

Company: United Producing Co., Inc.  
 Farm: Mary R. McNeil et al  
 Well No.: 1-1724  
 Elevation: 1832.6'  
 Total Depth: 4898  
 Location: Buchanan County  
           5720' S. of 37°15'  
           6675' W. of 81°50'  
 Drilling Commenced: 7/10/50  
 Well Completed: 11/18/50  
 Result: Dry Hole, P & A

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

## GEOLOGIC LOG

<u>Sample</u>	<u>Interval</u>	<u>Description</u>
0-1280	1280	No samples
1280-1286	6	Siltstone, locally shaly, light to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with: common biotite, common muscovite, and rare iron oxide stains.
1286-1325	39	Shale, dark gray, brown, moderately hard, flaky, fair to good fissility, argillaceous, with: rare iron oxide stains.
1325-1345	20	Interbedded; Siltstone, locally finely sandy, light to dark gray, moderately hard, brittle, no apparent bedding, argillaceous, with: rare biotite, common muscovite, abundant carbonaceous material, and rare iron oxide stains. Coal, black, vitreous, blocky fracture, with rare concoidal fracture, and common plant fossils.
1345-1360	15	Interbedded; Sandstone, white, light gray, moderately cemented, very fine-to medium-grained, medium sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, abundant muscovite, common carbonaceous material, and common coal fragments. Slightly porous. Shale, carbonaceous (locally), medium to dark gray, moderately soft, flaky, fair to good fissility, argillaceous, with: common muscovite.

1360-1377	17	Sandstone, white, light gray, moderately cemented, very fine-to fine-grained, well sorted, subangular to angular, interstitially silty, siliceous, abundant biotite, abundant muscovite, common carbonaceous material, and abundant iron oxide stains. Nonporous to slightly porous.
1377-1384	7	Siltstone, locally finely sandy, locally shaly, medium to dark gray, brown-gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, common muscovite, rare iron oxide stains.
1384-1400	16	Sandstone, white, clear, poorly cemented, fine-to medium-grained, well sorted, subrounded to angular, interstitially silty, siliceous, with: common biotite, abundant muscovite, rare chlorite, common iron oxide stains. Slightly porous.
1400-1406	6	Sandstone, as in 1384-1400, with stringers of Siltstone, shaly, light to dark gray, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, rare muscovite, common carbonaceous material, and rare iron oxide stains.
1406-1422	16	Sandstone, as in 1384-1400.
1422-1443	21	Siltstone, locally shaly, medium to dark gray, brown (rare), hard, tough, no apparent bedding to poorly fissile, argillaceous, with: rare muscovite, and common iron oxide stains.
1443-1480	37	Sandstone, white, light gray, moderately cemented, very fine-to fine-grained, medium sorted, subangular to angular, interstitially silty, siliceous, with: abundant biotite, abundant muscovite, common chlorite, rare carbonaceous material, common iron oxide stains. Slightly porous. Siltstone, as in 1422-1443.

1480-1497	17	Shale, carbonaceous, dark gray, black, moderately soft, flaky, fair to good fissility, argillaceous, with: rare muscovite, rare abundant carbonaceous material, abundant carbonaceous laminae, abundant coal fragments, rare iron oxide stains, and common fossils (plant).
1497-1521	24	Siltstone, locally finely sandy, locally shaly, medium to dark gray, green, moderately hard, brittle, no apparent bedding, argillaceous, with: rare biotite, rare muscovite, abundant chert (rounded brown nodules), common carbonaceous material, and abundant iron oxide stains.
1521-1527	6	Siltstone, locally shaly, red (rare), green-gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, common iron oxide stains.
1527-1532	5	Siltstone, locally shaly, red, green, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, ferruginous, with: common biotite, common muscovite, and rare iron oxide stains.
1532-1555	23	Siltstone, locally finely sandy, light gray, red (rare), green, moderately soft, flaky, no apparent bedding, calcareous (locally), argillaceous, with: abundant biotite, common muscovite, rare carbonaceous material, and rare iron oxide stains.
1555-1575	20	Sandstone, white, light gray, well cemented, very fine-to fine-grained, well sorted, rounded to subangular, interstitially silty, siliceous, with: abundant biotite, common muscovite, rare carbonaceous material. Slightly porous.
1575-1580	5	Interbedded; Sandstone, as in 1555-1575, with: Siltstone, carbonaceous, dark gray, moderately soft, flaky, poorly fissile, argillaceous, with: abundant muscovite, abundant carbonaceous material, abundant carbonaceous laminae, and rare iron oxide stains. Slightly porous.

