

Buchanan County
 United Producing Company
 Lon B. Rodgers et al
 Well No. : 14-2694
 Index No. 96
 VDMR W-280
 Elevation: 2364'

Remarks: Well location and elevation indicate well spudded in about 150' above the Hagy coal. Referred to measured sections 612, 613, coal geology along Slate Creek, particularly at the head of Slate Creek, (Mullins Branch area), and three cores in nearby areas. The three cores are: The Lynn Camp Core 4 miles SE, the Millhouse Core 4 miles NE, and the Blackey Creek Core 4 miles NW. The Splash Dam coal is approximately at 300', the Upper Banner coal at 375', the Lower Banner coal at 450', the Kennedy coal at 650', the Aily coal at 815' and the Raven coal at 875'. The coals present in the cuttings and noted on the geological log near the estimated horizons above, are assumed to be those coals. Correlations by Marshall Miller, 1970-74, VDMR.

<u>Formation</u>	<u>Top</u>	<u>Bottom</u>	<u>Thickness</u>
Pennsylvanian System			
Post Lee Formation "in at surface"		1931	1931'
		Hagy coal 139-140	
		Splash Dam coal 292-302	
		Upper Banner coal horizon at 375'	
		Lower Banner coal horizon at 450'	
		Kennedy coal 649-655	
		Raven coal 838-840	
Lee Formation	1931	2031	100'
		quartzose sand 1931-2031	100'
Pocahontas Formation	2031	2456	425'
		Pocahontas Coals: 2040-2041	
		2160-2170	
		(Poca #3 coal) 2176-2182	
		2241-2244	
		2300-2304	
Mississippian System			
Bluestone Formation	2456	2763	307'
Pride Shale	2671	2763	92'
Princeton Sand	2763?	2955	192'
Little Stone Gap	2955	3024	69'
Maxon Sand	3237	3403	166'
Greenbrier Fm.	4060?	4529	469'
Maccrady Fm.	4529		

Operator: United Producing Co.

Farm: Lon B. Rogers, et. al.

Well No.: 14-2694

Location: Buchanan County

4,650' S of 37° 20'

19,950' W of 81° 50'

Elevation: 2364 Ground

Total depth: 5226 (in Devonian shale)

Commenced: July 1, 1958

Completed: December 15, 1958

Result: Gas Well

Geologic log

Samples studied by R. J. Voigtsberger

Virginia Division of Mineral Resources

September, 1959

Pottsville group - Thickness 2416 (+) - Depth Interval 40' - 2456'.

DEPTH		
40' - 100'	60'	Siltstone, gray and tan, sandy with shale stringers, light gray. Shale, light gray, silty at base of interval.
100' - 114'	14'	Shale, medium gray.
114' - 124'	10'	Sandstone, tan, very fine-grained, porosity, negligible.
124' - 217'	93'	Sandstone, white, fine-grained, rather micaceous, some coal, porosity, poor but becoming better from about 165' to base of interval, although the better porosity is still poor at best.
217' - 238'	21'	Shale, medium gray.
238' - 242'	4'	Sandstone, light to medium-gray, micaceous and silty.
242' - 248'	6'	No sample.
248' - 252'	4'	Same as 238' - 242'
252' - 267'	15'	Sandstone, white, fine-grained, very poor porosity.
267' - 280'	13'	Shale, medium gray.
280' - 300'	20'	Sandstone, white, fine-grained, with shale stringers, medium gray, very poor porosity.
300' - 340'	40'	Sandstone, white, fine-grained, good sorting, but very poor porosity as result of tight silica cement.
340' - 367'	27'	Shale, medium gray, silty at base of interval.

