

Figure 1.--Distribution of the unnamed coal bed.

Figure 2.--Distribution of the Haggy coal bed.

Figure 3.--Distribution of the Splash Dam coal bed.

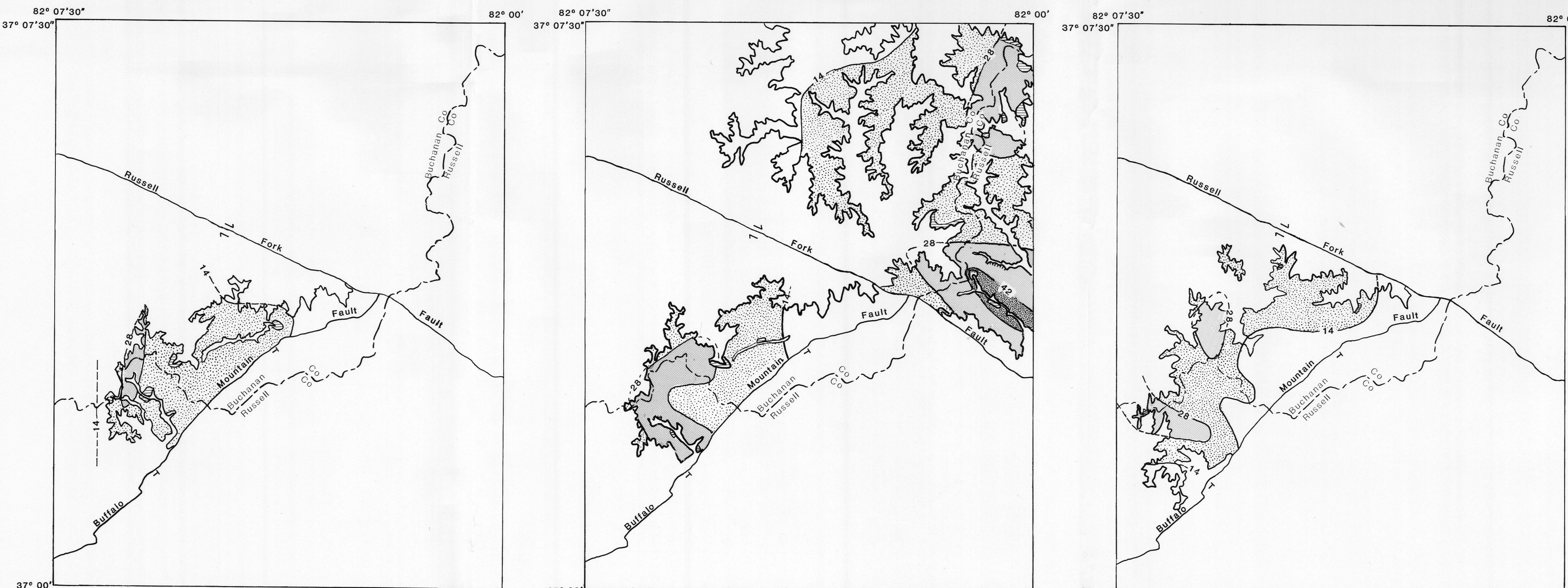


Figure 4.--Distribution of the Upper Banner coal bed.

Figure 5.--Distribution of the Lower Banner coal bed.

Figure 6.--Distribution of the Puncheon Camp coal bed.

