

Lyon County Utilities in Dayton, Nevada Successfully Removes Burdensome Bulk Sodium Hypochlorite from Operations by Installing Multiple Microclor® On-Site Hypochlorite Systems

Lyon County Utilities is responsible for providing safe drinking water to the approximately 13,000 residents of Dayton and Mound House. The arid region derives its drinking water from multiple groundwater wells throughout the Dayton Valley. Only disinfection is required as all primary and secondary water quality standards are met without the need for filtration or advanced treatment.



Historically, Lyon County Utilities applied 12.5% bulk sodium hypochlorite for disinfection at each of their well sites, and was resigned to the operating challenges faced resulting from use of the high strength solution. Lyon County routinely reaches temperatures near 100°F during the summer which leads to substantial degradation of the bulk hypochlorite. Leaks were commonplace in the disinfection piping often requiring time consuming repairs. Additionally, delivery of the hypochlorite solution to the remote well sites proved cumbersome and inefficient for the operations staff. Lyon County initially tried on-site hypochlorite generation (OSHG), but found the original system unreliable.



Always looking to improve system efficiency, Lyon County staff re-examined OSHG to determine if the use of the 0.8% sodium hypochlorite solution could mitigate the challenges associated with dosing high strength sodium hypochlorite. Lyon County purchased their first two Process Solutions (PSI) LC-20 Microclor® systems (20 pounds per day of chlorine equivalent) in 2009 for use at Well 5 that produced approximately 1.1 MGD and Well 8 that produced approximately 1.4 MGD. Based on the success of those installations, and the strong support the Lyon County team received from PSI's staff, Lyon County purchased an additional three LC-20's over the span of seven years and eventually eliminated most of the burdensome use of bulk hypochlorite.



Lyon County's latest LC-20 was installed in July 2016 by their operations team with guidance from PSI in a new well house built to house a 1.1 MGD well. Operations took advantage of the open layout of the room to install the required equipment with unrestricted access to Microclor® system components: generator skid, brine tank, hypochlorite tank, blower, and metering pump. All the equipment fits easily within the modestly sized well house and allows unimpeded access to the equipment for easy maintenance.

"When looking at replacing our nearly 10-year-old onsite sodium hypochlorite system we decided on the Microclor® system. There were a number of reasons for our decision, including compact design and technical support."

Scott Fleckenstein, Water Superintendent