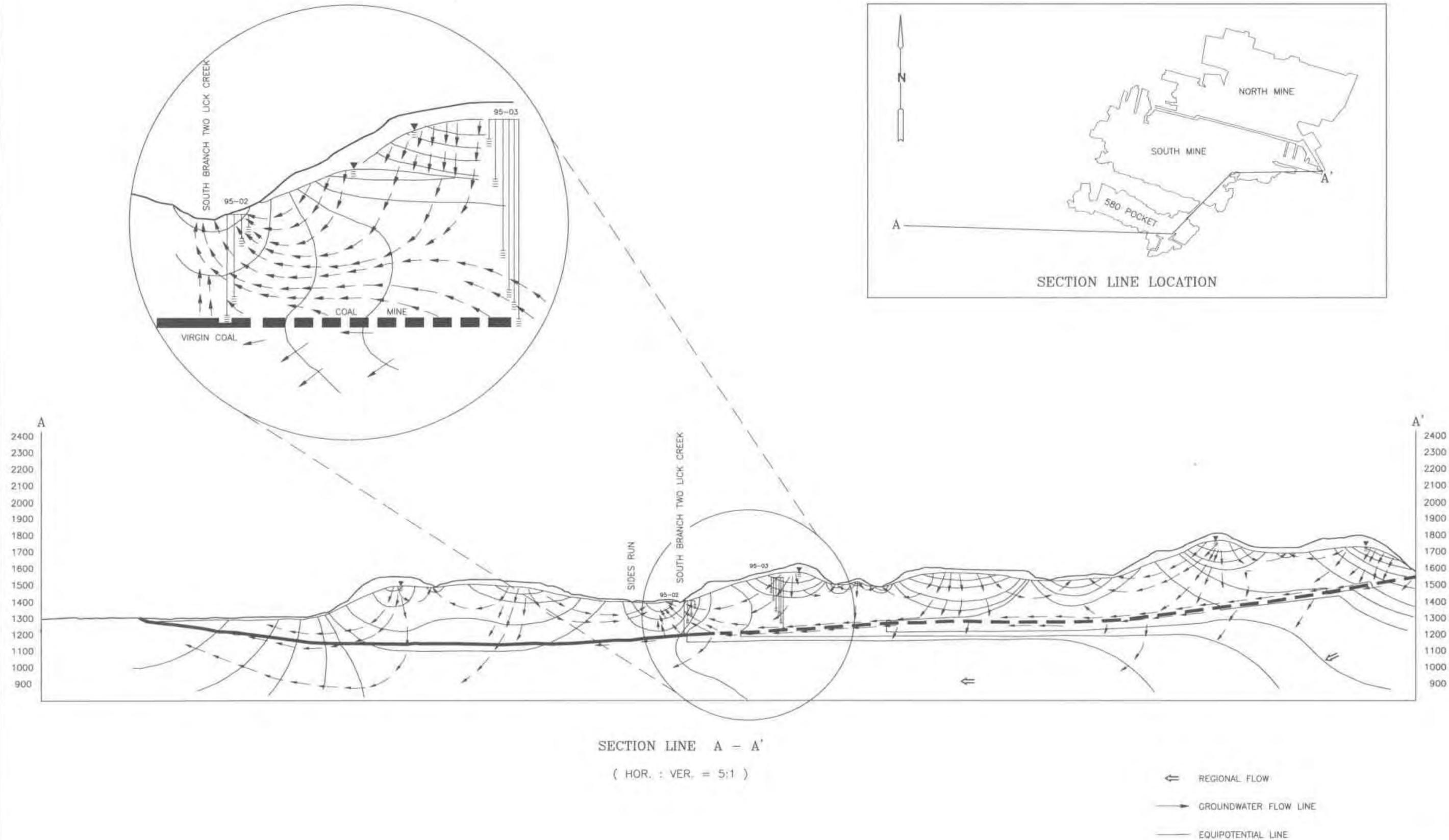




Coal Mine Drainage Prediction
and
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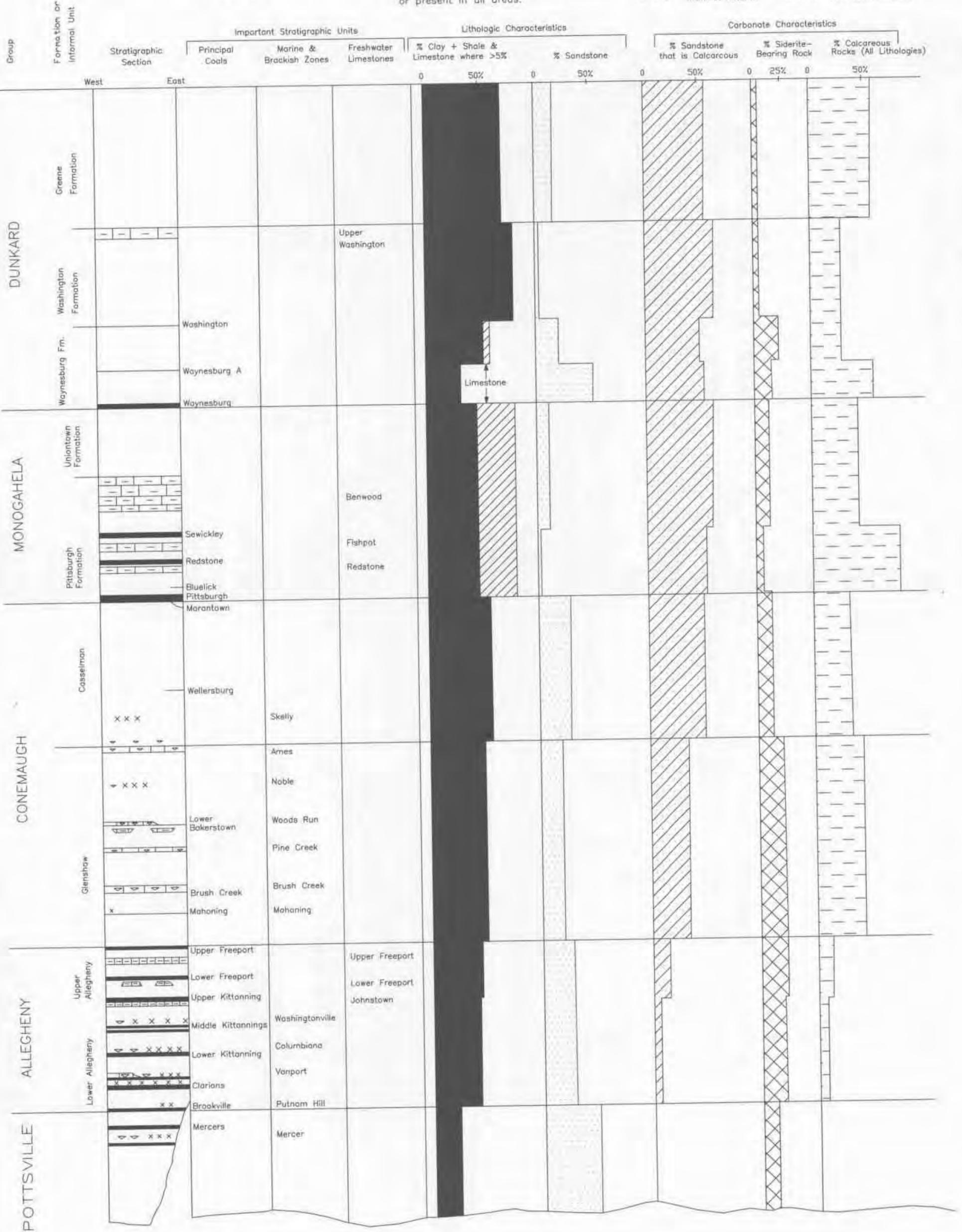
FIGURE 2.20 Qualitative Flow Net (South Mine and 580 Pocket)





Coal Mine Drainage Prediction
and
Pollution Prevention in Pennsylvania
Figure 8.2

Figure 8.2. Generalized stratigraphic section of the bituminous coal field of western Pennsylvania, showing positions of principle coals, marine zones, and major freshwater limestones. Also shown are distributions of rock types and carbonates that can influence mine drainage quality. Histograms should be considered semi-quantitative. Formation thicknesses are to approximate scale of 1 in. = 100 ft. (2.5 cm = 30.5 m). Coal and limestone thicknesses are not to scale, but are located in their approximate stratigraphic position. Coal seams and limestones are generally not continuous or present in all areas.