1580-1610	30	Sandstone, white, clear, moderately cemented, very fine-to medium grained, medium sorted, subangular to angular, interstitially silty, siliceous, calcareous (slightly), with: abundant biotite, abundant muscovite, common feldspar, abundant chlorite, rare carbonaceous material, abundant iron oxide stains. Slightly porous.
1610-1628	18	Siltstone, locally shaly, light to dark gray, hard, tough, no apparent bedding to poorly fissile, argillaceous, with: rare biotite, rare muscovite, rare iron oxide stains.
1628-1643	15	Sandstone, white, light gray, moderately cemented, very fine-to fine-grained, well sorted, subrounded to angular, interstitially silty, siliceous, with: common biotite, rare muscovite, rare chlorite, rare carbonaceous material, abundant iron oxide stains. Slightly porous to porous.
1643-1650	7	Interbedded; Sandstone, as in 1628-1643, with: Siltstone, carbonaceous, black, soft, flaky, no apparent bedding to poorly fissile, argillaceous, with: abundant muscovite, rare iron oxide stains.
1650-1654	4	Sandstone, as in 1643-1650.
1654-1670	16	Interbedded; Sandstone, white, clear, well cemented, fine-to medium-grained, coarse-grained (rare); medium sorted, subangular to angular, siliceous, with: common biotite, common, iron oxide stains. Slightly porous. Siltstone, locally shaly, dark gray, moderately hard, brittle, poorly fissile, argillaceous, with: rare muscovite, common carbonaceous laminae, and rare iron oxide stains.
1670-1719	49	Siltstone, locally shaly, red, green, tan, moderately soft, flaky, no apparent bedding to poorly fissile, calcareous (slightly), argillaceous, with: rare biotite, rare muscovite, and rare carbonaceous material.

1719-1729	10	Siltstone, red, green (rare), tan (rare), moderately hard, brittle, no apparent bedding, calcareous (slightly), ferruginous, with: common biotite, rare muscovite.
1729-1739	10	Siltstone, red (common), green, moderately hard, brittle, no apparent bedding, calcareous (slightly), argillaceous, with: common biotite, rare muscovite, rare iron oxide stains.
1739-1750	11	Siltstone, locally finely sandy, light gray, dark gray, green-gray, moderately hard, flaky, no apparent bedding, argillaceous, with: abundant biotite, common muscovite, and common iron oxide stains.
1750-1760	10	Siltstone, variegated, locally finely sandy, light gray, red, green, tan, moderately hard, brittle, no apparent bedding, calcareous, argillaceous, with: common biotite, common muscovite, and rare iron oxide stains.
1760-1792	32	Siltstone, locally shaly, red (rare), green, moderately soft, flaky, poorly fissile, calcareous (very slightly), argillaceous, with: common biotite, common muscovite, rare chert nodules, abundant carbonaceous laminae, and rare iron oxide stains.
1792-1820	28	Interbedded; Sandstone, white, moderately cemented, very fine-grained, well sorted, subangular, interstitially silty, siliceous, with: rare biotite, rare muscovite, rare coal, rare iron oxide stains. Nonporous to slightly porous. Siltstone, locally finely sandy, light to medium gray, moderately hard, brittle, no apparent bedding, argillaceous, with: common biotite, common muscovite,
1820-1825	5	Sandstone, white, well cemented, very fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: rare biotite, rare muscovite, abundant iron oxide stains. Nonporous.
1825-1826	1	No samples.

