

## Catherine Hill Mine

Catherine Hill, NSW

Re-drilling minimised due to use of specialised equipment improving borehole stability and drilling accuracy.



### The project

Investigations for a new residential development revealed a risk of future ground subsidence due to the presence of the decommissioned Catherine Hill Bay mine near Lake Macquarie, NSW. Prompt action was required to fill the workings to allow the re-development earthworks to continue.

### The challenge

With the extent of the old coal workings relatively unknown, the project needed to rely on a high level of quality control and underground camera work to ensure the correct workings were backfilled with the minimum quantity of grout.

## The solution

Keller used a specialised dual rotary drill rig, developed from experience gained on previous similar projects in the Hunter Valley, to install steel casing directly to the open and collapsed workings. The casing acted as both a tremie pipe to pump grout, as well as providing access for an underground camera, to ensure the grout was placed where required. This eliminated the risk surrounding borehole instability as well as increasing the drilling accuracy and target grout locations. The initial drilling found larger than expected mine workings, increasing the potential for grout to flow into areas where fill was not required. Using a combination of several tremie lines and small volume injections, Keller built a grout barrier limiting the quantity of grout placed and reducing the risk of additional cost to the client.

## Project facts

### Owner(s)

Daracon Contractors

### Keller business unit(s)

Keller Australia

### Main contractor(s)

Rose Group

### Solutions

Mine stabilisation / void filling

### Markets

Residential

### Techniques

Mine infill or cavity grouting