

PILBARA LANDFILL PROJECT, WESTERN AUSTRALIA

Improving waste management with GSE HD



Industry: Waste
Sub-industry: Industrial, Solid, Hazardous landfill
Location: Australia
Product: GSE® HD, GSE HD Leak Location

Overview

The Shire of Ashburton is one of four local government areas in the Pilbara region of Western Australia. The territory has experienced significant growth in the last fifteen years as a result of the rapid expansion of the resources industry, in particular the mining, oil and gas sectors. As this growth was putting significant pressure on existing waste infrastructure and services, the local authority decided to build a new waste-management facility (PRWMF) adjacent to the town of Onslow. The construction commenced in mid-2019 and was completed in early 2021.

The new site is the only facility of its kind in Pilbara. The Class IV landfill in accordance to Western Australia EPA accepts both Class III and Class IV waste, including that from the mining, industrial, and oil and gas sectors across the wider region.

Solmax was selected to supply a total of 90,000 m² (970,000 ft²) of both textured and conductive-textured high-density geomembrane to line the new landfill. The facility is the first in Australia to incorporate a conductive-backed geomembrane liner to facilitate electrical leak location-testing of the as-built containment system.

The final outcome was a facility that caters to the needs of both the Onslow community and the expanding resources sector across Pilbara.

CASE STUDY

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Challenge

The installation of a conductive geomembrane requires special care in terms of welding and weld crossing. The double composite-liner system incorporated seven different geosynthetic layers, which made concurrent installation more complex than a single composite lining system. In addition, careful planning is required to ensure the layers function as intended, achieving proper isolation to reduce false alarms.

Furthermore, when welding in dry and dusty conditions such as those found in Pilbara, more diligent cleaning of the mating surfaces of the conductive geomembrane is required

Finally, travel restrictions imposed to tackle the COVID-19 pandemic caused staffing issues for the lining contractor, whose workforce included large numbers of overseas staff.

Solution

Solmax provided 50,000 m² (540,000 ft²) of textured **GSE HD** and 40,000 m² (430,000 ft²) of textured conductive **GSE HD** geomembrane to the project.

Good communication and coordination between all parties – from Solmax to the engineering consultants (Talis) to the contractors (Raubex Construction and West Coast Lining Systems) – ensured all challenges were overcome to achieve a high-quality installation.

The final outcome was a facility that caters to the needs of both the Onslow community and the expanding resources sector across Pilbara. It is also expected to reduce transportation costs for the Shire and its commercial and industrial customers, and also generated significant job opportunities for people in the region, both during construction and operation of the site.



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