



Longitude 80 45

7 1/2
0.495
11.90
0.14
4.63 W 4.57 W

6 NW (M-8)

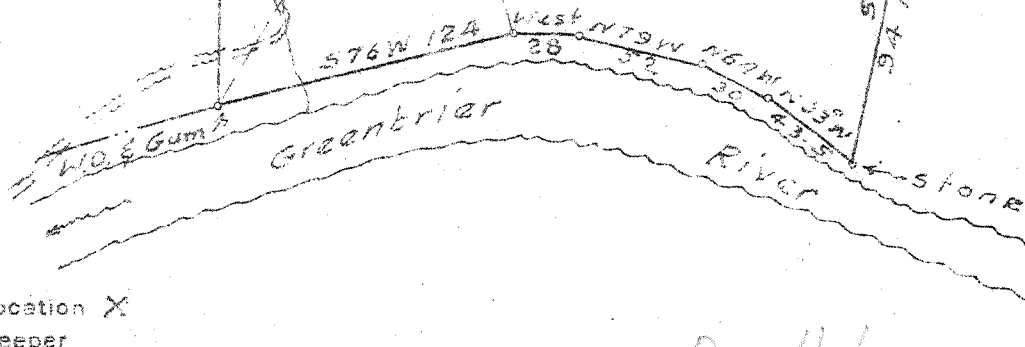
Longitude 80 45

Salas Cox & A.O. Hicks

North 650 F.

Proposed location
Walter M. Elswick
1026 ac

Lon Buckland
McNeil
Graham
Harvey



New Location X
Drill Deeper
Abandonment

Dry Hole
(turn over)

Company Godfrey L. Cabot, Inc.
 Address 300 Union Bldg. Charleston, W.Va.
 Farm Walter M. Elswick
 Tract _____ Acres 1026 Lease No. 4-678
 Well (Farm) No 1 Serial No. 1226
 Elevation (Spirit Level) 1526'
 Quadrangle Big Bend - C
 County Summers District Greenbrier
 Engineer Roy Borton
 Engineer's Registration No. _____
 File No. _____ Drawing No. _____
 Date 10-16-46 Scale 1" = 1920'

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION
CHARLESTON

WELL LOCATION MAP
FILE NO. SUM-1

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.

1-0 0

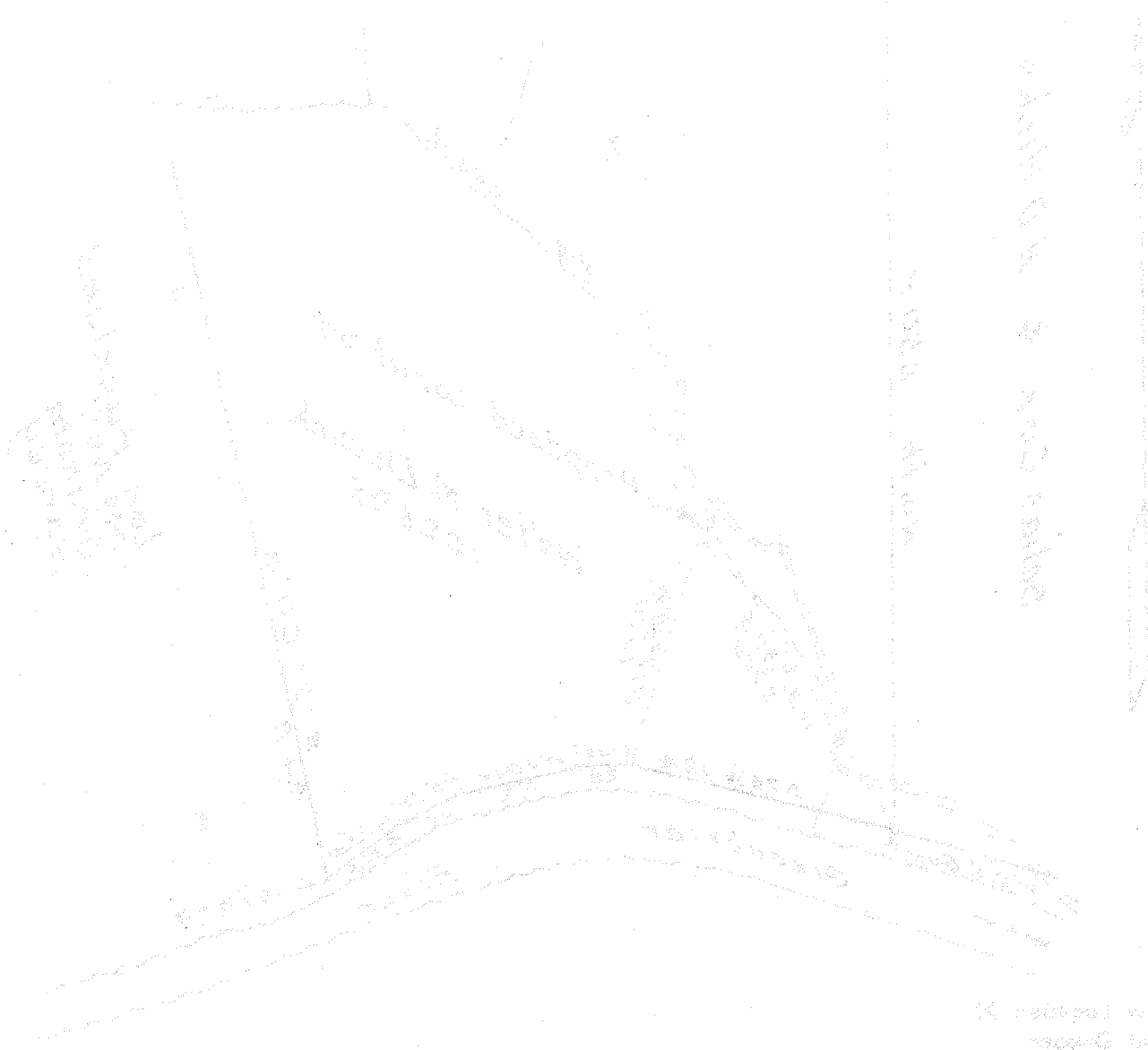
Deep Test

(Sample Record by Flowers and log strip by McLeod)

Sum-1

Volume: Dry Hole
Completed: Dec. 1, 1947

Onondagan Group: 6645 - 6720
Oriskany 6720 - 6775
Helderberg Group 6775-
Total Depth 6972'



Vertical text on the right side of the diagram, possibly a well log or depth scale.

