



Reliable Large Scale Treatment of River Water for Industrial Use

Ultrafiltration (UF) is commonly used as a pre-treatment to Reverse Osmosis (RO) to ensure reliable, consistent and efficient operation. As Shandong Hongxin Chemicals Co., Ltd in China recently discovered, this consistency and reliability, along with quick setup and installation times, helped them realize convenience and cost savings. Additionally, given the fluctuations in contamination levels of the water source, the selected UF modules continuously exceeded requirements. In 2014, HWTT designed a 13,000 m³/day ultrafiltration system that was equipped with 120 3M™ Liqui-Flux™ W10 Ultrafiltration Modules to provide reliable pre-treatment to RO. The water source for this project was the middle and lower reach of the Yellow River. The system design consisted of a settling pool to lower Total Suspended Solids (TSS) such as sludge and sand from the river. A heat exchanger is used maintain a certain minimum water temperature in colder months.

Due to the presence of algae and other organic contaminants, the feed water to the UF is continuously conditioned with 2 ppm NaClO, which improved the filtration process. Finally, 100 µm disc filters are used to protect the UF capillary membrane from obstruction by large particles.

The reliable and robust design of the Liqui-Flux W10 ultrafiltration modules allowed HWTT to install, preserve and ship the entire skid after testing was completed. This allowed the customer to shorten installation time by several weeks and save on construction and testing costs. This UF system has been running since March 2014 without incident. The produced water continues to exceed the customer’s technical requirements, low maintenance expectations and service level.

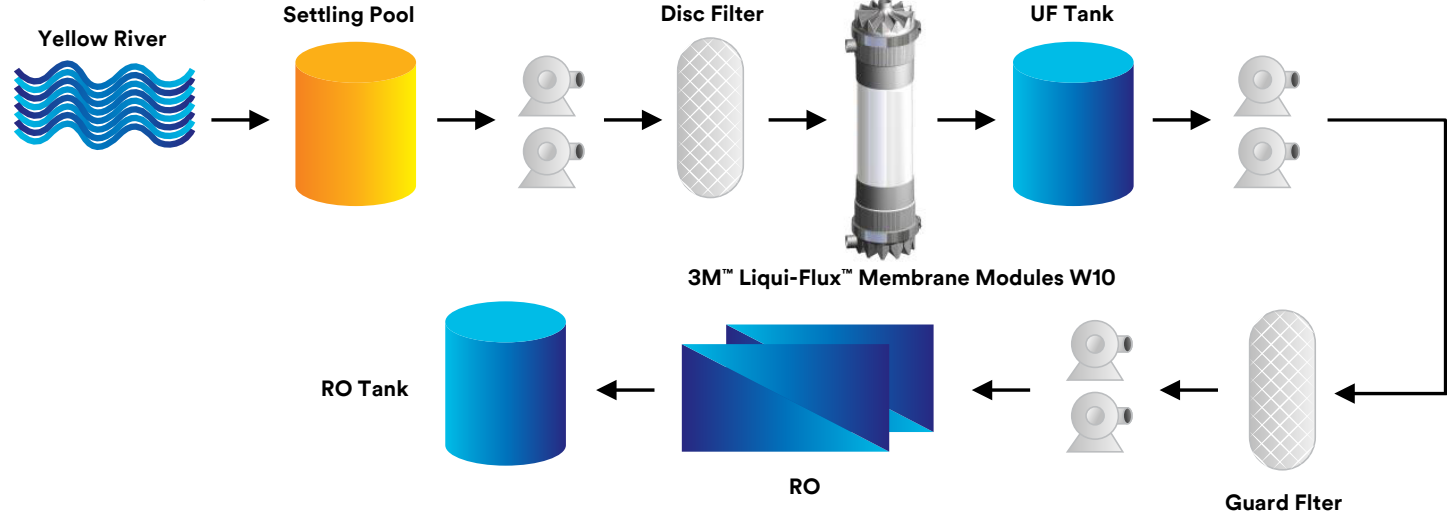
Technical Measurements	Project Results
SDI ≤3	Exceed
Turbidity <0.2 NTU	Exceed
Recovery >90%	Exceed

System Summary	
Ultrafiltration system summary	120 pcs 3M™ Liqui-Flux™ W10 in 2 racks
Location	Shanghai, China
OEM/System manufacturer	HWTT
End user	Shangdong Hongxin Chemical Plant
Market/Industry	Chemical
Plant capacity	13,000m ³ /d
Application	RO Pre-treatment
Feed water source	River Water
Pre-treatment	Biological and chemical treatments including gravel filter
Commisioning	May, 2014



Shandong Hongxin UF System
(2x60 pcs 3M™ Liqui-Flux™ Membrane Module W10)

Process Diagram



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