1826-1840	14	Sandstone, white, light gray, well cemented, very fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, abundant muscovite, abundant iron oxide stains. Nonporous to slightly porous. With stringers of Siltstone, locally finely sandy, dark gray, moderately soft, flaky, no apparent bedding, argillaceous, with: common biotite, rare muscovite, and abundant carbonaceous material.
1840-1902	62	Shale, carbonaceous (locally), silty, dark, gray, brown, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with: rare muscovite, abundant pyrite.
1902-1932	30	Shale, as in 1840-1902, with stringers of Siltstone, locally finely sandy, light gray, moderately hard, brittle, no apparent bedding, argillaceous, with: rare biotite, rare muscovite.
1932-1933	1	No samples.
1933-2000	67	Siltstone, shaly, dark gray, moderately hard, brittle, poorly fissile argillaceous, with: common muscovite.
2000-2040	40	Shale, carbonaceous, black, moderately soft, flaky, good fissility, argillaceous, with: rare muscovite.
2040-2066	26	Interbedded; Shale, as in 2000-2040, with: Siltstone, locally finely sandy, light to medium gray, moderately hard, brittle, no apparent bedding, argillaceous, with: common biotite, common muscovite.
2066-2088	22	Interbedded; Limestone, dolomitic, light brown, moderately hard, fossil fragmental (rare), no apparent bedding, cryptocrystalline, with: common calcite. Siltstone, locally shaly, light to dark gray, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with: rare muscovite.

2088-2128	<u>40</u>	Sandstone, white, light gray, moderately cemented, very fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, common carbonaceous material, rare iron oxide stains. Nonporous to slightly porous. With stringers of Siltstone, as in 2066-2088.
2128-2194	66	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, argillaceous, with: rare biotite, rare muscovite, and rare iron oxide stains.
2194-2260	<u>66</u>	Interbedded; Siltstone, as in 2128-2194, with: Sandstone, white, light gray, poorly cemented, very fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: rare biotite, common muscovite, and rare iron oxide stains. Nonporous.
2260-2304	44	Sandstone, white, clear, orange, moderately cemented, very fine-to fine-grained, well sorted, subrounded to angular, siliceous, with: rare biotite, rare muscovite, common carbonaceous material, abundant iron oxide stains. Nonporous to slightly porous.
2304-2366	<u>62</u>	Limestone, shaly, light to dark gray, moderately hard, fossil fragmental, no apparent bedding, cryptocrystalline, with: rare mica, rare pyrite, common calcite and common iron oxide staining.
2366-2377	11	Limestone, sandy, green-gray, moderately soft, no apparent fossil content, no apparent bedding, cryptocrystalline, with: common mica, rare calcite, rare carbonaceous material.
2377-2379	2	No samples

2379-2403	24	Siltstone, locally shaly, red, green, moderately soft, brittle, no apparent bedding to poorly fissile, calcareous (locally), argillaceous, ferruginous, with: common biotite, abundant muscovite.
2403-2448	45	Siltstone, red, as in 2379-2403, rare green.
2448-2454	6	Siltstone, maroon-drab, moderately hard, brittle, no apparent bedding, calcareous (locally), ferruginous, with: rare biotite, abundant muscovite.
2454-2458	8	No samples.
2458-2499	41	Siltstone, as in 2448-2454.
2499-2524	25	Siltstone, locally shaly, light gray, red (rare), moderately hard, brittle, poorly fissile, calcareous, argillaceous, with: common muscovite, rare carbonaceous material, rare iron oxide stains.
2524-2534	10	No samples.
2534-2561	27	Siltstone, locally shaly, dark gray (rare), red, moderately hard, brittle, poorly fissile, argillaceous, ferruginous, with: common biotite, common muscovite, and rare carbonaceous material.
2561-2566	5	Siltstone, as in 2534-2561, finely sandy.
2566-2588	22	Siltstone, locally shaly, dark gray, red, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, ferruginous, with: rare biotite, abundant muscovite.
2588-2595	7	Siltstone, light to dark gray, moderately hard, brittle, no apparent bedding, argillaceous, common biotite, abundant muscovite, and rare iron oxide stains.
2595-2610	15	Sandstone, white, light gray, moderately cemented, very fine-to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, abundant muscovite, common iron oxide stains, abundant silty, micaceous partings (contamination?). Nonporous.

