

# Xylem Partners with Swiss Fresh Water on Innovative Reverse Osmosis Water Treatment Solution

## Customer Challenge

While universal access to safe drinking water is a fundamental need and basic human right, it is estimated that 2.2 billion people globally lack access to safely managed water resources. While those in developing countries are most affected, with up to 80% of illnesses directly linked to inadequate water and sanitation, escalating climate challenges are impacting supply around the world. Data from the United Nations suggests that by 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity, and two-thirds of the world's population could be living under water stressed conditions.

Water scarcity impacts communities in different ways, depending on variable socio-economic factors. In urban areas, rapid development is putting increased stress on aging water infrastructure, with the rise in climate-related extreme weather events further impacting quality and supply. Rural and developing communities face similar challenges, though people often have to travel long distances just to access safe water sources. Globally, it is estimated that women and girls spend 200 million hours carrying water every day, with the average woman in rural Africa having to walk up to 4 miles each day to haul 18 liters (4.5 gallons) of water.

With a mission to provide the highest quality drinking water at an affordable cost to the people of Senegal and West Africa, while fostering local entrepreneurship, Swiss Fresh Water has been engineering innovative water treatment solutions to address water accessibility. Since 2012, they've designed and upgraded four generations of the BW Delta - a portable plug and play water filtration system that is capable of producing up to 4,000 liters (1,057 gallons) of purified drinking water from contaminated sources per day. Motivated by the high cost



Swiss Fresh Water's BW Delta Treatment system is capable of delivering up to 4,000 liters (1,057 gallons) of purified drinking water per day.

of bottled water and the environmental drawbacks of single-use plastics, Swiss Fresh Water partnered with local entrepreneurs to establish water kiosk franchises which would also serve as community centers, employment hubs, and symbols of sustainable development.

## Customer Solution

Swiss Fresh Water's BW Delta filtration solution was designed with simplicity and flexibility in mind. The system works by treating raw water from wells, rivers, lakes,

boreholes and public networks across four filtration stages and self-cleaning cycles. The first involves running the water through a pre-filter stage to remove dust, sludge, organic particles and parasites. The water is then treated during an 'ultra filtration' stage that removes bacteria and viruses, while improving the water's overall turbidity. From there, the water is sent through a charcoal filter to remove chlorine and odors, before it undergoes reverse osmosis to remove salt, heavy metals and any remaining chemical substances like hormones or drugs. Coupled with the appropriate pre and post treatments, this process delivers high quality purified drinking water that meets World Health Organization (WHO) certification standards.

When designing the system, Swiss Fresh Water required a robust pumping solution that could adequately support each of the filtration stages and self-cleaning cycles. To find the right pump for the job, they called on leading global water technology company, Xylem. For more than 80 years, Xylem's Jabsco brand has been a global leader in industrial, marine and sanitary markets, offering pumps for use in applications including life sciences, agriculture, food and beverage and construction. To meet the needs of the BW Delta system, Swiss Fresh Water utilized Jabsco's renowned Par-Max HD4 freshwater delivery pump - a durable, pressure-controlled diaphragm pump that supports remote drinking water supply systems.

As a highly efficient and flexible solution, Jabsco Par-Max Series pumps are capable of accommodating flows between 3.8 liters per minute (1 gallon) to 22.7 liters per minute (6 gallons), and can operate at pressures of up to 60psi (4.1 bar). Due to its co-molded diaphragm technology and heavy-duty motor, complete with cast aluminum lower housing, the pump is renowned for its durability and ability to run for long periods of time at high pressures.

The pump's dampening mounting feet also reduces vibration during operation to support an efficient and quiet application. The pump also comes equipped with an integrated, seal-pressured switch for on-demand pumping, meaning the pump is only in use when needed. As a self-priming solution, the Jabsco Par-Max HD4 pump is also able to run dry without damage. Its quick-connect ports also support easy installation and maintenance for even greater efficiency and flexibility.



The Jabsco Par-Max HD4 diaphragm pump has been designed to run for long periods of time at high pressures, making it the perfect solution to support Swiss Fresh Water's plug and play water treatment system.

### Customer Result

To date, Swiss Fresh Water's BW Delta system has delivered more than 200 million liters (approx. 55 million gallons) of clean drinking water to communities in Senegal and West Africa. With the help of Jabsco's Par-Max HD4 technology, the system treats the correct volume of water while ensuring WHO drinking water quality standards are met, every time. Thanks to the system's overall durability, all types of raw water, regardless of variations in quality, can be adequately treated to produce fresh drinking water at an affordable cost to communities.

*"Our innovative BW Delta system, delivered through our kiosk franchise model, enables us to produce superior quality drinking water and sell it at a price that's up to 10 times cheaper than the cheapest available bottled water. The system is also equipped with remote monitoring capabilities, meaning overall maintenance is far more efficient compared to similar systems. The system is extremely reliable, and made of the most robust materials, making it suitable for even the toughest conditions,"* said Lionel Groperrin, Head of R&D and Supply Chain Management at Swiss Fresh Water.

*"We're proud to have partnered with Xylem on this innovative solution, advancing our shared goal of improving water access and equity for all."*

"At Xylem, we pride ourselves on delivering the highest quality products for use in the most complex applications. Originally designed for the marine market, our Jabsco Par-Max HD4 pump has a ruggedness to it that's unmatched - its durability and flexibility makes it the perfect fit for the BW Delta treatment system," said Pierpaolo Nocchia, Area Sales Manager, SFC Industry Europe at Xylem. *"With more than 80 years of experience serving the industrial, marine and sanitary markets, we know our customers come to expect reliability from our products. We're proud to support Swiss Fresh Water in the development of an innovative solution that improves water access for communities around the world."*