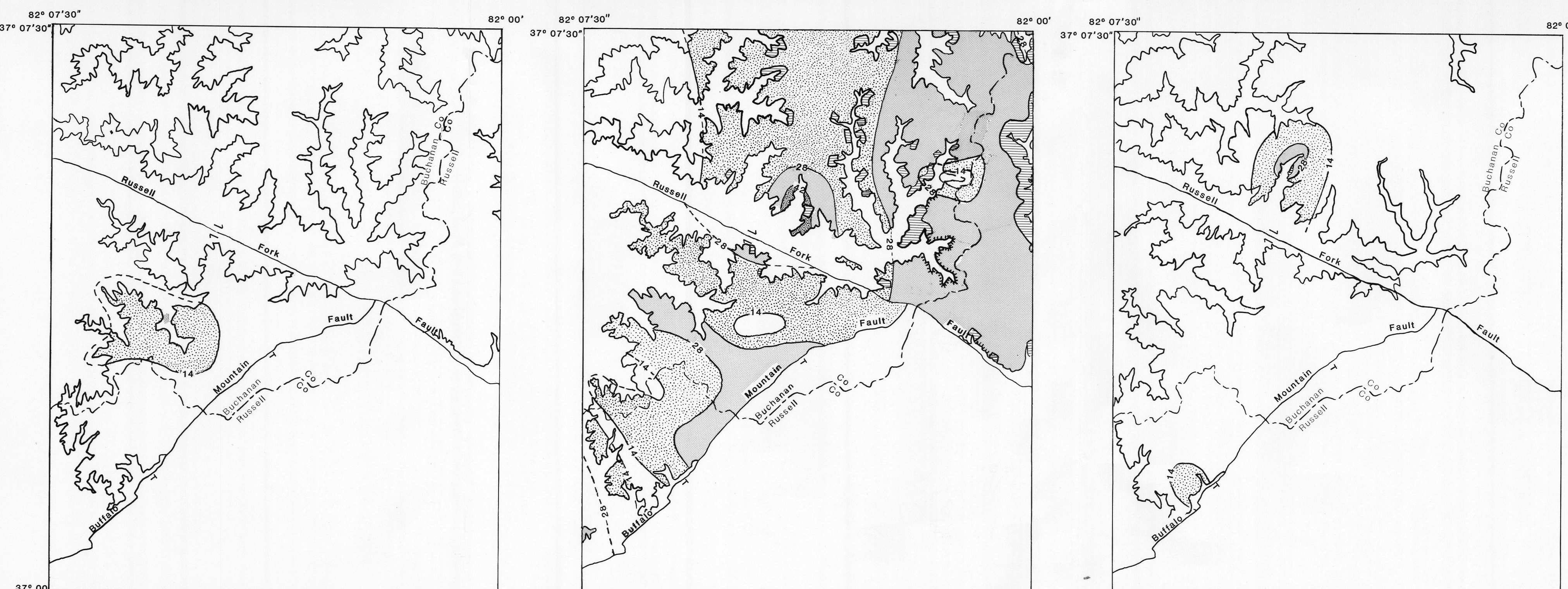


Figure 7.--Distribution of the Kennedy rider coal bed.

Figure 8.--Distribution of the Kennedy coal bed.

Figure 9.--Distribution of the Ally coal bed.

