

SUPPLY OF RECLAIMED WATER FOR DROUGHT RELIEF

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1. INTRODUCTION

There is significant interest within Victoria for using reclaimed water (water from sewage treatment plants) in times of drought. This interest reflects the increasing restrictions on our water resource and that reclaimed water provides a defined quantity and quality of water that, with some appropriate management controls, is suitable for a wide range of uses. For the majority of reclaimed water in Victoria, these uses include dust suppression, watering council parks and gardens and agricultural irrigation such as pasture for cattle grazing.

This document was developed to assist water authorities and their potential customers develop processes that meet EPA Victoria requirements for the supply of reclaimed water for drought relief. In most instances, supply to customers would be via tankers accessing designated standpipes (filling point at treatment plant).

Although the regulatory framework for reclaimed water in Victoria is well established, this document was considered necessary since the development of drought relief schemes requires some variations to the 'default' reclaimed water controls. These variations reflect that, compared to traditional reuse schemes, drought relief end-uses are expected to involve the temporary application of small volumes of water, but are likely to be managed by people with limited reclaimed water experience.

2. SUMMARY OF REGULATORY CONTROLS

The *Guideline for Environmental Management (GEM): Use of Reclaimed Water* (EPA, 2002 publication 464.2), *GEM: Dual Pipe Water Recycling Schemes* (EPA, 2005 publication 1015) and the *Guideline for Wastewater Irrigation* (EPA, 1991 publication 168) provide detailed information on the management objectives and key controls for reclaimed water schemes. Water businesses and users of reclaimed water must comply with these guidance documents, or obtain a works approval and licence from EPA.

This document provides guidance on achieving the objectives in the above guidelines, while providing a level of control that reflects the unique aspects of drought relief reuse programs.

3. KEY ASPECTS OF A DROUGHT RELIEF SCHEME

Water authorities that provide reclaimed water for drought relief, need to have an EPA approved management framework that addresses the following:

- 1) **Screening of applicants** - a mechanism needs to be included for the water authorities to screen potential users and confirm that the reclaimed water quality and intended uses are consistent with Table 1. The screening process also needs

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to identify whether there are constraints at the site that would make it difficult for the user to comply with these guidelines requirements (refer to Section 5). This could be approached by a direct meeting, telephone interview or written questionnaire.

- 2) **Provision of information** – users who pass the screening stage need to be provided with information describing the necessary management controls for safe use of the reclaimed water. The information can be tailored to specific use categories and issues associated with the local area and reclaimed water quality or relatively generic, as necessary.
- 3) **Ensuring compliance** – a mechanism needs to be included to ensure that the user is aware of the necessary controls, such as signing an undertaking to comply with the listed requirements. For some users, this may also involve the integration of the controls into internal operational procedures.
- 4) **Ongoing oversight** – water authorities need to control access to the water, record tanker details, monitor water quality and record the volumes supplied to end-users. A program of random inspections on end-users needs to be included.
- 5) **Review** – the above framework is only appropriate for temporary schemes such as for drought relief. A scheme that involves ongoing use (that is greater than one year) will need to develop a management plan tailored to that scheme. A process should also be included for reviewing the effectiveness of the management framework and the associated documentation,

such as via an annual review with EPA and key customers.

Standpipes and Supply by Tanker

Water authorities should ensure standpipes are appropriately designed and managed so as to avoid spills to the environment.

Mechanisms need to be in place to ensure that tankers are not subsequently used for transport of potable water for human consumption. Transporters should refer to the *Guideline for Potable (Drinking) Water Transport in Victoria*, available from www.health.vic.gov.au/foodsafety/downloads/water_transport_guidelines01.pdf.

Water authorities need to control access to the water, record tanker details, monitor water quality and record the volumes supplied to end-users. Where access to a standpipe is in a location owned by a third party, for example, a standpipe located at a golf course, additional arrangements for control of access and recording of details may need to be established.

4. ACCEPTABLE USES

The uses acceptable for drought relief programs are referred to in Table 1. The uses described in the table are considered a subset of the uses described in Publication 464.2. Uses that rely on significant management controls (for example, separation of produce from contact with Class C water through irrigation methodology) should not be managed via this drought relief protocol. Such uses should be dealt with on a case-by-case basis.

5. KEY REUSE SITE MANAGEMENT CONTROLS

Protocols need to be developed to provide end-users with information on the necessary management controls for using the reclaimed water.

