

## VIII ANALYSIS OF INDIVIDUAL WATERSHEDS

### A. General

The purpose of this section is to analyze the mine drainage problem of the individual watersheds, relate this problem to the effect that each has on the overall system, and to recommend specific abatement measures to significantly reduce the pollution within the Pucketa Creek Drainage Basin. Each watershed analysis will include the following information:

- (1) A sketch-type map showing the location of sampling stations
- (2) Sampling station data consisting of pollution loads.

Each polluted watershed will contain the following additional information:

- (1) The location and condition of the streams which are symbolized as severely acid and iron and moderately acid and iron.
- (2) A description of pollution sources
- (3) Maps showing the location of pollution sources
- (4) Abatement recommendations.

### B. Non-Polluted Systems

There are two (2) watersheds in the Pucketa Creek Drainage Basin that are classified as non-polluted. These watersheds are analyzed and described below, however, abatement recommendations are not included since the water quality of these streams are considered acceptable for the purpose of this study. The two (2) non-polluted watersheds are: Pucketa Creek (Main Stem) and Little Pucketa Creek.

## PUCKETA CREEK WATERSHED (MAIN STEM)

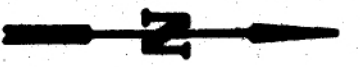
The headwaters of Pucketa Creek Watershed (Main Stem) which exclude Unnamed Tributaries #1 and #2 for the purpose of this study, originate at a point approximately 4 miles east of Sardis, Pennsylvania. Pucketa Creek (Main Stem) flows in a northwesterly direction for about 10 miles where it discharges into the Allegheny River. The total length of the stream including all tributaries is 45.5 miles. The total area of the watershed is approximately 22 square miles.

### B. Stream Condition

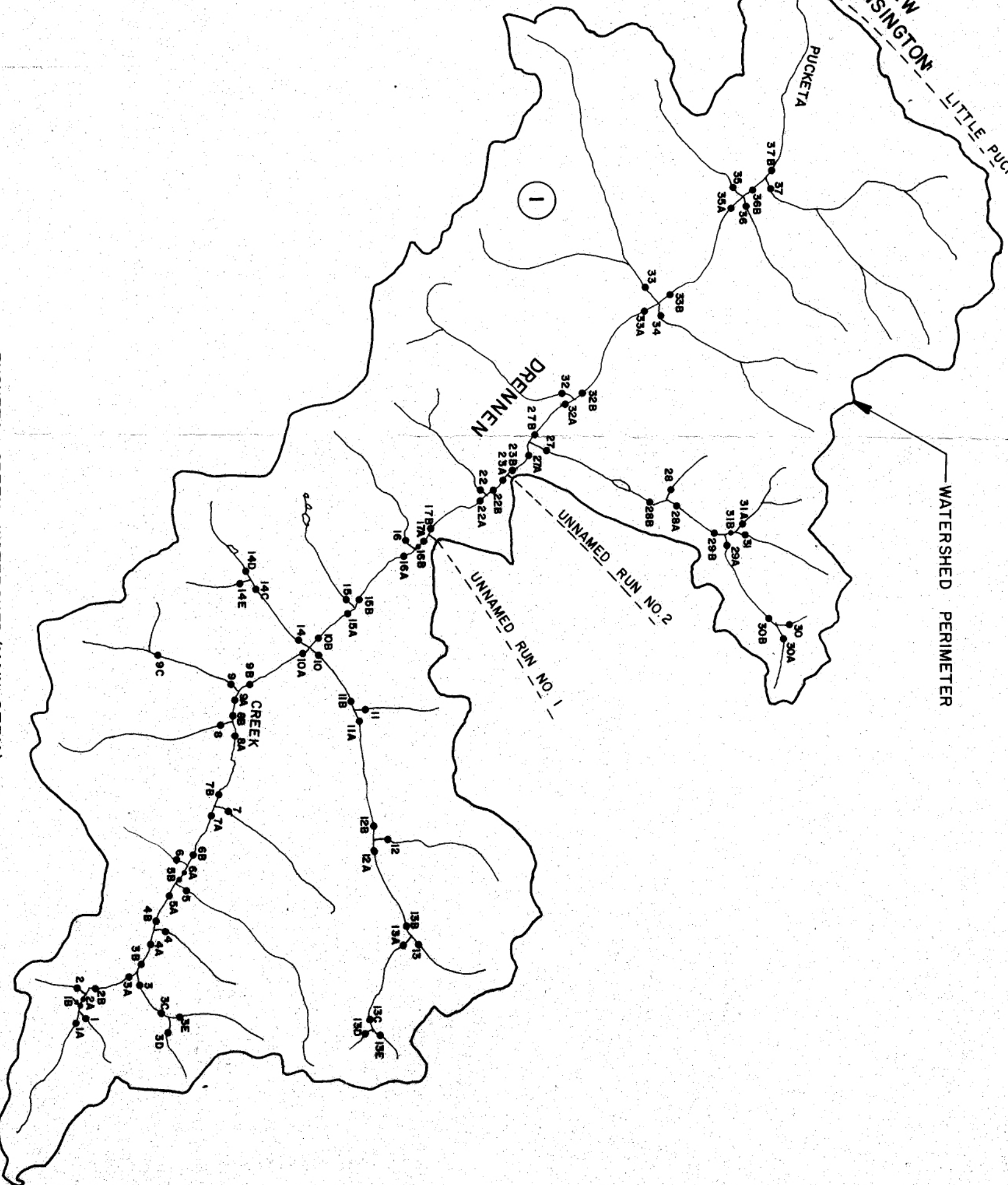
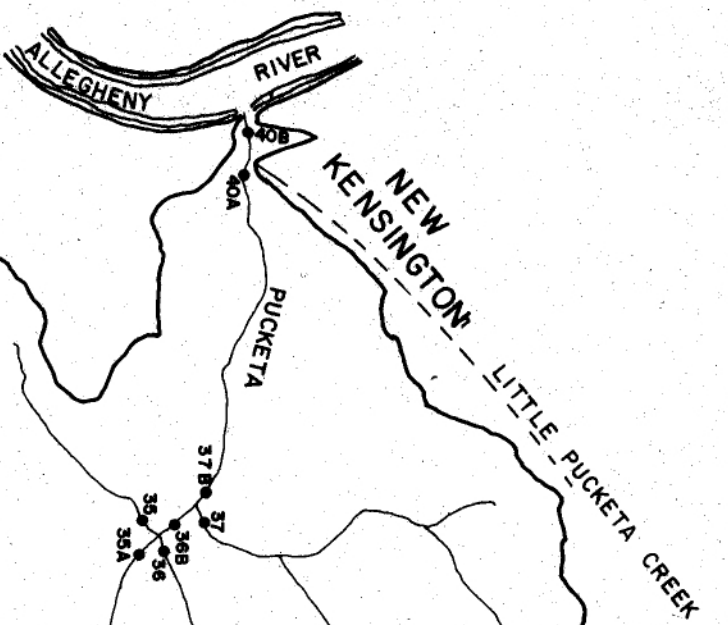
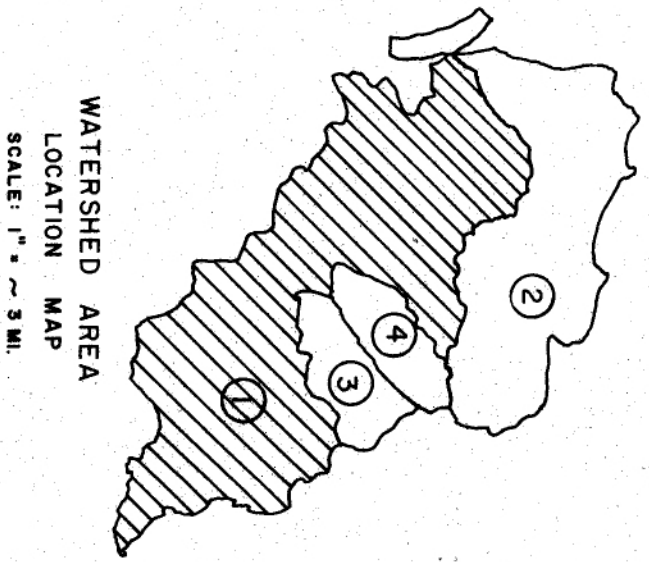
No source of acid mine drainage within the watershed was found; consequently, the water quality is good. Plate 3 shows the location of the sampling stations on the watershed.

