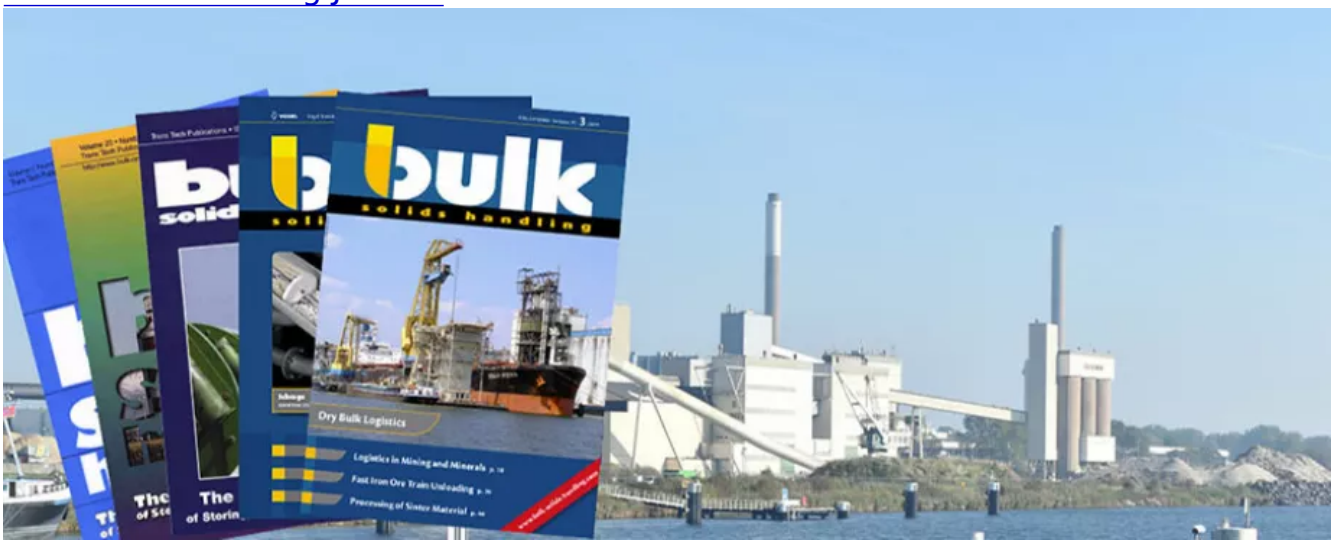
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Technical Article

Review of Raw Material Stacking and Reclamation Methods

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A comprehensive review of the processing equipment utilized within the minerals processing industry for stockpile raw material stacking, blending and reclaiming is presented. The benefits and shortcomings of each based on their as observed operational performance are given and relative comparison and blending efficiency. The concept of the raw material stockpile as a bulk solids mixing device is amplified and the basic intrinsic process parameters, variables and operational constraints which influence performance are highlighted. This paper is the first of two concerned with the optimal design of raw material stockpile homogenizers.

Raw material stockpiles are utilized for storage and blending purposes in most sections of the processing industry, being an integral part of the raw material preparation and processing stage of, for example, iron and steel manufacture, coke plants and coal washeries and in cement manufacture.

A common feature and basic requirement of the raw material stockpile is to even out and reduce the variation or variability in some inherent or intrinsic raw material physical or chemical quality. In this respect, the stockpile has a dual role within the overall preparation system, being a storage unit in addition to its capacity and capability for blending and homogenization. As an intermediate

buffer storage device, production activities in the quarry and in subsequent processing stages need not be related and a constant supply of raw materials to the process is ensured.

Good overall input/output raw material variability reduction can be achieved if correct layout or stacking is employed and hence raw materials from poorer deposits with large scale heterogeneity can be utilized.