



Environmental Health

Guidelines for Drinking Water Transport in the Northern Territory

September 2011

Acknowledgements

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Definition

The Australian Drinking Water Guidelines (ADWG) define drinking water as water intended primarily for human consumption, either directly, as supplied from the tap, or indirectly, in beverages, ice or foods prepared with water. Drinking water is also used for other domestic purposes such as bathing and showering.

It should be noted that drinking water is also referred to as potable water, and the two terminologies are interchangeable.

Purpose

The purpose of these guidelines is to specify public health requirements for water carters delivering drinking water to domestic and commercial customers in the Northern Territory.

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1. INTRODUCTION

The Environmental Health Branch of the Department of Health (DoH) developed the *Guidelines for Drinking Water Transport in the Northern Territory*, for the operation of water carting vehicles supplying water for drinking and domestic use. These guidelines are in addition to provisions required by the water supplier to protect their asset.

Consumers purchasing drinking water from a water carter need assurance that the water is safe and suitable for human consumption. These guidelines have been developed to assist carters of drinking water in the Northern Territory (NT) to meet their legal obligations under the NT *Food Act*, and to ensure that the water they supply to their customers is both safe and suitable for drinking and food preparation.

2. LEGAL OBLIGATIONS

A person transporting and selling drinking water has both a legal obligation and a duty of care to ensure that the supplied water is protected from contamination during loading, transporting and delivery.

A water transport vehicle is defined as a food transport vehicle under the NT *Food Act* and drinking water is defined as a food in the NT *Food Act*. Section 7 of the NT *Food Act* defines the meaning of food and states that food includes:

- (a) *any substance or thing of a kind used, or represented as being for use, for human consumption (whether it is live, raw, prepared or partly prepared)*
- (b) *any substance or thing of a kind used, or represented as being for use, as an ingredient or additive in a substance or thing referred to in paragraph (a)*

A water carter is required to be registered as a proprietor of a Food Business in accordance with the NT *Food Act*.

For further information on Food Business registration, including registration forms and Environmental Health contacts please visit the Environmental Health Website http://www.health.nt.gov.au/Environmental_Health/Food_Safety/index.aspx

The NT *Food Act* requires compliance with the Australian and New Zealand Food Standards Code. Section 20 of the NT *Food Act* states that:

- 1) *A person must comply with any requirement imposed on the person by the Food Standards Code in relation to carrying on a food business or to food intended for sale or food for sale.*

Of particular importance for water carters are *Standard 3.2.3 Food Premises and Equipment* and *Standard 3.2.2 Food Safety Practices and General Requirements*.

3. WATER QUALITY

3.1. Australian Drinking Water Guidelines

Water carters supplying drinking water for human consumption, should obtain water from a water source that complies with the national *Australian Drinking Water Guidelines* (ADWG) developed by the National Health and Medical Research Council (NHMRC). As a minimum, the supplied water must comply with the microbiological guideline value of the ADWG. (No detection of the indicator bacteria, E.coli, in a 100 ml sample)

E.coli present in drinking water indicates that human or animal faeces have contaminated the water. Faeces can harbour a number of pathogenic, or disease causing organisms. The guideline value for E.coli, set in the ADWG, to ensure that drinking water is safe to consume is zero.

It is the responsibility of the water carter to ensure that the water supplied to commercial and domestic customers complies with the ADWG.

Note: *When water that meets the ADWG is added to an empty water tank it may re-suspend any sludge present in the bottom of the water tank, potentially creating taste and turbidity problems. The water carter should advise the customer of this potential issue, and ideally water should be added to a tank that was cleaned and sanitised prior to filling.*

3.2. Treatment

Water sourced from a reticulated water supply will in most cases be sufficiently chlorinated to ensure the water is safe to drink, however it is the water carter's responsibility to maintain an adequate chlorine residual until the water is supplied to the consumer. If the source water is not chlorinated, it should be chlorinated prior to carting by the operator. An adequate free available chlorine residual lies between 0.5 -1.0mg/L. Free available chlorine (FAC) refers to chlorine that is free to disinfect the water and kill bacteria and disease causing organisms, because it has not reacted with any other substance in the water. Table One on page 9 provides information on achieving the required free chlorine residuals for cleaning purposes.

For further information on disinfection of water with chlorine refer to the Environmental Health Bulletin: Disinfection of Water Tanks

http://www.health.nt.gov.au/Environmental_Health/Water_Quality/index.aspx#FactSheetsWaterQuality

4. WATER TANK AND VEHICLE

4.1 Transport of drinking water

Water transport vehicles, containers and fittings used to cart drinking water must not be used for carting reclaimed water, toxic or hazardous chemicals, non-food liquids, and human or animal wastes. Vehicles used to cart consumable liquids, should be subject to a thorough and appropriate cleaning and sanitising process before transporting drinking water.

4.2 Water transport vehicle construction

The water transport vehicle must be designed and constructed to prevent possible contamination of the water and must be able to be effectively cleaned.

The vehicle must comply with the following:

- Constructed of a suitable material (Food grade plastic, stainless steel, fibreglass, aluminium or coated mild steel)
- All surfaces that may come in contact with drinking water must be made of a material that will not contaminate the water. See AS/NZ4020: 2005 Testing of products for use in contact with drinking water
- Any fitted water hoses or pipes must be suitable for contact with drinking water and easy to clean, as detailed in AS/NZS 4020:2005 Testing of products for use in contact with drinking water
- Be fitted with appropriate backflow prevention mechanisms to protect against contamination or cross-contamination. Details of appropriate backflow prevention mechanisms and the necessary certification practices are detailed in *AS 3500.1: 2003 Plumbing and Drainage - Water Services*
- Able to be fully drained and having a sufficient opening for inspection and cleaning of contact surfaces
- Signs installed on each side and the rear of the tank that read 'Drinking Water' in letters at least 100 mm high.