### C. Sampling Station Data

Ninety-two (92) water sampling stations were established. The water quality data obtained from these stations are listed in Tables 2 and 3 .



LEGEND  
● SAMPLING POINT



PUCKETA CREEK WATERSHED (MAIN STEM)  
SCALE: 1" = 4000'

PLATE 3  
PUCKETA CREEK MINE  
DRAINAGE INVENTORY  
ALLEGHENY AND WESTMORELAND CO.

TABLE 2

| SAMPLE STATION | FLOW GPM | pH   | ACIDITY |       | ALKALINITY |       | TOTAL IRON |       | SULPHATES |       |
|----------------|----------|------|---------|-------|------------|-------|------------|-------|-----------|-------|
|                |          |      | mg/l    | lbs/d | mg/l       | lbs/d | mg/l       | lbs/d | mg/l      | lbs/d |
| 1              | 236      | 6.1  | 7       | 20    | 12         | 134   | 0.2        | 0.6   | 50        | 142   |
| 1A             | 87       | 6.55 | 0       | 0     | 18         | 19    | 0.5        | 0.5   | 42        | 44    |
| 1B             | 323      | 6.55 | 0       | 0     | 17         | 66    | 0.3        | 1.2   | 41        | 159   |
| 2              | 94       | 6.6  | 0       | 0     | 18         | 20    | 0.6        | 0.7   | 45        | 51    |
| 2A             | 339      | 6.6  | 0       | 0     | 15         | 61    | 0.2        | 0.8   | 48        | 195   |
| 2B             | 433      | 6.6  | 0       | 0     | 18         | 94    | 0.3        | 1.6   | 64        | 333   |
| 3              | 237      | 6.8  | 0       | 0     | 17         | 48    | 0.3        | 0.9   | 47        | 134   |
| 3A             | 456      | 6.78 | 0       | 0     | 20         | 109   | 0.4        | 2.2   | 188       | 1029  |
| 3B             | 693      | 6.7  | 0       | 0     | 14         | 116   | 0.3        | 2.5   | 50        | 416   |
| 3C             | 213      | 6.7  | 0       | 0     | 14         | 36    | 0.2        | 0.5   | 41        | 105   |
| 3D             | 127      | 6.55 | 0       | 0     | 16         | 24    | 0.3        | 0.5   | 38        | 58    |
| 3E             | 86       | 6.65 | 0       | 0     | 12         | 12    | 0.1        | 0.1   | 38        | 39    |
| 4              | 78       | 6.6  | 0       | 0     | 15         | 14    | 0.4        | 0.4   | 38        | 36    |
| 4A             | 711      | 6.7  | 0       | 0     | 18         | 154   | 0.3        | 2.6   | 38        | 324   |
| 4B             | 789      | 7.1  | 0       | 0     | 18         | 170   | 0.2        | 1.9   | 40        | 379   |
| 5              | 223      | 6.9  | 0       | 0     | 20         | 54    | 0.1        | 0.3   | 38        | 102   |
| 5A             | 916      | 6.8  | 0       | 0     | 18         | 198   | 0.2        | 2.2   | 38        | 418   |
| 5B             | 1139     | 6.8  | 0       | 0     | 16         | 219   | 0.2        | 2.7   | 38        | 519   |
| 6              | 91       | 6.8  | 0       | 0     | 17         | 19    | 0.1        | 0.1   | 46        | 50    |
| 6A             | 1183     | 6.82 | 0       | 0     | 21         | 298   | 0.3        | 4.3   | 41        | 582   |
| 6B             | 1274     | 6.45 | 0       | 0     | 20         | 306   | 0.2        | 3     | 41        | 627   |
| 7              | 267      | 6.7  | 0       | 0     | 40         | 128   | 0.1        | 0.3   | 52        | 167   |
| 7A             | 1339     | 7.0  | 0       | 0     | 22         | 353   | 0.2        | 3.2   | 38        | 611   |
| 7B             | 1606     | 6.75 | 0       | 0     | 22         | 424   | 0.2        | 3.9   | 38        | 732   |
| 8              | 119      | 6.8  | 0       | 0     | 24         | 34    | 0.2        | 0.3   | 46        | 66    |
| 8A             | 2227     | 6.8  | 0       | 0     | 28         | 748   | 0.2        | 5.3   | 33        | 882   |
| 8B             | 2346     | 6.85 | 0       | 0     | 47         | 1323  | 0.2        | 5.6   | 38        | 1070  |
| 9              | 161      | 7.15 | 0       | 0     | 28         | 154   | 0.2        | 0.4   | 52        | 100   |
| 9A             | 2372     | 7.1  | 0       | 0     | 30         | 854   | 0.2        | 5.7   | 41        | 1167  |
| 9B             | 2533     | 7.4  | 0       | 0     | 51         | 1550  | 0.2        | 6     | 42        | 1277  |
| 9C             | 126      | 7.25 | 0       | 0     | 45         | 68    | 0.2        | 0.3   | 50        | 76    |
| 10             | 1238     | 7.2  | 0       | 0     | 28         | 416   | 0.2        | 3     | 43        | 639   |
| 10A            | 2614     | 7.4  | 0       | 0     | 39         | 1223  | 0.1        | 3.1   | 41        | 1286  |
| 10B            | 4218     | 7.2  | 0       | 0     | 39         | 1974  | 0.2        | 10    | 41        | 2075  |
| 11             | 166      | 7.2  | 0       | 0     | 36         | 72    | 0.3        | 0.6   | 48        | 96    |
| 11A            | 965      | 8.1  | 0       | 0     | 57         | 660   | 0.2        | 2.3   | 47        | 544   |
| 11B            | 1131     | 8.3  | 0       | 0     | 77         | 1045  | 0.2        | 2.7   | 52        | 706   |
| 12             | 277      | 8.12 | 0       | 0     | 42         | 140   | 0.4        | 1.3   | 47        | 156   |
| 12A            | 471      | 8.2  | 0       | 0     | 42         | 237   | 0.2        | 1.1   | 45        | 254   |
| 12B            | 748      | 8.1  | 0       | 0     | 51         | 458   | 0.2        | 1.8   | 49        | 440   |
| 13             | 162      | 6.8  | 0       | 0     | 26         | 51    | 0.2        | 0.4   | 34        | 66    |
| 13A            | 184      | 6.7  | 0       | 0     | 44         | 97    | 1.0        | 2.2   | 45        | 99    |
| 13B            | 346      | 6.8  | 0       | 0     | 32         | 133   | 0.4        | 1.7   | 45        | 187   |
| 13C            | 95       | 6.8  | 0       | 0     | 31         | 35    | 0.6        | 0.7   | 41        | 47    |

TABLE 2 (CONTINUED)