2610-2619	9	Siltstone, locally finely sandy, light to medium gray, moderately soft, brittle, no apparent bedding, siliceous, argillaceous, with: abundant biotite, abundant muscovite, common pyrite, and rare iron oxide stains.
2619-2632	13	Sandstone, as in 2595-2610.
2632-2659	27	Sandstone, grades locally to a sandy Siltstone, white, light gray, moderately cemented, very fine-to fine-grained, well sorted, subrounded to angular, interstitially silty, siliceous, with: abundant biotite, abundant muscovite, rare pyrite, and rare carbonaceous material. Nonporous to slightly porous.
2659-2690	31	Interbedded; Sandstone, as in 2632-2659, with: Siltstone, calcareous, light to dark gray, moderately hard, brittle, no apparent bedding, calcareous, argillaceous, with: abundant biotite, common muscovite, abundant carbonaceous material, and rare iron oxide stains.
2690-2705	15	Sandstone, white, clear, orange, moderately cemented, very fine-to medium-grained, medium sorted, rounded to subangular, interstitially silty, siliceous, with: common biotite, common muscovite, rare carbonaceous material, abundant iron oxide stains. Slightly porous.
2705-2715	10	Sandstone, as in 2690-2705, with minor stringers of Siltstone locally shaly, medium to dark gray, moderately soft, flaky, poorly fissile, argillaceous, with: common biotite, abundant muscovite, common iron oxide stains.
2715-2751	36	Sandstone, white, orange, poorly cemented, fine-to medium-grained, well sorted, subrounded to angular, siliceous, with: rare biotite, rare muscovite, abundant iron oxide stains. Slightly porous.
2751-2753	2	No samples.
2753-2770	17	Sandstone, white, clear, moderately cemented, fine-to medium-grained, well sorted, subrounded to angular, siliceous, with: rare biotite, rare muscovite, rare carbonaceous material. Nonporous to slightly porous.

2770-2810	40	Interbedded; Sandstone, as in 2753-2770, with: Siltstone, locally finely sandy, light to dark gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with: common biotite, common muscovite, rare iron oxide stains.
2810-2845	35	Siltstone, shaly, light to medium gray, moderately soft, flaky poorly fissile, calcareous, (locally) argillaceous, with: rare biotite, rare muscovite, and rare iron oxide stains.
2845-2859	14	Siltstone, as in 2810-2845, with minor stringers of Sandstone, white, clear, moderately cemented, very fine-to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: rare biotite, rare muscovite. Slightly porous.
2859-2865	6	Siltstone, locally finely sandy, light to dark gray, green-gray, moderately soft, flaky, no apparent bedding, siliceous, argillaceous, with: rare biotite, common muscovite, rare carbonaceous material, and rare iron oxide stains.
2865-2866	1	No samples.
2866-2878	12	Siltstone, as in 2859-2865.
2878-2887	9	Interbedded; Siltstone, as in 2859-2865, with: Sandstone, white, clear, moderately cemented, very fine-to fine-grained, well sorted, subrounded to subangular, siliceous, with: rare biotite, rare muscovite, rare iron oxide stains. Nonporous to slightly porous.
2887-2939	52	Siltstone, locally shaly, medium gray-green, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, with: rare muscovite, rare carbonaceous material, rare iron oxide stains.
2939-2954	15	Siltstone, grades to a very fine-grained Sandstone, locally finely sandy, light gray, light green, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with: rare biotite, rare muscovite, and common iron oxide stains.

2954-2967	13	Sandstone, silty, white, orange, moderately cemented, very fine-to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: rare biotite, rare muscovite, rare carbonaceous material, abundant iron oxide stains. Nonporous to slightly porous.
2967-2993	26	Sandstone, as in 2954-2967, with minor stringers of: Siltstone, locally finely sandy, light to medium gray, moderately hard, brittle, no apparent bedding, siliceous, with: common biotite, common muscovite, and abundant iron oxide stains.
2993-3011	18	Shale, silty, medium to dark gray, moderately hard, brittle, poorly fissile to fair fissility, argillaceous, with: rare muscovite, common carbonaceous material.
3011-3021	10	No samples.
3021-3063	42	Silty Shale, as in 2993-3011.
3063-3090	27	Interbedded; Siltstone, locally shaly, light to dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with: rare muscovite, and common carbonaceous material. Sandstone, white, clear, moderately cemented, very fine-to fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: common biotite, common muscovite, common iron oxide stains. Nonporous to slightly porous.
3090-3136	46	Siltstone, locally shaly, light to medium gray, moderately soft, flaky, poorly fissile, calcareous (slightly), argillaceous, with: abundant biotite, common muscovite, rare carbonaceous material, and rare iron oxide stains.
3136-3137	1	No samples.
3137-3164	27	Shale, silty, medium to dark gray, moderately hard, brittle, fair to good fissility, calcareous (locally), argillaceous, with: rare muscovite, and rare carbonaceous material.

