

NSW Guidelines for Water Carters

NSW Health
NSW Food Authority

2012



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Key Terms and Abbreviations

<i>Australian Drinking Water Guidelines</i>	Primary guidance for drinking water quality and management within Australia. Copies are available at http://www.nhmrc.gov.au/guidelines/publications/eh52
<i>Food Act 2003</i> (NSW)	Sets out requirements for management of food safety – including notification of businesses (includes water carters if carrying drinking water) to the NSW Food Authority.
Framework for Management of Drinking Water Quality	Drinking water-specific quality assurance framework. Quality assurance programs within the Public Health Regulation 2012 are required to take the Framework into account.
<i>Local Government Act 1993</i> (NSW)	Along with the Local Government (General) Regulation 2005 (NSW), sets out provisions for the regulation of water carting vehicles by local councils.
<i>Public Health Act 2010</i> (NSW)	Along with the Public Health Regulation 2012, sets out how drinking water suppliers should manage drinking water safety, including mandating the development and implementation of a quality assurance program.
Quality Assurance Program	A program for assuring the quality of water supplied for drinking, required under Section 25 of the <i>Public Health Act 2010</i> (NSW).
Water Carter	Any person who receives water from a drinking water supplier (defined in the <i>Public Health Act 2010</i>) and who supplies drinking water from a water carting vehicle in the course of a commercial undertaking.

SECTION 1

Background

Water carters provide a drinking water supply in areas where other water supplies are insufficient or temporarily unsuitable. NSW Health and NSW Food Authority have developed these Guidelines to help water carters provide safe drinking water and comply with the requirements of the Public Health Act 2010, the Public Health Regulation 2012, the Food Act 2003 and the Local Government Act 1993.

These Guidelines will help a water carter develop a quality assurance program as required by the *Public Health Act 2010* and the *Public Health Regulation 2012*. From 1 September 2014, drinking water carters must develop and adhere to a quality assurance program. A copy of the completed quality assurance program document must be provided to the local NSW Health Public Health Unit. Water carters may complete the quality assurance program template (available at <http://health.nsw.gov.au/environment/water/Pages/drinkwater-watercarters.aspx>) or create their own.

These Guidelines should be read together with any specific requirements that water utilities and/or councils may have as a condition of access to their water supplies.

NSW Health acknowledges the assistance of the Department of Health Western Australia in preparing these guidelines.

Assuring Quality from Source to Consumer

2.1 Water Source

Water carters providing drinking water for human consumption should take water from a supply that meets the *Australian Drinking Water Guidelines* (potable water supplies). Appropriate sources include town drinking water supplies, or directly from a bulk water supplier at the point of water treatment. Other sources should be avoided.

Chlorine is the main disinfectant used in reticulated water supplies. However, some water suppliers use chloramine, which is a disinfectant produced from the

mixing of chlorine and ammonia. Water carters should check with the water supplier for the type of disinfection used, as this guides the testing required.

It is essential that the water contains adequate chlorine until it is supplied to consumers. Chlorine of 0.2 to 0.5 milligrams per litre (mg/L) is adequate.

If the chlorine level is not adequate, chlorine should be added to the water load prior to carting, to ensure safety (see Box 1).

BOX 1

How do I measure the chlorine?

A chlorine test kit, such as a swimming pool kit can be used to check the chlorine at the point of supply. The amount of chlorine that is available for disinfection is usually measured as 'free chlorine' and is also known as 'available chlorine'. A 'combined chlorine' test should be performed for chloraminated supplies. Combined chlorine is formed when free chlorine reacts with ammonia.

Measure the chlorine in the source water, either at the filling point or if more practical, from the tank. Measure the chlorine in the tank if chlorine has been added.

How much chlorine should I add?

Where insufficient chlorine is present, chlorine disinfection can be boosted with:

- 8 grams (one dessert spoon) of calcium hypochlorite (granular or powdered chlorine) at 65% strength per 10,000 L of water to give a rise of 0.5 mg/L of chlorine, or
- 40 mL of sodium hypochlorite (liquid chlorine) at 12.5% strength per 10,000 L of water to give a rise of 0.5 mg/L of chlorine.