DEPTH		
367' - 372'	5'	Siltstone, light gray and red.
372' - 393'	21'	Sandstone, white and red, very fine-grained, porosity, poor.
393' - 415'	22'	Shale, medium gray, silty.
415' - 434'	19'	Shale, medium gray.
434' - 480'	46'	Sandstone, white, fine-grained, porosity, poor with shale stringers, medium gray in lower part of interval.
480' - 632'	152'	Shale, medium gray, and silt, light gray at base of interval.
632' - 636'	4'	No samples.
636' - 700'	64'	Sandstone, light gray, very fine-grained, very micaceous, porosity, poor.
700' - 730'	30'	Shale, black, silty with sandstone, white, fine-grained increasing in amount toward lower part of interval.
730' - 880'	150'	Sandstone, white, fine-grained, very micaceous, porosity, poor with coal at 830' - 858' and shale, black, increasing from 855' to base of interval.
880' - 900'	20'	Shale, medium gray.
900' - 914'	14'	Sandstone, white, medium-grained, porosity, poor.
914' - 960'	46'	No samples.
960' - 983'	23'	Shale, medium gray, silty.
983' - 1025'	42'	Sandstone, white, very fine-grained, porosity, poor with sandstone, light gray, silty at about 996' - 1000'.
1025' - 1138'	113'	Siltstone, medium gray, sandy, and micaceous becoming more shaly from about 1090' to base of interval.
1138' - 1161	23'	No samples.
1161' - 1230'	69'	Sandstone, white, fine-grained, porosity, poor, with shale, stringers, black from about 1212' to base of interval.
1230' - 1280'	50'	Shale, black, silty in lower part of interval.

DEPTH			
1280'	- 1352'	72'	Shale, black, silty with sandstone, white, fine-grained, porosity, poor.
1352'	- 1478'	126'	Shale, black; sandstone, white, fine-grained, porosity, poor, with varying proportions of sand and shale throughout interval, sand becoming predominant toward lower part of interval.
1478'	- 1498'	20'	Sandstone, white, fine-grained, porosity, poor.
1498'	- 1539'	41'	Shale, medium black with silt at about 1522' - 1524'.
1539'	- 1542'	3'	No sample.
1542'	- 1780'	238'	Sandstone, white, fine-grained, porosity, poor, with shale stringers at 1570' - 1585', a trace of shale, black at 1618' - 1642' and a trace of shale, medium gray at 1740' - 1780'.
1780'	- 1820'	40'	Shale, medium gray to black alternating with sandstone, white, fine grained, porosity, poor.
1820'	- 1830'	10'	Sandstone, light gray; shale, medium gray; and siltstone, medium gray.
1830'	- 1842'	12'	Sandstone, light gray, fine-grained porosity, poor giving way to shale at base of interval.
1842'	- 1932'	90'	Shale, medium gray.
1932'	- 1952'	20'	Sandstone, white, very fine-grained, porosity poor, with shale, black decreasing from top to bottom of the interval.
1952'	- 2032'	80'	Sandstone, white, fine-grained, porosity, poor.
2032'	- 2122'	90'	Shale, light to medium gray, silty, with coal.
2122'	- 2160'	38'	Sandstone, white, fine-grained, porosity, poor, with shale, medium gray, in upper part of interval.
2160'	- 2170'	10'	<u>Coal.</u>
2170'	- 2176'	6'	Sandstone, white, fine-grained, porosity poor, with shale, medium gray.
2176'	- 2180'	4'	<u>Coal.</u>

