Centennial Coal's Newstan vent shaft.

Blind solution

A mining services contractor used the world's largest blind boring rigs for projects in the Hunter Valley. By **Alison Middleton**

The world's largest blind boring rigs have helped a mining services company tackle technically challenging projects in the Hunter Valley. Abergeldie Complex Infrastructure was commissioned to complete Glencore Xstrata's Ravensworth Vent Shaft earlier this year and finished work on Centennial Coal's Newstan vent shaft in August.

Works to sink and line a 180 metre-deep, 6m finished diameter vent shaft for Centennial Coal began in May 2012.

The company designs and builds its own drill rigs and holds a number of American patents for its equipment.

Rig 103 and Rig 105 have masts standing 30.35m high, and are rated for a maximum load of 450 tonnes.

Both rigs have a full range of drill tools to drill diameters of 2m to 6.5m. At 3m diameter, a depth of 750m is achievable, while a 600m depth is achievable at 5m diameter.

Rig 100 has a mast standing 31.7m high with a maximum load of 500 tonnes, and a full range of tools to drill shafts of 2m to 8m in diameter. At 3m diameter, depths of 900m are achievable and at 5m a depth of 750m is achievable.

Managing director Mick Boyle said the company's expertise in blind boring technology enabled it to drill deep shafts for the resources sector in areas that required smart solutions to complex problems.

"We currently own and operate three giant blind boring rigs, the largest of which is capable of sinking shafts with a diameter 50% larger than any other rig in the world," he added.

"The project went smoothly and we achieved reasonable drill rates.

"The liners are steel, but include composite action with the grout to increase its strength and durability.

"Given the small footprint for the site, this constraint has required some creative thinking and ingenuity.

"Careful calculations and lateral thinking allowed the installation of two sedimentation ponds for effective settling of the water, which is used in the reverse circulation process of removing cuttings from within the shaft."

Abergeldie said it had a successful record in delivering mining and resources projects in the region.

This includes Austar's Stage 3 underground workings at their Hunter Valley coal mine.

A further Glencore Xstrata project was completed in October to serve underground coal mine workings at the company's Ulan West Operations.

Abergeldie was commissioned to design and construct the Ulan West Ventilation Shaft, which involved a 4.5m finished diameter, hydrostatically lined, vertical ventilation shaft to a depth of 46m.

The company used blind boring for sinking the shaft.

It then welded steel liner segments instead of the originally proposed segmented concrete liners.

Abergeldie is based in Sydney, New South Wales, with regional offices throughout Australia and New Zealand. AMM

alison.middleton@aspermont.com