

Leslie Thompson et al No. 1 Well (GW 1069)

Steele District, Wood County, W. Va.

By Columbian Carbon Co., Box 873, Charleston, W. Va.

Located 2.8 Mi. S. of 39° 05' and 0.03 Mi. W. of 81° 30' SC

Belleville Quadrangle

Elevation, 746.25' L

Permit W00 - 252

Drilling commenced Apr. 26, 1948; completed Aug. 12, 1948.

Shot Aug. 12, 1948 at 4842-4882' with 267# Atlas gelatin.

Gas well; volume 4,721,000 cu. ft.

Rock pressure 1925 lbs. in 5 days.

Fresh water 570', 3-14" blrs. per hour.

Salt water, 1075', 1-10" blrs. per hour; 1655' hole full

16" 75# casing, 37' 5/2", 13 3/8" 48#, 77' 5/4" (pulled), 10 3/4" 32#, 1048' 5/3" (pulled), 8 1/4" 24#, 1894' (pulled), 6 5/8" 24#, 4885' 5"

No coal was encountered

Section based on samples from 0 to 4907'; examined by Russell R. Flowers

Top Bottom Thickness

Dunkard Group, Monongahela Formation, 630 ft.

Top	Bottom	Thickness	Description
0	38	38	Clay, grayish-red to grayish-brown to moderate yellowish-brown; small amount of limestone (as nodules), olive-gray to dark yellowish brown
38	50	12	Clay-shale, pale yellowish brown to dark yellowish brown to moderate-brown; siltstone and shale, light olive gray to greenish-gray to dark olive gray and dark greenish gray; small amount of limestone (as nodules), dark yellowish brown
50	88	38	Clay, grayish-brown to very dusky red; small amount of greenish-gray, highly micaceous siltstone; a small amount of dark yellowish brown limestone
88	108	20	Siltstone to fine sandstone, greenish-gray, very highly micaceous, moderately dolomitic; shale, brownish-gray; small amount of greenish-gray to dark yellowish brown and moderate-brown limestone

		⁰	
108	128	28	Clay, very dusky red to grayish-brown with streaks of light-greenish-gray; small amount of greenish-gray shale and siltstone (cavings ?); small amount of olive-gray to dark yellowish gray limestone
128	167	39	Sandstone, light olive gray to greenish-gray, fine- to medium-grained, subangular, highly argillaceous (clays and cement ^{ing} material), highly micaceous (muscovite and biotite)
167	197	30	Clay, grayish-brown to moderate brown; minor amount of limestone (as nodules), dark to dusky yellowish brown, grayish-red; sandstone, greenish-gray, highly micaceous, fine-grained (probably cavings)
197	215	18	Siltstone to very fine sandstone, greenish-gray, highly micaceous, moderately dolomitic and calcareous; shale, greenish-gray, moderately calcareous; clay, moderate-brown to grayish-brown (probably cavings)
215	245	30	Sandstone, light to dark olive gray to greenish-gray, very fine to fine-grained, subangular to subrounded, moderately calcareous and dolomitic, very highly micaceous (muscovite and biotite); clay, grayish-brown (cavings ?)
245	251	6	Clay, grayish-brown to very dusky red; small amount of moderate yellowish brown; small amount of limestone (as nodules), brownish-gray
251	267	16	Clay-shale, light to dark greenish gray, light olive to grayish-brown; moderate to dark yellowish brown, highly sideritic shale (siderite as oolites and spherulites); Sideritic oolites and spherulites are also scattered through much of the greenish-gray shale and siltstone, some of the shale is brownish-black from the concentration of the sideritic material

267	283	16	Siltstone and shale, light to dark greenish gray, highly micaceous in part, moderately calcareous, dolomitic in part; shale, olive-gray to moderate yellowish brown, sideritic, calcareous
283	288	5	Siltstone, shale, and clay, greenish-gray to olive-gray, grayish-brown to moderate-brown, moderately calcareous
288	298	10	Clay, grayish-brown to very dusky red, 70%; shale and siltstone, greenish-gray to grayish-brown, calcareous, 30%, small amount of moderate yellowish brown to grayish-brown limestone (as nodules)
298	320	22	Fine-grained sandstone to siltstone to shale, greenish-gray to dark greenish gray to olive-gray, highly micaceous; small amount of moderate-brown to grayish-brown clay and shale; small amount of light to dark yellowish brown limestone
320	332	12	Clay, grayish-brown to very dusky red, moderate to dark yellowish brown, moderately calcareous
332	345	11	Sandstone (fine-grained) to siltstone (coarse), light olive gray to greenish-gray, moderately dolomitic and calcareous, highly micaceous; toward the bottom a shale, light to dark olive gray to greenish-gray to brownish-gray, partly silty and micaceous
343	360	17	Clay and shale, ^{gray} greenish-brown with small amounts of light olive gray, brownish-gray, and greenish-gray, 70%; siltstone and shale, brownish-gray to light olive gray to greenish-gray, micaceous, moderately dolomitic and calcareous in part, 30%; limestone nodules, grayish-brown to moderate yellowish brown, sideritic shale
360	373	13	Clay, <u>grayish-brown</u> to very dusky red; minor amount of light greenish gray to greenish gray, silty, micaceous clay to argillaceous siltstone; limestone nodules, grayish-red to brownish-gray to yellowish-brown in small amount

