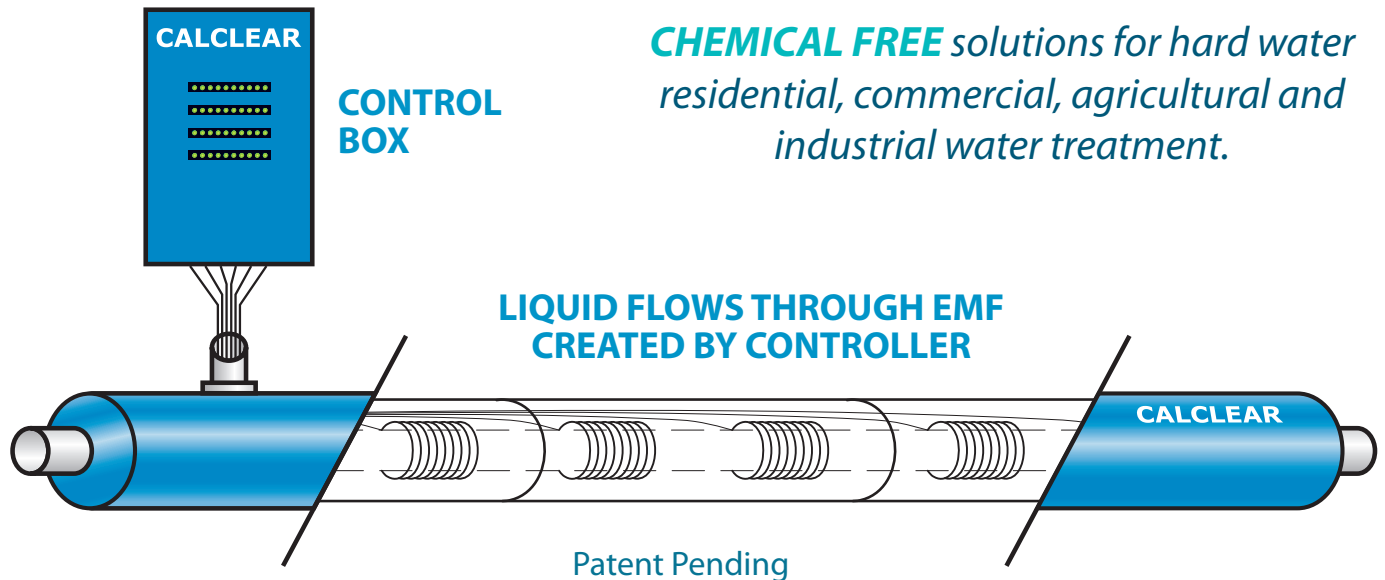


CALCLEAR WATER

DESCALING WATER PROCESS SYSTEMS



The **CALCLEAR** unit eliminates:

~~❌~~ Birm Filter ~~❌~~ Cation Exchange ~~❌~~ Acid Dosing ~~❌~~ Anti-Scale Dosing



CALCLEAR prewound pipe with protective outer pipe being installed below ground.



Antennae cables in conduit linked to **CALCLEAR** control box. Brookvale Oval, NSW



Prewound pipes installed above ground for water supply. Liverpool Plains Council, NSW.

Australian Made & Owned. Ph: +61 (2) 9977 8801 or visit: www.CALCLEAR.com.au

Member of: AWA | Water Industry Capability Team | Cleantech Industry Capability Team

Curlewis NSW Case Study

A town of 150 households has installed a **CALCLEAR** to soften its heavily mineralised water.

"Calcium has ruined our evaporative cooler, bathroom and gutters. We have lived here for 31 years, over the years it's got so bad we can't drink it, our skin is hard and scratchy. All the kids around here have skin problems."

Wayne & Wendy Scach, 32 Pike Street, Curlewis NSW



6 Weeks after **CALCLEAR** installation.

"My plant garden has improved with quicker new growth. My hair feels softer and the washing water suds better."

C. Fordham, 16 Gordon Street, Curlewis NSW

"Water tastes nice. Dogs will now drink it too!"

Kevin Brett, Curlewis NSW

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Curlewis NSW Case Study

Background Information

CALCLEAR Water Conditioner's method of water treatment uses a unique microprocessor transmitting a sine wave programme, through antennae around the water pipe, creating an electromagnetic field which keeps minerals in the water in solution. This inhibits scale formation, creates soft water and enables it to descale previously scaled equipment.

The **CALCLEAR** system eliminates the need to use chemicals or filters - and, because it uses an electromagnet field (through which the water passes), it copes with varying flows and hardness levels.

Curlewis, Gunnedah Shire, NSW

October 2007 was the first of our NSW Council applications with a **CALCLEAR** water treatment unit. The unit was implemented to treat the water supply for the whole community (450 residents) of the Curlewis township in the Gunnedah Shire, NSW.

The residents were complaining bitterly about their town bore water and the protesting Curlewis local postmistress had actually been featured on channel 9's A Current Affair's (television) programme.

