

Company: United Producing Co., Inc.  
 Farm: Pocahontas Mining Corp.  
 Well No.: 1-1784  
 Elevation: 2519.4  
 Total Depth: 5735'  
 Location: Buchanan County  
           50' S. of 37°15'  
           200' E. of 81°45'  
 Drilling Commenced: 2/28/51  
 Well Completed: 11/30/51  
 Result: Dry hole

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

## GEOLOGIC LOG

Depth	Thickness	Description
0-2226		No samples
2226-2297	71	Siltstone, locally finely sandy, medium gray, red, green, moderately hard, brittle, no apparent bedding, slightly calcareous, siliceous, argillaceous, with; rare biotite, rare muscovite, rare carbonaceous material
2297-2301	4	Siltstone, locally finely sandy, light gray, (rare) red, green, moderately hard, brittle, no apparent bedding, to poorly fissile, argillaceous, with; rare biotite, common muscovite, rare carbonaceous material, rare iron oxide stains
2301-2312	11	Siltstone, locally shaly, red, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, ferruginous, with; rare biotite, rare muscovite
2312-2330	18	No samples
2330-2373	43	Interbedded Sandstone, white, clear, moderately cemented, fine to medium grained, well sorted, subrounded to subangular, siliceous, with; rare biotite, rare muscovite, rare chlorite, rare iron oxide stains, slightly porous, with; Siltstone, locally finely sandy, light to medium gray, red, moderately hard, brittle, no apparent bedding, argillaceous, ferruginous, with; rare muscovite
2373-2396	23	Siltstone, locally shaly, carbonaceous (locally) light to dark gray, moderately soft, flaky, no apparent bedding to poorly fissile, calcareous, argillaceous, common biotite, rare muscovite, abundant carbonaceous material

2396-2404	8	Siltstone, variegated, locally finely sandy, light gray, red, green, tan, moderately hard, brittle, no apparent bedding, slightly calcareous, argillaceous, with; common biotite, common muscovite, rare carbonaceous material
2404-2434	30	Siltstone, locally finely sandy, light to dark gray, (rare) red, green, white, moderately hard, brittle, no apparent bedding, slightly calcareous, argillaceous, with; common biotite, common muscovite, rare iron oxide stains
2434-2464		Siltstone, shaly, dark gray, black, moderately hard, brittle, poor to fair fissility, argillaceous, with; common muscovite
2464-2477	13	No samples
2477-2534	57	Siltstone, locally finely sandy, locally shaly, medium to dark gray, moderately hard, brittle, no apparent bedding, locally calcareous, argillaceous, with; common biotite, common muscovite, common carbonaceous material
2534-2564	30	No samples
2564-2608	44	Siltstone, locally shaly, light to dark gray, moderately hard, tough, no apparent bedding to poorly fissile, argillaceous, with; common muscovite
2608-2669	61	Shale, carbonaceous, locally silty, dark gray, black, moderately soft, flaky, fair to good fissility, argillaceous, with; rare muscovite
2669-2678	9	No samples
2678-2686	8	Shale, as in 2608-2669
2686-2716	30	Interbedded Sandstone, white, light gray, moderately cemented, very fine to medium grained, medium sorted, subrounded to angular, siliceous, with; rare biotite, common muscovite, common iron oxide stains, slightly porous with; Siltstone, locally shaly, dark gray, red, green, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous ferruginous, with; rare muscovite, rare carbonaceous material
2716-2717	1	No samples
2717-2725	8	Lithologies as in 2686-2716
2725-2749	24	Siltstone, locally shaly, light to dark gray, moderately hard, brittle, poorly fissile, argillaceous, with; common biotite, common muscovite, rare carbonaceous material

2749-2789	40	Interbedded; Siltstone, as in 2725-2749, with; Sandstone, white, light gray, moderately cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, slightly calcareous, with; common biotite, common iron oxide stains. Nonporous to slightly porous
2789-2815	26	Conglomeratic Sandstone, white, milky white, moderately cemented, fine to very coarse grained, granule (common), poorly sorted, subrounded to angular, siliceous, common biotite, common carbonaceous material, abundant iron oxide stains, slightly porous to porous
2815-2856	41	Siltstone, shaly, light to dark gray, moderately hard, brittle, poor to fair fissility, argillaceous, with; rare muscovite, rare iron oxide stains, stringers of Limestone, shaly, dark gray, moderately hard, fossils (brachiopod fragments) no apparent bedding, cryptocrystalline, with; rare mica, rare calcite
2856-2925	69	Siltstone, locally finely sandy, medium to dark gray, green, moderately soft, flaky, no apparent bedding, slightly calcareous, argillaceous, with; abundant biotite, common muscovite, rare carbonaceous material, common iron oxide stains
2925-2986	61	Limestone, silty, light to dark gray, moderately hard, fragmental fossil content, no apparent bedding, cryptocrystalline to microcrystalline, with; rare mica, common calcite, rare iron oxide staining
2986-3130	144	Siltstone, locally shaly, red, moderately hard, brittle, no apparent bedding to poorly fissile, calcareous (slightly), argillaceous, with; abundant biotite, muscovite
3130-3141	11	Siltstone, as in 2986-3130 maroon-drab
3141-3230	89	Siltstone, locally finely sandy, locally shaly, light to medium gray, red, moderately hard, brittle, no apparent bedding, slightly calcareous, argillaceous, ferruginous, with; abundant muscovite, rare iron oxide stains
3230-3231	1	No samples
3231-3264	33	Siltstone, as in 3141-3230
3264-3280	16	Sandstone, white, light gray, poorly cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; abundant biotite, abundant muscovite, rare carbonaceous material. Nonporous to slightly porous

