

Company: United Fuel Gas Co.
 Farm: National Showmut Bk. of Boston
 Well No: 8871
 Total Depth: 3005'
 Elevation: 1222.85
 Location: Buchanan Co.
 10,500' S. of 37°30'
 3700' W. of 82°00'
 Drilling Commenced: 7/17/61
 Well Completed: 12/1/61
 Result: Gas Well

Geologic Log
 Samples studied and
 described by:
 John M. Wilson
 Virginia Division of
 Mineral Resources
 June, 1963

GEOLOGIC LOG

Depth	Thickness	Description
0-1900	1900	No samples
1900-1905	5	Siltstone, locally shaly, light gray to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with: common biotite, abundant muscovite, common carbonaceous material, and rare iron oxide stains. With stringers of Sandstone, white to light gray, well cemented, very fine to fine grained, well sorted, subrounded to angular, interstitially silty, siliceous, with: common biotite, common muscovite, rare carbonaceous material, and rare iron oxide stains. Nonporous to slightly porous.
1905-1921	16	Sandstone, white, clear, moderately cemented, very fine to medium-grained, medium sorted, subangular to angular, interstitially silty, siliceous, with: rare biotite, rare muscovite, rare carbonaceous material, and common iron oxide stains. Nonporous to slightly porous. With stringers of Siltstone, as in 1900-1905.
1921-1925	4	Sandstone, as in 1905-1921
1925-1940	15	Lithologies as in 1905-1921
1940-1972	32	Sandstone, as in 1905-1921, with abundant silty-micaceous partings (contamination?)
1972-1990	18	Sandstone, silty, white to clear, light gray, moderately cemented, very fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: rare biotite, rare muscovite, rare carbonaceous material, and abundant iron oxide stains. Nonporous to slightly porous. With stringers of Siltstone, locally carbonaceous, medium to dark gray, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with: common muscovite, common carbonaceous material, and common iron oxide stains.

1990-2013	23	Sandstone, white to clear, milky white, moderately cemented, fine to very coarse-grained, poorly sorted, subrounded to angular, siliceous, with rare biotite, rare muscovite, rare carbonaceous material, common iron oxide stains, and common silty-micaceous partings (contamination?). Slightly porous.
2013-2060	47	Sandstone, white to clear, moderately cemented, very fine to medium-grained, rare coarse grained, poorly sorted, subrounded to angular, siliceous, with: rare biotite, rare muscovite, rare chlorite, rare carbonaceous material, and iron oxide stains. Nonporous to slightly porous.
2060-2064	4	Siltstone, calcareous, locally shaly, medium to dark gray, moderately hard to brittle, no apparent bedding to poorly fissile, calcareous, argillaceous, with: rare biotite, rare muscovite, rare calcite, rare carbonaceous material, and abundant iron oxide stains.
2064-2094	30	Siltstone, locally shaly, red, green, tan, moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (slightly), argillaceous, with: common biotite, rare muscovite, and rare carbonaceous material.
2094-2100	6	Siltstone, as in 2064-2094, without tan.
2100-2128	28	Siltstone, locally shaly, light to dark gray, red, (common), green (common), moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (slightly), argillaceous, with: common biotite, rare muscovite, rare carbonaceous material, rare iron oxide stains, with; stringers of Sandstone, white to light gray, moderately cemented, very fine to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, calcareous, with: rare biotite, rare muscovite, and rare iron oxide stains. Nonporous to slightly porous.
2128-2135	7	Sandstone, white to clear, orange, well cemented, very fine to fine-grained, well sorted, subrounded to angular, interstitially silty, siliceous, calcareous, with: rare biotite, rare muscovite, common carbonaceous material, and abundant iron oxide stains. Nonporous to slightly porous.
2135-2157	22	Siltstone, locally shaly, light to dark gray, moderately hard, brittle, poorly fissile, argillaceous, with: common biotite, rare muscovite, common carbonaceous material, and rare iron oxide stains.
2157-2164	7	Siltstone, variegated, locally shaly, light to dark gray, red, green, tan, brown, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, ferruginous, with: rare biotite, rare muscovite, rare carbonaceous material and common iron oxide stains.

2164-2171	7	Siltstone, locally shaly, light gray to dark gray, red (common), moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (very slightly), argillaceous, with rare biotite, common muscovite, common carbonaceous material, with stringers of dolomite, light brown, moderately hard, no apparent fossil, no apparent bedding to platy, cryptocrystalline.
2171-2177	6	Sandstone, white to clear, light gray, well cemented, very fine to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, common muscovite, rare carbonaceous material, and common iron oxide stains. Nonporous to slightly porous. With stringers of Siltstone, locally shaly, medium to dark gray, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, common muscovite, and rare iron oxide stains.
2177-2215	38	Shale, locally silty, medium to dark gray, moderately soft, flaky, good fissility, argillaceous, with rare muscovite, and common carbonaceous material.
2215-2221	6	Siltstone, locally finely sandy, locally shaly, light to dark gray, moderately hard, brittle, no apparent bedding, argillaceous, with common biotite, abundant muscovite, rare carbonaceous material, and rare iron oxide stains, with; stringers of Sandstone, white to clear, moderately cemented, very fine to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, abundant muscovite, and common iron oxide stains. Nonporous to slightly porous.
2221-2239	18	Sandstone, as in 2215-2221, with stringers of Siltstone, as in 2215-2221.
2239-2247	8	Sandstone, as in 2215-2221.
2247-2250	3	Siltstone, locally shaly, medium to dark gray, red, green (common), moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (very slightly), argillaceous, with: common biotite, common muscovite, rare carbonaceous material and rare iron oxide stains.
2250-2525	275	No samples.
2525-2540	15	Shale, locally silty, light to dark gray, red (rare), moderately hard, brittle, poor to fair fissility, argillaceous, with: common muscovite, common carbonaceous material, contains common sandy stringers.
2540-2554	14	Limestone, shaly, light to dark gray, dark brown, moderately hard, fossil rare fragmental, no apparent bedding to platy, cryptocrystalline, with: rare mica, and abundant calcite.

