OLO No. 767 Stein & McComas #5 Harts Creek District Lincoln Co., W. Va. Elevation: 1149'

Line 814

Examined: 12-20-48

1 2 - 4 5 - 7	1779 - 1783 1783 - 1796 1796 - 1811	Gray limestone. Drills medium. Light brown limestone. Drills medium to medium fine. Very light tan to white limestone. Drills medium.
8 - 9 10	1816 - 1832 1832 - 1837	(7" Casing set at 1806'.) Dense yellow limestone. Drills medium. Light tan and white limestone, a few oolites. Drills medium.
11 12 - 13 14	1837 - 1843 1843 - 1856 1856 - 1861	Light gray silty limestone. Drills medium. Light tan limestone. Drills medium. Very light gray limestone with some pale green mudstone
15 16 <b>-</b> 17	1861 - 1865 1865 - 1877	mixed and silty. (Top Big Lime 1861.) Dense white limestone. Drills medium fine. White to very light tan slightly colitic limestone. Drills medium.
18 - 20 21 - 23		Dense white limestone. Drills medium. White slightly oolitic limestone. Drills medium to medium fine.
24 - 25 26 - 29	1914 - 1939	Yellow to tan silty limestone. Drills medium. Light greenish gray dolomitic silty limestone. Drills medium to coarse.
30 - 32 33	1939 - 1961 1961 - 1968	Dense light tan limestone. Drills medium fine to coarse flat pieces. Light tan and greenish gray limestone and dolomitic
		limestone. Drills medium to coarse flat pieces.
-		Examined: 12-21-48
34	<b>1968 - 197</b> 6	Very light brown slightly colitic leached limestone with red inclusions and encrustations, a few rounded quartz
		Very light brown slightly oolitic leached limestone with red inclusions and encrustations, a few rounded quartz pebbles. (Base Big Lime 1976.)
34 35 36 - 39	1976 - 1984	Very light brown slightly colitic leached limestone with red inclusions and encrustations, a few rounded quartz pebbles. (Base Big Lime 1976.) Reddish brown siltstone. Drills medium.
35 36 - 39 40 - 42	1976 - 1984 1984 - 2017 2017 - 2049	Very light brown slightly colitic leached limestone with red inclusions and encrustations, a few rounded quartz pebbles. (Base Big Lime 1976.) Reddish brown siltstone. Drills medium. Red mudstone and silty mudstone. Drills medium to coarse. Light gray sandstone shell with pyrite at top and gray
35 36 - 39 40 - 42 43 - 48	1976 - 1984 1984 - 2017	Very light brown slightly colitic leached limestone with red inclusions and encrustations, a few rounded quartz pebbles. (Base Big Lime 1976.) Reddish brown siltstone. Drills medium. Red mudstone and silty mudstone. Drills medium to coarse.
35 36 - 39 40 - 42 43 - 48 * * * *	1976 - 1984 1984 - 2017 2017 - 2049 2049 - 2108	Very light brown slightly colitic leached limestone with red inclusions and encrustations, a few rounded quartz pebbles. (Base Big Lime 1976.) Reddish brown siltstone. Drills medium. Red mudstone and silty mudstone. Drills medium to coarse. Light gray sandstone shell with pyrite at top and gray mudstone. Drills medium. (43 M Gas 2023.) Gray micaceous siltstone with black bituminous specks and a little tan sandstone shell. Drills medium.
35 36 - 39 40 - 42 43 - 48 * * * * 49	1976 - 1984 1984 - 2017 2017 - 2049 2049 - 2108 2478 - 2491	Very light brown slightly colitic leached limestone with red inclusions and encrustations, a few rounded quartz pebbles. (Base Big Lime 1976.) Reddish brown siltstone. Drills medium. Red mudstone and silty mudstone. Drills medium to coarse. Light gray sandstone shell with pyrite at top and gray mudstone. Drills medium. (43 M Gas 2023.) Gray micaceous siltstone with black bituminous specks and a little tan sandstone shell. Drills medium. Gray mudstone and light tan silty sandstone shell. Drills medium.