373	401	28	Clay, <u>grayish-brown</u> to very dusky red, brownish-gray to light olive gray to greenish-gray (small amount), 80%; sandstone (fine) to siltstone (coarse), light olive gray to greenish-gray, micaceous, moderately calcareous, 20%; limestone nodules, greenish-gray to light olive gray to brownish-gray
401	418	17	Siltstone, (coarse, sandy) and shale, light olive gray to greenish-gray, partly micaceous, partly calcareous, 50%; clay, moderate brown to grayish-brown to very dusky red, small amount of brownish-gray to olive gray, 50%; trace of brownish-gray to greenish-gray limestone
418	446	28	Clay, <u>grayish-brown</u> to grayish red with light olive gray to greenish-gray at the top, small amount of moderate yellowish brown at the bottom, moderately calcareous limestone nodules, olive-gray to grayish-brown to grayish-red in small amount
446	481	35	Sandstone, (fine) to siltstone (coarse) and shale, light olive gray to greenish-gray, the sandstone and siltstone ^{are} highly micaceous, partly calcareous and dolomitic; trace of greenish-gray limestone
481	537	56	Clay, very dusky red with minor amount of grayish-brown and moderate yellowish brown, highly calcareous and dolomitic
537	559	22	Shale and siltstone, greenish-gray to greenish-black micaceous and chloritic; small amount of greenish-gray to yellowish-brown, highly sideritic shale
559	613	54	Sandstone, yellowish-gray to light greenish-gray, medium- to coarse-grained, angular to subangular, many of the largest grains are rounded (and frosted), somewhat shaly and argillaceous (probably mostly cavings), good porosity
613	625	12	Sandstone (medium- to fine-grained) and siltstone, light olive gray to greenish-gray, moderately calcareous in part, micaceous

625 630 5 Clay, shale, and siltstone, light to dark olive gray to greenish-gray, siltstone is micaceous, medium light gray clay with carbonaceous streaks; small amount of pyritic, highly carbonaceous shale; trace of coal (Pittsburgh coal?), trace of dark yellowish brown sideritic shale

Conemaugh Formation, 490 feet

630 637 7 Clay, medium light gray to light olive gray with carbonaceous streaks, small amounts of grayish-red, black (highly carbonaceous and pyritic), moderate yellowish brown; small amount of medium gray to greenish-gray shale trace of coal; trace of limestone and siderite

637 643 6 Clay, grayish-brown to very dusky red, medium light gray to light olive gray; greenish-gray, silty, micaceous clay; limestone nodules, light olive gray, brownish-gray, greenish-red in minor amount; trace of black, carbonaceous shale

643 668 25 Sandstone, siltstone to silty clay, greenish-gray, highly micaceous, micaceous streaks give a schistose structure, very highly sideritic, 50%; clay, grayish-brown to grayish-red, clastic texture, moderate to dark yellowish brown (with dark brown sideritic ^{ph} spherulites), medium light gray to light olive gray, 45%; limestone, nearly white to greenish-gray to grayish-brown, 5%; trace of dark yellowish brown, sideritic shale

668 674 6 Clay, grayish-red, very dusky red, grayish-brown, clastic texture, moderate yellowish brown (sideritic) to light olive gray; limestone nearly white to greenish-gray to brownish-gray in minor amount

674 680 6 Sandstone, light olive gray, fine- to medium-grained, subangular to subrounded, highly calcareous, mostly quartz grains (many of which are clear and glassy), slightly micaceous

