

MBR Container Sewage Plant SKM – SHARJAH, UAE

S.K.M Air Conditioning L.L.C

S.K.M Air Conditioning LLC is one of the leading manufacturers of HVAC (Heating, Ventilation and Air Conditioning) equipment in the Gulf area established in 1974. Located at Industrial Area Sharjah, SKM operates out of a modern state of the art 43,000 m² factory.

About Project

Wastewater produced from S.K.M factory and staff accommodations is been collected for disposal by several tankers daily at a number of different collecting manholes, which interrupted road traffic by tankers parking and caused bad odour in nearby vicinity.

Scope and Realization

MENA-Water suggested to set up a collecting system with central holding tank and MBR treatment plant. This centralized plant is designed to receive all domestic waste water throughout the factory area by a pumping system. With the use of 2 package plants model MW-MR150 with very small footprint, the plant could be placed at an access road and no excavation work was needed in that densely build up area.

The scope of works included lifting pumps, screening equipment, grit removal systems, and an aeration tank for effective wastewater treatment. Additionally, two containerized MBR packages with all the necessary measuring instrumentation were installed. Storage tanks were provided for the treated water and sludge, and a dry bag unit was incorporated for sludge dewatering.

To address odor concerns, an odor control unit was installed, ensuring nearby accommodations were not affected by unpleasant smells. Moreover, the treated water underwent further cleaning through a Reverse Osmosis (RO) system, making it suitable for reuse in chillers and other processes.

The entire plant was operated by a Programmable Logic Controller (PLC) and monitored through an online monitoring system, enabling continuous observation and control of the treatment processes 24/7. The plant successfully commenced operation in February 2017.



MBR Package Plant

Equipment	Application
Screen	Screening removal
Grit & Grease Tank	Sand & FOG removal
Mixers and Aerators	Biological treatment
MBR Package Plants	Ultra-Filtration
Reverse Osmosis Unit	Pure water for re-use
Blowers	Aeration and scouring
Pumps	Flow control & service water
Bag System	Sludge dewatering
Instrumentation	Flow, level, H ₂ S, TSS, DO, pressure control
Control Panels / PLC	Complete auto control

System Benefit, Technology and Advantages

System Benefit

- Fast construction and minimums civil work in very small footprint and densely area.
- Simple management of the plant, as results of the high degree of automation.
- Recycling of wastewater for usage in chillers

Technology and Advantages

- Simple management of the plant, as results of the high degree of automation.
- Higher MLSS concentration less sludge with better quality effluent.
- Low operation cost and chemicals requirement



Drum Screen



Reverse Osmosis Plant