| SAMPLE STATION | FLOW GPM | pH   | ACIDITY |       | ALKALINITY |       | TOTAL IRON |       | SULPHATES |        |
|----------------|----------|------|---------|-------|------------|-------|------------|-------|-----------|--------|
|                |          |      | mg/l    | lbs/d | mg/l       | lbs/d | mg/l       | lbs/d | mg/l      | lbs/d  |
| 13E            | 42       | 6.78 | 0       | 0     | 34         | 17    | 1.0        | 0.5   | 60        | 30     |
| 14             | 366      | 7.2  | 0       | 0     | 75         | 329   | 0.1        | 0.4   | 57        | 250    |
| 14C            | 321      | 7.2  | 0       | 0     | 69         | 266   | 0.5        | 1.9   | 57        | 220    |
| 14D            | 244      | 7.2  | 0       | 0     | 75         | 220   | 0.2        | 0.6   | 64        | 187    |
| 14E            | 77       | 7.22 | 0       | 0     | 57         | 53    | 0.4        | 0.4   | 45        | 42     |
| 15             | 212      | 7.3  | 0       | 0     | 63         | 160   | 0.5        | 1.3   | 45        | 114    |
| 15A            | 4254     | 7.32 | 0       | 0     | 43         | 2195  | 0.1        | 5.1   | 60        | 3063   |
| 15B            | 4466     | 7.4  | 0       | 0     | 41         | 2197  | 0.1        | 5.4   | 38        | 2036   |
| 16             | 243      | 7.2  | 0       | 0     | 63         | 1184  | 0          | ---   | 79        | 230    |
| 16A            | 4487     | 7.5  | 0       | 0     | 44         | 2369  | 0.2        | 10.8  | 57        | 3069   |
| 16B            | 4730     | 7.6  | 0       | 0     | 47         | 2668  | 0          | ---   | 41        | 2327   |
| 17A            | 4746     | 7.2  | 0       | 0     | 48         | 2734  | 0.1        | 5.7   | 43        | 2449   |
| 17B            | 5908     | 6.5  | 0       | 0     | 17         | 1205  | 1.6        | 113   | 81        | 5743   |
| 22             | 142      | 7.02 | 0       | 0     | 89         | 152   | 0          | ---   | 83        | 141    |
| 22A            | 5987     | 7.2  | 0       | 0     | 34         | 2443  | 0.5        | 36    | 75        | 5388   |
| 22B            | 6129     | 7.3  | 0       | 0     | 31         | 2280  | 0.4        | 29    | 75        | 5516   |
| 23A            | 6162     | 7.4  | 0       | 0     | 42         | 3106  | 0.6        | 44    | 66        | 4880   |
| 23B            | 7214     | 7.62 | 0       | 0     | 43         | 3722  | 0.5        | 43    | 68        | 5887   |
| 27             | 482      | 6.65 | 0       | 0     | 69         | 399   | 0.1        | 0.6   | 75        | 434    |
| 27A            | 7275     | 6.78 | 0       | 0     | 39         | 3405  | 0.3        | 26    | 53        | 4627   |
| 27B            | 7757     | 6.72 | 0       | 0     | 43         | 4003  | 0.4        | 37    | 57        | 5306   |
| 28             | 23       | 6.78 | 0       | 0     | 74         | 20    | 0.1        | 0.03  | 77        | 21     |
| 28A            | 421      | 7.1  | 0       | 0     | 66         | 333   | 0.1        | 0.5   | 68        | 344    |
| 28B            | 444      | 7.08 | 0       | 0     | 63         | 336   | 0.1        | 0.5   | 77        | 410    |
| 29A            | 206      | 7.12 | 0       | 0     | 60         | 148   | 0          | ---   | 57        | 141    |
| 29B            | 370      | 7.1  | 0       | 0     | 67         | 297   | 0          | ---   | 68        | 302    |
| 30             | 18       | 7.15 | 0       | 0     | 64         | 14    | 0.4        | 0.09  | 43        | 9      |
| 30A            | 37       | 7.08 | 0       | 0     | 58         | 26    | 0          | ---   | 57        | 25     |
| 30B            | 55       | 7.12 | 0       | 0     | 65         | 43    | 0.1        | 0.07  | 49        | 32     |