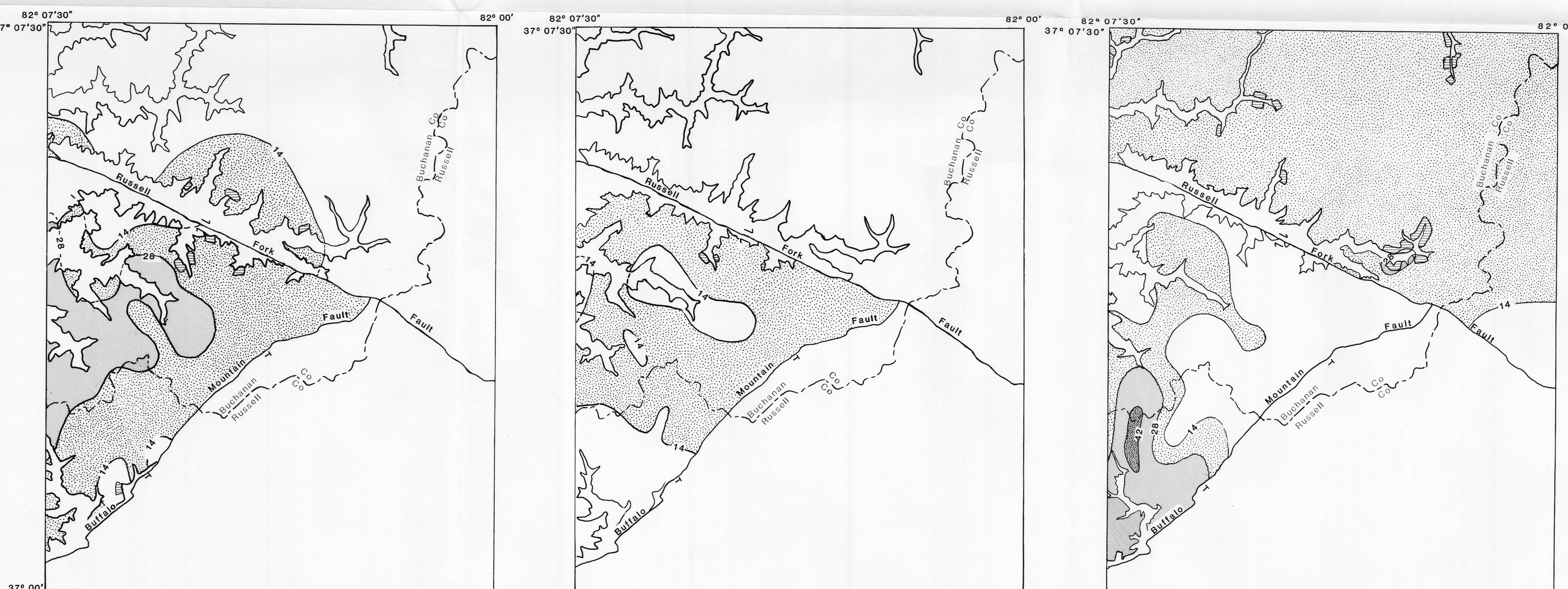


Figure 10.--Distribution of the Raven No. 3 coal bed.

Figure 11.--Distribution of the Raven No. 2 coal bed.

Figure 12.--Distribution of the Raven No. 1 coal bed.