For chloraminated supplies, please contact the water utility or your local Public Health Unit for advice on boosting chlorine.

How do I obtain chlorine?

Sodium hypochlorite and calcium hypochlorite can be purchased from supermarkets, hardware stores and swimming pool suppliers. Check the label to be sure the strength is correct.

Do not use stabilized swimming pool chlorine for disinfection because it contains iso-cyanuric acid and is not effective in enclosed tanks.

The required amount of chlorine can be added to clean water in a plastic bucket. Do not pour water into chlorine, always add chlorine to water. Prepare the chlorine in the open air. Use the appropriate personal protective equipment.

Add the chlorine partway through refilling the tank so that it mixes through the water.

If chlorine comes into contact with diesel or acid, a chemical reaction can occur which may cause a fire.

When water is added to an empty water storage tank, it may re-suspend the sediment in the bottom of the tank creating taste and dirty water problems. It is important for the water carter to confirm the quality of the water before it enters the tank.

In an emergency, water carters may need to take water from non potable sources, for example, untreated dam or river water. In such circumstances, water carters should seek advice from Environmental Health Officers at their local Public Health Unit or Council.

2.2 The Tank, Hoses and Fittings

Water carting tanks and fittings must be kept clean and in good repair so that they do not cause deterioration of water quality. Tanks, hoses and fittings should be made of, or lined with, a material that will not contaminate the drinking water.

Applicable standards or certification include:

- AS/NZS 4020:2005 The testing of products for use in contact with drinking water and/or

- AS 2070:1999 Plastics materials for food contact use.
- Australian Technical Standard ATS 5200.026: 2004 Technical Specification for Plumbing and Drainage Products, Cold Water Storage Products
- AS/NZS 4766:2006 – Polyethylene storage tanks for water and chemicals.
- WaterMark



Use only containers, hoses and fittings which are marked as WaterMark, AS/NZS4020, AS2070, AS/NZS4766 or ATS5200.026.

Tanks used for carting drinking water should be used only for that purpose. If this is not possible, then the tank must not be used for transport of effluent (treated or otherwise), petroleum products, or other potentially hazardous materials that may be harmful to health.

Tanks, hoses and fittings should be regularly cleaned and disinfected. See Box 2. When a tank has been used for transport of non-hazardous materials other than drinking water, the tank, hoses and fittings should be cleaned and disinfected prior to filling with drinking water.

Hoses and fittings should be capped or stored in a dust proof container during transport and when not being used.

BOX 2

Cleaning and disinfecting tanks

At least every 3 months, clean and flush tanks.

Fill cleaned tanks with water at not less than 5 mg/L chlorine and hold for at least 30 min. Test chlorine in water prior to disposal or use.

Cleaning and disinfecting hoses and fittings

At least every month, clean hoses and fittings.

Fill with water containing at least 5 mg/L chlorine and cap for at least 30 minutes.

Rinse with clean drinking water.

Drain, dry and seal securely to prevent dust and dirt entry. Test chlorine prior to disposal of rinse water.

Preparing the chlorine solution

Add the required amount of chlorine to clean water in a plastic bucket.

Chlorine of 5 mg/L can be achieved by either:

- 76 grams of calcium hypochlorite at 65% strength per 10,000 L of water
- 400 mL sodium hypochlorite at 12.5% strength per 10,000 L of water.

2.3 Disposal of water after cleaning

Water with a chlorine level of 5 mg/L can cause environmental damage and a person discharging such water could be liable to action under the *Protection of the Environment Operations Act 1997*. Water should be tested prior to discharge to ensure that the chlorine level has been reduced appropriately. Contact the Environment Protection Authority for advice on disposal of chlorinated water to the environment.

Water should not be disposed of until the chlorine level has reached;

Less than 1 mg/L for disposal onto low risk grassed areas,

Less than 0.1 mg/L for disposal near waterways, creeks or drains.

