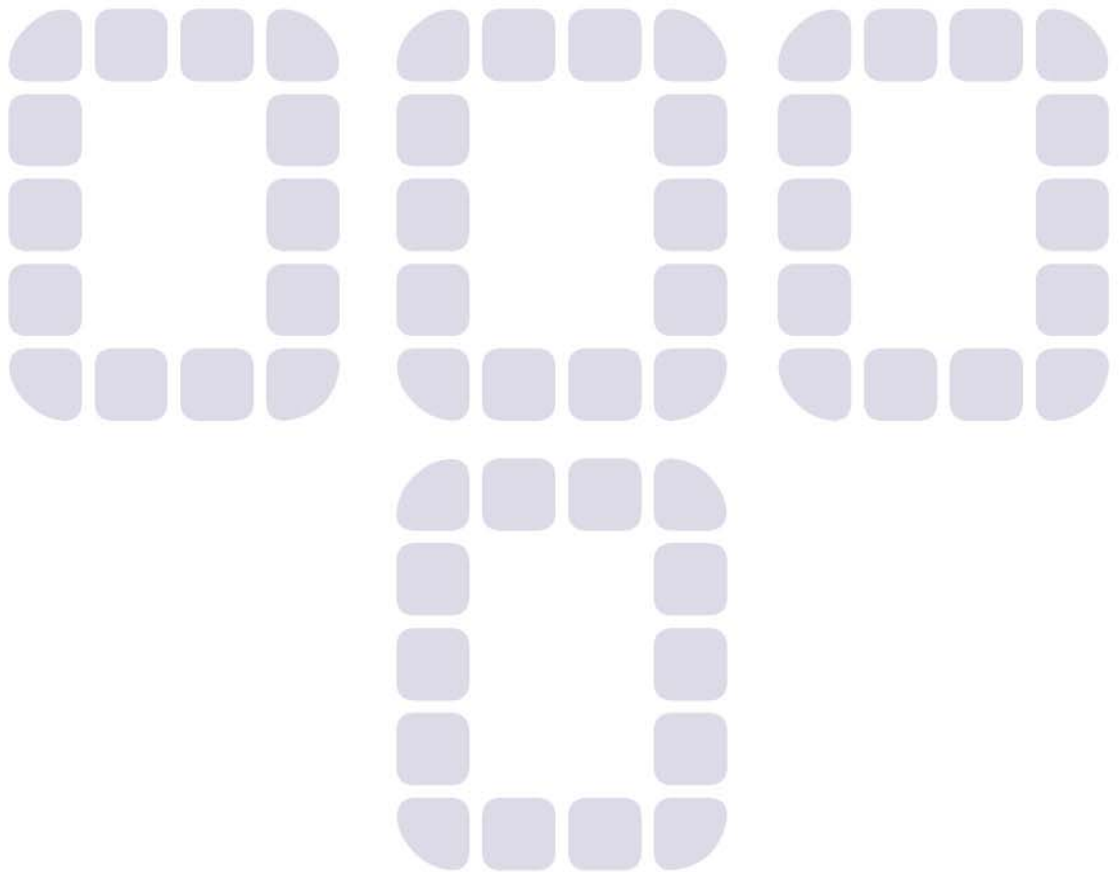


Guidelines for the Bulk Cartage of Drinking Water

Environmental Health Directorate



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GUIDELINES

FOR THE BULK CARTAGE OF DRINKING WATER

Part I - Introduction

These Guidelines have been prepared to assist those persons who are involved in the bulk cartage of drinking water (quantities in excess of 100 litres).

These Guidelines set minimum standards of hygiene to ensure that water provided to the consumer complies with:

- Microbiological quality criteria
- Chemical quality criteria

of the National Health and Medical Research Council Guidelines for Drinking Water Quality.

Aim

Where reticulated scheme water supplies or other natural sources of water (e.g. bore, dam, rainwater etc.) are not available it may be necessary to transport drinking water in bulk to consumers.

A carrier who undertakes the bulk cartage of drinking water has a duty of care to ensure that the water is obtained from an approved source and is protected from contamination to the point of delivery during:

- loading
- transportation; and
- off loading.

