

Company: United Fuel Gas Co.
 Farm: National Shawmut Bk. of Boston
 Well No.: 8917
 Elevation: 1513.46'
 Total Depth: 5320'
 Location: Buchanan Co.
 12,500' S. of 37°30'
 250' E. of 82°00'
 Drilling Commenced: 5/19/61
 Well Completed: 9/28/61
 Result: Dry hole

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

GEOLOGIC LOG

Depth	Thickness	Description
0-250	250	No samples
250-300	50	Sandstone, white, light gray, friable, <u>very fine to medium grained</u> , medium sorted, subrounded to subangular, interstitially <u>silty</u> , siliceous, with; abundant biotite, abundant muscovite, common chlorite, common carbonaceous material, rare iron oxide stains. Slightly porous. Minor stringers of Siltstone, locally finely sandy, locally shaly, light to medium gray, moderately hard, brittle, no apparent bedding to poorly fissile, siliceous, argillaceous, with; abundant biotite, abundant muscovite, rare carbonaceous material
300-308	8	Interbedded; Lithologies as in 250-300
308-315	7	No samples
315-334	19	Interbedded; Lithologies as in 250-300
334-417	83	Sandstone, as in 250-300, with minor stringers of; Siltstone, locally finely sandy, medium to dark gray, moderately hard, brittle, poorly fissile, siliceous, argillaceous, with; common biotite, abundant muscovite
417-463	46	Siltstone, grades locally to a very fine grained Sandstone, locally finely sandy, light to dark gray, moderately soft, flaky, no apparent bedding, siliceous, argillaceous, with; abundant biotite, abundant muscovite, abundant carbonaceous material

463-530	67	Sandstone, white, light gray, moderately cemented, very fine to medium grained, medium sorted, subrounded to subangular, interstitially silty, siliceous, abundant biotite, abundant muscovite, common chlorite, common carbonaceous material, rare iron oxide stains, Nonporous to slightly porous. Minor stringers of Siltstone, locally finely sandy, medium to dark gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with; common biotite, abundant muscovite
530-540	10	Siltstone, light to medium gray, hard, brittle, no apparent bedding, argillaceous, with; common biotite, abundant muscovite, rare carbonaceous material, rare iron oxide stains
540-561	21	Siltstone, as in 530-540, with minor stringers of; Sandstone, white, clear, moderately cemented, fine to coarse grained, medium sorted, subrounded to angular, siliceous, with; common muscovite, rare carbonaceous material, Slightly porous
561-615	54	Siltstone, as in 530-540
615-666	51	Sandstone, white, clear, moderately cemented, fine to coarse grained, medium sorted, subrounded to angular, interstitially silty, siliceous, with; abundant biotite, abundant muscovite, common chlorite, common carbonaceous material, rare iron oxide stains. Nonporous to slightly porous. Stringers of Siltstone, as in 530-540
666-700	34	Siltstone, locally shaly, medium to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; rare biotite, common muscovite,
700-710	10	Siltstone, as in 666-700, locally finely sandy
710-778	68	Sandstone, white, milky white, moderately cemented, fine to coarse grained, medium sorted, rounded to subangular, interstitially silty, siliceous, calcareous (slightly), abundant biotite, abundant muscovite, rare chlorite, common iron oxide stains. Nonporous to slightly porous. Stringers of Siltstone, locally shaly, medium to dark gray, brown (rare) moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; common muscovite, rare carbonaceous material