Alternatively, chlorinated water may be discharged into the town sewer (not to a septic system), however consult with your relevant Council or Water Utility for advice before doing so. Water with a chlorine level of less than 1 mg/L could be used for non-drinking purposes such as dust suppression or construction.

Because of confined space and other risks, it is important to be aware of work health and safety guidelines if entering a tank. Further information can be obtained from your local WorkCover office.

2.4 Hydrant Boxes and Standpipes

To protect water quality in the source water, it is important to prevent flow of water back into the reticulation system.

Hydrant boxes should be self-draining, mounted above ground level and not collect surface runoff. Fixed standpipes must have an air gap to prevent backflow. If possible, remove any water ponding in the hydrant box prior to connecting a removable standpipe and while the standpipe is in use. Alternatively, if the hydrant box contains water, removable standpipes should be flushed to discard any contaminated water.

Tanks being filled from a reticulated supply using a removable standpipe must have a backflow prevention device that complies with the Plumbing Code of Australia and AS/NZS3500 Part 1.

SECTION 3

Documentation and Records

Water carters are required to:

1. **notify their business to the NSW Food Authority, at**
<http://www.foodnotify.nsw.gov.au>

and

2. obtain necessary approvals from the water utility or supplier.

Documentation and records provide evidence that the water carter's business is being operated appropriately. Documents, records and logs may be requested by authorities to check on business operation. For example, the local Council or Public Health Unit can require the submission of the vehicle, tank, hoses, fittings, and/or logbooks for inspection.

3.1 Records to be kept by Water Carters - Log Books

A water carter should keep a log book to record information on deliveries and cleaning. A sample log book is provided as an attachment to these Guidelines.

The *Public Health Act 2010* and Public Health Regulation 2012 require water carters to keep the following records:

- The name of each supplier of drinking from whom the water carter receives water
- The place, date, and time at which water is supplied to the water carter
- The name and address of each person to whom the water carter supplies water
- The place, date and time at which the water is supplied to that person
- The volume of water supplied to that person,
- Details of any substances other than drinking water transported in the water tank used by the water carter
- The dates on which any water tank used by the water carter is cleaned.

These records must be retained for at least 6 months.

The water carter should also keep a record of the following:

- Identification detail for temporary mounted tanks. (e.g. serial number if applicable)
- Chlorine level at the time of filling or re-chlorination
- Additional chlorine added (if applicable)

3.2 Records to be kept by Water Utilities/Suppliers

Water utilities and any other water supplier should keep a record of water carters who draw from their drinking water supply. They should ensure that each water carter is notified to the NSW Food Authority, undergoes regular sanitary inspections by the local council and maintains appropriate log books prior to accessing the reticulated drinking water supply.

The *Public Health Act 2010* and Public Health Regulation 2012 require water utilities/suppliers to keep records of the name and contact details of each water carter to which drinking water is supplied.

These records must be retained for at least 6 months.

It is also recommended that water utilities/suppliers or local councils keep a record of:

- Details of water carting vehicles, make, model, registration, tank volume, type of tank e.g. temporary mounted tanks, etc
- Date and results of last inspection of each vehicle.

For further information contact your local Council or Public Health Unit. (Under Health in the white pages or at <http://www.health.nsw.gov.au/Infectious/Pages/plus.aspx>).

SECTION 4

Legislative Summary (NSW)

