

Operator: Clinchfield Coal Company  
 Farm: E. J. Long  
 Well No.: 211  
 Index No.: 27  
 Location: Dickenson County  
 12,850' N of 37°00'  
 50' E of 82°20'

NORA  
 DK 55

DI-55

Elevation: 1926.2'

Total Depth: 4505'

Remarks: Elevation and location of well site in relation to coal geology along McClure River and Blair Branch indicate well located near the Lower Banner Coal Horizon. Correlations by Marshall Miller, 1970-74, VDMR.

<u>Formation</u>	<u>Top</u>	<u>Bottom</u>	<u>Thickness</u>
Post Lee Formation "in at surface"		955	955
		Kennedy coal 217-218	
		Aily coal 427-428	
		Raven coal 539-540	
		Jawbone coal 636-638	
Lee Formation	955	1962	1007'
		War Creek coal 1442-1443	
		quartzose sand 955-1031	76'
		quartzose sand 1820-1962	142'
		total quartzose sand	218'
Pocahontas Formation	1962	2242	280'
		Pocahontas #3 coal 2011-2016	
		Pocahontas #2 coal 2116-2120	
		Pocahontas #1 coal 2163-2165	
Mississippian System			
Bluestone Formation	2242	2756	514'
Pride Shale	2440	2756	316'
Princeton Interval	2756	2886	130'
Little Stone Gap Mem.	2886	2953	67'
Stony Gap Sandstone	3239	3420?	181'
Greenbrier Formation	4017	4486	469'
Maccrady	4486		

Operator: Clinchfield Coal Company

Farm: E. J. Long

Well No.: 211

Location: Dickenson County

12,850' N of 37°00'

50' E of 82°00'  
20'

Elevation: 1926.2'

Total Depth: 4505'

Remarks: Well has been logged by James Smith, VDMR, 1960. Due to the briefness of Smith's log, and the present attempt to identify the Lee quartzose sands, the following summary has been prepared by Marshall S. Miller.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
0- 29	29'	No samples
29- 41	12'	Sandstone, light gray, fine to medium grained, poorly sorted, interstitially silty, with abundant micas (chlorite, muscovite, biotite) rare carbonaceous fragments, and traces of feldspar, about 60% quartz
41- 51	10'	No samples
51- 61	10'	Siltstone, gray, micaceous
61- 67	6'	No samples
67- 73	6'	Sandstone, gray, very fine to fine grained; subround to subangular, moderately sorted, micaceous, slightly feldspathic, with red and dark rock fragments, and carbonaceous material, abundant clay-silt matrix material; 55% quartz, 5% feldspar, 20% matrix, 25% rock and mineral fragments
73-109	26'	Interbedded; sandstone and siltstone, sandstone like interval 67-73; siltstone is locally siliceous, generally micaceous
109-115	6'	No sample
115-119	4'	Shale, gray, silty

119-130	11'	Sandstone, gray, fine grained, silty, micaceous, abundant dark rock fragments, trace of feldspar, about 60% quartz
130-140	10'	No sample
140-211	71'	Siltstone, mostly with lesser amounts sandstone as in interval 119-130 and gray silty shale
211-217	6'	Sandstone, gray, fine to coarse grained, subangular, poorly sorted, with abundance of coarse grained muscovite, biotite, chlorite, and carbonaceous material, also traces of feldspar and abundant clay-silt matrix; 55% quartz, 5% feldspar, 20% matrix, 20% rock and mineral fragments
217-218	1'	Coal, with minor pyrite
218-240	22'	Siltstone, gray, micaceous, shaly
240-260	20'	No sample
260-286	26'	Sandstone, light gray, fine to coarse grained, subangular, poorly sorted, with scattered muscovite, chlorite, biotite, dark rock fragments, carbonaceous material, and calcareous-clay silt matrix; about 80% quartz, 10% matrix, 10% rock and mineral fragments
286-290	4'	No sample
290-320	30'	Shale, gray, reddish gray, with minor amounts of ironstone
320-329	9'	Sandstone, gray, grayish brown, fine grained, silty, micaceous

McL

329-400	71'	Sandstone, light gray, greenish gray to white, fine to coarse grained to granular and conglomeratic, subround to subangular, poorly sorted, with muscovite, biotite, chlorite, phlogopite, coal fragments, dark rock fragments, hematite and siderite, and traces of feldspar, a calcareous clay-silt matrix, 75% quartz, 10% matrix, 15% rock and mineral fragments
400-418	18'	No sample
418-431	13'	Shale, gray to grayish brown, micaceous, also an estimated coal seam 427-428
431-453	22'	No sample; driller notes coal 445-447
453-482	29'	Shale, gray, micaceous, silty, locally carbonaceous
482-488	6'	No sample
488-491	3'	Sandstone, like interval 329-400
491-497	6'	No sample
497-511	14'	Sandstone, like interval 329-400
511-529	18'	No sample
529-539	10'	Sandstone like interval 329-400
539-540	1'	Coal, silty, impure
540-605	65'	Shale, gray, finely micaceous, locally silty
605-621	16'	No sample
621-636	15'	Siltstone, gray, shaly
636-638	2'	Coal, pure to impure, also mentioned on drillers log
638-685	49'	Sandstone, light gray, fine to medium grained, occasionally coarser grained and conglomeratic (particularly in basal intervals, subround to subangular, poorly sorted with scattered muscovite, chlorite, dark rock fragments and carbonaceous material, some siderite, trace of feldspar, about 80% quartz