- 680 709 29 Sandstone, light+olive^{gray} to olive-gray to greenish-gray, very highly micaceous streaks, argillaceous (cement), slightly calcareous, very fine to fine-grained with an occasional medium sized grain, subangular to subrounded; toward the bottom (692, plus) clay, grayish-brown to grayish-red and small amounts of moderate yellowish brown slightly sideritic clay; at the bottom, 10 feet of a medium- to fine-grained equivalent of the above, very fine to fine-grained sandstone
- 709 726 17 Clay, medium light gray to medium-gray to olive-gray, grayish-red to grayish-brown to brownish-gray; calcareous clay to argillaceous limestone in part, same colors as clay; small amount of carbonaceous material scattered throughout the clay
- 726 764 38 Clay, grayish-brown to grayish-red to grayish-red purple, moderate to dark yellowish brown; small amount of limestone nodules, the same hue of color as that of the clay but paler
- 764 770 6 Siltstone, and silty shale, greenish gray to dark^{gray} greenish gray, highly micaceous; small amount of light to dark olive gray limestone
- 770 775 5 Clay-shale, light to dark greenish gray (silty, partly micaceous), grayish-brown to brownish gray; small amount of light greenish^{gray} to brownish-gray limestone
- 775 780 5 Clay, grayish-brown to very dusky red, calcareous, 80%; light greenish-gray to greenish-gray siltstone and silty clay, 20%; trace of light greenish-gray to brownish-gray limestone; trace of moderate to dark yellowish brown, sideritic clay
- 780 820 40 Clay, a marble mixture of moderate yellowish brown to grayish-red and grayish-brown for the top ten feet, moderately calcareous, decrease in the yellowish-brown toward the bottom but increase of grayish red purple; trace of dark yellowish brown, ~~xxxxxxxxxxxxxxxx~~ sideritic shale; trace of hematite; small amount of limestone (as nodules), partly sideritic, grayish-brown to brownish-gray to light greenish^{gray}

- 820 882 12 Sandstone, light olive to greenish-gray, medium-grained, subangular to sub³rounded, occasional rounded, frosted, coarse quartz grains, chloritic, moderately to highly calcareous
- 832 836 4 Sandstone, light olive gray to greenish-gray, ^{fine-to-}medium-grained, subangular to subrounded, micaceous and chloritic, slightly to moderately calcareous
- 836 870 34 Clay, olive-gray to grayish-olive, moderate olive brown to moderate yellowish brown, light greenish-gray to greenish-gray (micaceous, silty), very dusky red to grayish-brown, small amount of olive-gray to brownish-black (carbonaceous); trace of hematite; small amount of pale olive to moderate+olive+brown to brownish-gray limestone
- 870 876 6 Limestone, light to dark brownish gray, pale-olive to olive-gray to medium-gray, fossiliferous, partly dolomitic; clay, medium to light gray to light olive gray, grayish-brown, pyritic
- 876 885 9 Clay, medium light gray to light olive gray, pyritic, minor amount of grayish-brown and moderate olive brown, highly calcareous, 80%; limestone, pale-olive and light brownish gray to olive-gray and brownish-black, 20%; trace of hematite; trace of coal
- 885 911 26 Clay, grayish-brown to very dusky red to grayish red purple, moderate yellowish brown, moderately calcareous; minor amount of limestone as nodules, medium light gray to light olive gray to brownish-gray, grayish-brown to grayish-red
- 911 917 6 Clay, light greenish gray, light olive gray to moderate and dark yellowish brown, grayish-brown to grayish-red to grayish red purple, moderately calcareous; small amounts of limestone (nodules), medium light gray to light olive gray, brownish-gray, grayish-brown and grayish-red

- 917 926 9 Siltstone, greenish-gray to dark greenish+gray, sandy in part, slightly to moderately calcareous, micaceous and chloritic, slightly sideritic in part
- 926 952 26 Clay - shale, greenish-brown to very dusky red; clay, grayish-brown, moderate yellow^{ish} brown, with small amounts of light olive gray and grayish red purple; minor amount of limestone (nodules), greenish- to brownish-gray, moderate yellowish brown to grayish-brown
- 952 979 27 Siltstone and shale with small amount of sandstone, greenish-gray to dark greenish+gray, moderately to highly calcareous, partly micaceous, small yellowish-brown siderite spherulites are scattered through much of the siltstone; small amount of silty, greenish-gray limestone; large amount of clay and clay shale, grayish-brown to grayish-red and yellowish-brown, brownish-gray at the bottom of the interval
- 979 985 6 Sandstone (fine) to siltstone, light olive gray to greenish-gray, slightly to moderately calcareous, highly micaceous and chloritic, partly sideritic (siderite spherulites); large amount of clay cavings, grayish-brown and red, yellowish-brown, light greenish gray, blackish-red; small amount of brownish-gray limestone
- 985 990 5 Clay, light greenish gray, grayish-red to very dusky red and blackish-red, grayish-brown to yellowish-brown, moderately calcareous; small amount of limestone (nodules), light greenish+gray to brownish-gray
- 990 1005 15 Siltstone and shale, medium-gray to greenish-gray, micaceous, 95%; limestone, partly dolomitic, silty in part, light greenish+gray, brownish-gray and brownish-black, 5%

