

UNITED PRODUCING COMPANY

Yukon-Pocohontas Coal Company

Number 5-1647

Topographic Location: 11,000' South of 35° 15'; 15,5000' West of 81° 55'
(revised location).
Buchanan County, Virginia.

Interval

- 3312-3321 Shale, medium gray and medium dark gray (N5+4), very finely micaceous, about 75%; shale, grayish red (10R 4/2), very finely micaceous, about 25%, trace pyrite.
- 3321-3331 Siltstone, medium light gray (N6), medium-grained, about 60%; shale, silty to some silty, medium gray (N5), micaceous, about 40%; trace pyrite.
- 3331-3337 Ditto.
- 3337-3339 Graywacke, very light gray (N8), very fine-grained, sub-angular to angular, poorly sorted, about 90% quartzose, dark inclusions, very slightly micaceous, moderately well cemented, about 50%; shale, silty, medium gray (N5), very finely micaceous, about 50%.
- 3339-3343 Graywacke, medium light gray and light gray (N6 and N7), as above.
- 3343-3353 Ditto.
- 3353-3355 Ditto, predominantly loose grains.
- 3355-3356 Ditto, very light gray (N6).
- 3356-3359 Graywacke, light gray (N7), very fine-grained, subangular to angular, poorly sorted, about 80% quartzose, dark inclusions, slightly micaceous, moderately well cemented to moderately friable.
- 3359-3364 Siltstone, medium light gray (N6.5), very coarse-grained, dark inclusions, micaceous, about 75%; shale, very silty, medium gray (N5), micaceous, about 25%.

Interval

- 3364-3370 Ditto, trace pyrite.
- 3370-3373 Graywacke, very light gray (N8), very fine-grained, subangular, poorly sorted, about 90% quartzose, dark inclusions, silt cement, moderately friable, about 90%; shale, grayish red (10R 4/2), about 10%.
- 3373-3376 Graywacke, as above, loose grains.
- 3376-3377 Graywacke, very fine-grained to fine-grained, some iron-staining.
- 3377-3378 Ditto, light gray (N7), fine-grained to very fine-grained, about 90% quartzose, slightly micaceous.
- 3378-3382 Ditto, very slightly calcareous.
- 3382-3384 Ditto, very light gray (N8), loose grains.
- 3385-3389 Shale, medium dark gray (N4), very slightly fissile, very finely micaceous, about 50%; graywacke, as above, about 50%.
- 3387-3395 Shale, as above.
- 3395-3404 Shale, as above, about 80%; siltstone, calcareous, coarse-grained, medium light gray (N6), micaceous, about 20%.
- 3404-3409 Shale, dark gray (N3), trace very finely micaceous material, about 75%; graywacke, calcareous, light gray (N7), very fine-grained, subangular, poorly sorted, about 85% quartzose, dark inclusions, micaceous, silt cement, moderately well cemented, about 25%.
- 3409-3416 No sample.
- 3416-3421 Shale, slightly silty to very silty, slightly calcareous to calcareous, medium gray (N5), finely micaceous.
- 3421-3428 Ditto.
- 3428-3434 Shale, non-calcareous to calcareous, medium dark gray (N4), about 75%; limestone, very shaly, medium gray (N5), finely clastic, about 25%.
- 3434-3439 Shale, non-calcareous to slightly calcareous, dark gray (N3), trace very finely micaceous material, about 80%; limestone, very slightly shaly, medium dark gray (N4), medium clastic, about 20%.

