

UNITED PRODUCING COMPANY

Slocum Land Corporation

Number 2-1539

Topographic Location: 11,300' West of 81° 55'; on 37° 15'.
Buchanan County, Virginia

Elevation: 1933.7' (ground).

Total Depth: 4611'.

Interval

- 421-433 Coal, high luster, blocky, some with conchoidal fracture, about 50%; graywacke, light gray (N7), fine-grained, sub-angular to angular, very poorly sorted, about 80% quartzose, dark and greenish inclusions, large flakes muscovite, little chlorite noted, silt and shale cement, moderately friable, clustered, loose grains.
- 433-442 Graywacke, light gray (N7), very fine-grained, very poorly sorted, subangular, about 65% quartzose, dark gray, brownish and greenish inclusions, micaceous, muscovite and little chlorite noted, trace calcareous material, silt and shale cement, moderately well cemented.
- 442-449 Ditto, very light gray (N8), fine-grained, more dark gray inclusions, part shale.
- 449-458 Ditto, very fine-grained to fine-grained, predominately loose grains.
- 458-465 Ditto, very fine-grained.
- 465-470 Ditto, fine-grained to very fine-grained, loose grains to some clusters moderately friable.
- 470-481 Graywacke, medium light gray (N6.3), fine-grained to very fine-grained, subangular, very poorly sorted, about 55% quartzose, dark and brownish inclusions, considerable chlorite and muscovite, silt and shale cement, very slightly calcareous, moderately friable.
- 481-491 Shale, slightly silty to silty, medium gray (N5), finely micaceous.
- 491-499 Ditto, silty.
- 499-508 Shale, medium gray (N5), non-silty to little slightly silty, slightly fissile, finely micaceous.

Interval.

- 508-515 Ditto.
- 515-525 Ditto, slightly silty to silty; trace carbonaceous shale.
- 525-532 Shale, very silty, medium gray (N5), slightly fissile, micaceous, about 75%; siltstone, shaly, medium light gray (N6), coarse-grained, dark inclusions, micaceous, well cemented, about 25%.
- 532-538 Siltstone, medium light gray and medium gray (N6-5), as above, part sandy, very well cemented.
- 538-544 Graywacke, light gray (N7), very fine-grained, subangular to subrounded, poorly sorted, about 60% quartzose, dark and brown and some green inclusions, micaceous, silt cement, moderately friable, trace pyrite.
- 544-550 Ditto, part calcareous; small part (about 15%) light brownish gray (5YR 6/1) graywacke, calcareous.
- 550-565 Shale, silty to sandy, medium gray (N5), micaceous; part non-silty, finely micaceous, little with dark nodules.
- 565-574 Graywacke, light gray (N7), fine-grained, subangular, very poorly sorted, about 70% quartzose, dark and some green inclusions, (muscovite, chlorite, and some phlogopite noted), few angular quartz fragments to very coarse-grained size, silt cement, moderately friable.
- 574-579 Coal, high luster, about 10%; graywacke, as above, very small clusters.
- 579-585 Shale, slightly silty to non-silty, medium gray (N5), very finely micaceous.
- 585-592 Siltstone, medium light gray (N6), very coarse-grained, part sandy, subangular to subrounded, moderately well sorted, dark inclusions, micaceous, grading to very fine-grained graywacke, about 50%; shale, very silty to some very slightly silty, slightly calcareous to very slightly calcareous, medium dark gray (N4), micaceous, about 50%; some shaly coal, very carbonaceous shale.
- 592-600 Shale, non-silty to some very silty, medium gray (N5), very slightly fissile, very finely micaceous.
- 600-607 Shale, very carbonaceous to carbonaceous, dark gray (N3), fissile to very slightly fissile, part very slightly micaceous; trace pyrite.
- 607-615 Shale, medium dark gray (N4), very finely micaceous.