Summary of well log data and geological observations. The text is partially obscured but appears to contain details about the well's performance and the characteristics of the rock layers encountered.

Additional notes or data from the well log, including possibly lithological descriptions and measurements.

WEST VIRGINIA DEPARTMENT OF MINES
OIL & GAS DIVISION
W E L L R E C O R D

Permit No. Summers -1
Big Bend Quad.

Dry Hole
CASING & TUBING

Company	Godfrey L. Cabot, Inc.			
Address	Charleston, W. Va.	13	12	12
Farm	Walter M. Elswick Acres	10	421	421*
Well No.	1 serial 1226 Elev. 1526	8	1205	1205**
District	Greenbrier Summers County	7	5614	5614***
Commenced	Nov. 14, 1946	5	6656	6656****
Completed	Dec. 1, 1947			
Water	38' 2 blrs. per hr.; 66' H.F.			
	850' 1 blr. per hr. (Note water exhausted at 851')			
	1400' 1/2 gallon per hr. *Collar shoe			
	** Shoe			
	*** Shoe			
	**** Shoe			

Soil	0	11	Gritty Lime	4154	4478
Sand	11	16	Slate & Shell	4478	4704
Coal	16	18	Gritty Lime	4704	5214
Lime	18	20	Slate & Shell	5214	6365
Sand	30	41	Shale Blk	6365	6652
Red Rock - <i>Maroon Chert</i>	41	48	Corniferous (samples)	6652	6731
Lime	48	60	Limy Sand Oriskany "	6731	6751
Slate	60	66	Lime	6751	6961
Red Rock	66	83	Slate & Shell	6961	6972
Lime	82	96	Total Depth	6972	
Sand	96	106			
Lime	106	125	SLM 4921		
Red Rock	125	148	SLM 6656 Gas 6569 gas pocket exhausted		
Slate	148	168			
Red Rock	168	177			
Slate & Shell	177	195			
Red Rock	195	291			
Slate & Shell	291	340			
Slate	340	355			
Slate & Shell	355	376			
Red Rock	376	386			
Slate & Shell	386	442			
Lime <i>AVIS ?? 43'</i>	442	485			
Slate & Shell	485	491			
Lime	491	506			
Slate & Shell	506	780	Gas show only 732		
Lime	780	818			
Slate & Shell	818	843			
Sand	843	850			
Lime	850	863			
Slate & Shell	863	895			
Sand	895	925			
Lime	925	1115			
Big Lime	1115	1977	Samples		
Red Rock	1977	1993			
Shale <i>Maroon</i>	1993	2016			
Red Rock	2016	2022			
Shale <i>Poc</i>	2022	2073			
Sand <i>Thin? Squaw?</i>	2073	2120			
Sandy Lime	2120	2206			
Slate & Shell	2206	2340			
Lime	2340	2425			
Slate & Shell <i>Greenbury Sh.</i>	2425	2490			
Sand <i>Beta</i>	2490	2523			
Slate & Shell	2523	2590			
Lime Gr	2590	2760			
Slate & Shell Blk	2760	2794			
Lime Wh	2794	2825			
Slate	2825	2955			
Lime	2955	3025			
Slate & Shell	3025	3266			
Lime Gr	3266	3600			
Sand Dk	3600	3688			
Lime Gr	3688	3757			
Slate & Shell	3757	3828			
Lime Gr	3828	3950			
Slate & Shell	3950	4154			

485

MAY 17 1949

O

1526
1115
+411

Location:

0.2 mi. S. of 37°40' and
4.63 mi. W. of 80°45'

WALTER M. ELSWICK NO. 1 (1226) WELL.

Greenbrier District, Summers County, W. Va.

By Godfrey L. Cabot, Inc., Charleston, W. Va.

Drilled under permit Sum-1.

On 1026 acres. Map Square 7-67.

Elevation, 1526' L.

Drilling commenced Nov. 14, 1946; completed Dec. 1, 1947.

13" casing, 12'; 10", 421' (collar shoe); 8", 1205' (shoe); 7", 5614'
(shoe); 5", 6656' (shoe).

Dry hole. Record to Dept. of Mines not dated or stamped.

Record to ROT from Mrs. Griffith April 8, 1948. Old File No. 5.

	Top.	Bottom.
Soil	0	11
Sand	11	16
Coal	16	18
Lime	18	20
Sand (water, 38', 2 bailers per hour)	30	41
Red rock	41	48
Lime	48	60
Slate	60	66
Red rock (water, 66', hole full)	66	82
Lime	82	96
Sand	96	106
Lime	106	125
Red rock	125	148
Slate	148	168
Red rock	168	177
Slate and shell	177	195
Red rock	195	291
Slate and shell	291	340
Slate	340	355
Slate and shell	355	376
Red rock	376	386
Slate and shell	386	442
Lime	442	485
Slate and shell	485	491
Lime	491	506
Slate and shell (gas, 732', show only)	506	780
Lime	780	818
Slate and shell	818	843
Sand (water, 850', 1 bailer per hour; NOTE: water exhausted at 851')	843	850
Lime	850	863
Slate and shell	863	895
Sand	895	925
Lime	925	1115
Big Lime (samples) (water, 1400', $\frac{1}{2}$ gallon per hour)	1115	1977
Red rock	1977	1993
Shale	1993	2016
Red rock	2016	2022
Shale	2022	2073
Sand	2073	2120
Sandy lime	2120	2206
Slate and shell	2206	2340
Lime	2340	2425
Slate and shell	2425	2490

(OVER)

WALTER M. ELSWICK NO. 1 (1226) WELL (Continued).

	Top.	Bottom.
Sand	2490	- 2523
Slate and shell	2523	- 2590
Lime, gray	2590	- 2760
Slate and shell, black	2760	- 2794
Lime, white	2794	- 2825
Slate	2825	- 2955
Lime	2955	- 3025
Slate and shell	3025	- 3266
Lime, gray	3266	- 3600
Sand, dark	3600	- 3688
Lime, gray	3688	- 3757
Slate and shell	3757	- 3828
Lime, gray	3828	- 3950
Slate and shell	3950	- 4154
Gritty lime	4154	- 4478
Slate and shell	4478	- 4704
Gritty lime (SIM 4921')	4704	- 5214
Slate and shell	5214	- 6365
Shale, black (SIM 6656') (gas, 6569', gas pocket, exhausted)	6365	- 6652
Corniferous Lime (samples)	6652	- 6731
Limy sand, Oriskany (samples)	6731	- 6751
Lime	6751	- 6961
Slate and shell	6961	- 6972
Total depth		6972

①

Greenbrier District, Summers County, W. Va.