| 31             | 71       | 7.15 | 0       | 0     | 52         | 44    | 0.1        | 0.09  | 49        | 42     |
| 31A            | 93       | 7.12 | 0       | 0     | 101        | 113   | 0          | ---   | 113       | 126    |
| 31B            | 164      | 7.22 | 0       | 0     | 82         | 161   | 0.1        | 0.2   | 83        | 163    |
| 32             | 231      | 7.28 | 0       | 0     | 96         | 266   | 0          | ---   | 113       | 313    |
| 32A            | 7832     | 7.32 | 0       | 0     | 42         | 3947  | 0.3        | 28    | 68        | 6391   |
| 32B            | 8063     | 7.35 | 0       | 0     | 46         | 4451  | 0.3        | 29    | 62        | 5999   |
| 33             | 286      | 7.12 | 0       | 0     | 59         | 202   | 0.6        | 2     | 388       | 1332   |
| 33A            | 8374     | 7.28 | 0       | 0     | 47         | 4723  | 0.1        | 10    | 68        | 6833   |
| 33B            | 8822     | 7.33 | 0       | 0     | 52         | 5505  | 0.2        | 21    | 68        | 7199   |
| 34             | 162      | 7.2  | 0       | 0     | 145        | 282   | 0          | ---   | 98        | 191    |
| 35             | 74       | 7.12 | 0       | 0     | 63         | 56    | 0.1        | 0.09  | 145       | 129    |
| 35A            | 9108     | 7.3  | 0       | 0     | 53         | 5793  | 0.1        | 11    | 109       | 11,913 |
| 36             | 31       | 7.77 | 0       | 0     | 168        | 62    | 0.3        | 0.1   | 68        | 25     |
| 36B            | 9213     | 7.6  | 0       | 0     | 55         | 6081  | 0.1        | 11    | 98        | 10,834 |
| 37             | 267      | 8.02 | 0       | 0     | 99         | 317   | 0          | ---   | 57        | 183    |
| 37B            | 9551     | 7.75 | 0       | 0     | 56         | 6418  | 0.1        | 11    | 94        | 10,774 |

TABLE 2 (CONTINUED)

| SAMPLE STATION | FLOW GPM | pH   | ACIDITY |       | ALKALINITY |       | TOTAL IRON |       | SULPHATES |        |
|----------------|----------|------|---------|-------|------------|-------|------------|-------|-----------|--------|
|                |          |      | mg/l    | lbs/d | mg/l       | lbs/d | mg/l       | lbs/d | mg/l      | lbs/d  |
| 40A            | 9,942    | 8.05 | 0       | 0     | 66         | 7874  | 0.9        | 107   | 106       | 12,646 |
| 40B            | 11,591   | 7.88 | 0       | 0     | 68         | 9458  | 0.8        | 111   | 106       | 14,744 |

NOTE: Sample Station Data from April 10 through April 28, 1978.

TABLE 3

| SAMPLE STATION 40B - Mouth of Pucketa Creek Drainage Basin |          |      |         |       |            |       |            |       |           |        |
|--|----------|------|---------|-------|------------|-------|------------|-------|-----------|--------|
| DATE   | FLOW GPM | pH   | ACIDITY |       | ALKALINITY |       | TOTAL IRON |       | SULPHATES |        |
|  |          |      | mg/l    | lbs/d | mg/l       | lbs/d | mg/l       | lbs/d | mg/l      | lbs/d  |
| *3-08-78   | N.M.     | 7.1  | 0       |       | 77         |       | 1.2        |       | 145       |        |
| 4-28-78  | 11,591   | 7.88 | 0       | 0     | 68         | 9,458 | 0.8        | 111   | 106       | 14,744 |
| 6-16-78  | 8,110    | 7.55 | 0       | 0     | 86         | 8,370 | 0.7        | 68    | 120       | 11,678 |
| Average  | 9,851    | 7.72 | 0       | 0     | 77         | 9,102 | 0.75       | 89    | 113       | 13,357 |

\* Not included in average

## LITTLE PUCKETA CREEK WATERSHED

### A. General

The headwaters of Little Pucketa Creek Watershed originate about half a mile northwest of Markle, Pennsylvania. The main stem of Little Pucketa Creek flows in a general westward direction to New Kensington, Pennsylvania, where it takes a southerly course to meet Pucketa Creek.

