburn Valley Water
SHEPPARTON	Goulburn River at Shepparton	Goulburn Valley Water
STANHOPE	CG 1/12/9 Channel	Goulburn Valley Water
TALLAROOK	Goulburn River at Seymour	Goulburn Valley Water
TALLYGARoopNA	Goulburn River at Shepparton	Goulburn Valley Water
TATURA	CG 3/5A Channel	Goulburn Valley Water
THORNTON	Goulburn River at Alexandra	Goulburn Valley Water

Town Supplied	Supply Source	Supplier
TONGALA	19/28/9 Channel	Goulburn Valley Water
TOOLAMBA	Goulburn River at Shepparton	Goulburn Valley Water
WATERFORD PARK	Goulburn River at Tallarook	Goulburn Valley Water
WUNGHNU	Broken Creek	Goulburn Valley Water
<b>Loddon System</b>		
AXEDALE	Eppalock Reservoir	Coliban Water
BALLARAT	Newlyn Reservoir	Central Highlands Water
BENDIGO	Lake Eppalock	Coliban Water
BRIDGEWATER	Loddon River (Bridgewater offtake)	Coliban Water
GOORNONG	Campaspe River (Goornong offtake)	Coliban Water
HEATHCOTE	Lake Eppalock	Coliban Water
KERANG	Loddon River (Kerang offtake)	Lower Murray Water
LAANECOORIE	Loddon River (Laanecoorie offtake)	Coliban Water
MARYBOROUGH	Tullaroop Reservoir	Central Highlands Water
QUAMBATOOK	Waranga Western Channel (via Normanville pipeline)	Grampians Wimmera Mallee Water
ROCHESTER	Campaspe River (Rochester offtake)	Coliban Water
SERPENTINE	Serpentine Creek (Serpentine offtake)	Coliban Water
<b>Murray System</b>		
BARMAH	River Murray (Barmah offtake)	Goulburn Valley Water
BARNAWARTHA	Wodonga Creek (an anabranch of the Murray River)	North East Water
BELLBRIDGE	Lake Hume	North East Water
BERRIWILLOCK	River Murray - Nyah	Grampians Wimmera Mallee Water
BONEGILLA	Wodonga Creek (an anabranch of the Murray)	North East Water
BUNDALONG	Lake Mulwala Back Water	North East Water
CHILINGOLLAH	River Murray - Nyah	Grampians Wimmera Mallee Water
CHILTERN	Wodonga Creek (an anabranch of the Murray)	North East Water
CHINKAPOOK	River Murray - Nyah	Grampians Wimmera Mallee Water
COBRAM	River Murray at Cobram	Goulburn Valley Water
COHUNA	Gunbower Creek (Cohuna offtake)	Coliban Water
CULGOA	River Murray - Swan Hill (Pental Island)	Grampians Wimmera Mallee Water
DARTMOUTH	Mitta Mitta River (Dartmouth offtake)	North East Water
DEVENISH	Boosey Creek	North East Water
EBDEN	Wodonga Creek (an anabranch of the Murray)	North East Water
ECHUCA	River Murray (Echuca offtake)	Coliban Water
ESKDALE	Mitta Mitta River (Eskdale offtake)	North East Water
GLENROWAN	Ovens River (confluence with King River)	North East Water
GUNBOWER	Taylor's Creek	Coliban Water
KATAMATITE	MV 7/3 Channel	Goulburn Valley Water
KERANG	River Murray at Koondrook and TIA 14/2 Channel	Lower Murray Water
KIEWA	Wodonga Creek (an anabranch of the Murray)	North East Water
KOONDROOK	River Murray at Koondrook	Lower Murray Water
LALBERT	River Murray - Swan Hill (Pental Island)	Grampians Wimmera Mallee Water