By Godfrey L. Cabot, Inc., Charleston, W. Va.

Located 0.2 mi. S. of 37° 40' and 4.63 mi. W. of 80° 45' - EC - Big Bend Quadrangle

Elevation, 1526' L.

Permit Sum-1.

Drilling commenced Nov. 14, 1946; completed Dec. 1, 1947.

13" casing, 12'; 10", 471' (collar shoe); 8", 1205' (shoe); 7", 5614' (shoe);
5", 5614' (shoe).

Section based on samples from 100' to 6957', examined by Russell R. Flowers.

Record to RCT from Flowers March 1, 1949.

Top. Bottom. Thickness.

MAUCH CHUNK GROUP, 1002+ FEET.

100	-	106	6	Shale, red, 70%; siltstone, gray, 30%
106	-	110	4	No sample
110	-	119	9	Shale and siltstone, red; a little limestone
119	-	128	9	Shale, red, 90%; shale, dark-gray, 5%; siltstone, grayish-red, 5% (toward bottom of interval)
128	-	142	14	No sample
142	-	153	11	Shale, red, 70%; shale, greenish-gray to dark-gray, 15%; calcite, white, coarse-grained at top, 5%; siltstone, greenish-gray to red, micaceous toward bottom, 10%
153	-	158	5	No sample
158	-	162	4	Siltstone, calcareous, very light gray to reddish-brown, 30%; shale, red and gray, 70%, with trace of calcite
162	-	168	6	Clay, shale, red, 70%; shale, gray, 30%
168	-	178	10	Shale, very dusky red, calcareous, silty; shale, greenish-gray, very calcareous; limestone, gray, pisolitic, silty; appears to be in thin beds
178	-	188	10	No sample
188	-	194	6	Shale, gray, silty; siltstone, greenish-gray limestone, light- to dark-brown to gray
194	-	205	11	Shale and siltstone, ^{red} grayish to very dusky red, 65%; shale, greenish-gray to dark-gray, 35%
205	-	248	33	No sample
248	-	258	10	Clay-shale, grayish-red at top of interval; siltstone, shaly, very dark red, and shale, green
258	-	293	35	No samples
293	-	305	12	Shale, light- to dark-gray, silty, moderately calcareous, with grayish-green to grayish-red shale toward bottom
305	-	311	6	No sample
311	-	325	14	Shale, grayish-red, silty; shale, greenish-gray; clay, silty, dark-gray
325	-	333	8	Clay-shale, black, silty, 20%; shale, gray and grayish-brown, moderately calcareous
333	-	336	3	No sample
336	-	355	19	Sandstone, very fine to fine-grained, light-gray, with carbonaceous streaks; clay-shale, brownish-gray to black, carbonaceous, pyritic
355	-	374	19	Shale, gray, moderately calcareous, with some carbonaceous streaks
374	-	416	42	No samples
416	-	426	10	Shale, light- to dark-gray, calcareous
426	-	436	10	No samples
436	-	440	4	Shale, gray, partly calceous; some carbonaceous material
440	-	466	26	No samples
466	-	472	6	Siltstone, grayish-red, very sandy, micaceous, moderately calcareous

(OVER)

(Contd. on p. 2)

Top.	Bottom.	Thickness.	
472	- 488	16	No samples
488	- 494	6	Shale, gray, slightly calcareous; limestone, gray to brown, partly dolomitic; a small amount of gypsum
494	- 508	14	Siltstone, grayish-red and greenish-gray, shaly, mica-ceous, somewhat glauconitic?
508	- 523	15	Siltstone, greenish-gray to brownish-gray, 80%; siltstone and shale, grayish-red to very dusky red, 20%
523	- 535	12	No samples
535	- 540	5	Shale, gray, calcareous; limestone, gray, shaly; trace of calcite as crystal aggregates
540	- 561	21	No samples
561	- 598	37	Sandstone, white to light-gray, very fine to fine-grained; streaks of micaceous siltstone, moderately calcareous at top
598	- 636	38	Clay-shale, gray, laminated, soft, 75%; limestone, brownish-gray to black, 25%
636	- 653	17	Limestone, brownish-gray to dark-gray, moderately dolomitic, shale, 40%; trace of pyrite; siltstone, light- to dark-gray, calcareous, shaly, 60%
653	- 661	5	No samples
661	- 685	24	Shale, gray, distinctly laminated, highly calcareous, fossiliferous, pyritic
685	- 693	8	Shale, gray, silty, dolomitic, fossiliferous, 67%; limestone, dark-gray streaked with white, 33%
693	- 698	5	No sample
698	- 734	36	Limestone, dark-gray, shaly, fossiliferous, some pyrite toward bottom
734	- 742	8	Siltstone, light- to dark-gray, calcareous; shale, gray, silty
742	- 788	46	Limestone, mottled gray and white, somewhat oolitic, somewhat shaly at bottom
788	- 809	21	Sandstone, very fine to fine-grained, light- to medium-gray, calcareous, 75%; shale and siltstone (at bottom), gray, 25%
809	- 822	13	Siltstone and shale, gray, calcareous
822	- 829	7	No sample
829	- 836	7	Limestone, dark-gray, fossiliferous, oolitic; siltstone, light-green to greenish-gray, slightly calcareous
836	- 843	7	Siltstone, light- to medium-gray, calcareous, 40%; shale, gray, silty, calcareous; limestone, dark-gray
843	- 863	20	Sandstone, white to light greenish gray, fine-grained, calcareous, 60%; shale and siltstone, light grayish green to gray, 35%; limestone, dark-gray to brown, 5%
863	- 872	9	Siltstone and shale, gray, slightly pyritic, calcareous, 90%; limestone, dark-gray to brown, 10%
872	- 888	16	Shale and siltstone, medium-gray
888	- 892	4	No sample
892	- 895	3	Limestone, silty and calcareous; siltstone, brownish-gray to dark-gray, 70%; shale, greenish-gray to medium-gray, slightly calcareous, laminated
895	- 917	22	Sandstone, white to light-gray, fine-grained, calcareous, 60%; shale (in bottom two-thirds), light greenish gray, very sandy in part, 30%
917	- 928	11	Sandstone, fine-grained, and siltstone, light-gray to light greenish gray, highly oolitic (calcite oolites), 40%; limestone, nearly white to light-brown, grades into siltstone and sandstone, 60%