Coal Mine Drainage Prediction and Pollution Prevention in Pennsylvania

Table 8.2 Postmining water quality of Pennsylvania Bituminous Coal Region by stratigraphic interval.

SMP #	Site Name	Township	County	Stratigraphic Interval	Date	pH	Alkalinity	Acidity	Fe	Mn	Al	SO ₄	TSS	Type of Sample	Comments	
					Sampled	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			
Dunkard Group	30813011	Willow Tree	Greene	Greene	Waynesburg	11/5/80	7.8	379.0	0.0	0.12	0.04	no data	165.0	17.0	Seep	at deep mine DM-2, pre-mining, 1 gpm
	30813009	Susan Ann	Greene	Greene	Waynesburg	5/29/81	8.3	340.0	0.0	0.04	0.02	no data	180.0	27.0	Seep	at deep mine DM-2, pre-mining, 1 gpm
	30813009	Susan Ann	Greene	Greene	Waynesburg	6/14/85	3.3	0.0	1500.0	324.40	89.70	92.40	2616.0	12.0	Seep	near DM-2 sealed entry, during mining, <1 gpm
	30813009	Susan Ann	Greene	Greene	Waynesburg	6/14/85	3.4	0.0	306.0	101.30	34.70	18.40	1122.0	8.0	Seep	near DM-2 sealed entry, during mining, <1 gpm
	30813009	Susan Ann	Greene	Greene	Waynesburg	8/13/91	6.8	142.0	0.0	< 0.30	8.20	< 0.50	624.0	10.0	Seep	near deep mine DM-1, post-mining, 5 gpm
	30813009	Susan Ann	Greene	Greene	Waynesburg	8/13/91	7.7	244.0	0.0	7.34	20.20	< 0.50	1380.0	27.0	Spill Discharge	discharge F, 8 gpm
	30813009	Susan Ann	Greene	Greene	Waynesburg	10/24/91	7.9	286.0	0.0	2.61	17.60	< 0.50	1392.0	15.0	Spill Discharge	discharge F, <1 gpm
	30813009	Susan Ann	Greene	Greene	Waynesburg	11/5/80	8.0	292.0	0.0	0.24	0.09	no data	170.0	7.0	Spring	combined flow of springs pre-mining, 1.5 gpm
	30813009	Susan Ann	Greene	Greene	Waynesburg	8/7/81	7.9	296.0	0.0	0.49	0.09	< 0.10	124.0	no data	Stream	headwaters tributary pre-mining
	30813009	Susan Ann	Greene	Greene	Waynesburg	8/29/91	7.7	286.0	0.0	0.11	0.04	no data	180.0	< 10.0	Stream	tributary A above site post mining, <1 gpm
	30813009	Susan Ann	Greene	Greene	Waynesburg	8/11/83	8.0	213.0	0.0	0.22	0.13	no data	133.0	2.0	Stream	tributary C below haulroad pre-mining, 33 gpm
	30813009	Susan Ann	Greene	Greene	Waynesburg	8/10/88	7.1	238.0	0.0	0.37	0.17	0.08	140.0	25.0	Stream	tributary C below haulroad during mining, 20 gpm
30813009	Susan Ann	Greene	Greene	Waynesburg	10/24/91	7.9	238.0	0.0	< 0.30	< 0.05	< 0.50	312.0	< 2.0	Stream	tributary C below haulroad post-mining, 8 gpm	
30850103	Viable	Greene	Greene	Waynesburg	7/25/85	5.8	18.0	4.0	< 0.30	0.10	< 0.50	82.0	6.0	Deep Mine Disch.	MP-MD1, punch mine discharge, <0.5 gpm	
30850103	Viable	Greene	Greene	Waynesburg	7/25/85	6.3	60.0	0.0	< 0.30	0.12	< 0.50	88.0	4.0	Deep Mine Disch.	MP-MD2, punch mine discharge, 2-3 gpm	
