

Assessment of VCD technology for effective gas drainage in underground coal mining operations

by

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ABSTRACT

The paper assesses the use of Virgin Coal Demethanation (VCD) Technology in operating underground coal mines with particular reference to the Bulli seam, Southern Coalfield, NSW. Input parameters for modelling have been determined from field measurements and back analysis using SIMED. The data is further analysed using COALGAS for fracture geometries. Sensitivity analysis has been done using orthogonal experimental design technique. Results show that for larger

times the order of the importance of parameters is reservoir pressure, permeability, porosity, desorption time, rock compressibility. For smaller times (up to one year), the order of importance is reservoir pressure, permeability, porosity, rock compressibility and desorption time. Economic analysis has been conducted and the cost of demethanation is compared with the conventional underground gas drainage system used in the Southern Coalfield. Results show that VCD Technology using surface boreholes is much costlier compared with conventional technology.

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