- 1005 1009 4 Siltstone and clay-shale (silty), medium-gray to greenish-gray, slightly to moderately calcareous, micaceous, 40%; clay-shale, grayish-black to black, carbonaceous, fossiliferous, 40%; clay, grayish-brown to grayish-red, moderate yellowish brown to light olive gray, 20%; small amount of limestone
- 1009 1017 8 Shale, grayish-black to black, highly carbonaceous, highly fossiliferous, and coal 60%; siltstone and shale medium-gray to greenish-gray, micaceous, 20%; clay, grayish-brown and grayish-red, moderate yellowish brown to light olive gray, 20%; small amount of limestone
- 1017 1023 6 Shale, grayish-black to black, carbonaceous, pyritic in part, highly fossiliferous, 60%; small amount of coal; siltstone and shale, medium-gray to greenish-gray, micaceous, moderately calcareous and dolomitic, 20%; clay, grayish-brown to grayish-red, medium light gray to light olive gray to moderate yellowish brown, 20%; small amount of limestone
- 1023 1032 9 Clay, medium light to medium dark gray to olive-gray, slightly calcareous, highly sideritic in part, partly silty and micaceous; clay (small amount) grayish-black to black, grayish-brown to grayish-red, moderate yellowish brown; small amount of light greenish-gray to greenish-gray, silty limestone and limy siltstone; trace of coal
- 1032 1035 3 Sandy clay to argillaceous sandstone, fine- to medium-grained, yellowish-gray to light olive gray, micaceous, sideritic in part
- 1035 1043 8 Sandstone, yellowish-gray to light olive gray, fine- to medium-grained at the top, mostly fine-grained toward the bottom, argillaceous cementing material at top to calcareous cement at the bottom, highly micaceous, chloritic, angular to subangular at the top to angular at the bottom

- 1043 1060 17 Sandstone, yellowish-gray, fine- to medium-grained, & angular to subangular, highly micaceous, chloritic^{ic}, moderately calcareous at top, slightly calcareous at bottom; most of the sand grains are frosted
- 1060 1088 28 Sandstone, white to yellowish-gray, medium to coarse-grained, angular to subangular, chloritic, slightly micaceous, most of the sand grains are frosted, many of the quartz grains are partly clear and glassy showing secondary crystal facets; good porosity
- 1088 1108 20 Sandstone, yellowish^{gray} to very light-gray, medium-grained, occasional coarse grain, much of the quartz is clear and glassy showing an occasional crystal face, angular to subangular, chloritic, slightly calcareous; small amount of grayish-brown to brownish-gray siderite
- 1108 1120 12 Sandstone (very fine-grained) to coarse siltstone, very light gray to yellowish-gray, micaceous, slightly chloritic, 90%; siderite, grayish-brown to brownish-gray, partly silty, 10%
- Allegheny Formation, 234 feet.
- 1120 1125 5 Siltstone and shale, medium light to medium dark gray, 75%; shale, black, highly carbonaceous with streaks of coal (Upper Freeport coal?), 5%; shale, light to dark brownish gray, 20%
- 1125 1131 6 Siltstone and shale, medium-gray to greenish-gray, highly micaceous, 60%; limestone, light brownish gray, silty, 20%; shale, medium light gray to light brownish gray, highly sideritic
- 1131 1140 9 Siltstone, medium-gray to dark greenish-gray, very slightly calcareous, highly micaceous
- 1140 1150 10 Siltstone and shale, medium-gray to dark greenish-gray, highly micaceous, slightly calcareous; small amount of medium-brown to grayish-brown, sideritic limestone
- 1150 1157 7 Shale, medium to medium dark gray, 80%; sandstone (fine grained) to siltstone, medium light gray to light olive gray, highly micaceous, moderately calcareous, 20%; small amount of medium brown to grayish-brown, sideritic limestone; trace of light gray, sideritic shale (avings?)

- 1157 1171 14 Clay, medium light gray to light olive gray, silty, moderately calcareous, 30%; shale at top, medium light gray to grayish-black, partly carbonaceous, 20%; limestone, olive-gray to dark and dusky yellowish brown, highly sideritic, 50%; (siderite part is yellowish brown)
- 1171 1177 6 Siltstone and shale, medium-gray to greenish-gray, micaceous, partly sideritic (spherulites), 65%; sandstone, light greenish gray, highly micaceous, chloritic, fine- to medium-grained, 20%; limestone, mottled olive-gray and dark yellowish brown, highly sideritic, 10%; shale, grayish-black to black, carbonaceous, 5%
- 1177 1185 8 Siltstone, shale, medium-gray to light olive gray to greenish-gray, sideritic in part, partly micaceous, 70%; clay, light olive gray to olive-gray to black, carbonaceous, 30%; trace of black highly carbonaceous shale that is almost a coal
- 1185 1208 23 Sandstone, yellowish-gray to light olive gray, fine-grained, angular, well cemented, slightly calcareous, highly micaceous, moderately to highly sideritic, chloritic
- 1208 1218 10 Siltstone and shale, medium-gray to light olive gray, micaceous, slightly to moderately sideritic; siltstone, dark gray to grayish-black, micaceous, carbonaceous, slightly to moderately sideritic, pyritic in part; trace of moderate dark yellowish brown, silty, calcareous siderite.
- 1218 1225 7 Siltstone, medium- to dark-gray to olivegray, slightly to moderately carbonaceous, olive gray is siderite^{ic}, 80%; trace of moderate to dark yellowish brown, sideritic shale and siltstone; shale, grayish-black to black, highly carbonaceous, 20%
- 1225 1232 7 Siltstone and shale, medium-gray to light olive gray to greenish-gray, medium dark gray to black (highly carbonaceous), partly micaceous; trace of coal; small amount of moderate to dark yellowish brown, sideritic shale