Interval

- 615-623 Shale, medium gray (N5), very slightly fissile, very finely micaceous.
- 623-641 Shale, non-silty to very silty, medium gray (N5) slightly micaceous, about 10% coal, high luster, blacky.
- 641-645 Graywacke, medium light gray (N6), very fine-grained, sub-angular to subrounded, poorly sorted, about 70% quartzose, dark inclusions, very micaceous, silt cement, well cemented, about 60%; shale, medium gray (N5), very finely micaceous, about 20%; coal, high luster, blocky, and shale, carbonaceous, dark gray (N3), fissile, about 20%.
- 645-655 Shale, silty, medium gray, very finely micaceous.
- 655-661 Graywacke, light gray (N7), fine-grained, subangular, very poorly sorted, about 80% quartzose, dark and some green inclusions, micaceous (muscovite and some chlorite), silty cement, moderately well cemented.
- 661-669 Ditto, predominantly loose grains.
- 669-673 Ditto, some very small clusters with calcareous cement.
- 673-682 Ditto, non-calcareous, about 75% quartzose, predominantly small clusters, well cemented.
- 682-686 Ditto, part slightly calcareous to calcareous.
- 686-697 Shale, very silty, medium dark gray (N4), finely micaceous to micaceous.
- 697-708 Shale, slightly silty to silty, slightly to very slightly calcareous, medium dark gray (N4), slightly fissile, very finely micaceous.
- 708-716 Shale, very silty to some slightly silty, slightly calcareous, to non-calcareous, medium dark gray (N4), micaceous, about 85%; graywacke, medium gray (N5), very fine-grained (approaching siltstone), poorly sorted, very micaceous, silt and shale cement, about 15%.
- 715-725 Shale, very silty to non-silty, calcareous to non-calcareous, medium gray (N5), micaceous to very micaceous; little graywacke, as above.
- 725-735 Shale, non-silty to little very silty, slightly calcareous to non-calcareous, medium gray (N5), very finely micaceous.
- 735-745 Shale, medium dark gray (N4), very finely micaceous, about 50%; graywacke, light gray (N7), very fine-grained, sub-angular to subrounded, poorly sorted, about 85% quartzose, dark and some green inclusions, micaceous, considerable muscovite and some chlorite noted, silt cement, moderately well cemented, about 50%.

Interval

- 745-752 Graywacke, fine-grained, as above, large flakes muscovite.
- 752-761 Graywacke, as above, well cemented with about 10% shale, silty to non-silty, part very carbonaceous, medium dark gray (N4-3), very micaceous, several pieces showing contact; trace coal, conchoidal fracture.
- 761-771 Graywacke, as above, about 75% quartzose, trace phlogopite noted, very slightly calcareous, considerable dark gray shale inclusions; trace medium-grained size chert, medium bluish gray (5B 5/1).
- 771-779 Ditto, very calcareous, extremely poorly sorted, some medium-grained inclusions, more chert inclusions, some large flakes muscovite, large flakes chlorite, trace phlogopite, well cemented and friable.
- 779-789 Ditto, slightly calcareous, about 80% quartzose.
- 789-800 Ditto, calcareous to slightly calcareous, considerable medium-grained to coarse-grained quartz angular inclusions, and loose fragments.
- 800-810 Graywacke, light gray (N7), very fine-grained, subangular to angular, very poorly sorted, about 70% quartzose, much black and little green and brown inclusions, moderately large muscovite flakes, trace chlorite noted, silt and shale cement, moderately well cemented.
- 810-822 Graywacke, light gray and medium light gray (N7@6), as above about 75%; shale, silt to non-silty, medium gray (N5), very finely micaceous, about 25%.
- 822-832 Ditto; graywacke, small fragments, about 80%; shale, part very micaceous, about 20%.
- 832-837 Shale, medium dark gray (N4), slightly fissile, part very slightly silty, very finely micaceous.
- 837-849 Ditto.
- 849-861 Ditto, trace very finely micaceous material.
- 861-872 Ditto.
- 872-882 Ditto, (sample needs washing).
- 882-892 Shale, silty to very silty, medium dark gray (N4), very finely micaceous to micaceous.
- 892-903 Shale, slightly silty to non-silty, medium dark gray (N4), finely micaceous.