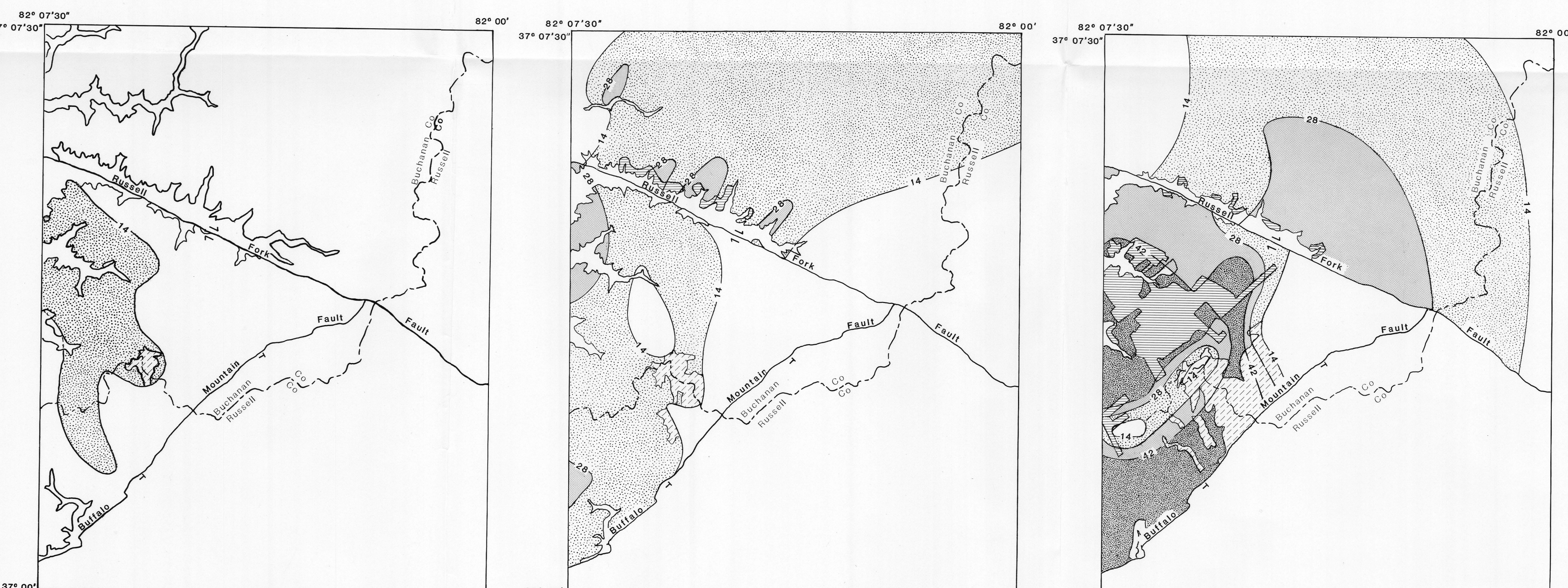
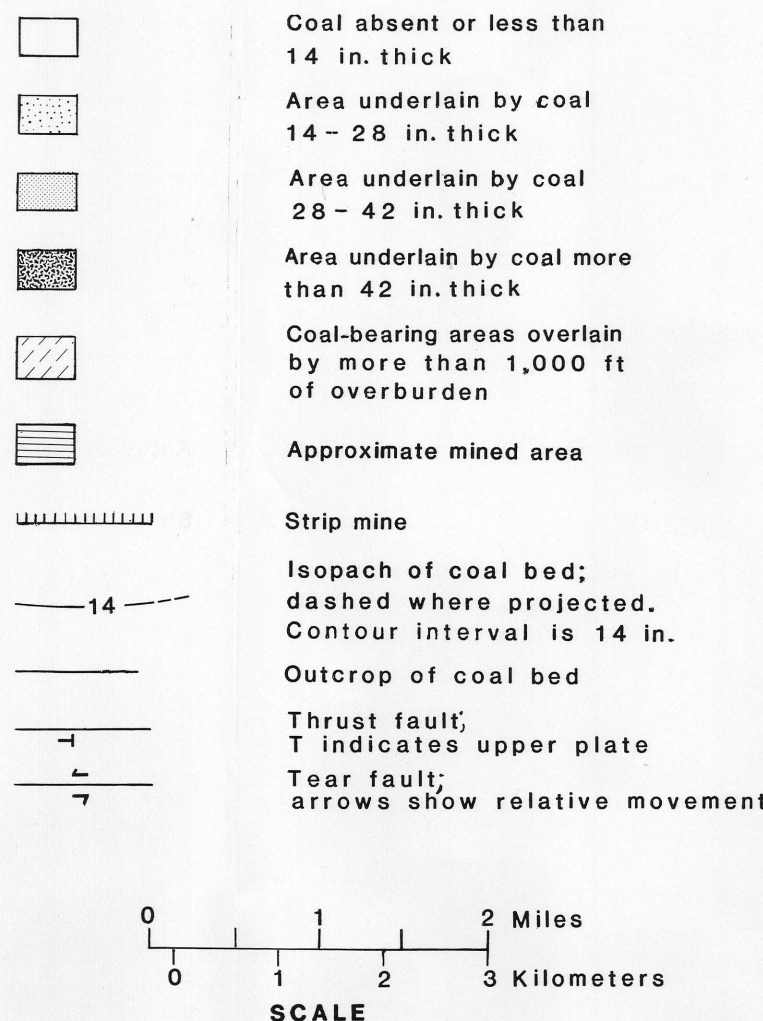


Figure 13.--Distribution of the Jawbone rider coal bed.