- 3164-3175 11 Limestone, shaly, light to dark gray, moderately soft, oolitic structure (rare), fossil fragmental, no apparent bedding, cryptocrystalline, with: rare muca, common calcite.
- 3175-3189 14 Limestone, sandy, dark gray, moderately hard, oolitic structure (rare), no apparent fossil content, no apparent bedding, cryptocrystalline, with: rare calcite.
- 3189-3236 Siltstone, locally finely sandy, locally shaly, light to medium gray, moderately hard, brittle, no apparent bedding, calcareous (very slightly), argillaceous, with: common biotite, common muscovite, rare pyrite, and rare carbonaceous material.
- 3236-3237 1 Sandstone, silty, white, light gray, moderately cemented, very fine-grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with: rare biotite, rare muscovite common carbonaceous material, abundant iron oxide stains. Nonporous.
- 3237-3274 37 Siltstone, light to dark gray, moderately hard, brittle, no apparent bedding, argillaceous, with: common biotite, common muscovite, rare pyrite, rare carbonaceous laminae, common iron oxide stains. With stringers of Silty Sandstone, as in 3236-3237.
- 3274-3346 72 Shale, dark gray, moderately soft, flaky, good fissility, argillaceous, with: rare muscovite.
- 3346-3387 41 Limestone, shaly, light to dark gray, moderately hard, fossil fragmental, platy, cryptocrystalline, with: rare mica, rare pyrite, common calcite.
- 3387-3394 7 Limestone, shaly, light to dark gray, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with: common mica.

3394-3410	16	No samples.
3410-3442	32	Limestone, dark gray, white, moderately hard, oolitic structure (locally), fossil fragmental (crinoid stems), no apparent bedding, microcrystalline, with: rare mica, abundant calcite.
4332-3474	32	Limestone, shaly, dark gray, moderately soft, fossil fragmental (rare), no apparent bedding, cryptocrystalline, with: rare mica, common calcite.
3474-3537	63	Limestone, dark gray, white, moderately hard, oolitic structure (locally), fossils (crinoid stems), no apparent bedding, cryptocrystalline, with: abundant calcite.
3537-3575	38	Siltstone, green-gray, moderately hard, brittle, no apparent bedding, calcareous, argillaceous, with: rare biotite, rare muscovite, rare carbonaceous material.
3575-3635	60	Limestone, dark gray, moderately hard, fossil fragmental, no apparent bedding, cryptocrystalline, with: common calcite, and rare iron oxide staining.
3635-3674	39	Limestone, light to dark gray, moderately hard, fossil fragmental, no apparent bedding, microcrystalline, with: abundant calcite, and rare iron oxide staining.
3674-3788	114	Limestone, light gray, light to dark brown, moderately hard, fossil fragmental, no apparent bedding, cryptocrystalline to microcrystalline, with: rare pyrite, and common calcite.
3788-3803	15	Siltstone, locally finely sandy, light to medium gray, moderately hard, brittle, no apparent bedding, calcareous, argillaceous, with: rare biotite, rare muscovite, and common iron oxide stains.

