

RECLAMATION OF MINEROCK STOCKPILES¹

by

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Abstract. The Reclamation of minerock stockpiles in the State of Minnesota is addressed in Minnesota Rules, Chapter 6130. Minnesota law basically requires that if runoff from stockpiles is likely to cause water quality violations, that drainage control and capping be implemented. Various capping techniques are available. Some of the issues presented will include the need for and effectiveness of various barrier layers including geomembranes, clay and impermeable glacial till soils. The effectiveness of surface sloping, ditching and other techniques to shed runoff will also be presented. The evaluation of the various capping techniques for this study included hydraulic conductivity testing and computer modeling using the Environmental Protection Agency/U.S. Army Corps of Engineers Hydraulic Evaluation of Landfill Performance computer model. The study identified that one of the most effective techniques for capping minerock stockpiles is a screened glacial till soil with 20% to 30% silt and clay content. Typical impermeable barrier layers have much greater clay content. The study identified that the hydraulic conductivity of the barrier layer and evapotranspiration were significant design considerations. The study also identified that if infiltration is to be controlled, that side slopes must be covered and/or capped.

Key Words: mineland reclamation, capping

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