

Operator: Clinchfield Coal Company

Farm: Big Sandy Fuel

Well No.: 214

Location: Dickenson County

4350' S of 37°15'

4550' W of 82°15'

Elevation: 1546.0'

Total Depth: 5665

Remarks: Elevation and location of well site with reference to coal geology along Russell Rrater and Barts Lick creeks, indicate that well spudded in about 146' above the Splash Dam coal. 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"		516	516'
		Hagy coal 75-77	
		Splash Dam coal 142-144	
		Upper Banner coal 249-250	
		Lower Banner coal 300-301	
		Kennedy coal 426-428	
Lee Formation	516	1722	1206'
		quartzose sand 516-566	50'
		Jawbone coal 787-780	
		quartzose sand 1052-1083	31'
		quartzose sand 1116-1143	27'
		quartzose sand 1162-1212	50'
		quartzose sand 1314-1453	139'
		quartzose sand 1621-1722	101'
		total quartzose sand	398'
Pocahontas Formation	1722	1871	149'
		Pocahontas #3 coal 1722-1725	
		Pocahontas coal 1803-1805	

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Location: Dickenson County

9300' S of 37° 15'

4500' W of 82° 15'

Elevation: 1546.0'

Total Depth: 5665'

Geologic log by Marshall S. Miller, 1971-72; sample intervals are very inconsistent.

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
10- 75	65'	Shale, light gray to dark gray, finely micaceous, silty in part, poorly fissile, pebble-like, lesser amounts of light gray siltstone
75- 77	2'	Coal, pure to impure, dull and silty in part, high vitreous luster and blocky fracture for the most part
77-100	23'	Sandstone, gray, very fine to medium grained, subangular, poorly sorted, with abundant clay-silt matrix material, scattered muscovite, reddish iron minerals, and dark argillaceous rock fragments, about 55 to 60% quartz
100-117	17'	Sandstone, gray to light gray, fine to medium grained, subangular, poorly sorted, slightly micaceous, and feldspathic with abundant clay silt matrix material, reddish iron minerals, about 60% quartz
117-142	25'	Siltstone, light to dark gray, hard, brittle, locally shaly, lesser amounts of reddish ironstone
142-144	2'	Coal, dull, silty, impure
144-156	12'	Shale, gray, silty in part, hard, brittle

156-185	19'	Sandstone, light gray to white, fine to medium grained, subangular to subround, moderately sorted, with rare muscovite, reddish iron minerals, and scattered dark, rounded rock fragments, lesser amounts of gray, micaceous shale
185-249	64'	Shale, gray, slightly silty, hard, brittle and pebbly, finely micaceous, locally fissile, minor amounts of reddish ironstone
249-250	1'	Coal, hard, bony
250-300	50'	Shale, dark gray, finely micaceous, generally fissile, with lesser amounts of red ironstone
300-301	1'	Coal, vitreous luster, blocky fracture
301-315	14'	Sandstone, gray, fine to coarse grained, subangular, poorly sorted, micaceous, with feldspar, and abundant white clay matrix material
315-325	10'	Shale, gray to brownish gray, with lesser amounts of brown argillaceous limestone, and reddish iron stone
325-387	52'	Sandstone, gray, very fine to fine grained, subangular, poorly sorted, very micaceous, with abundant carbonaceous material, feldspar and calcareous clay-silt matrix material, abundant coaly micaceous laminae and partings, about 50% quartz
387-426	39'	Shale, dark gray to black, fairly fissile, slightly silty
426-428	2'	Coal, dull, silty, bony
428-447	19'	Shale, as in 387-426, with minor amounts of gray, micaceous, feldspathic, calcareous, sandstone
447-494	47'	Shale, black, carbonaceous, silty, with lesser amounts of gray to brownish gray, fine grained, micaceous, and argillaceous sandstone

494-516	20'	Shale, gray to dark gray, hard, brittle and pebbly, silty in part
516-539	23'	Sandstone, white, quartzose, medium grained to granular, subangular to subround, poorly sorted, with scattered dark, rounded rock fragments, small amount of fine silica matrix material, 90 to 95% quartz, scattered quartz conglomerate present from (528-539)
539-556	17'	Sandstone, white, quartzose, fine to medium grained, occasionally coarse grained, subround to subangular, moderately sorted, with scattered dark rock fragments, 95% quartz
556-566	10'	Sandstone, white, quartzose, as above, but medium grained, subrounded, well sorted
566-590	24'	Sandstone, light gray to white, moderately quartzose, fine to coarse grained, subangular to round, poorly sorted, with scattered muscovite, chlorite, reddish iron minerals, abundant dark, rounded rock fragments, about 85% quartz
590-639	49'	Shale, dark gray, finely micaceous, hard, pebbly, silty downward
639-649	10'	Siltstone, gray to light gray, argillaceous with minor sand stringers
649-656	7'	Shale, dark gray, hard, brittle
656-658	2'	Coal, dull and shaly in part
658-678	20'	Shale, as in 649-656
678-680	2'	Coal, soft, pure
680-715	35'	Sandstone, gray to light gray, fine to medium grained, subangular, poorly sorted, micaceous, silty, with traces of feldspar, about 65% quartz, minor amounts of gray, argillaceous siltstone
715-725	10'	Shale, gray, hard, brittle, silty in part