35 36 - 39 40 - 42 43 - 48 * * * * 49 50 - 51	1976 - 1984 1984 - 2017 2017 - 2049 2049 - 2108	<pre>Very light brown slightly oolitic leached limestone with red inclusions and encrustations, a few rounded quartz pebbles. (Base Big Lime 1976.) Reddish brown siltstone. Drills medium. Red mudstone and silty mudstone. Drills medium to coarse. Light gray sandstone shell with pyrite at top and gray mudstone. Drills medium. (43 M Gas 2023.) Gray micaceous siltstone with black bituminous specks and a little tan sandstone shell. Drills medium. Gray mudstone and light tan silty sandstone shell. Drills medium. Black shale, some pyrite. Drills medium. White quartz, fine-grained sandstone, pyrite, slightly</pre>
35 36 - 39 40 - 42 43 - 48 * * * * 49 50 - 51 52 - 53	1976 - 1984  1984 - 2017  2017 - 2049  2049 - 2108  2478 - 2491  2491 - 2516  2516 - 2530	<pre>Very light brown slightly oolitic leached limestone with red inclusions and encrustations, a few rounded quartz pebbles. (Base Big Lime 1976.) Reddish brown siltstone. Drills medium. Red mudstone and silty mudstone. Drills medium to coarse. Light gray sandstone shell with pyrite at top and gray mudstone. Drills medium. (43 M Gas 2023.) Gray micaceous siltstone with black bituminous specks and a little tan sandstone shell. Drills medium. Gray mudstone and light tan silty sandstone shell. Drills medium. Black shale, some pyrite. Drills medium. White quartz, fine-grained sandstone, pyrite, slightly limy, Drills medium fine to medium pieces.</pre>
35 $36 - 39$ $40 - 42$ $43 - 48$ $* * * *$ $49$ $50 - 51$ $52 - 53$ $54$ $55 - 56$	1976 - 1984  1984 - 2017  2017 - 2049  2049 - 2108  2478 - 2491  2491 - 2516  2516 - 2530  2530 - 2533  2533 - 2541	<pre>Very light brown slightly colitic leached limestone with red inclusions and encrustations, a few rounded quartz pebbles. (Base Big Lime 1976.) Reddish brown siltstone. Drills medium. Red mudstone and silty mudstone. Drills medium to coarse. Light gray sandstone shell with pyrite at top and gray mudstone. Drills medium. (43 M Gas 2023.) Gray micaceous siltstone with black bituminous specks and a little tan sandstone shell. Drills medium. Gray mudstone and light tan silty sandstone shell. Drills medium. Black shale, some pyrite. Drills medium. White quartz, fine-grained sandstone, pyrite, slightly limy/ Drills medium fine to medium pieces. Do and gray mudstone. Drills medium. Light gray siltstone shell - pyrite - and dark gray silty</pre>
35 $36 - 39$ $40 - 42$ $43 - 48$ $* * * *$ $49$ $50 - 51$ $52 - 53$ $54$ $55 - 56$	1976 - 1984  1984 - 2017  2017 - 2049  2049 - 2108  2478 - 2491  2491 - 2516  2516 - 2530	<pre>Very light brown slightly oolitic leached limestone with red inclusions and encrustations, a few rounded quartz pebbles. (Base Big Lime 1976.) Reddish brown siltstone. Drills medium. Red mudstone and silty mudstone. Drills medium to coarse. Light gray sandstone shell with pyrite at top and gray mudstone. Drills medium. (43 M Gas 2023.) Gray micaceous siltstone with black bituminous specks and a little tan sandstone shell. Drills medium. Gray mudstone and light tan silty sandstone shell. Drills medium. Black shale, some pyrite. Drills medium. White quartz, fine-grained sandstone, pyrite, slightly limy/ Drills medium fine to medium pieces. Do and gray mudstone. Drills medium.</pre>