685-689	4'	No samples
689-705	16'	Sandstone, like interval 636-685
705-725	20'	Siltstone, gray, finely micaceous
725-739	14'	No sample
739-751	12'	Siltstone, gray
751-757	6'	No sample
757-798	41'	Sandstone, light gray, gray, fine to very fine grained, interstitially silty with calcareous clay-silt matrix, reddish and orange iron minerals present; scattered muscovite, phlogopite, chlorite, biotite, and carbonaceous material; about 55% quartz, 25% matrix, 20% rock and mineral fragments
798-883	85'	Shale, gray, finely micaceous, silty, with minor amounts of gray siltstone and red ironstone
883-889	5'	Sandstone, white, fine grained, subrounded, well sorted, with scattered dark rock fragments, carbonaceous material, and abundant clay-silt matrix; 80% quartz, 15% matrix, 5% rock fragments
889-914	25'	Shale, gray, dark gray, silty, micaceous, locally carbonaceous
914-924	10'	Sandstone, light gray, gray, fine to very fine grained, micaceous, silty, with abundant carbonaceous material, about 70% quartz
924-934	10'	Shale, gray, with silty nature
934-942	9'	Sandstone, white, fine grained, subround to subangular, moderately sorted, with scattered amount of muscovite, biotite, chlorite, red hamatite?, dark carbonaceous material and dark rock fragments, traces of feldspar, a moderately quartzose sand; about 85% quartz, 5% rock fragments, 10% matrix

942-955	13'	Siltstone, gray, shaly, micaceous with red ironstone stringers
*955-979	24'	Sandstone, appears quartzose, fine grained, subrounded, well sorted, with rare muscovite and dark rock fragments, occasionally interstitially silty, with traces of feldspar. A large consolidated sand in interval 961-973 indicates occasional thin coaly laminations. Would estimate sand to be 90 to 95% quartz. X-ray indicated a quartz sand with only traces of feldspar
*979-1031	52'	Sandstone, white, quartzose, medium to coarse grained, to granular and locally conglomeratic, subround to subangular, moderately to poorly sorted, conglomeratic (984-989) (993-1031) appears to pick up some large coarse reworked rock fragments and non-quartzose material in lower 10'.
1031-1039	8'	Shale, dark gray, silty, micaceous, carbonaceous
1039-1041	2'	Coal, pure to impure, also noted on drillers log
1041-1061	20'	Shale, like 1031-1039, with minor amounts of siltstone and sandstone
1061-1129	68'	Sandstone, gray to light gray, fine to medium to coarse grained, with the grain size gradually increasing downward, subround to subangular, poorly sorted, with abundance of muscovite, chlorite, biotite, hematite and limonite stains, phlogopite, traces of feldspar, and a calcareous clay-silt matrix; 65 to 75% quartz, 10% to 15% matrix
1129-1138	9'	Shale, gray, silty
1138-1156	18'	Sandstone, light gray to gray, very fine to fine grained, very silty and micaceous, with minor silt and shale stringers
1156-1171	15'	Siltstone, gray, micaceous, with minor amounts of ironstone

1171-1215	44'	Sandstone, as in 1138-1156 with stringers of gray silty shale
1215-1297	82'	Shale, gray, silty, locally carbonaceous, with minor amounts of red ironstone and sandstone as in 1138-1156
1297-1319	22'	Sandstone, light gray, light tan, fine to very fine to medium grained, subangular, poorly sorted, with muscovite, biotite, chlorite, phlogopite, dark rock fragments, and carbonaceous fragments, traces of feldspar, a clay-silt matrix, 50 to 55% quartz, 5 to 10% feldspar, 20% matrix, 20% rock and mineral fragments
1319-1330	11'	Shale, dark gray, silty, with minor amount of ironstone
1330-1336	6'	Coal, pure, with good vitreous luster, Driller notes coal 1329-1331
1336-1360	24'	Sandstone, as in 1297-1319, with minor amounts of siltstone and shale
1360-1403	43'	Shale, dark gray, gray, finely micaceous, locally silty, with minor amounts of ironstone
1403-1408	5'	No sample
1408-1412	4'	Coal, silty, impure to pure, driller notes coal 1410-1412
1412-1422	10'	Siltstone, dark gray, carbonaceous
1422-1442	20'	Sandstone, gray to light gray, fine grained, silty, slightly micaceous, a clay-silt matrix, about 75 to 80% quartz
1442-1443	1'	Coal
1443-1460	17'	Siltstone, gray, micaceous, locally carbonaceous, with minor ironstone present

