Indiana Department of Natural Resources
Division of Reclamation

Submits

AML Site 901
Coles Creek
Near Scalesville, Warrick County, Indiana

for the

2004 Abandoned Mine Land Reclamation Award

Submitted By
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Project Information
Construction Start Date: March 1, 2002
Construction Completion Date: September 19, 2002
Clean Streams Project
Clean Streams Funds: $814,997.76
Expended over FY2000, FY2001, FY2002 Clean Streams Grants
Finished project with AML Funds of $22,534.98
Total Construction Costs of $837,532.74

Organizations Responsible for the Reclamation
Indiana Department of Natural Resources
Division of Reclamation - Designer
Foertsch Construction Company, Inc. - Contractor
Patoka South Fork Watershed Steering Committee – Partner

Date Submitted

March 19, 2004

Introduction

The intent of this project was to address the exposed, acid producing material that was adversely affecting on-site impoundments and off-site drainage. This material was primarily the result of the widespread use of gob as a base for haul road construction during the mining operations and the coal that was left exposed in numerous unreclaimed pit bottoms. The work consisted of picking up coal refuse and burying these toxic materials in a designated gob disposal area. A series of passive wetland treatment cells were also constructed to improve water quality.

This project was undertaken utilizing a combination of Appalachian Clean Streams Initiative and Abandoned Mine Lands funds. Although the Indiana Division of Reclamation performed the work, it is considered a successful partnering endeavor with the Patoka South Fork Watershed Steering Committee (PSFWSC). This location was long ago determined to be a high priority for the PSFWSC citizens group. They identified the area as a major contributor to water degradation in the South Fork of the Patoka River. This project was the biggest concern at the time for the group, as it lies within the headwaters of the impacted river. Because of the size of this project, it was determined during the project development process that it would be more appropriate for the Division of Reclamation to address the problems at this site directly, instead of the volunteer group. The PSFWSC served as a vocal advocate for doing the work and remain involved in the area to this day.

Background

This site is located near Scalesville in Warrick County, Lane Township at T3S R7W Sections 28, 32, and 33 on the Folsomsville, IN Quadrangle. It consisted of gob covered roads, acid impoundments and acid drainage. Mining operations at this site occurred from 1950 to 1966 by an unknown operator.

Gob was once commonly used as a road base in early mining operations, simply because it was cheap and available. However, this means that instead of simply covering a gob pile that is isolated in one area, one must now deal with a crisscrossing maze of 50’ wide gob haul roads up to a mile and a half long. This project consisted of about ninety-five acres of these long, tracks of barren gob with adjacent and isolated barren underclay pit bottoms, all surrounded by well-vegetated spoils. In all, there were approximately four and a half miles of gob haul roads reclaimed at this site.

Numerous pit bottoms impounded acid water, totaling approximately seven acres. Drainage off site was acidic with pHs in the 3 to 4 range and elevated metals. Because of the long, linear nature of the gob haul roads, this ninety-five acre site was spread out over a much larger area, complicating the reclamation activities.

Another very serious problem at this site was the extensive use of these gob haul roads for unauthorized off-road vehicular activities. One could travel at great speeds down these long straight haul roads, only increasing the chance for personal injury.

Reclamation Objectives and Activity

The objectives of this reclamation project included reducing the adverse off-site contamination caused by the barren gob haul roads and acidic pit bottom impoundments, improving the aesthetic value of the area and creating valuable wildlife habitat.

Reclamation consisted primarily of the consolidation and burial of coal refuse in a designated burial area and the establishment of passive water treatment wetlands. All acidic impoundments on site were treated to meet NPDES standards prior to being discharged.

All coal refuse scattered throughout this site was consolidated and encapsulated into one large burial area to eliminate its acid producing abilities and provided the source of borrow material used as cover throughout the site. This burial area was centrally located so to minimize the distance refuse material would need to be hauled.

At several of the common entrances to this site, “tanks traps” were installed to prevent the unauthorized access by off-road vehicles. These tank traps consisted of very tall and steep berms bisected by a deep trench and were built perpendicular to the entrance. This virtually eliminated unauthorized access to this site with a vehicle.

Surface water drainage through and off the site was one of the primary concerns at this project because of the prevalent toxic materials scattered about, the many existing acid impoundments, and the numerous acid seeps that were present. Therefore, one of the main objectives was to redirect the surface flow through a series of shallow passive wetland treatment cells and deep polishing ponds before leaving the site. These impoundments were

then planted with native aquatic vegetation. Now they provide passive water treatment and exceptionally rich and diverse wildlife habitat. Many dead snags were intentionally left standing, and other trees were flooded which now provide homes for numerous birds and other wildlife. Even though acid seeps still exist within the site, by the time the surface flow leaves the site, it meets all NPDES standards.

Post Reclamation Land Use

This privately owned land that was once a moonscape of barren gob roads and acidic impoundments now consists of well-vegetated corridors and small isolated ponds with good water quality, a virtual wildlife paradise. The wildlife that now exists there is quite impressive: deer, turkey, rabbits, waterfowl, numerous other birds and amphibians, as well as others. There was even a sighting of the State endangered Bobcat. This site now looks almost identical to the adjacent Sugar Ridge State Fish and Wildlife Area, which will also benefit from this reclamation project. In addition, there is no longer any problems with unauthorized access by off-road vehicles.

Summary and Conclusions

Prior to reclamation, this network of acid producing gob haul roads and acidic impoundments were not only unsightly and unproductive, but also detrimental to adjacent agricultural lands and fish and wildlife resources, including the State Fish and Wildlife Area.

Reclamation has also prevented the unauthorized access to this site by off-road vehicles, not only eliminating further degradation of the site, but also preventing any possible injury caused by this attractive nuisance.

This excellent reclamation project is also yet another example of the successful cooperative relationship between the Abandoned Mine Lands Program and a local watershed citizen’s group.

Photo Captions

Attached are six photos showing portions of the site before and after reclamation depicting the dramatic differences and overall success of this reclamation project.

Photo 1: This photo shows one of the barren gob haul roads and adjacent acidic impoundments. This shot gives the viewer an idea of the long linear nature of this site and the complicated drainage issues associated with reclamation.

Photo 2: Another view of a portion of a haul road and an adjacent acidic impoundment prior to reclamation.

Photo 3: Yet another portion of the site with a gob haul road and an adjacent acidic impoundment. Tire tracks from unauthorized access are evident in the foreground.

Photo 4, Cover Photo: After reclamation, this photo shows one of the passive water treatment wetland cells with good water quality and habitat improvement features such as brush piles on land and rock piles in the shallow water.

Photo 5: This photo shows a portion of a reclaimed haul road and adjacent wetland with good water quality.

Photo 6: This photo is of one of the passive water treatment cells with aquatic vegetation establishment during the first growing season.