

10.2 Drinking water quality

Why this measure is included

Safe drinking water is fundamental to good health. Unsafe water can carry microbiological and chemical contamination which may be harmful in the short or long term. Children and young people who do not have access to safe water may be vulnerable to water-borne diseases or to the effects of potentially harmful chemicals in the water.⁵⁴⁹

Table 10.3: Compliance with health-related Drinking Water Guidelines, tests of scheme water that complied with the guidelines: in per cent, Western Australia, 2006–07 to 2011–12

	Microbiological guidelines	Health-related chemical guidelines
2006–07	100.0	100.0
2007–08	100.0	100.0
2008–09	100.0	100.0
2009–10	100.0	100.0
2010–11	100.0	100.0
2011–12	100.0	100.0

Source: Economic Regulation Authority, *Water, Wastewater and Irrigation Performance Report*, [series]

Table 10.4: Compliance with microbiological guidelines in Aboriginal Communities serviced by the Remote Area Essential Services Program: in per cent, Kimberley, Pilbara and Goldfields, 2006 to 2012

Year	Kimberley		Pilbara		Goldfields	
	<i>E.Coli</i>	Thermophilic Naegleria	<i>E.Coli</i>	Thermophilic Naegleria	<i>E.Coli</i>	Thermophilic Naegleria
2006	93.8	92.4	91.5	90.3	97.0	93.5
2007	96.8	97.4	93.8	90.3	96.5	85.9
2008	95.6	92.0	95.3	92.0	96.5	94.2
2009	94.6	92.7	96.6	94.0	99.5	89.6
2010	94.4	94.4	98.5	89.2	97.7	88.1
2011	95.3	94.2	97.1	93.0	96.4	93.5
2012	94.4	95.3	95.7	95.3	99.4	97.7

Source: Department of Housing 2014, custom report (unpublished)

Notes:

1. A remediation process including a re-test is conducted after each fail. Re-tests are included in the overall test counts upon which this data is based.
2. Communities are tested on average once a month. However not all communities can be tested every month for a number of factors including non-occupation of community (transient population or abandoned during the wet), inaccessibility due to seasonal factors and failed pick up from the airstrip by community.

What is this measure?

This measure shows the proportion of water schemes that complied with the microbiological guidelines and health-related chemical guidelines set down in the Australian Drinking Water Guidelines. Water schemes are tested throughout the year and immediate action is taken to address any detected contamination outside the guidelines.

Microbiological guidelines include the presence of *E.coli* or Thermophilic Naegleria. *E.coli* is an indicator of faecal contamination in water, which may indicate the presence of water-borne diseases.⁵⁵⁰ Thermophilic Naegleria are a group of free-living amoeba whose presence in water may indicate the potential presence of *N. fowleri*, which can cause primary amoebic meningoencephalitis (amoebic meningitis). Health-related chemical guidelines set out safe levels for more than 130 chemicals, including Fluoride, Nitrate, and Trihalomethanes (a by-product of disinfection by chlorination and chloramination).⁵⁵¹ The Australian Drinking Water Guidelines have been adopted by the WA Department of Health in agreement with water service providers through a Memorandum of Understanding.

The Australian Drinking Water Guidelines also include guidelines for aesthetic quality of drinking water. Broadly, these are inclusions which might affect taste, appearance or properties (such as water hardness), but do not have health effects. These have not been included in this report.⁵⁵²

Commentary

Drinking water in Western Australia (WA) is of high quality. The State complies with the Australian Drinking Water Guidelines, developed by the National Health and Medical Research Council (NHMRC) and the Natural Resource Management Ministerial Council (NRMCC). These guidelines provide a basis for determining the quality of drinking water supplies.⁵⁵³

Around 90 per cent of the population in WA receives water from licenced and regulated water supply schemes. The Water Corporation provides around 75 per cent of scheme water, with the rest provided by licenced providers Aqwest (Bunbury), Busselton Water Board, Rottnest Island Authority and Hamersley Iron (Dampier, Paraburdoo and Tom Price).⁵⁵⁴

The remainder of the population get water from mine sites and exploration camps, private small system operators (roadhouses, caravan parks, water carriers), some local governments, or through the Remote Aboriginal Essential Services Program.⁵⁵⁵

Water from regulated and licenced schemes is monitored by the scheme providers themselves, with the results reported to the WA Department of Health. Private small system operators are monitored through a network of local government health authorities.