Interval

- 903-914 Shale, very silty to some non-silty, medium gray (N5), slightly micaceous.
- 914-925 Shale, very silty to silty, medium gray (N5), slightly fissile, micaceous, about 60%; siltstone, light gray (N7), very coarse-grained, subrounded, moderately well sorted, micaceous, very well cemented, about 40%.
- 925-934 Graywacke, medium light gray (N6.5), very fine-grained, subangular, poorly sorted, brownish and dark inclusions, micaceous, silt and shale cement, moderately well cemented, about 60%; shale, dark gray (N3), slightly fissile, very finely micaceous, about 40%.
- 934-945 Shale, dark gray (N3), very slightly fissile, trace very finely micaceous material.
- 945-956 Ditto.
- 956-969 Ditto; one piece coal noted.
- 969-976 Graywacke, slightly calcareous, light gray (N7), very fine-grained, subangular to subrounded, poorly sorted, about 70% quartzose, brownish and dark inclusions, very micaceous (much muscovite and some chlorite), silt cement, moderately well cemented.
- 976-988 Siltstone, shaly, medium gray (N5), coarse-grained, subrounded, very micaceous, dark inclusions, some shale, silty, medium dark gray (N4), micaceous; trace coal.
- 988-998 Siltstone, as above, medium light gray (N6).
- 998-1011 Siltstone, as above, about 75%; shale, silty, medium gray (N5), finely micaceous, about 25%.
- 1011-1018 Shale, silty, medium gray (N5), finely micaceous.
- 1018-1032 Shale, silty, medium dark gray (N4), very slightly fissile, micaceous, about 50%; shale, carbonaceous, to very carbonaceous, about 10%; coal, about 5%; graywacke, light gray (N7), very fine-grained, about 70% quartzose, dark and brown and some green inclusions, very micaceous, silt cement, moderately well cemented, about 35%.

50
5
70
35

160%!?
- 1032-1042 Graywacke, as above. OR 50% SH. 10% CARB. SH.
5% COAL
35% GRAYWACKE - WHICH IS 70% QUARTZOSE
- 1042-1052 Ditto, some chlorite and trace phlogopite noted, silt and shale cement.
- 1052-1057 Graywacke, as above, about 60% quartzose, very well cemented, about 90%; graywacke, calcareous, medium gray (N5), as

Interval

as preceding, 10%.

- 1057-1064 Siltstone, light gray, very coarse-grained, subrounded, moderately well sorted, dark inclusions, micaceous, about 75%; shale, very silty to non-silty, medium dark gray (N4), micaceous, about 25%.
- 1064-1074 Graywacke, light gray (N6.5), very fine-grained, subangular, about 70% quartzose, brownish and dark inclusions, micaceous, trace chlorite noted, small part calcareous, about 75%; shale, as above, very silty to little very slightly silty, very micaceous, about 25%.
- 1074-1085 Shale, slightly silty to some silty, medium gray (N5), finely micaceous.
- 1085-1092 Shale, very silty to slightly silty, medium gray (N5), micaceous, about 60%; graywacke, medium light gray (N6), very fine-grained (some very coarse-grained siltstone), subangular, poorly sorted, about 60% quartzose, dark and brownish inclusions, very micaceous (considerable muscovite??, trace chlorite and phlogopite), silt cement, moderately well cemented, about 30%; shale, dark gray (N3), slightly fissile, very finely micaceous, about 10%.
- 1092-1100 Shale, silty to very silty, medium dark gray (N4), micaceous to very micaceous, about 70%; graywacke, as above, 30%.
- 1100-1107 Shale, very silty to sandy, medium dark gray (N4), very micaceous, about 70%; graywacke, as above, about 30%.
- 1107-1117 Graywacke, as above, moderately to very well cemented, 85%; shale, sandy, as above, several pieces showing contact, few pieces with lenses slightly carbonaceous, about 15%.
- 1117-1127 Graywacke, slightly conglomeratic, slightly calcareous medium light gray (N6), fine-grained, subangular to angular, very poorly sorted (very fine-grained to medium-grained), some angular very coarse-grained quartz fragments, some brownish gray granule size chert; about 70% quartzose, dark, some green and brown inclusions, micaceous, silt cement, moderately well cemented, about 60%; shale, silty to sandy, dark gray (N3), micaceous, about 40%; considerable pyrite.
- 1127-1138 Graywacke, non-calcareous, as above, and some medium dark gray (N4), graywacke, about 75%; shale, silty to some non-silty medium dark gray (N4), finely micaceous, about 20%; coal, about 5%.
- 1138-1147 Shale, very silty so silty, medium dark gray (N4), very micaceous.