3280-3295	15	Siltstone, locally finely sandy, slight to medium gray, moderately soft, flaky, no apparent bedding, argillaceous, common biotite, common muscovite, rare carbonaceous material, rare iron oxide stains
3295-3316	21	Siltstone, light gray, red, moderately soft flaky, no apparent bedding, argillaceous, ferruginous, common muscovite
3316-3330	14	Interbedded Sandstone, white, light gray, moderately cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, common biotite, common muscovite, common iron oxide stains. Nonporous to slightly porous, with; Siltstone, shaly, light to dark gray, moderately soft, flaky, no apparent bedding to poorly fissile, argillaceous, common biotite, rare muscovite, rare carbonaceous material
3330-3351	21	Interbedded Limestone, shaly, dark gray, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with; rare mica, rare calcite with; Siltstone, as in 3316-3330
3351-3377	26	Siltstone, locally shaly, light gray to dark gray, moderately hard, brittle, no apparent bedding, slightly calcareous, argillaceous, with; common biotite, common muscovite, rare carbonaceous material, rare iron oxide stains
3377-3394	17	Siltstone, as in 3351-3377, with; stringers of Sandstone, white, light gray, well cemented, very fine to fine grained, well sorted, rounded to subangular, interstitially silty, siliceous, with; abundant biotite, abundant muscovite, rare carbonaceous material, rare iron oxide stains, slightly porous
3394-3400	6	Shale, medium to dark gray, moderately hard, brittle, fair to good fissility, argillaceous, with; rare muscovite, common pyrite, fossils (imprints)
3400-3412	12	Shale, as in 3394-3400, with stringers of Limestone, shaly, light gray, moderately hard, fragmental fossil content, no apparent bedding, cryptocrystalline to microcrystalline, with; rare mica
3412-3435	23	Siltstone, locally shaly, light gray, (rare) red, green, moderately soft, brittle, no apparent bedding, slightly calcareous, argillaceous, with; rare biotite, rare muscovite, rare carbonaceous material, rare iron oxide stains
3435-3466	31	Shale, silty, medium to dark gray, moderately

hard, brittle, fair to good fissility, slightly calcareous, argillaceous, with; rare biotite, rare muscovite, common pyrite, rare iron oxide stains

- 3466-3486      20      Shale, as in 3435-3466, with minor stringers of Sandstone, white, clear, moderately cemented, fine to medium grained, well sorted, subangular to angular, siliceous, with; rare biotite, slightly porous
- 3486-3494      8      Shale, silty, green, black, moderately hard, brittle, poor to fair fissility, slightly calcareous, argillaceous, with; rare biotite, rare muscovite, carbonaceous material
- 3494-3521      27      Siltstone, locally finely sandy, light to dark gray, red, moderately hard, brittle, no apparent bedding, calcareous, argillaceous, with; abundant biotite, common muscovite, rare carbonaceous material
- 3521-3567      46      Siltstone, as in 3494-3521, with stringers of Sandstone, white, moderately cemented, very fine to medium grained, medium sorted, subrounded to subangular, interstitially silty, siliceous, with; rare muscovite, slightly porous
- 3567-3569      2      No samples
- 3569-3615      46      Siltstone, locally finely sandy, green-gray, hard, tough, no apparent bedding, argillaceous with; common biotite, common muscovite,
- 3615-3634      19      Sandstone, white, clear, moderately cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, with; common biotite, common muscovite, rare carbonaceous material, abundant silty - micaceous partings, Nonporous, slightly porous
- 3634-3646      12      Siltstone, finely sandy, light to medium gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with; abundant biotite, common muscovite, common carbonaceous material, common iron oxide stains
- 3646-3657      11      Sandstone, white, clear, moderately cemented, fine to medium grained, well sorted, subrounded to angular, siliceous, rare biotite, rare chlorite, abundant iron oxide stains, slightly porous to porous
- 3657-3677      20      Sandstone, as in 3646-3657, with abundant iron staining (lit particles), and stringers of Siltstone, locally shaly, light to dark gray

		moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, rare biotite, rare muscovite
3677-3740	63	Sandstone, as in 3646-3657
3740-3770	30	Siltstone, grades locally to a very fine grained Sandstone, locally finely sandy, light to dark gray, moderately hard, brittle, no apparent bedding, argillaceous, abundant biotite, abundant muscovite, common carbonaceous material abundant iron oxide stains
3770-3785	15	Interbedded; Siltstone, as in 3740-3770, with; Sandstone, white to light gray, moderately cemented, very fine to fine grained, well sorted, subrounded to subangular, interstitially silty, siliceous, common biotite, common muscovite, rare pyrite, abundant iron oxide stains; Nonporous to slightly porous
3785-3796	11	Shale, silty, medium to dark gray, moderately soft, flaky, fair to good fissility, argillaceous, rare muscovite, rare iron oxide stains, with; stringers of Sandstone, as in 3770-3785
3796-3805	9	Lithologies as in 3770-3785
3805-3816	11	Siltstone, shaly, light to dark gray, moderately hard, brittle, poorly to fair fissility, slightly calcareous, argillaceous, common muscovite, rare carbonaceous material rare iron oxide stains
3816-3837	21	Siltstone, shaly, green-gray, black, moderately hard, brittle, poor to fair fissility, argillaceous, abundant biotite, common muscovite, common carbonaceous material
3837-3839	2	No samples
3839-3903	64	Shale, light to dark gray, moderately soft, flaky, good fissility, slightly calcareous argillaceous, common muscovite, common pyrite, rare iron oxide stains
3903-3908	5	Interbedded; Shale, as in 3839-3903, with; Sandstone, white to light gray, moderately cemented, very fine to fine grained, well sorted, subangular to angular, interstitially silty, siliceous, common biotite, common muscovite, rare iron oxide stains. Nonporous to slightly porous

3908-3915	7	No samples
3915-3928	13	Lithologies as in 3903-3908
3928-3949	21	Sandstone, white, clear, well cemented, very fine to fine grained, well sorted, subrounded to angular, interstitially silty, siliceous, common biotite, common muscovite, rare chlorite, rare carbonaceous material, abundant iron oxide stains, common silty-micaceous partings, Nonporous
3949-4090	141	No samples
4090-4139	49	Shale, locally silty, medium to dark gray, moderately soft, flaky, good fissility, slightly calcareous, argillaceous, with; rare muscovite, with; abundant carbonaceous material, rare iron oxide stains
4139-4174	35	Limestone, shaly, light to dark gray, moderately hard, fossils (crinoid stems, brachiopod fragments), no apparent bedding, cryptocrystalline, common mica, abundant calcite
4174-4308	134	Siltstone, light to medium gray, moderately hard, brittle, no apparent bedding, very calcareous, argillaceous, with; rare biotite, rare muscovite, common calcite, common carbonaceous material, common iron oxide stains
4308-4560	252	Limestone, silty, light to dark gray, moderately hard, oolitic, (locally), fragmental fossil content, no apparent bedding, microcrystalline, common mica, abundant calcite
4560-4564	4	No samples
4564-4610	46	Limestone, silty, light gray, white, green, moderately hard, fragmental (rare) fossil content, no apparent bedding, cryptocrystalline, rare mica, common calcite, rare carbonaceous material, rare iron oxide staining,
4610-4625	15	Limestone, light to dark gray, white, moderately hard, oolitic, fragmental fossil content, no apparent bedding, microcrystalline, rare mica, common calcite
4625-4639	14	Siltstone, red, green, moderately hard, brittle, no apparent bedding, calcareous, argillaceous, common biotite, common muscovite

