The Utilisation of an Ash Wall for the Treatment and Control of Acid Mine Drainage

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Eskom currently produces approximately 22 million tons of fly ash annually. This is, bar a small percentage, dumped on vast ash dumps, which require dust suppression and rehabilitation. The ash is an aluminosilicate, consisting of glass beads. It is highly alkaline with a pH above 11.

The production of Acid Mine Drainage (AMD), due to the oxidation of pyrite in the surrounding rock, is one of the main environmental concerns facing the mining fraternity internationally. AMD is generally of low pH, high in sulphates and rich in heavy metals, most notably Iron and Aluminium.

It was envisaged to utilise the one to combat the other. An ash wall will be constructed *in situ* within the mine spoil, at the decant points of the mines. The AMD will initially flow through the fly ash and be treated (increase the pH and remove sulphate and heavy metals). Once the calcium sulphate has precipitated within the ash the wall will clog forming an AMD dam which can be pumped away for further treatment.

This paper will detail the initial work conducted in laboratory scale tests, in addition to the development of a way forward.

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