- 1232 1241 9 Clay, light olive gray, silty and sandy, 60%; sandstone, yellowish-gray to light olive gray, fine grained, angular to subangular, partly argillaceous, micaceous 40%
- 1241 1280 30 Sandstone, yellowish-gray to light olive gray, fine-grained 1241-1260, medium grained 1260-1277, angular to subangular, moderately micaceous, most of the sand grains are quartz and are frosted, slightly calcareous 1260-1267, a few of the grains show crystal faces⁵
- 1280 1285 5 Siltstone, medium-gray to dark-gray heavily dotted with dark yellowish brown spots of siderite and black specks with occasional black streak of carbonaceous matter
- 1285 1294 9 Clay, light olive gray with occasional carbonaceous streak, some olive-gray, fragmental⁵; with considerable interbedded sandstone (fine-grained) and siltstone, very light gray to grayish-black, micaceous and sideritic; small amount of dark to dusky yellowish brown, sideritic shale; trace of pyrite
- 1294 1311 17 Shale and siltstone, medium light to medium dark gray, some light olive gray, with interbedded light olive gray to olive gray, partly sideritic (spherulites) clay; at the bottom a very fine to fine-grained, light olive gray, highly micaceous, moderately sideritic, sandstone
- 1311 1326 15 Siltstone and shale, medium light gray to grayish-black, micaceous, sideritic, carbonaceous; considerable interbedded, silty, light olive gray clay containing many siderite spherulites
- 1326 1336 10 Sandstone, yellowish-gray to light olive gray, very fine grained, partly argillaceous, micaceous, highly sideritic in part
- 1336 1354 8 Siltstone and shale, medium to medium dark gray, micaceous, carbonaceous, and moderately to highly sideritic
- 1344 1354 10 Siltstone and shale, medium- to dark-gray, micaceous; some grayish-black to black, highly carbonaceous shale with a little coal (Lower Kittanning coal?)

Pottsville Formation, 401 Feet

- | | | | |
|-------|------|----|--|
| 1384 | 1385 | 31 | Siltstone and shale, medium to dark-gray, micaceous; some interbedded grayish-black to black highly carbonaceous shale with a little coal at the top, near the bottom, a moderate amount of interbedded, light olive gray fine to very fine sandstone, with some mica, clay, and carbonaceous material |
| 1385 | 1392 | 7 | Sandstone, yellowish-gray to <u>light olive gray</u> , fine-grained, micaceous, partly carbonaceous, moderately sideritic; some interbedded, medium- to dark-gray, micaceous, moderately sideritic, somewhat carbonaceous siltstone and shale |
| 1392 | 1435 | 43 | Sandstone, light-gray to yellowish-gray, ^{the} <u>quartz</u> , ^{is} <u>fine-grained</u> with considerable amount of medium grains at the bottom, angular to subangular, highly micaceous and carbonaceous streaks, sideritic, argillaceous, contains some chlorite |
| 1435 | 1460 | 25 | Shale and siltstone, medium light to medium dark gray, micaceous, occasional carbonaceous streak toward the the bottom; small amount of dark yellowish-brown sideritic siltstone and shale; trace of black, highly carbonaceous shale |
| 1460 | 1498 | 38 | Siltstone and shale, medium light to dark-gray, a few carbonaceous streaks; interbedded grayish-black to black, highly carbonaceous shale; toward the middle and lower part, considerable interbedded, light olive gray, argillaceous, moderately micaceous siltstone |
| 1498 | 1514 | 16 | Siltstone and shale, medium- to dark-gray with occasional carbonaceous streak, light olive gray (argillaceous), micaceous; some interbedded brownish-to grayish-black to black, highly carbonaceous/shale; trace of dark yellowish-brown, sideritic shale |
| 1514- | 1580 | 20 | Sandstone, light olive gray, fine-grained, subangular, mostly quartz grains, moderately calcareous, partly sideritic, contains mica and chlorite in moderate amount, some interbedded light olive gray to medium-gray silty clay; scattered fragments of medium- to dark brownish gray, siderite |