Town Supplied	Supply Source	Supplier
LEITCHVILLE	Gunbower Creek (Leitchville offtake) and TIA 5/1 Channel	Coliban Water
MANANGATANG	River Murray - Piangil	Grampians Wimmera Mallee Water
MILDURA	River Murray (Mildura offtake)	Lower Murray Water
MILDURA WEST	River Murray (Mildura West offtake)	Lower Murray Water
MOYHU	King River (Moyhu offtake)	North East Water
MURRABIT	2/11/4 Channel and River Murray	Lower Murray Water
NANDALY	River Murray - Nyah	Grampians Wimmera Mallee Water
NULLAWIL	River Murray - Swan Hill (Pental Island)	Grampians Wimmera Mallee Water
NYAH	River Murray - Nyah	Grampians Wimmera Mallee Water
OUYEN	River Murray - Wemen	Grampians Wimmera Mallee Water
OXLEY	King River (Oxley offtake)	North East Water
PATCHEWOLLOCK	River Murray - Wemen	Grampians Wimmera Mallee Water
PIANGIL	River Murray (Piangil town offtake)	Lower Murray Water
PICOLA	MV 9/9/6 Channel	Goulburn Valley Water
RED CLIFFS	River Murray (Red Cliffs offtake)	Lower Murray Water
ROBINVALE	River Murray (Robinvale offtake)	Lower Murray Water
RUTHERGLEN	River Murray at Wahgunyah	North East Water
SEA LAKE	River Murray - Swan Hill (Pental Island)	Grampians Wimmera Mallee Water
SPEED	River Murray - Wemen	Grampians Wimmera Mallee Water
ST JAMES	Lake Mulwala	North East Water
STRATHMERTON	River Murray at Cobram	Goulburn Valley Water
SWAN HILL	Murray River	Lower Murray Water
TALLANGATTA	Lake Hume / Mitta Mitta River	North East Water
TANGAMBALANGA	Wodonga Creek (an anabranch of the Murray River)	North East Water
TEMPY	River Murray - Wemen	Grampians Wimmera Mallee Water
TUNGAMAH	Lake Mulwala	North East Water
ULTIMA	River Murray - Swan Hill (Pental Island)	Grampians Wimmera Mallee Water
UNDERBOOL	River Murray - Wemen	Grampians Wimmera Mallee Water
WAHGUNYAH	River Murray at Wahgunyah	North East Water
WAICHIE	River Murray - Nyah	Grampians Wimmera Mallee Water
WALPEUP	River Murray - Wemen	Grampians Wimmera Mallee Water
WANGARATTA	Ovens River (confluence with King River)	North East Water
WEMEN	River Murray - Wemen	Grampians Wimmera Mallee Water
WHITFIELD	King River (Whitfield offtake)	North East Water
WODONGA	Wodonga Creek (an anabranch of the Murray River)	North East Water
YARRAWONGA	Lake Mulwala	North East Water



## Appendix 2. Environmental incidents reported during 2012/13 related to water quality

Risk #	Date	Level	Incident Description	Location	Action undertaken (by GMW)
617	10/08/12	1	Truck accident into creek. Diesel and oil have entered the waterway however it does not appear the fuel tanks have been ruptured. Fuel and oil entering waterway is from engine only.	Webb Creek. Hume Freeway bridge. near Wangaratta	GMW confirmed with CFA that EPA had been notified and that no customers are on creek. No further actions required of GMW
625	12/08/12	1	Vehicle and boat trailer brake failure	Eildon - Eildon Alliance Boat Ramp	Vehicle removed by Victorian Water Police with assistance from GMW Officer. No further action required.
626	16/08/12	2	Suspected algal bloom noticed in creek. Strong green tinge from below Koraleigh Weir to Day Rd bridge. Cause unknown	Yambuna Creek, Day Rd Tongala	GMW tested sample found not to be hazardous algae.
698	6/09/12	1	Water Quality, customer complained water was poisoned.	Torrumbarry Irrigation Area - 26a/4 channel Benjeroop	Customer was advised that GMW does not supply potable water in its channels and GMW uses Weedmaster Duo, which has an Aquatic registration and does not cause the conditions she was relating to us. Checked for BGA and visual signs of poison in 26a/4 channel, nothing of significance found.
705	8/09/12	1	Sewerage Recycle Water getting into the Channel 14 system. Cause - system failure	Rochester/Campaspe Irrigation Area - Channel 14 - Restdown Road	Liaised with Coliban Water to come up with a solution to prevent class B water from being able to run into the irrigation system when channel flows are low.
714	14/09/12	3	Two trucks have collided, and there was a large fuel spill which went into the Lambing/Gunyah Crk.	On the Hume Fwy, 1.5 Km South of the Violet Town exit.	EPA incident controller implemented required controls to manage incident. Diversions customers and GVW notified of the incident.
739	20/09/12	1	20-50 dead fish (Bony Bream) in Lake Charm	Torrumbarry Irrigation Area - Lake Charm	EPA (incident controller) and NECMA notified of incident. Site inspections and updates provided to EPA.
815	25/09/12	1	EPA s30A emergency discharge by NEW	Cemetery Creek (a tributary of Corryong Creek)	Landholders along Cemetery Creek notified.
835	30/10/12	1	High levels of Blue-Green Algae	Torrumbarry Irrigation Area - Kow Swamp, Pyramid Creek (including the No.6 Channel) and the Macorna Main	Reponses in line with BGA checklist including customer notification and signage.

