## INTELLIGENT WATER TREATMENT SYSTEMS

Historically, waste and drinking water treatment systems, from the simplest to the most sophisticated, have been unintelligent. They have had neither the capacity to determine whether they were under-treating or over-treating nor the ability to identify performance issues in a timely fashion.

Additionally manufacturers have provided little in the way of support to optimize system performance; following the sale daily operational control and performance become the responsibility of the asset owner. The asset owner is left to manage and deal with system failures caused by a wide range of factors including sudden and unpredictable changes in influent quality, unanticipated hardware component failures, operator errors and seasonal and diurnal variations in temperature.

System failures can be expensive to correct and they inherently put consumers' health and the environment at risk. They also lead to client dissatisfaction since the asset owner has to shoulder the burden of blame, the financial penalties and reputational damage arising from such incidents and the treatment system vendor is insulated from blame.



The advent of intelligent water treatments is poised to shift this paradigm. Intelligent water treatment systems incorporate real-time sensing to ensure that their performance is optimized to avoid under- or over-treatment and that any deterioration in system performance is signaled to permit timely remedial intervention.

Treatment system vendors will see this technological leap to intelligent water treatment systems as exciting or threatening. This technology will help vendors guarantee treated water quality or even offer clients a meter based pricing arrangement (cents/gallon of treated water) by minimizing the risks arising from a lack of visibility of and control over their system's performance.

Aqua Metrology Systems has deployed the first intelligent water treatment system in the United States with their recently launch of the SafeGuard H2O<sup>™</sup> system that integrates real-time sensing with an innovative treatment system for removing carcinogenic Hexavalent Chrome from drinking water. The company plans to offer its clients the ability to pay for this system based on the volumes of water it treats while also guaranteeing that their system will always deliver water meeting regulatory standards.

Intelligent water treatment systems offer cash-strapped municipalities an attractive alternative to substantial capital investments and a peace of mind as they will no longer have the burden of manually monitoring and maintaining increasingly sophisticated treatment systems for which they struggle to recruit and retain the skilled labor required for their supervision and maintenance.

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