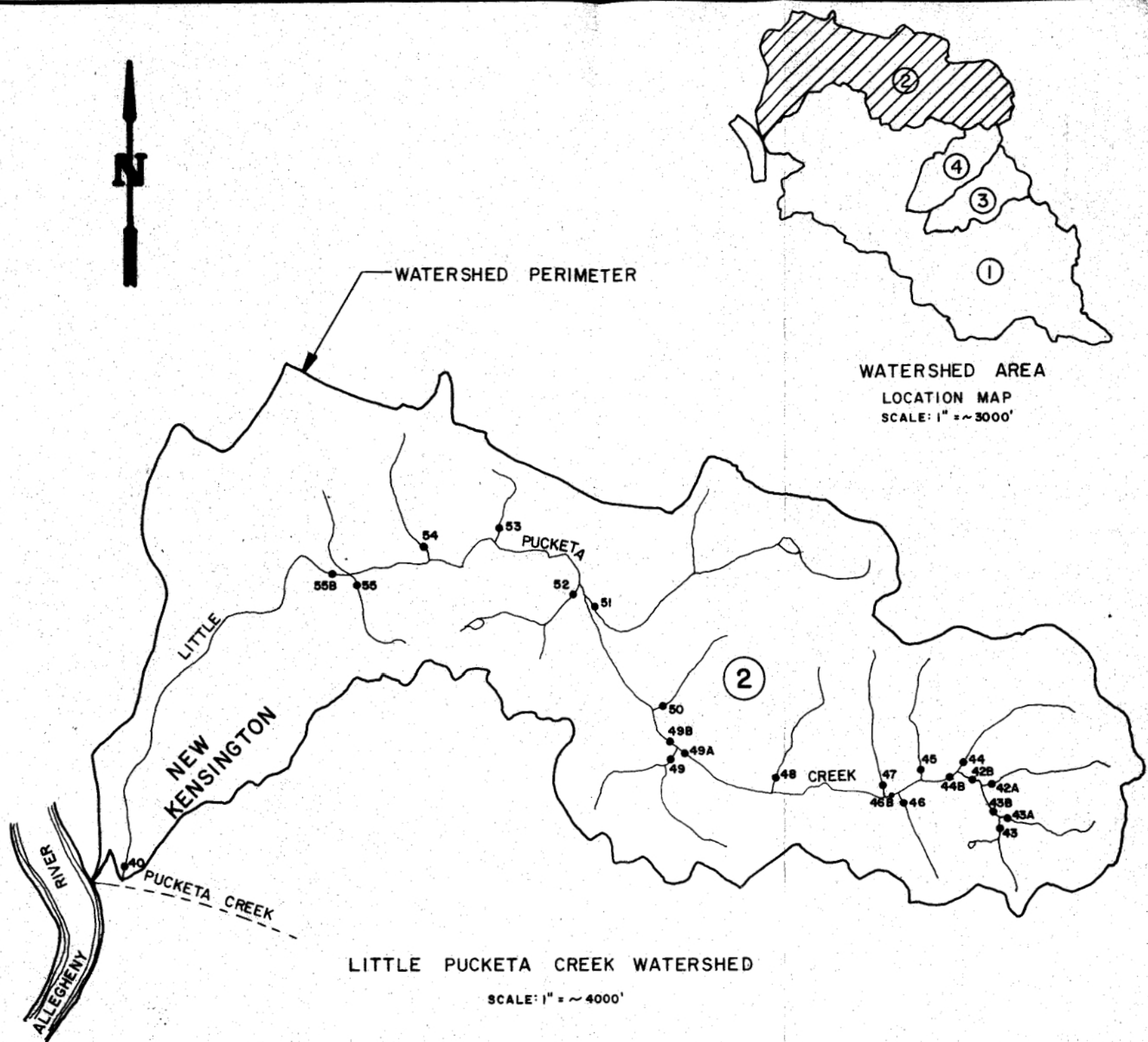
Total stream length including all tributaries is 21.7 miles. Main stream length is 8.1 miles. The total area of the watershed is 37.2 square miles.

### B. Stream Condition

No source of acid mine drainage within the watershed was found; consequently, the water quality is good. Plate 4 shows the location of the sampling stations on the watershed.

### C. Sampling Station Data

Twenty-three (23) sampling stations were established. The water quality data obtained from these stations are listed in Table 4 .



**LEGEND**

• SAMPLING POINT

**PLATE 4**

PUCKETA CREEK MINE  
DRAINAGE INVENTORY

ALLEGHENY AND WESTMORELAND CO.