Interval

- 3439-3445 Limestone, medium dark gray (N4), very finely clastic to medium clastic, small part nodular and mottled with light gray (no oolitic structure noted), about 60%; shale, medium dark gray (N4), as above, about 40%.
- 3445-3450 Limestone, medium dark gray (N4), medium clastic to coarsely clastic, nodular, small part mottled with light gray, about 70%; shale, medium gray (N5), as above, about 30%.
- 3450-3456 Limestone, dark gray and medium dark gray (N3-4), part shaly, very finely clastic to coarsely clastic, as above, more very small nodules, part oolitic (about 1/8 mm. in diameter), considerably mottled with light gray or light gray finely clastic matrix.
- 3456-3459 Limestone, very slightly shaly, dark gray (N3), finely clastic about 30%; limestone, medium brownish gray (5YR 5/1), mottled with light gray, nodular (1/10 mm. in diameter), about 20%; limestone, light brownish gray (5YR 6/1), finely clastic and finely crystalline, about 20%; limestone, as above, about 30%.
- 3459-3467 Graywacke, light gray and medium light gray (N7-6), very fine-grained, subangular, poorly sorted, about 90% quartzose, silt and shale cement, about 30%; shale, slightly calcareous to non-calcareous, medium dark gray and medium gray (N4-5), about 70%.
- 3467-3475 Ditto, part of medium gray (N5) shale silt; trace coal and considerable pyrite noted.
- 3475-3489 Shale, very silty, medium gray (N5), trace mica, about 80%; siltstone, medium light gray (N6), very slightly calcareous, coarse-grained, about 20%; trace pyrite.
- 3489-3500 Ditto.
- 3500-3511 Ditto.
- 3511-3419 Graywacke, slightly calcareous, very light gray (N8), very fine-grained, subangular, poorly sorted, about 85% quartzose, dark inclusions, slightly micaceous, moderately well cemented, silt cement, about 40%; shale, as above, about 60%.
- 3519-3531 Ditto; trace pyrite.
- 3531-3539 Shale, non-silty to silty, medium gray (N5), trace very finely micaceous material, about 90%; siltstone, light gray (N7), very coarse-grained, well cemented, about 10%.
- 3539-3546 Shale, medium dark gray (N4), trace very finely micaceous material.

Interval

- 3546-3555 Shale, medium gray (N5), trace very finely micaceous material.
- 3555-3563 Ditto.
- 3563-3673 Shale, as above, about 80%; limestone, shaly, medium gray (N5), very finely clastic, fossiliferous (crinoids and gastropod).
- 3573-3581 Shale, non-calcareous to some calcareous, medium dark gray (N4), trace very finely micaceous material.
- 3581-3590 Ditto, to some very calcareous. (sample needs washing).
- 3590-3598 Ditto, fossiliferous (crinoid fragments), (sample needs washing).
- 3598-3606 Shale, very slightly calcareous to very calcareous, as above, no fossils noted; some (about 5%) limestone, medium gray (N5), (Sample needs washing).
- 3606-3614 Shale, slightly calcareous, medium dark gray (N4), very finely micaceous, about 80%; limestone, shaly, medium dark gray (N4), very finely clastic to finely clastic, some light gray (N7), and finely clastic, fossiliferous (crinoids and brachiopod? fragments); trace light gray and medium dark gray coarsely crystalline limestone fragments.
- 3614-3621 Ditto (no brachiopod? fragments noted).
- 3621-3631 Shale, very slightly to slightly calcareous, medium gray (N5), about 70%; limestone, light gray (N7), medium clastic, moderately soft, about 30%.
- 3621-3637 Limestone, very shaly, dark gray (N3), finely clastic, about 95%; limestone, light gray (N7), finely clastic, about 5%.
- 3637-3644 Limestone, shaly, medium gray (N5), finely clastic to medium clastic, part mottled, with light gray, some light gray and medium gray crinoid fragments, small part light gray, medium clastic and nodular, about 75%; shale, non-calcareous to calcareous, medium gray (N5), trace very finely micaceous material, about 25%.
- 3644-3650 Limestone, shaly, medium gray (N5), finely clastic.
- 3650-3658 Limestone, very shaly, medium gray (N5), finely clastic to very finely clastic.
- 3658-3666 Limestone, slightly shaly, medium dark gray (N4), very finely clastic, with small part very finely crystalline. ((Sample needs washing)).

