

Operator: Clinchfield Coal Company  
 Farm: E. J. Long  
 Well No.: 211  
 Location: Dickenson County  
           12,850' N. of 37° 00')  
           50' E. of 82° 20') approximate  
 Elevation: 1926.2' Ground  
 Total Depth: 4505' (4508' SLM) in Maccrady Shale  
 Commenced: June 15, 1958  
 Completed: February 28, 1959  
 Result: Gas well

Geologic Log  
 Samples studied by James Wm. Smith  
 Virginia Division of Mineral Resources  
 June, 1960

Note: Where porosity is not mentioned, the rock contains no visible porosity.  
 Where the cement is not mentioned in sandstone, the cement is believed  
 to be silica.

Pottsville group - thickness 1933' - depth interval 29' - 1962'

<u>Depth</u>	<u>Thickness</u>	<u>Description</u>
29' - 41'	12'	Sandstone, white, speckled, medium grained, poorly sorted, contains mica and black, green, and brownish red minerals.
41' - 51'	10'	No sample.
51' - 61'	10'	Siltstone, gray, micaceous.
61' - 67'	6'	No samples.
67' - 73'	6'	Sandstone, light gray, speckled, fine grained, poorly sorted, contains mica and a few dark minerals.
73' - 78'	5'	Siltstone, gray.
78' - 94'	6'	Sandstone, light gray, speckled, very fine to fine grained, contains mica and a few dark minerals.
94' - 100'	6'	Sandstone, light gray, very fine grained, micaceous.
100' - 109'	9'	Shale, gray.
109' - 115'	6'	No sample.
115' - 120'	5'	Shale, gray.
120' - 130'	10'	Sandstone, light gray to gray, very fine grained, micaceous.

130' - 140'	10'	No sample.
140' - 162'	22'	Sandstone, light gray to gray, very fine grained, micaceous.
162' - 169'	7'	Siltstone, gray to dark gray, coarse grained, micaceous.
169' - 174'	5'	Shale, gray.
174' - 240'	66'	Siltstone, light gray to gray, micaceous, contains an occasional brownish red mineral and below 183' contains an occasional green mineral. Coal containing pyrite at 218' and 234'. Trace of coal at 212'
240' - 260'	20'	No sample.
260' - 286'	26'	Sandstone, white, speckled, medium grained, medium sorted, angular, some calcareous cement, trace of coal at 262', 271', 280', micaceous, contains green and black mineral grains.
286' - 290'	4'	No sample.
290' - 322'	32'	Shale, largely dark gray but contains interbedded grayish red shale.
322' - 333'	11'	Sandstone, light and dark gray, very fine grained, micaceous.
333' - 350'	17'	Sandstone, white, speckled, medium grained, medium sorted, contains light green and black mineral grains, between 344' - 350' also contains mica and red mineral.
350' - 381'	31'	Sandstone, white, speckled, medium grained, medium sorted, angular, calcareous cement between 373' - 381', contains mica and green, red, and black mineral grains, trace of coal at 357' and 373'.
381' - 390'	9'	No sample.
390' - 398'	8'	Sandstone, white, speckled, medium grained, medium sorted, angular, calcareous cement, contains mica and green, red, and black mineral grains.
398' - 400'	2'	Siltstone, gray.

400' - 418'	18'	No sample.
418' - 431'	13'	Shale, gray, micaceous, trace of reddish brown shale and coal at 427'.
431' - 453'	22'	No sample
453' - 466'	13'	Siltstone, gray, micaceous, traces of coal between 453' - 461', trace of reddish brown shale at 460'.
466' - 482'	16'	Shale, gray, trace coal 478'.
482' - 488'	6'	No sample.
488' - 491'	3'	Sandstone, white, speckled, medium grained, medium sorted, angular, slightly calcareous cement, micaceous, contains green, reddish brown, and black mineral grains.
491' - 497'	6'	No sample.
497' - 511'	14'	Same as 488' - 491'.
511' - 529'	18'	No sample.
529' - 543'	14'	Same as 488' - 491' except cement is more calcareous between 533' - 543', trace of coal at 539'.
543' - 554'	11'	Siltstone, gray.
554' - 581'	27'	Shale, gray and interbedded siltstone, gray.
581' - 598'	17'	Shale, gray.
598' - 605'	7'	Shale, gray and interbedded siltstone, gray.
605' - 621'	16'	No sample.
621' - 636'	15'	Siltstone, gray.
636' - 676'	40'	Sandstone, white, speckled, medium grained, medium sorted, angular, micaceous, green and black mineral grains, interbedded coal between 636' - 655', coal bed at 643'.
676' - 686'	9'	Sandstone, white, speckled, coarse grained, medium sorted, angular, micaceous, trace of coal, contains green and black mineral grains.
685' - 689'	4'	No samples.

