



## CHEMICAL CONTROL AND CONTINGENCY PLAN

### **IN CASE OF EMERGENCY**

#### **PRIMARY CONTACT:**

**000 – fire 'HazMat'  
(Who will contact Police, Shire and other Authorities  
as deemed necessary)**

#### **SECONDARY CONTACT:**

**Shire of Wentworth  
5027 5027**

**Dareton Police – 5027 7599, or**

**Wentworth Police – 5027 3102**

**EPA – 131 555**

**SafeWork NSW 131 050**





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	<b>Name</b>	<b>Position</b>	<b>Signature</b>	<b>Date</b>
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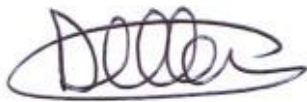


## Declaration

This Chemical Control Plan covers the Western Murray Irrigation Limited area of operations. The Plan has been prepared in accordance with the requirements of Western Murray Irrigation Limited's Environment Protection Licence (Licence Number 004659).

The plan also implements best practice, as identified in the SafeWork NSW 2017–2022 Hazardous Chemicals and Materials Exposures Baseline and Reduction Strategy and NSW Emergency Management Plan (EMPLAN 2012).

Western Murray Irrigation also complies with SafeWork NSW requirements who primarily administer the *Work Health and Safety Act 2011*, which covers the Work Health and Safety Regulation 2017, in relation to the keeping and handling of dangerous goods at premises dealing with liquid chemicals.



David J Hilton  
Manager Assets and Operations  
August 2018.





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## 1. Introduction

This Chemical Control and Contingency Plan has been prepared in accordance with Western Murray Irrigation Limited's (WMI) Environment Protection Authority issued Environment Protection Licence (Licence 004659, Sections O4 and O5).

A plan such as this is required wherever liquid chemicals are stored and handled and there is potential for air, soil, groundwater and surface water pollution to occur through spills or other releases.

WMI has responsibility for undertaking weed control programs for all surface drainage infrastructure and areas surrounding pump and supply infrastructure e.g. balance tower and pipeline reserve, within its area of operations and as such is required to use a range of herbicides. The weed control programs are necessary to maintain the operational efficiency of the infrastructure.

Chemical weed control is undertaken by trained staff (i.e. ChemCert) in three irrigation areas, Buronga, Coomealla and Curlwaa. The staff members who undertake weed control activities are supervised by WMI's Assets and Operations Manager, who in turn reports to the WMI Chief Executive Officer.

### 1.1 Applicable legislation

#### 1.1.1 Pesticides Act 1999

Any chemical substance used for the control of pests must be registered with the Australian Pesticides and Veterinary Medicines Authority (AVPMA) before use.

Under the Pesticides Act 1999 all pesticide users must:

- use only pesticides registered by the AVPMA that are approved for the intended situation of use
- read the registered label on the pesticide container (or have them read to the user) and strictly follow the label directions
- not risk injury to persons, property and non-target plants and animals through the use of the pesticide
- obtain an AVPMA permit if the user wishes to vary the label directions or use pattern
- make a record of pesticide applications
- be trained

#### 1.1.2 Work Health and Safety Act 2011 and Work Health and Safety Regulation 2017

The *Work Health and Safety Act 2011* (WHS Act) establishes general obligations on employers, self-employed persons, suppliers and employees which are intended to ensure the health and safety of all persons in workplaces including visitors. The WHS Act also imposes obligations on building owners (e.g. in the case of multi-tenanted buildings) and other persons in control of a place of work. These obligations apply to pesticides used in workplaces.

The WHS Act is supported by the WHS Regulation 2017 (WHS Regulation) that specifies requirements for the supply and use of hazardous substances and dangerous goods in workplaces. This code of practice provides guidance about how to comply with these requirements.

#### 1.1.3 Australian Work Health and Safety Strategy 2012 -2022

The Australian Work Health and Safety Strategy 2012–2022 (the Strategy) was launched on 31 October 2012 and an updated version republished in April 2018. With its vision of 'healthy, safe and productive working lives' it is a high level, forward-looking document capable of being implemented by governments, unions, industry and other organisations across Australia.

The Strategy was developed after nearly two years of consultation with WHS regulators, governments, unions, employer organisations, industry groups, safety organisations and the general public. It is underpinned by two key principles:

- All workers regardless of their occupation or how they are engaged have the right to a healthy and safe working environment.
- Well-designed healthy and safe work will allow workers in Australia to have more productive working lives.