4639-4697	58	Limestone, light to dark gray, moderately hard, fossil fragmental content, no apparent bedding to platy, with; cryptocrystalline, rare mica, common calcite, rare iron oxide staining
4697-4710	13	Limestone, light to dark gray, moderately hard, oolitic, fragmental fossil content, no apparent bedding, microcrystalline, abundant calcite
4710-4753	43	Limestone, silty, light to dark gray, moderately hard, fragmental fossil content, no apparent bedding, microcrystalline, common calcite
4753-4769	16	Siltstone, red, green, moderately hard, brittle, no apparent bedding, calcareous, argillaceous, common biotite, common muscovite
4769-4785	16	Interbedded; Siltstone, as in 4753-4769, with; Limestone, silty, light brown, tan, white, moderately hard, fragmental fossil content, no apparent bedding, cryptocrystalline, common calcite
4785-4846	61	Limestone, light to dark gray, moderately hard, oolitic (rare) no apparent fossil content, no apparent bedding, cryptocrystalline, rare mica, common calcite
4846-4865	19	Limestone, dark gray, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with; rare calcite
4865-4926	61	Limestone, silty, light gray, white, light green, hard, fossil fragmental (rare) content, no apparent bedding, cryptocrystalline, abundant calcite, common iron oxide staining
4926-4971	45	Dolomite "Sugary", white, moderately hard, no apparent fossil content, no apparent bedding, cryptocrystalline, with; rare calcite, rare iron oxide staining.
4971-4988	17	Siltstone, locally finely sandy, light gray, red, green, moderately soft, flaky, no apparent bedding, argillaceous, dolomitic, with; rare muscovite, rare iron oxide stains
4988-5004	16	Siltstone, locally finely sandy, red, moderately hard, brittle, poorly fissile, argillaceous, ferruginous, with; rare muscovite
5004-5127	123	Siltstone, locally shaly, dark gray, moderately hard, brittle, no apparent bedding to poorly fissile, argillaceous, with; rare biotite, rare muscovite, rare iron oxide stains
5127-5284	157	Sandstone, grades to abundant Siltstone, white, light gray, poorly cemented, very fine to fine grained, well sorted, subrounded to

		subangular, interstitially silty, siliceous, common biotite, common muscovite, abundant pyrite, rare carbonaceous material, rare iron oxide stains, Nonporous
5284-5322	38	Siltstone, locally finely sandy, light to dark gray, moderately hard, brittle, no apparent bedding, argillaceous, common biotite, abundant muscovite, with; rare carbonaceous material, rare iron oxide stains
5322-5341	19	Shale, silty, dark gray, moderately soft, flaky, fair to good fissility, argillaceous, common muscovite, rare iron oxide stains
5341-5433	92	Siltstone, shaly, medium to dark gray, moderately soft, flaky, poor to fair fissility, argillaceous, common muscovite
5433-5560	127	Shale, silty, medium to dark gray, moderately soft, flaky, fair to good fissility, argillaceous, with; rare muscovite, rare iron oxide stains
5560-5569	9	No samples
5569-5595	26	Lithology as in 5433-5560
5595-5606	11	Siltstone, shaly, carbonaceous, dark gray, black, moderately hard, brittle, poorly fissile, argillaceous, with; rare muscovite, common pyrite, abundant carbonaceous material
5606-5614	8	Interbedded; Siltstone, as in 5595-5606 with; Shale, silty, light to medium gray, moderately hard, brittle, fair to good fissility, argillaceous, with; common muscovite, common iron oxide stains
5614-5620	6	Interbedded Shale, silty, medium to dark gray, moderately hard, brittle, fair to good fissility, argillaceous, with; common muscovite, rare iron oxide stains, with; Siltstone, locally finely sandy, light to medium gray, moderately soft, brittle, no apparent bedding, siliceous, argillaceous, common muscovite, rare pyrite, rare iron oxide stains
5620-5623	3	No samples
5623-5639	16	Lithologies as in 5614-5620
5639-5654	15	Lithologies as in 5614-5620, with; common granule-sized quartz grains
5654-5665	11	Interbedded Sandstone, white, clear, moderately cemented, fine to medium grained, medium sorted, subangular to angular, siliceous, with; rare biotite, rare muscovite, common iron oxide stains, slightly porous, with; Shale, carbonaceous, medium to dark gray, moderately soft, flaky, fair to good fissility, argillaceous, with; abundant biotite, abundant muscovite

common pyrite, abundant carbonaceous material

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|-----------|----|--|
| 5665-5721 | 56 | Shale, locally silty, light to medium gray, moderately hard, brittle, poor to fair fissility, argillaceous, with; rare biotite, rare muscovite, rare iron oxide stains   |
| 5721-5728 | 7  | Shale, as in 5665-5721, with; stringers of Siltstone, locally finely sandy, light gray, moderately hard, brittle, no apparent bedding, siliceous, argillaceous, with; rare biotite, rare muscovite, rare iron oxide stains |
| 5728-5735 | 7  | No samples   |

GEOLOGIC SUMMARY

Mississippian System

Bluestone Formation	in	2226
	bottom	2686
Princeton Sandstone	top	2686
	bottom	2925
Hinton Formation	top	2925
	bottom	3785
Stony Gap Sandstone	top	3412
	bottom	3785
Bluefield Formation	top	3785
	bottom	4139
Greenbrier Limestone	top	4139
	bottom	4971
Maccrady-Price Formations	top	4971
	bottom	5322

Mississippian-Devonian Systems

Big Stone Gap Shale	top	5322
	bottom	5595

Devonian System

Devonian undivided	top	5595
	in ...	5728 (deepest sample)

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

September 1963