



SANDERSON FARMS CASE STUDY



WATER & ENERGY SOLUTIONS

redefining efficiency since 1969

Sanderson Farms is a Fortune 1000 company that produces, processes and distributes fresh and frozen chicken among other prepared food items. Since 1947, Sanderson Farms has continually produced high-quality chicken products amid unparalleled company growth.

With farms and facilities located across the southeastern United States, Sanderson Farms processes more than 16 million chickens each week. One Texas hatchery began experiencing problems with its reverse osmosis (RO) system, which had been used to remove mineral scale in misting nozzles within the facility's larger humidifier operation. When it came time to replace this system, Sanderson Farms called Kemco Systems.

With multiple installations in several facilities, Kemco Systems has maintained a long-standing relationship with Sanderson Farms. Because Sanderson Farms emphasizes the importance of sustainable practices and champions environmental stewardship, Kemco's eco-friendly innovations and energy-saving products serve Sanderson Farm's commitment to conservation.

Problem

Sanderson Farms' previous RO system was dated and struggled to keep up with the facility's demands. This was made more apparent during winter months, when cooler temperatures corresponded to increased volume requirements for humidity absorption. Comprised of two units, the previous RO system could only produce 8 GPM of clean permeate with both units running simultaneously. Naturally, this often left the storage tank empty over the course of normal daily operations.

Limited space was a particular concern at this location. Sanderson Farms needed to double the output with the new RO system but contending with ancillary equipment while allowing adequate maintenance space proved challenging. Fortunately, Kemco's HatchRO features a compact design built specifically for tight hatchery environments. Kemco's standard design allowed Sanderson Farms to install two Kemco HatchROs, which produce 2.5 times the volume of permeate compared to the previous system.



Solution

Kemco's HatchRO Series offers an economical route to remove harsh mineral scale and deposits from water, reducing overall maintenance needs for plumbing. Removing scaling minerals lowers the maintenance needs of humidifiers as well, allowing misting nozzles to operate at higher rates of efficiency with less intervention. By removing minerals from a humidifier's water supply, damaging limescale buildups are prevented from ever taking form.

HatchRO

REVERSE OSMOSIS MISTING SYSTEM

Results

The new HatchRO units are each capable of producing 10 GPM of high-purity permeate from 13 GPM of soft, chlorine-free water. The vertical design minimizes the space required for each unit, which stand at just 36 inches wide and 43 inches deep. Their corrosion-resistant and stainless-steel frames will not rust in the humid environment. Furthermore, the HatchRO's pumps and valves are conveniently placed on the unit to increase ease of access. Standard HatchRO units come equipped with a microprocessor controller for feed and permeate rates, dissolved solids monitoring, low-pressure protection and delayed-start flush capabilities. Three flow meters monitor the permeate, concentrate and recycle flows while stainless steel piping and valves control the system's flow.



Because humidifier usage is reduced in the summer months, Kemco ensured changes in demand would have no adverse effect on the equipment's functionality. By installing an alternating controller connected to two-level switches within the storage tanks, neither unit is left stagnant. This alternating operation will balance the load of the two HatchRO units and provide an equal run time on the pumps. When the demand increases again during the winter and the storage tank levels drop below a mid-point, the second level switch will activate both HatchRO units to make a combined

flow of 20 GPM. Once full, the units will resume their alternating mode. Because the standard design met this location's needs, these units were constructed and shipping took place within a two-week window. Installation took place over the course of a single weekend so hatchery operations were not disrupted.