

Two seams from one vent shaft

A 390m deep ventilation shaft designed and constructed by Abergeldie for the Integra underground mine by blind boring is the first of its kind in Australia to serve simultaneous workings on two coal seams; the Liddell seam between 327m and 330m, and the Hebden seam below it at 390m.

The shaft was drilled and hydrostatically lined from the surface downward, using one of Abergeldie's blind boring rigs. The initial contract was for a 320m shaft with composite concrete/steel liners to serve only the Liddell seam.

The design was modified to drill an additional 10m, unlined through the Liddell seam, and then a further 60m with simple steel segment liners down to the Hebden seam.

An Australian first for blind boring, the two-part design enables working access to two coal seams from one blind bored shaft.

The initial contract price for the upper section of the shaft was approximately \$13 million, and the part-two extension added approximately \$3 million to the overall cost.

The blind bore construction method allows the shaft to be remotely drilled from the surface downward, with no personnel entering the shaft during the construction process.

This is by far the safest method of shaft construction and is especially suitable for difficult ground conditions where there may be unstable or water-charged strata.

A heavily weighted drilling assembly provides vertical thrust to a hard rock cutter head, which grinds concentric grooves into the rock face, leading to



More information can be found at www.abergeldie.com.au.

fragmentation of the rock between the cutter paths.

The rock fragments are transported from the face to the surface by a strong

flow of water directed around the cutter head and up through the centre of the drill rods and discharged into sedimentation ponds on the surface.

Abergeldie's blind boring rigs are the largest of their type in the world, having drilled shafts to record-breaking depths of up to 520m with diameters up to 6.2m.

Safely drilling deeper than ever before

Your one-stop shop for all mining infrastructure



Using Abergeldie designed and developed blind boring equipment, Abergeldie has recently drilled and lined the largest blind bored shaft in Australia.

- Drilled in a single pass to more than 515m deep and at 6.2m diameter it is, perhaps, the world's largest blind bore shaft.
- Drilled and lined from the surface for maximum worker safety. No worker entered the shaft during excavation or lining.
- Lined using the Abergeldie composite method to provide a high quality, smooth, 5.0m finished diameter shaft with a 50 year design life and requiring minimal maintenance.
- No mine interruption. All excavated material brought to the surface by Abergeldie using reverse circulation.

Now with increased tunnelling expertise and capability in New Zealand and Australia with the acquisition of Harker Underground now operating as Abergeldie Harker.

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