PALL Water

Longer Life Filter Cartridges Cut Operating Costs

THE CHALLENGE

In order to supply 700,000 residents and an influx of summertime tourists with drinking water, the Empresa Municipal Aguas de Málaga (EMASA) installed a desalination plant that came online in 2005. The El Atabal plant draws from nine different primary water sources including multiple reservoirs, a well and river water. One major source, the Guadalhorce reservoir, is fed by a salty stream with salinity as high as 15 g/l. Overall, 80-85% of the feed water needs to be desalinated. The original plant design called for pre-filtering to protect the reverse osmosis membranes. As regulations require, EMASA regularly revisits the cost of those filters and other consumable supplies in order to deliver safe drinking water.

THE SOLUTION

The design committee evaluated the Pall Water Ultipleat® High Flow filter system. The Ultipleat High Flow is an absolute rated filter that delivers a consistent efficiency that would result in a reduction of downtime for the Reverse Osmosis membranes and cost-savings. Because of the high-flow-rate cartridges, the Pall Water system required only 10 filter housings, with 12 filters per housing. By contrast, systems that used conventional, 2.5” Double Open End (DOE) filters, required 18 housings, each with approximately 150 filters. The Pall Water solution reduced the footprint, stock needs as well as capital expenditures for items such as pipes and valves.

With the Pall Water system, complete replacement of the filters could be accomplished in six hours, compared to a range of 48 to 72 man-hours needed to replace the conventional filters. This represents a savings of approximately 60 hours for filter changeout. In addition, the horizontal housings design made the filters easily accessible to remove and replace and did not require the need of an overhead crane. The Ultipleat High Flow has a unique crescent-shaped pleat geometry. This provides a high surface area and a solid structure which maximizes the usage of the surface, resulting in an increase of filter lifetime and solids retention capacity. Furthermore, the inside to outside flow pattern eliminates the need for cleaning the housings during the changeout process, leading to an additional cost-savings and time.

> “We know there are alternative filters available to us, and we regularly test and evaluate them. What we have always found is that when you take into account the performance, pricing and filter lifetime, the Pall Water filters provide us the best pre-filtering solution.”

Nicolás Urgoiti Moinot, Production Manager / Process Engineer, EMASA

THE RESULTS

The plant has achieved lifetimes as long as one year between Ultipleat cartridge replacements. In fact, because of the consistent performance of the Pall Water filters, the time between replacements has become a benchmark for the rest of the operation. Long filter lifetimes are seen as an indicator that the Reverse Osmosis feedwater conditions are consistent, the plant's operation is stable and that the other systems and equipment are performing to standard.

With chronic drought conditions only increasing the brackishness of the available water, the plant will be increasingly vital in the sustaining quality of life within the region. The arid climate creates challenging conditions for water production, but is also beneficial for the tourism that is a mainstay of the local economy. The reliability and ease of maintenance of the Pall Water filters is one thing that EMASA knows it can depend on as the El Atabal plant can produce 165,000 cubic meters of desalinated water every day. In 14 years of service, the water served by El Atabal to the city of Malaga has met excellent quality requirements.

THE BENEFITS

EMASA regularly re-evaluates its pre-filter options and continues to use the Pall Ultipleat High Flow filters because of:

- Superior filtering efficiency, reducing reverse-osmosis downtime
- Lower cost of operations compared to other available filters
- Longer filter lifetimes, and faster filter changeout
- Reliable performance

prelude™

Pall Water's range of Prelude™ filtration and pretreatment solutions are trusted to protect your membranes, your systems, and your investments. Additionally, a number of our trusted solutions are NSF / ANSI 61 certified for compliance in Drinking Water applications.

- Disposable pretreatment products designed to protect your membrane system
- Filters and housings are engineered to solve complex water treatment challenges
- Solutions for municipal and industrial applications

PALL Water

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