Top.	Bottom.	Thickness.	
928	- 934	6	Limestone, brown to greenish-gray, very sandy and shaly, highly oolitic
934	- 949	15	Limestone, light- to dark-brown, fossiliferous, highly oolitic, sandy
949	- 985	36	Limestone, light-brown to very dark grayish brown, highly to very highly oolitic, fossiliferous, with very little residue
985	- 1002	17	Shale, grayish-red to dark-red at top, with greenish-gray to gray, silty, calcareous shale in middle and bottom of interval
1002	- 1009	7	Shale, gray to greenish-gray, silty, calcareous to a limy shale that grades into a brown limestone
1009	- 1015	6	Shale, greenish-gray, limy; shaly limestone; limestone, light-brown
1015	- 1026	11	Interbedded: Shale, medium-gray, silty, calcareous; shale, greenish-gray, silty, moderately calcareous; and limestone, light-brown to greenish-gray
1026	- 1048	22	Limestone, nearly white to light-brown and greenish-gray, slightly dolomitic; at top interbedded with grayish-brown to greenish-gray, shaly, calcareous siltstone
1048	- 1102	54	Limestone, dark-gray, shaly, fossiliferous GREENBRIER LIMESTONE, 875 FEET
1102	- 1110	8	Limestone, dark brownish gray, fossiliferous, shaly in part (moderate amount of residue)
1110	- 1117	7	Limestone, light- to medium-gray, shaly, oolitic
1117	- 1131	14	Limestone, nearly white to light grayish brown with gray, shaly limestone and gray, silty, calcareous shale at bottom
1131	- 1146	15	Interbedded limestones; at top, limestone, dusky-red, shaly; limestone, nearly white to light-gray, highly oolitic; and at bottom, limestone, light greenish gray, shaly
1146	- 1165	19	Limestone, nearly white to dark grayish brown, highly oolitic, interbedded with a thin light greenish gray, shaly limestone
1165	- 1179	14	Limestone, dark grayish brown, shaly, oolitic
1179	- 1220	41	Limestone, medium- to dark-brown, oolitic, fossiliferous, less oolitic toward middle and bottom of interval
1220	- 1249	29	Limestone, light to dark brownish gray, oolitic, interbedded with a thin gray, silty and shaly limestone which becomes a gray, calcareous shale toward the middle of the interval
1249	- 1270	21	Limestone, light- to medium-gray
1270	- 1280	10	Limestone, white to light-brown, mostly oolitic
1280	- 1290	10	Limestone, light to dark brownish gray, fossiliferous, somewhat oolitic
1290	- 1329	39	Limestone, light to medium brownish gray, highly oolitic, moderately fossiliferous and is almost entirely oolitic with calcite cement at the top
1329	- 1335	6	Limestone, light to dark brownish gray, silty in part, fossiliferous, oolitic
1335	- 1354	19	Limestone, medium to dark brownish gray, small amount of shale in middle and lower part of interval
1354	- 1375	21	Limestone, medium-gray, silty, considerable silica residue when treated with HCl
1375	- 1401	26	Limestone, nearly white to medium grayish brown, highly oolitic at top decreasing toward bottom

Top.	Bottom.	Thickness.	
1401	- 1427	26	Limestone, medium to dark brownish gray, fossiliferous, slightly cherty, large residue when treated with HCl and at the bottom greenish-gray to gray, very silty, moderately oolitic limestone
1427	- 1470	43	Limestone, dark brownish gray, fossiliferous and oolitic in part, partly dolomitic, with a thin, brown limestone at the bottom
1470	- 1476	6	No sample
1476	- 1495	19	Limestone, light to dark brownish gray to gray, dolomitic (?) in part
1495	- 1503	8	Shale, dark-gray, highly calcareous, silty, fossiliferous at the top
1503	- 1506	3	Limestone, silty, medium to dark brownish gray, oolitic and fossiliferous
1506	- 1511	5	Limestone, medium to dark grayish brown, highly oolitic
1511	- 1538	27	Limestone, dark brownish gray to dark-gray, silty in part
1538	- 1556	18	Limestone, dark-gray, slightly fossiliferous and partly dolomitic at middle, very shaly toward bottom. At bottom a thin limestone, dark-brown with light spots, highly fossiliferous
1556	- 1575	19	Siltstone, gray, highly calcareous; limestone, medium- to dark-gray, very shaly, moderately dolomitic in part
1575	- 1597	22	Limestone, light- to dark-brown to brownish-gray, fossiliferous, oolitic at the top and middle; limestone, light- to medium-gray, shaly, dolomitic
1597	- 1612	15	Limestones interbedded: at the top, a light grayish brown limestone; limestones, light to medium grayish red, moderately dolomitic and nearly white to medium grayish green, moderately dolomitic
1612	- 1619	7	No sample
1619	- 1627	8	Limestone, grayish-red, very shaly, moderately dolomitic
1627	- 1634	7	No sample
1634	- 1646	12	Limestone, light to dark grayish brown, sandy, oolitic in part, interbedded with thin, medium-gray, shaly and thin, red and green dolomitic limestones
1646	- 1678	32	Limestone, medium to dark grayish brown, moderately oolitic, dolomitic in part
1678	- 1687	9	Shale, dark-gray, highly calcareous, silty
1687	- 1716	29	Limestone, nearly white to dark grayish brown, slightly dolomitic near center, and highly oolitic at the bottom
1716	- 1722	6	No sample
1722	- 1736	14	Siltstone, light brownish red to brown to gray, highly calcareous, interbedded with a light-gray to dark-brown, partly oolitic limestone
1736	- 1743	7	Limestone, dark-brown to gray, clastic texture, mostly oolitic
1743	- 1760	17	Limestone, medium-brown, dolomitic, with a few feet of dark-gray, silty, highly calcareous shale at the top
1760	- 1786	26	Limestone, light- to medium-brown, slightly dolomitic at the top, increasing to moderately dolomitic at bottom
1786	- 1797	11	Limestone, light-brown, sandy, dolomitic (?), 50%; limestone, light-gray, shaly, 50%
1797	- 1815	18	Limestone, dark brownish gray, shaly and silty, fossiliferous, interbedded with a thin, green, calcareous shale at the middle, and a thin brown, oolitic limestone
1815	- 1826	11	Limestone, light- to dark-brown, slightly sandy, with an occasional large sand grain interbedded at top with a thin, dark brownish gray limestone and at bottom a thin, light-gray, shaly limestone