1460-1500	40'	Sandstone, light gray, fine to medium grained, subangular, poorly sorted, with abundant muscovite, biotite, chlorite, hematite, dark rock fragments and trace of feldspar, a clay-silt matrix, about 65% quartz, 20% matrix, 15% rock and mineral fragments
1500-1507	7'	No sample
1507-1523	16'	Sandstone, as in 1460-1500
1523-1537	14'	Siltstone, gray, dark gray, carbonaceous, possibly a coal seam present
1537-1578	41'	Sandstone, light gray to gray, very fine to fine grained, very silty with abundant rock and mineral fragments and clay-silt matrix
1578-1586	8'	No sample
1586-1600	14'	Sandstone as in 1537-1578
1600-1605	5'	No sample
1605-1610	5'	Siltstone, light brown, gray
1610-1620	10'	Sandstone, light gray, very fine grained, silty with abundant rock fragments, micaceous, low quartz percentage
1620-1628	8'	Siltstone, dark gray
1628-1643	15'	No sample
1643-1650	7'	Sandstone, light gray to light tan to brown, fine to medium grained, subangular, poorly sorted, calcareous clay-silt matrix, micaceous, feldspathic, about 55% quartz, 10% feldspar, 25% matrix, 15% rock and mineral fragments
1650-1662	12'	No sample
1662-1693	31'	Sandstone, light gray, fine grained, silty, micaceous
1693-1698	5'	No sample

1698-1705	7'	Sandstone, as in 1662-1693
1705-1721	16'	Sandstone, light gray, fine to medium grained, subangular, poorly sorted, abundant calcareous clay-silt matrix, and accessory rock and mineral fragments, about 70% quartz
1721-1732	11'	Siltstone, gray, micaceous
1732-1739	7'	No sample
1739-1744	5'	Sandstone, gray, light gray, fine grained, silty with muscovite, biotite, chlorite, hematite and traces of feldspar, about 75% quartz
1744-1750	6'	No sample
1750-1770	20'	Sandstone as in 1739-1744
1770-1787	17'	Sandstone, light gray, medium to coarse grained to granular and conglomeratic, very poorly sorted, otherwise like 1739-1744
1787-1808	21'	Sandstone, light gray to white, mostly medium grained, subround to subangular, moderately sorted, with rare micas, and iron stains present, about 85% quartz
1808-1820	12'	Sandstone, gray, fine grained, silty, micaceous, with minor silt stringers
1820-1962	142'	Sandstone, white, quartzose, medium grained to granular and locally conglomeratic (basal 30' is very conglomeratic; interval 1914-1932 has scattered conglomeratic pebbles) sorting varies, but is considered poorly sorted wherever conglomerate occurs, rare and generally no visible matrix material, secondary quartz overgrowths often visible, scattered dark rock fragments; generally 95% quartz, 5% matrix and rock fragments *Some carbonaceous material and a gray, fine grained sand appears to have been reworked into the basal 20' of the massive quartz sand.

1962-1969	7'	Sandstone, gray, fine to medium grained, subangular, poorly sorted, interstitially silty, with dark rock fragments and carbonaceous material, green chlorite, and reddish iron minerals, about 70% quartz, 15% matrix
1969-1976	7'	Shale, dark gray, carbonaceous
1976-1986	10'	No sample
1986-1995	9'	Sandstone, as in 1962-1969
1995-2000	5'	Siltstone, gray, micaceous
2000-2011	11'	No sample
2011-2043	32'	Siltstone, gray, micaceous, with minor amounts of sand and shale. <u>Coal</u> is estimated to be present 2011-2016.
2043-2061	18'	No sample
2061-2084	23'	Sandstone, gray, fine grained, silty, micaceous
2084-2116	32'	Siltstone, gray, locally shaly
2116-2120	4'	Coal, pure to impure, and shaly, also noted on Drillers log
2120-2139	19'	Shale, dark gray, black, silty with fossil plant fragment, also minor amounts of siltstone and sandstone
2139-2178	39'	Sandstone, white, fine grained, moderately quartzose, subrounded, well sorted, with rare carbonaceous material and reddish iron minerals, a calcareous-clay silt matrix, about 85% quartz, 10 to 15% matrix
2118-2198	20'	Sandstone, light gray, grayish tan, fine grained, interstitially silty, micaceous and with reddish iron minerals, minor gray siltstone stringer

2198-2224

26'

Shale, gray, silty

2224

Red siltstone, red and green shale and minor amounts of brown argillaceous limestone