

202'-239'	37'	No Samples
239'-245'	6'	<u>Shale</u> , gray, clay, siliceous, silty, hard with light gray sandstone containing shale inclusions.
245'-276'	31'	<u>Shale</u> , dark gray, clay, platy, soft. 269'-276' - with some silt
276'-313'	37'	<u>Sandstone</u> , white to light gray, dark specks of shale pellets dark gray and gray-green, large mica flakes, calcareous with fair visible porosity.
313'-338'	25'	<u>Shale</u> , gray, clay, silty, sandy, with very fine mica flakes, hard.
338'-358'	20'	<u>Sandstone</u> , white to light gray, speckled by green and gray shale pellets, micaceous, fair visible porosity.
358'-370'	12'	<u>Silt</u> , gray, hard, calcareous.
370'-643'	273'	<u>Shale</u> , gray, clay, siliceous to silty, very fine mica flakes, hard. 583'-643' - with an increase in silt. 633'-643' - with coal, thin bed.
643'-660'	17'	<u>Sandstone</u> , gray, fine grained, shaly, silty, medium fine mica flakes, no visible porosity.
660'-701'	41'	<u>Shale</u> , gray, clay, silty, very fine mica flakes, hard. 665'-682' - with interbedded fine grained sandstone, no visible porosity.
701'-783'	82'	<u>Sandstone</u> , white, medium fine to coarse with a few shale pellet specks, good visible porosity.

783'-843'	60'	<u>Shale</u> , gray, clay, silty, fine mica flakes, fairly soft. 806'-816' - No samples 816'-826' - with thin bedded coal. 826'-843' - The shale becomes more silty to sandy.
843'-884'	41'	<u>Sandstone</u> , white to gray, medium grained, speckled by green and gray shale pellets, large mica flakes, slightly calcareous, visible porosity varies from poor to fair, some brown shale. 859'-884' - with interbedded dark, shaly silts.
884'-940'	56'	<u>Shale</u> , gray, clay, very fine mica flakes, fairly soft. 911'-929' - with coal (probably of mineable thickness).
940'-958'	18'	<u>Sandstone</u> , white to gray, medium to fine grained, medium size mica flakes, and interbedded clay, dark gray, soft shale, and dark silts.
958'-1016'	58'	<u>Sandstone</u> , white, medium grained, with green and dark gray shale pellet specks, fair sized mica flakes, with visible porosity. 967'-971' - No samples 995'-1002' - with coal and bone (argillaceous coal)
1016'-1029'	13'	<u>Shale</u> , gray, siliceous and silty, fine mica flakes, medium hard.
1029'-1044'	15'	<u>Sandstone</u> , dull white, medium grained, fine mica flakes, silty.
1044'-1128'	84'	<u>Shale</u> , dark gray, clay, medium soft, with a few interbedded silts.

1058'-1100' - with an increase in silts and very fine grained sands. Hard.

1114'-1128' - with much less silt and sand.

1128'-1133'	5'	<u>Coal</u> (probably of mineable thickness)
1133'-1173'	40'	<u>Shale</u> , gray, clay, siliceous to silty, very fine mica flakes.
1173'-1207'	34'	<u>Sandstone</u> , medium to fine grained, silty, fine mica flakes and interbedded dark gray shale.
		1173'-1181' - with thin coal and bone atop the sandstone.
		1189'-1207' - with an increase of silts.
1207'-1244'	37'	<u>Sandstone</u> , white, medium to coarse grained, fair to good visible porosity.
1244'-1279'	35'	<u>Shale</u> , gray, siliceous, fine mica flakes, hard.
1279'-1314'	35'	No Samples
1314'-1334'	20'	<u>Sandstone</u> , dull white, medium grained, speckled by shale inclusions, medium size mica flakes with thin interbedded coal and bone.
1334'-1422'	88'	<u>Sandstone</u> , white to tan, medium to fine grained with inclusions of green and gray shale, fair visible porosity.
		1387'-1422' - with the sandstone dull white, containing more shale inclusions and bone, with less porosity.
1422'-1494'	72'	<u>Sandstone</u> , gray, medium fine to silt, with matrix containing dark shale and bone, medium size mica.

1442'-1494' - with more lighter gray sand and less shale.

