



# PRESS RELEASE – FEBRUARY 2005

## COE DRILLING COMPLETES GLENBROOK STP TRANSFER DIRECTIONAL BOREHOLE CONTRACT

In Mid 2004, Sydney Water Corporation awarded the Glenbrook STP Transfer Directional Borehole Construction Contract to Coe Drilling Australia Pty Ltd.

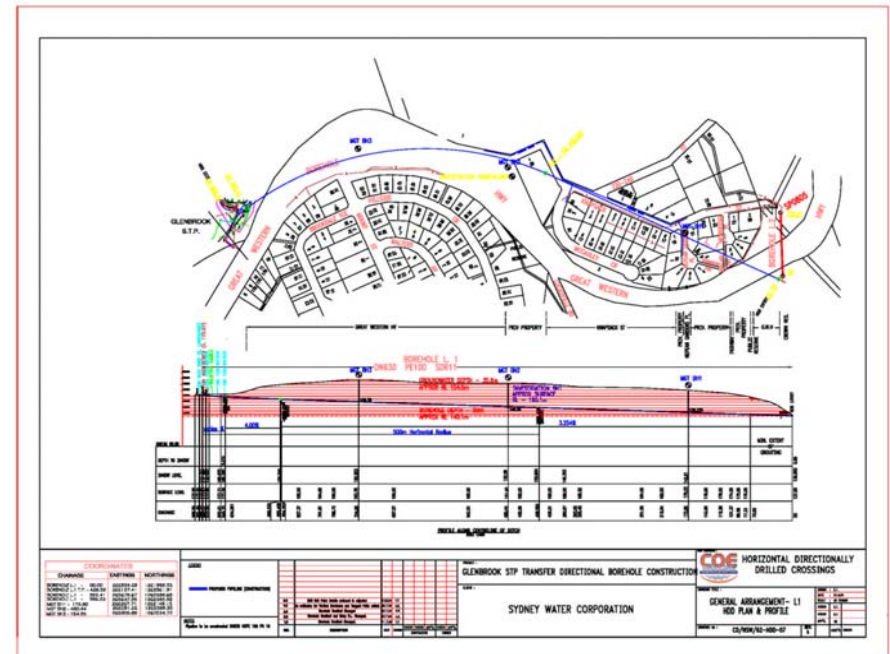
### Project

As part of Water Plan 21 Sydney Water Corporation (SWC) is proposing to amplify Penrith Sewage Treatment Plant (STP) to cater for growth in the Penrith sewerage catchment and to decommission Glenbrook STP. Sewage from the Glenbrook sewerage system will be transferred to Penrith STP via a new pipeline, which is to be constructed in part using Horizontal Directional Drilling (HDD)

In total 3 boreholes were constructed as part of the project with the longest and most complex 986m on grade installation beneath Lapstone Hill, which terminated within the live Glenbrook STP.

### Project Delivery HDD Crossings

The Glenbrook STP Transfer Directional Borehole Construction Contract involved the Design, Construction, Installation and Commissioning of HDPE Transfer Pipelines for Sewerage from the Glenbrook Sewerage Treatment Plant and from Sewerage Pump Station 805 using Horizontal Directional Drilling Technology. The Drilling and Pipeline installation was part of a challenging and highly complex project. The project team developed and implemented a detailed engineering design and execution methodology to minimise potential drilling and pipeline installation risks.



**Top:** Design Profile for 986m long DN630 HDPE 100 PN 16 on grade crossing.

### Geology

The geology to be encountered for the project indicates that the subsurface lithology to the depth of the investigation is relatively consistent, comprising highly abrasive Hawkesbury Sandstone with sub horizontal bedding. The rock is generally quartz rich of medium to high strength with many ironstone cemented bands. Geological features encountered during the drilling operations included a north south trending fault



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**CoeDrill 550 Rig Spread**

### Equipment

The crossings were constructed using three of Coe Drilling's 5 rigs. The CoeDrill 550 and CoeDrill 90 were employed as well as an American Augers DD6.

ParaTracker and Magnetic Ranging were used to control the grade of 3.25% on the longest of the boreholes L1, which included a horizontal alignment change of 26 degrees in order to exit the ground within the confined limits of the Glenbrook STP. Grade 3.25% Borehole size was 813mm.

L3 a 315m long crossing connecting Leonay with Lapstone also included complex curve geometry in order to maintain maximum cover and grade beneath the State Rail Sydney- Katoomba railway lines. Borehole size was 813mm.

L2 connects the downstream end of L3 with SPS 805 and crossed beneath the Great western Highway. The SPS will later be decommissioned as part of future Sydney Water Works. The works also included pipeline testing and grouting of the borehole annulus to prevent long term groundwater changes in the area. Borehole size was 445mm.

The ultimate success of the contract reinforces Coe Drilling Australia Pty Ltd's position as a leading Australian supplier of engineered Horizontal Directionally Drilled Crossings.

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#### **PROJECT DATA:**

**Owner:** Sydney Water Corporation

**Main Contractor:** Coe Drilling Australia Pty Ltd

#### **Crossing Details:**

**Line #1:** DN630 PN16 Pipe String Length: 986m Grade 3.25%

**Line #2:** DN315 PN16 Pipe String Length: 115m Grade 20.1%

**Line #3:** DN630 PN16 Pipe String Length: 315m 3.00 %



Detailed Survey set out was required on the project to achieve the targets.