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	6 <b>0</b>		2563 -	2572	Gray shale and silty mudstone and a little siltstone
	61		2572 -	2581	shell with pyrite. Drills medium. Gray mudstone and silty micaceous mudstone with pyrite.
	6 <b>2</b>		2581 -	2591	Drills coarse. Gray, some light gray, mudstone and some gray siltstone shell with pyrite. Drills medium.
	63		2591 -	2600	Light gray mudstone, some silty mudstone. Drills coarse.
* * 64	<del>-</del>	65	3385 -	- 3403	(Gas increased 43 M to 63 M.) Light gray mudstone and some siltstone shell and light brown shale 20%. Drills medium fine.
66	-	67	3403 -	- 3425	Light gray siltstone and sandstone shell and light gray mudstone. Drills medium fine.
68		71	3425 -	- 3474	Light gray mudstone and siltstone shell and a little light Brown Shale 10%. Drills medium.
72	-	74	3474 -	- 3504	Light gray mudstone and sandstone shell and a little Brown Shale 5%. Drills medium fine.
75	-	77	3504 -	- 3541	Light gray mudstone and a little silty sandstone shell with pyrite and light Brown Shale 5%. Drills medium to coarse.
78	-	80	3541 .	- 3568	Gray mudstone and silty mudstone and some Brown Shale 15%. Drills medium to medium fine.
81	-	82	3568 -	- 3587	Dark Brown Shale 80%, some light gray mudstone. Drills
83	-	85	<b>3</b> 587 ·	- 3605	medium. (Gas increased 3591 62 M to 66 M.) Gray mudstone and siltstone and some silty sandstone shell and Brown Shale
86	-	87	3605 -	- 3628	5%. Drills medium to medium fine. Gray mudstone and silty sandstone shell with pyrite and brown silty shale 40%. Drills medium to medium fine.
	88		3628	- 3636	Black Shale 70%, light tan sandstone shell and some mudstone. Drills medium to medium fine.
	89		3636	- 3642	(Gas increased 3642 62 M to 65 M.) Light gray mudstone and some micaceous sandstone shell and some Brown Shale 10%. Drills medium fine.
90	-	91	3642	<b>-</b> 3660	Light gray mudstone and silty sandstone shell with pyrite and Black Shale 40%. Drills medium.
	9 <b>2</b>			- 3666	Black Shale 95%, light gray mudstone. Drills medium.
93	- 1	95	3666	- 3707	Black Shale and light blue gray mudstone, some pyrite, drills medium.
96	, <u> </u>	97	3707	- 3724	Gray mudstone and some silty sandstone with pyrite and Black Shale 5%. Drills medium to medium fine.
98	-	99	3724	- 3744	Light Brown Shale with some spors and Black Shale with pyrite 90% and a little gray siltstone shell. Drills
100	) - (	103	3744	- 3800	medium. Black Shale 90%, some light gray mudstone and siltstone shell. Drills medium.
	104		3800	- 3812	Light Brown Shale with spors and Brown Shale 90% and gray silty mudstone. Drills medium.
105	5 -	106	3812	- 38 <b>35</b>	Light Brown silty Shale and some Black Shale 80% and light gray silty mudstone with some pyrite. Drills medium.
	107		3835	- 3862	Black Shale 90% and gray silty mudstone with pyrite.
	108		3862	- 3873	Drills medium. (Gas increased 3537 65 M to 66 M.) Light blue gray mudstone with much pyrite and a little Black Shale 20%. Drills medium.

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109	3873 - 3881	Light blue gray mudstone and some sandstone shell with pyrite and some Black Shale 10%. Drills medium.
110 - 112	3881 - 3902	(Gas increased 3881 66 M to 67 M.) Light gray mudstone and a little silty sandstone shell, some lime at base. Drills medium to medium fine.
113	3902 <b>- 3915</b>	Do and 5% Brown Shale, slightly limy. Drills medium.

Total Depth 3915

Shot 11,700# Detonite 2700 - 3915 Test Before Shot 67 M Tubed 307 M Shale \_\_\_\_\_\_\_ Injun

332 M Total

NOTE: Errors made in measurement make sand thickness almost impossible to interpret.

 29'
 Big Lime

 27'
 Top Berea

 70'
 Top Shale

 126'
 Error in 1700'

This was at a time when we were having lots of trouble with drillers measurements. Cleaned up after drilling. Superintendents changed. .

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