1494'-1629'	135'	<p><u>Sandstone</u>, white medium to fine grained, fair visible porosity.</p> <p>1522'-1534' - with medium to coarse grained sandstone with fair visible porosity.</p> <p>1534'-1564' - with white to gray sandstone, carbonaceous staining and shale in the matrix. Less visible porosity.</p> <p>1564'-1629' - the sandstone is white with no shale. Porous.</p>
1629'-1639'	10'	<p><u>Coal</u> (probably of mineable thickness)</p>
1639'-1643'	4'	<p><u>Shale</u>, dark gray to black, clay, and bone, with medium fine to silty sandstone, carbonaceous staining on sand grains.</p>
1643'-1658'	15'	<p><u>Coal</u> (probably of mineable thickness, this is the best coal show in the well).</p>
1658'-1756'	98'	<p><u>Sandstone</u>, white, medium grained, specks of green and gray shale pellets, with visible porosity.</p> <p>1747'-1756' - thin bedded coal</p>
1756'-1803'	47'	<p><u>Sandstone</u>, dark gray, fine grained, to silty, carbonaceous staining, shale and bone in matrix, fine mica flakes. No visible porosity.</p> <p>1779'-1781' - with coal and bone</p> <p>1781'-1803' - with interbedded white, medium fine grained, thin sandstone.</p>
1803'-2051'	248'	<p><u>Sandstone</u>, white, medium grained, green and gray shale pellets, inclusions, with visible porosity.</p>

1810'-1818' - No samples

1846'-1903' - with dark gray siliceous and silty, interbedded, thin bedded shale.

1903'-2051' - with fairly clean sand, visible porosity.

2051'-2063' 12' Shale, gray, clay, siliceous and silty, hard.

2063'-2103' 40' Sandstone, white, medium to coarse grained, with larger broken pebbles (conglomeratic), visible porosity.

2081'-2093' - No samples

2103'-2286' 183' Shale, gray, clay, siliceous, with interbedded gray-green shales and a few chips of dull, dark, reddish-brown slightly calcareous shale.

2228'-2286' - with an increase in siliceous content and silt.

2277'-2286' - with sandy content.

2286'-2354' 68' Sandstone, dull white, fine grained to silt, carbonaceous stained sand grains, with interbedded gray, siliceous shale and dull red shale.

2326'-2329' - with an increase in shale.

2354'-2575' 221' Shale, dark gray, clay, siliceous, occasionally silty, with dull red shale and fine mica flakes.

2527'-2537' - No samples

2575'-2645' 70' Sandstone, (drillers top 2596') gray to dull white, medium fine to fine grained to silt in part, containing shale in matrix with interbedded dark gray, siliceous to silty shale and some dull dark red shale. (Carbonaceous material on some shale bedding planes). No visible porosity.

2600'-2645' - with sandstone occasionally containing limited visible porosity.

2645'-2701' 56' Sandstone, white, medium to coarse grained, some larger broken pebbles (conglomeratic), fair visible porosity.

2701'-2725' 24' Silt, gray-green, considerable fine mica flakes, some clay in the matrix and interbedded gray silts.

2713'-2725' - with dull white to greenish, fine grained to silty interbedded, hard sandstone.

2725'-2800' 75' Shale, dull reddish-brown, clay, and interbedded gray-green, siliceous to silty, with fine mica flakes, hard shale.

sequence is calcareous, but not a distinctive little stone gap member

2800'-2810' 10' Sandstone, white, fine grained to silty, calcareous, poor visible porosity.

(Corrected depth at 2805' is actually 2780')

2810'-2856' 46' Shale, gray to gray-green to dull red, clay, siliceous, slightly calcareous, hard.

2856'-3015' 159' Sandstone, dull white to white, fine grained, slightly calcareous, poor to fair visible porosity.

2874'-2884' - with interbedded gray, siliceous, silty shale.

2914'-2923' - with gray-green silt.

2923'-3015' - with fair visible porosity (Fair reservoir type)

3015'-3037' 22' Shale, gray, clay, siliceous to silty, hard.

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3037'-3075'	38'	<u>Sandstone</u> , white to gray, fine grained, low visible porosity. 3050'-3075' - with dark interbedded silts.
3075'-3301'	226'	<u>Shale</u> , dark gray, clay, calcareous to limey in part, fairly soft. 3134'-3162' - with siliceous content. 3239'-3301' - cavings.
3301'-3340'	39'	<u>Limestone</u> , dark brown, very oolitic (brown oolites), well cemented, no visible porosity. 3331'-3340' - with decrease in oolites.
3340'-3368'	28'	<u>Limestone</u> , dark brown to black, very argillaceous, few dark oolites. 3347'-3353' - cavings 3353'-3361' - no samples
3368'-3428'	60'	<u>Shale</u> , dark gray, clay, calcareous, fairly soft, with interbedded dark brown to black limestone, containing some dark oolites. 3405'-3415' - no samples 3423'-3428' - no samples
3428'-3471'	43'	<u>Limestone</u> , dark brown, crystalline, argillaceous, siliceous, with dark brown chert. 3448'-3461' - Cement in samples. 3428'-3448' - Brachiopod
3471'-3574'	103'	<u>Limestone</u> , brown to gray-brown mottled, finely crystalline, dense, with small brown oolites. 3514'-3557' - the limestone is darker in color and is more argillaceous.