DEPTH			
2180'	- 2190'	10'	Siltstone, light gray, micaceous, sandy, with coal.
2190'	- 2200'	10'	Sandstone, <u>white</u> , fine-grained, and shale, medium gray.
2200'	- 2230'	30'	Sandstone, light gray, fine-grained, micaceous, silty, porosity, poor.
2230'	- 2240'	10'	Sandstone, light gray, fine-grained, porosity, poor, and shale, medium gray.
2240'	- 2256'	16'	Sandstone, light gray, fine-grained, porosity, poor, and shale, medium gray, and coal.
2256'	- 2291'	35'	Sandstone, light gray, fine to medium-grained, porosity, poor, and shale, medium gray to black.
2291'	- 2305'	14'	Shale, black, and coal.
2305'	- 2332'	27'	Shale, light to medium gray.
2332'	- 2456'	124'	Sandstone, <u>white</u> , fine-grained, porosity, poor, with shale, medium gray, in upper half of interval and a trace at 2426' - 2448'.
Bluestone formation - Top 2456'			
2456'	- 2466'	10'	Shale, medium gray.
2466'	- 2480'	14'	Shale, red-brown, calcareous.
2480'	- 2500'	20'	Shale, variegated, red, green, and gray.
2500'	- 2540'	40'	Shale, red and gray with pyrite at 2534' - 2540'.
2540'	- 2580'	40'	Shale, medium gray and red with siltstone, light green.
2580'	- 2590'	10'	Sandstone, white, very fine-grained, porosity, poor, and dolomite, (?) tan, very argillaceous.
2590'	- 2610'	20'	Shale, medium gray, and limestone, tan, argillaceous.
2610'	- 2620'	10'	Shale, medium gray; siltstone, medium gray with limestone, tan, argillaceous.
2620'	- 2637'	17'	Shale, medium gray; sandstone, white, fine-grained, porosity, poor, and limestone, tan, argillaceous.

DEPTH			
2637'	- 2671'	34'	Sandstone, white, fine-grained, porosity, poor with shale, medium gray in upper part of interval.
2671'	- 2750'	79'	Shale, medium black, with pyrite from 2700' - 2750'.
2750'	- 2761'	11'	Shale, medium gray and shale, light gray, and silty with pyrite.
2761'	- 2770'	9'	Shale, medium gray and limestone, tan, argillaceous.
2770'	- 2787'	17'	Shale red and gray, and limestone, tan, argillaceous.
2787'	- 2800'	13'	Shale, varigated, red and green, silty and limestone, tan, argillaceous.
2800'	- 2810'	10'	Shale, medium gray; siltstone, light gray; limestone, tan, argillaceous.
2810'	- 2820'	10'	Shale, medium gray; siltstone, red; limestone, tan, argillaceous.
2820'	- 2830'	10'	Shale, medium gray, and siltstone, medium gray with pyrite.
2830'	- 2890'	60'	Shale, medium gray, and shale, red, calcareous.
2890'	- 2920'	30'	Sandstone, light gray, fine-grained, porosity, poor, and shale, medium gray with pyrite in middle of interval.
2920'	- 2940'	20'	Shale, medium gray, and siltstone, medium gray.
2940'	- 3001'	61'	Shale, medium gray, calcareous.
3001'	- 3024'	23'	Shale, medium gray, and a trace of shale, red, very calcareous with pyrite and macro fossil fragments.
3024'	- 3065'	41'	Shale, varigated, red, green, and medium gray with siltstone, white to light gray at the base of interval.
3065'	- 3080'	15'	Shale, red, gray, and sandstone, white, very fine-grained, porosity, poor.
3080'	- 3122'	42'	Sandstone, white, clean, fine-grained, porosity poor, with shale, red and medium gray, sandstone become subordinate at base of interval.
3122'	- 3237'	115'	Shale, red and gray, very calcareous with a trace of limestone, argillaceous at 3130' - 3150' and a little silt at 3150' - 3160'.

