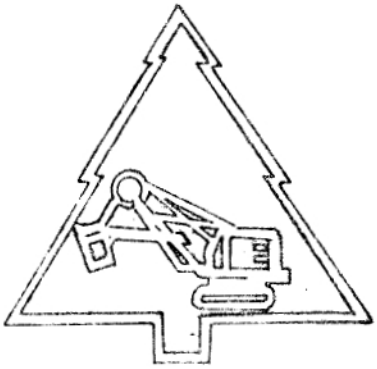
BLACKLEGS CREEK

MINE DRAINAGE POLLUTION ABATEMENT PROJECT

OPERATION SCARLIFT



COMMONWEALTH OF PENNSYLVANIA

MILTON J. SHAPP GOVERNOR

DEPARTMENT OF ENVIRONMENTAL RESOURCES

MAURICE K. GODDARD SECRETARY

PROJECT NO SL-182

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DEPARTMENT OF ENVIRONMENTAL RESOURCES

OFFICE OF RESOURCES MANAGEMENT

EBENSBURG DISTRICT OFFICE

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I. INTRODUCTION

The Office of Resources Management under the Department of Environmental Resources initiated a project in June 1971 to conduct an investigation of coal mine drainage pollution within the Blacklegs Creek Watershed in Indiana County. This project is SL-182. It is the intent of Project SL-182 to recommend engineering measures necessary to effectively abate the pollution and improve the quality of water within the watershed to an acceptable and desirable level. This report contains the results of the investigation and includes pertinent description of the basin's geography, geology, mining locations, and general stream conditions in relation to acid mine drainage. The main body of the report deals in describing the small watersheds of the Blacklegs Creek Basin. Sources of mine drainage are defined and analyzed to determine their effect on the individual tributaries and on the entire drainage system.

Recommendations are made for abating mine drainage with the ultimate objective of raising stream quality to a desired level.

Maps and charts at a reduced scale are contained in the various sections of the report which show the specific pollutant sources, deep and surface mining, geological and physical features.

The investigation was directed by Mr. A. E. Molinski, District Engineer, Office of Resources Management. The Project Engineer in charge was Robert H. Lundberg with assistance of District Office Staff.

II. METHOD OF INVESTIGATION

The investigation began by determining through field reconnaissance the most desirable locations to establish sampling stations to best evaluate the various sources of pollution. There were thirty-nine (39) sampling stations on the watershed. Twenty-two (22) were weirs and the remaining seventeen (17) locations were sampling points. Samples were then collected from each station and tested by Seewald Testing Laboratories on a monthly basis for a period of approximately one year. Each sample was tested to determine the pH, alkalinity, acidity, iron, and sulfate content of the water.

Field investigation and stream reconnaissance were made. The main streams were traveled, field testing all tributaries for evidence of pollution. When an area of below pH of 6.0 was encountered, the stream was followed and searched for any source of pollution. The pollutant sources were catalogued and spotted on a map. Further field reconnaissance was conducted where it was learned that surface water was entering into the coal seam or mine workings.

Topographic maps were made from existing U.S.G.S. base maps and W.P.A. Project Maps. These maps include the following pertinent information: (1) mine openings and extent of underground workings, (2) strip mine areas,(3) coal refuse areas, (4) coal contours, (5) coal outcrops, (6) flow measurements and sampling stations, (7) deep well sections.

A review of all data and an analysis of corrective measures for each source of pollution were considered. The types of corrective measures that

were considered include the following: (1) mine sealing, (2) grouting, (3) backfilling, planting and soil treatment, (4) surface water diversion, (5) stream channel improvements and sealing, (6) burial or covering of refuse, (7) water treatment - chemical and mechanical.

The final effort was the actual completion of writing and conveyance of this report which presents our findings together with conclusions, recommendations, and proposed corrective measures, and estimated cost for these proposed abatement measures.