3574'-3591'	17'	<u>Limestone</u> , dark gray, finely crystalline, argillaceous, dense.
3591'-3684'	93'	<u>Limestone</u> , gray-brown and light gray mottled, few dark oolites, slightly argillaceous, dense. 3600'-3604' - no samples. 3618'-3684' - with an increase in oolites. 3658'-3684' - with traces of pyrite.
3684'-3795'	111'	<u>Limestone</u> , light gray-brown, finely crystalline, dense, slightly argillaceous, a few brown oolites, with dull, dark red limestone.
3795'-3829'	34'	<u>Limestone</u> , brown and light brown, finely crystalline, many brown oolites. 3822'-3829' - with opaque, brown tinted chert.
3829'-3865'	36'	<u>Limestone</u> , dark gray-brown, finely crystalline, dense, argillaceous, and gray, very argillaceous limestone, with brown to opaque and some reddish-brown tinted chert.
3865'-4022'	157'	<u>Sandstone</u> , gray, gray-green, very fine grained to fine grained, some silt, some argillaceous materials. 3865'-3910' - with some dull red sandstone. 3874'-3910' - with gray-green silt. 3910'-3961' - with dull, light gray-green, very fine grained sandstone, some interbedded silts, fair to good porosity. 3961'-3985' - with dark speckled sandstone and an increase in dark gray argillaceous material (possibly as thin shale partings).

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3985'-3995' - with dark gray silty shale.

3995'-4007' - with some dull, dark red silt.

4007'-4022' - with dull, mottled, reddish-brown, fine grained sandstone.

4022'-4795'

773'

Shale, dark gray, clay, occasional interbedded silts and dull reddish-brown to chocolate shale.

4022'-4072' - with the shale siliceous to silty, hard.

(Note: 4022' to about 4965' the sample interval is often 30' or more.)

4072'-4795' - the shale is soft and there are cavings from it. Often there is cement contamination in the samples.

4365'-about 4613' - with some siliceous and silty shale.

4421'-4441' - with small amounts of interbedded silts and light gray, slightly calcareous and brown to reddish brown shale.

4651'-4669' - with some chocolate brown shale.

4735'-4751' - with rounded, pyritic, pisolites.

4795'-4965'

170'

Shale, very dark gray (black), clay, platy, very fine grained mica flakes, pyritic, with coal and bone.

4810'-4844' - with interbedded light gray to gray, soft, clay shale.

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4844'-4855' - with some slickensides on shale.

4855'-4858' - coal: crumbles into very small pieces, is often slickensided and flaky.

4858'-4876' - with coal and bone.

4911'-4947' - with some light gray, clay, shale.

4957'-4965' - with slickensided bone.

(Note: 4965'-T.D. 6057' the sample interval is 5' and less).

4965'-5544'

579'

Shale, gray, clay, platy, very fine mica flakes, often slickensided and darker gray to black on these sides, fractured and often slickened on fracture plane, soft and with occasional interbedded rusty brown to dull vermilion shale.

4980'-5075' - with darker gray, interbedded shale.

5001'-5105' - with slickensides on bedding and fracture planes, lumpy.

5026'-5067' - with pyrite.

5075'-5085' - with thin gray, calcareous shale.

5105'-5119' - with clay, brown, rusty brown shale, and very small chips of vermilion shale. Some of the vermilion shale is in very small pellets interdisseminated in the shale chips (possibly a precipitate).

5130'-5186' - with less slickensides.

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5186'-5198' - with clay, brown, rusty brown shale, and a few chips of red shale.

5198'-5255' - with the shale, medium hard.

5226'-5229' - with brown and reddish brown shale.

5255'-5559' - with an increase in slickensides.

5316'-5325' - with a thin chocolate to rusty brown shale.

5360'- 5390' - no sample

5412'-5450' - with a slightly darker gray shade of color.

5461'-5544' - with some inter-bedded black shale.

(Note: Through the above section cavings are in evidence. Often there is cement in the samples).

5544'-5603'

59'

Shale, very dark gray (black), clay, lumpy, slickensided (every chip has slickensides), fissile, pyritic, soft.

5580'-5603' - coal in samples (appears identical to coal at 4855'-4858').

5603'-5625'

22'

Limestone, light-gray-white, crystalline and chert white to milky to smoky.

5609'-5611' - with clay, platy, pyritic, soft shale.

5611'-5625' - with mostly smoky chert and some light gray to dark gray mottled, slightly siliceous limestone.

5620'-5625' - with black shale.