Hoses and fittings must be stored in a safe and hygienic manner during transport and when not being used, to protect them from contamination.

5. CLEANING

As required under the NT *Food Act 2004*, all water carter equipment must be maintained in a clean and sanitary condition. This equipment includes the lining of the tank, openings, lids, seals, hoses, fitting and pipes.

The cleaning process involves the removal of dirt, followed by sanitising to reduce the number of disease-causing microorganisms.

The water tank/container must be cleaned and sanitised regularly. Containers and equipment that have not been used for some time will need to be cleaned and sanitised prior to use. Water tanks not being used should be drained air-dried and the inspection hatch left partly open until use.

Tanks should be cleaned at a minimum every three months, by:

1. Physically cleaning the tank/container with detergent and flushing with clean water.
2. Sanitising by,
 - (a) spraying the surfaces with a solution containing 10 mg/L free available chlorine, leaving it for 5 minutes and then rinsing off with drinking water, or
 - (b) filling the tank with a solution containing 5 mg/L of free available chlorine, leaving for at least 30 minutes before draining and rinsing the tank with drinking water.

Pipes, fitting, hoses and similar should be cleaned at a minimum monthly with a solution containing 5 mg/L of free chlorine, using the following steps:

1. Physically cleaning the equipment with detergent followed by flushing with clean water.
2. Sanitising pipes or hoses by filling them for at least 30 minutes with a solution containing 5 mg/L free available chlorine, and then rinsing them with clean water.
3. Sanitising fittings by soaking them in a solution containing 5 mg/L of free available chlorine for 5 minutes followed by rinsing with clean water.
4. Drain and air-dry equipment and store in a manner protecting them from contamination.

Note: The water carter should ensure that the disposal of wash water does not cause a nuisance. For advice on wash water disposal contact the Department of Natural Resources, Environment, the Arts and Sport (NRETAS).

Table 1: Achieving the required free chlorine residuals for cleaning purposes.

Volume of Water	Household bleach 4% available chlorine		Sodium Hypochlorite liquid 12.5 % available chlorine		Swimming Pool Chlorine 65 % available chlorine	
	5 mg/L	10 mg/L	5 mg/L	10 mg/L	5 mg/L	10 mg/L
5 litres	0.63 ml	1.25 ml				
100 litres	12.5 ml	25 ml	4 ml	8 ml	0.8g	1.6g
1000 litres	125 ml	250 ml	40 ml	80 ml	8 g	16 g
5000 litres	625 ml	1.25 L	200 ml	400 ml	40 g	80 g
10 000 litres	1.25 L	2.5 L	400 ml	800 ml	80 g	160 g

Notes:

1. If using household bleach, ensure it does not contain fragrances or detergents, if using swimming pool chlorine ensure that it does not contain isocyanuric acid.

(Swimming pool chlorine containing isocyanuric acid is not effective in enclosed tanks, and therefore should not be used. Fragrances and perfumes contained in household bleach can lead to health effects if ingested, and therefore plain household bleach should be used).

2. Mix the chlorine with water in a plastic bucket in the open air prior to adding it to the tank and wear appropriate protective clothing. Always add chlorine to water, not water to chlorine.
3. When cleaning the tank, be aware that there might be occupational health and safety requirements if entry into the water container is required. For more information see the NT WorkSafe Bulletin on confined spaces. <http://www.worksafe.nt.gov.au/corporate/bulletins02.shtml>.

6. RECORD KEEPING

To satisfy legal requirements a water carting business needs to keep detailed written records of all drinking water deliveries. These records need to be provided to NT Environmental Health Officers as part of the food business registration process.

6.1 Delivery Record

A delivery record should include the following details:

- Customer name and delivery address
- Water source details, including date and time of extraction
- Free available chlorine at extraction (if chlorinated source)
- Free available chlorine after tank chlorination (if an unchlorinated source)
- Delivery date, time and operator
- Volume delivered
- Free available Chlorine (FAC) at delivery
- Comments relating to the delivery
- Date and method used for tank and equipment cleaning and sanitising

Further Information

1. FSANZ, Food Safety Standards 3.2.2 and 3.2.3, www.foodstandards.gov.au
2. The Australian Drinking Water Guidelines, <http://www.nhmrc.gov.au/publications/synopses/eh19syn.htm>
3. AS/NZS 4020:2005 Testing of products for use in contact with drinking water. Standards Australia, www.standards.com.au
4. AS/NZS 3500:1:2003 *Plumbing and Drainage – Water Services*, Standards Australia, www.standards.com.au
5. Environment Heritage and the Arts Division of Natural Resources, Environment, The Arts and Sport (NRETAS), <http://www.nt.gov.au/nreta/environment/index.html> for information on the requirements of wash water disposal.
6. Power and Water Corporation for requirements and arrangements associated with extracting water from their water supplies.
Phone: 1800 245 092.

Contacts of the Regional Environmental Health Offices in the Northern Territory

ENVIRONMENTAL HEALTH OFFICE	FAX	PHONE
Top End	8922 7036	8922 7377
Katherine	8973 9063	8973 9061 or 8973 9062
Katherine West Health Board	8972 1233	8971 9315
East Arnhem	8987 0444	8987 0441 or 8987 0440
Barkly	8962 4420	8962 4302
Alice Springs	8952 5927	8955 6122