



Retrofitting and enlargement of the Palmahim SWRO desalination plant (150,000 m³ d⁻¹)

Alexander Drak*, Iris Sutzkover-Gutman, Avner Hermoni

GES – Global Environmental Solutions, P.O. Box 2408, Akko 24123, Israel

Tel. +972 (4) 987 6158; Fax: +972 (4) 985 3731, +972 4 9876158; email: alexd@ges.co.il

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ABSTRACT

The Palmahim Sea Water Desalination plant supplies to the Israeli water net potable water in accordance with all contractual requirements of water quality and quantity. The plant was commissioned on 2007 and produced 110,000 m³ d⁻¹ (30 million m³ per year). Recently, the plant production capacity was enlarged to 150,000 m³ d⁻¹ (45 million m³ per year). Plant enlargement was performed without interrupting the potable water supply while minimizing capital cost investments. The plant original relatively small footprint (3.2 Hectare) and the high degree of operation flexibility remained the same. The enlargement involved the addition of energy recovery devices, membranes and pressure vessels and the modification of the filtration media. As a result of the enlargement, the specific energy consumption of the plant was reduced by 0.2 kWh m⁻³.

Keywords: Seawater desalination plant; Retrofit; Reverse osmosis; Membrane; Water treatment; Energy recovery device

*Corresponding author.