778-800	22	Siltstone, locally shaly, medium to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; abundant muscovite, rare carbonaceous material, Stringers of Sandstone, as in 710-778
800-837	37	Siltstone, locally finely sandy, locally shaly, light to dark gray, moderately hard, tough, no apparent bedding to poorly fissile, argillaceous, with; rare muscovite, rare carbonaceous material, rare iron oxide stains
837-872	35	Sandstone, white, light gray, well cemented, very fine to medium grained, medium sorted, subrounded to angular, interstitially silty, siliceous, with; abundant biotite, abundant muscovite, rare chlorite, rare carbonaceous material, common iron oxide stains. Nonporous to slightly porous. Siltstone, as in 800-837
872-885	13	Shale, grades to coal, coaly carbonaceous black, soft, flaky, good fissility, argillaceous, with; common muscovite, abundant coal
885-928	43	Sandstone, white to light gray, poorly cemented, very fine to medium grained, medium sorted, subrounded to angular, interstitially silty, siliceous, with; abundant biotite, abundant muscovite, common carbonaceous material, rare iron oxide stains. Nonporous to slightly porous. Stringers of carbonaceous Shale, as in 872-885
928-946	18	Interbedded; Sandstone, as in 885-928, with; Siltstone, locally shaly, light to medium gray, moderately hard, brittle, poorly fissile, argillaceous, with; common muscovite
946-966	20	Shale, dark gray, brown (rare), moderately soft, flaky, good fissility, argillaceous, with; common muscovite, common carbonaceous material, rare iron oxide stains
966-1020	54	Sandstone, white, clear, moderately cemented, fine to medium grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; abundant biotite, abundant muscovite, common chlorite, common carbonaceous material, rare iron oxide stains. Slightly porous. Stringers of Shale, as in 946-966, silty

1020-1044	24	Interbedded; Sandstone, as in 966-1020, with; Siltstone, locally shaly, light to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; common muscovite rare carbonaceous material
1044-1100	56	Conglomeratic Sandstone, white, clear, moderately cemented, very fine to very coarse grained, common granule, poorly sorted, subrounded to subangular, interstitially silty, siliceous, with; abundant biotite, abundant muscovite, common chlorite, common carbonaceous material, rare iron oxide stains. Slightly porous. Stringers of Siltstone, locally finely sandy, locally shaly, medium to dark gray, moderately soft, flaky, no apparent bedding to poorly fissile, siliceous, argillaceous, with; common biotite, abundant muscovite, common iron oxide stains
1100-1155	55	Conglomeratic Sandstone, white, clear, moderately cemented, fine to very coarse grained, common granule, poorly sorted, subrounded to angular, siliceous, with; rare biotite, rare muscovite, rare carbonaceous material, abundant iron oxide stains. Nonporous to slightly porous
1155-1194	39	Conglomeratic Sandstone, white, clear, milky white, smoky gray, moderately cemented, medium to very coarse grained, abundant granule, common pebble, poorly sorted, subrounded to subangular, siliceous, with; rare muscovite, rare carbonaceous material, Nonporous to slightly porous
1194-1213	19	Sandstone, white to clear, moderately cemented, very fine to coarse grained, poorly sorted, subrounded to angular, siliceous, with; rare biotite, rare muscovite, rare carbonaceous material, abundant iron oxide stains. Slightly porous
1213-1250	37	Conglomeratic Sandstone, white, clear, milky white, moderately cemented, very fine to very coarse grained, common granule, poorly sorted, subrounded to subangular, interstitially silty, siliceous, with; rare biotite, rare muscovite, rare carbonaceous material, abundant iron oxide stains. Nonporous to slightly porous