689' - 705'	16'	Sandstone, white, speckled, medium grained, medium sorted, angular, contains gray, black, and reddish brown mineral grains.
705' - 717'	12'	Siltstone, gray with interbedded sandstone, light gray, very fine grained, micaceous.
717' - 725'	8'	Siltstone, gray.
725' - 739'	14'	No sample.
739' - 751'	12'	Siltstone, gray.
751' - 757'	6'	No sample.
757' - 797/98'	41'	Sandstone, light gray, speckled, fine grained, slightly calcareous, clayey cement, contains reddish brown and black mineral grains.
798' - 812'	14'	Siltstone, gray.
812' - 883'	71'	Shale, gray with an occasional red tinge.
883' - 890'	7'	Sandstone, white, fine grained, medium sorted, angular, trace of coal.
890' - 916'	26'	Shale, gray with some gray siltstone.
916' - 925'	9'	Sandstone, light gray, speckled, fine grained, contains mica and light brown and black mineral grains.
925' - 932'	7'	Shale, gray.
932' - 945'	13'	Sandstone, white, fine grained, well sorted.
945' - 955'	10'	Shale, gray.
955' - 980'	25'	Sandstone, white, fine grained with an occasional granule between 960-980, well sorted.
980' - 1025'	45'	Conglomerate, white, speckled, medium grain sand to granule grained, medium sorted, contains black mineral grains.
1025' - 1060'	35'	Siltstone, gray, micaceous, trace of coal and pyrite at 1040'.
1060' - 1095'	35'	Sandstone, light gray, speckled, fine to medium grained, poorly sorted, micaceous, contains black, reddish brown, and light green mineral grains.

1095' - 1130'	35'	Sandstone, white, speckled, medium to coarse grained, poorly sorted, micaceous, contains black, reddish brown, and light green mineral grains.
1130' - 1138'	8'	Siltstone, gray, trace of coal, reddish gray shale, and pyrite.
1138' - 1149'	11'	Sandstone, light gray, speckled, fine grained, traces of coal, contains black and reddish brown mineral grains, micaceous.
1149' - 1159'	10'	Sandstone, light gray to gray, very fine grained, micaceous.
1159' - 1177'	18'	Siltstone, light to dark gray, coarse grained, micaceous.
1177' - 1215'	38'	Sandstone, light gray to gray, very fine grained, micaceous.
1215' - 1230'	15'	Sandstone, light gray to gray, fine grained, micaceous, contains black and reddish brown mineral grains.
1230' - 1246'	16'	Shale, gray, poorly sorted contains silt, light gray sand and trace of red shale.
1246' - 1257'	11'	Shale, dark gray, micaceous.
1257' - 1260'	3'	Shale, gray and siltstone light gray speckled red-brown.
1260' - 1268'	8'	Sandstone, white speckled red-brown, fine grained, micaceous.
1268' - 1287'	19'	Shale, gray, trace of coal.
1287' - 1297'	10'	Shale, gray with some red, some reddish siltstone.
1297' - 1320'	23'	Sandstone, light gray speckled black, red, brown and green, fine grained, trace of coal, micaceous.
1320' - 1332'	12'	Siltstone, gray speckled green & red-brown, micaceous.
1332' - 1333'	1'	Coal.
1333' - 1360'	27'	Sandstone, white speckled green, red-brown & black, very fine grained.
1360' - 1367'	7'	Siltstone, light gray.

1367' - 1394'	27'	Shale, dark gray.
1394' - 1403'	9'	Siltstone, light gray speckled red-brown.
1403' - 1408'	5'	No sample.
1408' - 1422'	14'	Siltstone, light gray, some very fine sandstone. Thin bed of coal at about 1410'.
1422' - 1442'	20'	Sandstone, white, very fine grained, micaceous.
1442' - 1443'	1'	Coal
1443' - 1460'	17'	Siltstone, light gray, micaceous, trace of red siltstone.
1460' - 1500'	40'	Sandstone; white to light gray speckled black, reddish brown, light green; medium grained; medium sorted; angular; clay cement; micaceous, trace of coal at 1474'.
1500' - 1507'	7'	No sample.
1507' - 1524'	17'	Sandstone; white to light gray speckled black, reddish brown, light green, medium grained; medium sorted; angular; clay cement; micaceous, trace of coal at 1511'.
1524' - 1537'	13'	Siltstone; gray to black; much coal, trace of pyrite.
1537' - 1544'	7'	Sandstone, light gray speckled black and light brown, very fine grained, well sorted.
1544' - 1578'	34'	Sandstone, light gray to gray, very fine grained, well sorted.
1578' - 1586'	8'	No sample.
1586' - 1600'	14'	Siltstone, light gray to gray, coarse grained.
1600' - 1605'	5'	No sample.
1605' - 1610'	5'	Siltstone, light brown and gray.
1610' - 1620'	10'	Sandstone, white to light gray speckled reddish brown and black, very fine grained, well sorted, micaceous.
1620' - 1628'	8'	Siltstone, dark gray.
1628' - 1643'	15'	No sample.