Interval

- 1147-1154 Shale, as above, about 80%; graywacke, medium light gray (N6), fine-grained, subangular to angular, very poorly sorted (very fine-grained to medium-grained), silt cement, predominantly loose grains, about 20%.
- 1154-1165 Shale, medium dark gray (N3.5), very finely micaceous.
- 1165-1173 Shale, part very slightly silty, medium dark gray (N4), slightly fissile, very finely micaceous, about 90%; graywacke, medium light gray (N6), very fine-grained, subangular, poorly sorted, about 70% quartzose, dark inclusions, few green inclusions, slightly micaceous, silt and shale cement, about 10%.
- 1173-1178 Graywacke, very light gray to light gray (N8-7), very fine-grained, subangular, poorly sorted, about 70% quartzose, dark and green inclusions, muscovite and some chlorite, much pinkish gray and light gray (5YR 8/1 and N7), chert (about 15%) in sample, about 80%; shale, dark gray and medium dark gray (N3-4), fissile to slightly fissile, part very finely micaceous, about 20%.
- 1178-1185 Graywacke, as above, with considerable brown inclusions, and large flakes muscovite, predominantly loose grains, trace chert, as above.
- 1185-1193 Ditto.
- 1193-1202 Ditto, light gray (N7), no chert noted.
- 1202-1210 Graywacke, as above, part calcareous, about 65% quartzose, clustered, more chlorite, trace, phlogopite.
- 1210-1218 Ditto, about 85% quartzose.
- 1218-1225 Ditto, slightly calcareous, about 80% quartzose.
- 1225-1235 Ditto, about 85% quartzose.
- 1235-1240 Ditto, very fine-grained to fine-grained, about 80% quartzose.
- 1240-1245 Ditto, loose grains.
- 1245-1256 Coal, part shaly, chunky, about 30%; graywacke, very light gray (N8), fine-grained, subangular, very poorly sorted, about 75% quartzose, dark and brown inclusions, micaceous (muscovite and phlogopite), small clusters to loose grains, about 70%; considerable pyrite.
- 1256-2166 Graywacke, as above.
- 1266-1273 Shale, silty, medium dark gray (N4), fissile, to slightly fissile, very micaceous.

Interval

- 1273-1284 Shale, very silty to silty, medium gray (N5), part very slightly fissile, micaceous.
- 1284-1290 Shale, very silty, as above, about 50%; siltstone, shaly, medium light gray (N6), medium-grained, dark inclusions, micaceous, moderately well cemented, about 50%.
- 1290-1297 Shale, medium dark gray (N4), very slightly fissile, very very finely micaceous, about 40%; siltstone, as above, about 60%.
- 1297-1305 Graywacke, light gray (N7), very fine-grained, subangular, poorly sorted, about 70% quartzose, dark and green inclusions, micaceous (muscovite and some phlogopite and chlorite), silt cement, about 70%; shale, very slightly silty to non-silty, medium dark gray (N4), micaceous, about 20%; shale, carbonaceous, dark gray (N3), about 10%; considerable light gray (N7), chert in sample, most loose, one piece showing embedded in shale, one piece in graywacke; trace coal.
- 1305-1310 Graywacke, as above, little chert noted.
- 1310-1320 Ditto, fine-grained, part with calcareous cement.
- 1320-~~3120~~
1330 Shale, very silty to non-silty, dark gray (N3), slightly fissile, very micaceous to very finely micaceous.
- 1330-1343 Shale, verlty, medium dark gray (N4), finely micaceous, about 70%; shale, carbonaceous to very carbonaceous, grayish black (N2), about 30%; some shaly coal; trace pyrite.
- 1343-1350 Shale, very silty, medium dark gray (N4), micaceous, about 70%; siltstone, shaly, medium light gray (N6), coarse-grained, poorly sorted, micaceous, about 30%.
- 1350-1360 Shale, very silty to slightly silty, medium gray (N5), very micaceous about 85%; graywacke, light gray (N7), fine-grained, subangular, very poorly sorted, about 85% quartzose, dark and green inclusions, slightly micaceous, much silt cement, well cemented, about 15%.
- 1360-1367 Graywacke, as above, some medium-grained pinkish gray and very light gray (5YR 5/1 and N8), angular chert fragments, some chlorite noted.
- 1367-1375 Graywacke, as above, about 80%; shale, very silty to non-silty, medium dark gray (N4), very to slightly micaceous, few pieces showing shale and graywacke contact; one peice of very carbonaceous fissile shale noted.
- 1375-1381 Graywacke, light gray (N7), very fine-grained, subangular to subrounded, moderately well sorted, about 90% quartzose, dark very fine-grained inclusions, very slightly micaceous, silt cement, moderately well to well cemented.