Wildcat
Vols
SS

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5625'-5628'	3'	<u>Limestone</u> , light gray-light brown and brown mottled, crystalline, glauconitic, shaly, dark gray, cherty and some very fine grained sandstone.
5628'-5644'	16'	<u>Sandstone</u> , light gray, green tinted, fine to very fine grained, glauconitic, calcareous, milky chert, no visible porosity. (Note: Samples overlap in interval from 5625'-5630'). 5635'-5636' - with dark brown, very cherty (brown to smoky) sandstone, and some dark shale. 5636'-5641' - with inter-disseminated light gray and dark gray, glauconitic limestone with smoky chert. 5641'-5644' - with an increase in glauconitic sandstone.
5644'-5681'	37'	<u>Limestone</u> , light gray and dark gray, mottled, calcarenitic, sandy, with milky to smoky chert. 5650'-5652' - with dark gray, black shale. 5652'-5663' - with dark gray, calcarenitic, siliceous, cherty, argillaceous limestone. 5663'-5667' - with light gray, calcarenitic, siliceous limestone. 5667'-5671' - with a few clusters of sand grains, medium to fine grained, some rounded and frosted, pyrite. 5671'-5676' - with medium grained sand, with many frosted grains & calcareous matrix.

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5676'-5681' - with an increase in black calcarenitic limestone and many frosted sand grains.

5681'-5688'

7'

Sandstone, white to dull light gray, fine to medium fine, some frosted grains, calcareous matrix, somewhat friable, limited visible porosity.

Handwritten 5688'-5834'

146'

Limestone, dark brown to dark gray, finely crystalline, platy, argillaceous, dense, and clear anhydrite.

5688'-5699' - with a few small brown oolites.

5699'-5711' - with reddish brown tints.

5711'-5740' - with more dark to black limestone.

5740'-5801' - with light gray, finely crystalline, dense, argillaceous limestone.

5766'-5834' - with clear to opaque, crystalline anhydrite.

5774'-5778' - no samples

5778'-5801' - with an increase in anhydrite (the anhydrite is clear to opaque, crystalline, with no shale inclusions or partings nor cavity or vugs fillings).

5801'-5834' - with darker more argillaceous materials, with decreasing amounts of anhydrite.

5828'-5834' - with an increase in anhydrite and there are reddish brown tints in the limestone.

5834'-5970'

136'

Limestone, dark gray-black, argillaceous, with gray-brown to black, slightly dolomitic limestone and light gray-brown granular limestone.

5861'-5867' - with light gray argillaceous limestone.

5909'-5914' - no samples

5914'-5945' - with a decrease in dolomite and an increase in black limestone with a few small oolites.

5928'-5932' - with a few sub-rounded, frosted fine grains of sand and an increase in oolites.

5945'-5949' - with granular, gray-brown dolomite.

5949'-5953' - no samples

5953'-5970' - with predominately black, argillaceous limestone and an occasional quartz grain.

5965'-5970' - with very small, dark, oolites.

5970'-5979'

9'

Shale, black, clay, platy, soft with white to light gray, fine to very fine grained sandstone.

5979'-5982'

3'

Limestone, black to gray, with very small black oolites, argillaceous.

5982'-5985' - Poor samples, contaminated

5985'-5992'

7'

Sandstone, white, medium to fine grained, sub-rounded, frosted, some larger grains that are broken, calcareous matrix.

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5992'-5994'	2'	<u>Limestone</u> , black, dolomitic and sandy.
5994'-5998'	4'	<u>Sandstone</u> , white with greenish tints, very fine grained, calcareous, with very small black specks between the sand grains.
5998'-6031'	33'	<u>Shale</u> , gray to gray-green, clay, very slightly calcareous.
6031'-6035'	4'	<u>Sandstone</u> , gray-green, very fine grained to silt, hard.
6035'-6057' (T.D.)	22'	<u>Shale</u> , dark reddish brown, clay, platy, soft.

6041'-6046' - with very fine mica flakes, and some gray-green shale, slightly siliceous.

(Note: When drilling stopped a measurement was made and total depth was found to be 6070').

SUMMARY**Pennsylvanian System**

Norton and Lee Formations
(undivided)

surface - 2103'

Mississippian System

Bluestone Formation
Princeton Sandstone
Hinton Formation
 Stony Gap Sandstone Member
Bluefield Formation
Greenbrier Limestone
Maccrady and Price Formations
(undivided)

2103 - 2596'
2596 - 2725' (?)
2725 (?) - 3075'
2856 - 3075'
3075 - 3301'
3301 - 3865'
3865 - 4022' (?)

Mississippian and Devonian Systems
(undivided, probably repeated
in part by faulting)

4022 (?) - 5688'

Silurian System

Cayuga Group
Clinton Formation

5688 - 5998' (?)
5998 (?) - T. D.