

Company: United Fuel Gas Co.
 Farm: National Showmut Bk. of Boston
 Well No.: 8870
 Elevation: 1725.53
 Total Depth: 5444'
 Location: Buchanan Co.
 3650' S. of 37°30'
 7600' W. of 82°00'
 Drilling Commenced: 9/28/59
 Well Completed: 8/25/60
 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
0-2420	2420	No samples
2420-2433	13	Interbedded, Sandstone, white to light gray, moderately cemented, very fine to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, common muscovite, and common carbonaceous material. Nonporous to slightly porous. Siltstone, locally shaly, medium to dark gray, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with: common muscovite and rare carbonaceous material.
2433-2450	17	No samples
2450-2458	8	Sandstone, white to clear, moderately cemented, very fine to medium-grained, medium sorted, subrounded to angular, interstitially silty, siliceous, with: rare biotite, rare muscovite, common carbonaceous material, abundant iron oxide stains, and abundant silty-micaceous partings (contamination?). Nonporous to slightly porous.
2458-2475	17	Siltstone, grades locally to a very fine-grained sandstone, light to medium gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with: common biotite, abundant muscovite, rare carbonaceous material, and rare iron oxide stains.

2475-2503	28	Sandstone, white, to clear, well cemented, very fine to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: rare biotite, rare muscovite, rare carbonaceous material, and iron oxide stains. Nonporous to slightly porous. Minor stringers of Siltstone, as in 2458-2475.
2503-2520	17	Sandstone, as in 2475-2503.
2520-2530	10	Conglomeratic sandstone, white to clear, milky white, moderately cemented, medium to very coarse grained, with common granule, poorly sorted, subrounded to angular, siliceous, with: rare biotite, rare muscovite and rare chlorite, common carbonaceous material, and common iron oxide stains. Nonporous to slightly porous.
2530-2566	36	Sandstone, white, clear, moderately cemented, medium to very coarse-grained, medium sorted, subrounded to subangular, interstitially silty, siliceous, with: rare biotite, rare muscovite, rare carbonaceous material and common iron oxide stains. Nonporous to slightly porous.
2566-2576	10	Interbedded; Siltstone, locally shaly, medium to dark gray, red, moderately hard, brittle, poorly fissile, argillaceous, ferruginous, with: rare biotite, rare muscovite, and rare carbonaceous material, and with; Limestone, light gray-green, moderately hard, no apparent fossil content, no apparent bedding to platy, cryptocrystalline, with: rare calcite and rare carbonaceous material.
2576-2583	7	Siltstone, locally finely sandy, dark gray (rare), red (common), green, moderately hard, brittle, no apparent bedding to poorly fissile, siliceous, argillaceous, with: Abundant biotite, common muscovite, common carbonaceous material and rare iron oxide stains.
2583-2610	27	Siltstone, locally shaly, light to dark gray, red, green, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, ferruginous, with: common biotite, common muscovite, and rare carbonaceous material.
2610-2622	12	Siltstone grades locally to a very fine-grained sandstone, locally finely sandy, light to dark gray, red, moderately hard, brittle, no apparent bedding, argillaceous, ferruginous, with: abundant biotite, abundant muscovite, and rare carbonaceous material.
2622-2632	10	Sandstone, white to clear, moderately cemented, very fine to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, common muscovite, abundant carbonaceous material, abundant iron oxide stains, and abundant silty-micaceous partings. Nonporous to slightly porous.

2632-2646	14	Siltstone, locally finely sandy, locally shaly, light to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, siliceous, argillaceous, with: rare muscovite, common carbonaceous material, and abundant iron oxide stains.
2646-2658	12	Siltstone, locally shaly, light to medium gray, light brown, moderately hard, brittle, poorly fissile, argillaceous, with: rare muscovite, common carbonaceous material, and common iron oxide stains.
2658-2900	2425	No samples
2900-2933	33	Sandstone, white to clear, moderately cemented, very fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: rare muscovite, rare chlorite (?), rare carbonaceous material, and abundant iron oxide stains. Nonporous to slightly porous. With stringers of Siltstone, locally shaly, medium gray to dark gray, red (common), moderately hard, brittle, poorly fissile, argillaceous with rare muscovite.
2933-2941	8	Sandstone, as in 2900-2933, with minor stringers of Siltstone, as in 2900-2933.
2941-2965	24	Siltstone, locally shaly, light to dark gray, moderately hard, brittle, poorly fissile, argillaceous with: common muscovite, and iron oxide stains.
2965-2990	25	Siltstone, as in 2941-2965, locally finely sandy.
2990-3005	15	Sandstone, white to clear, well cemented, very fine to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, common muscovite, rare carbonaceous material, common iron oxide stains. Nonporous to slightly porous; with stringers of Siltstone, as in 2965-2990.
3005-3063	58	Siltstone, locally finely sandy, locally shaly, light to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (slightly), siliceous, argillaceous, with rare biotite, common muscovite, rare pyrite, and carbonaceous material.
3063-3123	60	Limestone, dark gray, light to dark brown, moderately hard, fossil fragmental, no apparent bedding, microcrystalline, with: rare mica, common calcite, and rare carbonaceous material.
3123-3146	23	Limestone, light to dark brown, moderately hard, oolitic (locally), fossil fragmental, no apparent bedding, cryptocrystalline, with: rare mica, rare pyrite, abundant calcite, and rare carbonaceous material.

