

# DALRYMPLE BAY COAL TERMINAL, HAY POINT, QLD



## STORAGE DAM GROUT CURTAIN



**Client:** Ports Corporation of Queensland  
**Consultant:** Connel Wagner/Golder Associates



**Contractor:** Henry Walker Contracting  
**Specialist Contractor:** Menard Bachy Pty Ltd

## THE PROJECT

As part of the expansion of the coal terminal storage facilities at Dalrymple the industrial dam had to be deepened and enlarged to accommodate greater storage of water for coal washing and other industrial uses. The Andesite rock beneath the dam was heavily jointed and a cut off was required along the ocean side of the dam to reduce saline seepage contaminating the fresh water storage.

The original design was to excavate a trench in the strong Andesite rock and to fill this trench with clay. Menard Bachy proposed a more cost effective grout curtain solution.

## MENARD BACHY'S ROLE

Menard Bachy, in conjunction with Henry Walker Contracting reviewed the geotechnical data and proposed a single row, 10 metre deep curtain, 800 metres in length.

A proving trial was carried out on three sections of the dam wall totalling 80 metres, to assess the practicability of a grout curtain treatment and prove the design and the techniques and execution method for the main works.

These tests showed the clayey decomposed Andesite near the surface to be essentially impermeable, but that the rock at depth was highly permeable consisting of fine fractures that could easily be grouted.

Using descending stage grouting techniques, a multiple phase curtain was constructed and proved by a program of water testing to the satisfaction of all parties. A target permeability of 2-4 Lugeons was set as satisfactory. A cementitious grout mixed in colloidal mixers was placed by mono pump in accordance with normal dam grouting practice.

Menard Bachy provided:

- Technical expertise to review geotechnical information and design a grouting program
- Engineering expertise to carry out site trials and analyse the results
- Specialist equipment, material and labour
- Expert supervision of site operations

The work was completed ahead of schedule in August 1997 and demonstrated the innovative use of grouting techniques to provide most effective alternative solutions

### SYDNEY

13-15 Lyonpark Road, Macquarie Park NSW 2113  
Tel: 61 2 9491 7100 Fax: 61 2 9491 7111

### BRISBANE

3 Harvton Street, Stafford, QLD 4053  
Tel: 61 7 3354 9100 Fax: 61 7 3354 9111

### MELBOURNE

41 Boundary Road, North Melb. VIC 3051  
Tel: 61 3 9321 1333 Fax: 61 3 9326 8996

### AUCKLAND

PO Box 72734, Papakura, Auckland NZ  
Tel: 64 9 236 3385 Fax: 64 9 236 3385