Risk #	Date	Level	Incident Description	Location	Action undertaken (by GMW)
841	31/10/12	1	Suspected algae scum	Channel System	Site inspection, no issue found
856	10/11/12	1	Breach of event permit Special Conditions for the Targa Rally Event. A number of incidents occurred throughout the day at the Targa High Country Rally Event that used recreation area as their lunch stop.	William Hovell - Lake William Hovell Recreation Area.	GMW officer attended the event and cleaned up rubbish. Event proponent informed that access to William Hovell will not be available for future events.
863	14/11/12	1	Unbundled bulk chemical storage within 5 metres of channel	Goulburn Weir - Stuart Murray Canal	Contacted the license holder of the pump station to comply with the terms and condition of their license, they confirmed they would remove the chemicals.
878	30/11/12	1	Small houseboat sunk after being slipped (was empty no fuel or effluent), no slicks on water, fortunately in shallow water and able to be salvaged quickly.	Lake Eildon - Jerusalem Creek Marina	Compliance with GMW slipping program confirmed. Transport Safety Victoria advised.
881	3/12/12	1	Inboard recreational vessel caught fire.	Lake Eppalock in the proximity of Lake Eppalock Holiday Park	Site inspection, no evidence of water quality visible. CFA managed incident
887	6/12/12	1	Ute discovered partly submerged in Campaspe River	Campaspe River 1.9km South of Township on Bonn Road	Police notified, vehicle was removed.
900	13/12/12	1	High levels of Blue-green algae	Torgannah Lagoon	Reponses in line with BGA checklist
907	24/12/12	2	Police found a ute in the river and contacted GMW	Goulburn River Wyuna	Notified CMA & Parks Vic, vehicle removed
923	6/01/13	1	Boat fire, boat sunk in 18 metres of water. No oils or fuel on water surface following sinking.	Lake Eildon, near Peppin Point Caravan Park	Insurance company contacted to remove the boat.
932	15/01/13	1	9 dead Carp and approximately 50 Stressed Carp	Rochester/Campaspe Irrigation Area - Bamawm Main Drain	Notified EPA, EPA advised no further action was required by GMW.
933	15/01/13	1	Approximately 50 decomposed Carp found in Warrigul Creek at Stewarts Bridge. The creek/drain was dry. It is estimated that the carp would have been dead for at least 2 weeks.	Central Goulburn Irrigation Area - Warrigul Creek at Stewarts Bridge	Notified EPA, EPA advised no further action was required by GMW.
935	15/01/13	1	Unauthorized discharge of waste water into GMW channel	Channel 2/16/8 Central Goulburn	Landowner notified to cease pumping and gain permission in future. DEPI contacted to investigate discharge and dairy effluent guide
942	18/01/13	1	Numerous Carp deaths in Lake due to the NCCMA implementing a drying cycle.	Lake Boort	The EPA is the incident controller for this incident. No action was required from GMW.

