

<p>Project title: Advice on suitability of crushed OB for cemented backfill at Mahagiri mine, IMFA</p> <p>Project No.- CNP/4886/2019-20</p>	<p>Executive Summary:</p> <p>It was required to design the backfill using crushed overburden (OB). OB generated from the Mahagiri Mines Chromite (MMC) were screened in the screening plant to have an optimum size range for backfilling. Screened OB samples of 200 kg with size range of < 5 mm and 5 – 10 mm were collected from the screening plant. Various lab studies were conducted to determine the suitability of using less than 5 mm and 5-10 mm fraction of OB as backfill material for the Mahagiri underground chromite mines. Percolation, settlement and UCS studies were conducted with varying fines (<5 mm) fraction within the backfill for both the 5 wt% and 10 wt% binder category. Results shows that backfill in plug may take more time to settle. Also, increase in fines fraction (-5mm) in the backfill results in an increase of UCS, however this increase rate is limited to a certain fines fraction (35% of fines). After this fine fraction limit (35 wt%) is reached the strength decreases, as it is determined for the 40 wt% and 45 wt% fine fractions. Thus, overburden fines (<5 mm) can be used up to 35% along with coarser OB (5-10 mm) in the backfill with 5wt% OPC above the plug level. Whereas, fines (-5mm) up to 30% can be used in the backfill plug with 10wt% OPC.</p>
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