



DRINKING WATER TREATMENT CASE



A combination of Silicon Carbide Ceramic Ultrafiltration (SiC UF) membranes and Reverse Osmosis (RO) secures safe and affordable drinking water to 65,000 people in Serbia

The Case

In the city of Zrenjanin in Serbia they suffered from heavily contaminated ground, making the tap water unfit for drinking water purposes. Having evaluated the benefits from a combination of UF and RO, the city decided to establish a Public Private Partnership (PPP) for the city water supply to ensure safe and affordable drinking water for its citizens.



The Solution

The goal was to provide a full treatment train from intake to distribution, including a chemical handling and control system. LiqTech worked closely with our local partner in order to have local representation throughout the project phase and to provide the end user with a full investment and operational budget.

Beyond providing 250 elements OD146 SiC UF membranes for pretreatment, LiqTech supplied the complete precipitation stage and RO systems. The complete installation included chemical dosing, recirculation pumps, UF, RO, ion exchange, remineralization, and CIP membrane chemical cleaning.

LiqTech System Design

Materials and Components

The UF membranes are made from silicon carbide material and prove to be extremely robust with high permeability and stable flux. Further the membranes are chemical inert and very temperature resistant.

Membrane housings are made of polypropylene (PP) and the entire piping is made of PP and welded by our certified craftsmen.

The RO system is fabricated as 4 similar sized skids with innovative square housings providing easy mounting and space saving opportunities. The RO system is powered with high-efficient inline Grundfos BM pumps.

All components and pipes are mounted on galvanized frames and supports. The systems are controlled with Allan Bradley PLC and full HMI interface.

Modular Systems

The UF filtration systems are made in a semi dead-end configuration utilizing our OD-146mm CoMem UF SiC membranes in racks of 5 housings and 5 rows providing 25 membranes equal to 100 m³/h – 441GPM, pr module. The RO system uses polymeric membranes with each skid capable of 145 m³/h – 640GPM.

Cleaning method

The system uses Grundfos DDA and DMX dosing pumps for membrane cleaning. Further LiqTech supplied chemical blending and backwash tanks – all fabricated in-house with PE material.

LiqTech Installation



- Chemical precipitation stage including dosing pumps, stirrers and pH regulation
- 10 SiC UF filtration systems / 250 OD146mm UF SiC membranes / 2,000 m² - 21,392 ft² surface area
- 4 RO systems / 600 membranes / 22,200 m² - 236,806 ft²
- Capacity 1,080 m³/h - 4,400 GPM

We are here to help you



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