1250-1276	26	Shale, carbonaceous (locally), silty, dark gray, brown, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with; rare muscovite, common carbonaceous material
1276-1295	19	Sandstone, silty, white to light gray, well cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with, abundant biotite, abundant muscovite, common carbonaceous material, rare iron oxide stains. Nonporous to slightly porous.
1295-1315	20	Sandstone, white, clear, moderately cemented, very fine to medium grained, medium sorted, subrounded to angular, interstitially silty, siliceous, with; common biotite, abundant muscovite, common chlorite, rare iron oxide stains. Slightly porous. Minor stringers of Siltstone, locally shaly, dark gray, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with; abundant muscovite, common carbonaceous material, rare iron oxide stains
1315-1344	29	Siltstone, locally shaly, medium to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; rare muscovite
1344-1369	25	Sandstone, white, clear, moderately cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; common biotite, common muscovite, common feldspar (?), common iron oxide stains. Nonporous to slightly porous. Minor stringers of; Siltstone, locally shaly, dark gray, moderately soft, flaky, poorly fissile, argillaceous, with; rare muscovite
1369-1393	24	Conglomeratic Sandstone, clear, milky white, moderately cemented, fine to very coarse grained, abundant granule, abundant pebble, poorly sorted, subangular to angular, interstitially silty, siliceous, with; rare biotite, rare muscovite, rare feldspar (?), rare chlorite, rare carbonaceous material, rare iron oxide stains. Nonporous to slightly porous
1393-1406	13	Conglomeratic Sandstone, as in 1369-1393, with; abundant iron oxide staining, and minor stringers of; Siltstone, locally shaly, dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; rare muscovite

1406-1417	11	Siltstone, as in 1393-1406
1417-1456	39	Sandstone, white, clear, moderately cemented, fine to coarse grained, medium sorted, subrounded to subangular, interstitially silty, siliceous, with; common biotite, abundant muscovite, common carbonaceous material, common iron oxide stains. Nonporous to slightly porous. Stringers of Siltstone, as in 1393-1406
1456-1468	12	Interbedded; Lithologies as in 1417-1456
1468-1490	22	Siltstone, locally finely sandy, locally shaly, medium to dark gray, hard, tough, no apparent bedding to poorly fissile, argillaceous, with; rare biotite, common muscovite
1490-1520	30	Interbedded; Siltstone, as in 1468-1490, with; coal vitreous, conchoidal fracture, with; Sandstone, white, 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, common iron oxide stains. Nonporous to slightly porous
1520-1534	14	Sandstone, white, clear, milky white, moderately cemented, fine to coarse grained, medium sorted, rounded to subangular, interstitially silty, siliceous, with; common biotite, abundant muscovite, abundant coal fragments (contamination?), common iron oxide stains. Slightly porous
1534-1565	31	Sandstone, as in 1520-1534, without coal fragments
1565-1575	10	Conglomeratic Sandstone, white, milky white, moderately cemented, medium to very coarse grained, abundant granule, poorly sorted, subrounded to angular, siliceous, with; common biotite, common muscovite, rare coal fragments, common iron oxide stains Nonporous to slightly porous. Stringers of; Siltstone, light gray, brown, moderately hard, brittle, no apparent bedding, argillaceous, with; common biotite, common muscovite, rare iron oxide stains

1575-1605	30	Sandstone, white, orange, well cemented, very fine to medium grained, medium sorted, subangular to angular, interstitially silty, siliceous, with; common biotite, common muscovite, rare carbonaceous material, abundant iron oxide stains. Nonporous to slightly porous
1605-1708	103	Conglomeratic Sandstone, white, to milky white, moderately cemented, medium to very coarse grained, common granule, rare pebble, poorly sorted, subrounded to angular, siliceous, with; rare biotite, rare muscovite, rare carbonaceous material, common iron oxide stains. Nonporous to slightly porous
1708-1767	59	Conglomeratic Sandstone, as in 1605-1708, with stringers of; Siltstone, locally shaly, locally carbonaceous, dark gray, moderately soft, flaky, poorly fissile, argillaceous, with; rare muscovite, rare iron oxide stains
1767-1800	33	Sandstone, white, clear, light gray, moderately cemented, fine to very coarse grained, poorly sorted, subrounded to angular, interstitially silty, siliceous, with; rare biotite, rare muscovite, rare carbonaceous material, common iron oxide stains. Slightly porous. Minor stringers of Siltstone, as in 1708-1767
1800-1839	39	Conglomeratic Sandstone, white, clear, milky white, moderately cemented, fine to very coarse grained, common granule, poorly sorted, subrounded to angular, interstitially silty, siliceous, with; rare biotite, rare muscovite, rare carbonaceous material, common iron oxide stains. Nonporous to slightly porous
1839-1858	19	Shale, carbonaceous, silty, black, soft, flaky, good fissility, argillaceous, with; rare muscovite
1858-1866	8	Interbedded; Shale, as in 1839-1858, with; Sandstone, white, light gray, poorly cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; common biotite, common muscovite, abundant carbonaceous material, common iron oxide stains. Nonporous to slightly porous
1866-1873	7	Interbedded; Sandstone, as in 1858-1866,