3146-3185	39	Limestone, light to dark gray, light to dark brown, moderately hard, fossil fragmental, common, no apparent bedding, cryptocrystalline to microcrystalline, with: common calcite and common carbonaceous material.
3185-3215	30	Limestone, light brown, tan, white, moderately soft, oolitic (locally), fossil fragmental, rare, no apparent bedding, cryptocrystalline, with: abundant calcite, rare carbonaceous material and rare iron oxide staining.
3215-3235	20	Limestone, light gray, light to dark brown, moderately hard, oolitic (locally), fossil fragmental, no apparent bedding, cryptocrystalline to microcrystalline, with: common calcite.
3235-3305	70	Limestone, light brown, white, moderately hard, oolitic, fossils (crinoids), no apparent bedding, cryptocrystalline, with: abundant calcite, rare carbonaceous material, and common iron oxide staining.
3305-3310	5	No samples.
3310-3358	48	Limestone, light to dark brown, white, moderately hard, oolitic, no apparent fossil content, no apparent bedding, microcrystalline, with: abundant calcite and rare carbonaceous material.
3358-3365	7	No samples.
3365-3396	31	Limestone, light gray, white, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with: rare calcite and common iron oxide staining.
3396-3410	14	Limestone, light to dark brown, white, moderately hard, fossil fragmental, rare, no apparent bedding, cryptocrystalline, with: common calcite and rare iron oxide staining.
3410-3424	14	Interbedded; Limestone, as in 3396-3410, with; Siltstone, red, green-gray, moderately hard, brittle, no apparent bedding to poorly fissile, calcareous, argillaceous, ferruginous with: rare muscovite, abundant calcite, and rare iron oxide stains.
3424-3436	12	Siltstone, as in 3410-3424.
3436-3478	42	Limestone, dolomitic, light gray, tan, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with: common chert, rare calcite, rare carbonaceous material, and rare iron oxide staining.
3478-3500	22	Siltstone, locally shaly, light gray, red, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, ferruginous, with common biotite, common muscovite, and common carbonaceous material.

3500-3510	10	Siltstone, red, moderately soft, flaky, no apparent bedding, ferruginous, with: rare muscovite, and rare iron oxide stains.
3510-3512	2	No samples.
3512-3537	25	Siltstone, as in 3500-3510.
3537-3575	38	Siltstone, light to medium gray, red, moderately hard, brittle, no apparent bedding, argillaceous, ferruginous, with: common muscovite, rare carbonaceous material, and rare iron oxide stains.
3575-3650	75	Siltstone, grades locally to a very fine-grained Sandstone, locally finely sandy, light to medium gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with: common biotite, common muscovite, rare carbonaceous material, and rare iron oxide stains.
3650-3688	38	Sandstone, silty, light gray, moderately cemented, very fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, common muscovite, rare carbonaceous material, and rare iron oxide stains. Nonporous to slightly porous.
3688-3720	32	Siltstone, grades locally to a very fine-grained sandstone, locally finely sandy, locally shaly, light to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, siliceous, argillaceous, with: common muscovite, common carbonaceous material and rare iron oxide stains.
3720-3721	1	No samples.
3721-3746	25	Siltstone, as in 3688-3720.
3746-3761	15	Siltstone, locally shaly, medium to dark gray, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with: rare muscovite and rare carbonaceous material.
3761-3952	191	Shale, locally silty, medium to dark gray, brown (rare) moderately soft, flaky, fair to good fissility, argillaceous, with: rare muscovite, rare carbonaceous material, and rare iron oxide stains.
3952-4017	65	Interbedded; Shale, as in 3761-3952, with; Siltstone, locally finely sandy, light gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with: common biotite, common muscovite, and rare carbonaceous material.
4017-4075	58	Shale, locally carbonaceous, medium to dark gray, black, moderately soft, flaky, fair to good fissility, argillaceous, with: rare muscovite, rare pyrite.

4075-4087	12	Shale, carbonaceous, dark gray, black, moderately soft, flaky, fair to good fissility, argillaceous, with: rare muscovite, common pyrite, and rare iron oxide stains.
4087-4114	27	Interbedded; Shale, as in 4075-4087, with; Siltstone, light to medium gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with: rare muscovite, abundant pyrite.
4114-4174	60	Siltstone, locally shaly, medium to dark gray, brown, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, common muscovite, and rare carbonaceous material.
4174-5444	1270	No samples.
5444	Total Depth	

GEOLOGIC SUMMARY

Mississippian System

Bluestone Formation	samples start	2420
	bottom	2420±
Princeton Sandstone	top	2420±
	bottom	2566
Hinton Formation	top	2566
	bottom	(?)
Stony Gap Sandstone	top	(?)
	bottom	(?)
Bluefield Formation	top	(?)
	bottom	3063
Greenbrier Limestone	top	3063
	bottom	3478
Maccrady-Price Formations	top	3478
	bottom	3761

Mississippian-Devonian Systems

Big Stone Gap Shale	top	3761
	bottom	4087

Devonian System

Devonian undivided	top	4087
	in	4174 (deepest sample)