



Guidelines for the Bulk Cartage of Drinking Water

The following information is designed to assist persons and organisations who are involved in the bulk cartage of drinking water (quantities in excess of 100 litres) to comply with the microbiological and chemical quality criteria of the 2004 Australian Drinking Water Guidelines.

The Bulk Cartage Guidelines outline the:

- Responsibilities of the carrier,
- Design, construction, maintenance of containers and fitments,
- Selection of drinking water sources,
- Collection, transportation and discharge,
- Disinfection of drinking water,
- Consumer advice;
- Record keeping.

Definitions

Bulk Cartage	:	the collection, transportation and storage of bulk drinking water;
Bulk Drinking Water	:	a quantity of drinking water in a single container exceeding 100 litres in volume water that is intended or used for the purpose of human consumption;
Carrier	:	an individual or company who undertakes the bulk cartage of drinking water;
Consumer	:	for the purpose of these Guidelines a person who consumes or intends to consume drinking water in a house.
Container	:	includes tank or other vessel used in the bulk cartage of drinking water;
Fitments	:	may include a hose, pipe, coupling, pump, valves or other object that may either be used to transfer bulk drinking water to or from the container; or come into contact with bulk drinking water during bulk cartage.
Source	:	the point at which water is obtained from any body of water, whether moving or not and whether underground or not.
Treat	:	includes the removal of foreign substances, filtration, exposure to ultra violet light, the addition of any substance to bulk drinking water and includes carrying out alterations to containers and fitments.

Responsibilities of Carriers

Carriers are responsible to provide consumers with drinking water that complies with the 2004 Australian Drinking Water Guidelines. To fulfil this responsibility carriers should:

- notify the Local Government of the district in which the business is registered prior to undertaking the bulk cartage of drinking water,



- obtain drinking water from a source that is either run by a licensed drinking water provider or has been approved by the Department of Health,
- seek permission of the source owner to draw bulk drinking water from that source and comply with the source owners conditions,
- use containers and fitments that comply with these Guidelines,
- ensure the containers and fitments used for the transportation and delivery of bulk drinking water is not used for any other purpose,
- ensure that all persons involved in the bulk cartage of drinking water are adequately trained in the safe operation of equipment, handling of treatment chemicals and the application of these Guidelines,
- make material safety data sheets available to all persons handling chemicals used for water treatment; and;
- provide advice to the consumer regarding the treatment and use of the drinking water.

Design, construction, maintenance of containers and Fitments

Design

All materials that come into contact with drinking water within containers and fitments must either comply with:

- Australian Standard AS 4020 2005 ‘Testing of Products for Use in Contact with Drinking Water’,
- Australian Technical Specification ATS 5200.026 - 2004 ‘Technical Specification for plumbing and drainage products, Cold Water Storage Products’; or
- Australian Standard AS 2070 ‘Plastic materials for food contact use’.

Only use WaterMark, AS 4020, ATS5200.026 or “Drinking Water Only”, marked containers and fitments.



In addition:

- All fitments used to transfer bulk drinking water either to or from containers should be designed to prevent back flow contamination of the water source or bulk drinking water in the container in accordance with AS 3500.1-1992. Back flow devices on tanks used solely for the bulk cartage of drinking water shall conform to the medium hazard rating of AS 3500.1-1992, National Plumbing and Drainage Code, Part 1: Water Supply.

Construction

- Brass snap on hose fittings reduce the potential for contamination and are preferable to screw on fittings. However, screw on fittings may be used providing the threads are thoroughly inspected and cleaned before attachment.
- All drinking water containers should be marked “Drinking Water Only” in lettering 100 millimetres high.
- Fitments used for drinking water should either be labelled “Drinking Water Only” or Water Marked in accordance with AS 4020 or ATS5200.026. (See More Information)
- The use of canvas materials or coal tar based products in containers and fitments is prohibited.



Maintenance

The condition of water containers and associated fittings can contribute to the deterioration of the microbiological or chemical quality of bulk drinking water.

- Where containers and fittings are continually used they should be regularly cleaned at least once every three months by:
 - physically cleaning and flushing out the inside of the container,
 - filling and keeping full for at least 30 minutes with water containing at least 4.0 mg per litre free chlorine rinsing with drinking water; and
 - either filled with drinking water or sealed securely against dust or dirt.
- The above procedure should also be used where container and fittings are to be used for the first time or following a period of storage.
- During transport containers and fittings should be completely sealed to prevent the ingress of dust and contaminants,
- When not in use containers and fittings should be sealed stored in such a manner as to prevent contamination.

