Sentec Consultation

Sentec supports Xylem's innovation and new product development activities, while also providing technology evaluation, product development and technical problem-solving services to customers. Xylem's portfolio provides proven solutions for many produced water challenges. When off-the-shelf options are not enough, Sentec works directly with customers to evaluate technologies, develop new capabilities and bring innovation into practical use.

The Sentec teams in Cambridge, UK and Tewksbury, MA combine expertise in sensing, instrumentation, electronics, data analytics, water treatment and process development. We develop new technologies, apply proven approaches from other industries and help customers tackle emerging challenges. From improving understanding of process performance and asset health to enabling new treatment, monitoring and operational capabilities, Sentec helps customers reduce uncertainty and turn innovative ideas into practical solutions that can be deployed with confidence.

Ultraviolet (UV) disinfection systems

Produced water treatment involves high volumes of chemically complex, pathogen-laden wastewater. This wastewater must be disinfected reliably without introducing additional chemistry into an already difficult water matrix. Our WEDECO UV systems provide a proven, non-chemical disinfection solution that fits the demanding realities of field operations. Handling flow rates from 0.5 to over 4,000 m³/h, our Duron® open channel and Spektron closed-vessel systems neutralize a broad spectrum of bacteria, parasites, and viruses, ensuring treated produced water meets discharge or reuse requirements regardless of how influent quality fluctuates across production cycles.

The compact footprint makes installation practical in space-constrained wellsite and midstream environments. With lamp service intervals of up to 18 months, automated OptiWipe sleeve cleaning, and Xylem's Avensor platform providing 24/7 remote monitoring and data-driven alerts over a secure private cellular network, we help you maintain consistent disinfection performance with minimal operator involvement.

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Let's Solve Water

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Integrated Technologies for Produced Water Management

Innovation for the future of water treatment

With successful projects across energy and industrial water applications, Xylem brings the experience, treatment expertise, and integrated solutions needed to support complex produced water reuse projects. From water movement and treatment to monitoring, commissioning, and field support, Xylem helps customers turn challenging water streams into practical reuse opportunities.

Xylem's team of incubators and innovators are investing in next-generation technologies while our in-house laboratories are testing the waters and pushing technology to the limits of what's possible now.

Crystallization – Vacom One-Step

Xylem's Vacom One-step ZLD system uses patented Mechanical Vapor Recompression (MVR) technology to eliminate or minimize liquid waste discharge across heavy industrial applications. Operating as both a concentrator and crystallizer, it reduces wastewater to disposable salts and solids.

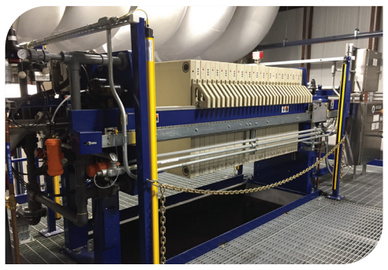
Deionized Water

We deliver reliable deionized water solutions — as a routine scheduled service, a temporary response, or a permanent system — designed to keep your equipment running at peak efficiency and free from scaling, fouling, and costly unplanned downtime. Backed by one of the largest mobile DI water fleets in the industry, we guarantee both the quality and quantity of water your operations require, so you never run short, even in water-scarce regions.

For more remote locations, we work with you to determine whether a temporary deployment or a permanent system best fits your needs — and for facilities with existing deionization systems, we also offer off-site resin regeneration with fast turnaround to keep you running without interruption.

Dissolved Air Flotation

Dissolved Air Flotation (DAF) is a proven physical/chemical water treatment technology we use to remove suspended solids, and biochemical oxygen demand (BOD) from industrial wastewater streams. The solution supports treatment goals ranging from contaminant removal to product recovery. DAF systems deliver a smaller footprint, faster implementation, higher sludge solids content, and more reliable effluent quality. Our skid-mounted DAF systems are built for quick deployment and gives you a safe, reliable, low-maintenance solution that performs flawlessly in a produced water application.



Filter Press

In produced water applications across oil and gas operations, filter presses — and specifically our J-Press® Sidebar Filter Press — deliver industry-leading solid-liquid separation that converts high-volume, contaminant-laden wastewater into reusable process water while producing exceptionally dry filter cake for efficient disposal. The J-Press® is engineered for the demanding, continuous-duty environment of oil and gas production, offering fully automated operation with minimal operator intervention. These capabilities improve water recovery and throughput and drive down disposal volumes, transportation costs, and landfill expenses.

Lagoon Liners and Covers

In produced water operations, where lagoons and impoundments often hold complex, chemically aggressive wastewater streams laden with hydrocarbons, heavy metals, and volatile compounds, our containment liners and lagoon covers work together to protect your site, your people, and the surrounding environment. Our engineered containment liners are fabricated from durable, chemical-resistant materials prevent produced water from migrating into groundwater or surrounding soil. Built from tough, UV- and chemical-resistant materials, the covers feature integrated drainage systems and safe walk-on surfaces, so your team can access, sample, and maintain the impoundment without interrupting operations.

Moving Bed Biofilm Reactors (MBBR)

In oil and gas produced water treatment, where high concentrations of soluble organics, BOD, COD, and nitrogen-based contaminants must be reduced before water can be reused or discharged, our Mobile Moving Bed Biofilm Reactor (MBBR) system delivers a compact, high-rate biological treatment solution that can be rapidly deployed directly to your operations.

Delivered pre-assembled on a rugged skid with no permanent foundation required, the MBBR integrates seamlessly into a broader produced water treatment train — typically paired with our RT-Series Dissolved Air Flotation (DAF) system for upstream solids removal, followed by filtration and disinfection.

Pumps & piping

We provide rapid response pump and piping deployment capabilities. That means we can mobilize the right equipment to your produced water treatment site quickly, bridging the gap between a disruption and a permanent solution while keeping your operations moving. The ability to respond rapidly protects you from costly downtime while giving you the operational flexibility to scale treatment capacity on demand.

Remote monitoring – Xylem Vue

In a produced water treatment train where multiple technologies must work in concert across remote or distributed oilfield sites, Xylem Vue brings the digital intelligence needed to manage that complexity from a single, unified platform. By connecting your treatment assets and aggregating real-time operational data across the entire system, Xylem Vue gives your team visibility into performance, water quality, energy consumption, and equipment health at every stage of the treatment process — enabling faster, more informed decisions without requiring personnel to be physically present at the site.

For oil and gas operators managing multiple wellsites or treatment locations simultaneously, the ability to monitor and benchmark performance across your entire water management portfolio — and act on that data in real time — means we're not just providing equipment, we're working alongside you with the insights needed to continuously improve efficiency.

Reverse Osmosis

Reverse osmosis (RO) membrane technology represents one of the most powerful tools available in a produced water treatment train. It is capable of achieving the high-purity water quality needed for reuse by removing dissolved salts, TDS, heavy metals, residual hydrocarbons, and trace contaminants that upstream biological and physical treatment processes alone cannot fully address. Reuse applications include hydraulic fracturing, steam generation, agriculture, or discharge. Ultrafiltration (UF) membranes serve as a critical pretreatment step ahead of RO, removing suspended solids, bacteria, and colloidal material that would otherwise foul or degrade the RO membranes. This protects your capital investment and maintains consistent throughput over the long term. Together, UF and RO deliver a robust, scalable solution that maximizes water recovery from your produced water streams, reduces the volume of concentrate requiring disposal, and gives you a reliable, high-quality water supply that decreases your dependence on freshwater sources.