Responsibility	Description	Legislative Requirement
Implement a Quality Assurance Program Provide copy to NSW Health	Water carters are required to establish and adhere to a Quality Assurance Program. NSW Health may review the quality assurance program at any time. The quality assurance program is required to address the elements of the Framework for Management of Drinking Water Quality within the <i>Australian Drinking Water Guidelines</i> .	<i>Public Health Act 2010</i> (NSW), Section 25 <i>Public Health Regulation 2012</i> (NSW) Clause 34
Keep records	Water carters and water utilities/suppliers are to keep certain records (see these Guidelines for notes on records to be kept).	<i>Public Health Regulation 2012</i> (NSW), Clause 35
Notify the NSW Food Authority of your business	A water carter that supplies drinking water is classified in the <i>Food Act 2003</i> as a 'food business' and must notify the NSW Food Authority of their business activity details. Notification to the NSW Food Authority can be via the internet or in a paper form. Guidance is provided at http://www.foodnotify.nsw.gov.au	<i>Food Act 1993</i> (NSW), Section 100
Seek approval from and comply with local council/water utility requirements	Outside the areas of operation of Sydney Water Corporation or Hunter Water Corporation a water carter must obtain approval from the water supplier (Council/Water Utility) to draw and sell water. The water supplier may require the water carter to comply with additional conditions, to those set out in these guidelines, before granting access to their supply.	<i>Local Government Act 1993</i> (NSW) section 68 (Under clause 2 of Part B of the Table to that section)
Preserve the quality of water during transport	Water must be kept in a potable condition from source to supply. A water carting vehicle must be kept in a clean and sanitary condition. If water contains any foreign matter it may be classed as unsafe or unsuitable for its intended use. If a supplier sells unsafe water, an offence may have been committed.	<i>Food Act 2003</i> (NSW) section 8, 9 and 14. The Minister has powers to do what is considered necessary to protect public health, <i>Public Health Act 2010</i> (NSW) section 7. <i>Local Government Act 1993</i> (NSW) Councils may order the owner or operator of a vehicle used for the storage and transportation of food (including drinking water) to take action as specified by the council to render the vehicle in a clean or sanitary condition.
Appropriate aperture of water carting vehicle	A water carting vehicle must have an aperture that is large enough to enable easy inspection and thorough cleaning of the interior and must have a cover that is able to be kept clean.	<i>Local Government (General) Regulation 2005</i> (NSW) Part 3, Clause 93.
Disposal of cleaning water	Chlorinated water used for cleaning may not be disposed into the environment where it may reach waterways or drains. A person discharging such water could be liable to action under the <i>Protection of the Environment Operations Act 1997</i> . Water should not be disposed of until the chlorine level is reduced to less than 1 mg/L for low risk use onto grassed areas and "non-detect" (less than 0.1 mg/L) for discharge to a creek or drain.	<i>Protection of the Environment Operations Act 1997</i> (NSW), Chapter 5.

SECTION 5

References and Further Information

Government of Western Australia (2010) *Guidelines for the Bulk Cartage of Drinking Water*. Department of Health, Public Health.

NHMRC/NRMMC (National Health and Medical Research Council/ Natural Resource Management Ministerial Council) (2011) *Australian Drinking Water Guidelines* (ADWG) National Water Quality Management Strategy.

NSW Environment and Heritage (2012) Environmental Issues

[http://www.environment.nsw.gov.au/
environmentalissues.htm](http://www.environment.nsw.gov.au/environmentalissues.htm)

NSW Division of Local Government (2012) Local Government Directory

[http://www.dlg.nsw.gov.au/dlg/dlghome/dlg_
ocalgovdirectory.asp](http://www.dlg.nsw.gov.au/dlg/dlghome/dlg_localgovdirectory.asp)

NSW Food Authority (2011) Water (non reticulated)

[http://www.foodauthority.nsw.gov.au/industry/food-
business-issues/water-non-reticulated/#.UcAulRYqpYh](http://www.foodauthority.nsw.gov.au/industry/food-business-issues/water-non-reticulated/#.UcAulRYqpYh)
Helpline: 1300 552 406

NSW Department of Fair Trading

[http://www.fairtrading.nsw.gov.au/ftw/Tradespeople
Plumbers_and_drainers/page?](http://www.fairtrading.nsw.gov.au/ftw/Tradespeople/Plumbers_and_drainers/page?)

