

Final

Buchanan County
 United Fuel Gas Co.
 Zach Justice #8835
 Index No. 27
 Elevation: 1343.51'

Remarks: Elevation, location of well site and geology of area indicate well is approximately 220' above the Hagy coal, 330' above the Splash Dam Coal, 430' above the Lower Banner Coal and 530' above the Kennedy Coal. Referred to coal geology on Guess Fork and further north. Referred to measured sections 849, 847.

Quartzose sands and other formational boundaries were determined from the gamma-ray neutron log. (No cuttings were collected from the Pennsylvanian section in this well.) If the drillers log noted a coal very near the approximate coal horizons noted above, the drillers coal depth and thicknesses were used. 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"		590	590'
		Hagy coal 214-217	3'
		Splash Dam coal 322-324	2'
		Lower Banner coal 446-448	2'
*see page 221		*Kennedy coal horizon at 530'	
Lee Formation	590	1830	1240'
		quartzose sand 590-652	62'
		quartzose sand 687-715	28'
			90'
		quartzose sand 1030-1045	15'
		quartzose sand 1066-1148	82'
		quartzose sand 1292 1318	26'
			123'
(*determined from Shawmut core)		*War Creek coal horizon at 1400'	
		quartzose sand 1405-1445	40'
		quartzose sand 1460-1496	36'
		quartzose sand 1518-1670	152'
		quartzose sand 1675-1697	22'
		quartzose sand 1703-1718	15'
		quartzose sand 1722-1830	108'
		total quartzose sand	586'

Pocahontas Formation "absent"

Mississippian System

Bluestone Formation	1830	2030	200'
Pride Shale	1960	2030	70'
Princeton Sand	2030	2159	129'
Little Stone Gap Mem.	2159	2171	12'
Maxon Sand?	2280	2385	105'
Greenbrier Formation	2710	3071	361'
Maccrady	3071		

Zach Justice 8835 Geological log supplement by Marshall Miller, VDMR.

- 2037-2069 22' *Sandstone, white, fine to medium grained, fairly well sorted, subangular to subrounded, appears to be almost entirely composed of quartz, shale stringers and interbeds throughout. Mostly shale, gray and micaceous present (2060-2065). At 2065' sand becomes micaceous, very fine grained with abundant dark minerals
- 2069-2110 41' Shale, dark gray, finely micaceous is not calcareous
- 2110-2133 23' Shale, mostly, like that above and a white, very fine grained sand, interstitially silty, slightly micaceous, with dark laminations. Progressively more sand downward, is 50% of sample by 2114'
- 2133-2159 26' *Sandstone, mostly white, fine to medium grained, subangular to subround, occasional large coarse grains, quartzose, lesser amounts of interbedded gray shale. At (2155-2159) fragments of reworked dark brown limestone with shell fragments can be seen actually cemented with the quartz sand.
- 2159-2171 12' Gray, very calcareous shale, and dark argillaceous limestone, considerable pyrite present.
- 2171-2186 15' Siltstone, light gray, green, siliceous, red, green and gray shales, calcareous