Do not use drinking water containers and fittings for any other purpose.

Selection of Drinking water sources

Licensed drinking water providers operate most town water (reticulated) supplies in Western Australia. If you are unsure of the water treatment undertaken in a town or community, contact the Local Government Environmental Health Officer the Department of Health or the Water Corporation. Any other source of water should be treated with suspicion and not be used.

Collection, Transportation and Discharge

Initial Use of Containers

If containers are going to be used for the first time to store drinking water:

- Only use containers that are designed for drinking water storage (See Design, construction, maintenance of containers and fittings),
- Drain containers dry.
- Where possible scrub the inside using a clean soft bristle broom or cleaning rag and a solution of chlorinated water or water and dishwashing liquid. (Clean the exterior of the container with particular attention to the area around filling and discharge openings).
- Rinse clean with drinking water (town water supply) to remove any residue of the cleaning agent.
- Fill with drinking water from a town water supply, chlorinated with 7 grams of calcium hypochlorite per 1,000 litres of water and leave to stand for 24 hours to allow the chlorine taste and smell to dissipate.
- Seal securely against dust and sunlight with a tight fitting lid.



Initial Use of Fitments

Before fitments are attached to containers to supply drinking water:

- Soak in a solution of chlorinated water.
- Rinse clean with drinking water (town water supply) to remove any residue of the cleaning agent.
- Seal securely against dust and dirt.

Continual Use

- Treat Drinking water that is continually used with 1 gram of calcium hypochlorite per 1,000 litres of water each week.
- Wait for 2 hours to allow the chlorine taste and smell to dissipate.

Topping up Containers

- Only use fitments marked “Drinking Water” to fill containers. Clean and rinse the external surfaces of fitments that are to be placed inside water containers.
- Treat Drinking water that is occasionally topped up from a drinking water supply with 1 gram of calcium hypochlorite per 1,000 litres of water every time drinking water is added to the container.

During Transportation

- Empty all hose connections to containers, stand pipes and supply points.
- Join end to end or cap hoses, standpipes or supply points to eliminate any chance of contamination by dirt, dust or foreign object.
- Cap and seal outlets on containers.
- Empty any other fitting that is used in the water system and store away from dirt, dust and other contaminants.

Disinfection of Drinking Water

The microbiological quality of bulk drinking water transferred into and transported via a container cannot be guaranteed.

During bulk cartage drinking water should be treated using either

- 7 grams of calcium hypochlorite (60 to 70% strength); or
- 40 ml of sodium hypochlorite (12.5% solution) per 1000 litres of water.

(Calcium hypochlorite is recommended for use as a disinfectant in drinking water in vehicle mounted containers as it may be stored for long periods of time and it is heat stable.)

Do not use stabilised chlorine or chlorine containing cyanuric acid.



Chemical Safety and Storage

Liquid and solid chlorine are strong alkalis that can burn skin or damage eyes.

- Use only in a well-ventilated area.
- Avoid inhaling fumes or ingesting granules or droplets.
- Before handling any chemicals put on chemical resistant gloves, splash proof goggles or a face shield.
- Store all chlorine in a secure, clearly marked, water tight container.

If Calcium Hypochlorite comes in contact with either diesel or acid the resultant chemical action could cause a fire.

Operator Advice

Place the attached disinfection tag inside the vehicle in a sealed waterproof container. (See page 7)

Consumer Advice

Carriers should advise consumers to disinfect and maintain the drinking water prior to consumption by providing the “Consumer Advisory Notice attached on page 9 of these Guidelines.

Record Keeping

Carriers should keep in delivery vehicles a logbook that records:

- details of the date, source, destination and volume of bulk drinking water delivered,
- chemical treatment test results for each load of drinking water delivered (free available chlorine); and
- the date of cleaning and inspection of tanks and fitments.

(A model log book is attached on page 10 of these Guidelines.)

Emergency Drinking Water Treatment

For advice on how to treat drinking water in an emergency (24 hours a day) send an email to the healthinfo@health.wa.gov.au automatic email reply service. Type **emergency** in the subject line and send.



References

AS 4020 , 1999 Products for Use in Contact with Water Intended for Human Consumption With Regard to their Effect on Quality of Water. Standards Australia.

AS 2300.1 , 1992 National Plumbing and Drainage Code, Part 1:Water Supply. Standards Australia

AS 5200.000 , 2005 Technical specification for plumbing and drainage products. Part 000: Procedures for certification of plumbing and drainage products.