Objectives

The objectives of these Guidelines are to:

- provide health standards for the safe transportation, delivery and supply of drinking water;
- advise carriers of drinking water on the correct procedures to ensure health standards are maintained;
- facilitate the supply of bulk quantities of drinking water during an emergency; and
- enable local government to adequately monitor carriers who undertake the bulk cartage of drinking water.

Part II - Application

These Guidelines may be applied to any carrier of bulk quantities of water transported by vehicle intended for human consumption.

Control of Water Carriers

Local government environmental health officers may monitor persons or companies who undertake the bulk cartage of drinking water within their district; and .

May inspect any drinking water container and associated equipment used within their municipality to determine compliance with these Guidelines.

Definitions

- Bulk Cartage** - means the collection, transportation and storage of bulk drinking water;
- Bulk Drinking Water** - means 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** - means an individual or company who undertakes the bulk cartage of drinking water;
- Consumer** - means 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** - means a hose, pipe, coupling, pump or valves that may either: be used to transfer bulk drinking water to or from the container; or may come into contact with bulk drinking water during bulk cartage.
- Source** - means 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.

Part III - Duties of Carriers

Approval as a Carrier

Carriers should notify the Local Government of the district in which the business is registered prior to undertaking the bulk cartage of drinking water.

Approval to Use a Source of Water

A carrier of bulk drinking water shall:

- obtain drinking water from a source that has been approved by the Executive Director Public Health.
- seek permission of the source owner to draw bulk drinking water from that source and shall comply with the source owners conditions.

Equipment Used

All containers and fitments shall comply with these Guidelines.

Specific Use of Containers

Containers and fitments used for the transportation and delivery of bulk drinking water shall not be used for any other purpose.

Materials Used

Lining materials used within containers and fitments shall comply with Australian Standard AS 4020 - 1999 'Products for Use in Contact with Water Intended for Human Consumption With Regard to their Effect on Quality of Water'.

Maintenance and Condition

The condition of water containers and associated fitments shall not contribute to the deterioration of the chemical or microbiological quality of bulk drinking water.

All containers and fitments attached to vehicles shall be maintained in a clean condition and shall be sealed when not in use.

All containers and fitments shall be constructed of non-deteriorating and easily cleanable material.

All containers and fitments are to be regularly inspected and repaired if damaged.

Containers and Fitments to be Cleaned

All containers shall 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
- filling with drinking water and/or sealed securely against dust or dirt.

All fitments are to be cleaned at least once every month by:

- filling with water containing at least 5.0 mg/L free chlorine and capped for at least 30 minutes,
- rinsing with clean drinking water; and
- drained dry and sealed securely against dust and dirt.

Back Flow Prevention

All fitments used to transfer bulk drinking water either to or from containers shall 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.

Signage

The carrier shall affix signs on the side and rear of the container that reads 'Drinking Water' in letters with a minimum height of 100 mm in a contrasting colour to the background.

All fitments shall have clear signs either printed on or pressed into the exterior surface that reads 'Drinking Water'.

During Transport

All containers and fitments shall be completely sealed to prevent the ingress of dust and contaminants during transportation. Bulk drinking water shall be treated in accordance with Part IV.

Storage When Not in Use

When not in use containers and fitments shall be stored in such a manner as to prevent contamination. Prior to use containers and fitments shall be thoroughly cleansed and disinfected.

Log Books

Carriers shall 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.

Log books may be inspected by an environmental health officer at any time.

Consumer Advice

The carrier shall advise the consumer to take precautions to disinfect and maintain the drinking water prior to consumption by providing the following advice notice:

Notice to Consumers

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

After Delivery

Treat the drinking water with either;

- seven 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 ltrs; or
- 4 ml of sodium hypochlorite (12.5%) per 1000 ltrs

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

Dissolve or mix chlorine with water in a plastic bucket in the open air before mixing in the water tank.

Exemptions

The Local Government environmental health officer may give written approval, subject to conditions, to use containers and fittings not normally used to transport bulk drinking water. See Emergency Provisions.

Part IV - Water Treatment

The microbiological quality of bulk drinking water transported in a container cannot be guaranteed.

Chemical Treatment

During bulk cartage all bulk drinking water shall be treated using either calcium hypochlorite or sodium hypochlorite.

