

# The treatment of 'hard' water in Elliott

## Using Calgon to minimise scale formation

Many communities in the Northern Territory rely on groundwater supplies that are characterised by 'hard' water. Hardness in water may cause scale deposits on the internal surfaces of pipes, fittings and appliances.

Power and Water Corporation has investigated the potential use of Calgon® SHMP (sodium hexametaphosphate) to minimise scale build-up caused by hardness in water supplies. We plan to install this system in Elliott this year.

The purpose of this fact sheet is to inform the water users in Elliott about 'hardness' in the water supply; the use of Calgon to minimise the scale formation on pipes, fittings and appliances and the Calgon dosing system that will be installed towards the end of 2009.

### What is 'hard' water?

Total hardness is a measure of concentration of calcium and magnesium salts in the water, commonly expressed as 'calcium carbonate' ( $\text{CaCO}_3$ ). Water supplies are 'hard' when the concentration of calcium and magnesium is high. Calcium and magnesium are difficult to remove since they are dissolved in the water when it moves through the soil and rocks.

Degrees of hardness can be described as follows:

<60mg/L $\text{CaCO}_3$	soft but possibly corrosive
60-200mg/L $\text{CaCO}_3$	good quality
200-500mg/L $\text{CaCO}_3$	increasing scaling problems
> 500mg/L $\text{CaCO}_3$	severe scaling

Power and Water closely monitors the quality of the water it delivers. During 2007-08 the average hardness level measured in the water in Elliott was 381mg/L  $\text{CaCO}_3$ .

### Effects of 'hard' water

'Hard' water reacts chemically with soap and requires more soap to form lather. It may also leave spots on drinking glasses, windows and shower screens. Water with a total hardness above 200mg/L can cause scale formation on hot water systems, pipes, fittings and domestic appliances that can reduce or block the flow of water. Scaling occurs when the natural salts precipitate out of solution and are converted to white crystals (calcite crystal growth).

Medical research indicates that 'hard' water is safe to drink.

## Using Calgon to reduce scale formation

Power and Water has been researching ways to minimise the impact of 'hard' water on the residents at Elliott. Following successful trials in many country towns throughout Western Australia, Water Corporation of Western Australia is using a Calgon dosing program in water supplies in affected areas of their state.

The name Calgon is derived from **calcium gone**. It contains sodium hexametaphosphate (SHMP), and when it is added to 'hard' water at threshold concentrations between 0.5 and 2mg/L, it can reduce scale formation. SHMP keeps the calcium carbonate in solution to prevent it from depositing in pipes and on appliances.

Calgon does not actually change the composition of the water or reduce hardness levels; does not remove existing scale build-up; has no effect on soap consumption and does not affect the taste and odour of water.

The National Health and Medical Research Council of Australia (NHMRC) and the Health Department of Western Australia have examined the product and it is suitable to use for water treatment.

Power and Water contractors will commence construction of a Calgon dosing system to the Elliott water supply in November 2009. Power and Water will monitor the system during its operation to verify its effectiveness.

## Customer correspondence

Please contact our customer service centre on 1800 245 092 or email [customerservice@powerwater.com.au](mailto:customerservice@powerwater.com.au) and attention the correspondence to Water Quality and Treatment – Water Services if you have any further enquiries or feedback about the Calgon dosing system and its effectiveness.