Monongahela Group	26870107	Bertovich	Nicholson	Fayette	Sewickley	11/4/87	3.1	0.0	378.0	74.80	9.14	30.50	1098.0	18.0	Deep Mine Disch.	MP-1, 2 gpm
	26910106	Nobel	Georges	Fayette	Sewickley	4/17/91	4.2	0.0	22.0	4.32	9.97	2.92	964.0	23.0	Seep	MP-N7, flow to ponds near final highwall, <1 gpm
	26910106	Nobel	Georges	Fayette	Sewickley	5/21/91	3.1	0.0	120.0	11.10	7.87	9.40	812.0	20.0	Seep	MP-N9, flow near southern limit of mine, <1 gpm
	65900107	Smith	Mt Pleasant	Westmoreland	Redstone	7/16/92	7.7	246.0	0.0	1.47	0.27	1.22	122.0	57.0	Pit Water	at lowwall slump on Redstone seam
	65900107	Smith	Mt Pleasant	Westmoreland	Redstone	3/12/92	7.1	216.0	0.0	3.22	3.52	< 0.50	285.0	no data	Seep	MP-18, pre-existing spoil discharge, <2 gpm
	65900103	Tarns	E Huntington	Westmoreland	Redstone	2/23/90	7.3	266.0	0.0	0.75	0.07	0.85	115.0	10.0	Pond	MP-BS2, impoundment phase 1A
	65900103	Tarns	E Huntington	Westmoreland	Redstone	2/19/91	8.3	296.0	0.0	3.03	0.09	3.39	217.0	58.0	Spring	MP-1, 5 gpm
	65930104	Smith	E Huntington	Westmoreland	Redstone	3/15/94	8.2	254.0	0.0	2.24	0.05	< 0.50	72.0	34.0	Well	Kimmel water supply near mine site
	65930104	Smith	E Huntington	Westmoreland	Redstone	10/18/94	7.1	338.0	0.0	0.66	0.33	0.52	181.0	< 3.0	Spring	Kimmel spring near cropline of Redstone coal
	26910115	Brown	Upper Tyrone	Fayette	Redstone	6/11/93	6.9	238.0	0.0	< 0.30	< 0.05	< 0.50	456.0	12.0	Spring	Brown spring near cropline of Redstone coal
	26910115	Brown	Upper Tyrone	Fayette	Redstone	8/17/93	7.4	628.0	0.0	1.65	1.05	< 0.50	1440.0	12.0	Spring	Brown spring near cropline of Redstone coal
	26910115	Brown	Upper Tyrone	Fayette	Redstone	3/9/94	8.8	196.0	0.0	< 0.30	< 0.05	< 0.50	329.0	< 3.0	Spring	Brown spring near cropline of Redstone coal
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	7/25/94	6.5	210.0	0.0	15.70	3.39	2.46	367.0	8.0	Well	Shaw water supply near mine site	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	5/10/95	6.8	166.0	0.0	2.86	0.52	< 0.50	220.0	24.0	Pit Water	seep in Blue Lick seam pit	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	4/22/96	7.0	166.0	0.0	0.91	0.73	< 0.50	376.0	< 3.0	Pit Water	seep in Blue Lick seam pit	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	7/24/96	6.7	166.0	0.0	0.79	1.11	< 0.50	615.0	4.0	Pit Water	seep in Blue Lick seam pit	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	3/28/98	2.9	0.0	2594.0	> 300.00	35.70	180.00	2701.0	5.0	Seep	pre-existing seep from adjacent area	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	4/22/98	6.8	216.0	0.0	3.68	1.52	< 0.50	439.0	10.0	Seep	on west side of township road T-568	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	9/7/95	7.6	220.0	0.0	2.84	0.43	0.67	710.0	10.0	Seep	MP-SP25	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	3/28/96	6.5	112.0	0.0	< 0.30	< 0.05	< 0.50	214.0	< 3.0	Deep Mine Disch.	