



TRANSFIELD-KUMAGAI JOINT VENTURE
BHP PORT HEDLAND HARBOUR TUNNEL
MEMO/FACSIMILE
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Date: 18 June, 1997

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SHIFT ENGINEER

Time Sent: PM

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SUBJECT : PORT HEDLAND HARBOUR TUNNEL- Groundwater inflow after Latex Grouting

MESSAGE

The groundwater inflow into the head was measured on Wednesday 18/6/97 at 2:00 pm by Steve Rheeder, Dave Roch, and Johan Ehrke of "Hydroseal Australia" and myself.

The measurement was carried out by timing the duration to fill a 44 gallon drum (200 litres) from 1 bebo pump discharging from the TBM head maintaining static water level. Hydroseal and myself entered the TBM head and inspected the pumps and water level. The water level was about 500 mm below the rotary coupling.

Three measurements were taken. Results were 67.33 seconds, 73.56 seconds and 71.26 seconds, giving an average of 70.7 seconds.

Groundwater flowrate into the head is calculated to be 2.83 litres/second. This represents a flow reduction of 66% after 3 no. 12 hour shifts of latex grouting.

Regards

TRANSFIELD-KUMAGAI JOINT VENTURE
PORT HEDLAND HARBOUR TUNNEL PROJECT

Patrick Whelan
Shift Engineer