

WWTP Yavne, Israel

A Case Study

Case Study: Municipal WWTP
Client: Municipality of Yavne, Israel
Start Up: September 2005
Capacity: 6,000 m³/d



Overview

An urgent improvement of the effluent quality of the old existing WWTP of Yavne was required by the Environmental Ministry of Israel.

Requirement

Effluent from the Yavne WWTP used to be discharged into a river which flows into the Mediterranean Sea. Years of inadequate treatment in two extensive ponds caused severe pollution. As a result, the Environmental Protection Ministry of Israel demanded an immediate upgrade of the WWTP.

Challenge

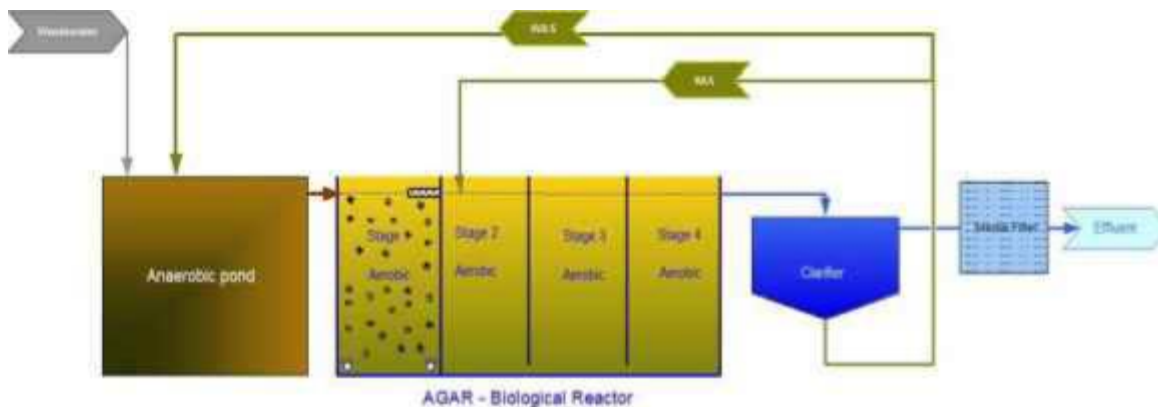
The sewage contains an industrial component of about 20%, which was found to have an inhibitory effect on the biological treatment.

Solution

The AGAR MBBR followed by AS system with a total volume of 720 m was installed. One of the two existing anaerobic ponds is still used for equalization, as well as primary settling. The MBBR followed by AS process combines a one-stage biomass carriers Roughing Filter, followed by conventional activated sludge. The excess sludge is stabilized in the aerobic Pond.

Design

Raw wastewater flows through a coarse mechanical screen into the equalization pond. The pond is equipped with a surface aerator near the outlet for re-aeration. Wastewater is pumped from the pond at a constant rate, through fine mechanical screens, into the AGAR reactor. The biological reactor is divided into 4 aerobic stages: The first stage is filled with biomass carriers for removal of about 50% of the BOD load. The rest of the volume is conventional activated sludge. Total HRT is 2.9h. The secondary effluent is filtered before discharge into the river.



Results

Since the elimination of specific toxics at their industrial source, the plant operates practically trouble free. The biomass carriers indeed take off 45-55% of the BOD load, keeping the F/M ratio optimal for good settling in the activated sludge process. In fact, during the summer MLSS concentration has to be controlled to prevent nitrification.

	BOD ₅	TSS
Influent	400	300
Effluent	< 10	< 10