



London's iconic "Gherkin" has 67 Aqua-Rex units on the electric water heaters.



The Aqua-Rex WK1 for line sizes up to 1". Larger Aqua-Rex units can treat any line sizes.

# AQUA REX<sup>TM</sup>

## SOFTENER ALTERNATIVE NOW IN USA

**Over ninety percent of hard water sites in the UK use alternatives to conventional water softeners. Water-King, the UK leading Physical Water Conditioner is now available in the USA under the brand name Aqua-Rex.**

Aqua-Rex causes scale to form as a fine particulate in suspension in the water rather than encrusting surfaces. It also removes existing scale deposits and, as a side effect, partially softens hot water by reducing the amount of dissolved calcium. It can be used in residential, commercial and hospitality applications on domestic water services and swimming pools.

In the UK Aqua-Rex is widely specified by Engineers for use in homes, schools, hotels, offices, factories and military establishments. Over twenty years it has proved to be effective, reliable and enduring with no maintenance or servicing, a running cost of less than \$30 a year – and at a very low buy and install cost.



**The British Prime Minister, David Cameron, listens as Jonny Seccombe, President of Aqua-Rex, explains how Aqua-Rex works and talks about its success in the USA.**

Recently the U.S. growth in activity exceeded sales in the UK market. As water shortages in the Southwestern States make it even more important to move away from salt re-generating water softeners, increasing interest is being shown in viable alternatives, especially those with a proven track record from the UK residential and commercial sector.

**GO GREEN use Aqua-Rex**  
**Aqua-Rex contributes in many ways to a better environment by treating hard water.**

Water shortages in many parts of the USA have focused attention on the importance of re-cycling waste water both for irrigation and human consumption. The chloride discharge from conventional softeners means a lot of waste water cannot be used for recycling unless very expensive treatment systems such as RO are used. Many communities have either banned regenerating softeners or are actively looking at doing so. Aqua-Rex is listed on the Los Angeles County Sanitation District website as an approved product in place of self re-generating water softeners.

Aqua-Rex is an environmentally beneficial alternative to the conventional water softener. It can deliver almost all of the benefits of a water softener without the attendant problems such as maintenance or chloride discharge. It is simple and quick to install as it requires no plumbing and it needs no maintenance or servicing during its expected life in excess of 25 years.

# CLEANS UP AT THE GYM

**Trial of an Aqua-Rex WK1 Physical Water Conditioner at Premier Fitness, 3918 Campus Dr, Newport Beach, CA between 1<sup>st</sup> October 2009 and 7<sup>th</sup> November 2009.**



An Aqua-Rex WK1 unit was installed on the flexible cold water connection to the tank water heater and plugged into a nearby outlet. The signal generated by the unit travels into the water heater and also travels back against the flow to treat all the cold water in the property.

Unless hard water is treated, scale forms readily on showerheads and on the floor and walls of shower cubicles. Not only is scale unsightly, it also harbors bacteria and dirt. In addition it reduces the energy efficiency of water heaters because scale is 400 times less conductive of heat than

copper. Premier Fitness is a typical high occupancy fitness club and suffers from scaling in the changing rooms due to the hard water in the locality.

At top is a photo of the showerhead in the left hand cubicle of the women's changing room on 1<sup>st</sup> October 2009. This was the date the Aqua-Rex WK1 unit was installed on the cold water inlet to the tank water heater. The scale on the showerhead was hard and encrusted and could not be removed by wiping or rubbing.

The middle photo is the same showerhead on 7<sup>th</sup> November 2009, just over five weeks after installation of the Aqua-Rex unit. The original scale remains on the showerhead but no additional scale has been deposited. The difference is the quality of the scale. It is now soft and can be wiped off with the hand leaving the showerhead almost completely clean as shown in the bottom picture. The Aqua-Rex unit has softened the scale and reduced its adhesion to the shower surface. It has also stopped new scale from forming.



Showerhead in the left hand cubicle of the women's changing room on 1<sup>st</sup> October 2009.



Same showerhead on 7<sup>th</sup> November 2009 before any cleaning.



Same showerhead on 7<sup>th</sup> November 2009 after wiping with hand.

## AQUA-REX CLEANS TANKLESS WATER HEATER.



Hot Water to a four star Laguna Beach Hotel was provided by a bank of seven tankless water heaters. Over a number of years the hotel had suffered from a succession of heater failures due to scaling. An Aqua-Rex WK3 unit was installed on the 2" cold line to the water heaters on 1<sup>st</sup> December 2008.

On 30<sup>th</sup> January 2009 one of the heaters was removed for inspection. The heat exchanger was found to be completely clear of scale. Previous experience suggested that it would have been heavily scaled.