- 1534 154 7 Siltstone, light olive gray, coarse, micaceous, argillaceous, occasional carbonaceous streak; interbedded medium gray to grayish-black, somewhat carbonaceous siltstone and black, carbonaceous shale, small amount of dusky yellowish brown siderite
- 1541 1560 19 Siltstone to fine sandstone at bottom, light olive gray to olive gray, medium to medium dark gray, abundant carbonaceous streaks, highly micaceous, slightly calcareous, and moderately sideritic
- 1560 1578 18 Siltstone and shale, medium light gray to grayish-black, micaceous, somewhat carbonaceous, with a small amount of dark dusky yellowish brown, sideritic shale and siderite; trace of black, carbonaceous shale; trace of brownish-gray limestone at bottom
- 1578 1608 30 Shaly siltstone and silty shale, dark-gray to grayish-black, sandy; considerable interbedded light- to medium-gray, very fine to fine-grained sandstone; some interbedded dark yellowish brown, sandy, sideritic shale
- 1608 1638 30 Sandstone, very light gray to yellowish-gray, very fine to fine grained, subangular to subrounded, considerable interbedded thin grayish-black to black, highly carbonaceous in part, micaceous shale; contains some dark yellowish brown, sandy, highly sideritic shale
- 1638 1646 8 Sandstone, very light gray to yellowish-gray, subangular to subrounded, contains some mica, and some carbonaceous material; interbedded dark gray to grayish-black, somewhat carbonaceous, silty, soft shale; trace of dark brown, sideritic shale
- 1646 1704 58 Sandstone, very light gray to yellowish-gray, medium- to coarse-grained, mostly quartz, subangular to subrounded, many of the larger grains are rounded and frosted, a large percentage of the quartz grains show secondary crystal facets, some medium-gray to grayish-black clay-shale near the top and bottom, the sandstone shows good porosity where the secondary crystal facets are less developed

- 1704 1708 4 No sample
- 1708 1726 18 Sandstone, yellowish-gray, [†] fine- to coarse-grained at top, very fine^e to fine-gr^oined at the bottom, subangular to subrounded, argillaceous, very slightly micaceous (muscovite), stained brown by iron (probably from drill tools), slightly shaly, almost entirely quartz, many of the quartz ~~min~~ grains have secondary crystal facets, many of the large grains are rounded and frosted
- 1726 1747 21 Sandstone, yellowish-gray to light gray to greenish-gray, fine-grained, angular to subangular, a large percent of the quartz grains have secondary crystal facets, very slightly calcareous, somewhat shaly, slightly micaceous and chloritic
- 1747 1755 8 Sandstone, light-gray to greenish-gray, fine-grained, angular to subangular, somewhat micaceous and chloritic; sandstone, yellowish-gray to very light gray, medium- to coarse-grained, angular to subrounded, mostly quartz
- Pocono Formation, 483 feet
- 1755 1853 98 Sandstone, yellowish-gray to white, fine- to medium-grained except at top and middle (medium to coarse) and at bottom (medium to very coarse), angular to subrounded, quartzose, many of the large quartz grains are rounded and frosted in upper and middle part but are angular and glassy in lower part of interval, a large percentage of the q^uartz grains show secondary crystal facets, the porosity is less where the secondary growths are most prominent, somewhat argillaceous
- 1764-1796
- 1853 1856 3 Sandstone, white to light gray, medium- to coarse-grained at the top to very fine-grained at the bottom, subangular; many of the quartz grains show secondary crystal facets; some interbedded, dark-gray shale and dark yellowish brown, sideritic shale

- 1856 1865 9 Sandstone (very fine) to siltstone, very light to medium-gray, slightly micaceous and carbonaceous; considerable interbedded medium to medium dark gray, silty, slightly carbonaceous shale
- 1865 1890 25 Sandstone (very fine) to coarse siltstone, light-gray to light olive gray, somewhat micaceous, slightly carbonaceous; considerable interbedded medium-gray, sandy, micaceous, somewhat carbonaceous siltstone; a small amount of moderate to dark yellowish brown, sideritic, sandy siltstone; trace of black, carbonaceous shale
- 1890 2023 133 Shale, medium-gray to dark-gray, very slightly carbonaceous, somewhat micaceous, silty, soft in part; interbedded light- to medium-gray to light olive gray siltstone with some very fine sandstone, somewhat micaceous, slightly carbonaceous, kaolinitic, slightly calcareous in part, the light olive gray siltstone is slightly sideritic; contains some moderate to dark yellowish brown, sideritic, silty shale; some olive gray to dark greenish gray siltstone near bottom
- 2023 2040 17 Limestone, very silty and sandy (clastic texture) to highly calcareous, sandy siltstone, light greenish gray and light olive gray, medium-gray and greenish-gray, kaolinitic and micaceous toward the top with interbedded, medium- to dark-gray to greenish-gray, silty, somewhat micaceous and slightly carbonaceous shale at bottom
- 2040 2189 149 Shale, medium- to dark-gray to dark greenish-gray, silty moderately micaceous in part, very slightly carbonaceous with interbedded light- to medium-gray, greenish-gray to dark greenish-gray, micaceous kaolinitic, slightly carbonaceous (in part) siltstone, moderately calcareous in part, the brownish-gray is slightly sideritic; some dark yellowish brown, silty and shaly siderite
- 2189 2225 36 Shale, medium light gray to dark gray, brownish-gray to brownish-black, partly pyritic, somewhat micaceous, slightly carbonaceous (Sunbury shale)

