

Unilever – Margarine & Soup Powder Factory Wastewater Treatment Plant



Site is situated in an industrial complex close to Haifa, Israel.

Plant Description:

- Upgrade existing industrial effluent treatment plant to meet higher discharge stands to reduce costs.
- Effluent quality to be high for long sea outfall discharge.
- The contract agreement provided for the process design, supply and delivery of membrane units.
- Additional services were provided in the nature of detailed design assistance, inspections during installation, assistance to start-up, commissioning and membrane maintenance.

Current Status:	Plant in operation since 2007
Client:	Unilever
Discharge Consent:	<20mg/l BOD; <5mg/l Ammonia, <20 SS
Brief Description:	Extended aeration biological process with membrane liquid/solid separation

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Unilever – Margarine & Soup Powder Factory Wastewater Treatment Plant

Process Description:

Tanks are of concrete construction, partially below ground and fully enclosed in buildings.
 Twin stream feeding 3 membrane tanks.
 Building height restriction of 3.5m due to local airport.
 DAF reduces factory effluent loads to influent average loading levels.
 Balance tank infeed via 3mm bi-directional screen.
 Flow to treatment plant via heat exchanger to limit influent temperature to 30°C.
 Highly variable pH so plant pH control adjusts for acidic and alkaline inflows.
 P & N dosing employed to provide optimum biological environment.
 Plant is designed to operate automatically with minimal supervision.

Design Requirements

Post DAF

Influent average loadings:

BOD	2,000mg/l
COD	4,000mg/l
TKN	104mg/l
NH ₃ – N	100mg/l
SS	550mg/l

Effluent standards

BOD	20mg/l
Total N	15 mg/l
Total P	2 mg/l
NH ₃ – N	5 mg/l
SS	20 mg/l

Plant Data

Maximum daily volume	350m ³ /d
Average Daily flow	350m ³ /d
Peak flow	4.05l/sec
MLSS membrane tank	12,000mg/l
Membrane units	9 x ES200
Sludge age	>30days

Current performance

BOD	<10 mg/l
SS	<5 mg/l
Ammonia	<5 mg/l
TN	<10 mg/l
Total P	<1 mg/l

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