Top.	Bottom.	Thickness.	
1826	- 1844	18	Limestone, light- to dark-brown, partly sandy and dolomitic at top
1844	- 1846	2	Shale, gray, silty, highly calcareous
1846	- 1867	21	Limestone, light-brown to brownish-black, slightly cherty at top and slightly dolomitic toward bottom
1867	- 1882	15	Dolomite, white to light-gray, calcareous, slightly cherty, interbedded with a thinner, light-brown to brownish-black limestone that has highly dolomitic portions
1882	- 1907	25	Dolomite, white, very sandy, calcareous, interbedded with a thin, light olive gray to greenish-gray, highly dolomitic, calcareous shale
1907	- 1912	5	Shale, light olive gray to medium-gray, highly dolomitic, calcareous; limestone, brownish-gray to brownish- and grayish-black, highly oolitic, fossiliferous, trace of chert
1912	- 1935	23	Interbedded limestone, brownish-gray to brownish-black, slightly dolomitic, cherty; at top, medium-gray, dolomitic shaly limestone; lower in the interval, thin, green to greenish-gray, moderately dolomitic, slightly calcareous shales
1935	- 1942	7	Limestone, brownish-gray to brownish-black, highly dolomitic in part, moderately cherty
1942	- 1956	14	Limestone, brownish-black, highly dolomitic, slightly cherty; trace of gypsum
1956	- 1977	21	Interbedded: limestone, light brownish gray, highly dolomitic, silty in part; limestone, brownish-gray to brownish-black, dolomitic; a small amount of anhydrite; near the bottom, shale, light-gray to greenish-gray, highly dolomitic, calcareous
MACCRADY FORMATION, 47 FEET			
1977	- 1998	21	Interbedded: siltstone, gray to greenish-gray, calcareous, streaked with dolomitic limestone, 25%; shale, grayish-red, calcareous, silty, 25%; trace of white anhydrite
1998	- 2007	9	Shaly dolomitic limestone to calcareous, dolomitic shale and siltstone, gray to greenish-gray, 75%; shale and siltstone, grayish-red to reddish-gray, 25%
2007	- 2023	16	Interbedded: shale and siltstone, grayish-red, calcareous; siltstone to shale to shaly dolomitic limestone, gray to greenish-gray; a small amount of anhydrite with included chlorite
2023	- 2024	1	Shale, grayish-red, partly calcareous
POCONO FORMATION AND DEVONIAN SHALES, 4623 FEET			
2024	- 2052	28	Siltstone and shale, brownish-gray to greenish-gray, moderately calcareous; small amount of anhydrite with chlorite inclusions
2052	- 2073	21	Clay-shale, 80%; moderately calcareous, light olive-gray to greenish-gray, contains much sand (fine to coarse), well-rounded for the most part, small amount of pyrite and chlorite interbedded with brownish-gray to greenish-gray shale and siltstone, 20%
2073	- 2080	7	Sandstone, light pinkish gray to light greenish gray, fine to coarse, angular to subangular, a very tight sand; shale, gray, grayish-red, brownish-gray, greenish-gray (cavings?); clay-shale, 20%
2080	- 2092	12	Sandstone, light greenish gray to nearly white, fine to coarse, angular to subangular, a small amount of chlorite scattered throughout

Top.	Bottom.	Thickness.	
2092	- 2097	5	Sandstone, light olive gray, very fine and very tight
2097	- 2102	5	No sample
2102	- 2142	40	Sandstone, brownish-gray, very fine, silty, micaceous, slightly calcareous (very tight sand)
2142	- 2149	7	Sandstone, brownish-gray, very fine, (very tight), silty, micaceous, slightly calcareous; interbedded with a siltstone and light brownish gray, fine to coarse sandstone
2149	- 2164	15	Interbedded: shale, brownish- to grayish-black; sandstone, brownish-gray, very fine to coarse, silty in part
2164	- 2180	16	Shale, brownish- to grayish-black; siltstone, brownish-gray, sandy, micaceous. The shale predominates at the top
2180	- 2194	14	Siltstone to fine sandstone, brownish-gray, interstratified with thinner layers of medium dark gray shales and siltstones
2194	- 2197	3	No sample
2197	- 2202	5	Sandstone, light greenish gray with light reddish gray streaks, very fine, very tight
2202	- 2206	4	No sample
2206	- 2225	19	Shale, brownish- to grayish-black, silty
2225	- 2240	15	Siltstone, brownish-gray to brownish-black
2240	- 2256	16	Siltstone, brownish-gray to medium dark gray, coarse, calcareous in part, sandy
2256	- 2290	34	Siltstone, brownish-gray to medium dark gray, fine- to coarse-grained, calcareous in part; small amount of medium- to dark-gray, silty shale
2290	- 2307	17	Siltstone, light olive gray to medium-gray, coarse to fine, slightly to moderately calcareous, with a medium- to dark-gray, poorly laminated, silty shale near the bottom
2307	- 2341	34	Siltstone, brownish and light olive gray to medium-gray, moderately calcareous, fine- to coarse-grained, with a mottled greenish-black and brownish-red, medium to coarse, moderately calcareous siltstone near the top
2341	- 2347	6	No sample
2347	- 2356	9	Siltstone, light- to medium-gray, fine- to medium-grained, calcareous in part, 80%; shale, medium- to dark-gray, silty, laminated, 20%
2356	- 2375	19	Siltstone, brownish-gray and medium-gray to medium dark gray, fine- to medium-grained, with a small amount of medium- to dark-gray shale
2375	- 2400	25	Siltstone, light to dark brownish gray, fine- to medium-grained
2400	- 2450	50	Shale, dark-gray to grayish-black, 80% (Sunbury Shale); sandstone, light brownish gray, fine-grained, 10%; siltstone, light- to medium-gray, coarse- to fine-grained, 10%
2450	- 2525	75	Sandstone, yellowish-gray, subangular to curvilinear, a fairly tight sand, fine- to medium-grained at the top, fine toward the middle, and very fine grained to coarse silt at the bottom (Berea), 50%; shale, medium- to dark-gray at top, medium dark gray to grayish-black toward the bottom, 50%
2525	- 2550	25	Shale, medium dark gray to grayish-black
2550	- 2580	30	Shale, medium- to dark-gray, distinctly laminated in part very sandy in part, interbedded with a medium-gray fine- to coarse-grained siltstone at the bottom
2580	- 2610	30	Siltstone, light- to medium-gray, fine- to medium-grained, shaly; trace of calcite and siderite

Top. Bottom. Thickness.