- 2225 2238 13 Sandstone, light olive gray, fine to very fine grained, partly pyritic, kaolinitic, slightly to highly calcareous (Berea Sandstone); interbedded, brownish-gray to brownish-black, somewhat carbonaceous shale (cavings? some medium to dark gray, silty shale
- Devonian Shale, 2462 feet
- 2238 2402 164 Siltstone and shale, medium and medium dark gray to greenish-gray and dark greenish-gray, somewhat micaceous very slightly carbonaceous, dolomitic and slightly calcareous in part; some brownish-gray to brownish-black shale at top and shale and siltstone toward the bottom
- 2402 2505 103 Siltstone and shale, light- to medium-gray, light and dark greenish gray, light olive gray to olive-gray, somewhat micaceous, very slightly carbonaceous, kaolinitic (particularly the siltstone), slightly calcareous and dolomitic; small amount^{of} brownish-black shale
- 2505 2540 35 Siltstone and shale, greenish-gray to light olive gray, brownish-gray and dark brownish-gray, slightly calcareous partly micaceous, partly kaolinitic, very slightly carbonaceous; trace of brownish-black and black shale; light gray to light olive gray, micaceous, kaolinitic, coarse siltstone interbedded at the bottom
- 2540 2547 7 Siltstone, light gray to light olive gray, somewhat micaceous and kaolinitic, moderately calcareous and dolomitic; interbedded olive-gray to greenish-gray and medium-gray, micaceous and kaolinitic siltstone and shale
- 2547 2559 12 Siltstone, light-gray to olive-gray, highly calcareous, somewhat micaceous and kaolinitic; a large amount of interbedded, olive-gray to greenish- and brownish-gray to medium-gray, somewhat micaceous and kaolinitic siltstone and shale

- 2559 2959 400 Siltstone and shale, light to medium-gray to light olive gray and greenish-gray, micaceous and kaolinitic, calcareous and slightly dolomitic in part; small amount of brownish-gray to brownish-black shale; trace of limestone (fossil fragments) 2640-2663, slightly dolomitic in part, 2831-2867, slightly to moderately calcareous in part, 2559-2758, very slightly calcareous and dolomitic at the bottom; trace of dark yellowish brown, sideritic shale
- 2959 3402 443 Siltstone and shale, brownish-gray and some greenish-gray at top, followed by brownish-gray, brownish-black, light olive gray, greenish-gray, and medium gray, micaceous, kaolinitic, a few scattered pyrite oolites, slightly fossiliferous, 3274-3294, very small, disc-like, brown (plant spores?), very slightly to slightly calcareous, slightly dolomitic in part
- 3402 3418 16 Shale, brownish-gray to brownish-black, silty, moderately carbonaceous, considerable interbedded light olive gray to medium-gray to greenish-gray, shale and siltstone, moderately calcareous in part, micaceous, somewhat kaolinitic
- 3418 3938 520 Shale, medium-gray to greenish-gray, light olive gray to brownish-gray, and brownish-black, silty, micaceous; interbedded medium to light-gray, light olive gray to greenish-gray, light brown to brownish-gray, micaceous, somewhat kaolinitic, partly calcareous siltstone; trace of pyrite at top, disseminated pyrite and pyrite oolites scattered throughout the interval, very slightly fossiliferous (plant spores?), 3591-3604, 3625-3632; 3665-3738, 3758-3841 slightly to moderately fossiliferous; 3841-3938 moderate to highly fossiliferous; increase in brownish-black shale; small amount of slightly to moderately calcareous and dolomitic siltstone

- 3938 4019 81 Siltstone and shale, light olive gray and olive-gray to brownish-gray and brownish-black, an increase of brownish-gray-black shale toward the bottom, micaceous and kaolinitic in part, moderately to highly fossiliferous (plant spores?), 3938-3993; small amount of slightly to moderately calcareous siltstone and shale
- 4019 4072 53 Siltstone and shale, medium-gray to brownish-gray, light olive gray to greenish-gray, somewhat micaceous and kaolinitic in part; small amount of slightly to moderately calcareous and slightly dolomitic siltstone, some interbedded brownish-black, somewhat carbonaceous shale, slightly fossiliferous
- 4072 4260 188 Shale with some siltstone, medium-gray to greenish-gray and light olive gray, brown, at top and in middle, very slightly calcareous and slightly dolomitic; at the bottom, slightly calcareous and moderately dolomitic, somewhat fossiliferous 4148-4173 and 4220; some dark brownish gray to brownish-black shale
- 4260 4437 177 Shale, medium-gray to greenish-gray, light olive gray to brownish-gray and brownish-black, silty in part; small amount of pyritic shale; small amount of slightly to moderately calcareous and moderately dolomitic shale
- 4437 4514 77 Shale, light olive-gray to olive-gray, brownish-gray to brownish-black and black, some medium gray to greenish-gray; black is highly carbonaceous, slightly pyritic (disseminated through shale and a few concretions); small amount of limestone
- 4514 4623 109 Shale, brownish-gray to black with some medium-gray, light olive gray and greenish-gray, the black shale is highly carbonaceous; small amount of limestone; a small amount of pyrite (disseminated as concretions)
- 4623 4650 27 Shale, brownish-black to black, highly carbonaceous; considerable interbedded light brownish gray to brownish-gray and some medium-gray to greenish-gray; a few pyrite fragments; moderate amount of moderately to highly calcareous shale

