



# Case Study

## Chihuahua, Mexico

DOROT S300 DI differential pressure valves generates savings of 15,000 USD.

## Background

Chihuahua, Mexico, is a city of about 900,000 inhabitants. As part of a pressure management project begun in 2018, 57 District Metered Areas were built in the city's Water Distribution Network (WDN). To prevent excessive pressures (>30 wmc) a maximum slope criteria was established (< 15-meter differential elevation within each DMA). To achieve this, some of the DMAs have subdistricts.

## Challenges Pressure differentials

At the entrance of each DMA, a pressure reducing valve (PRV) was installed, together with an autonomous electric/hydraulic controller with remote communication and an electromagnetic flowmeter. All of these components were arranged inside a chamber as a "Control Point". The pressure in the DMAs is managed through pressure-time or pressure-flow patterns within the controllers, with a demand-dependent logic. However, due to the high cost of the hydraulic controllers, it was not possible to use them to also control the subdistricts within the DMAs. Instead, each subdistrict was controlled by a traditional PRV, which has a known constraint: fixed downstream pressure. So, the demand-dependent pressure pattern achieved downstream of the entrance of the DMA was not mirrored in the subdistrict.

## Solution Replicating Pressure Management

A DOROT S300 DI Differential Pressure Valve (DPV) was proposed as a solution in the subdistricts, instead of the traditional fixed downstream pressure PRV. The DPV mirrors the pressure pattern achieved downstream of the main DMA entrance.

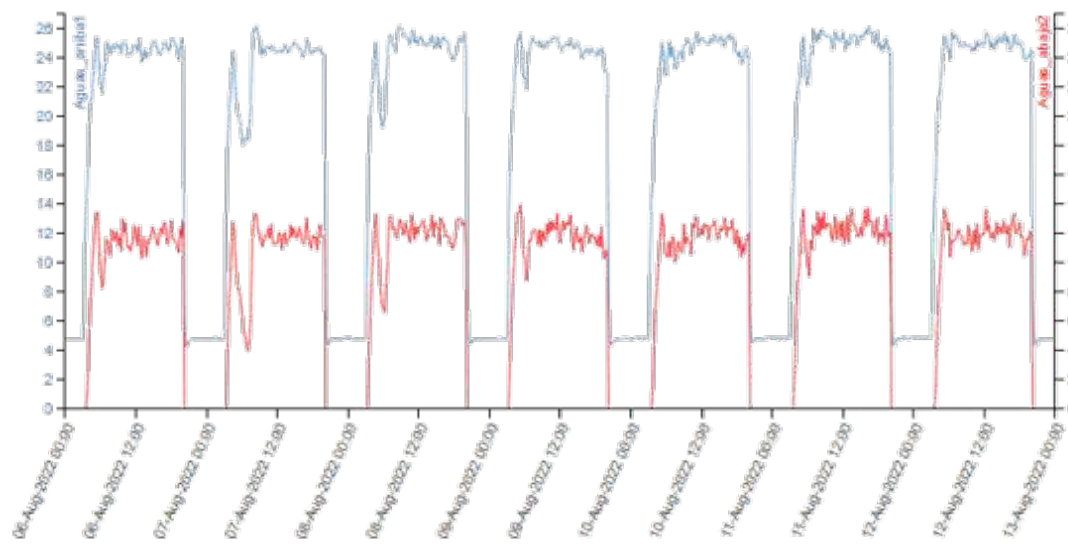


DPV calibration at Josefa DMA pressure layer

## Results Decreased Pressure. Increased Savings

By mirroring the demand-dependent pressure management behavior of the PRV at the entrance of the DMA, the DPV achieves a decrease in general pressure values inside the subdistrict, generating savings of 15,000 USD in water production – delivering ROI within year – along with 13% leakage flow recovery.

Upstream 1   Downstream 2



Pressure values as measured at the PRV inlet and outlet on display platform (units in MWC).  
Source: JMAS-Incotex Platform