The hotel management also reported much better pressure in the hot water system. The showerheads require less cleaning and there have been no heater failures due to scale in the heat exchangers since the Aqua-Rex installation.



## AQUA-REX CLEANS heavily scaled valve



Scaling of butterfly valves and check valves is a common problem in Las Vegas. On March 31<sup>st</sup> 2009 this valve from the hot water line in a Luxury Las Vegas Hotel was installed on a cold water supply line downstream from an Aqua-Rex WK3.



On June 8<sup>th</sup> 2009 the valve was removed for inspection. Most of the scale had disappeared and almost all the remaining scale fell out. The valve was fully operable again.

During 2011 the hotel was fitted with a total of ten Aqua-Rex WK5 units to treat all 2,500 rooms served by five separate pressure zones.



In December 2014 about a dozen similar valves were removed for inspection. None of them had any significant scale in them, thus showing how effective the Aqua-Rex had been in de-scaling the system. No adverse events had occurred as a result of the scale being removed.

## AQUA-REX ON SWIMMING POOLS



This swimming pool in Las Vegas NV suffered badly from scale along the water line and down the spillway. Phosphates were always high, affecting the clarity, and TDS was off the scale of the measuring instrument.

An Aqua-Rex WK1P (pool unit) was fitted in November 2009. No other change was made to the regular weekly pool service. By January 2010 most of the



scale had fallen off the tile walls and could be vacuumed up from the bottom of the pool. The remaining scale on the tiles could be wiped away. A second photo of the pool was taken in August 2010 and shows the tile walls still clear although there was still some scale remaining on the rock surfaces. The pool water is much clearer showing a substantial reduction in phosphates.

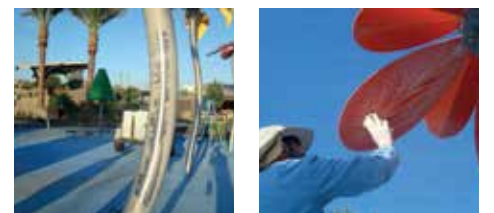
## REUNION TRAILS PARK SPLASH PAD



This recreational play park in the City of Henderson NV suffered very badly from scale on all wetted surfaces. It required regular chemical cleaning to remove encrusted scale from the supply pipes and features.

An Aqua-Rex WK3, commercial unit, was fitted on the supply line to the Splash Pad on August 15<sup>th</sup> 2013. Just 48 hours after installation scale could be wiped from the petals of one of the flower features with minimal effort and no chemicals. By August 21<sup>st</sup> 2013 it

was possible to clean this vertical supply pipe with a pressure washer. Even the concrete outer wall of the lazy river could be cleaned with a pressure washer.



# AQUA-REX REPLACES SOFTENERS AT THE PANORAMA TOWERS



The Panorama Towers is a twin, 33 story, 635 unit luxury condominium high rise just off the Las Vegas strip which opened in 2006. At the time of construction a total of four conventional water softeners were installed on the ground floor and



top floor of each tower to treat the hot water services.

In early 2013 one of the softeners required extensive repairs and the management company decided to investigate the use of Aqua-Rex. A total of four Aqua-Rex units were installed in place of one of the softeners and an extensive evaluation program was carried out over the next six months.

In December 2013 the HOA approved the purchase of additional Aqua-Rex units to treat both towers to replace the softeners entirely. As well as treating the hot water, these units also treat

the previously unsoftened cold water services. This means that scaling is reduced in mixing valves, shower heads and faucets, whereas previously they all suffered from this problem. The residents thus enjoy less scale problems than previously.

The cost of the installation was around \$55,000 for both Towers using multiple Aqua-Rex in each pressure zone. The resultant savings in the first year of installation were calculated to be around \$168,000 and over three years the savings are anticipated to be in excess of \$500,000. No further expenditure for treating hard water is expected over the life of the building apart from electrical running costs of around \$200. Additional properties under the same management company are being equipped with Aqua-Rex.



## TESTED BY FORENSIC EXPERTS

Independent tests carried out on an Aqua-Rex installation by TFW Associates, Forensic Engineering Consultants to the Legal Profession, show that at the end of the trial period **the residual calcium concentration as calcium bicarbonate was reduced by approximately 50%** compared with the initial pre-installation value. Additionally, there was a marked reduction in calcium deposition on appliances fed only from the cold water supply.

In the tests a WK1 model was fitted in domestic premises located in a hard water area to treat the hot water system. It was sited on the cold supply pipe between the header tank and the water heater. Water was sampled weekly and double filtered through a 0.45 µm micro-fibre filter. The residual calcium concentration was measured using a Z8100 Hitachi Absorption Photometer.

