

**Year 2000
Abandoned Mine Lands
Reclamation Award Nomination**

**Durst Road Abandoned Mine Land
Project**

Grantsville, Maryland

Project Construction Date: May 1, 1992 – October 14, 1992
Architect/Engineer: The Maryland Bureau of Mines
Contracting Agency: The Maryland Department of General Services
Construction Contractor: Winner Brothers Coal Company
Construction Cost: \$178,623.00

Respectfully submitted by:

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PROJECT NARRATIVE
Durst Road Abandoned Mine Lands Project

Site History

The Durst Road Abandoned Mine Land Reclamation Project is located in Garrett County, Maryland approximately 4 miles southwest of Grantsville in the Casselman Coal Basin, immediately adjacent to the Casselman River. The coal basin is bounded by Negro Mountain to the west and Meadow Mountain to the east, the Eastern Continental Divide of North America. This makes the Casselman River a unique Maryland river in that it flows to the Mississippi instead of the Chesapeake Bay. The Casselman River flows north through the center of the coal basin and is a major source of recreation for local residents as well as attracting tourist and sportsman from all over Maryland and surrounding states. Garrett County is a rural, mountainous area with large tracts of publicly owned land and the natural resources are a vital component of the economy (tourism, extraction), culture and recreation of the communities that reside within it's boundaries.

The unnamed mine on Durst Road was one of the earliest to surface mine coal in Maryland. The mine operated from the late 1940's to approximately 1952, beginning operations in the Upper Freeport Coal Seam that lay exposed along the banks of the North Branch Casselman River. Spoil from the first cuts was used to divert the river around the area to be mined. A large bend in the river was straightened and consequently, 2000 linear feet of stream and floodplain with it's wetlands, laurel thickets, aquatic habitat and prime wildlife habitat were destroyed ([Photograph #1](#)). The newly formed banks of the river were comprised of eroding, acid bearing spoil that continued to cause downstream impacts until reclamation was complete ([Photograph #2](#)).

When mining operations were terminated in 1952, the site was abandoned leaving approximately 30 acres of exposed, acid bearing spoil, 1500 linear feet of clogged stream, 3400 linear feet of dangerous highwall and 3 hazardous water bodies. Over the years the area became a local dump leaving one acre of residential and industrial waste. Water sampling indicated that the mine contributed a net acid discharge of 46 lbs per day to the North Branch Casselman River.

During the 1960's, the Maryland Forests, Parks and Wildlife Service realized that the site was having a substantial impact on the Casselman river due to erosion and acid mine drainage. Trees were planted on the site to provide some stabilization to the stream banks and spoil piles. Small groves of Red Pine became well established but overall the site remained unvegetated and barren ([Photograph #1,4](#)).

Because of it's close proximity to a county road and easy access, the site became well known to locals as a swimming hole, dumping area and place to consume alcoholic beverages. Shallow submerged rock ledges created hidden dangers to individuals diving from the highwall. These dangerous activities were reported by the landowner and observed by Bureau of Mines and Garrett County officials.

Project Development and Design

Project development began in the Spring of 1986, shortly after the inception of Maryland's Abandoned Mine Land Program, with the Bureau of Mines staff collecting field data at the site. Water quality data was compiled from various sample points located within and adjacent to the mine site. The data indicated that erosion of the spoil piles and the pit discharge were having a moderate impact on the already marginal quality of the receiving streams (the North Branch Casselman River).

Backfilling the pits and revegetating the spoil would have eliminated the health and safety hazards, but the Maryland Bureau of Mines saw an opportunity to create some unique wildlife habitat. Recognizing that there were some unexpected and fortuitous features resulting from the mining, the Bureau decided that utilizing only traditional reclamation methods would be a step backwards. The Bureau identified these features and incorporated them into a design that would eliminate the health and safety problems as well as improve on the environmental quality of the site. The Maryland Forest, Parks and Wildlife, the Non-tidal Wetlands Division and the Fisheries Division were consulted and assisted the Bureau of Mine's engineers with wildlife and fishery habitat enhancement techniques and wetland creation methods. In 1989, utilizing the technical assistance provided by these various state agencies, the Bureau of Mines completed the development of the reclamation design. The landowner, a retired horticulturalist, accepted the design with enthusiasm and also provide valuable technical input related to revegetation.

The design consisted of reducing the highwall and low-wall to a maximum 2.5 : 1 slope. This reduced slope would be extended to 6' below the final water elevation. This would allow for the removal of sudden drop offs and submerged rock ledges while retaining the water body for wildlife enhancement. Additionally, large shallow areas and islands would be created for shallow open water/wetland fish habitat and to provide cover protection for migrating water fowl ([Photograph #4](#)).

