



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL

**TESTING
and METROLOGY**

UQTA

Water Quality
and Treatment Laboratory

HYDRAULICS AND ENVIRONMENT DEPARTMENT

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Scope

The Water Quality and Treatment Laboratory (UQTA) of LNEC-EM is integrated in the Hydraulics and Environment Department/Urban Water Unit of LNEC.

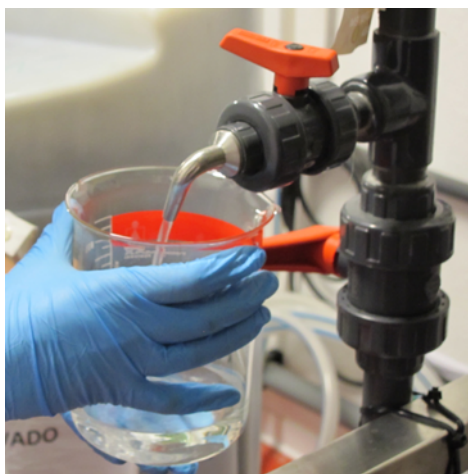


Since 2006, UQTA has been carrying out experimental activities to support R&D&I projects water quality, treatment and distribution of drinking water, urban wastewater and reclaimed water, aiming to increase effectiveness and efficiency of water services and to contribute to a smart and sustainable management of the urban water.



Field of expertise

UQTA performs characterization studies of water quality from water and wastewater treatment plants (WTP and WWTP), as well as in drinking water supply systems or reclaimed water supply systems. These comprise, apart from the laboratory analysis of conventional physicochemical parameters, the determination of other parameters that are likely to influence the safety of water, such as organic matter (total and dissolved organic carbon – TOC and DOC, hydrophobic/hydrophilic, molecular weight distribution, UV-Vis absorption and fluorescence emission spectra, disinfectant decay, as well as biofilm and disinfection by-product formation potential.



In addition, UQTA carries out tests in support to NES (Urban Water Unit) studies aiming at the optimisation of conventional treatments and at the development and implementation of advanced treatments for both drinking water and wastewater discharge and reuse. The testing of the treatment technologies is performed at laboratory and/or pilot scale and is mainly focused on physical separations and/or biodegradation. It comprises powdered activated charcoal adsorption or biofiltration on granular activated carbon, coagulation, as well as membrane and hybrid adsorption/membrane processes.



Highlights

One of the main goals of the tests performed by UQTA is to provide assistance to the development of strategies for the removal of contaminants resistant to the conventional treatment adopted in WTP and in WWTP: natural and anthropogenic organic matter, priority substances contaminants of emerging concern (endocrine disruptors, cyanotoxins), chemical oxidation by-products and resistant biological forms (viruses and protozoa oocysts). Another main goal is to assist in the management and safety of both drinking water and reclaimed water supply. UQTA provides support or carries out experimental or analytical works within the framework of NES' national and international co-financed research projects and contracted studies.

