

LANDFILL REHABILITATION CAP



DATE: MAY 2020
CLIENT: CLEANAWAY

ELCOSEAL® GCL

FEATURES

ELCOSEAL Geosynthetic Clay Liners (GCLs) are used as an easy to install lining system in landfills and waste containment structures and for liquid containment in effluent ponds and tailings dams. ELCOSEAL GCLs are also effective liners for dams, ponds, lakes, wetlands, irrigation canals and channels.

ELCOSEAL GCLs consist of a layer of bentonite bonded between two layers of woven and nonwoven geotextiles. The needle-punching process reinforces the bentonite layer with thousands of fibres, maximising the product's internal resistance. An additional heat treating process called "thermal locking" secures the needle-punched fibres, further improving strength and performance.

This project involved the capping of the old Fraser Road Landfill which has been progressively filled with waste over numerous years. As part of the environmental regulations, landfill operators must cap closed landfills in a timely fashion. This site had been overfilled in relation to final contours, so extensive earthworks were undertaken to achieve appropriate levels.

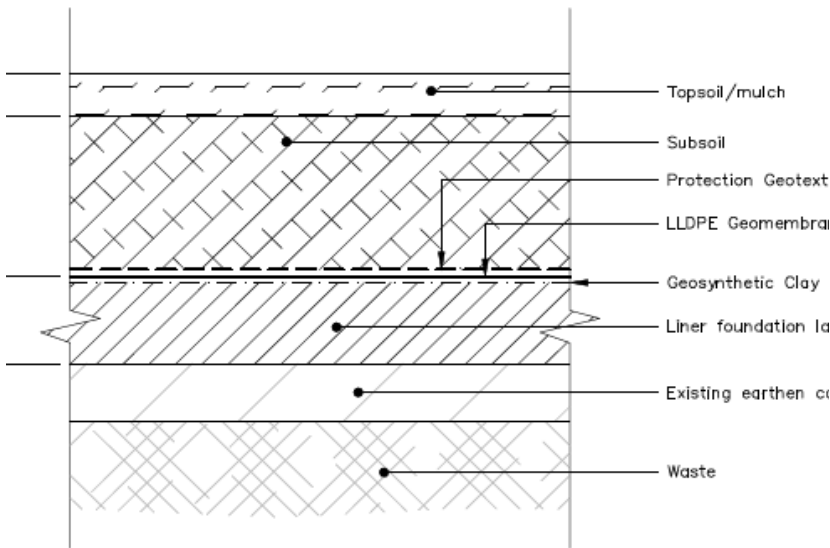
Geofabrics have been working extensively with Cleanaway throughout the Clayton Rehabilitation projects which has involved the capping of five closed landfill sites; Henry St LF, Carroll Rd LF, Victory Rd LF, Deals Rd LF and now the final cap in Fraser Rd LF. These projects have been a huge undertaking for both organisations resulting in millions of square metres of geosynthetic materials being supplied and installed.

With each of these capping projects, Geofabrics worked extensively with Cleanaway to come up with appropriate solutions. Tonkin and Taylor were the consultants who designed the capping system at both Fraser Rd and Deals Rd sites.

Geofabrics worked very closely with Tonkin and Taylor, fielding a variety of questions to ensure the specifications were both practical and feasible. Geofabrics made numerous suggestions to improve the efficiency and economics of the project. The major products utilised were Elcoseal® Geosynthetic Clay Liner (GCL) and Bidim® Geotextile. Huge quantities were required of both products and due to the landfill requirements, all products were rigorously tested in both manufacturing and onsite with independent testing.

This project was unique because the Victorian EPA permitted in-plant testing of Elcoseal® GCL to rapidly increase turnarounds from manufacture to installation. Being the market leading GCL and made in Australia, this gave the EPA confidence to grant such a unique request. A rigorous chain-of-command process was developed and implemented to ensure traceability and accountability.

The composition of the layers were as the drawing below:



The main benefit of this testing regime, being weather sensitive materials such as GCL could be stored inside a warehouse and shipped only when all testing had passed – greatly reducing the weather risk if left onsite while waiting for testing to be completed.

Geofabrics are proud to be involved in such great project and are particularly proud of the manufacturing team who were able to deliver huge quantities of world-class products, tested extensively and all without failing a single parameter.

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The major products utilised were Elcoseal® Geosynthetic Clay Liner (GCL) and Bidim® Geotextile.

Elcoseal® GCL performs particularly well in capping applications due to the impressive performance of the powdered natural sodium bentonite mined from Miles in Queensland.

High internal shear performance when differential settlement is expected. Elcoseal® is the premier GCL solution available in Australia and utilised much more than any other GCL on the market. Australian made, for Australian conditions.

At the time of writing, this project was still under construction.

