

GEOMORPHIC RECLAMATION OF ABANDONED COAL MINES ON VERMEJO PARK RANCH NEAR RATON, NEW MEXICO

II. RECLAMATION AND REVEGETATION¹

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Abstract: The New Mexico Abandoned Mine Lands (AML) Program recently completed reclamation of the Swastika Mine on the Vermejo Park Ranch near Raton, NM. Historic mining activities left steep piles of coal waste which were eroding into the adjacent channelized ephemeral stream. Project goals were to reconstruct the stream channel, stabilize and restore the surrounding landform function, and reclaim and revegetate the entire disturbed area. The geomorphic design and construction phases of the project are described in another paper in this session presented by Water & Earth Technologies, Inc. (WET). This paper will focus on the reclamation and revegetation design and implementation provided by Habitat Management, Inc. as part of the WET team.

The project began in December 2008 with evaluation of the soils, hydrology, vegetation, wildlife, and wetlands and preparation of an Environmental Assessment (EA). The project was successfully completed in October 2012 and received a NM Mining and Minerals Division Excellence in Reclamation Award.

Coal waste was removed to stable landforms constructed at repositories and/or regraded in place and then capped with clean soil. Before capping, gob was treated with either lime or gypsum to mitigate acid or alkaline soil conditions. After capping, soils were amended with composted wood waste or Kiwi Power Organic Soil Treatment™ and Fertil-Fibers NutriMulch™ (6-4-1) on areas difficult to access with equipment. All disturbed areas were seeded with either upland or wetland native seed mixtures comprised of locally observed species. After seeding, WoodStraw™ was applied to all slopes except the stream banks where turf reinforcement mat was installed.

Native upland and riparian shrubs encountered during excavation activities were removed from the ground using a tree spade and stored in burlap-lined cages before planting in reclaimed areas. When possible plugs of herbaceous wetland vegetation were also salvaged and replanted along the reconstructed channel.

Additional Key Words: Abandoned mine reclamation, revegetation, riparian restoration, wetland construction, shrub, soil amendment

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