with; Siltstone, locally shaly, medium gray, green, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with; rare biotite, common muscovite, common carbonaceous material, common iron oxide stains

1873-1909

36

Siltstone, variegated, locally shaly, light gray, red, green, tan, brown, moderately soft, flaky, poorly fissile, argillaceous, ferruginous, with; common muscovite, rare carbonaceous material, rare iron oxide stains

1909-1918

9

Siltstone, as in 1873-1909, slightly calcareous

1918-1936

18

Siltstone, locally shaly, medium gray, red (common), green, moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (locally), argillaceous, with; rare biotite, rare muscovite, rare iron oxide stains

1936-1954

18

Siltstone, as in 1918-1936, with minor stringers of; Sandstone, silty, white, to 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, common iron oxide stains. Slightly porous. *calcareous ss.*
small calc. concretions

1954-1994

40

Siltstone, variegated, locally shaly, light to medium gray, red, green, tan, brown, moderately soft, flaky, no apparent bedding, to poorly fissile, calcareous, argillaceous, with; rare biotite, rare muscovite, rare carbonaceous material. *red siltstone - calc grey siltstone more carbonaceous material not calc*

1994-2035

41

Siltstone, locally finely sandy, light to dark gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with; common biotite, common muscovite, rare carbonaceous material, rare iron oxide stains

2035-2045

10

No samples

2045-2068

23

Interbedded Sandstone, white, clear, light gray, moderately cemented, very fine to medium grained, medium sorted, subrounded to subangular, interstitially silty, siliceous, calcareous (slightly), rare biotite, rare muscovite, common carbonaceous material,

			rare iron oxide stains. Nonporous to slightly porous. Siltstone, locally shaly, light to dark gray, red, green, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; rare biotite, rare muscovite
2068-2081	13		Siltstone, locally shaly, light to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; common biotite, common muscovite, rare carbonaceous material. Stringers of Sandstone, as in 2045-2068
2081-2158	77		Siltstone, as in 2068-2081
2158-2194	36		Siltstone, ^{→ calc area - u?} as in 2068-2081, with minor stringers of; Sandstone, white to light gray, well cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; rare biotite, rare muscovite, Slightly porous
2194-2285	91		Sandstone, white, clear, light gray, moderately cemented, very fine to fine grained, well sorted, subrounded to angular, interstitially silty, siliceous, with; common biotite, common muscovite, rare pyrite, rare carbonaceous material, common iron oxide stains. Nonporous to slightly porous. Stringers of Siltstone, light to dark gray, red (rare), tan, moderately hard, brittle, no apparent bedding, argillaceous, with; rare muscovite, rare pyrite, common carbonaceous material, rare iron oxide stains
2285-2339	54		Sandstone, white, clear, moderately cemented, fine to coarse grained, common very coarse grained, poorly sorted, subrounded to angular, interstitially silty, siliceous, with; rare biotite, rare muscovite, rare carbonaceous material, common iron oxide stains. Slightly porous Siltstone, as in 2194-2285
2339-2351	12		Conglomeratic Sandstone, white, clear, milky white, moderately cemented, medium to very coarse grained, common granule, poorly sorted, subrounded to subangular, interstitially silty, siliceous, with; rare biotite, rare muscovite, rare carbonaceous material, common iron oxide stains. Nonporous to slightly porous

