



TeMa
Technologies
and Materials

South Africa



WWTW GAS COLLECTION LAYER

NATURE OF INTERVENTION

Wastewater treatment works traditionally make use of a number of storage ponds to contain treated liquids. Historically such ponds were often constructed using reinforced concrete liner systems.

Once the ponds reach their useful life spans the ponds require rehabilitation, and these liner systems are often the primary focal point of such renewals. Besides being outdated cumbersome in design, new reinforced concrete liner systems are often expensive and lengthy to replace. As such modern Geosynthetic solutions are often considered, while the remaining concrete liner is retained as a suitable foundational layer.

In this specific instance gas within the underlying materials of the existing facility had accumulated over the years and it was a concern and excessive amounts could create an adverse effect on the new geomembrane liner system.

It was thus decided to integrate a gas collection layer beneath the geomembrane which would allow for the easy accumulation and venting of these in-situ gas volumes before creating any uplift on the geomembrane, especially when the pond was partially or totally empty.

Location:

Herolds Bay, Western Cape, South Africa

Products:

- *TemaTEX NW34(PP)* nonwoven geotextile
- *MD 4 50 cuspated drainage core*

Quantity:

- *TemaTEX NW34(PP)*: 11 000sqm
- *MD 4 50*: 16 500sqm

Application:

Gas Collection

Date:

May, 2025

SOLUTION

TemaTEX NW34(PP) was used as light-weight protection layer over the existing concrete liner of the facility thereby providing a steady, yet adequately permeable foundational layer on which the drainage layer could be placed.

MD 4 50, TeMa SA's high strength, high flow, Polyolefin based cusped drainage core was placed above the geotextile, facing downwards thus allowing the collection of any gas from the underlying, existing layer works, and efficient conveying to venting points.

The layers were then overlain with a geomembrane liner



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