

GROUND ENGINEERING

www.geplus.co.uk

NEWS

Leachate drainage alternatives investigated

ASCOT ENVIRONMENTAL is investigating the use of alternatives to primary aggregates as leachate drainage media in the base of landfill cells.

Landfill tax money is funding the research. Two schemes are under way, the first looking at the use of a geosynthetic drainage material and the second using glass cullet (melted down waste glass).

The aim of the first project is to establish the suitability of geosynthetic drainage products for landfills and provide the Environment Agency with protocols for assessing similar materials.

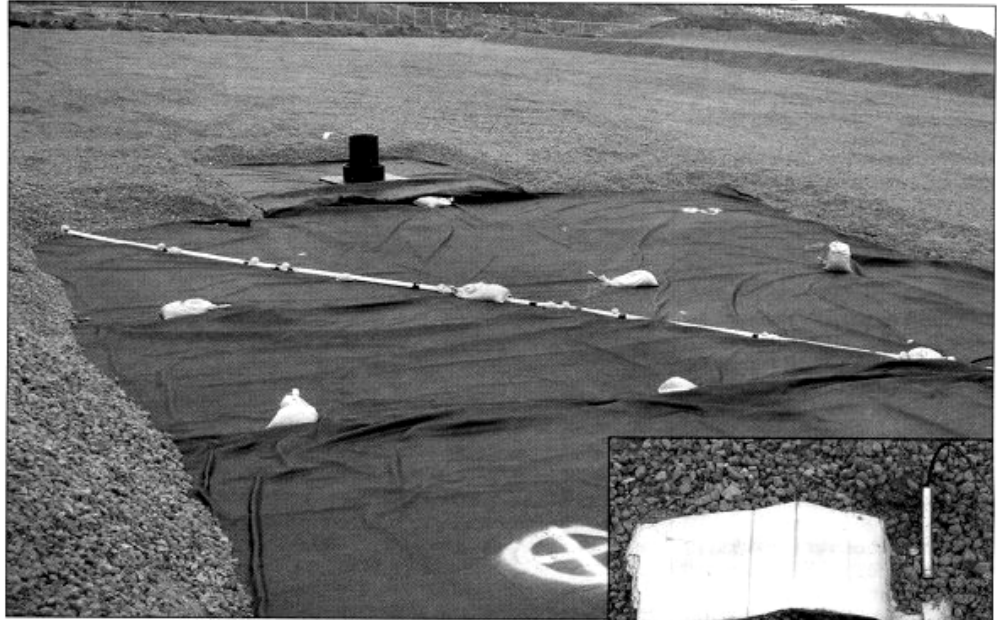
A trial cell has just been finished at Viridor Waste Management's Whitehead Landfill site.

The geosynthetic drainage material used is more commonly found in underground reservoirs for sustainable urban drainage schemes. However, the polypropylene material's high strength and ultra high drainage characteristics make it well suited for landfill drainage.

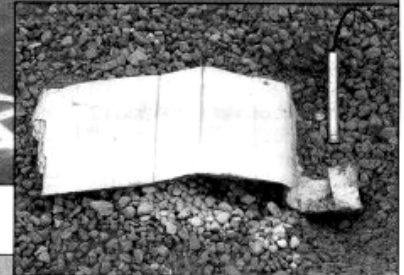
Consultant Terraconsult tested the geosynthetic before installation to ensure it could withstand the aggressive environment at the base of the landfill. The material was also tested for crush resistance and long term creep.

The Environment Agency was involved in assessing the acceptability of the trial cell installation and monitoring.

The trial cell will soon be covered by domestic refuse and the effectiveness of the geosynthetic monitored. The leachate head above the cell and in the aggregate will be measured by vibrating wire piezometers installed in the 300mm thick layer of



Extensive monitoring and testing will give greater insight into performance of geosynthetic drainage materials in landfill applications.



20-40mm primary aggregate which surrounds the cell.

A "modified Schlumberger array" will monitor the saturation levels in the waste and surrounding areas. Finally, visual inspection will be made using a CCTV camera lowered down a telescopic leachate monitoring well.

It is hoped this will allow the effectiveness of the geosynthetic drainage to be established and a comparison to be made with the primary aggregate.

Ascot Environmental expects to publish preliminary results in the next three to six months.