WALO UK CASE STUDY - WESTMILL LANDFILL SITE

Client: Biffa Waste Services Ltd

Engineer: WYG Environmental Ltd

Background

The Westmill Landfill site is located to the north west of Ware, Hertfordshire, UK and is operated by Biffa Waste Services Ltd. The landfill site is located in a working sand and gravel pit and receives municipal waste from the south east region of the UK. This is mainly waste from households and businesses, together with some construction industry waste.

The Challenge

The 38ha site is located on a chalk aquifer and so environmental considerations are of the utmost importance. Biffa chose Dense Asphaltic Concrete (DAC) as the lining system for this site as it is the most robust and reliable system available. WALO's Dense Asphaltic Concrete (DAC) is impermeable to leachate and methane so is ideal for complete containment of all materials that need to be impounded, such as landfill waste.

The Project

Since 2003, WALO has constructed 11 cells on the site using DAC with an overall capacity of around 2.5 million cubic metres. The largest and 11th cell was constructed during the summer of 2014. This cell, which was lined with over 13,000 tonnes of asphalt, consists of a basal surface area of 18,400 sq. m, with slopes of 9,300 sq. m. The longest slope length lined measures 60 m with an incline of 1:2. WALO UK also constructed intercell bunds into adjacent existing asphalt lined cells. These bunds measure two metres high and cover an area of 3,600 sq. m., again with a slope incline of 1:2.

The lining system itself was formulated in WALO's Zurich laboratory to a design mix specific to this project. It comprised a 300mm mineral attenuation layer; a 200mm sub-base material layer, a

60mm asphaltic binder layer; a 80mm DAC layer and a mastic seal coat to the base, side slopes and bund areas. The asphalt was placed by hand on the intercell bunds and by paver and winch on the base and slopes. Once the lining works were completed, a leachate collection and removal system was installed. The project was scheduled to be completed within a ten week period, but was actually completed in just seven weeks.