Figure 14.--Distribution of the Jawbone coal bed.

Figure 15.--Distribution of the Tiller coal bed.

EXPLANATION



COAL GEOLOGY

The coal-bearing Norton Formation of Early and Middle Pennsylvanian age is at the surface over most of the northwestern two-thirds of the Big A Mountain quadrangle. The southeastern part of the quadrangle, bounded on the northwest and northeast by the Buffalo Mountain and Russell Fork faults, consists of highly faulted rocks ranging in age from Early Cambrian to Middle Pennsylvanian (Miller and Meissner, 1977). The coal-bearing rocks in the northwestern two-thirds of the quadrangle are bisected by the Russell Fork fault. The rocks southwest of the fault, which are part of the Cumberland overthrust block (Wentworth, 1921), have been displaced approximately four miles to the northwest (England, 1971) along the concealed Pine Mountain overthrust. Because the rocks of the Norton Formation are displaced laterally by the Russell Fork fault, the coal bed sequences across the fault do not match. For this reason the resources are shown separately for the coal beds north and south of the fault (table 1). The stratigraphic section from the Gladville Sandstone to the Tiller coal bed is thicker to the south of the fault than it is to the north, as illustrated in figures 16 and 17. The Puncheon Camp, a locally important coal bed, is present only south of the fault.

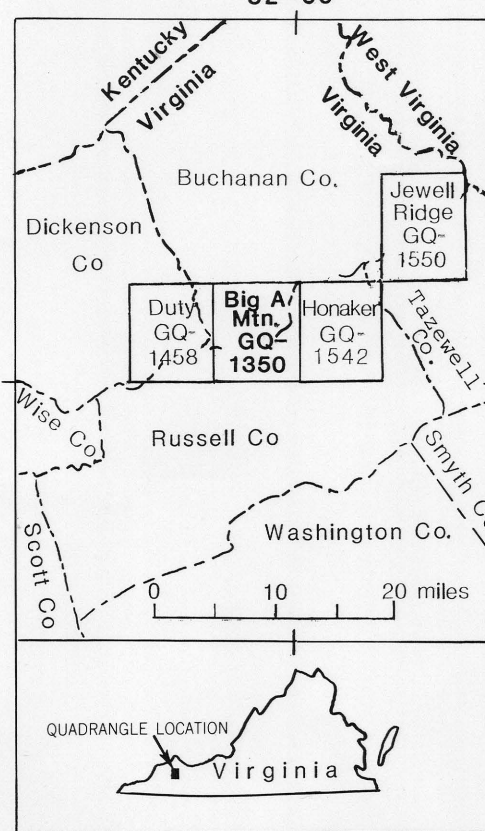
Average analyses of three of the more important coal beds mined in the quadrangle--the Kennedy, Raven No. 3, and Tiller--show an average fixed carbon of 81 percent; volatiles, 32 percent; ash, 5 percent; sulfur, 0.7 percent; and BTUs, 14,840. Average ash for all coal beds in the quadrangle is 5 percent, and average sulfur is 0.9 percent.

REFERENCES CITED

England, K. J., 1971, Displacement of the Foothosts Formation by the Russell Fork fault, southwest Virginia: U.S. Geological Survey Professional Paper 750-B, p. B13-B16.

Miller, R. L., and Meissner, C. R., Jr., 1977, Geologic map of the Big A Mountain Quadrangle, Buchanan and Russell Counties, Virginia: U.S. Geological Survey Geologic Quadrangle Map GQ-1350.

Wentworth, C. K., 1921, Russell Fork fault of southwest Virginia: Journal of Geology, v. 29, p. 351-369.