Large public water supplies are fluoridated due to the dental health benefits of fluoride. In Western Australia, fluoridation is regulated by the *Fluoridation of Public Water Supplies Act 1966* and overseen by the Fluoridation of Public Water Supplies Advisory Committee (FAC).

From 2006–07 to 2011–12, all licenced water providers were fully compliant with microbiological and health-related chemical guidelines for licenced water schemes, in accordance with requirements outlined in the Memorandum of Understanding with the Department of Health (Table 10.3).⁵⁵⁶

Around 90 Aboriginal communities are serviced by the Remote Area Essential Services Program. From 2006 to 2012 there were a number of occasions where microbiological guidelines were exceeded in these communities. These locations are sampled monthly, and any detection of microbiological contamination is reported and remediation taken (Table 10.4). Water sources in communities are also tested for compliance with health-related chemical and aesthetic guidelines.



Some locations in WA have exemptions from the health guidelines for Nitrate content in water. The Australian Drinking Water Guidelines specify 50 mg/L (measured as nitrate) for infants less than three months old and 100 mg/L (measured as nitrate) for adults and children over three months old. Where the water supply contains between 50 and 100 mg/L of nitrate and no other supply is available, an exemption may be available. In WA, the following areas have been granted exemptions from the nitrate guideline:

- Mid West Region – Cue, Meekatharra, Mt Magnet, Nabawa, New Norcia, Sandstone, Wiluna and Yalgoo
- Goldfields and Agricultural Region – Laverton, Leonora and Menzies

In these towns, the Water Corporation supplies free bottled water to community health nurses for supply to mothers who are bottle feeding babies less than three months old.⁵⁵⁷

Strategies

Water Forever: Towards Climate Resilience, Water Corporation of WA (released 2009)

Water Forever is a 50-year plan to deliver sustainable water services to Perth and surrounding areas, including the Goldfields and Agricultural water supply. It includes targets to reduce water use, develop new water sources and increase water recycling to ensure sustainable water supplies. In 2012 the Water Corporation released 10-year plans under the Water Forever brand for Perth and WA to address the short-term needs of the state. More information is available from www.watercorporation.com.au/Home/Residential/About%20us/Planning%20for%20the%20future

National Water Quality Management Strategy, Commonwealth Government (released 2000)

This strategy was developed jointly by the Agriculture and Resource Management Council of Australia and New Zealand and the Australia and New Zealand Environment and Conservation Council to help develop a national approach to water resource management in Australia. Further information is available from www.environment.gov.au/topics/water/water-quality/national-water-quality-management-strategy

Want to know more?

Data on water quality

The Water Corporation publishes annual reports on water quality monitoring for WA. These reports are available at www.watercorporation.com.au/about-us/our-performance/drinking-water-quality

Aqwest provides scheme water to the Bunbury area. Annual reports are available at <http://aqwest.com.au/Downloads/AnnualReports.aspx>

Busselton Water supplies scheme water to the Busselton area. Reports on water quality and annual reports are available at www.busseltonwater.wa.gov.au/OurWater/WaterQuality/WaterQualityReports.aspx

More information about water quality

The Australian Drinking Water Guidelines are based on the latest scientific evidence on good quality drinking water. The most recent guidelines were released in 2011 and are available at www.nhmrc.gov.au/guidelines/publications/eh52

The Advisory Committee for the Purity of Water is an inter-departmental committee chaired by the WA Department of Health. It includes representatives from relevant government agencies as well as representatives of the licenced drinking water providers. Its purpose is to advise the Ministers of Health and Water on maintaining the quality of drinking water, and fostering inter-agency cooperation in regard to supply. More information is available at www.public.health.wa.gov.au/3/962/2/drinking_water_in_wa.pm