2554-2564	10	Shale, locally silty, medium to dark gray, moderately soft, flaky, fair to good fissility, argillaceous, with: rare muscovite
2564-2585	21	Limestone, shaly, dark gray, light to dark brown, moderately hard, fossils (crinoid stems), no apparent bedding to platy, cryptocrystalline to microcrystalline, with: rare mica, abundant calcite, and rare carbonaceous material.
2585-2612	27	Interbedded; Limestone, as in 2564-2585, with; Shale, medium to dark gray, moderately soft, flaky, good fissility, argillaceous, with: rare muscovite.
2612-2629	17	Limestone, dark gray, light to dark brown, moderately soft, common fossils (crinoid stems), no apparent bedding, microcrystalline, with: abundant calcite, and rare iron oxide staining
2629-2634	5	Limestone, light to dark brown, tan, moderately hard, oolitic (locally), fossil fragmental, no apparent bedding, microcrystalline, with: rare pyrite, and abundant calcite.
2634-2653	19	Limestone, light brown to dark brown, tan, moderately hard, fossil fragmental, rare, no apparent bedding, cryptocrystalline, to microcrystalline, with: abundant calcite and with stringers of Siltstone, green moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with: rare muscovite.
2653-2698	45	Limestone, dark gray, light to dark brown, moderately hard, common fossils (crinoid stems, brachiopod fragments), no apparent bedding, cryptocrystalline to microcrystalline, with: rare mica, abundant calcite, and rare iron oxide staining.
2698-2700	2	No samples
2700-2719	19	Limestone, dark gray (common), light brown, tan, white moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with: common calcite, rare carbonaceous material, and rare iron oxide staining.
2719-2744	25	Limestone, light to dark gray, light to dark brown, moderately hard, fossil fragmental, no apparent bedding, cryptocrystalline to microcrystalline, with: abundant calcite and rare iron oxide staining.
2744-2810	66	Limestone, light brown, white, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with: abundant calcite, and rare iron oxide staining.

2810-2843	33	Limestone, light brown to dark brown, moderately hard, oolitic (locally), no apparent fossil content, no apparent bedding, microcrystalline, with: abundant calcite, and rare iron oxide staining.
2843-2861	18	Limestone, light to dark brown, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline to microcrystalline, with: abundant calcite.
2861-2870	9	Limestone, light brown, tan, white, moderately hard, oolitic, fossils (crinoid stems), no apparent bedding, cryptocrystalline to microcrystalline, with: rare calcite.
2870-2882	12	Limestone, light to dark brown, tan, white, moderately hard, fossil fragmental, no apparent bedding, cryptocrystalline to microcrystalline, with: abundant calcite.
2882-2902	20	Limestone, light gray, white, moderately hard, oolitic (rare), fossil fragmental, rare, no apparent bedding, cryptocrystalline to microcrystalline, with: abundant calcite.
2902-2929	27	Limestone, light brown to dark brown, white, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with: rare calcite and rare iron oxide staining.
2929-2950	21	Limestone, tan, white, moderately hard, fossil fragmental, rare, no apparent bedding, cryptocrystalline, with: rare iron oxide staining.
2950-2964	14	Limestone, as in 2929-2950, with stringers of; Siltstone, red, moderately hard, brittle, no apparent bedding, ferruginous, with: rare muscovite.
2964-2985	21	Limestone, as in 2929-2950.
2985-2995	10	Limestone, oolitic, light brown, moderately soft, oolitic (very), no apparent fossil content, no apparent bedding, microcrystalline. Samples show very good porosity. Note on bag says "This sample blew out of hole at 2995". Well completion form states approximately 7,000,000 cubic feet of gas a day is obtained from this interval.
2995-3005	10	No samples
3005	Total Depth	

GEOLOGIC SUMMARY

Mississippian System

Bluestone Formation	in	1900	
	bottom	1905	
Princeton Sandstone	top	1905	
	bottom	2060	
Hinton Formation	top	2060	
	bottom	(?)	
Stony Gap Sandstone	top	2215	
	bottom	(?)	
Bluefield Formation	top	(?)	
	bottom	2590	
Greenbrier Limestone	top	2590	
	in	2995 (deepest sample)	