

Design & Construction of Barrier Berms using Innovative Reclamation Techniques to Benefit Mineland Operational Safety and Community Viewshed¹

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Abstract: Design and installation of two barrier berms over 14 acres was completed at a Northern MN³ active taconite mine operation located in close proximity to two communities. The berms provide a safety barrier between the mine and communities for a visually appealing landscape that aides in minimizing the operational impact through reduction in noise and potential dust and reduces trespass from outside the active operation. Vegetation restoration was completed to promote native species in conjunction with building soil on overburden material. Soils were ameliorated with nutrient and organic matter additions, and hydroseeded to manage soil erosion. Trees and surface soils were salvaged in advance of mineland stripping, then located to the berms to enhance vegetation establishment. The project serves as an opportunity to test alternative reclamation methods to build soil as a growing medium, establish native vegetation, and create a blueprint of best practices to be leveraged when designing reclamation sites, keeping in mind that post-mining landscapes can be a valued community resource for vegetation reestablishment and aesthetically appealing viewsheds from neighboring communities.

Additional Key Words: mining, active operation, soil, material salvage, viewshed, community, safety, native vegetation.

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 3. Work reported here was conducted near 92°31'24.364"W 47°30'0.394"N; 92°32'3.484"W 47°30'33.02"N.