

## I INTRODUCTION

In January, 1978, the office of Resources Management under the Department of Environmental Resources was requested to undertake an inventory of acid mine drainage on the Pucketa Creek Drainage Basin by the Ohio River Basin Commission. It is the intent of this study to recommend engineering measures necessary to effectively abate the pollution and improve the quality of water within the basin to an acceptable level established by Chapter 93 of the Pennsylvania Department of Environmental Resources' Rules and Regulations. 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. 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 ultimate objective of raising stream quality to the level established by Chapter 93 of the Pennsylvania Department of Environmental Resources' Rules and Regulations. 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. Pucketa Creek Basin proved to be a minor source of pollution to the Allegheny River. The bulk of the mining conducted within the basin has been confined to the upper reaches of the stream. This report is one step in reporting the extent and severity of mine drainage pollution of Pucketa Creek Drainage Basin and its tributaries.

The investigation was directed by A. E. Molinski, District Engineer, Office of Resources Management. The Project Engineer in charge was Patrick J. Watt with the assistance of Arthur W. Kelly and the District Office staff.

## II BACKGROUND

Streams draining the coal fields of the Pucketa Creek Drainage Basin have probably been acidic in nature from the time of the opening of the first mines and they remain so at the present time. The initial substantiation of the mine drainage problem in this basin is not known; however, it has possibly existed for nearly a century. Acid stream conditions in the Pucketa Creek Drainage Basin have been described in published and unpublished reports in the past ten (10) years. However, none of these reports were detailed and no comprehensive studies of the problem were made. During 1978, the Ebensburg District Office of the Department of Environmental Resources, Pennsylvania, conducted a stream water quality survey of the Pucketa Creek Drainage Basin to find acid mine drainage pollution sources and possible abatement measures. Water sampling was conducted during the months of April and May, 1978. The short time frame established for this study permitted the taking of only one (1) water sample at each station; therefore, the survey findings are correct at the time of study but cannot be assumed to be accurate during extended periods of changing hydrologic conditions. All recommendations for acid mine drainage abatement are preliminary in nature.