



## 'Hard' Water

Many areas throughout Western Australia relying on groundwater supplies have 'hard' water. 'Hardness' is a measure of the concentration of calcium and magnesium salts in water. These natural minerals are good for healthy teeth and bones and hard water is safe to drink. But the hard water may cause a scaling effect on water appliances.

Natural water sources contain two types of solids – suspended and dissolved.

Suspended solids, like sand or silt, can be removed from water by leaving it to settle for a period of time. But as settling is not always practical, most suspended solids are removed by some type of filtration.

Dissolved solids like calcium and magnesium are common in many supplies across the State and make the water 'hard'. These natural minerals are dissolved as water moves through soil and rock and cannot be removed by filtration. The degree of hardness becomes greater as calcium and magnesium content increases.

Hard water reacts chemically with soap and the higher the hardness, the more soap is required to form a lather. Hard water may also leave spots on drinking glasses, shower screens or garden plants because the minerals remain after the water has evaporated.

Water with a total hardness above 200 milligrams per litre may also have a scaling effect on hot water systems, pipes, fittings and domestic appliances such as kettles, with the natural salts being converted to white crystals.

### COMMONLY ASKED QUESTIONS

#### Is hard water harmful to drink?

Hard water is safe to drink. In fact, medical research indicates that hard water contributes a small amount towards calcium and magnesium human dietary needs and may have a beneficial effect on health, particularly some types of cardiovascular diseases.

#### How do I know if I have hard water?

You can call the Water Corporation's 13 13 75 Faults, Emergencies and Security line to find out the degree of hardness of water in your local area. This information is often required by customers when installing new dishwashing machines to maximise performance.

## How can I treat the effects of hard water?

A handy hint to avoid spots caused by hard water is to use liquid soaps and dry wet surfaces immediately after water use. Special cleaning products are also available to remove calcium and lime deposits, scale and discolouration from bench tops, appliances, toilets, sinks, bathtubs, tiles and glass. But users should take care to follow manufacturers' instructions.

Customers with hard water problems should regularly release hot water system pressure valves for a few seconds each month to prevent scale build-up in the system. To clean kettles simply insert a slice of lemon and fill with water, then bring to boil and refill before use. Bicarbonate soda and vinegar-based cleaning products are also effective for cleaning domestic appliances.

## What is the Water Corporation doing to solve hard water problems?

The Water Corporation recognises that drinking water supplies with elevated hardness levels (above Australian Drinking Water Guidelines of 200 milligrams per litre) are likely to cause scaling. Hard water is unlikely to affect metropolitan customers as the Perth Metropolitan Water Supply Scheme meets the National guidelines for hardness levels. However, the Water Corporation has been researching ways to minimise the impact on country customers with hard water.

Following successful trials in various country towns, a Calgon dosing program is being progressively implemented in affected areas across the State.

Although Calgon, the brand name for sodium hexametaphosphate, does not reduce hardness levels, it has proved a simple method to reduce the scaling effects caused by hard water. It is a registered food additive (No. 450) and has been approved by the National Health and Medical Research Council.

We have also begun a longterm program to install desalination treatment technology at country water supply schemes with high salinity levels.

This treatment process will in turn improve aesthetic water quality, reducing hardness levels. But this technology is very expensive and work will progress depending on available funding.

### If you have any further enquiries

Please call the Water Corporation's 24 hour Faults, Emergencies and Security line on **13 13 75**

To the best of the knowledge of the Water Corporation, its directors, officers and staff, the information provided in this bulletin is correct, scientifically accurate and supported by current data. The statements made in this bulletin are based on Australian and international standards in effect as at the time of publication.

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