

# Building a Sustainable Future Through Radical Innovation



Rick Bacon, CEO, AMS

It's been an extraordinarily challenging year for the global water industry that has faced increased pressure to reduce its greenhouse gas (GHG) emissions, while treating an ever-wider range of contaminants present in water resources with ever-declining quality and growing scarcity to serve increasing populations. This has provided a major stimulus to innovation in technologies to address these challenges in ways that are more cost-effective and environmentally sustainable than traditional technologies.

After the disruption and challenges of COVID-19, [AMS](#) has emerged stronger than ever thanks to the continued support of our investors and the hard work and dedication of our team members and partners. We continued to deliver an exceptionally high standard of service to our customers while maintaining our investment in developing and demonstrating our transformative innovations in water treatment and analytics. The result of our work is that we now have an unprecedented platform for disruptive growth in the U.S. and globally.

We have developed a highly competitive portfolio of advanced water treatment technologies to analyze, predict, and treat contaminants that threaten public and environmental health. Our innovative solutions are paired with a unique approach to a client service that delivers 24/7/365 service-support and oversight for every analyzer or treatment system we provide, anywhere in the world. Our innovative solutions are poised to reshape operational efficiency for enterprises of all sizes, and our commitment as a change agent for sustainability remains as strong as ever.

Coming on the heels of this progress, we are entering the most exciting period in the company's 13-year history. To reflect the evolution and growth of Aqua Metrology Systems, we are changing our trading name to AMS. This identity is already familiar to our many business partners and marks our progression from a leader in online water quality analysis to now being able to offer fully integrated, rapid-to-deploy, intelligent water treatment systems.



As we evolve from a start-up into a more mature business, we also endeavour to maintain the spirit of enterprise, innovation, and multi-disciplinary collaboration that has been paramount to AMS' success and makes being part of this team such a joyful and rewarding experience. We aim to provide a safe workplace of forward-thinking innovation and ingenuity. We recognize the benefits of inclusion and diversity in its many aspects, and we are committed to providing for that across the entire company.

## 2023 Milestones

During 2023 we consolidated our technology platform and aligned for our future growth by bringing to market several cutting-edge innovations. Here are the pivotal aspects that shaped our **AMS Analytics** and **AMS Environment** divisions and overall business.

As a mark of our impact, AMS was chosen as the North & Northwest Breakthrough Winner of [The Spectator Economic Innovator of the Year Award](#) in partnership with Investec. This award recognizes AMS and our ability to provide industrial and municipal facilities with proven solutions that enable them to operate their water treatment operations more efficiently, meet ever tighter regulatory controls, and reduce their GHG emissions.

**AMS Analytics** has built a technology and market leadership position in online, high frequency monitoring of water treatment technologies and their efficacy addressing organic, inorganic and trace metal contaminants of concern. AMS has been selected as one of the three companies appointed as Sacyr's global partner for online water quality monitoring following our participation in [Sacyr iChallenges](#) for its open innovation program that garnered 53 applications.

In 2023 our analytical solutions continued to deliver value to every customer. Our analyzers provided real-time data accuracy of ( $\pm 10\%$ ), boasting uptimes greater than 98.5%. The data quality, availability, and accuracy are the result of incorporating three core technologies (automatic sample conditioning modules, continuous self-condition monitoring and reporting, and automatic self-calibration and validation) into every monitoring system. Using advanced analytics techniques, the AMS team identified and categorized numerous issues, providing actionable insights to our customers' operations and maintenance teams.

The data generated by our online analyzers has exposed the limitations of traditional water treatment technologies to address the needs of today's global water industry. This informed our decision five years ago to make a significant investment in **AMS Environment's** innovative approach to water treatment (SafeGuard™ H2O). [SafeGuard H2O](#) is a patented technology that generates a stannous or ferrous based water treatment reagent onsite and on-demand through an electrolytic process. The technology reduces reliance on hazardous bulk chemicals and provides facilities with a sustainable alternative that offers numerous advantages for water treatment systems seeking to reduce GHG emissions while removing contaminants from their water and wastewater streams and increase water reuse. This modular, containerized system is rapid to deploy, can be powered by renewable energy sources, and produces no toxic waste streams compared to many legacy technologies such as reverse osmosis and ion exchange.