2610 - 2625	15	Siltstone, very light to light-gray, coarse-grained, 85%; shale, medium- to dark-gray, silty, 15%
2625 - 2650	25	Siltstone, very light to light-gray, medium- to coarse-grained, 60%; siltstone and shale, medium- to dark-gray, micaceous, 40%; siltstone, medium-grained, sideritic; trace of calcite
2650 - 2677	27	Siltstone, very light gray, coarse; trace of calcite
2677 - 2692	15	Siltstone, very light gray to dark brownish gray, shaly
2692 - 2707	15	Shale, medium-gray to grayish-black, very silty
2707 - 2713	6	Siltstone, very light gray, medium-grained, slightly calcareous, interbedded with a medium- to dark-gray, very silty thin shale
2713 - 2732	19	Siltstone, very light gray to medium, partly shaly, very slightly calcareous, with a very silty, medium-dark to dark-gray shale at the bottom
2732 - 2744	12	Siltstone and shale, very light to dark-gray, very slightly calcareous
2744 - 2768	24	Shale, light- to dark-gray, very silty; small amount of dolomitic limestone; pyritic toward the bottom
2768 - 2780	12	Siltstone, medium light gray to light brownish gray, fine- to coarse-grained, interbedded with a medium-gray to grayish-black, slightly pyritic shale
2780 - 2784	4	No sample
2784 - 2794	10	Shale and siltstone, medium light to dark-gray; trace of siderite; trace of calcite
2794 - 2824	30	Siltstone, very light to medium light gray, very shaly, fine- to coarse-grained, calcareous in part, interbedded with a medium light gray to grayish-black, very silty shale near the top
2824 - 2890	66	Siltstone and shale, light to medium dark gray, slightly calcareous near the bottom
2890 - 2990	100	Siltstone and shale, very light to medium-gray, very slightly carbonaceous, slightly calcareous in part
2990 - 2999	9	Sandstone, brownish-gray, very fine grained, very silty, moderately calcareous, 70%; siltstone, fine- to coarse-grained, olive-gray to very light gray, 20%; shale, light- to medium-gray, silty, 10%
2999 - 3290	91	Shale and siltstone, light- to medium dark gray to greenish-gray, very slightly carbonaceous at top and middle, very slightly carbonaceous at the top and middle to slightly calcareous toward the bottom; trace of pyrite at the top
3290 - 3335	45	Shale, medium light to medium-gray, silty, interbedded with a very light to medium dark gray to light olive gray, slightly calcareous, micaceous in part <i>siltstone</i>
3335 - 3400	65	Siltstone, light-gray to light olive gray, slightly micaceous, slightly calcareous, interbedded with a light- to dark-gray, partly silty shale
3400 - 3430	30	Siltstone, very light gray to greenish-gray, moderately calcareous, interbedded with medium light to medium dark gray, partly silty shale in upper part; scattered fragments of limestone
3430 - 3445	15	Siltstone, very light to dark-gray, highly calcareous, shaly, coarse-grained at top of interval and at bottom interbedded with a medium light to dark-gray, very silty shale; scattered fragments of limestone

(Contd. on p. 8)

Top.	Bottom.	Thickness.	
3445	- 3460	15	Siltstone, grayish-brown, brownish-gray, light- to dark-gray, moderately calcareous, 85%; shale, medium light gray to dark-gray, dusky-brown to brownish-black, very silty in part, 15%
3460	- 3469	9	Siltstone, light- to medium-gray, highly calcareous, medium- to coarse-grained
3469	- 3603	134	Siltstone, light- to medium dark gray to greenish-gray, moderately to highly calcareous, slightly carbonaceous toward the bottom, interbedded with small amounts of medium light to dark-gray silty shale
3603	- 3618	15	Siltstone, light- to medium dark gray, slightly calcareous; small amounts of medium- to dark-gray silty shale
3618	- 3635	17	Siltstone, dark-gray to grayish-black, moderately calcareous, with streaks of calcite interbedded with brownish-gray siltstone (streaked with calcite), and a small amount of brownish-gray shale
3635	- 3658	23	Siltstone, light- to medium-gray, slightly calcareous, with a small amount of medium- to dark-gray, silty shale; some limestone fragments
3658	- 3766	108	Siltstone, greenish-gray and light- to medium-gray, medium- to coarse-grained, slightly to moderately calcareous; small amount of medium- to dark-gray, very silty shale
3766	- 3900	134	Siltstone, light olive gray to medium-gray, very slightly to slightly calcareous, interbedded with medium- to light-gray to dark-gray, silty shale
3900	- 3960	60	Siltstone, light olive gray to medium-gray, very slightly calcareous; shale, medium light gray to grayish-black; the grayish-black shale is very silty
3960	- 4507	547	Siltstone, light olive gray to medium-gray, very slightly calcareous, interbedded with brownish-gray to brownish- and grayish-black, silty shales; the grayish-black shales are carbonaceous; pyritic in part toward the bottom
4507	- 4539	32	Shale, grayish-black to black, carbonaceous, distinctly laminated, 45%; shale, medium-gray to brownish-gray and brownish-black, pyritic, 45%; siltstone, light olive gray, slightly calcareous, 10%
4539	- 4615	76	Shale, medium-gray to brownish-gray to grayish-black; grayish-black shale is carbonaceous; siltstone, light olive gray to brownish-gray, pyritic, slightly calcareous
4615	- 4693	78	Siltstone, light olive gray to medium- and brownish-gray, moderately calcareous at top to slightly calcareous at bottom, micaceous at the top; shale, medium- to brownish-gray to black; black is carbonaceous, silty
4693	- 4780	87	Siltstone, very light to light olive gray to medium-gray, slightly calcareous at top, moderately calcareous toward the bottom, interbedded with a smaller amount of medium light gray to dark-gray, partly silty shale; small amount of grayish-black to black shale
4780	- 4828	48	Siltstone, very light gray to greenish-gray to medium light gray, slightly to moderately calcareous; shale, light-gray to medium-gray, partly silty
4828	- 4921	93	Siltstone, light olive gray to greenish-gray, slightly to moderately calcareous; interbedded with medium light gray to grayish-black, partly silty, partly laminated shales with mostly dark shales toward the bottom

