

C. Non-Polluted Systems

There are four (4) watersheds in the Two Lick Creek System 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 systems is considered acceptable for the purpose of this study.

1. South Branch Watershed

a. General

The headwaters of the South Branch of Two Lick Creek originate near Cookport to the north and Pine Flats to the south. The stream flows in a generally westerly direction for about 8.5 miles where it joins the North Branch at Wandin Junction to form Two Lick Creek.

The total length of the stream including all tributaries is approximately 35.5 miles. The total area of the watershed is approximately 22.6 square miles.

There has never been any coal mining activity within this watershed. Consequently, the water quality is good. Only one minor source of contamination is known, which is a road constructed of coal refuse. This source was monitored by Sampling Station #90.

Table 21 on the following page shows minimums, maximums, and yearly averages of water quality data for the sampling stations.

Plate 14 shows the location of the sampling stations and the various tributaries of the watershed.

Plate 15 graphically illustrates the monthly relationship between stream flow, contamination load, and weather elements within the watershed. The stream data is based on measurements taken at Sampling Station #412 located near the mouth of South Branch.

Flow and total contamination load fluctuates correspondingly with precipitation, temperature and time of year. April was the peak month for total flow and contamination load, although the most rainfall occurred in July.

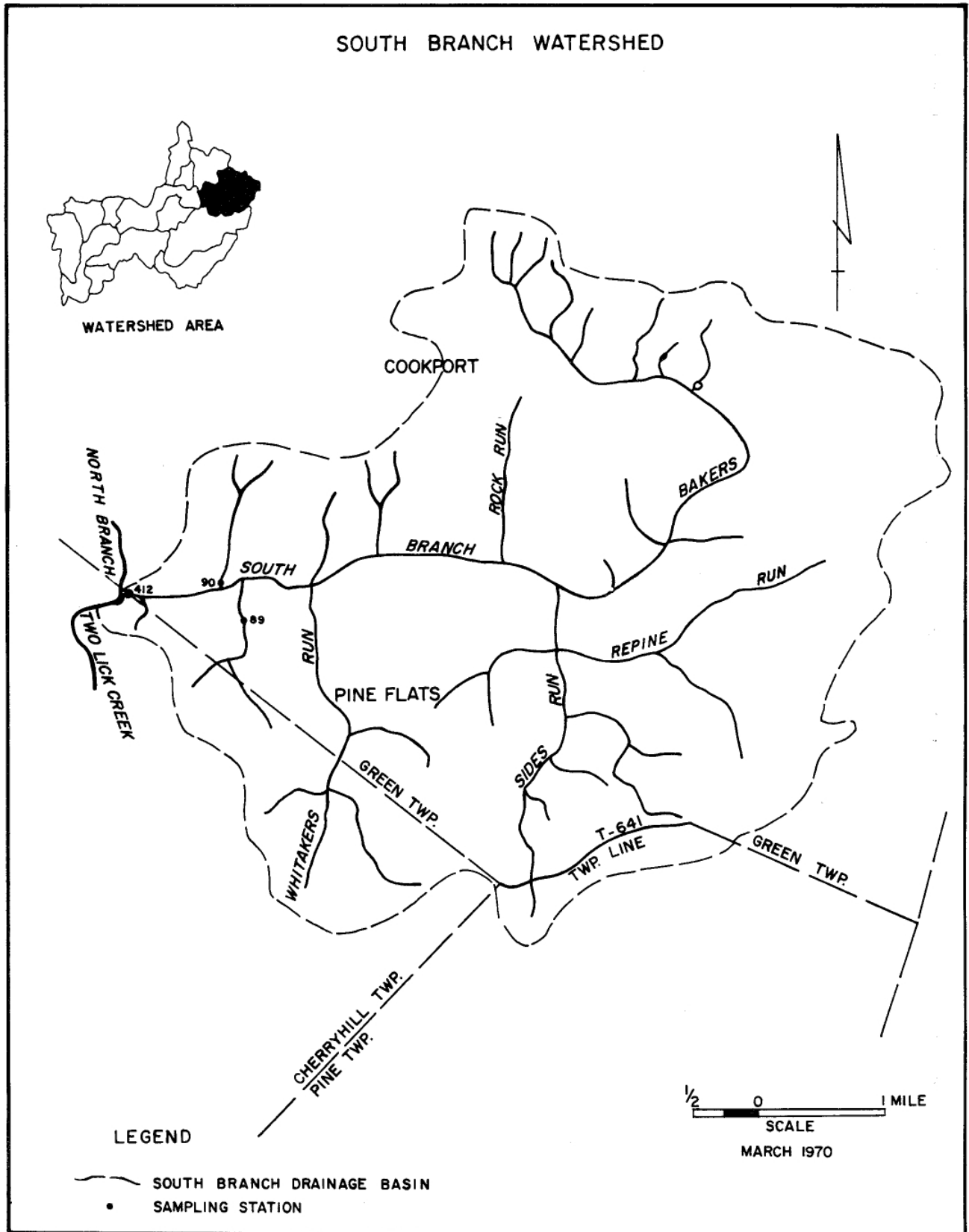
The pH level was fairly consistent throughout the year with a high of 7.1 in October, 1968, and a low of 6.0 in December, 1968.

The South Branch contributed the following percentages of flow and contamination to the total pollution load of Two Lick Creek as measured at Sampling Station #416: Flow - 32%; Acidity - 2%; Iron - 1%; and Sulfate - 4%.