The Strategy was updated in April 2018 following the scheduled mid-term review.

SafeWork NSW administers and provides advice on the WHS Act and the WHS Regulation.

WMI will continue to implement safe work practices under this legislation.

## **1.2 Risk management**

WMI have set in place the following overall procedures for preventing the discharge of pollutants from liquid chemical storage and handling activities:

- Purchasing chemicals on an as needs basis
- All materials are stored in designated areas as per label requirements
- Regular inspections are conducted
- Emergency spill management procedures are documented and communicated to staff
- All required employees are trained in the management and handling of chemicals
- All storage areas are covered and secured against unauthorised entry

## **1.3 Best environmental management**

Best environmental management practices regarding incident management include the following:

- Spill and emergency response plans
- Regular training and drills
- Accessible spill and response equipment
- Immediate containment of spills and proper disposal
- Prevention of the discharge of contaminated water

## 2. Operational procedures

### 2.1 Chemical application

The only chemicals currently used by WMI are herbicides for the purpose of weed control in surface drains and on levee banks. Weed species include both submerged aquatic weeds and weeds growing along the batters and on banks of the drainage channels. The chemicals used and the target species are summarised in the table 1.

**Table 1: Chemical application**

Target Species	Situation	Product (Chemical)	Time of Year	Rate (concentration)	Method of Application
-Water Couch -Johnson Grass -Nutgrass -Rushes -Sedge -Paspalum -Cumbungi -Caltrop -Three Cornered Jack	Surface drain, levee banks, pump yards, depot, pipeline supply infrastructure	Roundup bioactive (Glyphosphate), Striker (Oxyfluorfen) Amitrole (ammonium thiocyanate)	Aug-Nov & Jan-May	1:100	Hand Gun Boom Spray

### 2.2 Accreditation

As required by law and company policy, WMI spray operators are required to complete appropriate competency based training provided by a registered training organisation.

The *Pesticides Act 1999* and Pesticide Regulations 2017 provide that certain users of pesticides must hold a prescribed qualification and be re-assessed every five years. To identify a prescribed qualification, the Environment Protection Authority must approve units of competency that are specified in a current training package endorsed by the National Training Framework Committee of the Australian National Training Authority.

Competencies to be achieved for a Level 3 (Australian Qualification Framework) assessment:

- Level 3 - AHCHM303 Prepare and apply chemicals
- Level 3 - AHCHM304 Transport, handle and store chemicals
- Level 3 - AHCPMG301 Control weeds
- Level 2 - AHCHM201 Apply chemicals under supervision

Spill response training and drills are conducted annually for all staff involved in chemical spraying.

### 2.3 Disposal of containers

WMI requires that herbicide containers are not to be re-used for any purpose by WMI. They are rendered unusable and prepared for disposal at an approved site for recycling such as the program by drumMUSTER.

Prior to disposal, empty chemical containers are triple-rinsed and the washing wastewater used to control weeds around the WMI depot. Containers are also punctured to avoid reuse.

## 2.4 Washing of vehicles and equipment

The wash-down procedure for spray operators is to rinse the spray tanks and to empty the rinsate onto a designated gravelled area to control weeds. Figure 1 presents the location of the rinsate disposal area. This procedure ensures that rinsate is not discharged to any waterways and optimises the value of chemicals used.



**Figure 1: Location of wash-down area**

### 3. Storage and handling

#### 3.1 Storage facilities

WMI has a permanent bunded chemical storage facility but all materials are purchased as they are required. The maximum amount of chemical stored for weed spraying is 100lt.

#### 3.2 Spill kits

A spill kit is kept in the vehicle with the spray operators. The minimum contents of the spill kit include:

- Personal protective equipment (PPE) disposable gloves and respirator, safety glasses
- Recovery drum
- Waste disposal container
- Hydrated lime
- Soda ash (sodium carbonate)
- Liquid industrial detergent
- Absorbent material (e.g. Soil, diatomaceous earth)
- Broom
- Shovel
- MSDS (material safety data sheets) are stored at the WMI depot and a second set stored in the vehicle transporting the chemical

#### 3.3 Chemical spillage procedures

In the event of a minor chemical spill (classified as a spill that can be contained and disposed of with the contents of a spill kit) the following procedures are followed by WMI staff. This procedure is consistent with ChemCert Resource Manual (ChemCert Australia, 2015, p. 174).