*The Council agreed to install the **CALCLEAR** on the bore water supply... the results were quite remarkable*

The postmistress kept a survey running in her post office to gather locals' comments BEFORE and AFTER the **CALCLEAR** was installed, comments ranged from improvements in health with reduced skin irritation, better soap lathering and clothes washing through to improved plant growth and efficient use of plumbing equipment.

Curlewis NSW Case Study

Water Services Engineers Report

Curlewis is supplied with water from groundwater aquifers' located on the Liverpool Plains approx 8 km from town. The water is extremely hard and analysis of the supply indicates high levels of sodium, chloride, total dissolved solids and total hardness. The water supply was treated with Sodium Hypochlorite as a disinfectant.

Following discussions with the distributor of **CALCLEAR**, a three month trial was carried out. Davidson Bros Electrical carried out the installation by connecting the unit to the common feed main into Curlewis which was a 200mm AC main. The low cost of the unit, being chemical free and requiring little maintenance were convincing factors considered by Council.

After four months of **CALCLEAR** treatment the residents of Curlewis were much happier with the quality of the water supply. A survey of local residents reported softer water in general, an increase in the amount of soap suds created during bathing and effective washing of clothes

"Some residents suffering from skin complaints reported improvements and others reported improvements in smell, taste and the general softer feel of the water."

Council is very pleased with the local response resulting from the **CALCLEAR** Water Conditioners installation and recommends anyone experiencing similar water quality problems to give the **CALCLEAR** Conditioner a go.

Mr. Kevin Sheridan

Water Services Engineer
Gunnedah Shire Council

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Pilbara WA Case Study

Fortescue Metals Group (FMG), Solomon Rail Project Camp experiences extreme scaling to its RO membranes.

500 people would have to be flown out and the camp closed until water supply restored - at a huge financial cost to the project and work delayed for FMG.

Mark Lobban, Water Division Manager APC



We are grateful for the opportunity to be the first in the world to trial this system on RO – it literally saved our arses. Our maintenance crew rave about how great it is, they have to deal with water and accommodation camp problems first hand – it is a hero technology to APC and FMG.

Mark Lobban, Water Division Manager APC

Pilbara WA Case Study

Mining Camp Trials: Water Services Engineers Report April 2012

The scale affecting RO membranes at camp Fortescues Metals Group (FMG) Solomon Rail Project was extreme. Silica content was high and combined with calcium carbonate had scaled up the RO membranes within 2 weeks of running. This caused a panic as RO water production was down to 10 litres per minute and dropping. No spare membranes were at site and it cost a huge sum of money for express freight 24 hrs from SA to Port Hedland. Lucky we just received a consignment of RO membranes – otherwise 500 people would have to be flown out and the camp closed until water supply was restored. A huge financial cost to project and work progress for FMG.

“Silica forms a glass hard scale and is proven to be a major issue with RO membranes and pre-treatment.”

New membranes were fitted in late November 2011 along with a **CALCLEAR** Hydro 200 system and 100mm pre wired treatment pipe. The cation exchange water softener, birm media filter (for iron removal) and chemical metered dosing anti-scalant system were by passed and shut down.

Since installation of the **CALCLEAR** there has been no decrease at all in recorded pressure or flow rates. Important to note if the trial failed and there were no spare set of membranes – there would not be enough potable water to sustain this camp. The whole camp water supply is desalinated bore water through 3 RO systems – pre-treated by a **CALCLEAR** system and media filter, for particle removal, prior to the RO.

The filter pump that is not connected to the **CALCLEAR** is showing extreme scale build up – and so is the pipe fitting at the untreated bore water entrance of the **CALCLEAR**. The pump set downstream of the **CALCLEAR** is completely free of scale deposits.

Pilbara WA Case Study

Mining Camp Trials: Findings and Results

The flow rate of permeate (product water) from the RO with birm filter, water softener by passed is now **85% increased in productivity** due to less filter media beds to go through. There are savings in salt, not needed for water softener regeneration, saving a pallet of salt per month and the anti-scalant no longer needed **saves around \$460.00 per month**.

All new potable water plants will be designed to have **CALCLEAR** pre treat the RO water. Camp showers and wash basins will be treated only with media filter and **CALCLEAR**. Bore water consumption will be reduced by 150,000 litres per day (around 55 million litres per year). Ground water resources in the Pilbara region are finite – the increased consumption of ground water in this hugely expanded population of mining and construction is unsustainable.

"CALCLEAR technology has outstanding water conservation benefits."

Capex savings in a potable water plant with RO producing up to 100,000 litres per day without the Birm media filter, water softener and anti-scalant metered dosing equipment associated plumbing and electrical – and the addition of a Hydro 200 **CALCLEAR** are around **\$20,000 to \$25,000** including savings in labour and pipe fittings .

Opex in terms of RO replacement membranes, electricity, chemicals, salt and maintenance labour in a remote site are around **\$35,000 per year**. We are yet to determine how long the membranes will last with the **CALCLEAR** treatment – there is no sign of wear so far.

Mark Lobban

Water Division Manager APC (© 2012)

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