Interval

- 1381-1389 Graywacke, as above.
- 1389-1395 Ditto, about 87% quartzose, some green inclusions.
- 1395-1402 Shale, very silty, medium dark gray (N4), slightly micaceous, about 40%; graywacke, as above, some 85% quartzose, about 60%.
- 1402-1407 Graywacke, as above.
- 1407-1417 Graywacke, medium brownish gray (5YR 5/1), very fine-grained, subangular, poorly sorted, about 60% quartzose, dark inclusions, slightly micaceous, much silt cement, about 60%; shale, slightly carbonaceous to carbonaceous, dark gray (N3.3), slightly fissile, about 35%; coal, part impure, about 5%.
- 1417-1427 Shale, silty, medium gray (N5), slightly micaceous, about 50%; shale, very silty, grading to siltstone, shaly, medium light gray (N6), slightly micaceous.
- 1427-1437 Ditto; trace carbonaceous shale, to coal, blocky.
- 1437-1449 Graywacke, medium light gray (N6.5), very fine-grained, subangular, poorly sorted, about 70% quartzose, dark and some green inclusions, micaceous, silt and shale cement, moderately well cemented, about 60%; shale, carbonaceous to very carbonaceous, dark gray (N3), part very finely micaceous, and coal, shaly, about 40%; trace pyrite.
- 1449-1457 Graywacke, light gray (N7), very fine-grained, subangular, very poorly sorted, about 70% quartzose, dark, brown, and green inclusions, micaceous (much muscovite, some phlogopite, and chlorite), silt cement, moderately well cemented.
- 1457-1465 Graywacke, medium gray (N5), very fine-grained (approaching siltstone), subrounded, to subangular, moderately well sorted, about 55% quartzose, dark inclusions, micaceous, much silt cement, shale, and carbonaceous shale lenses, about 60%; graywacke, as above, about 40%.
- 1465-1475 Shale, silty, medium gray (N5), finely micaceous.
- 1475-1483 Shale, slightly silty, medium dark gray (N4), very finely micaceous.
- 1483-1495 Shale, very silty to sandy, medium dark gray (N4), slightly micaceous, about 90%; graywacke, light gray (N7), very fine-grained, subangular to subrounded, about 70% quartzose, poorly sorted, dark and brown inclusions, micaceous, silt cement, about 10%.