The initial dose to treat drinking water shall be seven grams of calcium hypochlorite (60 to 70% strength) or 14 ml of hypochlorite (12.5% solution) per 1000 litres of water.

Automatic Chlorination Systems

Manual chemical dosing of drinking water may not be accurate or consistently applied. It is recommended that automatic chlorination devices be connected to containers to ensure adequate bulk drinking water treatment.

Safety Note

It is important to dissolve or mix chlorine with water in a plastic bucket in the open air prior to adding it to the container. This solution should then be thoroughly mixed within the water tank.

Part V - Monitoring Water Quality

Carriers Duty of Care

A Carrier shall ensure that bulk drinking water is collected, treated and transported in accordance with Part III and Part IV of these Guidelines.

Carriers should also ensure that all persons involved in the bulk cartage of drinking water are adequately trained in the safe operation of equipment and handling of chemicals and application of these Guidelines.

Material safety data sheets should be available to all persons handling substances used during chemical water treatment.

Duty of Local Government

Should:

- identify carriers of bulk drinking water operating within their district.
- prepare a sampling programme to monitor water sources used by the carrier;
- conduct routine inspection of containers and fitments;
- inspect vehicle log books at any time; and
- conduct random sampling of bulk drinking water in containers used within the district at any point during delivery to the consumer.

Sampling/Analytical Procedures

Sampling procedures for bulk drinking water shall be carried out in accordance with the 1987, 'Guidelines for Drinking Water Quality in Australia', as published by the National Health and Medical Research Council. (Note: The Health Department of Western Australia is working towards the adoption of the Australian Drinking Water Guidelines 1996 as published by the National Health and Medical Research Council and Agriculture and Resource Management Council of Australia and New Zealand by approximately the year 2000).

Sampling Frequency

Drinking water used by carriers should be sampled:

1. For microbiological contamination as follows:
 - from source 12 times per year
 - during transportation as frequently as possible.
2. For chemical treatment:
 - for each load of drinking water delivered.

Notice to Treat Water, Containers and Fitments

An environmental health officer may direct treatment to prevent contamination of bulk drinking water by:

- requiring bulk drinking water to be treated;
- prohibiting containers and fitments to be used;
- requiring containers and fitments to be decontaminated;
- specifying repairs and maintenance and a period for compliance for repairs to be done

In addition an environmental health officer may, if he or she is of the opinion that bulk drinking water is in such a condition as to be injurious to health, prohibit the delivery and take such samples as required to determine the nature of contamination.

Part VI - Emergency Provisions

The Local Government may approve the use of any equipment to transport, store and supply bulk drinking water in an emergency, provided that containers and fitments:

- are suitable for the purpose.
- will not chemically or microbiologically contaminate the drinking water.
- are thoroughly cleaned to remove any liquid residues or growths.
- are disinfected with a solution of hypochlorite with a final concentration of 100 - 200 parts per million free chlorine for a minimum of 2 to 3 hours. (This solution shall be safely disposed).
- are thoroughly rinsed with drinking water to remove excess residue prior to use.
- have not been used to carry sewage, chemicals or any other product that may contaminate drinking water.

Part VII - General Prohibitions

Coal Tar Products Prohibited

Use of coal tar based products are not permitted as internal coatings or lining for containers and fitments. Organic chemical leaching from these products act as food source for bacteria, consequently promoting bacterial growth. Organic leachates, may contain carcinogenic polynuclear aromatic hydrocarbons (PAHs). They may also react with disinfection agents, such as chlorine, to form toxic and carcinogenic compounds, or to form taste and odour producing compounds in the drinking water.

Canvas Materials Prohibited

The use of canvas materials in containers and fitments is prohibited.

Part VIII - More Information

For more information please contact either your:

Local Government Environmental Health Officer

or

Environmental Health Directorate
Department of Health
PO Box 8172
PERTH BUSINESS CENTRE WA 6849

Telephone: (08) 9388 4999

Facsimile: (08) 9388 4955

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Part IX - References

Australian Standards Referenced

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

Guidelines Referenced

Guidelines for Drinking Water Quality in Australia 1987, National Health and Medical Research Council

Australian Drinking Water Guidelines 1996, National Health and Medical Research Council and Agriculture and Resource Management Council of Australia and New Zealand

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