

PLANT AND SOIL RELATIONSHIPS OF MINE-LAND RECLAMATION AT THE NAVAJO MINE-NORTHWESTERN NEW MEXICO¹

by

Davis, Luci M.², Bruce A. Buchanan³ and Walter J. Ruzzo⁴

Abstract. Soil suitability criteria for mine-lands in the arid southwest are often lacking for specific sites. Most guidelines are based on literature and experimental work from other mining regions which may not be applicable to local conditions. The objective of this study is to determine spoil suitability criteria with various depths of topdressing, that will meet reclamation standards. These criteria are specific to Navajo Mine. Vegetation and soil data were collected from 15 reclamation sites at Navajo Mine near Farmington, New Mexico. The reclamation sites are 8-15 years old and had different topdressing and spoil characteristics. Vegetation cover, production and shrub density were determined on two plots (30 x 30m) per site. A composite of topdressing samples was collected from each plot. In addition, four samples were taken from a 1.2m deep pit at each site. The results of this study are forthcoming and the application to reclamation in the southwest will be discussed.

¹Paper presented at the 1991 National Meeting of the American Society for Surface Mining and Reclamation, Durango, CO, April 14-17, 1991.

³Bruce A. Buchanan, Private Consultant to BHP-Utah Minerals International and Associate Professor, New Mexico State University, Las Cruces, NM.

²Luci M. Davis, Research Specialist, New Mexico State University, Las Cruces, NM.

⁴Walter J. Ruzzo, Senior Environmental Specialist, BHP-Utah Minerals International-Navajo Mine, Fruitland, NM.