- 2351-2357 6 Interbedded Limestone, light to dark gray, moderately hard, rare fragmental fossil content, no apparent bedding, cryptocrystalline to microcrystalline, rare mica, rare calcite, common iron oxide staining Siltstone, locally shaly, red, green, moderately soft, flaky, no apparent bedding to poorly fissile, calcareous, siliceous, argillaceous, with; rare biotite, rare muscovite, rare carbonaceous material, common iron oxide stains
- 2357-2364 7 Sandstone, white, clear, moderately cemented, very fine to coarse grained, poorly sorted, subrounded to subangular, interstitially silty, siliceous, calcareous, with; common biotite, common muscovite, common carbonaceous material, abundant iron oxide stains. Slightly porous
- 2364-2387 23 Siltstone, variegated, locally finely sandy, locally shaly, light to medium gray, red, green, white, moderately hard, brittle, no apparent bedding, calcareous, argillaceous, with; common biotite, common muscovite, common pyrite, rare carbonaceous material
- 2387-2410 23 Siltstone, medium gray (rare), red, green(rare), moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (slightly), ferruginous, with; common biotite, rare muscovite, rare carbonaceous material
- 2410-2426 16 Siltstone, locally finely sandy, light to dark gray, red, moderately hard, brittle, no apparent bedding, argillaceous, ferruginous, with; rare biotite, rare muscovite, common carbonaceous material, rare iron oxide stains. Minor stringers of Sandstone, white, moderately cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; rare biotite, rare muscovite, rare iron oxide stains. Slightly porous
- 2426-2441 15 Siltstone, shaly, medium to dark gray, red, (rare), green, moderately soft, flaky, poor to fair fissility, calcareous (very slightly), argillaceous, with; rare muscovite, rare carbonaceous material, rare iron oxide stains
- 2441-2455 14 Interbedded Dolomite, light gray, light brown, moderately hard, no apparent fossil content, no apparent bedding, microcrystalline, with; rare calcite, rare iron oxide staining

		Siltstone, locally shaly, medium to dark gray, red, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, ferruginous, with; rare biotite, rare muscovite, rare carbonaceous material, rare iron oxide stains
2455-2501	46	Siltstone, locally shaly, medium to dark gray, green, moderately soft, flaky, poor to fair fissility, argillaceous, with; common biotite, rare muscovite, common carbonaceous material
2501-2519	18	Sandstone, white, clear, moderately cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; rare biotite, rare muscovite, rare carbonaceous material, common iron oxide stains. Slightly porous. Siltstone, locally shaly, medium to dark gray, red, moderately hard, brittle, no apparent bedding to poorly fissile, with; argillaceous, rare muscovite
2519-2524	5	Lithologies, as in 2501-2519, interbedded
2524-2527	3	Lithologies, as in 2501-2519
2527-2578	51	Interbedded Siltstone, locally shaly, light to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; rare biotite, common muscovite, common carbonaceous material, rare iron oxide stains. Sandstone, white, clear, poorly cemented, very fine to medium grained, medium sorted, subrounded to angular, siliceous, with; rare biotite, rare muscovite, rare carbonaceous material, common iron oxide stains. Slightly porous
2578-2595	17	Shale, silty, medium to dark gray, red, green, moderately soft, flaky, fair to good fissility, argillaceous, with; rare muscovite, common carbonaceous material
2595-2677	82	Siltstone, locally shaly, light to dark gray, red, green, moderately hard, brittle, no apparent bedding to poorly fissile, siliceous, argillaceous, with; rare biotite, common muscovite, rare carbonaceous material, Stringers of Sandstone, white, clear, moderately cemented, very fine to fine grained, well sorted, subrounded to angular, siliceous, with; rare biotite, common muscovite, rare iron oxide stains. Nonporous to slightly porous