TABLE 4

| SAMPLE STATION | FLOW GPM | pH   | ACIDITY |       | ALKALINITY |       | TOTAL IRON |       | SULPHATES |       |
|----------------|----------|------|---------|-------|------------|-------|------------|-------|-----------|-------|
|                |          |      | mg/l    | lbs/d | mg/l       | lbs/d | mg/l       | lbs/d | mg/l      | lbs/d |
| 42A            | 97       | 7.53 | 0       | 0     | 55         | 164   | 0.2        | 0.2   | 47        | 55    |
| 42B            | 267      | 7.62 | 0       | 0     | 66         | 211   | 0.1        | 0.3   | 49        | 157   |
| 43             | 41       | 7.48 | 0       | 0     | 83         | 41    | 0.1        | 0.05  | 45        | 22    |
| 43A            | 112      | 7.9  | 0       | 0     | 71         | 95    | 0          | 0     | 45        | 60    |
| 43B            | 153      | 7.85 | 0       | 0     | 75         | 138   | 0          | 0     | 43        | 79    |
| 44             | 136      | 7.72 | 0       | 0     | 34         | 55    | 0.1        | 0.2   | 91        | 149   |
| 44B            | 426      | 7.65 | 0       | 0     | 48         | 245   | 0.2        | 1.0   | 68        | 348   |
| 45             | 52       | 7.7  | 0       | 0     | 59         | 37    | 0.2        | 0.1   | 38        | 24    |
| 46             | 91       | 7.55 | 0       | 0     | 86         | 94    | 0.2        | 0.2   | 41        | 45    |
| 46B            | 587      | 7.5  | 0       | 0     | 37         | 261   | 0.1        | 0.7   | 68        | 479   |
| 47             | 76       | 6.82 | 0       | 0     | 81         | 74    | 0.2        | 0.2   | 49        | 45    |
| 48             | 81       | 7.02 | 0       | 0     | 99         | 96    | 0          | 0     | 45        | 44    |
| 49             | 236      | 7.0  | 0       | 0     | 70         | 198   | 0          | 0     | 51        | 144   |
| 49A            | 802      | 7.12 | 0       | 0     | 73         | 703   | 0          | 0     | 57        | 549   |
| 49B            | 1038     | 7.08 | 0       | 0     | 71         | 884   | 0.2        | 2.5   | 57        | 710   |
| 50             | 47       | 7.2  | 0       | 0     | 85         | 48    | 0.1        | 0.06  | 49        | 28    |
| 51             | 273      | 7.22 | 0       | 0     | 64         | 210   | 0          | 0     | 49        | 161   |
| 52             | 94       | 7.3  | 0       | 0     | 60         | 68    | 0          | 0     | 57        | 64    |
| 53             | 15       | 7.18 | 0       | 0     | 34         | 6     | 0.5        | 0.09  | 40        | 7     |
| 54             | 21       | 7.15 | 0       | 0     | 50         | 13    | 0          | 0     | 57        | 14    |
| 55             | 66       | 7.22 | 0       | 0     | 81         | 64    | 0          | 0     | 75        | 59    |
| 55B            | 1620     | 7.65 | 0       | 0     | 69         | 1341  | 0.1        | 1.9   | 49        | 953   |
| 40             | 1649     | 8.25 | 0       | 0     | 73         | 1445  | 0.1        | 2.0   | 68        | 1346  |

NOTE: Sample Station Data from April 24 through April 28, 1978.

## VIII ANALYSIS OF INDIVIDUAL WATERSHEDS (CONTINUED)

### C. Polluted Systems

There are 2 watersheds in the Pucketa Creek Drainage Basin that are classified as polluted. The 2 polluted watersheds are Unnamed Run #1 and Unnamed Run #2. Overall stream conditions for the 2 polluted watersheds in total stream miles are:

|    |                                  |      |
|----|----------------------------------|------|
| 1. | Total Stream Length              | 11.1 |
| 2. | Total Length Non-Polluted        | 8.7  |
| 3. | Total Length Severely Polluted   | 1.2  |
| 4. | Total Length Moderately Polluted | 1.2  |

Approximately 22% of the polluted watershed stream length is seriously degraded by mine drainage. This represents about 3% of the total stream length within the entire Pucketa Creek Drainage Basin that is polluted. The total area of the polluted watersheds is 4.7 square miles. The study of polluted watersheds revealed 2 known major sources of mine drainage pollution from a deep mine and a surface mine area.

The pollution load at the mouth of each major polluted stream in the watershed is shown below:

| <u>SUB-BASIN</u> | <u>STA.</u> | <u>ACRES</u> | <u>NO. OF SOURCES</u> | <u>ACID LBS/DA</u> | <u>ALK. LBS/DA</u> | <u>IRON LBS/DA</u> | <u>SULPHATES LBS/DA</u> |
|------------------|-------------|--------------|-----------------------|--------------------|--------------------|--------------------|-------------------------|
| Unnamed Run #1   | 17          | 1585         | 1                     | 307                | 0                  | 59                 | 1576                    |
| Unnamed Run #2   | 23          | 1418         | 1                     | 0                  | 442                | 5                  | 1187                    |

Note: Above data represents the analysis of a single water sample from each station taken May, 1978.

## UNNAMED RUN #1 WATERSHED

### A. General

The headwaters of Unnamed Run #1 originate about 1000 feet southwest of Merwin, Pennsylvania. The main stem of Unnamed Run #1 flows in a southwesterly direction for 2.9 miles and discharges into Pucketa Creek Watershed (Main Stem). The total length of stream including all tributaries is 5.9 miles. The total area of the watershed is 2.5 square miles.

### B. Stream Condition

An analysis of mine drainage contamination within the watershed provides the following breakdown. on stream conditions:

TABLE 5

#### Unnamed Run #1 Watershed

| <u>Stream</u><br><u>Classification</u> | <u>Stream Length</u><br><u>Miles</u> | <u>Percent Total</u><br><u>Stream Length</u> |
|--|--------------------------------------|--|
| Non-Polluted                           | 4.0                                  | 68   |
| Severely Polluted                      | 0.8                                  | 14   |
| Moderately Polluted                    | 1.1                                  | 18   |

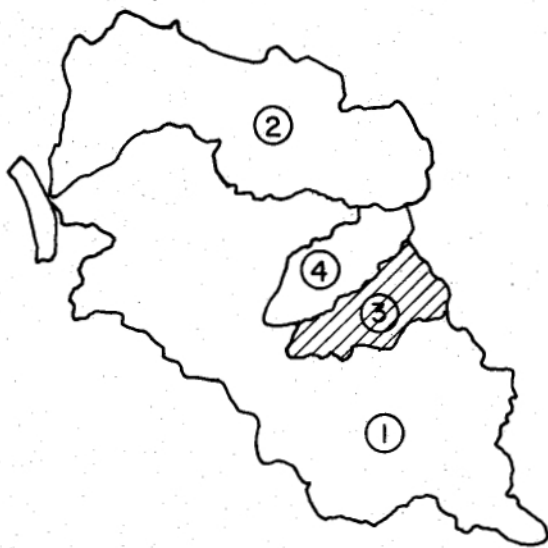
Approximately 32% of Unnamed Run #1 Watershed is seriously degraded by mine drainage. Plate 5 shows the location of the sampling stations on the watershed.