3803-3810	7	Limestone, light to dark gray, dark brown, moderately hard, oolitic structure, fossil fragmental no apparent bedding, cryptocry-stalline to microcrystalline, with: rare pyrite, common calcite, and common iron oxide staining.
3810-3886	76	Limestone, silty, light gray, white, light green moderately soft, no apparent fossil content, no apparent bedding, cryptocrystalline, with: rare mica, common calcite, and rare iron oxide staining.
3886-3950	64	Limestone, light to dark gray, dark brown, moderately hard, fossil fragmental, no apparent bedding, cryptocrystalline to microcrystalline, with: rare calcite.
3950-3960	10	Limestone, light gray, light brown, white, hard, no apparent fossil content, platy, cryptocrystalline, abundant calcite,
3960-3964	4	No samples.
3964-3979	15	Limestone, as in 3950-3960.
3979-4042	63	Limestone, light to dark gray, light to dark brown, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline to microcrystalline, with: rare calcite.
4042-4050	8	Limestone, light gray, light brown, white, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with: abundant calcite, and rare iron oxide staining.
4050-4092	42	Limestone, light to dark gray, light brown, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with: rare calcite.
4092-4157	65	Limestone light to dark gray, moderately hard, no apparent fossil content, no apparent bedding, microcrystalline, with: abundant calcite, common carbonaceous material, and rare iron oxide staining.
4157-4170	13	Siltstone, locally finely sandy, red, moderately soft, flaky, no apparent bedding, ferruginous, with: common muscovite.

4170-4210	40	Siltstone, locally finely sandy, medium gray, red, green, moderately hard, brittle, no apparent bedding, argillaceous, ferruginous, with: common muscovite, and rare iron oxide stains.
4210-4400	190	Siltstone, grades to a very fine-grained Sandstone, locally finely sandy, light to medium gray, moderately soft, brittle, no apparent bedding, siliceous, argillaceous, with: abundant biotite, abundant muscovite, and rare iron oxide stains.
4400-4408	8	Conglomeratic; Sandstone, white, milky white, light gray, moderately cemented, very fine-to very coarse-grained, with: abundant granules, poorly sorted, sub-angular to angular, interstitially silty, siliceous, with: rare biotite, rare muscovite, and common iron oxide stains. Slightly porous.
4408-4457	49	Siltstone, locally finely sandy, light to dark gray, moderately soft, flaky, no apparent bedding to poorly fissile, siliceous, argillaceous, with: abundant biotite, abundant muscovite, and rare carbonaceous material.
4457-4467	10	No samples
4467-4550	83	Shale, locally silty, medium to dark gray, moderately hard, brittle, fair to good fissility, argillaceous, with: rare muscovite, common pyrite.
4550-4565	15	No samples.
4565-4760	195	Shale, as in 4467-4550.
4760-4782	22	Shale, carbonaceous, black, moderately soft, flaky, good fissility, argillaceous, with: rare muscovite, and abundant carbonaceous material.
4782-4797	15	Interbedded; Shale, as in 4760-4782, with: Siltstone, locally finely sandy, light to medium gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with: common biotite, abundant muscovite, and rare iron oxide stains.

4797-4798	1	No samples.
4798-4806	8	Lithologies as in 4782-4797.
4806-4826	20	No samples.
4826-4860	34	Lithologies as in 4782-4797.
4860-4882	22	Siltstone, locally finely sandy, medium to dark gray, moderately hard, brittle, no apparent bedding, argillaceous, with: abundant biotite, abundant muscovite, and rare iron oxide stains.
4882-4902	20	Shale, carbonaceous, black, moderately soft, flaky, fair to good fissility, argillaceous, with: common muscovite, and rare carbonaceous material.

## GEOLOGIC SUMMARY

## Pennsylvanian System

Lee Formation	in	1280
	bottom	1497

## Mississippian System

Bluestone Formation	top	1497
	bottom	2088

Princeton Sandstone	top	2088
	bottom	2304

Hinton Formation	top	2304
	bottom	2993

Stony Gap Sandstone	top	2690
	bottom	2993

Bluefield Formation	top	2993
	bottom	3346

Greenbrier Limestone	top	3346
	bottom	4157

Maccrady-Price Formations	top	4157
	bottom	4462 <sup>+</sup>

## Mississippian-Devonian Systems

Big Stone Gap Shale	top	4462 <sup>+</sup>
	bottom	4782 <sup>+</sup>

## Devonian System

Devonian undivided	top	4782
	in	4902 (deepest sample)

Correlations by: J. M. Wilson and R. C. Milici

September 1963