Interval

- 3666-3671 Limestone, very shaly, dark gray (N3), finely clastic with small part very finely crystalline and few coarsely crystalline inclusions, about 75%; limestone, slightly shaly, medium gray (N5), to medium light gray (N6), finely clastic to medium clastic, few crinoid fragments.
- 3671-3676 Limestone, shaly, medium dark gray (N4), finely clastic to medium clastic with small part very finely crystalline and few coarsely crystalline inclusions, about 60%; limestone, slightly shaly, medium gray (N5), few crinoid fragments.
- 3676-3680 Limestone, very slightly shaly, dark gray (N3), very finely clastic to medium clastic, considerably mottled with light gray.
- 3680-3692 Limestone, dark gray and medium light gray (N3-6), medium clastic, few very coarsely crystalline light gray fragments, and considerably nodular, mottled with light gray, trace bryozoan and crinoid, about 80%, shale, very calcareous, greenish gray (5NGY 6/1), very finely micaceous, about 20%.
- 3692-3700 Limestone, medium gray (N5), medium clastic to coarsely clastic, slightly fossiliferous.
- 3700-3714 Shale, slightly calcareous, medium gray (N5), very finely micaceous.
- 3714-3723 Limestone, medium dark gray (N4), medium clastic, fossiliferous, about 50%; shale, as above, about 50%.
- 3723-3733 Shale, calcareous, medium gray (N5), very finely micaceous, about 90%; limestone, as above, trace ostracod, about 10%.
- 3733-3743 Shale, slightly calcareous, medium gray (N5), about 90%; limestone, medium dark gray (N4), medium clastic to coarsely clastic, mottled with light gray, crinoid and few other macrofossil fragments.
- 3743-3753 Shale, slightly calcareous to calcareous, medium gray (N5), very finely micaceous, about 70%; limestone, very shaly, medium gray (N5), finely clastic.
- 3753-3760 Ditto.
- 3760-3762 Shale, as above, very slightly calcareous to calcareous, about 20%; limestone, medium gray (N5), medium clastic, fossiliferous, some coarsely crystalline fragments, about 20%.
- 3762-3770 Shale, as above, about 80%; limestone, medium dark gray and medium light gray (N4-6), medium clastic to coarsely clastic, part nodular, slightly crinoidal, about 20%.

Interval

3770-3773

Shale, very slightly to slightly calcareous, medium dark gray (N4), trace micaceous material, about 60%; limestone, medium dark gray and medium light gray (N4-6), coarsely clastic, nodular, fossiliferous, few very coarsely crystalline fragments, about 40%.

Samples examined by Elosie T. Jacobsen
Geologist, U.S. Geological Survey
Lexington, Kentucky
April, 1950.

Summarized
FLOWER BOND
25% COTTON FIBER
U.S.A.

UNITED PRODUCING COMPANY

Yukon-Pocahontas Coal Company

Number 5-1647

Topographic Location: 11,000' South of 37° 15'; 15,5000' West of 81° 55',
(revised location).
Richlands Quardrangle (NW),
Buchanan County, Virginia.

Elevation: 1826.4' (ground).

Total Depth: 4358'.

Interval

- 3773-3780 Limestone, slightly shaly, medium gray and medium dark gray (N4-5), very coarsely clastic with finely clastic and some part very finely crystalline matrix, angular and rounded inclusion, fossiliferous (crinoids and foraminifera?), few light gray very coarsely crystalline pieces, about 50%; shale, medium dark gray (N4), very slightly calcareous, about 50%.
- 3780-3790 Limestone, as above, medium dark gray (N4), considerably mottled, with finely clastic to very coarsely crystalline light gray limestone, about 70%; shale, as above, about 30%; trace pyrite.
- 3790-3796 Limestone, medium dark gray (N4), very coarsely clastic, nodular and part oolitic (diameter 1/2 to 1 mm.), some with light gray (N7), finely clastic matrix, some very coarsely crystalline light gray limestone, few crinoid fragments, about 70%; shale, as above, medium dark gray (N4), about 30%; trace pyrite.
- 3796-3804 Ditto; limestone, about 60%; shale, calcareous, about 40%.
- 3804-3815 Limestone, as above, diameter ooliths? (about 1/4 mm. and few 1/2 mm.), very slightly fossiliferous (no crinoid fragments noted).
- 3815-3824 Ditto, few crinoid fragments, some very coarsely crystalline light gray limestone.