Interval

- 1495-1505 Shale, silty to slightly silty, medium dark gray (N4), trace very finely micaceous material.
- 1505-1515 Shale, carbonaceous to very carbonaceous, grayish black (N2), considerable shaly coal. Sample needs washing.
- 1515-1521 Ditto, about 50% shaly coal (sample needs washing).
- 1521-1531 Shale, very silty and sandy to silty, medium gray (N5), very finely micaceous.
- 1531-1537 Shale, slightly silty, medium dark gray (N4.5), trace very finely micaceous material. (sample needs washing).
- 1537-1545 Shale, slightly carbonaceous to carbonaceous, dark gray (N3), fissile to slightly fissile, about 50%, shale, medium dark gray (N4), trace very finely micaceous material, about 50%.
- 1545-1550 Shale, slightly silty to non-silty, medium gray (N5), very finely micaceous, about 70%; siltstone, shaly, medium light gray (N6), medium-grained, dark peppering and inclusions, slightly micaceous, about 20%; graywacke, light gray (N7), very fine-grained, subangular, poorly sorted, about 90% quartzose, dark inclusions, slightly micaceous, silt and shale cement, few medium-grained angular quartz fragments noted, moderately well cemented, about 10%.
- 1550-1554 Siltstone, part sandy, medium dark gray (N4), medium-grained, dark inclusions, slightly micaceous, about 40%; shale, non-silty to silty, medium dark gray (N4), about 20%; trace coal, part high luster and blocky, part shaly; graywacke, with as above, about 40%.
- 1554-1559 Graywacke, very light gray (N8), fine-grained, angular to subangular, very poorly sorted (silt to coarse-grained quartz fragments), about 90% quartzose, some dark and green (part chlorite) inclusions, micaceous, about 60%; shale, very silty to non-silty and slightly carbonaceous and fissile, medium dark gray (N4), very finely micaceous to finely micaceous, about 40%.
- 1559-1562 Graywacke, slightly conglomeratic, as above, predominantly loose grains, about 85%; shale, as above, about 15%.
- 1562-1565 Graywacke, conglomeratic, as above, about 50%, angular, quartz fragments to very coarse-grained size.
- 1565-1570 Shale, very silty, to slightly silty, dark gray (N3), micaceous about 50%; conglomeratic graywacke, as above, about 50%.
- 1570-1575 Graywacke, very light gray* (N8), fine-grained, subangular to angular, very poorly sorted (very fine-grained to medium-grained), about 95% quartzose, few dark and green inclusions, predominantly loose grains, few clusters with silt cement,

Interval

moderately friable to moderately well cemented.

1575-1580	Ditto.
1580-1580 $\frac{1}{2}$	Ditto.
1580- $\frac{1}{2}$ -1586	Ditto, slightly conglomeratic, about 25% angular quartz fragments to coarse-grained size.
1586-1592	Ditto.
1592-1594	Ditto, about 40% angular quartz fragments to very coarse-grained size, no clusters.
1594-1597	Ditto, medium-grained, about 25%, ditto.
1597-1600	Ditto, fine-grained.
1600-1602	Ditto, and slightly conglomeratic.
1602-1608	Ditto.
1608-1610	Ditto.
1610-1613	Ditto, fine-grained to medium-grained, one medium-grained chert fragments noted, and few medium-grained quartz fragments noted.
1613-1616	Ditto, more chert fragments.
1616-1620	Ditto, fine-grained, some medium-grained and fine-grained chert fragments.
1620-1624	Ditto, trace chert noted.
1624-1627	Ditto, fine-grained to medium-grained.
1627-1631	Ditto, medium-grained, trace mica noted.
1631-1635	Ditto, fine-grained, few angular, coarse-grained quartz fragments noted; trace chert.
1635-1638	Ditto, fine-grained to medium-grained, no coarse-grained quartz fragments or chert noted.
1638-1644	Ditto, few angular quartz fragments to very coarse-grained size.