2677-2700	23	Siltstone, locally shaly, light to dark gray, red, green, moderately hard, brittle, no apparent bedding, argillaceous, with; rare biotite, common muscovite, rare carbonaceous material
2700-2735	35	Siltstone, grades locally to a very fine grained Sandstone, locally finely sandy, locally shaly, light to dark gray, red (rare), moderately hard, brittle, no apparent bedding to poorly fissile, siliceous, argillaceous, with; common biotite, common muscovite, rare carbonaceous material, rare iron oxide stains
2735-2760	25	Siltstone, locally finely sandy, locally shaly, medium to dark gray, red, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, ferruginous, with; abundant biotite, abundant muscovite, common carbonaceous material, rare iron oxide stains
2760-2785	26	Siltstone, locally shaly, medium to dark gray, red (rare), moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; rare muscovite, rare carbonaceous material. Stringers of Limestone, shaly, light to dark gray, moderately hard, no apparent fossil content, no apparent bedding, microcrystalline, with; rare pyrite, rare calcite
2760-2785	26	Siltstone, locally shaly, medium to dark gray, red (rare), moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; rare muscovite, rare carbonaceous material, Stringers of Limestone, shaly, light to dark gray, moderately hard, no apparent bedding, no apparent fossil content, microcrystalline, with; rare mica, rare calcite
2785-2795	9	Siltstone, as in 2760-2795, with abundant pyrite
2795-2832	37	Siltstone, as in 2786-2795, with stringers of Sandstone, silty, white, to 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, rare iron oxide stains. Nonporous to slightly porous

2832-2842	10	Siltstone, shaly, light to dark gray, moderately hard, brittle, poor fissility argillaceous, with; rare biotite, rare muscovite, common carbonaceous material, rare iron oxide stains
2842-2862	20	Siltstone, as in 2832-2842, with minor stringers of; Limestone, light to dark gray, dark brown, moderately hard, fragmental fossil content, no apparent bedding, cryptocrystalline to microcrystalline, with; rare mica, common pyrite, common calcite
2862-2865	3	Shale, locally silty, medium to dark gray, moderately soft, flaky, fair to good fissility, argillaceous, with; rare muscovite, rare carbonaceous material, rare iron oxide stains
2865-2882	17	Shale, as in 2862-2865, with stringers of; Limestone, light to dark gray, moderately hard, fossils (crinoid stems), no apparent bedding, cryptocrystalline to microcrystalline, with; common calcite,
2882-2915	33	Limestone, light to dark gray, moderately hard, fragmental fossil content, no apparent bedding, microcrystalline; with; rare mica, abundant calcite. Stringers of Shale, as in 2862-2865
2915-2960	45	Limestone, light to dark gray, light to dark brown, moderately hard, fragmental (rare) fossil content, no apparent bedding, microcrystalline, with; abundant mica, rare pyrite, common carbonaceous material
2960-3012	52	Limestone, light to dark gray, moderately hard, fragmental fossil content, no apparent bedding, cryptocrystalline to microcrystalline, with; abundant calcite
3012-3053	41	Limestone, shaly, dark gray, light to dark brown, white, green, moderately hard, fragmental fossil content, no apparent bedding to platy, cryptocrystalline to microcrystalline, with; common calcite, rare iron oxide staining
3053-3103	50	Limestone, dark gray, tan, white, moderately hard, fragmental (rare), fossil content no apparent bedding, cryptocrystalline, with; abundant calcite
3103-3153	50	Limestone, light to dark brown, moderately hard, fragmental (rare) fossil content, no apparent bedding, cryptocrystalline to microcrystalline, with; common calcite rare carbonaceous material

