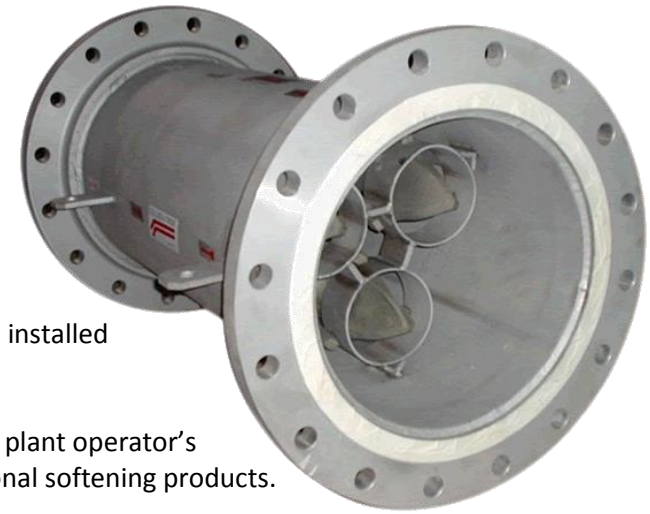
Case Study:

Fluid Dynamics 16” Colloid-A-Tron: Fabrica Militar Rio Tercero



In 2005 Fluid Dynamics International supplied a 16” scale prevention system to a customer in Argentina. The unit (pictured here) was installed in a large cooling water system, replacing chemicals as a means of scale prevention.

These products can treat systems with pipework as small as 1/4” diameter but can be scaled to any size. We are currently working on designs for 72”and 84” diameter systems. Over 10,000 units have now been installed in Argentina alone.

There is an increasing demand for our technology as plant operator’s move away from the use of chemicals and conventional softening products.

The COLLOID-A-TRON uses no external power, no magnets, has no moving parts and is guaranteed against material defects for 10 years.

The following provides details of the installation at FMRT:

16” Colloid-A-Tron Delivers Proven Results

FABRICA MILITAR RIO TERCERO is dedicated to the production of high quality chemical products such as nitric acid, sulfuric acid, nitrate of ammonia and ammonia anhydride. These products are supplied to the Argentinean government. They are in a field of their own in the Argentinean chemical business being the only manufacturer of nitric acid in the country.

The Problem:

Within the nitric acid plant a very large heat exchanger was supplied water by a SULZER model 3E MB 2300/HD 15 cooling tower with an average flow of 1700m3/h (nearly 1/2 million US gallons per hour). The water within the circuit contained a high level of hardness and scaling was a major issue despite the use of a chemical treatment program. Periodically the system had to be shut down to physically remove scale accumulation.

Algae was also an issue with doses of hypochlorite required at regular intervals just to keep it under control.

The Solution:

In April 2005 a custom built Colloid-A-Tron with a diameter of 16" was installed to treat the 1700m3/h flow of water within the recirculating circuit. After several months it was clearly noticeable that the previous hard scaling was not forming as before. In addition pre-existing scale had diminished. The other significant point was that the algae presence was reducing allowing for the reduction of hypochlorite dosing.

The Savings:

A year after the installation of the Colloid-A-Tron a second review was carried out. It was noted that the results continued to be very good. Cleaning the soft chalk like deposits that occasionally built up was much easier than before. Use of chemicals to deal with the scaling problems had been completely eliminated saving substantial amounts of money and also preventing damage to the environment.

In addition it was no longer necessary to carry out shutdowns for cleaning saving on production losses.

The algae control also saved the company a large amount in chemical treatment with the use of hypochlorite reduced by 50% and this was expected to be reduced further.

Fabrica Militar estimated that the payback on their 16” Colloid-A-Tron investment would be less than two years representing a return on investment of at least 50% each year. This ignored the likely extension of the systems working life due to the reduced use of aggressive chemicals.

Conclusion:

Colloid-A-Tron is part of Fluid Dynamics catalytic range of in-line water conditioners. Already over 500,000 units have been successfully installed in countries world-wide during the past 40 years.

Colloid-A-Tron requires no power, no maintenance and no chemical agents. Fluid Dynamics offers scaling solutions for a wide range of industrial and commercial applications from small coffee machines to large industrial applications such as cooling towers, condensers, RO systems, evaporators, compressors, humidifiers, heat exchangers, boilers, general service water and many more.

Update(2015):

This system has now been in place for nearly 10 years with no issues. This scale prevention has been achieved without the use of chemicals.