



# Case Study

## Water Purification Plant & Aqueduct

A comprehensive solution to secure a reliable supply of drinking water for people in Santa Fe province, Argentina

**Background** 4,500 m<sup>3</sup> per hour originating in South America's second largest river

In the north of the province of Santa Fe, Argentina, the cities of Reconquista and Avellaneda, together with neighboring towns, have a population of more than 200,000. The Paraná River, almost 5,000 km in length and the second largest in South America after the Amazon, runs through the area. Having flown through parts of Brazil, Paraguay and Argentina, the Paraná empties into the estuary of the Río de la Plata.

The local water purification plant draws water from the Paraná, before pumping it to several locations, each with its storage tank and level control valve. After filtration and conditioning, the water is directed back into the local water supply system through a new network of aqueducts, to the local communities. Maximum production flow is 4,500 m<sup>3</sup> per hour, and the entire process is controlled and monitored centrally by a SCADA (Supervisory Control and Data Acquisition) system.



## Challenges Ensuring smooth operations

The new Reconquista Water Treatment Plant has the largest tank of all the locations in the aqueduct system. A concern arose that, when the Reconquista level control valve went in and out of service, this would have a significant impact on the rest of the aqueduct. A comprehensive valve solution was required to be installed throughout the water control part of this water treatment facility. Looking for a reliable product, with proven capabilities and engineering services, the Reconquista team turned to Valvtronic, Aquestia representative in the Argentine public water market.

## Solution A tailored, electronically-controlled system

Working together with Valvtronic, the Engineering Department of Aquestia planned the design and dimensions of the relevant valves, tailoring existing products to suit the needs of the water purification plant and the aqueducts network. The company then acquired the necessary stock, and carried out the initial installation and configuration.

Dorot's electronically-controlled level control valve was critical to the solution. By means of a central controller, the valve was programmed to modulate the flow according to the level of water in the cistern to prevent overflow, while maintaining the inlet pressure. In this way, the level of the Reconquista cistern was addressed, without affecting the pressure of the rest of the aqueduct or the supply to the rest of the towns. Ranging in size from 2" to 20", the valves sit on the outside of the tank for easy visibility.

### Models used:

- DOROT DAV-MH-X-KA air valve, designed to drain air at high flows at very low pressure, through filling-up of the pipeline.
- DOROT S300-X-EC (electronically controlled) / PS-EL (pressure sustaining) level control valves, with hydromechanical back-up by means of a sustaining pilot, and a level control with electric float.
- DOROT S300-X-QR relief valves, which open instantly when pressure in the pipeline exceeds the safe level, to relieve excessive pressure from the network. When the pressure returns to normal, the valve closes slowly, at an adjustable pace.