SYSTEM	SERIES	FORMATION, MEMBER, AND BED	LITHO- LOGY	Coal thickness, in inches	Thickness of interval between coal beds, in feet	SYSTEM	SERIES	FORMATION, MEMBER, AND BED	LITHO- LOGY	Coal thickness, in inches	Thickness of interval between coal beds, in feet
PENNSYLVANIAN	Middle Pennsylvanian	Gladville Sandstone (?)			50	PENNSYLVANIAN	Middle Pennsylvanian	Gladville Sandstone (?)			50
		Unnamed coal bed		0 - 14	40±			Unnamed coal bed		0 - 14	100±
		Haggy coal bed		0 - 21	80			Haggy coal bed		14	125±
		Splash Dam coal bed		0 - 12	120±			Splash Dam coal bed		10 - 28	65 - 85
		Upper Banner coal bed		0 - 15	80 - 100			Upper Banner coal bed		4 - 43	60±
		Lower Banner coal bed		0 - 48	50 - 100			Lower Banner coal bed		9 - 48	160 - 170
		Kennedy rider coal bed		0 - 22	145 - 185		Norton Formation	Puncheon Camp coal bed		0 - 33	165 - 190
		Kennedy coal bed		0 - 24	15±			Kennedy rider coal bed		0 - 23	30±
		McClure Sandstone Member		0 - a few inches	40 - 80			Kennedy coal bed		0 - 29	40 - 80
		Ally coal bed		0 - a few inches	70±			McClure Sandstone Member		0 - 18	20 - 60
PENNSYLVANIAN	Lower Pennsylvanian	Raven No. 3 coal bed		0 - 27	75±		Lower Pennsylvanian	Raven No. 3 coal bed		20 - 30	85 - 100
		Raven No. 2 coal bed		0 - 31	50±			Raven No. 2 coal bed		0 - 27	60 - 80
		Raven No. 1 coal bed		0 - 27	60±			Raven No. 1 coal bed		0 - 27	25 - 75
		Tiller coal bed		0 - 35	60 - 160			Jawbone rider coal bed		0 - 28	100 - 140
					1045±			Jawbone coal bed		0 - 28	0 - 100
								Council Sandstone Member		0 - 82	0 - 100
								Tiller coal bed			135±±
	Lee Formation						Lee Formation				

Figure 16.--Coal-bearing sequences north of Russell Fork fault.

Figure 17.--Coal-bearing sequences south of Russell Fork fault.

Table 1.--Estimated remaining and original coal resources in the Norton Formation in the Big A Mountain quadrangle, in thousands of short tons, as of March 1980