VDMR Well No. 279

1643' - 1650'	7'	Sandstone, light gray to reddish brown speckled black and reddish brown, fine grained, medium sorted, calcareous cement, micaceous.
1650' - 1662'	12'	No sample.
1662' - 1693'	31'	Sandstone, light gray, very fine grained, micaceous.
1693' - 1698'	5'	No sample.
1698' - 1705'	7'	Sandstone, light gray, very fine grained, micaceous.
1705' - 1721'	16'	Sandstone, light gray to white, medium grained, poorly sorted, clay cement.
1721' - 1732'	11'	Siltstone, light to dark gray, coarse grained, micaceous.
1732' - 1739'	7'	No sample.
1739' - 1744'	5'	Sandstone; light gray speckled black, green, and reddish brown; fine grained; micaceous.
1744' - 1750'	6'	No sample.
1750' - 1770'	20'	Sandstone; light gray speckled black, green, and reddish brown; fine grained; micaceous.
1770' - 1800'	30'	Sandstone; light gray to white speckled black, green, and reddish brown; medium grained with an occasional granule; poorly sorted.
1800' - 1810'	10'	Conglomerate; white speckled black, green, and reddish brown; granules and medium grained sand; poorly sorted.
1810' - 1820'	10'	Sandstone, light gray speckled black and green, fine grained, medium sorted, micaceous.
1820' - 1836'	16'	Sandstone, white speckled black, coarse to very coarse grained, poorly sorted.
1836' - 1845'	9'	Sandstone, white speckled black and green, medium grained, medium sorted.
1845' - 1850'	5'	No sample.
1850' - 1855'	5'	Sandstone, white speckled black and green, medium grained, medium sorted.

1855' - 1917'	62'	Sandstone, white medium to coarse grained with a few granules at 1898' and 1908', poorly sorted, angular.
1917' - 1936'	19'	Conglomerate, white, granules with medium grained sand, poorly sorted, angular.
1936' - 1941'	5'	Conglomerate, white, granules with coarse grained sand, poorly sorted, angular.
1941' - 1947'	6'	No sample.
1947' - 1962'	15'	Conglomerate, light gray to gray, silt to granule grained, poorly sorted, much coal, micaceous.
Bluestone formation - top 1962'		
1962' - 1969'	7'	Sandstone, light gray speckled black, medium grained, medium sorted, micaceous.
1969' - 1976'	7'	Siltstone, gray, micaceous.
1976' - 1986'	10'	No sample.
1986' - 1995'	9'	Sandstone, light gray speckled black, medium grained, medium sorted, micaceous.
1995' - 2000'	5'	Siltstone, gray, micaceous.
2000' - 2011'	11'	No sample.
2011' - 2018'	7'	Siltstone, gray; sandstone, gray, very fine grained; coal containing trace of sulphur.
2018' - 2043'	25'	Siltstone, gray, micaceous, and some shale, trace of coal at 2020' and 2038'.
2043' - 2061'	18'	No sample.
2061' - 2084'	23'	Sandstone, gray, very fine grained.
2084' - 2118'	34'	Siltstone, gray.
2118' - 2120'	2'	Coal.
2120' - 2122'	2'	Sandstone, light gray, very fine grained.
2122' - 2129'	7'	Coal, some black shale and siltstone, slightly calcareous and contains a trace of sulphur.
2129' - 2133'	4'	Shale, dark gray.
2133' - 2137'	4'	Sandstone, white, fine grained, medium sorted.