In 2023, this technology was designated a Best Available Technology by the State of California for removing hexavalent chromium (Cr6) that contaminates the drinking water supplies of millions of people across the State. In addition, SafeGuard H2O was awarded NSF/ANSI 61 Standard certification and received the WQA Gold Seal. The technology was widely and successfully demonstrated in drinking water applications to remove arsenic, Cr6, and hydrogen sulfide; and in wastewater applications to remove phosphate. Preliminary work on manganese removal in drinking water applications began, as did bench-scale testing on SafeGuard H2O's ability to support beneficial resource recovery of multiple metals from groundwater and wastewater sources.

Through our partnership with [BioBox España](#) we are also uniquely positioned to bring a cost-effective and reliable containerized biotreatment system for nitrate removal from contaminated water supplies to the U.S. market. By integrating this with an advanced online Instran® nitrate analyzer from our Spanish partner, [Instrumentación Analítica](#), we offer our clients a fully integrated treatment solution.



We significantly expanded our manufacturing capacity in California, opened a software development center and European sales office in Barcelona, Spain, and recruited experienced business development, applications research, field service engineers and procurement specialists to support the accelerated expansion of AMS in 2024 and beyond.

## 2024 Outlook

Through our unique platform of advanced water treatment solutions, AMS is positioned for accelerated growth in 2024. Our solutions are poised to help facilities to achieve water treatment process optimization and a reduction in the use of chemicals and energy. One of the pillars of our success as a technology start-up has been the long-standing and trust-based partnerships we've built with our clients. We remain committed to providing high levels of customer service and building value for our clients and partners.

### AMS Analytics

Demand for online, real-time, high frequency water quality data and analytics is expected to continue to grow in 2024 as the market moves from early adopters to majority adoption. Through a unique servitization business model that delivers maximum data availability to minimize mean-time-to-repair and maximize mean-time-to-failure, **AMS Analytics** is committed to helping water treatment facilities optimize equipment use, reduce operational costs, and realize GHG reductions.

In the U.S., AMS' online analyzers are strongly positioned to support new regulations aimed at reducing consumers' exposure to lead and copper corrosion. In Asia, successful evaluations by leading utilities and the specification of our online analyzers into major water treatment projects there, signal that AMS has an attractive future in these fast-developing markets.

### AMS Environment

We anticipate that the extraordinary diversity of water contaminants that the SafeGuard H2O technology has been demonstrated to effectively treat will establish it as one of the most disruptive technologies to have emerged in recent years. This technology has multiple applications that include contaminant removal from industrial and municipal wastewater, corrosion control in industrial and commercial heating and cooling systems and beneficial resource recovery from industrial and municipal wastewater. The system's high level of automation makes it especially suited to deployment based on a fee-based water-as-a service that aligns with the interests of both industrial and municipal clients. This will position AMS as a pioneer in the adoption of servitization by the global water industry and support long-term revenue streams.

In the year ahead, **AMS Environment** will undertake full-scale deployments of our SafeGuard H2O advanced water treatment system in applications where it has already been successfully proven. We will also continue to explore new applications for the technology, including organic removal in food and beverage, ultrapure water treatment for semiconductors, stormwater runoff in oil refineries, waste streams from metal extrusion plants, and removal of microplastics from the effluent of plastic plants. Beneficial resource recovery will be a major focus of our technical and commercial efforts in 2024.

The importance of water as a fundamental part of our lives cannot be overstated. As we enter 2024, we commit to continue to accelerate sustainability in the global water sector through transformative ideas, innovations, and a unique approach to customer service.

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## AMS

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