

UTILIZATION OF SOME INDIAN IRON ORE WASTE PLANT TAILS BY REPROCESSING

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Abstract

Restriction in ore production and closing down Iron ore mines has spurred the mines to look for alternative routes like processing BHQ/BHJ waste rock or processing of iron ore slimy plant tails. The latter route was logically and scientifically attractive as pellet grade concentrates can be produced with a possibility of partial reclamation of the tailings pond area and mitigation of tailing pond management problem. The fine particle processing of slimy tails has been addressed either by flotation or wet, high-intensity, high gradient separation. This paper furnishes a few case studies of fine particle processing of iron ore slimy tails spread across Odisha. The results show that the pellet grade concentrates could be produced with appreciable yield (Weight %) for different slimy tails varying in granulometry, silica, alumina and hydrated – anhydrous iron oxide content. In some cases, the above process has also paved the way for a waste process wherein the tails produced become rich in alumina and can be used in building materials and the pottery industry.

Keywords: WHIMS, iron ore slimes, BHQ/BHJ, Odisha.