MP-SP39	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	10/29/98	4.9	24.0	90.0	8.18	10.00	11.00	643.3	< 3.0	Spill Discharge	flowing from SW corner of Phase II, 1-3 gpm	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	12/29/94	6.7	78.0	0.0	12.30	0.49	< 0.50	590.0	36.0	Spring	MP-SP27	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	12/29/94	6.9	170.0	0.0	17.20	1.69	< 0.50	253.0	32.0	Spring	MP-SP32	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	12/29/94	7.9	286.0	0.0	< 0.30	< 0.05	< 0.50	436.0	< 3.0	Spring	MP-SP15	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	9/7/95	6.4	114.0	0.0	3.24	0.37	1.12	454.0	48.0	Stream	MP-SP16, unnamed tributary to Blue Lick Creek	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	12/29/94	6.5	38.0	0.0	< 0.30	< 0.05	< 0.50	21.0	10.0	Stream	MP-SP48, Blue Lick Creek upstream of site	
56880109	Blue Lick #3	Brothersvalley	Somerset	Redstone to Morantown	9/17/96	7.1	96.0	0.0	1.37	1.14	2.11	506.8	16.0	Pond Disch.	untreated flow pumped from Blue Lick seam pit	
56940101	Krause	Brothersvalley	Somerset	Sewickley to Morantown	5/22/95	6.9	84.0	0.0	0.31	0.05	< 0.50	211.0	< 8.0	Mine Discharge	MP-13, pre-mining	
56940101	Krause	Brothersvalley	Somerset	Sewickley to Morantown	8/18/95	8.1	172.0	0.0	< 0.30	< 0.05	< 0.50	342.0	< 3.0	Mine Discharge	MP-13, pre-mining	
56940101	Krause	Brothersvalley	Somerset	Sewickley to Morantown	5/9/96	5.9	11.0	4.4	0.48	0.11	< 0.50	39.0	< 3.0	Spring	MP-SW22	
56940101	Krause	Brothersvalley	Somerset	Sewickley to Morantown	9/18/95	7.2	90.0	0.0	0.45	< 0.05	< 0.50	27.0	8.0	Stream	MP-SW32 unnamed tributary to Buffalo Creek	
02920103	Plum #1	Plum Borough	Allegheny	Pittsburgh	3/3/89	3.2	0.0	464.0	24.50	2.35	33.30	510.0	22.0	Mine Discharge	MP-1 pre-mining, 20 gpm	
02920103	Plum #1	Plum Borough	Allegheny	Pittsburgh	7/16/94	2.9	0.0	105.0	15.40	3.57	68.30	775.0	< 1.0	Mine Discharge	MP-1, 19 gpm	
02920103	Plum #1	Plum Borough	Allegheny	Pittsburgh	2/10/90	3.1	0.0	360.0	6.37	3.24	34.80	570.0	6.0	Mine Discharge	MP-BS12, pumped discharge on Plum Creek, 321 gpm	
65880112	Trees Mills	Salem	Westmoreland	Pittsburgh	10/8/88	2.4	0.0	2088.0	371.00	20.04	159.90	2408.3	26.0	Deep Mine Disch.	MP-1 pre-mining, 8 gpm	
65880112	Trees Mills	Salem	Westmoreland	Pittsburgh	11/29/90	2.5	0.0	3618.0	190.40	13.50	73.14	1497.8	10.0	Deep Mine Disch.	MP-1, 13 gpm	