2137' - 2140'	3'	Shale, dark gray, trace of coal.
2140' - 2177'	37'	Sandstone, white, fine grained, medium sorted, few very coarse sand grains at 2156', coal at 2163'
2177' - 2191'	13'	Sandstone, light gray speckled reddish brown, medium sorted.
2191' - 2195'	4'	Shale, gray.
2195' - 2199'	4'	Sandstone, light gray, fine grained.
2199' - 2204'	5'	Siltstone, gray.
2204' - 2226'	22'	Shale, gray.
2226' - 2237'	11'	Interbedded limestone, white; siltstone, light green; shale, gray; shale, reddish brown.
2237' - 2253'	16'	Interbedded siltstone, light green; shale, red; shale, gray.
2253' - 2263'	10'	No sample.
2263' - 2270'	7'	Siltstone, reddish brown and sandstone, light green, very fine grained, micaceous.
2270 - 2290'	20'	Shale, gray and reddish brown.
2290' - 2303'	13'	Shale, gray and reddish brown, and siltstone, light green, coarse grained.
2303' - 2311'	8'	Mottled shale, gray and reddish brown, and siltstone, light green, coarse grained.
2311' - 2314'	3'	Sandstone, grayish green, very fine grained, micaceous, and shale, gray and reddish brown.
2314' - 2320'	6'	No sample.
2320' - 2330'	10'	Shale reddish brown.
2330' - 2350'	20'	Shale reddish brown and gray.
2350' - 2362'	12'	Shale reddish brown and gray, and siltstone, light green, coarse grained.
2362' - 2378'	16'	No sample.
2378' - 2388'	10'	Shale, reddish brown and gray.
2388' - 2390'	2'	Siltstone, light green.

2390' - 2394'	4'	Shale, reddish brown and gray.
2394' - 2400'	6'	Sandstone, light green, very fine grained, micaceous.
2400' - 2407'	7'	Sandstone, light green, fine grained, micaceous.
2407' - 2413'	6'	Siltstone, gray.
2413' - 2440'	27'	Sandstone, light gray speckled black, fine grained.
2440' - 2450'	10'	No sample.
2450' - 2673'	223'	Siltstone, gray, micaceous, and some siltstone, light gray, very coarse grained.
2673' - 2756'	83'	Shale, gray.
Princeton sandstone - top ?, 2756'		
2756' - 2786'	30'	Sandstone, white speckled black and green, fine grained with a few very coarse grains, poorly sorted, angular, slightly calcareous.
2786' - 2806'	20'	As above but medium grained.
2806' - 2832'	26'	Conglomerate, light gray, granule grained, poorly sorted, calcareous cement, accessory light green mineral, pyrite, and white chert. Trace of coal at 2828'.
2832' - 2842'	10'	Sandstone, white, fine grained with occasional granule, medium sorted.
2842' - 2886'	40'	Sandstone, white, fine grained, medium sorted.
Avis member of Hinton formation - top 2886'		
2886' - 2890'	4'	Siltstone, gray, slightly calcareous.
2890' - 2930'	40'	Shale, gray, calcareous, silty, crinoid stems at 2898' and 2907', brachiopod at 2907'.
2930' - 2938'	8'	No sample.
2938' - 2953'	15'	Shale, gray, calcareous, silty.
2953' - 2957'	4'	Siltstone, light green.

Hinton formation undivided - top 2957'

2957' - 2970'	13'	Siltstone, reddish brown.
2970' - 2997'	27'	Siltstone, gray with greenish tinge.
2997' - 3029'	32'	Sandstone, light green, micaceous, with interbedded gray siltstone.
3029' - 3031'	2'	Shale, reddish brown.
3031' - 3050'	19'	Sandstone, white speckled light green and dark gray, medium grained, calcareous cement.
3050' - 3060'	10'	Calcareous shale, dark gray, with some gray siltstone.
3060' - 3072'	12'	Siltstone, reddish gray, micaceous, with interbedded calcareous shale, gray, brachiopod.
3072' - 3104'	32'	Siltstone, reddish gray, micaceous.
3104' - 3114'	10'	Sandstone; light gray with reddish tinge, speckled red and black; very fine grained; slightly calcareous cement; micaceous.
3114' - 3135'	21'	Siltstone, reddish gray mottled greenish gray, micaceous.
3135' - 3153'	18'	Siltstone, light greenish gray, slightly calcareous, micaceous.
3153' - 3191'	38'	Sandstone, light gray with greenish tinge, very fine grained, very slightly calcareous cement, micaceous.
3191' - 3210'	19'	Siltstone, reddish gray and greenish gray.
3210' - 3239'	29'	Shale, greenish gray and gray.

Stony Gap member of Hinton formation - top 3239'

3239' - 3420'	181'	Sandstone, light gray to white, very fine grained, medium sorted; thin beds of siltstone, dark gray, micaceous, calcareous cement in sandstone between 3285' - 3291', trace of pyrite at 3258', 3302', 3327', 3353', 3365'.
3420' - 3444'	24'	Siltstone, gray, micaceous and some sandstone, white, very fine grained.
3444' - 3455'	11'	Sandstone, light gray to white, very fine grained, medium sorted, and thin beds of siltstone, gray micaceous.