Risk #	Date	Level	Incident Description	Location	Action undertaken (by GMW)
952	21/01/13	1	Plastic rubbish bags in channel, containing rubbish.	Shepparton Irrigation Area - EG-12 Tallygaroopna	Plastic rubbish bag remove from the channel and taken to the tip
954	23/01/13	1	7 year old boy reported with severe illness after swimming in Lake Eildon.	Eildon - Lake Eildon (Paps Lane)	Advised that medical attention should be notified immediately. DH notified of incident
958	25/01/13	1	Dead Goats in channel, numbers & condition unknown	Shepparton Irrigation Area - Channel 28 Outlet SP2391 Inverness Road, Marungji	Goats removed from waterway and buried by owner.
1008	26/02/13	1	High levels of Blue-Green Algae in Lake Boga	Torrumbarry Irrigation Area - Lake Boga	Response in line with BGA checklist including customer notification and signage.
1010	27/02/13	2	Potential spill of mining chemicals used for mining operations into West branch of Ovens River. There was a landslip that impacted on a bunded site (chemical storage facility) which contained liquid and solid stores of cyanide.	Sandhurst mine, south of Harrietville	EPA was the incident controller. GMW liaised with EPA and attended EMT meeting (NEW also in attendance), consideration of risks to customers
1016	8/03/13	1	Fibre glass inboard boat caught fire and sunk on Friday 8/03/2013 (approx 50 metres from shore in approx 6 metres of water.)	Cairn Curran Reservoir - Woolshed Bay (Bryants foreshore.)	Required owner to remove the boat, and boat was removed.
1021	15/03/13	1	30-40 Dead Carp	Torrumbarry Irrigation Area - Lake Boga	Site inspection. Notified EPA, and EPA advised no further action was required by GMW.
1033	24/03/13	1	Minor sewer spill- clear liquid, no solids	Eildon - Lake Eildon marina	Served a Breach Notice to Lessee pursuant to Clause 4.6 Environmental Protection, Schedule B Risk Reduction Program, Special Condition 13.4 Sewerage System. Lessee to provide GMW with detailed program of how to prevent future breach (second request for this sent 25 July 2013.
1039	19/03/13	1	Dead cow in dried creek bed.	"Middle Creek" - tributary of 15 Mile Creek nr Laceby-Glenrowan Rd.	Owner has dumped dirt over carcass. NECMA in contact with EPA no further action required
1041	27/03/13	1	Non-compliant Diversion Pump including unbunded fuel tank.	Laanecoore Reservoir north east perimeter land	Site visit and enforcement order sent to land owner.
1046	4/04/13	1	Waste consisting of furniture, plastics and timbers has been discarded along lake bed and foreshore.	Eildon - Lake Eildon Marina	Arranged for leaseholder to clean up area

Risk #	Date	Level	Incident Description	Location	Action undertaken (by GMW)
1068	29/04/13	1	A car rolled into the water after being parked in the carpark just above the concrete boat ramp apron.	Eppalock - No.1 Boat Ramp, Kimbolton, Lake Eppalock	Car has been removed, community advised to safely park vehicles close to water
1082	13/05/13	2	Customer diversion pump has been relocated from edge of Reservoir below Full Supply Level. This has the potential to be inundated and pollute waterway if the Reservoir level rises.	Newlyn Reservoir - old access road across storage	Liaised with owner only have minimum fuel stored. Weather monitored daily. Pump removed 3/06/2013.
1121	4/06/13	1	Dead fox in channel, removed and buried.	Rochester/Campaspe Irrigation Area – CH16	Fox removed from waterway and buried in designated location. Weekly inspections
1127	12/06/13	2	4 cows stuck under the bridge.	Pyramid Creek on the Murray Valley Highway, Milnes Bridge.	Informed landowner of his cattle being in the waterway and his responsibility to remove his stock and control their access to the waterway. EPA notified
1136	21/06/13	2	Semi trailer carrying a load of cream left the highway and crashed into outfall drain. Incident attended by CFA, SES, police and other agencies. Greatest GMW issue was oil and possible 800 litres of diesel that escaped from prime mover fuel tanks (low/no flow in channel and connecting waterways to significantly reduced the risk to Murray River).	Murray Valley Irrigation Area - Yarrowonga Main Chanel outfall drain on the Murray Valley highway east of Cobram	EPA incident controller coordinated required controls to manage incident. Goulburn Valley Water notified of the incident.
1161	25/06/13	1	Fuel spill from an over filled fuel tank on a hire tip truck. Refuelling occur in a designated refuelling area however on moving to a set down area, approximately 2L of fuel continued to spill from the tank.	Cohuna - Hipwell Road Environmental Flows Project	The contaminated soil was immediately bagged and placed in the designated refueling area. The contaminated material was later disposed to an EPA approved site.
-	Various	1	16 incidents where single animals have been found in GMW managed water bodies	Various (channel/waterway/storage)	All carcasses removed from waterway and buried in designated location. Weekly inspections