Interval

- 3824-3833 Ditto, about 60% limestone, very shaly, medium dark gray (N4), finely clastic to part finely crystalline, about 40%.
- 3833-3842 Ditto, trace to very finely clastic limestone, nodular, no crinoids noted; considerable very coarsely crystalline light gray limestone.
- 3842-3852 Limestone, very shaly, medium dark gray (N4), finely clastic with part very finely crystalline; few pieces of calcite, possibly minute small lense.
- 3852-3862 Limestone, medium dark gray, coarsely clastic, nodular and oolitic (to 1 mm. in diameter), very finely clastic matrix with part very finely crystalline, part light gray matrix.
- 3862-3872 Limestone, medium gray (N3), very finely clastic with part very finely crystalline, dense.
- 3872-3875 Limestone, light brownish gray, medium clastic, nodular and oolitic (to 1/2 mm. in diameter), some finely clastic light gray matrix, some coarsely crystalline light gray limestone, trace crinoids.
- 3875-3880 Ditto, oolitic (diameter to 1 mm.).
- 3880-3889 Ditto, coarsely clastic, more light gray matrix and very coarsely crystalline fragments.
- 3889-3904 Limestone, medium gray (N5), very slightly shaly to shaly, dense.
- 3904-3915 Limestone, medium light gray and medium gray (N6-5), coarsely clastic, oolitic (to 1/2 mm. in diameter), very light gray and medium gray finely clastic matrix, very light gray matrix, soft.
- 3915-3931 Limestone, medium light gray and medium gray (N6-5), very coarsely clastic, oolitic (to over 1 mm. in diameter), to very light gray and medium-grained matrix, very light gray matrix soft, some very coarsely crystalline light gray fragments.
- 3931-3950 Limestone, very light gray (N8), and very light brownish gray (5YR 7/1), coarsely clastic, very oolitic (to 2/3 mm. in diameter), small crinoid fragments, as foraminifera fragment noted; small pieces.
- 3950-3962 Limestone, medium dark gray (N4), very finely clastic, small part oolitic to slightly oolitic (to 1 1/3 mm. in diameter), part with light gray very finely clastic matrix.

Interval

- 3962-3975 Limestone, medium dark gray (N4), coarsely clastic, oolitic (to 3/4 mm. in diameter), part with finely clastic soft matrix, mostly with very finely clastic medium dark gray matrix, few very coarsely crystalline light gray limestone fragments.
- 3975-3988 Limestone, very shaly to shaly, medium dark gray (N4), finely clastic with small part very finely crystalline.
- 3988-4004 Limestone, slightly shaly, medium dark gray (N4), very finely clastic, with small part very finely crystalline.
- 4004-4015 Limestone, dark gray (N3), very finely clastic with small part very finely crystalline, part slightly mottled with light gray.
- 4015-4029 Limestone, shaly, medium light gray (N5.8), medium clastic to finely clastic with small part very finely crystalline.
- 4029-4039 Limestone, light brownish gray and medium gray (5YR 6/1 and N5), coarsely clastic, nodular oolitic (to 2/3 mm. in diameter), considerable light gray to very light gray matrix predominantly soft, very slightly crinoidal, some coarsely crystalline light gray limestone.
- 4039-4049 Limestone, light brownish gray (5YR 6/1), finely clastic to medium clastic with small part very finely crystalline, trace fossiliferous fragments; limestone, very light gray (N8), finely clastic to small medium clastic, slightly crinoidal, soft, about 20%.
- 4049-4055 Limestone, medium gray (N5), very finely clastic, part slightly mottled with light gray, about 80%; limestone, very light gray (N8), finely clastic, soft, about 20%; some light gray coarsely crystalline limestone.
- 4005-4064 Limestone, brownish gray (5YR 4/1), very finely clastic with part very finely crystalline, slightly mottled with light gray, about 85%; limestone, very light gray, as above, and some very coarsely crystalline, about 15%.
- 4064-4073 Limestone, medium dark gray (N4) and some very light gray (N8), medium clastic to coarsely clastic, slightly oolitic to some oolitic (dark and light oolitic to 1/3 mm. in diameter), matrix finely clastic, much of very light gray limestone soft.
- 4073-4084 Limestone, light brownish gray (5YR 6/1), very finely clastic with part very finely crystalline, small part oolitic with light brownish gray ooliths well cemented with light brownish gray, about 85%; limestone, very light gray (N8), finely clastic to very finely crystalline, part oolitic and coarsely clastic, slightly crinoidal, soft to moderately soft, about 15%.