NSW Health (2012) Drinking Water Suppliers

[http://www.health.nsw.gov.au/environment/water/
/drinking-watersuppliers.aspx](http://www.health.nsw.gov.au/environment/water/Pages/drinking-watersuppliers.aspx)

NSW Health (2007) Private Water Supply Guidelines

[http://www.health.nsw.gov.au/environment/water/
Documents/pwsg.pdfs](http://www.health.nsw.gov.au/environment/water/Documents/pwsg.pdfs)

NSW Health Rainwater tanks brochure

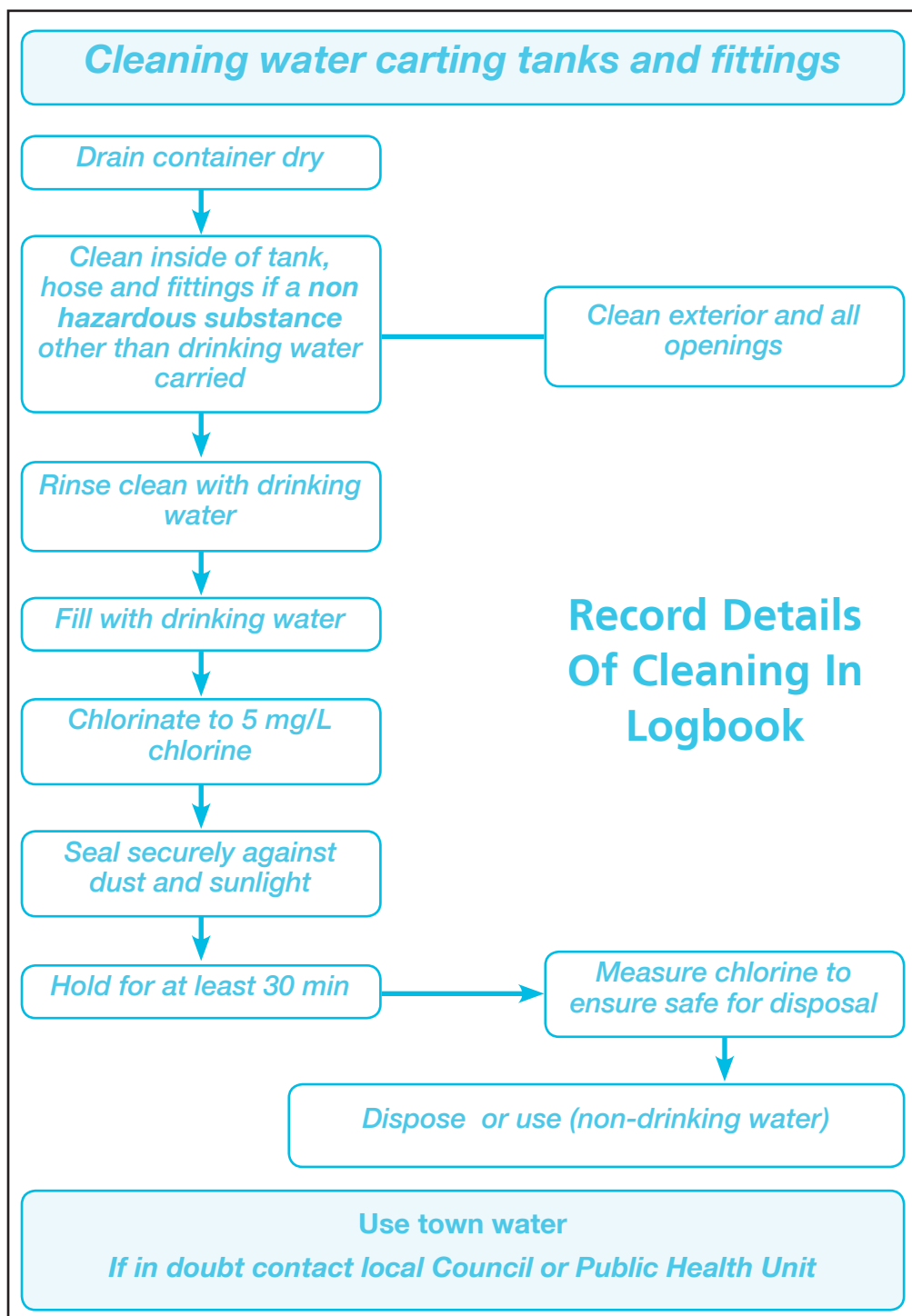
[http://www.health.nsw.gov.au/environment/water/
Documents/rainwater_tanks.pdf](http://www.health.nsw.gov.au/environment/water/Documents/rainwater_tanks.pdf)

NSW Health Public Health Unit Contact Details

[http://www.health.nsw.gov.au/Infectious/Pages/phus.
aspx](http://www.health.nsw.gov.au/Infectious/Pages/phus.aspx)

Cleaning and Disinfection Checklists

These checklists can be printed for use in vehicles.