1. Keep people and animals away
2. Identify the product and wear appropriate PPE. If product can't be identified wear full PPE, including respirator
3. Prevent the container from leaking further. Place it in a recovery drum if it is damaged
4. Contain and absorb spilled liquids with appropriate absorbent material, then shovel into a suitable container for disposal (not the recovery drum). Shovel spilled solids up directly
5. Absorb the residue with hydrated lime and add to the waste disposal container
6. Spread contaminated areas with hydrated lime and wash off after at least one hour
7. Wipe containers contaminated with spilled product with water containing detergent and 5% soda ash. Add all washings to the waste drum

**Note:** In the event of a major spill (classified as a spill that is too large to be contained by and disposed of with the contents of a spill kit or has the ability to do major harm to public of the environment) the NSW Fire Brigade (000), Environment Protection Authority (131 555) and SafeWork NSW (131 050) will be notified immediately.

## 4. Application

### 4.1 Alternative methods of weed control

WMI operates over 30km of open surface drains, pipelines and pumping infrastructure for irrigation drainage management. An integrated weed control program is undertaken involving strategic desilting, water management and chemical application.

### 4.2 Chemical application

While desilting and water management assist in controlling weed growth, they are not totally effective. Chemical weed control is strategically applied to the district's drainage infrastructure to supplement these methods of control and remove potential for blockages in the event of significant rainfall. WMI only uses two registered chemicals as shown in Table 1. A maximum of 500lt of diluted chemical is used at any one time.

The trained chemical operators only spray weeds when conditions are conducive to the activity, where there is little wind to ensure there is no spray drift, outside of harvest time and adhere to withholding periods.

The process for notifying adjacent landholders on intent to use chemicals for weed control is in place through the use of landholder notifications placed on WMI's homepage ([www.westernmurray.com.au](http://www.westernmurray.com.au)).

### 4.3 Farm level works and measures

Improvements of irrigation efficiency has led to significant reduced quantities of the volume of drainage water and nutrients leaving the farm during the irrigation season i.e. Coomealla drainage figures for 1998/99 a total of 4653ML, in 2017/18 a total of 357ML.

### 4.4 Integrated pest management

Integrated pest management (IPM) is a planned approach that coordinates environmentally acceptable methods of pest control with careful and minimal use of toxic pesticides. IPM programs are based on a comprehensive assessment of local conditions, including factors such as climate, season, the biology of the pest species and government regulations.

Where possible IPM principals are incorporated into WMI weed management. The steps in integrated pest management are shown below.

- Recognise the pest problem and determine if there is a need for action
- Assess possible methods of control (if there is a need to act) in terms of their:
  - Effectiveness
  - Cost and benefits
  - Impact on human health
  - Environmental impact
  - Feasibility
- Decide on the most appropriate course of action, based on that assessment
- Implement the plan recording what is done and the outcomes
- Review the success of the program during and after its implementation.

### 4.5 Application rate of chemicals

It is a requirement of the *Pesticides Act 1999* that each product is used in accordance with the product label. The rate of application may vary depending on the stage of crop or weed growth, and the target species. This information is publicly available from the producers of each product. All chemical users are trained in the use of chemicals and adhere to product labels when mixing chemicals.



## 5. Chemical contingency Plan

### 5.1 Overview

WMI's chemical contingency plan is a risk based assessment of the potential risks associated with the practices occurring in WMI's business and irrigation areas. WMI undertake regular monitoring as required by their EPA licence. The three main risks are:

1. Contamination caused by WMI staff chemical staff
2. Contamination caused by irrigators
3. Contamination caused by an incident leading to bulk release of chemicals (e.g. Truck carrying chemicals crashes near surface drains).

### 5.2 Risk assessment

The three main risks associated with WMI business as listed above, were assessed to determine the level of risk. To do this a simple and well-tried method of consequence versus likelihood to determine the overall level of risk is presented in figure 2. All risks were assessed as low except risk 3, which is outside the control of WMI.

