HUNTER VALLEY MINE, NSW

SOIL-BENTONITE CUT-OFF WALL

Consultant: GHD Pty Ltd

Head Contractor: John Holland Pty Ltd
Specialist Contractor: Menard Bachy Pty Ltd

THE PROJECT

Coal and Allied Operations Pty Ltd, a subsidiary of Rio Tinti, are the owners of the Hunter Valley Mine Located north of Sydney in NSW, Australia. In order to access further coal reserves below the water table alongside the Hunter River on its alluvial plain, as an extension to our open cut coal mining operation, Gutteridge, Haskins and Davey Pty Ltd (GHD) where engaged to undertake engineering studies, design and documentation of a deep cut-off trench and a flood protection levee.

The solution GHD developed involved a 1.1 m wide soil-bentonite impervious barrier excavated through 15-30 m of alluvial sands and gravels, sandstone and fractured coal. The length of the cut off was approx 4km. To protect the open cut mine workings from floods occurring in the Hunter River the cut-off was connected to an impervious earthfill embankment located above the cut-off. The maximum height of the levee bank is 9m and its length also approx 4 km. This was the first soil-bentonite cut-off trench of this type in Australia and one of the longest known in the world at the time.

MENARD BACHY'S ROLE

On design and construct basis, Menard Bachy provided the mix and wall design, technical assistance and supervision on site for wall construction and backfill mixing, specialised equipment including long reach excavators, buckets and slurry mixing plant.

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