

W. M. Ritter Lumber Company #1-V

Serial No. 1461

Drilled by: United Carbon Company (United Producing Company, Inc.)

Location : 2200' south 37°15' 11,850' west 81°55'
Richlands Quadrangle, Garden District,
Buchanan County, Virginia

Elevation : 1619.2' Spirit Level, Ground

Sample Description (Cable Tool)

Depth

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| 24- 85 | Sandstone, gray-white, glauconitic and micaceous; coal fragments, 60-64. |
| 85- 100 | Shale, gray; coal fragments, 97-100. |
| 100- 155 | Sandstone, gray-white, fine grain to very fine grain; coal fragments, 109-112, 125-127, 148-151; gray silty shale in sample interval 140-143. |
| 155- 214 | Shale, gray, silty. |
| 214- 276 | Siltstone, gray, medium grained. |
| 276- 283 | Sandstone, gray-white, very fine grained and coal fragments. |
| 283- 322 | Siltstone and shale, gray. |
| 322- 384 | Sandstone, white, rounded fine to medium grained, free grains, sandstone slightly shaly, 355-365. |
| 384- 424 | Shale, gray, silty; siltstone medium grained, 390-400. |
| 424- 522 | Sandstone, white, medium grained to coarse grained; coal fragments, 465-467; slightly shaly, 480-490. |
| 522- 610 | Shale, gray, micaceous, silty. |
| 610- 625 | Siltstone, gray, coarse grained; coal fragments 614-616. |
| 625- 633 | Sandstone, gray-white, very fine grained. |
| 633- 645 | Siltstone, gray, coarse grained; coal fragments 638-641. |
| 645- 663 | Shale, gray. |
| 663- 788 | Sandstone, gray-white, very fine grain to fine grained; coal fragments 696-698, 708-711, 726-730, 747-750; slightly shaly 718-724; porous sandstone clusters, 773-778. |

Depth

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| 788- 796 | Shale, gray, silty. |
| 796- 870 | Sandstone, gray-white, fine grained to medium grained. |
| 870- 886 | Siltstone and shale, gray. |
| 886- 970 | Sandstone, gray to white, fine grained to medium grained, free grains to clustered grains. |
| 970- 976 | Shale, black, pyritic; coal fragments, 974-976. |
| 976- 985 | Sandstone, white to gray, fine grained to medium grained; coal fragments, 983-985. |
| 985-1020 | Sandstone, gray-white, ^{very} fine grained to fine grained, siltstone, gray, medium grained to coarse grained, slightly shaly. |
| 1020-1080 | Sandstone, white, fine grained to coarse grained; coal fragments, 1030-1033, 1063-1065. |
| 1080-1084 | Shale, dark gray. |
| 1084-1125 | Sandstone, gray-white, fine grained porous. |
| 1125-1150 | Shale, dark gray, silty. |
| 1150-1210 | Siltstone, gray, coarse grained. |
| 1210-1213 | Shale, dark gray, silty. |
| 1213-1237 | Siltstone, gray, medium grained. |
| 1237-1270 | Sandstone, gray-white, very fine grained, slightly shaly. |
| 1270-1280 | Shale, dark gray, silty. |
| 1280-1303 | Sandstone, gray-white, very fine grained. |
| 1303-1308 | Samples missing |
| 1308-1400 | Sandstone, white, fine grained to medium grained, angular to sub-angular. |
| 1400-1420 | Sandstone, white, medium grained and heavy concentration of coal fragments, coarse grained gray siltstone and coal fragments, 1414-1420. |
| 1420-1443 | Sandstone, gray, very fine grained, tight. |
| 1443-1455 | Shale, gray, silty; few coal fragments-1446-1448. |
| 1455-1500 | Sandstone, gray-white, fine grained to medium grained to coarse grained, clustered, tight. |
| 1500-1518 | Shale, gray, very silty. |
| 1518-1533 | Sandstone, gray-white, very fine grained to medium grained, tight. |