3455' - 3470'	15'	Sandstone, light gray to white, fine grained, medium sorted, and thin beds of siltstone, gray, micaceous.
3470' - 3474'	4'	Siltstone, dark gray, coal films of plant fossils.
3474' - 3486'	12'	Sandstone, light gray to white, fine grained, medium sorted, slightly calcareous cement; siltstone, gray, micaceous.
Bluefield formation - top 3486'		
3486' - 3516'	30'	Shale, gray, slightly silty.
3516' - 3546'	3'	Slightly calcareous shale, gray, slightly silty.
3546' - 3565'	19'	Silty shale, gray.
3565' - 3577'	12'	Siltstone, gray; a few thin beds of sandstone, light gray, fine grained.
3577' - 3601'	24'	Siltstone, gray, micaceous.
3601' - 3625'	24'	Silty shale, gray; few calcareous layers, trace of pyrite at 3616'.
3625' - 3640'	15'	Shale, gray and greenish gray; few thin layers sandstone, reddish gray, very fine grained, calcareous cement, trace of pyrite at 3626'.
3640' - 3677'	37'	Shale, dark gray; few calcareous shale beds, dark gray, trace of pyrite at 3648' and 3655'.
3677' - 3725'	48'	Sandstone, light gray to gray, very fine grained, poorly sorted, slightly calcareous cement.
3725' - 3744'	19'	Siltstone, light gray to gray.
3744' - 3765'	21'	Shale, gray, silty.
3765' - 3832'	67'	Shale, gray; thin calcareous beds. Brachiopods at 3814'. Trace of pyrite at 3826'.
3832' - 3852'	20'	Argillaceous limestone, gray, dense.
3852' - 3857'	5'	Argillaceous limestone, dark gray, dense.
3857' - 3860'	3'	Calcareous shale, gray.
3860' - 3873'	13'	Slightly argillaceous limestone, gray.
3873' - 3884'	11'	Argillaceous limestone, gray, trace of pyrite at 3879'.

3884' - 3909'	25'	Calcareous shale, gray, crinoid stem at 3885' and 3900', bryozoan at 3891'.
3909' - 3944'	35'	Slightly calcareous shale, gray, crinoid stem at 3921'.
3944' - 3952'	8'	Calcareous shale, gray, oolites at 3945'.
3952' - 4017'	65'	Calcareous shale, gray, very finely crystalline, crinoid stem at 3953'.

Greenbriar member of the Bluefield formation - top 4017'

4017' - 4058'	41'	Slightly argillaceous limestone, light gray, dense.
4058' - 4131'	73'	Argillaceous limestone, gray, oolites at 4061', crinoid stems at 4114', trace of pyrite at 4114'.
4131' - 4156'	25'	Slightly argillaceous limestone, dark gray, dense.
4156' - 4167'	11'	Calcareous shale, gray.
4167' - 4186'	19'	Argillaceous limestone, light gray, fragmental, oolites at 4171'.
4186' - 4215'	29'	Argillaceous limestone, gray, dense, oolites at 4209'.
4215' - 4233'	18'	Calcareous shale, gray.
4233' - 4340'	107'	Limestone, gray, dense, oolites at 4276', 4286', 4310', 4323', brachiopods at 4334', trace of coal at 4309'.
4340' - 4360'	20'	Argillaceous limestone, gray, oolites at 4358'.
4360' - 4384'	24'	Limestone, gray, dense, oolites at 4379'.
4384' - 4394'	10'	No sample.
4394' - 4407'	13'	Limestone, light gray, very finely crystalline.
4407' - 4428'	21'	Limestone, gray, dense.
4428' - 4451'	23'	Oolitic limestone, light gray.
4451' - 4470'	19'	Argillaceous limestone, gray, and calcareous chert, very light gray, translucent. Chert had green spots.

4470' - 4486'            16'            Limestone, light gray, very finely crystalline.

Maccrady formation - top 4486'

4486' - 4505'            19'            Siltstone, brownish red, micaceous.

SUMMARY

Pottsville group	in	29'
	bottom	1962' ?
Bluestone formation	top	1962' ?
	bottom	2756'
Princeton sandstone	top	2756'
	bottom	2886'
Hinton formation		
Avis member	top	2886'
	bottom	2957'
Hinton formation undivided	top	2957'
	bottom	3239'
Stony Gap member	top	3239'
	bottom	3486'
Bluefield formation	top	3486'
	bottom	4017'
Greenbrier limestone	top	4017'
	bottom	4486'
Maccrady shale	top	4486'
	Sampled depth	4505'
	Total Depth	4505'