725-730	5'	Sandstone, gray to light gray, very fine grained to fine grained, subangular, poorly sorted, with abundant muscovite, biotite, chlorite, dark rock fragments, phyllogopite, reddish iron minerals, (siderite?), clay-silt matrix material, about 65% quartz
730-755	25'	Shale, gray, hard, brittle, silty
755-787	22'	Siltstone, light gray to gray, coarse grained and siliceous in part
787-790	3'	Coal, pure, high vitreous luster, conchoidal fracture
790-799	9'	Sandstone, as in 725-730
799-812	13'	Sandstone, as in 725-730, hematitic
812-820	8'	No samples
820-856	36'	Sandstone, light gray to white, fine grained to granular, subangular to round, very poorly sorted, with scattered muscovite, dark rock fragments, and calcareous clay-silt matrix material, minor amounts of gray, argillaceous siltstone, and red ironstone
856-863	7'	Siltstone, gray, argillaceous, hard, brittle, finely micaceous, occasionally light tan and siliceous in part
863-885	22'	Sandstone, light gray to gray, very fine to fine grained, subround, moderately sorted, with scattered muscovite, biotite, and dark rock fragments, reddish iron minerals traces of feldspar, clay and silty matrix material, about 70% quartz
885-945	60'	Siltstone, as in 856-863, with minor ironstone stringers
945-974	29'	Shale, dark gray, hard, brittle, finely micaceous, locally fissile, minor ironstone stringers

974-984	10'	Sandstone, light gray to gray, very fine grained, interstitially silty with abundant coaly carbonaceous partings
984-990	6'	Siltstone, gray to light gray, argillaceous, coarse grained locally
990-994	4'	No samples
994-995	1'	Coal
995-1052	57'	Siltstone, as in 984-990, more argillaceous or shaly
1052-1083	31'	Sandstone, white, quartzose, fine grained to granular, subangular to subround, poorly sorted, with rare muscovite, scattered dark rock fragments, considerable clay-silt matrix material, scattered quartz conglomerate, 90% quartz, 5% matrix, 5% rock and accessory mineral fragments
1083-1085	2'	Coal, hard and shaly
1085-1116	31'	Shale, gray to dark gray, hard, brittle, silty in part, minor ironstone stringers present
1116-1143	27'	Sandstone, white, quartzose, fine to medium grained, subround, moderately sorted, small amount of matrix material, scattered dark rock fragments, about 90% quartz
1143-1144	1'	Coal, dull, bony, silty
1144-1162	18'	Shale, dark gray to black, carbonaceous in part, with smaller amounts of grayish brown, argillaceous siltstone
1162-1212	50'	Sandstone, white, quartzose, fine grained, subround, well sorted, with rare carbonaceous partings and small amount of clay-silt matrix material, 90 to 95% quartz
1212-1238	26'	Siltstone, gray to light gray, generally argillaceous or shaly, with minor siliceous stringers

1238-1303	65'	Sandstone, gray, very fine to coarse grained, subangular, poorly sorted, with abundant muscovite, biotite, chlorite, feldspar, dark argillaceous rock fragments, reddish iron minerals and considerable clay-silt matrix material, about 55% quartz, 10% feldspar, 20% matrix, 20% rock and accessory mineral fragments
1303-1314	11'	Siltstone, gray, argillaceous, finely micaceous
1314-1453	139'	Sandstone, white, quartzose, fine to coarse grained, subangular to subround, moderately to poorly sorted, rare mica, rock fragments and considerable clay matrix material, about 90% quartz
1453-1568	15'	Sandstone, light gray to gray, fine to medium grained, subround to subangular, poorly sorted, very micaceous (muscovite, biotite, chlorite) traces of feldspar, abundant dark rock fragments and clay-silt matrix material, about 70% quartz
1468-1568	100'	Shale, dark gray to black, locally carbonaceous, fair fissility, silty in part
1568-1570	2'	Coal, high vitreous luster, conchoidal fracture
1570-1587	17'	Sandstone, light gray, very fine to medium grained, subangular, poorly sorted, with scattered micas, dark carbonaceous and argillaceous rock fragments, clay-silt matrix material, about 75 to 80% quartz
1587-1590	3'	Coal, pure, high vitreous luster
1590-1621	31'	Sandstone, as in 1570-1587
1621-1676	55'	Sandstone, white, quartzose, fine to coarse grained, subangular to subround, moderately to poorly sorted, with scattered dark rock fragments, little to no matrix material, 95% quartz
1676-1722	46'	Sandstone, as in 1621-1676, and conglomeratic

1722-1725	3'	Coal, pure, high vitreous luster, blocky and conchoidal fracture
1725-1732	7'	Shale, gray, dark gray to black, hard, brittle, slightly silty
1732-1803	71'	Shale, light gray to gray, with scattered black "chert"? nodules
1803-1805	2'	Coal, pure, high luster, conchoidal fracture
1805-1827	22'	Shale, gray to dark gray to black, locally silty, locally carbonaceous
1827-1871	44'	Sandstone, light gray, very fine to medium grained, subangular, poorly sorted, slightly micaceous, very silty, minor amounts of gray, argillaceous siltstone
1871-1895	24'	Shale, mostly gray, with rare red, generally calcareous and silty, occasionally pyritic