Drump Road

Redruth

Network Rail identified an abandoned mine shaft near to live London-Penzance Railway line. It was decided that the best way to treat and stabilise the ground was jet grouting of the shaft and the soils surrounding it.



The project

Following the discovery of the mine shaft, engineers Ove Arup and Network Rail developed a solution to treat the former mine workings using piling. Keller offered a design and build solution using jet grouting as an alternative.

The challenge

The main challenge was to ensure that the mine cap did not collapse during the operation and so threaten the rail line. As the line was blockaded for other operations nearby it was necessary to take advantage of this and carry out the treatment at relatively short notice. In view of the limited blockade time 24-hour working was necessary.

The solution

Keller installed 1.6m diameter jet grout columns to between 4m and 8m long through backfilled gravels and clay. Where competent mudstone was encountered, the diameter of the columns was reduced but in weaker material the erosive power led to large columns with a strength of 5N/mm^2 thus ensuring a sufficiently competent plug.

Project facts

Owner(s)
Network Rail

Keller business unit(s)
Keller UK

Main contractor(s)
Balfour Beatty

Engineer(s)
Ove Arup

Solutions

Markets
Infrastructure

Techniques
Jet grouting

Email address
rob.madill@keller.com

Phone number
02476 511266