### C. Sampling Station Data

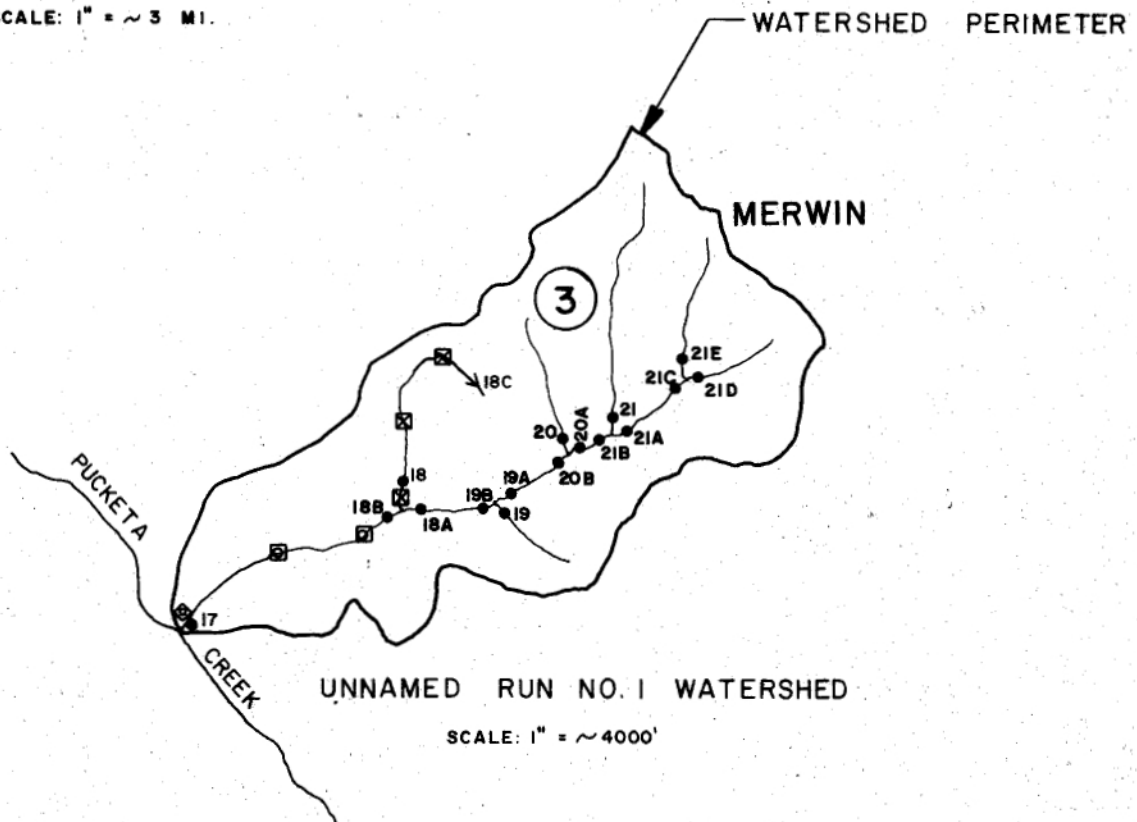
Seventeen (17) sampling stations were established. The water quality data obtained from these stations are listed in Table 6.

D. Description of Pollution Source

Station No. 18C - A 73 gpm discharge from an unknown abandoned mine in the Pittsburgh Seam. The discharge had a pH of 3.1 with 1391 and 272 lbs/day of acid and iron respectively. It is located approximately 1.2 miles southwest of Merwin, Pennsylvania, on the New Kensington East Quadrangle (Enclosure #2).



WATERSHED AREA  
LOCATION MAP  
SCALE: 1" = ~ 3 MI.



**LEGEND**

- SAMPLING POINT LOCATION
- Y UNDERGROUND MINE W/SAMPLING POINT
- ☒ SEVERELY ACID AND IRON
- ☐ MODERATELY ACID AND IRON

**PLATE 5**

PUCKETA CREEK MINE  
DRAINAGE INVENTORY  
ALLEGHENY AND WESTMORELAND CO.

