

Sub-watershed 6L (Un-named)

General Discussion

This sub-watershed encompasses 0.63 square miles 401.17 acres of land area, approximately 0.97% of the total study area. The basin is drained by 3.02 miles of tributaries (1.12% of the total length of all watershed tributaries) and contains no appreciable amount of ponds or lakes. Commonwealth records indicate 1 surface mine and 1 deep mine in the area. Our field investigation has located the strip mine which is flowing, but has not located any deep mines.

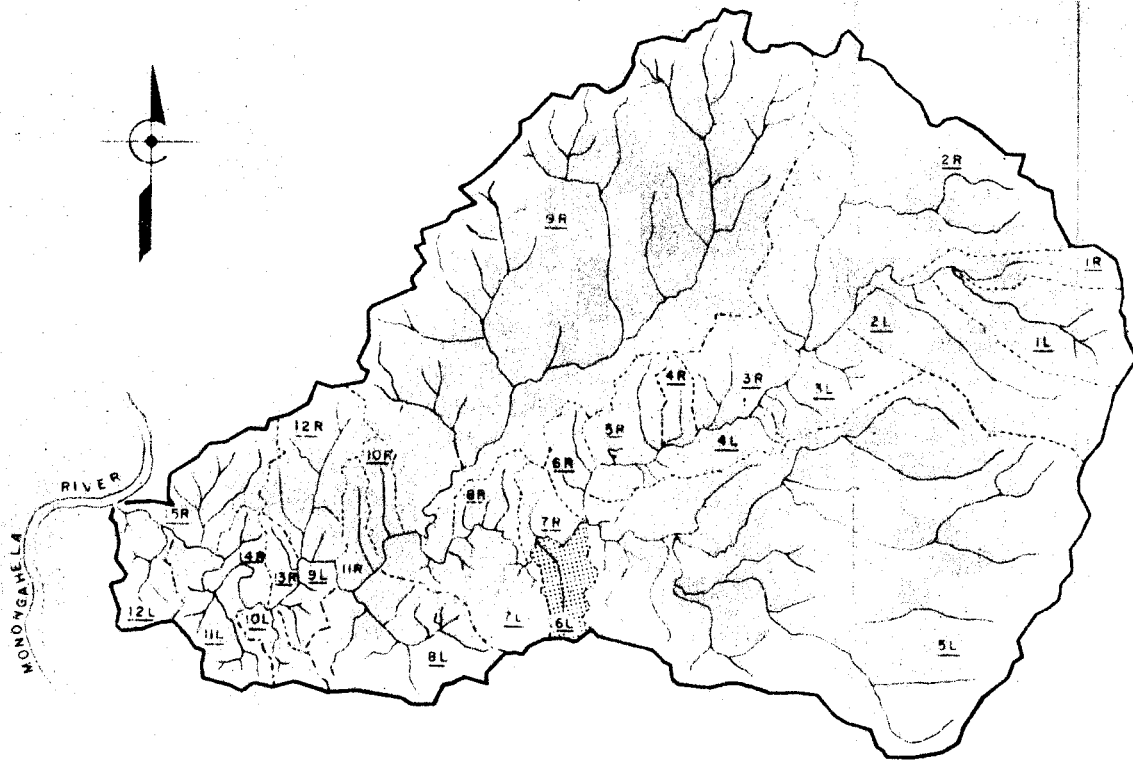
The following information gives the averages of the sampling station designated as GC6L4, un-named, which can be found on Drawing 7316-7. The percentages of pollution load and flow that this sub-watershed contributes to Monitoring Station GC8 near the mouth of Georges Creek are also shown.

	<u>Averages</u>		<u>Percent of Total Watershed</u>
pH	3.2		
Net Hot Acidity	566	PPD	2.35%
Ferrous Iron	0	PPD	0 %
Total Iron	33	PPD	0.41%
Sulfate	720	PPD	1.05%
Flow	482,400	GPD	0.81%





