

DEMOCRATIA CRATIA

Democratia-Aqua-Technica

DEMOCRACIA AQUA TECHNICA PROJECT : VISIT TO NOVI SAD, SERBIA

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INTRODUCTION

Democratia Aqua Technica project is a cooperation between SRH Hochschule Heidelberg and University of Novi Sad that focuses on the development of innovative solutions for sustainable water resource management to promote the reduction of water conflicts

Novi Sad Waterworks :

Novi Sad waterworks where the groundwater is treated before supplying it to a population of 250 439 inhabitant. The groundwater is in exploitation by 12 wells, with a flowrate between 100 l/s to 120 l/s. The water is then taken into five treatment stages.

Aeration process: In the first stage the water enters through the top of the unit, brought in contact with the air in order to remove dissolved gases, and oxidizes dissolved metals then collected in the bottom of the unit and transported to the next stage. An automatic monitoring of heavy metals is done in the inlet of this process using a control and an analytical unit due to the characteristic of the groundwater in Serbia that contains significant amount of heavy metals (Arsenic, Mercury, Lead, Cadmium...)

Filtration process: in this stage sand filters are used for the removal of suspended matters (manganese in particular)

Ozonation process: it's an advanced oxidation process that involve the production of very reactive oxygen species able to attack a wide range of organic compounds and all microorganisms

Granular activated carbon process: GAC filter helps remove certain chemicals, particularly organic chemicals that give objectionable odors or tastes to water

Chlorination process: the final stage is a disinfection stage using chlorine dioxide it's able to kill bacteria and microorganisms



laboratory of Novi Sad faculty of Science & department of environmental engineering

The laboratory in the department of chemistry in University of Novi Sad is considered high sophisticated since it got its accreditation to perform analysis for commercial purposes. The most common devices used in the labs are High Performance Liquid Chromatography (HPLC), Flame Ionization Detector (FID) and Mass Spectroscopy (MS)....

The water lab present in the department of environmental engineering is also accredited. Analysis for water and wastewater quality can be performed at high level of accuracy. Many devices are used to get those detailed parameters such as spectrophotometer, HPLC... the students carried out an experiment to determine the concentration of Ammonium in two samples, one from landfill leachates and one from domestic wastewater and to test out some lab devices.

Danube-Tisa-Danube canal

The Danube-Tisa-Danube canal is used for transportation and navigation purposes. The area visited is where the level of water is calibrated for the ships to cross to the Danube River easily. A sampling test has been carried out using a grab sampler device that take out the sediments from the bottom of the canal. The major problem in the canals is that in some period of the year a significant amount of sediment settle down in the bottom and decrease the depth of the water making it hard for ships and boats to navigate freely

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