Depth

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| 1533-1540 | Siltstone, gray, medium grained. |
| 1540-1544 | Sandstone, gray-white, very fine grained. |
| 1544-1547 | Siltstone, gray, medium grained. |
| 1547-1550 | Coal |
| 1550-1560 | Siltstone, gray, coarse grained; fragments, brown shale. |
| 1560-1592 | Shale, dark gray, silty. |
| 1592-1600 | Siltstone, gray-white, medium grained to coarse grained. |
| 1600-1624 | Sandstone, white, fine grained to medium grained, clustered, glauconitic slight porosity; brown shale parting 1615-1617. |
| 1624-1636 | Siltstone, gray, medium grained. |
| 1636-1675 | Shale, dark gray. |
| 1675-1681 | Siltstone, gray, medium grained. |
| 1681-1704 | Sandstone, white, fine grained to medium grained, tight. |
| 1704-1709 | Shale, gray. |
| 1709-1785 | Sandstone, gray-white to white, very fine grained to medium grained; free grains to clustered, tight; slightly shaly sections, 1746-48; 1756-58; 1765-67; coal fragments, 1760-62. |
| 1785-1800 | Siltstone, gray-white, medium grained; shale gray and brownish red to red; limestone, brownish red, impure, dense. |
| 1800-1840 | Sandstone, gray-white to white, fine grained to medium grained to coarse grained; fragments of shale, gray and brownish red, calcareous 1814-16. |
| 1840-1848 | Shale, gray and green. |
| 1848-1860 | Shale, red and green. |
| 1860-1893 | Limestone, light brown to buff to gray-white, dense to fragmental, shale, red, green and brown. |
| 1893-1903 | Samples missing. |
| 1903-1914 | Siltstone, gray-white, medium grained; shale, gray with some red and green shale fragments. |
| 1914-1917 | Sandstone, gray-white, very fine grained to fine grained. |
| 1917-1920 | Siltstone, gray and green, medium grained. |
| 1920-1927 | Samples missing. |

Depth

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| 1927-1934 | Sandstone, gray-white, very fine grained to fine grained. |
| 1934-1940 | Siltstone, green and red, medium grained. |
| 1940-1946 | Sandstone, white to gray-white, fine grained, free grains. |
| 1946-1974 | Siltstone, gray, very fine grained; shale, gray with brownish tint. |
| 1974-1996 | Sandstone, gray-white, very fine grained to fine grained, free grains, tight. |
| 1996-2006 | Siltstone, gray, fine grained to medium grained. |
| 2006-2030 | Sandstone, white-gray, fine grained, tight with dark gray bituminous micaceous residue. |
| 2030-2105 | Shale, dark gray to brown, pyritic. |
| 2105-2114 | Shale, gray, red and green, silty. |
| 2114-2178 | Sandstone, greenish white to gray-white to white, very fine grained to fine grained, free grains; green, red and gray shale fragments, 2145-2152, 2160-2163. |
| 2178-2190 | Shale, gray. |
| 2190-2219 | Sandstone, gray-white, very fine grained to fine grained. |
| 2219-2262 | Shale, gray. |
| 2262-2273 | Limestone, light brown to buff, dense; shale, green, very silty with few fragments, red shale, 2270-2273. |
| 2273-2290 | Limestone, light brown to buff; siltstone, green, fine grained to coarse grained showing beginning of sandstone development, some isolated very fine grained fragments of gray-white sandstone. |
| 2290 | Last sample |

Completion Data

Commenced drilling: August 20, 1947
 Completed drilling: January 30, 1948

Casing

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|---------|-----|-----------|
| 16" | | 28' 6 " |
| 10-3/4" | 32# | 1090' 11" |
| 7 " | 17# | 2301' |

7" x 8-5/8" casing packer at 2270'
 Perforated 7" casing from 2270-2301'

Completion Data (cont'd.)Fresh water

255' 1 bailer per hour
1405' 4 bailer - 24 hours

Pay Zones

Gas show 714 - 724'

" " 1086

" " 1405

" " 1550

Gas pay 2295 - 2301'

107/10ths mercury 7" O.D. 17#

17,196,000 cubic feet

665# reservoir pressure - 20 hours

Shut in: February 1, 1948

J. P. Clarkson