Top.	Bottom.	Thickness.	
4921	- 5020	99	Siltstone, light to dark greenish gray to olive-gray; shale, Medium- to dark-gray, silty in part; trace of calcite
5020	- 5090	70	Siltstone, light to dark olive gray to greenish-gray, slightly to moderately calcareous; interbedded with light-gray to grayish-black silty shales
5090	- 5150	60	Shale, medium light gray to medium dark gray; siltstone, light to dark olive gray to medium-gray, moderately calcareous
5150	- 5207	57	Interbedded: siltstone, light to dark olive gray to medium-gray, very slightly calcareous; shale, medium-gray to brownish-gray to grayish-black, silty in part; increase in grayish-black toward bottom
5207	- 5240	33	Shale, grayish-black to black, carbonaceous, 50%; shale, medium light to brownish-gray to brownish-black, 35%; siltstone, light to dark olive gray to medium-gray, very slightly carbonaceous, 15%
5240	- 5296	56	Shale, medium-gray and and brownish-gray to brownish- and grayish-black, poorly laminated, 80%; siltstone, light to dark olive gray to medium-gray, very slightly calcareous; trace of calcite
5296	- 5325	29	Siltstone, light to dark olive gray to medium-gray, moderately calcareous, interbedded with medium- to dark-gray shale, moderately calcareous, in part, laminated; the shale is present in greatest amount at top, decreasing toward the bottom
5325	- 5360	35	Shale, brownish-gray to brownish-black to black, slightly to moderately calcareous, poorly laminated, interbedded with siltstone, light to dark olive gray; the siltstone is 10% at top, increasing to 30% at the bottom
5360	- 5380	20	Siltstone, light- to medium dark gray to greenish-gray, medium- to coarse-grained, very slightly calcareous, 50%; interbedded with a medium-gray to grayish-black laminated shale, 50%
5380	- 5389	9	No sample
5389	- 5443	54	Interbedded: shale, medium- to brownish-gray to grayish-black, 80%; siltstone, light to dark olive gray to medium-gray, very slightly calcareous, 20%
5443	- 5500	57	Shale, medium- to brownish-gray to brownish-black to black, distinctly laminated; black shale is carbonaceous; siltstone, light olive gray, somewhat calcareous
5500	- 5576	76	Interbedded: shale, grayish-black to black; black is carbonaceous; 35%; shale, medium- to brownish-gray to brownish-black, silty, 50%; siltstone, light to dark olive gray, 15%
5576	- 5615	39	No samples
5615	- 5808	193	Shale, grayish-black to black; black is carbonaceous; 35%; shale and siltstone, medium- to dark-gray, slightly carbonaceous, 65%; trace of calcite; small amount of limestone, white to yellowish-gray, very sandy at the top
5808	- 5848	48	Interbedded: shale, medium light to dark-gray, 50% at the top, increasing to over 60% at base of interval; siltstone, medium light gray, moderately calcareous; trace of grayish-black to black shale
5848	- 5860	12	Shale, medium-gray to grayish-black in greatest amount, interbedded with siltstone, medium light gray to medium-gray, fine- to medium-grained, slightly calcareous, and a small amount of highly micaceous, brownish-gray siltstone, partly coarse-grained and partly extremely fine-grained (cleaves readily in thin flakes)

Top.	Bottom.	Thickness.	
5860	- 5960	100	Shale, medium-gray to grayish-black, silty, 90%; siltstone, light- to medium-gray, slightly to very slightly calcareous; trace of calcite
5960	- 6020	60	Shale, medium- to dark-gray, partly silty, 80%; interbedded with a grayish-black shale; black is carbonaceous; 20%
6020	- 6030	10	No sample
6030	- 6090	60	Shale, medium- to dark-gray, 70%; siltstone, light to dark-gray, moderately calcareous, 25%; shale, grayish-black to black, 5%; trace of calcite
6090	- 6102	12	No samples
6102	- 6162	60	Interbedded: shale, medium- to dark-gray, partly silty, 60%; siltstone, light to dark olive gray, slightly calcareous, 15% at top to trace at bottom; shale, grayish-black to black; black is carbonaceous; trace at top, 30% at bottom; trace of calcite
6162	- 6194	32	Shale, medium- to dark-gray, silty; trace of calcite
6194	- 6205	11	No sample
6205	- 6271	66	Shale and siltstone, medium light to medium-gray; trace of limestone
6271	- 6278	7	No sample
6278	- 6314	36	Shale, medium- to dark-gray, silty; small amount of limestone
6314	- 6375	61	Shale, medium-gray to black, silty, slightly carbonaceous; small amount of limestone
6375	- 6391	16	No sample
6391	- 6498	107	Shale, grayish-black to black; black is carbonaceous and decreases at the bottom of the interval; small amount of limestone at the bottom of the interval; small amount of limestone
6498	- 6518	20	Shale, medium dark gray to black, partly carbonaceous; small amount of limestone
6518	- 6525	7	No sample
6525	- 6569	44	Shale, medium dark gray to grayish-black, slightly calcareous, 60%-70%; shale, black, carbonaceous, 30%-40%, increasing toward the bottom of the interval; small amount of limestone
6569	- 6647	78	Interbedded: shale, black, carbonaceous, slightly calcareous at top to highly calcareous and moderately dolomitic at the bottom, 50% at top to 70% at bottom, interbedded with grayish-black to dark-gray, slightly carbonaceous, slightly calcareous at top to moderately calcareous to highly calcareous and moderately dolomitic at the bottom; small amount of dark-gray carbonaceous limestone
HUNTERSVILLE CHERT, 77 FEET			
6647	- 6657	10	No sample
6657	- 6658	1	Chert, very light gray to brownish-gray, slightly calcareous; chert, milky-white to medium dark gray, very shaly, highly calcareous in part
6658	- 6660	2	Shale, medium dark gray to grayish-black, highly calcareous and dolomitic, 80%; chert, light- to dark-brown, slightly calcareous, 20%
6660	- 6666	6	Chert, very light gray to grayish-black, very shaly, highly calcareous and moderately dolomitic, very slightly to slightly glauconitic
6666	- 6676	10	Shaly chert to cherty shale, very light gray to grayish-black, very highly glauconitic (indices below 1.58, almost a match), highly calcareous
6676	- 6681	5	No sample