Falls Mills

Louisiana

DEPTH			
567 G4P 55	3237' - 3254'	17'	Sandstone, white, fine-grained, poor porosity and shale, gray and red.
	3254' - 3271'	17'	No samples.
	3271' - 3403'	132'	Sandstone, white, fine-grained, porosity, poor, with small amount of shale, medium gray, calcareous coming in at 3330' and becoming prominent at the base of interval.
	3403' - 3490'	87'	Shale, medium gray with siltstone, light gray, sandy, at uppermost part of interval. Pyrite scattered throughout upper half of interval.
	3490' - 3542'	52'	Shale, medium gray with sandstone, white, fine-grained, porosity poor increasing up to about 40% and with pyrite and more silt with less sand at base of interval.
	3542' - 3588'	46'	Shale, medium gray and red, calcareous.
	3588' - 3606'	18'	Shale, medium gray with pyrite.
	3606' - 3643'	37'	Shale, gray and red, dolomitic with pyrite in uppermost part of interval.
	3643' - 3691'	48'	Shale, medium gray with pyrite at 3650' - 3670' and siltstone, light green-gray at base of interval.
	3691' - 3702'	11'	Shale, medium gray with small amount of sandstone, light gray, very fine-grained, calcareous, micaceous and a trace of limestone, argillaceous.
	3702' - 3738'	36'	Shale, dark gray, silty, calcareous, with scattered pyrite.
	3738' - 3760'	22'	No samples.
	3760' - 3800'	40'	Sandstone, light gray, fine-grained, porosity, poor with shale, medium gray.
	3800' - 3880'	80'	Shale, dark gray with pyrite at 3850' - 3860'.
	3880' - 3910'	30'	Shale, black with limestone, mottled white and gray, porosity, poor, and with crinoids, gastropods and macro fossil fragments.
	3910' - 3967'	57'	Limestone, white to tan, argillaceous, oolitic, porosity, poor with shale, dark gray increasing toward bottom of interval.

DEPTH		
3967' - 3976'	9'	Shale, medium gray.
3976' - 4030'	54'	Shale, dark gray, calcareous and limestone, medium gray, argillaceous with limestone becoming oolitic and predominant toward base of interval, porosity, poor.
4030' - 4060'	30'	No samples.
4060' - 4070'	10'	Limestone, medium gray, oolitic, porosity, poor.
4070' - 4080'	10'	Shale, medium gray, calcareous with a trace of limestone.
4080' - 4087'	7'	No sample.
4087' - 4097'	10'	Shale, medium gray, calcareous, with a trace of limestone, light gray to medium gray, argillaceous.
4097' - 4110'	13'	Shale, medium gray with pyrite.
Greenbriar limestone - Top 4110'		
4110' - 4220'	110'	Limestone, light to medium gray, argillaceous with a trace of shale, medium gray at 4170' - 4207'.
4220' - 4350'	130'	Limestone, medium tan-gray, oolitic, argillaceous, porosity, poor.
4350' - 4380'	30'	Same as above but without oolites.
4380' - 4420'	40'	Limestone, tan and red-green, few oolites, porosity, poor.
4420' - 4455'	35'	Limestone, tan to light gray, very oolitic, porosity, poor.
4455' - 4529'	74'	Limestone, light tan, extremely oolitic, porosity, poor, becoming less oolitic at about 4500'.
Maccrady shale - Top 4529'		
4529' - 4563'	34'	Shale, red, very silty, calcareous.
4563' - 4617'	54'	Shale, medium gray with a trace of shale, red at 4577' - 4602'.
Price sandstone - Top 4617'		
4617' - 4743'	126'	Siltstone, light gray and shale, medium gray.

Big Stone Gap shale - Top 4743'

DEPTH		
4743' - 4820'	77'	Shale, light to medium gray, slightly silty
4820' - 5150'	330'	Shale, medium to dark gray with pyrite at 4820' - 4825' and 4930' - 4941'.
5150' - 5226'	76'	Shale, medium gray with siltstone, light gray. T. D. 5226'.

Summary

Pennsylvanian	in bottom	40' 2455'
Bluestone fm., Princeton sandstone undifferentiated	top bottom	2455' 2763' ?
Avis limestone	top bottom	2763' ? 2820' ?
Hinton fm., (proper), Stony Gap sandstone member, Bluefield formation undifferentiated	top bottom	2820' ? 4111'
Greenbrier limestone	top bottom	4111' 4528'
Maccrady shale	top bottom	4528' 4617'
Price sandstone	top bottom	4617' 4745'
Big Stone Gap shale and Devonian shale undifferentiated in Devonian shale at	top T. D.	4745' 5226'