Interval

- 4084-4092 Limestone, light gray (N7), very coarsely clastic, very oolitic (to 1. mm. in diameter), most of ooliths loose, crinoidal, soft, finely clastic matrix, few very coarsely crystalline pieces.
- 4092-4103 Ditto, trace foraminifera noted.
- 4103-4112 Limestone, medium light and light brownish gray (5YR 5/1 and 6/1), very finely clastic to very finely crystalline, about 50%; limestone, light gray and very light gray (N7-8), finely clastic to medium clastic with some very finely crystalline, soft to moderately soft, some very coarsely crystalline, trace crinoids and foraminifera, trace very oolitic (1/4 mm. in diameter).
- 4112-4116 Ditto, brownish gray, about 75%; very light gray, finely to medium clastic to part finely crystalline, as above, about 25%.
- 4116-4123 Limestone, brownish gray (5YRN 4/1), very finely clastic to part very finely crystalline.
- 4123-4130 Ditto.
- 4130-4137 Limestone, very slightly shaly, dark brownish gray (5YR 3/1), very finely clastic to part very finely crystalline, few coarsely crystalline inclusions, few very small medium crystalline to very coarsely crystalline white streaks.
- 4137-4142 Limestone, slightly shaly to very slightly shaly, dark brownish gray (5YRN 3/1), very finely clastic to part very finely crystalline, about 85%; limestone, very light gray (N8), finely clastic to medium clastic, most soft, about 15%.
- 4142-4150 Limestone, medium dark gray (N4), very coarsely clastic, oolitic (to 1 mm. in diameter), very finely clastic matrix and very light gray finely clastic soft matrix, few pieces very coarsely crystalline white limestone, fossiliferous (crinoid fragments).
- 4150-4160 Ditto, very finely clastic to some coarsely clastic, slightly oolitic, about 15% finely clastic to finely crystalline soft light gray limestone.
- 4160-4171 Limestone, brownish gray (5YR 4/1), very finely clastic with part very finely crystalline, small part slightly mottled with light gray; about 15% limestone, light gray, as above; trace very coarsely crystalline white limestone.
- 4171-4181 Limestone, slightly shaly to shaly, medium light greenish gray (5GY 7/1), very finely clastic with part very finely crystalline, about 25%; limestone, medium dark gray (N4), very finely clastic with trace coarsely crystalline inclusions, dense, about 75%.

