

## INTRODUCTION

The Mahanoy Creek Drainage Basin is located north and northwest of Pottsville, in the Counties of Northumberland, Schuylkill, and Columbia, PA (see Figure 1, p. 3). The watershed is bounded on the west by the Susquehanna River and extends eastward to the town of Delano. The Mahanoy Creek originates near Mahanoy City and flows west through the boroughs of Gilberton, Girardville, Ashland, and Gordon. Continuing west, the creek flows through Helfenstein, Hunter, and Otto.

A watershed study begun in July, 1973 of the Mahanoy Creek Drainage Basin has revealed:

1. the sources, distribution, and abundance of acid mine discharges
2. types of mine drainage
3. the effects of mine drainage on water quality of streams
4. several areas severely disturbed by strip mining
5. the extent of deep mining and its effects on surface areas
6. the extent of effects of silt and culm banks in the watershed
7. the extent of acid mine drainage pollution in the subwatersheds of the drainage basin and
8. that abatement of the coal mine drainage in the watershed is economically feasible (see Abatement Plan III, Table 12).

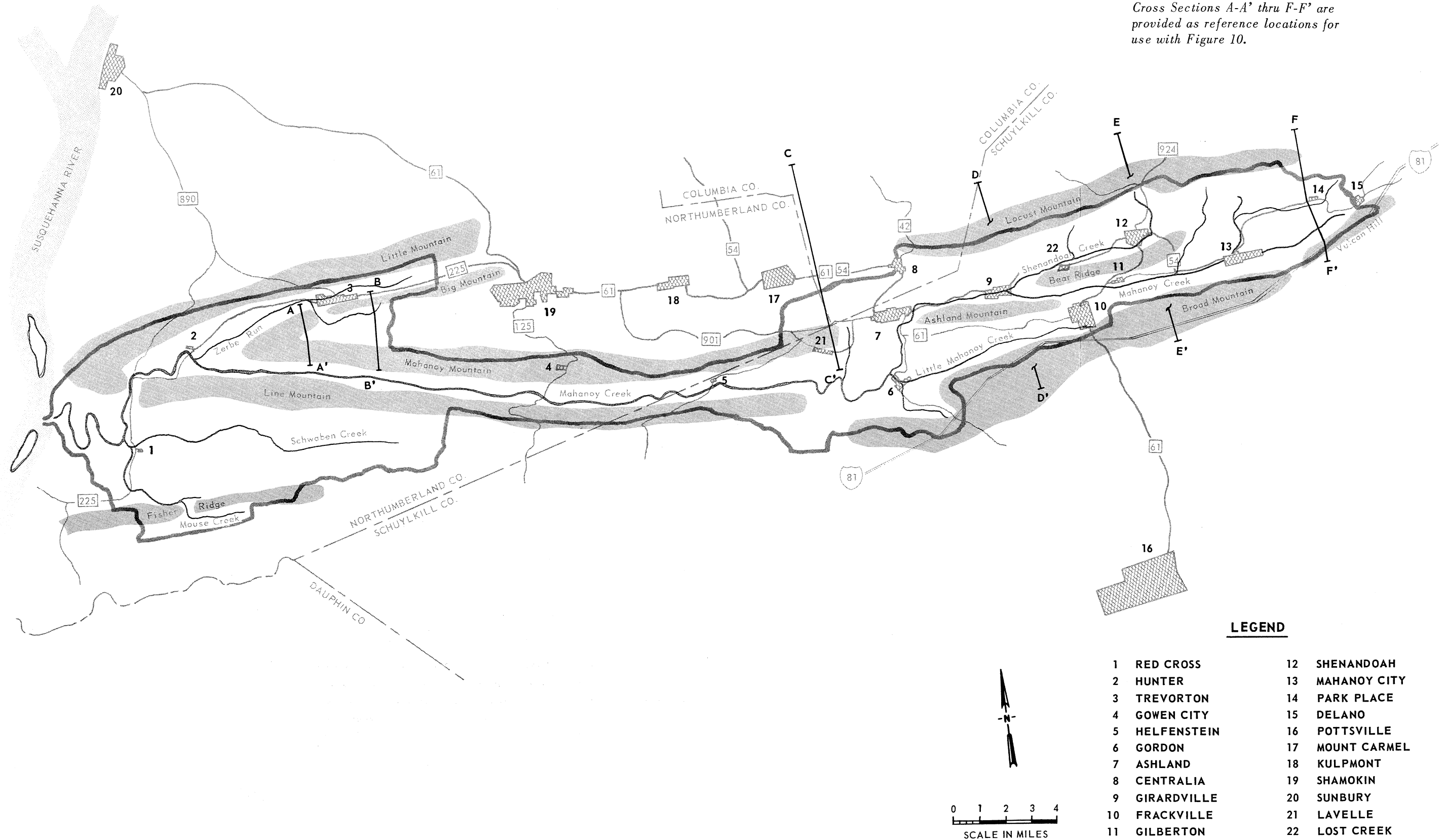
In the first two phases, field work was conducted to determine the water quality of each tributary of Mahanoy Creek with respect to acid mine drainage. The areas in the watershed affected by strip mining and deep mining were identified with dimensions of all stripping pits recorded. During these phases all acid mine discharges were located in the watershed, including discharges which re-entered deep mines a short distance downslope.

Phase I consisted of a reconnaissance survey of the watershed, including the identification of major sources of acid mine drainage and the division of the drainage basin into subwatersheds. Each of the streams in the watershed were visited, with samples taken of them as well as the acid mine discharges which entered them.

In Phase II the field mapping and the recording of the dimensions of the strip pits were completed. Areas which have been reclaimed, although few, were also located. Reclamation techniques used were partial regrading and replanting, replanting over disturbed areas without regrading, and regrading to original contours with and without replanting. Plates A and B (inside rear cover) show the extent of deep mining, strip mining, and all major mine refuse piles in the watershed.

Water samples were collected, analytical data evaluated and stream flows determined during Phase III. Based on the watershed investigations, the effectiveness and applicability of various abatement techniques were evaluated. Operating and initial costs using the most effective abatement procedures are detailed with priority areas outlined. All water analyses and flow measurements are shown in the Appendix.

Cross Sections A-A' thru F-F' are provided as reference locations for use with Figure 10.



**LEGEND**

1 RED CROSS	12 SHENANDOAH
2 HUNTER	13 MAHANAY CITY
3 TREVORTON	14 PARK PLACE
4 GOWEN CITY	15 DELANO
5 HELFENSTEIN	16 POTTSVILLE
6 GORDON	17 MOUNT CARMEL
7 ASHLAND	18 KULPMONT
8 CENTRALIA	19 SHAMOKIN
9 GIRARDVILLE	20 SUNBURY
10 FRACKVILLE	21 LAVELLE
11 GILBERTON	22 LOST CREEK

Figure 1. Location map