- 4650 4689 39 Shale, brownish and grayish-black to black, highly carbonaceous, small amount of shale is pyritic, slightly to moderately dolomitic, small amount is calcareous
- 4689 4700 11 Shale, black, very highly carbonaceous, some brownish- and grayish-black, carbonaceous shale, pyritic in part, 60%; limestone, brownish-gray to brownish-black, very fine-grained, crystalline texture, 40%
- Huntersville Chert, 140 feet
- 4700 4714 14 Limestone, light to dark brownish-gray, moderately dolomitic, crystalline, very fine grained, slightly cherty, very shaly, micaceous in part (biotite), slightly glauconitic; some brownish-black to black, carbonaceous shale; small amount of medium-gray to greenish-gray shale
- 4714 4760 46 Very cherty limestone, white to light brownish gray, slightly shaly, slightly dolomitic (dolomitic rhombs in chert), slightly sandy to a limy sandstone at bottom, pinkish gray to light brownish gray, fine- to medium-grained with some coarse chert grains, most of the sand grains are chert, moderate amount of quartz grains, some shale
- 4760 4785 25 No samples
- 4785 4800 15 Chert, white to medium gray and brownish-gray, highly calcareous, moderately dolomitic, a large amount of fine grained quartz sand and silt, shaly, a large amount of iron rust staining much of the sample
- 4800 4822 22 Limestone, very pale orange to pale yellowish brown and brownish-gray, the brownish-gray increases toward bottom, highly dolomitic, cherty and sandy, much of the chert has included rhombs of dolomite, clastic texture, slightly glauconitic, slightly shaly

- 4822 4840 18 Calcareous chert, somewhat sandy at top to a cherty, arenaceous limestone toward the center, to a cherty limestone at the bottom, brownish-gray with some pale yellowish brown at the top, brownish-gray to medium-gray in the middle, and at the bottom, pale yellowish brown to yellowish- and brownish-gray, moderately to highly dolomitic; much dolomite is included in the chert grains, somewhat glauconitic at top and middle; a large amount of rust and steel chips, slightly shaly
- Oriskany Sandstone, 40 feet
- 4840 4845 5 Sandstone, white to very light gray and medium- to coarse-grained, subrounded to rounded, moderately calcareous, hard but has good porosity, quartzose
- 4845 4850 5 Sandstone, very light gray, fine- to medium-grained with some coarse grains, quartzose, hard, subrounded to rounded, good porosity, moderately calcareous, somewhat cherty (cavings?), many of the quartz grains show secondary crystal facets
- 4850 4856 6 Sandstone, very light gray, fine-grained, some medium and a few coarse grains, quartzose, many of the grains show secondary crystal facets, subangular to subrounded, the coarse grains are rounded and frosted, moderately calcareous, stained brown by iron oxide (from tools)
- 4856 4870 14 Sandstone, light-gray with some dark-gray toward the bottom, very fine to fine-grained with some rounded medium grains near the bottom, subangular to subrounded, moderately to highly calcareous, somewhat shaly toward the bottom
- 4870 4876 6 Sandstone, light-gray with occasional dark-gray streaks, fine-grained, subangular to subrounded, some of the quartz veins show secondary crystal facets, the dark streaks are shaly, moderately calcareous
- 4876 4880 4 Sandstone, light- to medium-gray, fine-grained, subangular to subrounded, highly calcareous; considerable interbedded, dark gray, sandy, moderately calcareous shale

Helderberg Limestone, 27, plus, feet

4880	4887	7	Limestone, very pale orange to pale yellowish-brown, some grayish-brown, clastic texture, very sandy (fine grained), slightly dolomitic
4887	4894	7	Limestone, brownish-gray to brownish-black with some medium- to light-gray, slightly glauconitic, very sandy, fine-grained with some medium and coarse (rounded) grains, very shaly in part
4894	4907	13	Limestone, pale yellowish brown to brownish-gray and medium dark gray (fine-grained to silt), somewhat shaly, somewhat dolomitic, slightly glauconitic
4907			TOTAL DEPTH

4880
746
4134