TABLE 65
 TRIBUTARY AVERAGE WATER QUALITY DATA
 Sub-watershed
 6L

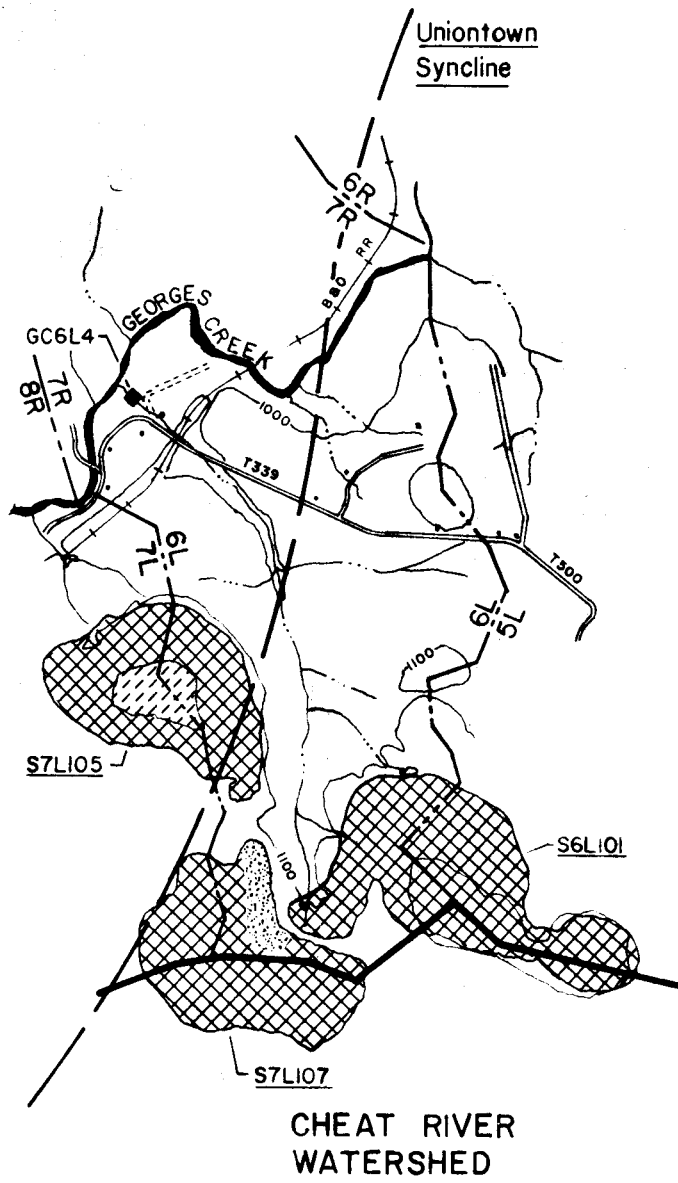
Station	pH	Hot Acid		Alkalinity		Net Hot Acid		Ferrous Iron		Iron as Fe		Sulfate		Flow	
		PPM	#/Day	PPM	#/Day	PPM	#/Day	PPM	#/Day	PPM	#/Day	PPM	#/Day	GPM	G.P.D.
GC6L4	3.2	166.57	568.14	.94	2.95	165.63	565.19	0	0	11.37	32.18	347.14	719.96	335	482,400

Location Plan

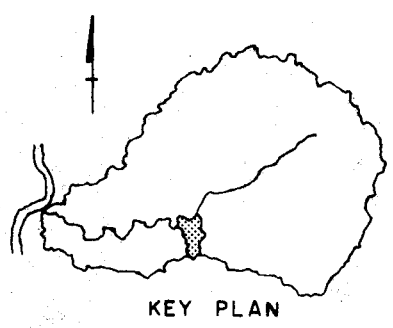


LEGEND FOR THE FOLLOWING PLATES

- Y DEEP MINE OPENING (M9R59A)
- ▲ DEEP MINE PIPE (SAMPLE STATIONS - MP5L2A, or BH9R2)
- ⌞ WEIR (TRIBUTARY SAMPLE STATION - GC7L1)
- CROSS-SECTION (TRIBUTARY SAMPLE STATION - GC9R1)
- ◻ GEORGES CREEK CROSS-SECTION (SAMPLE STATION - GC5)
-  STRIP MINE (ABANDONED-UNRECLAIMED - S11L102)
-  STRIP MINE (ACTIVE - S4R107)
-  STRIP MINE (ABANDONED-RECLAIMED - S7L106)
-  GOB PILE (G9R301)
- A,B,C UNDERLINED SUFFIX INDICATES FLOWING DEEP MINE SAMPLE STATIONS - M9R74A,B,C
- S7L101 UNDERLINE - INDICATES FLOWING STRIP MINE, GOB PILE, OR BORE HOLE SAMPLE STATION



CHEAT RIVER
WATERSHED



KEY PLAN

**MAP OF
SUB-WATERSHED 6L**
(UN-NAMED)
SCALE: 1" = 2000'

Strip Mines

The Commonwealth records indicate there is 1 strip mine in this sub-watershed. Our field investigations located the surface mine which was flowing. Table 66 shows the abandoned strip mine and the following information: the name of the mine or operator if known, permit number, the acres of area mined and which seam was mined, the designation we give the mine, whether or not there is a flow, and whether it connects to any deep mines.