Consequence	Incurred non recoverable cost	Injury/illness	Environmental harm/other incidents	Reputation	Legal
Low	<\$5,000	Minor, only requiring first aid	Hazardous material spill <2L	No media interest/local concern	None
Moderate	\$5,000-\$25,000	Medical treatment with no recovery period	Hazardous material spill <10L	Local media interest/community concern	Breaching of regulations leading to fine
High	\$25,000-\$100,000	Medical treatment with recovery period less than two weeks	Hazardous material spill <20L	Professional/industry association interest/public outcry	Breach of regulations that leads to investigation by authorities
Major	\$100,000-\$200,000	Permanent of serious injury greater than two weeks	Hazardous material spill >20L	State media interest/public outcry	Breach of regulations that leads to investigation by authorities
Critical	>\$200,000	Leans to fatality	Hazardous material spill >1000L	National/international media interest	Class action suit and/or major prosecution by authorities

Likelihood	Description
<b>Almost certain</b>	Common or repeating occurrence (will happen any day of this week)
<b>Likely</b>	Known to occur (will happened this month or year)
<b>Possible</b>	Could occur (May happen more than once in 5 years)
<b>Unlikely</b>	Probably will not occur (Might happen in the next 5 to 10 years)
<b>Rare</b>	Not expected to occur (Might happen in the next 10 or more years)

		Consequence				
		Low	Moderate	High	Major	Critical
Likelihood	Almost certain	High	High	Extreme	Extreme	Extreme
	Likely	Moderate	High	High	Extreme	Extreme
	Possible	Low	Moderate	High	Extreme	Extreme
	Unlikely	Low	Low	Moderate	High	Extreme
	Rare	Low	Low	Moderate	High	High

Main risks	Consequence	Likelihood	Overall risk level	Comment
1	Low	Rare	Low	Operators are trained, don't use hazardous materials
2	Moderate	Unlikely	Low	Spray diaries submitted to wineries, required to undertake chemical course, surface drains run infrequently
3	Moderate	Rare	Moderate	Transport operators to abide by <i>Dangerous Goods (Road and Rail Transport) Act 2008</i> , <i>Dangerous Goods (Road and Rail Transport) Regulation 2014</i> , <i>Australian Code for the Transport of Dangerous Goods by Road &amp; Rail Edition 7.5, 2017</i> and best practice management guidelines and relevant operator training. Outside the control of WMI.

Figure 2: Risk assessment matrix

### 5.3 Monitoring of chemicals

WMI undertake drainage water monitoring when flow trigger points are reached and analysis by a NATA accredited laboratory. Where an analytical result exceeds notification or action level,

sections of the drainage system can be isolated, using air block plugs inserted into pipelines, constructing earthen bunds and pumping infrastructure can be stopped quickly to isolate contaminated water moving through the system. Table 2 provides a list of scheduled chemicals and their respective notification and action levels.

**Table 2: Schedule 1 Chemicals**

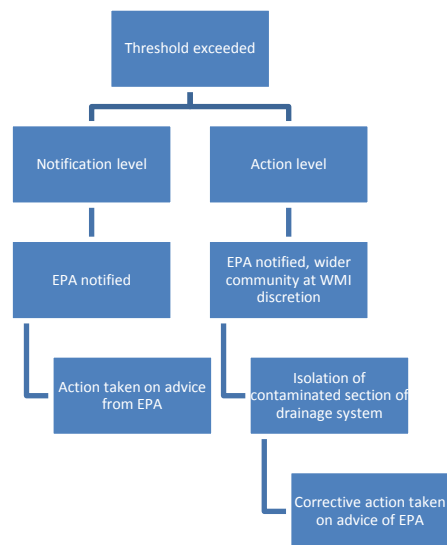
Chemical	Notification level (µg/L)	Action level (µg/L)
Copper	1.4	1.8
Zinc	8	15
Diuron	1	N/A
Simazine	3.2	11
Glyphosphate	1200	2000
Chlorpyrifos	0.01	0.11

#### 5.4 Communication

Where a monitoring event has returned a result above a notification or action threshold level, the EPA is immediately notified by WMI staff. Communication and additional monitoring events will be undertaken in conjunction with the EPA. Where a threshold level is achieved, public notification is at the discretion of WMI. Where the public could be impacted upon by contaminated drainage water, WMI will place an alert on their website and door knock potentially affected landholders. Contacting wider landholders is at the discretion of WMI, which may be undertaken through local radio, newspapers and TV. Table 3 lists the actions, communication and monitoring events that take place if threshold levels are reached. Figure 3 is a process chart of activities undertaken when threshold levels are exceeded for all Schedule 1 chemicals.

