Golden State Water's Proactive Approach to Heavy Metal Compliance

Golden State Water Company (GSWC) is an investor-owned public utility that serves over a million customers across more than 80 communities in Northern, Coastal, and Southern California. The company has taken proactive measures to address heavy metal exceedances in areas with limited water sources, specifically managing a groundwater source with selenium concentrations that exceed the Maximum Contaminant Level (MCL) in its Edna Road System.

To ensure consistent delivery of high-quality water, GSWC implemented an ion exchange selenium removal system. However, fluctuating selenium levels in the source water created various challenges in efficiently operating the treatment process. In response, GSWC installed an online selenium analyzer, MetalGuard™ Selenium manufactured by AMS, to continuously monitor influent and effluent selenium levels. This enables the company to make timely and informed adjustments to optimize the treatment process.

The Role of Real-time Monitoring

The online MetalGuard analyzer provides real-time selenium concentration data, enabling GSWC operators to promptly adjust the ion exchange treatment processes. The integration of real-time monitoring has been transformative, offering valuable insights that have refined GSWC's operational strategies, including:

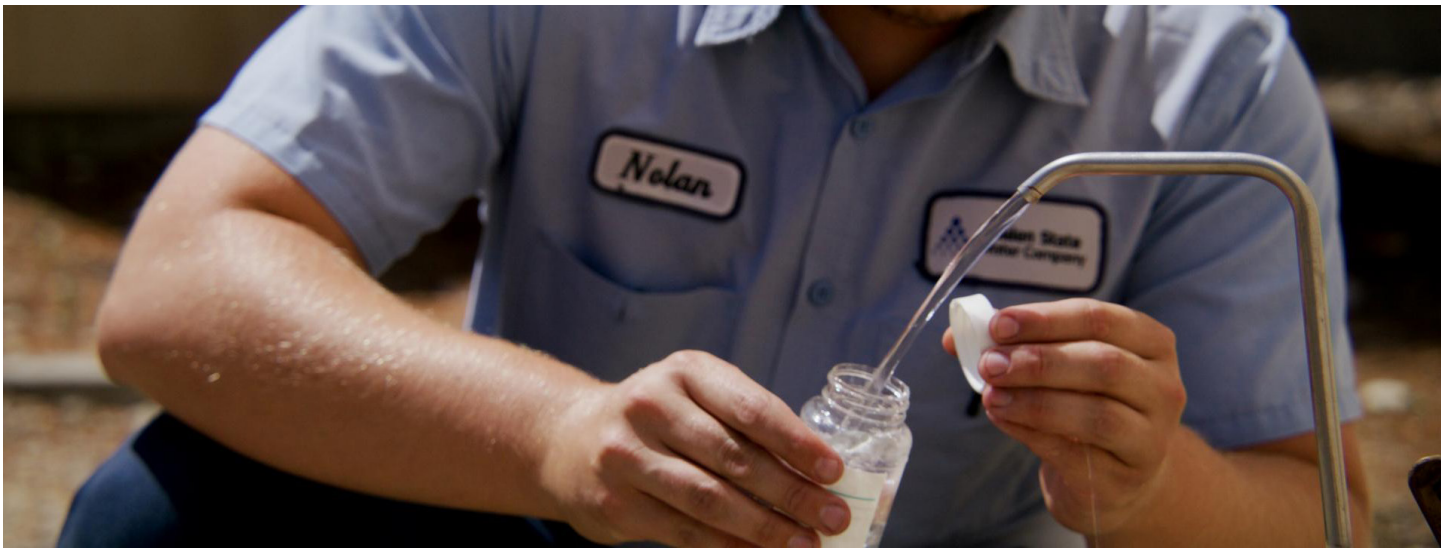
Informed Decisions and Timely Adjustments. Although grab samples are still required for compliance purposes, GSWC no longer has to wait for laboratory results before making critical plant adjustments. By mitigating delays associated with lab analysis, the online analyzer enhances GSWC's ability to respond proactively, contributing to a more resilient water management system. Plant operators can immediately adjust treatment parameters in response to fluctuations in selenium levels from the reliable live selenium data, ensuring optimal performance. This real-time visibility allows GSWC to anticipate changes and optimize its treatment processes proactively rather than reacting to past data. Analyzing selenium levels in real time minimizes the risk of exceeding compliance thresholds and ensures consistent water quality.

Enhanced Performance and Operational Flexibility. Real-time data empowers GSWC to optimize its treatment methods. The company utilizes two primary treatment methods: one involves passing source water through ion exchange vessels, while the other facilitates blending treated and raw water prior to distribution. Continuous monitoring determines the most effective approach based on actual selenium levels, allowing for greater operational adaptability. This flexibility helps GSWC maintain compliance while delivering reliable water service to its customers.

Cost Efficiency. By leveraging real-time selenium data to efficiently manage the ion exchange treatment process, GSWC has reduced waste disposal costs. This not only enhances operational efficiency but also provides economic and environmental benefits, reinforcing the company's commitment to sustainable, cost-effective water management.

Broader Implications for Water Utilities. GSWC's commitment to ensuring safe drinking water through innovative selenium management strategies demonstrates the importance of real-time monitoring and adaptive treatment processes. By integrating an online selenium analyzer into its operations, GSWC has enhanced treatment plant performance, maintained compliance with MCLs, and reduced costs associated with waste disposal.

As other utilities across California and beyond confront similar challenges, GSWC's experience provides a roadmap for effectively managing heavy metal exceedances in areas with limited water resources while safeguarding public health. GSWC's investment in a selenium removal system and real-time monitoring illustrates a forward-thinking approach to water quality in an era of increasing water scarcity.



Photos courtesy of Golden State Water Company.

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