

Buchanan County
 Clinchfield Coal Company
 Andrew Thomas Well #102
 VDMR W-142
 Index No. 9
 Elevation: 1373'

Remarks: Elevation and location of well indicate well spudded about 47'
 below Kennedy Coal.

Geological summary by Marshall S. Miller to determine coal correlations and identify quartzose sands of the Lee Formation. The geologic logs of Clinchfield Coal Co. or Voigtsberger of the VDMR provides descriptions for all other cuttings from this well.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
155-158	3'	Coal, interval is missing in samples from (158-165), but is noted on drillers log and again on Clinchfield Coal Co. log. Raven Coal?
268-269	1'	Coal, sporacious, vitreous luster.
458-459	1'	Coal, sporacious, and silty, depth and thickness estimated
535-553	18'	Sandstone, white, appears quartzose, fine grained, subrounded, well sorted, with rare and scattered muscovite, hematite, black minerals, and traces of feldspar, interstitially silty. Is atypical of Lee quartzose sands, although appears to be a very "clean" sand. X-ray analysis indicated presence of feldspar, illite, kaolinite and siderite. Is not a Lee quartzose sand. Quartz percentage increases downward; X-ray of samples verified increased quartz percentage downward
553-555	2'	Sandstone, white to light gray, appears quartzose, very fine to fine grained, occasionally medium grained, interstitially silty, subrounded, moderately sorted, with scattered muscovite, and dark rock fragments, traces of feldspar, occasional coaly laminations; X-ray analysis indicated high percentage of quartz, and presence of illite, siderite, and only a trace of feldspar

- *555-566 11' Sandstone, white, quartzose, fine to coarse grained, subround to subangular, moderately sorted, no longer contains interstitial silt, scattered and rare dark rock fragments and carbonaceous material appear to be only accessories; conglomeratic (560-563). X-ray analysis verified pure quartz sand. Typical Lee quartzose sand.
- *566-582 16' Sandstone, white to light gray, very fine to medium grained, subrounded, moderately sorted, moderately quartzose, with scattered muscovite, phlogopite, dark rock fragments, carbonaceous material, and traces of feldspar, interstitially silty. X-ray analysis indicated pure quartz sand with traces of feldspar
- *582-652 70' Sandstone, white, appears to be quartzose, very fine to very coarse grained, conglomeratic, remains silty, subangular to subround, poorly sorted, no longer silty by 629; X-ray analysis indicated pure quartz sand
- *693-711 18' Sandstone, white, medium to coarse grained, quartzose, subround to subangular, moderately sorted; conglomeratic (703-706); X-ray analysis indicated quartzose sand with a slight trace of feldspar and some siderite and illite
- 750-751 1' Coal, impure to pure, silty, banded
- 1052-1053 1' Coal, pure, vitreous luster, conchoidal fracture
- *1306-1324 18' Sandstone, white, quartzose, fine to medium grained, mostly medium grained, moderately to well sorted, subangular to rounded, no clay or silt matrix visible, and almost 100% quartz
- *1324-1377 53' Sandstone, white, quartzose, medium to coarse grained to granule, subrounded to subangular, moderately sorted to poorly sorted, conglomeratic
- *1377-1386 9' Sandstone, white, quartzose, medium to coarse grained, subangular to subround, moderately to poorly sorted

- *1386-1411 25' Sandstone, white, quartzose, medium to coarse grained, to granule and conglomeratic, subangular, poorly sorted, no silt or matrix material present

- *1411-1421 10' Sandstone, white, light brown, fine to coarse grained, subangular, poorly sorted, but remains quartzose, with presence of small, rounded, dark rock fragments, which is silty and carbonaceous

- *1421-1440 19' Sandstone, white, quartzose, medium to coarse grained, subround to subangular, moderately sorted to poorly sorted

*A carbonaceous shale, siltstone and coal lies directly below the quartzose sand. The coal is pure, with high vitreous luster and good conchoidal and blocky fracture; is estimated to be Pocahontas #3 coal and approximated at (1448-1452).

- 1448-1452 4' Coal, described above

- 1470-1472 2' Coal, pure to impure, blocky fracture

- 1592-1593 1' Coal, pure to impure, dull, silty

- 1440-1655 215' This interval represents the Pocahontas Formation. Composed of gray, dark gray, micaceous shales, and siltstones; and fine grained, gray, poorly sorted, micaceous, and feldspathic sandstones. Several coal seams are present as noted above, and entire interval is carbonaceous in nature. Several plant and root fossils can be recognized occasionally. No significant quartzose sand is present throughout interval; one isolated stringer of sand appears to be quartzose (1523-1532?)

1655- The presence of light greenish gray calcareous shales with red ironstone? nodules are recognized at 1655', just below a gray, fissile, noncalcareous shale. The red shales are not present until 1770'.

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Remarks: Well located about 47' below Kennedy coal, about 33' above the Aily coal, about 133' above the Raven coal, 248' above the Jawbone coal, and 323' above the Tiller coal. Referred to: measured sections 43, 44; coal geology in Upper Russell Fork Basin; and core approximately 6 miles E. Correlations by Marshall Miller, 1970-74, VDMR.

<u>Formation</u>	<u>Top</u>	<u>Bottom</u>	<u>Thickness</u>
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Pennsylvanian System

Post Lee Formation "in at surface"		555	555'
		Kennedy coal at -47'	
		Aily coal at 33'	
		Raven coal 155-158	
		Jawbone coal 268-269	
		Tiller coal at 350'	

✓ Lee Formation	555	1440	885'
		quartzose sand 555-652	97'
		conglomerate 582-652	70'
		quartzose sand 693-711	18'
		conglomerate 703-706	3'
		quartzose sand 1306-1440	134'
		conglomerate 1324-1377	53'
		conglomerate 1386-1411	25'
		total quartzose sand	249'
		total conglomerate	151'

War Creek coal 1052-1053

✓ Pocahontas Formation	1440	1714	274'
		Pocahontas #4? coal 1448-1454	
		Pocahontas #3 coal 1470-1472	
		Pocahontas #2 coal 1592-1610	

Mississippian System

↓	Bluestone Formation	1714	2179	465'	} 616'
↓	Pride Shale	2028	2179	151'	
↓	Princeton Sand	2179	2291	112'	
Hinton Fm. ↓	Little Stone Gap Mem.	2291	2342	51'	

Stony Gap Sand?	2652	2785	133'
Bluefield Formation	2785	3287	502'
Greenbrier Formation	3287	3736	449'
Mccrady	3736		