Top.	Bottom.	Thickness.	
6681	- 6696	15	Chert, light-gray to grayish-black, very shaly at top, slightly (at top) to highly calcareous (at bottom)
6696	- 6698	2	No sample
6698	- 6703	5	Chert, very light ^{gray} to brownish-gray to grayish-black, very calcareous; limestone, very light to dark-gray, cherty, shaly
6703	- 6708	5	No sample
6708	- 6720	12	Limestone, very light gray to brownish-gray to grayish-black, very cherty and shaly, partly glauconitic, somewhat sandy
			<u>ORISKANY SANDSTONE, 27 FEET</u>
6720	- 6724	4	Sandy limestone, shaly, and chert
6724	- 6728	4	Sandstone, nearly white to medium-gray, very fine to fine-grained, highly calcareous
6728	- 6743	15	No samples
			<u>HELDERBERG GROUP, 172+ FEET</u>
6743	- 6751	8	Sandstone, nearly white to light-gray, fine- to medium-grained, subangular to subrounded, quartzose, much of the quartz grains are clear and glassy, many of the large grains are round and forsted, highly calcareous
6751	- 6762	11	Limestone, very light gray to grayish-black; the light colored is very sandy and cherty; the darker is very shaly, increasing toward the bottom where it is fossiliferous
6762	- 6763	1	No sample
6763	- 6766	3	Sandstone, nearly white to light-gray, mostly milky-white chert and clear glassy fine quartz grains, highly calcareous, slightly shaly
6766	- 6769	3	No sample
6769	- 6775	6	Cherty limestone at top to limy chert at bottom; chert nearly white to light-gray; limestone light- to medium-gray, very sandy
6775	- 6781	6	Limestone, light- to dark-gray, very cherty, shaly
6781	- 6787	6	Limestone, medium to dark brownish gray, very shaly, cherty
6787	- 6792	5	No sample
6792	- 6800	8	Limestone, white to medium-gray, cherty, slightly shaly in upper part, lower part slightly sandy
6800	- 6813	13	Limestone, white to medium-gray, clastic texture, very sandy, slightly shaly and slightly dolomitic at bottom
6813	- 6826	13	Cherty limestone at top to limy chert at bottom, clastic texture, light-gray to grayish-black, very sandy, shaly
6826	- 6832	6	Sandstone, very light gray to grayish-black, very fine grained, highly calcareous, cherty and shaly at top, very shaly at bottom
6832	- 6838	6	No samples
6838	- 6844	6	Limestone, very light gray to grayish-black, clastic texture, very sandy (at top) to sandy, shaly, and cherty
6844	- 6856	12	Limestone, medium- to dark-gray, clastic texture, sandy, shaly, and cherty
6856	- 6881	25	Shale, dark-gray to grayish-black, highly calcareous, with a large amount of interbedded white to medium-gray, very sandy, cherty limestone, with a clastic texture, very shaly, extremely sandy (approaching calcareous sandstone), somewhat fossiliferous at bottom
6881	- 6886	5	No samples
6886	- 6893	7	Limestone, very light to medium-gray, clastic texture, very sandy, slightly shaly

(Contd. on p. 12)

Top.	Bottom.	Thickness.	
6893	- 6897	4	No sample
6897	- 6905	8	Limestone, light-gray to grayish-black, clastic texture, very shaly, sandy
6905	- 6909	4	Limestone, light- to medium-gray, clastic texture, very sandy (almost a calcareous sandstone), shaly
6909	- 6923	14	Limestone, light to dark brownish gray, clastic texture, very highly oolitic, sandy; a little shale
6923	- 6930	7	Limestone, dark-gray to grayish-black, somewhat oolitic, slightly sandy, 50%; sandstone, light- to medium-gray, very highly calcareous, very fine grained; quartz grains are subangular to subrounded
6930	- 6935	5	No samples
6935	- 6938	3	Sandstone, medium- ^{gray} to dark-gray, highly calcareous, very fine grained, quartz grains subangular to subrounded, pyritic, 75%; limestone light- to dark-gray and brownish-gray, moderately dolomitic, very cherty, 25%
6938	- 6947	9	Limestone, medium- to brownish-gray to grayish-black, shaly, sandy, and cherty, with considerable interbedded medium dark gray to dark greenish gray, slightly sandy limestone
6947	- 6957	10	Limestone, medium-gray to grayish-black, slightly shaly, sandy and silty, slightly dolomitic
6957	- 6972	15	No samples
	6972		Total depth

Greenbrier District, Summers County, W. Va.

By Godfrey L. Cabot, Inc.

REVISION, Depth Interval: 6691-6758'.

Record from Flowers April 10, 1950.

Top.	Bottom.	Thickness.	
6691	- 6696	5	Chert (medium-gray) to silicified, silty shale (dark-gray), calcareous and somewhat dolomitic
6696	- 6698	2	No sample
6698	- 6700	2	Chert to silicified shale, medium- to dark-gray, calcareous; some dark-gray to grayish-black, sandy (very fine), silty, highly glauconitic shale (this appears to be the base of the Huntersville Chert)
HELDERSBERG FORMATION			
6700	- 6703	3	Limestone, medium light to medium dark gray, very silty to a calcareous siltstone; a trace of sphalerite
6703	- 6708	5	No sample
6708	- 6713	5	Sandstone (very fine, highly calcareous) to limestone (very sandy), medium-gray with dark-gray streaks, very shaly and silty
6713	- 6720	7	Limestone, medium- to dark-gray, very silty to a grayish-black, silty, calcareous shale; small amount of chert
6720	- 6728	8	Sandstone, light- to medium-gray (with dark-gray shaly streaks), very highly calcareous to a sandy limestone, very fine to fine-grained, some medium grains (rounded)
6728	- 6743	15	No sample
6743	- 6751	8	Sandstone, light-gray, fine-grained, with many medium grains (rounded), very highly calcareous to a very sandy limestone at the bottom; contains some shaly material
6751	- 6758	7	Limestone, medium-gray with very sandy light-gray and very shaly dark-gray spots and streaks, cherty

6647

1526

5171

6700

1526

5174