ATS 5200.026 , 2004 Technical Specification for plumbing and drainage products. Part 026: Cold water storage tanks

2004 Australian Drinking Water Guidelines, National Health and Medical Research Council and Agriculture and Resource Management Council of Australia and New Zealand

More Information:

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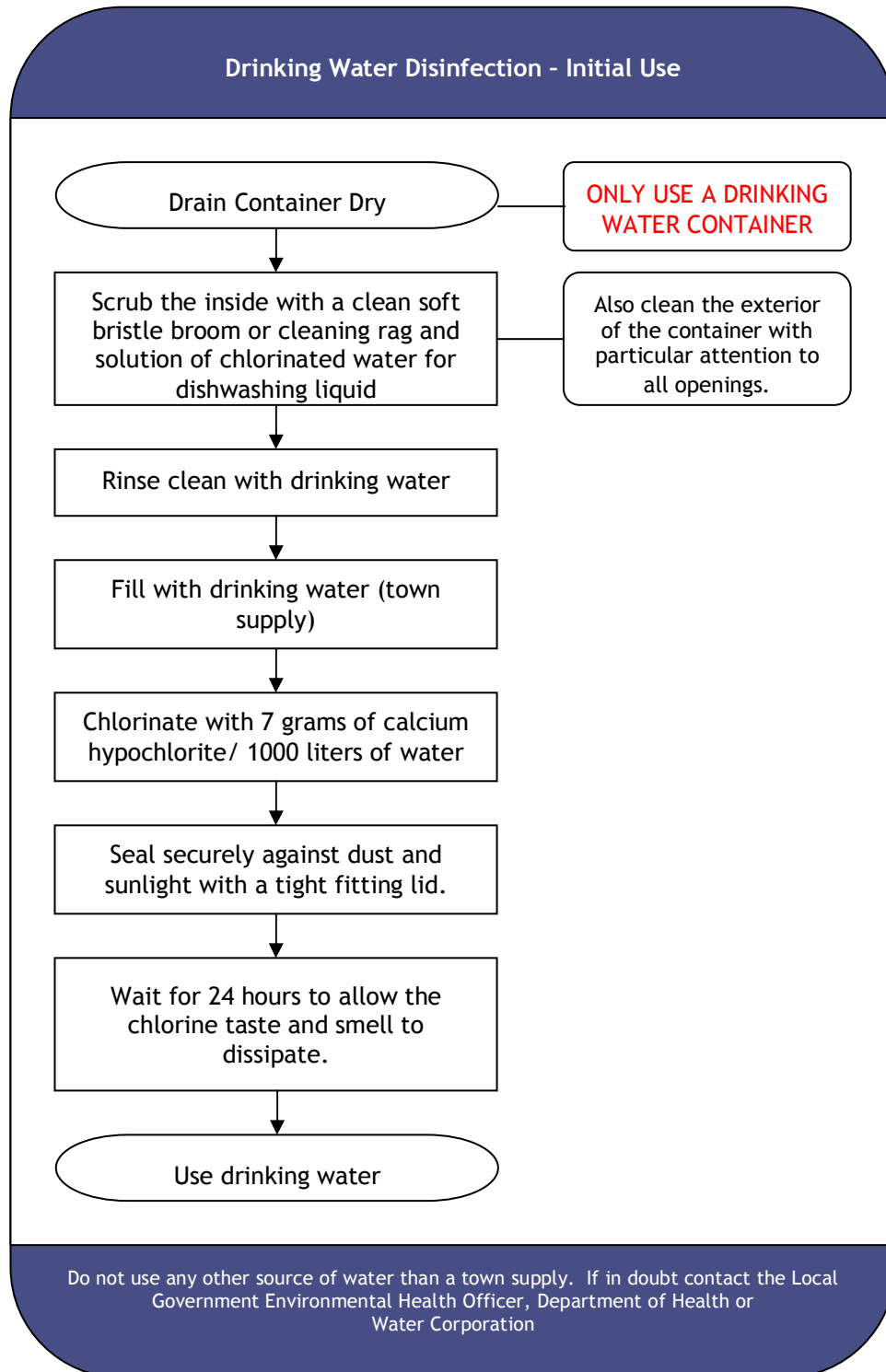
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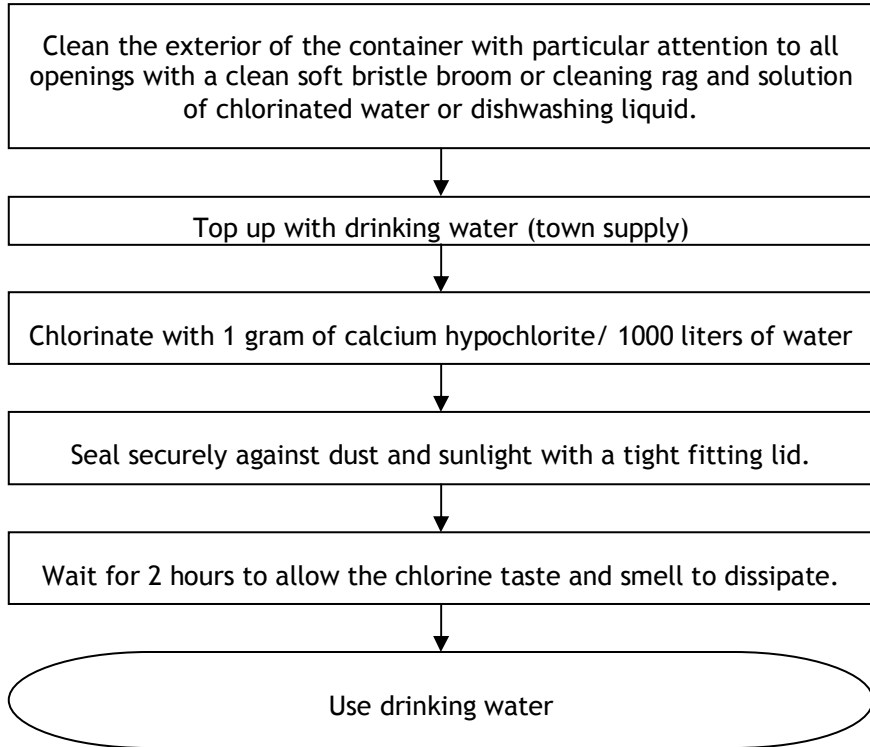
Disinfection Tag

