

# The company Cadagua awards the acquisition of a BM-EVO multipurpose respirometry system to Surcis

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The company [Cadagua](#) selected the company [Surcis, S.L.](#) for the supply of a BM-EVO Multipurpose Respirometry System to serve several municipal wastewater treatment plants.



**BM-EVO Respirometry System**

This operation is carried out by direct negotiation with Surcis and following the recent O&M contract of Cadagua by [Canal de Isabel II](#) (Madrid) to carry out the exploitation of 16 WWTPs corresponding to the Guadarrama River Basin ("Cuenca del Guadarrama")

## About Cadagua

Cadagua belongs to the [FERROVIAL Group](#), the largest private transport infrastructure company in the world and a leading service provider, present in 15 countries, with more than 70,000 employees. and an annual turnover of more than 7,500 million euros.

Ferrovial includes its water business line, in a sustainable way and respecting the environment, through two companies: the multinational [Cadagua](#) and the American [PLW Waterworks](#), with more than 460 references in the design and construction of water treatment plants that reach an aggregate capacity of almost 18,000,000 m<sup>3</sup>/d.

Cadagua has offices in Bilbao and Madrid, and has offices in Oman, Peru, Chile, Australia, Texas (USA)

With more than 140 treatment plants, Cadagua treats the discharges of more than 29 million inhabitants, and is specialized in the design, construction and operation and maintenance of water treatment and purification facilities.

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The company acts in all phases of the projects in which it participates: Design, Technology, Construction, Financing, Operation and Maintenance, whether from seawater and brackish water and urban and industrial wastewater. Likewise, it is a point of reference in environmental technology where it incorporates the most advanced processes, investing in research and development and taking care of environmental integration in its designs, saving energy consumption and reducing emissions.

With all this, Cadagua currently produces 6 million cubic meters of drinking water daily and treats more than 9 million cubic meters per day of wastewater.

Among the 16 treatment plants in the Guadarrama Basin, which the BM-EVO will serve, the WWTP of La Reguera stands out with 80,000 m<sup>3</sup>/d that serves the towns of Móstoles, Fuenlabrada and Alcorcón; WWTP Arroyo El Plantío that purifies the waters of Las Rozas and Majadahonda or Arroyo Valenoso WWTP that has membrane bioreactor technology obtaining high quality water for later reuse.



WWTP La Regera

#### About the BM-EVO

The [BM-EVO](#) is included within the Surcis BM Respirometry Systems family and is currently the most accepted equipment of the Surcis BM series.

The main attraction of the BM-EVO is that it is a compact respirometer, easy to operate and with a good Quality / Price ratio.

It uses the same software of the BM family, in which most of the Respirometry applications can be developed by means of three different working modes: OUR, cyclic OUR and R

The BM-EVO includes a unique analysis and software systems that allows to program respirometry tests at different oxygenation conditions, temperature, sample volume and sludge volume. In this way, the influence that a certain sample (wastewater, compound, discharge, ..) exerts on its biological oxidation can be analyzed in a specific way through a series of automatic parameters that generate the fundamental bases for a significant number of [Applications](#) aimed at biological treatment processes and thereby obtain the necessary data for its control in the possible framework of the best energy optimization, design and research.

#### Automatic parameters in the BM-EVO

Parameter	Description
<b>DO (mg/L)</b>	Dissolved Oxygen with which the test is being performed
<b>T (°C)</b>	Temperature
<b>OUR (mg O<sub>2</sub>/L.h)</b>	Oxygen Uptake Rate
<b>SOUR (mg O<sub>2</sub>/g VSS.h)</b>	Specific Oxygen Uptake Rate
<b>Rs (mg O<sub>2</sub>/L.h)</b>	Exogenous respiration rate
<b>Rsp (mg O<sub>2</sub>/g VSS.h)</b>	Specific exogenous respiration rate
<b>CO (mg /L)</b>	Consumed Oxygen from sample oxidation
<b>bCOD (mg/L)</b>	Biodegradable COD
<b>rbCOD (mg/L)</b>	Readily biodegradable COD
<b>U ( mg COD/L.h)</b>	COD uptake rate
<b>q (mg COD/mg VSS.d)</b>	Specific COD uptake rate

Among the most important applications we can mention the following:

- Take a quick pulse as an early early process performance testing tool.
- Oxygen requirement and energy optimization.
- COD fractionation and specific biodegradability to activated sludge.
- Toxicity related to activated sludge: global and specific to nitrification.
- Optimization of operational parameters within the framework of energy saving.
- Nitrification: Nitrification rate (AUR), Oxygen and minimum sludge age (SRT) for nitrification.
- Denitrification: Nitrate uptake rate (NUR), COD for denitrification.
- Influence of process conditions on biological activity and treatment capacity
- Monitoring of Bioaumatation.
- Stoichiometric and kinetic parameters.
- Respirometry for MBBR and granular biomass processes.
- Support for simulation programs such as GPS-X, BioWin, ...
- Other....

This BM-EVO is the second that Cadagua acquires from Surcis and, likewise, the second that Canal de Isabel II awards to service its treatment plants.

With this operation once again it is confirmed that the BM Respirometry of Surcis, in addition to its important implantation in Industries, Universities and Research Centers, with [REFERENCES](#) at national and international level, continues to consolidate itself as a fundamental tool in companies and leading groups in wastewater treatment, such as DAM, ACCIONA, SUEZ, FACSA, AIGÜES DE BARCELONA, INIMA and now CADAGUA.

Surcis, S.L