Interval

- 1644-1650 Conglomerate, angular quartz fragments to over granule size, predominantly very coarse-grained, some blusing gray chert coarse-grained to very coarse-grained, loose fragments; some iron staining.
- 1650-1653 Ditto, somewhat larger fragments.
- 1653-1658 Ditto.
- 1658-1668 Ditto, smaller fragments, to very coarse-grained size, averaging coarse-grained size.
- 1668-1672 Ditto, larger fragments, to granule size, predominated by coarse-grained to very coarse-grained size.
- 1672-1675 Ditto, smaller fragments to very coarse-grained size, averaging medium-grained to coarse-grained size.
- 1675-1684 Coal, part very high luster and conchoidal fracture, part slightly banded and blocky, about 70%; conglomeratic, as above, slightly larger fragments, about 30%; trace pyrite.
- 1684-1692 Shale, sandy, medium dark gray to medium gray (N4-5), micaceous, about 60%; shale, medium dark gray, very finely micaceous, resinous luster, about 30%; coal, shaly to slightly shaly, about 10%.
- 1692-1698 Graywacke, light gray (N7), very fine-grained, subangular, about 80% quartzose, dark and green inclusions, micaceous (muscovite and some phlogopite, trace chlorite?), silt cement, moderately well cemented, about 60%; shale, sandy to slightly silty, as above, about 40%.
- 1698-1702 Graywacke, very light gray (N8), fine-grained, subangular to angular, very poorly sorted, about 85% quartzose, dark and green inclusions, (part chlorite), muscovite and some phlogopite, silt cement, moderately well cemented, coal, blocky to chunky, high luster, small part very thin laminations and soft, about 10%.
- 1702-1710 Graywacke, light gray (N7), very fine-grained, subangular to subrounded, poorly sorted, about 70% quartzose, dark, green (part chlorite) inclusions, micaceous (muscovite and some phlogopite), silt cement, moderately well cemented.
- 1710-1718 Ditto, trace calcareous material.
- 1718-1725 Ditto, non=calcareous; about 15% coal, shaly, part fissile.
- 1725-1728 Shale, very silty, medium gray to medium light gray (N5-6), micaceous, about 70%; shale, very carbonaceous to slightly shaly coal, about 30%.

Interval

- 1728-1735 Graywacke, calcareous, very light gray (N8.5), fine-grained subangular, very poorly sorted, about 75% quartzose, dark, brownish and green inclusions, muscovite, some chlorite, silt cement, moderately well cemented.
- 1735-1741 Ditto, slightly to very slightly calcareous, about 70% quartzose.
- 1741-1746 Ditto, light gray (N7), fine-grained to medium-grained, extremely poorly sorted.
- 1746-1750 Ditto, very light gray (N8); medium-grained to fine-grained, very poorly sorted, many loose grains, moderately friable to moderately well cemented, trace pyrite.
- 1750-1757 Ditto, light gray to very light gray (N7-8), very fine-grained to fine-grained, about 60% quartzose.
- 1757-1763 Ditto, non-calcareous, about 75% quartzose, predominantly loose grains.
- 1763-1764 Ditto, loose grains, very few very small calcareous clusters.
- 1764-1769 No sample.
- 1769-1775 Ditto, slightly calcareous, fine-grained to medium-grained, loose grains to clustered and moderately well cemented.
- 1775-1790 Shale, very silty, medium gray (N5), micaceous.
- 1790-1796 Graywacke, light brownish gray to very light brownish gray (5YR 6/1 to 7/1), very fine-grained, subangular, very poorly sorted, about 75% quartzose, brownish and dark inclusions, slightly micaceous, silt cement, well cemented, moderately well cemented, about 30%; shale, very silty, as above, about 70%.
- 1796-1800 Graywacke, as above, fine-grained, loose grains.
- 1800-1803 Shale, slightly silty to silty, medium gray (N5), finely micaceous, about 50%; graywacke, as above, very fine-grained, about 50%.
- 1803-1818 Shale, silty, medium gray (N5), finely micaceous; about 5% coal, chunky, and little carbonaceous shale.
- 1818-1827 Shale, slightly silty to non-silty, medium gray (N5), finely micaceous, about 10% coal, blocky, high luster.
- 1827-1835] Shale, non-silty to slightly silty, as above, part very finely micaceous, with slightly resinous luster.

Interval

- 1835-1842 Shale, very silty, medium gray (N5), finely micaceous; and shale, medium dark gray (N4), very finely micaceous; about 15% coal, blocky, high luster.
- 1842-1848 Shale, very silty to sandy, grading to siltstone, shaly, medium gray (N5) finely micaceous to micaceous.
- 1848-1855 Siltstone, sandy, medium light gray (N6), very coarse-grained (approaching very fine-grained graywacke), dark inclusions, micaceous.
- 1855-1865 Ditto, medium gray to medium light gray (N5-6), very slightly calcareous.

Last of samples.
Samples examined by Eloise T. Jacobsen
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Lexington, Kentucky
March, 1950.