COAL BED	REMAINING				REMOVED				REMOVED				TOTAL				MINUS AND DEDT 25 ACRES				TOTAL ORIGINAL RESOURCES			
	(All coal in is the measured category)				(All coal in is the measured category)				(All coal in is the measured category)				(All coal in is the measured category)				(All coal in is the measured category)				(All coal in is the measured category)			
	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total	beds 11-05 111-05 05-12 051-12 12-18 121-18 Total				
Buchanan County - North of Russell Fork Fault (Coal covered by 0 - 1,000 feet of overburden)																								
Unnamed	200	-	-	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200			
Haggy	200	-	-	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200			
Splash Dam	100	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100			
Upper Banner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Lower Banner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Puncheon Camp	1,750	750	-	2,500	2,000	1,140	-	3,140	2,500	1,900	-	4,400	2,500	1,900	-	4,400	2,500	1,900	-	4,400	2,500			
Kennedy rider	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Kennedy	6,150	5,930	680	12,760	4,780	7,200	130	12,110	11,150	11,150	400	22,700	10,600	14,200	400	25,200	10,600	14,200	400	25,200	10,600			
Ally	350	350	-	700	350	90	-	1,600	2,000	1,900	-	3,900	1,000	150	-	2,000	1,000	150	-	2,000	1,000			
Raven No. 3	1,450	-	-	1,450	2,100	-	-	2,100	270	1,950	-	2,920	1,100	-	-	2,920	1,100	-	-	2,920	1,100			
Raven No. 2	1,700	130	-	1,830	14,750	-	-	16,220	11,250	11,250	-	22,500	10,000	2,700	-	15,400	10,000	2,700	-	15,400	10,000			
Raven No. 1	5,900	1,260	-	7,160	6,780	560	-	7,340	15,260	15,260	-	30,520	27,500	1,000	-	29,500	27,500	1,000	-	29,500	27,500			
Jawbone rider	1,010	1,320	-	2,330	1,700	1,900	-	3,600	17,750	10,530	-	28,280	13,000	15,000	-	28,000	13,000	15,000	-	28,000	13,000			
Jawbone	15,700	9,700	-	25,400	25,800	15,710	130	41,340	39,900	39,900	-	81,240	1,700	1,600	-	35,540	1,700	1,600	-	35,540	1,700			
Tiller	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Total	15,700	9,700	-	25,400	25,800	15,710	130	41,340	39,900	39,900	-	81,240	1,700	1,600	-	35,540	1,700	1,600	-	35,540	1,700			
Buchanan County - South of Russell Fork Fault (Coal covered by 0 - 1,000 feet of overburden)																								
Unnamed	30	-	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30			
Haggy	100	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100			
Splash Dam	100	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100			
Upper Banner	950	-	-	950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	950			
Lower Banner	1,150	130	-	1,280	1,280	300	-	2,580	1,700	1,700	-	3,400	600	10	-	4,010	600	10	-	4,010	600			
Puncheon Camp	1,750	750	-	2,500	2,000	1,140	-	3,140	2,500	1,900	-	4,400	2,500	1,900	-	4,400	2,500	1,900	-	4,400	2,500			
Kennedy rider	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Kennedy	6,150	5,930	680	12,760	4,780	7,200	130	12,110	11,150	11,150	400	22,700	10,600	14,200	400	25,200	10,600	14,200	400	25,200	10,600			
Ally	350	350	-	700	350	90	-	1,600	2,000	1,900	-	3,900	1,000	150	-	2,000	1,000	150	-	2,000	1,000			
Raven No. 3	1,450	-	-	1,450	2,100	-	-	2,100	270	1,950	-	2,920	1,100	-	-	2,920	1,100	-	-	2,920	1,100			
Raven No. 2	1,700	130	-	1,830	14,750	-	-	16,220	11,250	11,250	-	22,500	10,000	2,700	-	15,400	10,000	2,700	-	15,400	10,000			
Raven No. 1	5,900	1,260	-	7,160	6,780	560	-	7,340	15,260	15,260	-	30,520	27,500	1,000	-	29,500	27,500	1,000	-	29,500	27,500			
Jawbone rider	1,010	1,320	-	2,330	1,700	1,900	-	3,600	17,750	10,530	-	28,280	13,000	15,000	-	28,000	13,000	15,000	-	28,000	13,000			
Jawbone	15,700	9,700	-	25,400	25,800	15,710	130	41,340	39,900	39,900	-	81,240	1,700	1,600	-	35,540	1,700	1,600	-	35,540	1,700			
