

CASE STUDY

SNWA

Encore® 700 Chemical Metering Pumps Provide SNWA with A Decade of Flawless Service at River Mountains



An image of the Colorado River, where SNWA sources their water.

OVERVIEW

The Southern Nevada Water Authority (SNWA) was established in 1991 as a formal way to address the rather unique water needs and problems that plague Southern Nevada. Given the harsh climate, getting and maintaining high quality, was a challenge.

Thanks to the Water Resource Plan, the state was determined to identify project water demands and resource availability to meet such demands throughout the region.

The Southern Nevada Water Authority's River Mountains Water Treatment Facility is a state-of-the-art water treatment facility that delivers 300 million gallons per day. It was designed to ultimately deliver up to 600 million gallons per day of treated water.

This treatment facility was home to nine on-site hypochlorite generation units. Each produce up to 2,000 pounds per day of equivalent chlorine for residual disinfection in the Las Vegas Valley Water District distribution system. Each unit is fed about 2,300 gallons per day of saturated brine solution.

SITUATION

Salt brine is a difficult chemical to feed due to the inherently corrosive nature of the liquid. It also takes

incredible precision to accurately and effectively feed the electrolyzers of the on-site generation units. Unfortunately for SNWA their older, more out-of-date systems couldn't handle the stress the task required. This led to more maintenance and repairs in order to stay in operation. This drove up operation costs and cost the staff precious time.

APPROACH

The operation team looked at other potential alternative systems to assist in their efforts. The result was an investment in the Encore® 700 diaphragm pump. The idea was to see if it could handle the stress of their current processes and provide the solution they needed.

The team specifically chose an Encore® 700 double-simplex unit, which offers two heads, containing two gear boxes, each with independent stroke length control, as well as a common motor.

SNWA sources their water from the Colorado River and has the right to use 300,000 acre-feet of water each year. A single acre-foot is equivalent to roughly 325,000 gallons of water, or over 90 billion gallons of water in total.

The results spoke for themselves. The team was thrilled to see how that the Encore® 700 pump was capable of handling the problems they were trying to address.

The Encore® 700 pump also did not require frequent repairs or maintenance. This meant that that the team also did not have unnecessary down-time, which had previously been a big problem. They were able to maintain continuous metering service without any issues.

RESULTS

- The Encore® 700 pumps did the job it was purchased to do.
- The flexibility of the Encore ® 700 pumps allowed the operation team to manually adjust eccentricity during operation.
- The Encore® 700 pumps were quiet and more stable.
- The Encore® 700 pump allowed the operators to upgrade their pumps to a more robust model that required fewer parts.

CONCLUSION

Alongside saving the team time and money in operation costs, repairs and down-time, the overall efficiency of the system ended up being superior to their previous set-up.

As a result, the installed a total of 18 total Encore® 700 diaphragm chemical metering pumps (nine double-simplex units).

They continue to get excellent performance out of the Encore® 700 pumps.



Encore® 700 installations at SNWA



Encore® 700 Mechanical Diaphragm Metering Pump

"The eighteen Encore®700 metering pumps have provided precision pumping and metering of the salt brine solution over the past decade with minimal maintenance."

Todd Pickle, Chemical Engineer,
Water Treatment Division, River Mountain

Alfred Merrit Smith Water Plants,
Southern Nevada Water Authority



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