

Special Comtrac® geotextile seals a sludge lagoon at Viscofan, Caseda (Navarra, Spain)



A special **Comtrac**® geotextile was developed by HUESKER to seal a sludge lagoon at Viscofan with just one layer of geosynthetic reinforcement.

A high width-strength material was required in order to achieve an adequate seam strength when joining the individual **Comtrac**® panels. As a result the lagoon could be covered with 500 mm of gravel over only one layer of **Comtrac**®, creating a stable platform for the sealing system.

Viscofan, with a production centre in Caseda (Navarra), is a manufacturer of artificial skins for meat products, made from cellulose, collagen and plastic. The manufacturing process generates a slurry, which was discharged into a lagoon covering some 4,490 m². At the end of its useful life the surface of the slurry lagoon was sealed in the summer of 2002 in compliance with the provisions of the European Directive 1999/31, covering landfill waste.

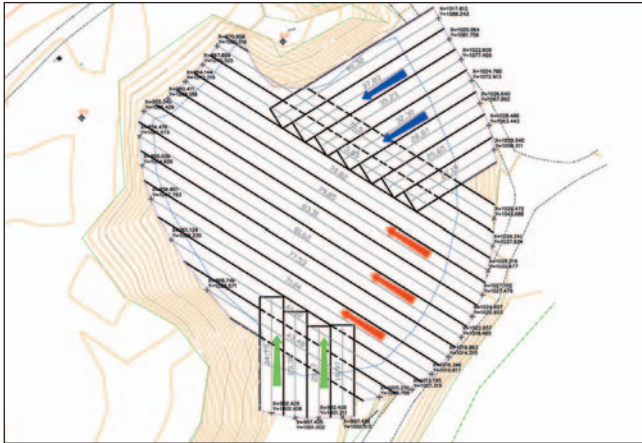
The sludge stored in the lagoon had a specific gravity of 8.5 kN/m³, a cohesion $c' = 19.6$ kN/m² and an angle of internal friction $\phi = 6^\circ$. The undrained shear strength c_u had been evaluated to $c_u = 10 \div 15$ kN/m². On such a material it is impossible to use civil engineering plant to carry out sealing work without the inclusion of a geotextile reinforcement.

Surface sealing consisted of the following sequence of materials:

- **Comtrac**® 200/350 kN/m geotextile reinforcement
- 500 mm of gravel (6/12) mm
- puncture-resistant polypropylene geotextile, 1200 g/m²
- 2 mm HDPE membrane, textured on both sides
- 400 mm of gravel (6/12) mm
- polypropylene separation geotextile, 400 g/m²
- 500 mm of topsoil, hydroseeded with graminæ

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Disposition of the individual panels of Comtrac®



The sealing system, in addition to preventing the ingress of water into the sludge, was designed to allow plant and machinery traffic over the surface of the lagoon. With this objective a **Comtrac®** geotextile reinforcement was used, with 200 kN/m length-wise strength and 350 kN/m in the width.

The geosynthetic reinforcement was tailor-made to meet the exact dimensions of the lagoon. All the panels were individually identified and their exact location was marked along their edges.

All the geosynthetics were manufactured by HUESKER and subjected to rigorous quality checks by an independent laboratory.

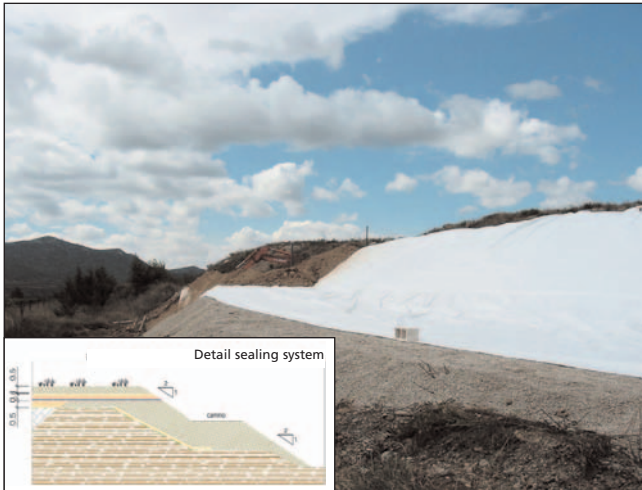
Client: Viscofan, S.A.

Consultant

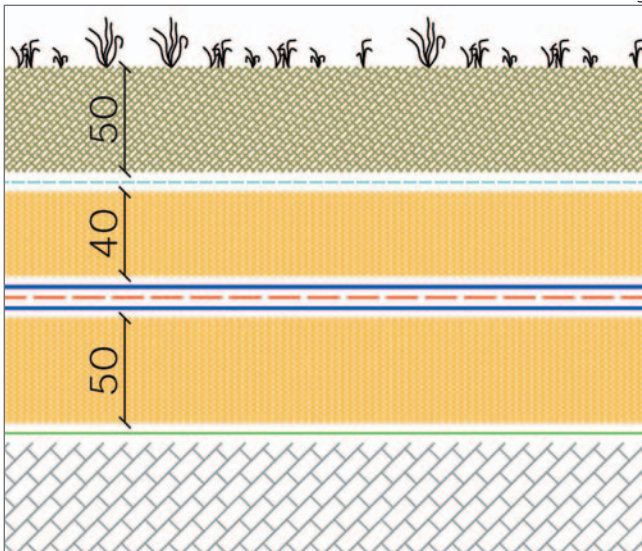
Engineer: Namainsa, S.A.

Contractor: Ecay Andueza- Muro Verde J. V.

Product: **Comtrac® 200/350**



Surface sealing



Legend

	Hydroseeding with gramineae
	Soil 95 % PM
	Polypropylene separation geotextile with a density of 400gr/m ²
	2 mm HDPE sheet, textured on both sides
	Puncture-Resistant Polypropylene geotextile with a density of 1200 gr/m ²
	400 mm of gravel (6/12) mm
	Comtrac® 200/350kN/m reinforcing geotextile
	Sludge

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