TABLE 6

| SAMPLE STATION | FLOW GPM | pH   | ACIDITY |       | ALKALINITY |       | TOTAL IRON |       | SULPHATES |       |
|----------------|----------|------|---------|-------|------------|-------|------------|-------|-----------|-------|
|                |          |      | mg/l    | lbs/d | mg/l       | lbs/d | mg/l       | lbs/d | mg/l      | lbs/d |
| 18             | 154      | 3.0  | 495     | 915   | 0          | 10    | 25         | 46    | 536       | 991   |
| 18A            | 723      | 6.4  | 0       | 0     | 24         | 208   | 0          | ---   | 57        | 495   |
| 18B            | 877      | 3.4  | 83      | 873   | 0          | 0     | 7.1        | 75    | 154       | 1621  |
| *18C (s)       | 73       | 3.1  | 1588    | 1391  | 0          | 0     | 310        | 272   | 2011      | 1762  |
| 19             | 52       | 6.2  | 0       | 0     | 24         | 15    | 0.2        | 0.1   | 41        | 26    |
| 19A            | 566      | 6.4  | 0       | 0     | 25         | 170   | 0.1        | 0.7   | 49        | 333   |
| 19B            | 618      | 6.5  | 0       | 0     | 26         | 193   | ---        | ---   | 53        | 393   |
| 20             | 26       | 6.65 | 0       | 0     | 28         | 9     | 0.2        | 0.06  | 65        | 20    |
| 20A            | 403      | 6.7  | 0       | 0     | 25         | 121   | 0.1        | 0.5   | 56        | 271   |
| 20B            | 429      | 6.7  | 0       | 0     | 25         | 129   | 0.1        | 0.5   | 55        | 283   |
| 21             | 127      | 6.65 | 0       | 0     | 32         | 49    | 0.1        | 0.2   | 52        | 79    |
| 21A            | 239      | 6.8  | 0       | 0     | 28         | 80    | 0.1        | 0.3   | 45        | 129   |
| 21B            | 366      | 6.8  | 0       | 0     | 30         | 132   | 0          | 0     | 44        | 193   |
| 21C            | 213      | 6.85 | 0       | 0     | 34         | 87    | 0.2        | 0.5   | 60        | 153   |
| 21D            | 95       | 6.72 | 0       | 0     | 28         | 32    | 0.3        | 0.3   | 49        | 56    |
| 21E            | 118      | 7.0  | 0       | 0     | 40         | 57    | 0.2        | 0.3   | 55        | 78    |
| 17             | 1162     | 4.4  | 22      | 307   | 0          | 0     | 4.2        | 59    | 113       | 1576  |

NOTE: Sample Station Data from April 10 through April 21, 1978, except where an asterisk is indicated.

\* Sample Station Data from May 12, 1978.

(s) Indicates pollution source

## UNNAMED RUN #2 WATERSHED

### A. General

The headwaters of Unnamed Run #2 Watershed originate about one (1) mile northwest of Merwin, Pennsylvania. The main stem of the watershed flows in a southwesterly direction for three (3) miles where it discharges into Pucketa Creek Watershed (Main Stem).

The total length of stream including all tributaries is 5.2 miles. The total area of the watershed is 2.2 square miles.

### B. Stream Condition

An analysis of mine drainage contamination within.. the watershed provides the following breakdown on stream conditions:

TABLE 7

#### Unnamed Run #2 Watershed

| <u>Stream Classification</u> | <u>Stream Length Miles</u> | <u>Percent Total Stream Length</u> |
|------------------------------|----------------------------|------------------------------------|
| Non-Polluted                 | 4.7                        | 90                                 |
| Severely Polluted            | 0.4                        | 8                                  |
| Moderately Polluted          | 0.1                        | 2                                  |

Approximately 10% of Unnamed Run #2 Watershed is seriously degraded by mine drainage. Plate 6 shows the location of the sampling stations on the watershed.

### C. Sampling Station Data

Fourteen (14) sampling stations were established. The water quality data obtained from these stations are listed in Table 8 .

D. Description of Pollution Source

Station No. 25C - A 37 gpm discharge from a poorly backfilled strip mine. The discharge pH was 3.15 with 614 and 75 lbs/day of acid and iron respectively. The strip is located approximately 1.3 miles west-southwest of Merwin, Pennsylvania, on the New Kensington East Quadrangle (Enclosure A).



TABLE 8

| SAMPLE STATION | FLOW GPM | pH   | ACIDITY |       | ALKALINITY |       | TOTAL IRON |       | SULPHATES |       |
|----------------|----------|------|---------|-------|------------|-------|------------|-------|-----------|-------|
|                |          |      | mg/l    | lbs/d | mg/l       | lbs/d | mg/l       | lbs/d | mg/l      | lbs/d |
| 24             | 179      | 7.28 | 0       | 0     | 75         | 161   | 0.3        | 0.6   | 57        | 122   |
| 24A            | 824      | 7.1  | 0       | 0     | 26         | 257   | 0.6        | 6.0   | 83        | 821   |
| 24B            | 1003     | 7.38 | 0       | 0     | 34         | 409   | 0.4        | 4.8   | 95        | 1143  |
| 25             | 148      | 4.1  | 150     | 266   | 0          | 0     | 4.6        | 8.2   | 427       | 758   |
| 25A            | 623      | 6.5  | 0       | 0     | 40         | 299   | 0.3        | 2.2   | 80        | 598   |
| 25B            | 771      | 6.75 | 0       | 0     | 21         | 194   | 0.9        | 8.3   | 121       | 1119  |
| *25C (s)       | 37       | 3.15 | 1384    | 614   | 0          | 0     | 170        | 75    | 1899      | 843   |
| 26             | 139      | 6.8  | 0       | 0     | 47         | 78    | 0.3        | 0.5   | 63        | 105   |
| 26A            | 352      | 6.65 | 0       | 0     | 42         | 177   | 0.4        | 1.7   | 86        | 363   |
| 26B            | 491      | 6.7  | 0       | 0     | 43         | 253   | 0.4        | 2.4   | 83        | 489   |
| 26C            | 314      | 6.95 | 0       | 0     | 68         | 256   | 0.1        | 0.4   | 57        | 215   |
| 26D            | 91       | 7.2  | 0       | 0     | 67         | 73    | 0.2        | 0.2   | 57        | 62    |
| 26E            | 223      | 7.0  | 0       | 0     | 69         | 185   | 0.2        | 0.5   | 53        | 142   |
| 23             | 1052     | 7.0  | 0       | 0     | 35         | 442   | 0.4        | 5.0   | 94        | 1187  |

NOTE: Sample Station Data from April 17 through April 21, 1978, except where an asterisk is indicated.

\* Sample Station Data from May 12, 1978.

(s) Indicates pollution source.