Tiller	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Total	15,700	9,700	-	25,400	25,800	15,710	130	41,340	39,900	39,900	-	81,240	1,700	1,600	-	35,540	1,700	1,600	-	35,540	1,700			
Russell County - North of Russell Fork Fault (Coal covered by 0 - 1,000 feet of overburden)																								
Unnamed	10	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10			
Haggy	100	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100			
Splash Dam	100	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100			
Upper Banner	950	-	-	950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	950			
Lower Banner	1,150	130	-	1,280	1,280	300	-	2,580	1,700	1,700	-	3,400	600	10	-	4,010	600	10	-	4,010	600			
Puncheon Camp	1,750	750	-	2,500	2,000	1,140	-	3,140	2,500	1,900	-	4,400	2,500	1,900	-	4,400	2,500	1,900	-	4,400	2,500			
Kennedy rider	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Kennedy	6,150	5,930	680	12,760	4,780	7,200	130	12,110	11,150	11,150	400	22,700	10,600	14,200	400	25,200	10,600	14,200	400	25,200	10,600			
Ally	350	350	-	700	350	90	-	1,600	2,000	1,900	-	3,900	1,000	150	-	2,000	1,000	150	-	2,000	1,000			
Raven No. 3	1,450	-	-	1,450	2,100	-	-	2,100	270	1,950	-	2,920	1,100	-	-	2,920	1,100	-	-	2,920	1,100			
Raven No. 2	1,700	130	-	1,830	14,750	-	-	16,220	11,250	11,250	-	22,500	10,000	2,700	-	15,400	10,000	2,700	-	15,400	10,000			
Raven No. 1	5,900	1,260	-	7,160	6,780	560	-	7,340	15,260	15,260	-	30,520	27,500	1,000	-	29,500	27,500	1,000	-	29,500	27,500			
Jawbone rider	1,010	1,320	-	2,330	1,700	1,900	-	3,600	17,750	10,530	-	28,280	13,000	15,000	-	28,000	13,000	15,000	-	28,000	13,000			
Jawbone	15,700	9,700	-	25,400	25,800	15,710	130	41,340	39,900	39,900	-	81,240	1,700	1,600	-	35,540	1,700	1,600	-	35,540	1,700			
Tiller	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Total	15,700	9,700	-	25,400	25,800	15,710	130	41,340	39,900	39,900	-	81,240	1,700	1,600	-	35,540	1,700	1,600	-	35,540	1,700			
Russell County - South of Russell Fork Fault (Coal covered by 0 - 1,000 feet of overburden)																								
Unnamed	30	-	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30			
Haggy	100	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100			
Splash Dam	100	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100			
Upper Banner	950	-	-	950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	950			
Lower Banner	1,150	130	-	1,280	1,280	300	-	2,580	1,700	1,700	-	3,400	600	10	-	4,010	600	10	-	4,010	600			
Puncheon Camp	1,750	750	-	2,500	2,000	1,140	-	3,140	2,500	1,900	-	4,400	2,500	1,900	-	4,400	2,500	1,900	-	4,400	2,500			
Kennedy rider	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Kennedy	6,150	5,930	680	12,760	4,780	7,200	130	12,110	11,150	11,150	400	22,700	10,600	14,200	400	25,200	10,600	14,200	400	25,200	10,600			
Ally	350	350	-	700	350	90	-	1,600	2,000	1,900	-	3,900	1,000	150	-	2,000	1,000	150	-	2,000	1,000			
Raven No. 3	1,450	-	-	1,450	2,100	-	-	2,100	270	1,950	-	2,920	1,100	-	-	2,920	1,100	-	-	2,920	1,100			
Raven No. 2	1,700	130	-	1,830	14,750	-	-	16,220	11,250	11,250	-	22,500	10,000	2,700	-	15,400	10,000	2,700	-	15,400	10,000			
Raven No. 1	5,900	1,260	-	7,160	6,780	560	-	7,340	15,260	15,260	-	30,520	27,500	1,000	-	29,500	27,500	1,000	-	29,500	27,500			
Jawbone rider	1,010	1,320	-	2,330	1,700	1,900	-	3,600	17,750	10,530	-	28,280	13,000	15,000	-	28,000	13,000	15,000	-	28,000	13,000			
Jawbone	15,700	9,700	-	25,400	25,800	15,710	130	41,340	39,900	39,900	-	81,240	1,700	1,600	-	35,540	1,700	1,600	-	35,540	1,700			
Tiller	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Total	15,700	9,700	-	25,400	25,800	15,710	130	41,340	39,900	39,900	-	81,240	1,700	1,600	-	35,540	1,700	1,600	-	35,540	1,700			
GRAND TOTAL (Coal covered by 0 - 5,000 feet of overburden)																								
beds	11-05	111-05	05-12	051-12	12-18	121-18	Total	beds	11-05	111-05	0													