**Table 3: Action, communication and monitoring**

Level	Action	Communication	Monitoring
Notification	Wait for EPA advice	EPA notified on 131 555, reported in Annual return.	Upon EPA advice
Action	Isolate area of known contamination, determine type of chemical and best method to reduce further contamination, may include pumping to a low risk outfall, deactivating product with soil or dilution with water.	EPA notified 131 555, wider communication at WMI discretion, reported in Annual return	On EPA advice, further sample analysed on completion of rectification/minimisation activity.



**Figure 3: Exceeded threshold process**

### 5.5 EMPLAN and EPA

The NSW State Emergency Management Plan (EMPLAN 2012) details emergency preparedness, response and recovery arrangements for New South Wales to ensure the coordinated response to emergencies by all agencies having responsibilities and functions in emergencies.

The HAZMAT/CBRN Sub Plan will be activated by either the SEOCCon or Deputy SEOCCon (DSEOCCon) prior to or during the response phase of a Hazmat/CBRN emergency. Alternatively the Plan may be activated by the SERCon or Deputy SERCon (DSERCon) in the recovery phase of a Hazmat/CBRN emergency requiring a coordinated multi-agency response.

Once the Plan is activated the State Emergency Operations Centre is to be advised and is to inform:

- relevant combat and/or lead agency Chief Executive Officers
- Environmental Services, Health Services and Public Information Functional Area Coordinators
- Minister for Police and Emergency Services
- relevant responsible Minister(s)

The Environmental Protection Authority (EPA) has responsibilities and powers under a range of NSW environmental legislation including:

1. Protect the environment during emergency response and recovery operations.
2. Coordinate scientific support for the on scene Controller during operations to combat the pollution of the sea and inland waters within New South Wales.
3. Advise and coordinate scientific support to the New South Wales Fire Brigades during land based hazardous materials emergency response operations.
4. Advise the Combat Agency, and other Functional Areas or Organisations involved in the emergency, on environmentally sound and legal practices for the disposal of wastes or contaminated materials resulting from an emergency.
5. Once the material has been rendered safe, direct and coordinate cleanup of hazardous materials which pose a threat to the environment.
6. Conduct post response operations investigations following incidents or emergencies involving hazardous materials.

7. Conduct assessment and provide advice, in consultation with the Health Services Functional Area, on mitigation and recovery from ongoing environmental impacts, particularly those that may have an adverse impact on public health or amenity.
8. Coordinate environmental cleanup, in consultation with local government, and advise on environmentally sound and legal practices for waste disposal.
9. Direct or coordinate, in consultation with the Engineering and Transport Services Functional Areas, disposal of hazardous materials that pose a threat to the environment.
10. Consider the impact of and, where necessary, amendment to administrative requirements, and consider waiving relevant levies to facilitate the timely and safe disposal of waste.
11. Protect and coordinate restoration of natural and cultural heritage sites.

Where a major environmental incident occurs WMI will co-operate fully with the coordinating authority.

## 6. References

ChemCert Australia, 2015. Chemical Users Course Resource Manual May 2008. ChemCert Australia.

EMPLAN, 2012. *NSW Emergency Management Plan*, accessed on line 08 August 2018, <https://www.emergency.nsw.gov.au/Pages/publications/plans/EMPLAN.aspx>

SafeWork NSW 2017-2022 Hazardous Chemicals and Materials Exposure Baseline and Reduction Strategy accessed 17 August 2018, [http://www.safework.nsw.gov.au/\\_data/assets/pdf\\_file/0004/320278/2017-2022-Hazardous-chemicals-and-materials-exposure-baseline-and-reduction-strategy-SW08592.pdf](http://www.safework.nsw.gov.au/_data/assets/pdf_file/0004/320278/2017-2022-Hazardous-chemicals-and-materials-exposure-baseline-and-reduction-strategy-SW08592.pdf)

SafeWork NSW 2018, accessed on line 08 August 2018, <http://www.safework.nsw.gov.au/>

Various legislation and regulations, accessed on line 08 August 2018, [http://www8.austlii.edu.au/cgi-bin/viewdb/au/legis/nsw/consol\\_act/](http://www8.austlii.edu.au/cgi-bin/viewdb/au/legis/nsw/consol_act/)