65880112	Trees Mills	Salem	Westmoreland	Pittsburgh	11/29/90	2.6	0.0	2720.0	79.90	11.34	50.88	1271.5	6.0	Seep	MP-5, 13 gpm	
Conemaugh Group	56850112	Emerick	Southampton	Somerset	Wellersburg	6.9	80.6	0.0	15.40	1.49	no data	397.0	no data	Mine Discharge	related to adjacent permit-coal correlation confirmed	
	56920105	State Line	Southampton	Somerset	U. & L. Bakerstown	4/29/96	6.4	24.0	12.0	1.90	0.06	3.37	< 20.0	< 3.0	Pit Water	water in Lower Bakerstown seam pit
	56920105	State Line	Southampton	Somerset	U. & L. Bakerstown	4/29/96	7.2	72.0	0.0	< 0.30	< 0.05	< 0.50	29.0	< 3.0	Pit Water	water in Upper Bakerstown seam pit
	56920105	State Line	Southampton	Somerset	U. & L. Bakerstown	9/28/96	6.0	10.8	4.4	0.95	0.27	0.79	29.8	4.0	Pit Water	water in Lower Bakerstown seam pit
	56920105	State Line	Southampton	Somerset	U. & L. Bakerstown	12/18/96	5.5	9.8	8.6	< 0.30	0.28	< 0.50	35.3	< 3.0	Pit Water	seep in Lower Bakerstown seam pit
	56920105	State Line	Southampton	Somerset	U. & L. Bakerstown	12/18/96	6.1	14.4	3.6	< 0.30	0.21	< 0.50	28.1	< 3.0	Pit Water	seep in Upper Bakerstown seam pit
	56920105	State Line	Southampton	Somerset	U. & L. Bakerstown	11/17/95	7.3	118.0	0.0	2.63	5.87	1.24	568.0	8.0	Pit Water	pool in L. Bakerstown pit from highwall seeps
	56920105	State Line	Southampton	Somerset	U. & L. Bakerstown	1/17/95	6.3	16.0	1.6	1.48	0.09	0.96	22.0	28.0	Spill Discharge	post-mining seep from eastern portion of Phase I
	56920105	State Line	Southampton	Somerset	U. & L. Bakerstown	1/17/95	8.0	14.8	7.0	< 0.30	< 0.05	< 0.50	< 20.0	< 3.0	Spring	MP-SP22
	56920105	State Line	Southampton	Somerset	U. & L. Bakerstown	4/29/96	6.6	24.0	0.0	4.15	0.14	2.91	< 20.0	115.0	Spring	MP-SP4, Lee spring
	56920105	State Line	Southampton	Somerset	U. & L. Bakerstown	9/28/94	8.2	180.0	0.0	0.97	0.08	0.86	53.0	12.0	Stream	MP-SP7, unnamed tributary downstream from site
	56920105	State Line	Southampton	Somerset	U. & L. Bakerstown	12/18/96	6.8	52.0	0.0	0.37	< 0.05	< 0.50	124.2	8.0	Stream	MP-SP7, unnamed tributary downstream from site
56900103	Cover Hill	Brothersvalley	Somerset	U. & L. Bakerstown	11/17/95	5.9	9.4	7.0	< 0.30	0.10	< 0.50	20.0	< 3.0	Stream	MP-SP40	
56900103	Cover Hill	Brothersvalley	Somerset	Lower Bakerstown	2/8/90	4.0	0.0	50.9	0.10	8.80	9.32	343.0	14.0	Spill Discharge	MP-SP10, pre-existing, below mine site, 14 gpm	
56900103	Cover Hill	Brothersvalley	Somerset	Lower Bakerstown	8/29/89	3.6	0.0	168.1	0.83	14.60	31.70	787.0	2.0	Mine Discharge	MP-SP11, from abandoned pit below site, 1.8 gpm	
56900103																



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5610-BA-1N/2256 6.98

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