

## MODULAR MBR PLANT TO TREAT THE WASTE WATERS GENERATED IN A SMALL WINERY LOCATED INSIDE AN URBAN AREA (CIUDAD REAL)



**Bodegas Rezuelo** is a small winery located in the province of Ciudad Real (Spain). The winery carries out all the steps needed for the production of bottled wine from reception of grapes to final bottling and distribution.

The wastewaters generated in this type of companies show an important seasonality with a high season between September and December when the reception of grapes takes place in which the wastewaters show high flow rates and high concentration of BOD along with a decompensated ratio between nutrients and BOD in relation to biological wastewater treatments.

The winery requires a technical solution that allows for a fast adaptation of the system to cope with the sudden rise in flow and organic load when the high season starts providing a high-quality effluent that allows its discharge into public waters. As the winery is by the urban area of the village opposite to houses it is required a process that needs demands a small footprint, that does not produce noise and bad odours. Thus, the company implemented a biological treatment following an MBR process that meets all the needs and requirements. The MBR was equipped with ultrafiltration membrane Cassettes that allow for future increases in flow just by adding new layers in the cassette.

The MBR implemented has a treatment capacity of 15 m<sup>3</sup>/day, that satisfies all the needs of the winery. The UF unit is equipped with a ultrafiltration membrane Cassette MBRable with 270 m<sup>2</sup> of membrane area installed that can be expanded up to a membrane surface area of 504 m<sup>2</sup>, just by adding new membrane modules. The cassette was installed in a prefabricated membrane tank of concrete. The UF unit follows an external immersed configuration that facilitates cleaning actions.



Year: 2017  
Sector: Winery  
Flow: 15 m<sup>3</sup>/d  
BOD5 influent: 7000 mg/l  
BOD5 effluent: <25 mg/l

