

Project title:

Advice on Suitability of Bottom Ash for stowing at Jitpur colliery, SAIL.

Project No -

CNP/4887/2019-20

Executive Summary:

Sand, the conventional material for stowing is getting depleted due to its over use in construction industries and there is a huge amount of ash which is being generated by coal based thermal power plant (about 220 Mt/). Due to dearth of sand, the gap between demand and supply of stowing material is getting big due to which large quantity of coal is locked up in standing pillars. Keeping the above facts in mind the management of Jitpur colliery approached CSIR-CIMFR for advice on using bottom ash of Chandrapura Thermal Power Plant (CTPS) and Maithon Power Limited (MPL) as a stowing material for underground mine. Bottom ash samples from both MPL and CTPS were collected from the respective power plant and laboratory studies were carried out to evaluate its suitability as a fill material. It was found out bottom ash samples of MPL was coarser, settled much faster and had higher percolating rate when compared with CTPS bottom ash. Physical modelling was carried out to using single layer bamboo matting and hessian clothes and results suggested that 64% of the water drained within 12 min. On the basis of above studies, it was suggested that both MPL and CTPS bottom ash is suitable for stowing and MPL ash showed more favourable results when compared with CTPS ash.