Drinking Water Disinfection Continual Use

Fill with drinking water



Measure chlorine and boost if less than 0.2 mg/L



Seal tank securely against dust and sunlight



Deliver drinking water



*Record details filling, treatment and delivery
in logbook*

What to do when transporting water

- Empty all hoses, standpipes, etc.
- Join hoses end to end or cap.
- Cap or cover water container inlets and outlets.
- Empty any other fittings used in the water system and store away from dirt, dust and other contaminants.

Use town water

If in doubt contact local Council or Public Health Unit

Water Carter Information and Inspection Templates

These templates are provided as an example of the records that should be kept. Water carters may use their own recording system or log book.

Water Carter Details

Business Name:		Driver:	
Business Registration Details:			
Food Authority Reference Number:			
Business Address:		Address:	
Email:			
Driver's Mobile No:			
Driver's Signature:			
Vehicle Registration No:			
Business Phone:		Business Fax:	
Comments:			

Equipment Check – before use for water carting

1	Have the tank, container hoses or fittings been used to cart hazardous materials such as recycled water, petrochemicals or human or animal waste? If 'Yes', do not use the equipment for carting drinking water.	Yes / No
2	Have the tank, container hoses or fittings been used to cart any non hazardous substance other than drinking water, for example milk or wine? If 'Yes', clean and disinfect all equipment in accordance with the NSW Guidelines for Water Carters.	Yes / No
3	Visually inspect all equipment to ensure that is clean and that the tank is empty. Record findings.	Tank empty: Yes / No Comments on cleanliness:
4	Flush hoses, fittings and pumps thoroughly before use with drinking water. Circle answer to record action.	Flushed / Not flushed

Check on Water Source

Source/town:		Collection point location:	
Water utility/water supplier:			
Disinfection type (free chlorine/chloramine):			
<p>Before filling the tank, check the chlorine in the source water. Record the chlorine, it should be at least 0.2 mg/L. If the source water is less than 0.2 mg/L, contact the water supplier to check that the water is treated and record comments.</p>			
		Chlorine in source water	mg/L
Fill Date:		Time Fill Commenced:	AM / PM
Water Type:	Raw Water/Treated water	Volume collected:	litres
Type of Supply:	Removable Standpipe	Hydrant	Other (provide details):
<p>After filling: If the chlorine is less than 0.2 mg/L, add chlorine in accordance with the NSW Guidelines for Water Carters.</p>		<p>If additional chlorine is added record the chlorine 30 minutes after dosing</p>	
			mg/L

Details of water delivery

Customer Name:		Volume Delivered:	litres
Customer Details:	Street:	Point of Delivery to Customer (eg tank at house):	
	Town:		
	Postcode:		
	Phone:		
Date:		Delivery Time:	AM / PM
Operator Signature (print name, date and sign):	Name:		
	Date:		
	Sign:		

Water Carting Vehicle - Record of Cleaning and Disinfection

Business Name:	
Business Details:	Address:
	Phone:
	Email:

Business Registration Details:

Equipment:**	Identification Details:**	Date Cleaned and Disinfected:	Disinfectant Used:	Notes:***	Operator Signature (name and signature):

* State whether tanks or hoses and fittings.

** For tanks, record the vehicle registration or detail of tank serial number if removable; for hoses and fittings, record the identification detail.

*** Note whether the action is a scheduled or exception action e.g. 3 monthly scheduled clean for tanks, 1 monthly clean for hoses and fittings, exception clean due to visual inspection having identified unhygienic state or from carting of non-potable but non-hazardous material such as untreated raw water or foodstuff.