Cut this double sided tag out, seal with plastic waterproofing and attach to the water container





Drinking Water Disinfection - Continual Use



What to do when transporting water.

- Empty all hoses, standpipes etc
- Join hoses end to end or cap them
- 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.

Do not use any other source of water than a town supply. If in doubt contact the Local Government Environmental Health Officer, Health Department or Water Corporation



Consumer Advisory

Notice to Consumers

Prior to consumption you are advised to disinfect your drinking water as follows:

After Delivery treat the drinking water with either;

- 7 grams of calcium hypochlorite (60 to 70% strength) per 1000 litres of water; or
- 40 ml of sodium hypochlorite (12.5% solution) per 1000 litres of water.

Leave the treated water for at least 24 hours to allow the chlorine taste and smell to dissipate.

To Maintain a Safe Water Supply after the initial dose add either:

- 1 gram of calcium hypochlorite (60-70%) per 1000 litres; or
- 4 ml of sodium hypochlorite (12.5%) per 1000 litres

each week to the holding tank and allow to stand for a minimum of 2 hours prior to consumption.

Model Log Book

Drinking Water Cartage Log Book

Carrier

Carrier:		Driver:	
Business Address:		Driver's Mobile Phone:	
		Vehicle Licence No:	
Business Phone:		Business Fax:	

Equipment Check

1	Has the container or fittings been used to cart reclaimed water, chemicals or human or animal wastes?	Yes	No
If "Yes", do not use container or fittings.			
2	Has the container or fittings been used for transporting foodstuffs intended for human consumption such as molasses, milk or wine?	Yes	No
If "Yes", disinfect the container, fittings and pump in accordance with the Bulk Cartage of Water Guidelines.			
3	Visually inspect container to ensure it is empty and clean	Clean	Dirty
4	Flush hoses (with fittings attached) and pumps for at least 2 minutes	Flushed	Not flushed
5	Prior to filling the container, check the free chlorine residual of the source water.	mg/L	
If the free chlorine residual is less than 0.5 mg/L, check with the water provider that the water has been treated or chlorinated.			



Drinking Water Cartage Log Book

Water Source

Source			Collection Point:		
Fill Date:			Time Fill Commenced:	AM PM	
Water Type	Raw Water		Treated Water		
Type of Supply	Standpipe	Hydrant	Other		

Delivery

1	Prior to discharge, check the free chlorine residual of the water to be used	mg/L	
If the free chlorine residual is less than 0.2 mg/L add chlorine (See Initial use instruction in the Bulk Cartage of Water Guidelines.)			
2	Flush hoses (with fittings attached) and pump with water from the container	Yes	No
3	Consumer advisory given	Yes	No
Location Address	Discharge Point		
Date:	Discharge time		

Form Completed By:		
Driver	Signature	Date