Table 21

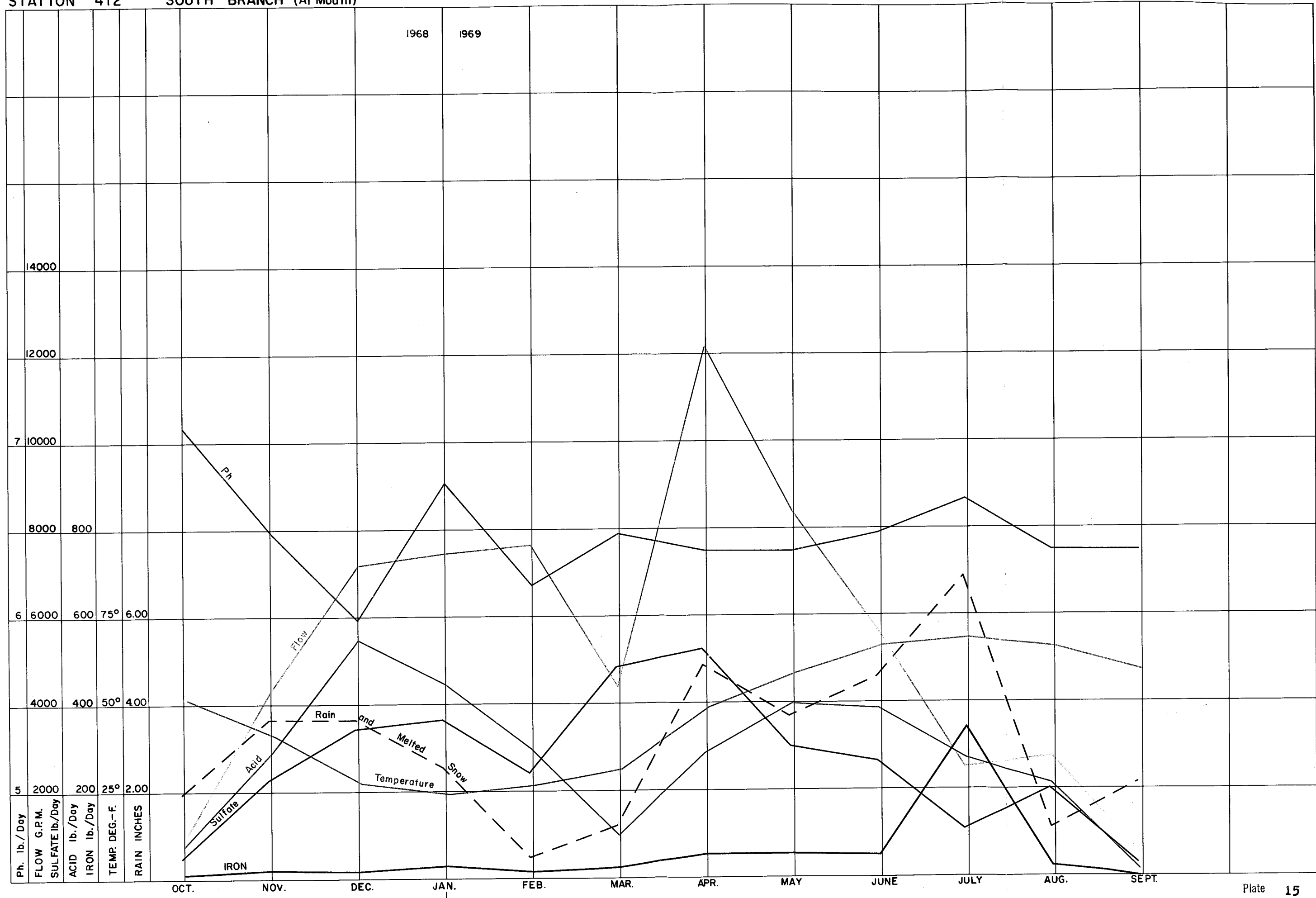
Water Quality DataSouth Branch Watershed

<u>Sampling Station</u>	<u>Flow GPM</u>	<u>pH Range</u>	<u>Acid Load Lbs./Day</u>	<u>Acidity Mg./L.</u>	<u>Iron Mg./L.</u>	<u>Sulfate Mg./L.</u>
412	Max. 14,016	4.0 - 7.6	288	Max. 20	Max. 1	Max. 150
	Min. 420			Min. .2	Min. .1	Min. 15
	Ave. 5,362			Ave. 4	Ave. 1	Ave. 42
90	Max. 983	4.6 - 7.7	39	Max. 88	Max. 1	Max. 225
	Min. 8			Min. 2	Min. .01	Min. 15
	Ave. 201			Ave. 16	Ave. .2	Ave. 44
89	Max. 983	4.4 - 6.1	8	Max. 144	Max. .4	Max. 210
	Min. 8			Min. 2	Min. .1	Min. 15
	Ave. 164			Ave. 4	Ave. .4	Ave. 19



<p>PREPARED BY L. ROBERT KIMBALL <i>Consulting Engineers</i> EBENSBURG, PENNSYLVANIA</p>	<p style="text-align: center;">TWO LICK CREEK MINE DRAINAGE POLLUTION ABATEMENT PROJECT INDIANA COUNTY, PENNSYLVANIA</p>	<p style="text-align: center;">PREPARED FOR PENNSYLVANIA DEPARTMENT OF MINES AND MINERAL INDUSTRIES</p>
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STATION 412 SOUTH BRANCH (At Mouth) RELATIONSHIP BETWEEN STREAM FLOW, POLLUTION LOAD AND WEATHER ELEMENTS



There appears to be a considerable amount of contamination that is unaccountable. It is assumed that this contamination originates from natural sources within the watershed.

The South Branch contributed about 7,721,000 gallons of water per day to the Two Lick Creek System during the study period.