The total acreage of this abandoned surface mine is 87.21 acres or 21.74% of the total sub-watershed land area.

Table 67 gives the averages of the abandoned surface mine flow. Directly under the averages are the percentages of flows and pollution loads that it contributes to the pollution load of the sub-watershed as measured at Sampling Station GC6L4.

Where a single surface mine has more than one flow, the averages of the flows are added together.

Following Table 67 are the descriptions of the flowing strip mines along with abatement recommendations.

TABLE 66
 ABANDONED SURFACE MINES
 Sub-Watershed
 6L

Mine Number	Name of Mine or Operator	Permit No.	Area Mined (Acres)	Seam Mined	Flowing	Connection w/Leasp Mine
S6L101	Sabatine Coal Co.	17797	87.21	RED	Yes	--

TABLE 67
 ABANDONED SURFACE MINE AVERAGE WATER QUALITY DATA
 Sub-Watershed
 6L

Station	pH	Hot Acid		Alkalinity		Net Hot Acid		Ferrous Iron		Iron as Fe		Sulfate		Flow	
		PPM	#/Day	PPM	#/Day	PPM	#/Day	PPM	#/Day	PPM	#/Day	PPM	#/Day	GPM	G.P.D.
S6L101	3.2	3356	662.4	6	.14	3350	662.2	79.72	19.54	583	108.2	4621	880.9	54	77,760
%	-	-	-	-	-	-	10.98%	-	-	-	12.24%	-	12.33%	-	7.08%

Strip Mine S6L101 (permit number 17797)

General Description:

This strip mine is located about 4,00 feet east of outcrop and about 2,000 feet southwest of the intersection between L.R. 26083 and T 500. The mine contains 87.21 acres and exploited the Redstone coal seam. It is 75% reclaimed by grading and revegetation. The strip is about 60% vegetated with grasses and trees. A 35 foot highwall still exists with the spoil just downslope. Sink holes are present which collect water. Four leaches were found, two on the northern portion, and two on the western edge. A mine pipe to the M5L2 complex is located just off the eastern edge of the strip. The strip mine is shown on the map of Sub-watershed 6L.

Recommendations:

The central portion of the strip mine is the origin of most of the pollution. This portion should be grubbed, graded and revegetated. The sink holes should be filled in. A clay lined ditch system is required to control surface runoff.

Costs:

Grading	11 acres @ \$1,800/acre	\$19,800
Vegetation	11 acres @ \$600/acre	6,600
Ditches	2000 feet @ \$7/foot	14,000
Grubbing and filling		<u>1,100</u>
		\$41,500

Recommendations

Table 68 gives the recommendations for the polluting deep and strip mines, along with the costs associated with each recommendation. The order in which they are placed is determined by the cost per pound of acid removal.

An estimated effectiveness of 75% reduction of pollution load is assigned for each recommendation.

Table 69 lists the sources abated, the amount of beneficiation, and the costs associated with each plan.

The distance from Sampling Station GC6L4 to the next polluting tributary downstream, GC7L1, is .5 miles. This is the minimum distance on Georges Creek that would benefit from the recommended work.

TABLE 68
 RECOMMENDED ABATEMENT PROCEDURES - COST BENEFICATION
 SUB-WATERSHED
 6L

Rank	Mine No.	TOTAL COSTS		COST \$/POUND ACID REMOVAL		Total Acid Abated PPD	Total Iron Abated PPD	% of Total Sub-Watershed	
		Known Sources	Potential Sources	Known Sources	Potential Sources			Acid	Iron
1	S6L101	\$41,500	\$41,500	\$83.56	\$83.56	496.65	81.15	88%	246%

TABLE 69
 BENEFICATION - RECOMMENDED PLANS
 SUB-WATERSHED
 6L

PLAN	No. of Sources ABATED	ACID		IRON		SULFATE		TOTAL CONS'T COSTS	
		PPD	% of Total Sub-Watershed	PPD	% of Total Sub-Watershed	PPD	% of Total Sub-Watershed	Known Sources	Potential Sources
A	1	496.65	88%	81.15	246%	660.68	92%	\$41,500	\$41,500

It is recommended that Plan "A" be initiated for this Sub-Watershed