

CASE STUDY

Mining | Water and Waste Containment | Kusile Power Station Ash Dump

May 2008 -2016

Client Eskom

Contractor WBHO

Consultant Worley Parsons

Product **EnviroFix[®] X1000** | 1 135 050 m²
Neoweb[™] 50mm | 280 000 m²

Rep Byron de Cramer

Problem

Besides generating electricity, Kusile will also generate tons of coal ash, a bi-product that will need discarding in an ash dump. Since coal ash is considered a pollutant to ground water, the Department of Water and Sanitation (DWS) does not allow storage of this bi-product without ensuring the area is protected against contaminated water seepage into the environment.

Solution

A durable composite liner system was designed to ensure the safety of the surrounding ground water for many years to come.

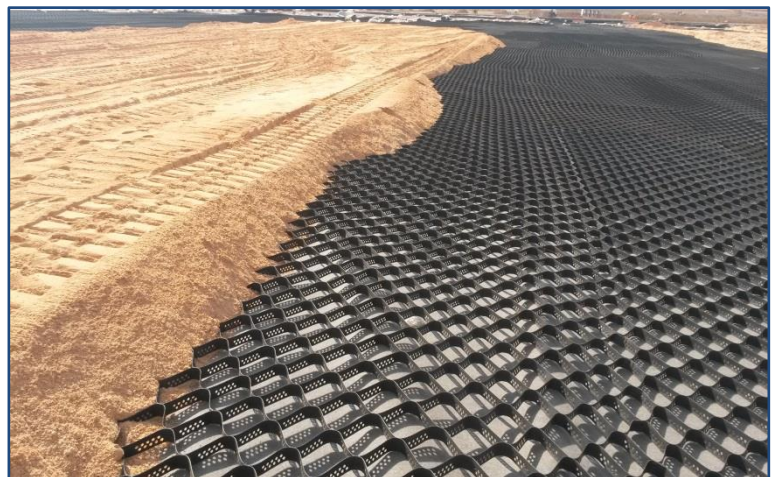
The multi-tiered composite liner system for the ash dump consisted of seven layers (top down); 2mm double-textured HDPE lining, 750gsm nonwoven geotextile protection layer, 100mm sand layer into which, in certain sections, Kaytech's Neoweb[™] was placed, layer of Kaytech's EnviroFix[®] X1000 Geosynthetic Clay Liner (GCL), second layer of 2mm double-textured HDPE lining, second layer of 750gsm nonwoven geotextile protection layer and finally 300mm selected G5 drainage layer.

Benefits

By completion of the ash dump, the installation of Neoweb[™] and EnviroFix[®] had saved Eskom millions of Rands in time, construction expenses and costly transportation of imported materials.



750gsm geotextile laid out to be covered with sand



100mm sand layer placed over the Neoweb[™] reinforcement

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Once fully operational, Kusile is expected to generate 4800MW of electricity, which will go a long way in alleviating the pressure on the South African grid.



EnviroFix® X1000 GCL laid over sand