Interval

- 4181-4191 Limestone, medium dark gray (N4), as above.
- 4191-4201 Limestone, shaly, medium light greenish gray (5GY 6/1), very finely clastic with part very finely crystalline, about 25%; limestone, medium dark gray (N4), as above, about 75%.
- 4201-4211 Limestone, very slightly shaly, light gray (N7), coarsely clastic, nodular and oolitic with some coarsely crystalline inclusions, moderately soft, about 25%; limestone, shaly medium gray (N5), very finely clastic with small part very finely crystalline, about 50%; limestone, medium dark gray (N4), as above, about 25%.
- 4211-4219 Limestone, medium dark gray (N4), very finely clastic with few coarsely crystalline inclusions, dense about 80%; limestone, very light gray (N8), finely clastic, soft, some very coarsely crystalline.
- 4219-4226 Limestone, light brownish gray (5YR 6/1), very finely clastic with part very finely crystalline, slightly fossiliferous (macrofossil fragments), about 50%; limestone, medium dark gray (N4), very finely clastic with part very finely crystalline, about 25%; limestone, very light gray (N8), finely clastic, soft, and very coarsely crystalline, about 25%.
- 4226-4236 Limestone, slightly shaly, medium gray (N5), very finely clastic with part very finely crystalline, about 70%; limestone, very light gray (N8), as above, trace crinoids and macrofossil fragments, some very coarsely crystalline light brownish gray limestone, about 30%.
- 4236-4245 Limestone, dark gray (N3), very finely clastic with part very finely crystalline, small part slightly mottled with light gray, and about 10% light gray limestone, as above.
- 4245-4252 Ditto, small amount oolitic (ooliths to 1 mm. in diameter), with light gray finely clastic matrix; some (about 10%) light brownish gray limestone, very finely clastic.
- 4252-4262 Limestone, medium gray (N5), finely clastic to medium clastic, very slightly shaly.
- 4262-4272 Limestone, dark gray (N3), very finely clastic, about 50%; limestone, brownish gray (5YR 4/1), very finely clastic, dense, about 25%; limestone, light gray and very light gray (N7-8), finely clastic to part coarsely clastic with dark nodular, part soft little white very coarsely crystalline, about 25%.
- 4272-4280 Limestone, slightly shaly, dark gray (N3), very finely clastic with small part very finely crystalline.

Interval

- 4280-4287 Limestone, slightly shaly, medium dark gray (N4), finely clastic.
- 4287-4292 Limestone, shaly, dark gray (N3), finely clastic with small part very finely crystalline.
- 4292-4297 Ditto.
- 4297-4302 Limestone, light brownish gray (5YR 6/1), very finely clastic with small part very finely crystalline, part mottled, with, add about 20% light gray and very light gray (N7-8), finely clastic to medium clastic, and small part white coarsely crystalline; some light brownish gray angular chert fragments.
- 4302-4308 Ditto; light gray and very light gray, about 60%; light brownish gray, and brownish gray, about 40%; more chert.
- 4308-4315 Limestone, brownish gray and medium dark gray (5YR 4/1) and (N4), very finely clastic with part very finely crystalline and few medium crystalline inclusions, about 70%; limestone, very light gray (N8), medium clastic, soft, about 30%; some light brownish gray limestone, as above, and considerable light brownish gray chert fragments.
- 4315-4322 Limestone, very light gray, as above, about 50%; limestone, medium dark gray (N4), very finely clastic with part very finely crystalline, trace macrofossil fragments, about 50%; considerable light brownish gray chert.
- 4322-4328 Limestone, silty, light brownish gray (5YR 6/1), very finely clastic with part very finely crystalline with very much light brownish gray chert fragments, about 50%; limestone, very silty, medium dark gray (N4), very finely clastic, about 40%; limestone, very light gray, as above, about 10%.
- 4328-4335 Limestone, slightly shaly, medium dark gray (N4), very finely clastic.
- 4335-4342 Limestone, shaly, medium dark gray (N4), about 80%, finely clastic; limestone, slightly shaly, light gray (N7), finely clastic to medium clastic, soft, about 20%; trace calcite.
- 4342-4348 Limestone, shaly, medium dark gray (N4), very finely crystalline to very finely clastic, about 50%; limestone, slightly shaly, light gray (N7), very finely crystalline to very finely clastic, soft, moderately soft, about 50%.
- 4348-4354 Shale, silty, greenish gray (5GY 6/1), some sand inclusions few green inclusions, finely micaceous, about 60%; shale, silty, grayish purple (5YP 6/1), purple and few green.

Interval

inclusions, micaceous, about 40%, trace white anhydrite and few angular quartz fragments to coarse-grained size.

Total Diphth: 4358'.

Samples examined by Elosie T. Jacobsen
Geologist, U.S. Geological Survey
Lexington, Kentucky
April, 1950.

Patented
PLOVER BRAND
52% COTTON FIBER
U.S.A.