Blundell
Gardner



3153-3235	82	Limestone, light brown, tan, white, moderately soft, no apparent fossil content, no apparent bedding, cryptocrystalline, with; abundant calcite
3235-3260	25	Interbedded Limestone, light gray, light brown, moderately hard, no apparent fossil content, no apparent bedding to platy, cryptocrystalline to micro-crystalline, with; common calcite Siltstone, locally shaly, red, moderately hard, brittle, no apparent bedding to poorly fissile, ferruginous, with; rare muscovite
3260-3300	40	Dolomite, light gray, moderately soft, no apparent fossil content, no apparent bedding, cryptocrystalline, with; rare chert, rare calcite
3300-3401	101	Siltstone, red, moderately hard, brittle, no apparent bedding, ferruginous, with; common biotite, common muscovite, rare iron oxide stains
3401-3418	17	Shale, silty, red (rare), green-gray, moderately hard, tough, fair to good fissility, argillaceous, with; rare muscovite
3418-3569	151	Siltstone, grades to a very fine grained Sandstone, locally finely sandy, light to dark gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with; common biotite, common muscovite, common carbonaceous material, rare iron oxide stains
3569-3765	196	Shale, locally silty, medium gray, brown (common), moderately soft, flaky, fair to good fissility, argillaceous, with; rare muscovite, rare carbonaceous material, rare iron oxide stains
3765-3782	17	Shale, as in 3569-3765, with stringers of light gray, micaceous Siltstone.
3782-3816	34	Shale, as in 3569-3765,
3816-3895	79	Shale, locally silty, medium to dark gray, brown (rare), moderately hard, tough, poor to fair fissility, argillaceous, with; common muscovite, rare pyrite, rare carbonaceous material
3895-3737	42	Shale, carbonaceous, black, moderately soft, flaky, good fissility, argillaceous, with; rare muscovite, common pyrite
3937-4017	80	Interbedded Shale, medium to dark gray,

moderately soft, flaky, fair to good
 fissility, argillaceous, with;
 common muscovite, rare carbonaceous
 material, rare iron oxide stains
 Siltstone, locally finely sandy, light to
 medium gray, moderately hard, brittle,
 no apparent bedding, siliceous, argillaceous,
 with; common biotite, common muscovite,
 rare iron oxide stains

4017-4135	118	Siltstone, locally shaly, medium to dark gray, moderately hard, brittle, poorly fissile, argillaceous, with; common muscovite, rare carbonaceous material
4135-4255	120	Siltstone, as in 4017-4135, with stringers of; Shale, medium gray, moderately soft, flaky, good fissility, argillaceous, with; rare muscovite
4255-4381	126	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, rare iron oxide stains
4381-4676	295	Interbedded; Siltstone, as in 4255-4381, with; Shale, locally silty, medium to dark gray, moderately soft, flaky, fair to good fissility, argillaceous, with; rare muscovite, rare carbonaceous material
4676-4831	155	Siltstone, locally finely sandy, locally shaly, light to dark gray, moderately hard, brittle, poorly fissile, siliceous, argillaceous, with; common biotite, common muscovite, common carbonaceous material, rare iron oxide stains
4831-4932	101	Shale, locally silty, light to dark gray, moderately soft, flaky, poor to good fissility, argillaceous, with; rare biotite, common muscovite, common carbonaceous material
4932-5320	388	No samples

5320' - T D.

GEOLOGIC SUMMARY

Pennsylvanian System

Norton Formation	in	250	
	bottom	1044	
Lee Formation	top	1044	
	bottom	1866	

Mississippian System

Bluestone Formation	top	1866	
	bottom	2194	
Princeton Sandstone	top	2194	
	bottom	2351	
Hinton Formation	top	2351	
	bottom	2578	
Stony Gap Sandstone	top	2455	
	bottom	2578	
Bluefield Formation	top	2578	
	bottom	2865	
Greenbrier Limestone	top	2865	
	bottom	3300	
Maccrady-Price Formations	top	3300	
	bottom	3569	

Mississippian-Devonian Systems

Big Stone Gap Shale	top	3569	
	bottom	3937	

Devonian - Pre-Devonian Systems

Devonian - Pre-Devonian undivided	top	3937	
			(deepest sample 4932)