These protocols need to provide user-friendly information on the following management areas:

- the accepted and prohibited uses for the relevant reclaimed water quality
- avoiding over-irrigation and run-off from the application site
- avoiding spills from storages and minimising the risk of algal blooms
- avoiding spray drift to sensitive or public access areas
- maintaining agricultural and public access withholding periods for the irrigation area
- adopting good practice measures to minimise exposures and related occupational health and safety measures
- using signage to alert the public to the use of reclaimed water
- ensuring tankers are not also used for transporting water for drinking.

To assist the development of drought relief schemes, the following generic end-use protocols are available with this information bulletin on the EPA website (additional end-use protocols may be developed as needed):

- *Management of reclaimed water (Class B or C) for dust suppression*

- *Management of reclaimed water (Class B or C) for irrigation of municipal garden-beds, trees and lawn areas*
- *Management of reclaimed water (Class B) for livestock*
- *Management of reclaimed water (Class C) for livestock*
- *Management of reclaimed water (Class B or C) for crop irrigation.*

In developing drought relief schemes and tailored protocols, water authorities should consider any specific issues associated with their reclaimed water. If necessary, additional management controls should be included in the end-use protocols. Such issues could include reclaimed water with elevated salinity or significant trade waste inputs for example, from an abattoir or sale-yard (potentially requiring additional livestock controls).

Prior to commencing reclaimed water supply for a drought relief scheme, water businesses must liaise with the regional EPA office and obtain EPA approval.

Where class A reclaimed water, as defined by EPA publication 1015, is available, it can be used for all of the potential drought relief uses, as outlined in Table 1 below. Less stringent management control requirements will be required for class A use (as opposed to class B or C). Where a water authority has DHS endorsed class A water for drought relief use, it should discuss the appropriate management controls for specific end uses with EPA prior to supply to customers and articulate these agreed management controls in their management framework for EPA approval.

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Table 1. Drought relief reclaimed water uses and treatment levels

Key end uses ¹	Reclaimed water treatment level ²
Irrigation of crops not supplied to consumers 'raw' eg barley, wheat and wine grapes	Class C, B, or A
Irrigation of crops potentially supplied to consumers 'raw' eg carrots, strawberries, apples	Class A Class C or B, requires case-by-case assessment and site specific management.
Irrigation of pasture for beef cattle grazing or dry dairy cattle	Class C, B or A with helminth control ³
Irrigation of pasture for dairy cattle grazing or livestock drinking water	Class B or A with helminth control ³
Irrigation of pasture for other livestock grazing	Class C, B, or A
Irrigation of municipal gardens and parks	Class C, B, or A
Dust suppression and road works	Class C, B, or A

Table notes

1 For the full range of end uses not associated with drought relief, refer *GEM: Use of reclaimed water*.

2 Class B and C refers to reclaimed water produced from secondary treatment coupled to disinfection to achieve water quality parameters that include: less than 20mg/L biochemical oxygen demand; less than 30mg/L suspended solids; and median E.coli levels of <100 organisms per 100mL (Class B) and <1000 organisms per 100mL (Class C). Publication 464.2 provides the full details of the Class B and C criteria. Class A reclaimed water for dual pipe reuse, ie residential reuse, is further outlined in EPA Publication 1015.

3 Helminth control is 25-day lagooning or approved filtration.

6. FURTHER INFORMATION

Electronic copies of this document, the example protocols, the *GEM: Use of Reclaimed Water* and *GEM: Dual Pipe Water Recycling Schemes* can be obtained from the EPA Victoria website www.epa.vic.gov.au. A copy of the *Guideline for Wastewater Irrigation* can be ordered via the website or by calling the EPA Information Centre, (03) 9695 2777.

The regional EPA offices can be contacted to discuss drought relief schemes at:

EPA Head Office

HWT Tower

40 City Road SOUTHBANK VIC 3006

GPO BOX 4395QQ, MELBOURNE VIC 3001

Tel: (03) 9695 2722

Fax: (03) 9695 2785

Website Address: <http://www.epa.vic.gov.au>

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Refer EPA Head Office details

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7 Church Street

Traralgon Victoria 3844

Tel: (03) 5176 1744

Fax: (03) 5174 7851

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27–29 Faithful Street

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North West Region

43 Williamson Street

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