

## APPLIED SCIENCE PROJECT

**TITLE:** Investigation of Alternatives for Restoring Headwater Streams via Sediment Pond Removal in the Appalachian Coal Belt Region

**PERFORMING ORGANIZATION:** University of Kentucky

**APPROVED FUNDING:** \$44,278

**ORIGINAL PERFORMANCE PERIOD:** 9/1/05 - 9/29/07

**OBJECTIVES:** 1) Document currently employed methods for sediment pond removal. 2) Develop design techniques for restoring the function of headwater streams and floodplains following sediment pond removal. 3) Re-establish high-value hardwood trees to provide shading, organic matter, habitat, and stream bank stability as part of the restoration design. 4) Monitor and document down-gradient sediment concentrations associated with modified sediment pond removal techniques. 5) Document the economic factors associated with these new methods for sediment pond removal and headwater stream restoration.

All of the project objectives were not able to complete during the original performance period due to coal mine permit approval issues. No-cost time extensions were requested and approved because the permitting delays were outside of the control of the University of Kentucky.

Since this situation did not change for several years and was not expected to change the project was not granted time extensions past September 30, 2010. A final report was submitted, summarizing work that had been completed prior to the delays caused by coal mine permit approval issues. The remaining funding for the project was de-obligated.

The final report includes the documentation of currently employed methods for sediment pond removal, design techniques for restoring the function of headwater streams and floodplains following sediment pond removal, and preliminary water quality sampling to establish background conditions.