xylem
Let's Solve Water

Case Study

Xylem's Chihuahua Facility Embraces Reuse Solutions to Advance Water Stewardship

Plant in Mexico leverages Flojet technology to recirculate water during production processes, supporting Xylem's ambitious sustainability goals

Overview

Xylem has a global operational footprint that spans 21 countries and includes 54 manufacturing facilities. Among those is Xylem's facility in Chihuahua, Mexico – a 104,000 square foot factory that manufactures pumps and related equipment from Xylem's broad portfolio of solutions, including its Jabsco, Flojet and Rule product lines. As one of Xylem's major facilities, it produces approximately 16,670 units per day, supplying 1,200 customers across North America, Europe, Asia-Pacific and Latin America.

The facility is also located in a country with low water availability, with scarce rainfall contributing to the ongoing drought in Chihuahua City and surrounding areas. As a result, efficient and sustainable water management practices are critical – not just to ensure a consistent water supply for production processes, but also to protect freshwater resources for local communities and the surrounding environment.

In support of more sustainable water practices, Xylem launched a number of global operational targets under its 2025 Signature Goals. Serving as vital benchmarks across key categories including water management, waste management, energy efficiency and emissions reduction, those targets include using 100% renewable energy and 100% recycled process water at all major facilities by 2025, and achieving zero process waste to landfill.

In 2023, Xylem made significant progress against all three operational goals, with seven out of 22 major facilities achieving "triple crown" status – including its facility in Chihuahua. For recycled process water specifically, the plant uses Xylem technology in its recirculating water system to ensure that the reused water meets the necessary quality requirements. The system is also powered by Xylem's renowned Flojet diaphragm pumps.

Xylem's Chihuahua facility uses an innovative recirculating water system to reuse process water, supporting the company's goal of achieving 100% recycled process water at all major facilities by 2025.

FLOJET
a xylem brand

Xylem Solution

The recirculating water systems are used at two points in the production site – one system is installed at the plant's assembly line, and the other is installed in the test lab where quality checks are carried out. In each application, Xylem's Flojet VersiJet Series industrial diaphragm pumps are used to move water through a looped system between two tanks – one 'holding' tank and one 'storage' tank.

The more critical of the two applications is the system located in Chihuahua's test lab. Product testing requires a lot of water, and without a reuse solution in place, the process could require the use of approximately 1,220 gallons of freshwater every day. The system works by draining the water used during product testing into the holding tank. As the water is drained into the tank, it flows through three different filters to remove contaminants like grease and organic compounds.

The water then flows through a UV light filter for additional treatment – a critical step when manufacturing hygienic pumps that need to meet stringent regulatory requirements. The holding tank is now full of clean treated water and is transported by a mobile cart to the storage tank located at each testing station. The clean water is then pumped into this storage tank, ready to be returned to the test lab to support another round of product tests.

Once the water has been reused at the test lab, the process starts again. The wastewater is drained back into the holding tank, where it undergoes another round of filtration and UV treatment before the clean water is transported back to the holding tank for further use. The system is so efficient, the wastewater or 'process' water from the test lab can run through up to ten reuse cycles before it needs to be disposed.

Capable of handling flow rates of up to six gallons per minute (GPM) and pressures of up to 70 pounds per square inch (PSI), Xylem's Flojet VersiJet Series is equipped to tackle a variety of industrial applications, including agricultural, construction, and disinfection and sanitization. The pumps were chosen for this specific application due to their pumping capacity, and their small footprint which allows for flexible installation to maximize space.

Xylem Result

Xylem's Chihuahua facility was one of the first to achieve 100% recycled process water validation, reaching the milestone in 2020 alongside Xylem's Nanjing facility in China. To date, the facility has reused more than 310,000 gallons of water from its production processes – the equivalent of flushing a domestic toilet 190,000 times. Xylem's Chihuahua facility achieved zero process waste to landfill in 2022, and reached the milestone of using 100% renewable energy in 2023.

Xylem's Flojet VersiJet Series industrial diaphragm pumps are used to move water through a looped system between two tanks. The pumps are capable of handling flow rates of up to six GPM and pressures of up to 70 PSI.

To date, 17 out of Xylem's 22 major facilities use 100% process water recycling, 19 use 100% renewable energy and 17 have achieved zero process waste to landfill. As 2025 approaches, Xylem is looking towards 2030 and has recently announced new water stewardship commitments. These include enabling customers to reduce global water demand by at least 2 billion cubic meters and reducing the company's own water intensity by 30%.

This builds on the company's existing work to advance water security for all, as detailed in its 2023 Sustainability Report. Since 2019, Xylem technology has enabled water managers to treat over 13 billion cubic meters of water for reuse, which is equivalent to the domestic water needs of 197 million people annually. The company's solutions have also enabled its customers to prevent more than 8 billion cubic meters of polluted water from flooding communities.

"Sustainability sits at the core of everything we do – from our own operations, to providing advanced services and solutions that enable our customers and communities to become more water secure," said Jorge Cuevas, Site Leader, Chihuahua, at Xylem. "Our facility has made significant progress against the company's sustainability goals, reaching all three operational milestones two years ahead of schedule. We're proud to be building a more resilient and sustainable company, and we look forward to scaling our impact as we move towards 2030."

xylem.com