The eroding stream banks of the North Branch Casselman River would be reduced and stabilized using Rip-Rap ([Photograph #3](#)). Existing vegetation along the banks would be avoided in order to minimize thermal impacts to the stream. The final grading plan would utilize selective grading to preserve clusters of established vegetation ([Photograph #4,5,6](#)). Subsurface limestone drains would be constructed to provide a clean flow path through the backfilled areas to convey alkaline groundwater to the water bodies. During grading of the spoil piles, pockets of topsoil would be salvaged and spread over the final grades to provide a growing medium. The site would be revegetated using a mixture of noninvasive or persistent grasses which would allow the natural flora and fauna to invade and colonize the site.

Reclamation Construction

The construction contract was approved by the Maryland Board of Public Works on November 27, 1991. The contract was awarded to Winner Bothers Coal Company, Inc., of Frostburg, Maryland in the amount of \$178,623.00. Construction was subcontracted to Pyramid Equipment Company, of LaVale, Maryland. Project construction began on May 1, 1992 and completed on October 14, 1992.

The project consisted of 88,500 cubic yards of earthwork to reclaim 38 acres of abandoned surface coal mine which included the elimination of public health and safety hazards associated with 3,400 linear feet of dangerous highwall, 3 hazardous water bodies, 460 linear feet of clogged stream, 15 acres of clogged stream lands and one acre of industrial/residential waste.

During the course of construction, the contractor consistently demonstrated an excellent ability and desire to complete the required reclamation and enhancement work. Additionally, the contractor and landowner made specific suggestions to modify the construction plan for wildlife enhancement and with the Bureau of Mines approval the contractor implemented these modifications at no additional cost to the contract.

By using innovative reclamation techniques, the Bureau of Mines reduced the amount of earthwork by approximately 50% and revegetation by 25% which resulted in an approximate cost savings of \$100,000.00. Additionally, the site is in a more advanced state of forest succession due to the clusters of mature trees scattered throughout the site.

Post Construction Efforts and Current Status

The Maryland Bureau of Mine's revegetation crew assisted the landowner by supplying trees and shrubs to supplement those provided from the landowners own greenhouses. Since the completion of construction, approximately 20,000 trees and shrubs have been planted on the site. A variety of tree and shrub species were planted around the water bodies, within the wetlands, and on the upland areas. Species such as Alder, Willow, Red Maple, River Birch, Sycamore and Black Pine were planted along the water edge and within the wetlands. Poplar, Red Pine, Dogwood, Black Cherry, Ash, Aspen and Spruce were planted on the upland areas. The tree and shrub plantings were designed to provide maximum grassland/forest edge and to provide travel lanes of trees to allow wildlife to migrate to and from the waterbodies while remaining in cover ([Photograph #3,4,5,6](#)).

Additionally, the Bureau of Mines constructed limestone fill areas ([Photograph #6](#)) between the water bodies to increase the alkalinity as the water flows into each successive water body. The landowner also allowed a dry fire hydrant to be installed at the waterbodies so that the local fire department can fill their trucks in the case of a nearby fire emergency.

Currently, the site is stabilized and undergoing the slow transformation from grassland to forest. The survival rate of the planted trees has been excellent and are providing a variety of habitats. Many wildlife species, such as turkey, deer, Canadian geese, beaver, bear and blue herons, have been seen on the site.

Water quality problems on the site have been completely eliminated. The spoil piles have been stabilized eliminating the erosion of acidic spoil into the stream and water bodies. The water body discharge is net alkaline and has a pH of 7. The water bodies have been stocked with trout, bluegills, and bass and are thriving and reproducing.

Conclusion

The National Environmental Policy Act of 1969 (NEPA) requires the State to perform an environmental review of the proposed project by presenting the reclamation alternatives to other state agencies that regulate and protect the environmental and cultural resource values of the State. The successful reclamation of the Durst Road Abandoned Mine Lands Project exemplifies the spirit and intent of the NEPA. Through the NEPA coordination process, a reclamation design was developed and implemented that not only protected these resource values but created additional natural resources for future generations to enjoy.

In conclusion, innovative reclamation design techniques and cooperation between state agencies, contractors and the landowner resulted in the exemplary reclamation of 38 acres of abandoned stripmine. Post reclamation construction efforts have established a variety of tree, shrub and grass species on the site. All the health and safety hazards have been eliminated and the site returned to the prime fish and wildlife habitat that existed prior to mining.