

Operator: Pipe Line Construction and Drilling Company
 Farm: F. H. Curtis
 Well No.: 2-A

Samples for this well were examined by Mr. David Bowen in preparing a Master's thesis entitled "Subsurface Study of the Lee Formation in Buchanan County, Virginia," for the Virginia Polytechnic Institute. A microfilm copy of the thesis, containing a detailed description of the Post-Princeton strata in this well, is available for reference in the Library of the Virginia Division of Mineral Resources.

Formation boundaries stated in this thesis are as follows:

System

Formation

Pennsylvanian

| | | |
|----------------------------|--------|-------|
| Post-Lee Strata, Undivided | in | 0' |
| | bottom | 1016' |
| Lee Formation | top | 1016' |
| | bottom | 2274' |

Mississippian

| | | |
|---------------------|--------|-------|
| Bluestone Formation | top | 2274' |
| | bottom | 2577' |
| Princeton Sandstone | top | 2577' |
| | bottom | -- |

PIPE LINE CONSTRUCTION AND DRILLING COMPANY

2-A F. H. CURTIS WELL

Buchanan County, Virginia

Location: 0.40 miles north of 37° 20',
1.57 miles west of 82° 00'

Ground elevation: 2009.8 Total depth: 6453

Drilling commenced: September 1, 1949

Drilling completed: September 7, 1950

Water: 174-180, 3 BPH

Gas: 1035-1040, show; 1904-1908, show; 2125-2130, show

Oil: 1090-1095, show

Casing record: 13 3/8 at 71, 10 3/4 at 1344, 8 5/8 at 2495

Depth corrections: 2510 = 2495

Samples examined by David G. Bowen, 1958

POST-LEE FORMATION BEDS (PENNSYLVANIAN) UNDIVIDED

- 0 - 187 No sample
- 187 - 193 Sandstone, white, medium- to coarse-grained, subrounded, quartzose, moderately micaceous and chloritic, moderately coaly
- 193 - 199 Sandstone, gray, fine-grained, subangular, quartzose, feldspathic, very dirty with argillaceous material, mica, and interstitial pyrite
- 199 - 206 Sandstone, same as 187-193, but with a moderate amount of green grains
- 206 - 227 Siltstone, gray, quartzose, argillaceous, dirty
- 227 - 240 Sandstone, light-gray, fine- to very fine grained, subangular, quartzose, feldspathic, micaceous, coaly material, calcareous to slightly calcareous, rather dirty
- 240 - 280 Siltstone, gray, quartzose, argillaceous, dirty, slightly calcareous
- 280 - 287 Sandstone, gray, very fine grained, subangular, quartzose, dirty, micaceous, coaly material on bedding surfaces, very slightly calcareous
- 287 - 296 Shale, gray, silty, micaceous, moderately hard

- 296 - 326 Sandstone, white, mostly fine-grained but some medium grains and very fine grains, subangular to subrounded, quartzose, feldspathic, moderately micaceous and chloritic, moderate amount of darker minerals, at 312-321 moderate amount of coaly material and trace of light-gray underclay
- 326 - 332 Shale, gray to dark-gray and carbonaceous, slightly micaceous; a little coal
- 332 - 337 Sandstone, gray, fine-grained, subangular, quartzose, dirty, argillaceous, micaceous
- 337 - 400 Sandstone, white, medium-grained with a few coarse grains grading to equal amount of both at 388-400, subangular to subrounded, quartzose, slightly feldspathic, slightly micaceous and chloritic, at 356-365 calcareous to slightly calcareous
- 400 - 419 Siltstone, dark-gray, quartzose, micaceous, faintly laminated with argillaceous material
- 419 - 424 Shale, gray to light-gray, finely micaceous, soft, coaly plant fossils; a little underclay; trace of coal
- 424 - 430 Shale, same as above; and shale, gray, silty, micaceous
- 430 - 442 Shale, gray, silty, micaceous, moderately hard; some siltstone, gray, quartzose, micaceous at the base
- 442 - 451 Siltstone, same as above; and underclay, gray, soft, coaly plant fossils; a little coal
- 451 - 455 Sandstone, very light tan, fine-grained, subangular, quartzose, slightly micaceous, some coaly and argillaceous laminations
- 455 - 476 Siltstone, gray, quartzose, argillaceous; and shale, gray, soft, coaly plant fossils
- 476 - 492 Sandstone, white, medium- to fine-grained, subangular to subrounded, quartzose, micaceous, chloritic
- 492 - 499 Sandstone, same as above, but dirtier and a little darker; some shale, gray
- 499 - 515 Sandstone, light-gray to light-tannish gray, fine-grained, subangular to subrounded, quartzose, in part slightly feldspathic, micaceous, some argillaceous and coaly

laminations at top, calcareous at bottom

- 515 - 541 Shale, gray, moderately hard, finely micaceous; laminated with a little siltstone, gray, which grades to fine-grained sandstone at the bottom
- 541 - 564 Sandstone, light-gray, fine-grained, subangular, quartzose, slightly micaceous and chloritic, slightly glauconitic, at 549-564 coaly material on bedding surfaces; at 549-564 a little interbedded shale, gray, finely micaceous
- 564 - 574 Sandstone, white, fine-grained, subangular, quartzose, finely micaceous but otherwise clean; and shale, white to faintly pink, soft, slightly silty, siderite nodules
- 574 - 582 Sandstone, gray, very fine grained to silt, quartzose, moderately micaceous, in part slightly calcareous
- 582 - 622 Shale, gray, finely micaceous, moderately hard; at the top a little siltstone, gray; at 588-594 no sample
- 622 - 655 Shale, same as above, but slightly darker, pyrite and pyritized plant fossils at the top; laminated with sandstone, gray to light-gray, fine-grained, subangular, quartzose, slightly feldspathic, rather dirty, grading toward the base to light-tan to white, cleaner, very calcareous
- 655 - 665 Siltstone, gray, quartzose, argillaceous; and sandstone, light-tan to white, fine-grained, subangular, quartzose, slightly micaceous and chloritic
- 665 - 694 Shale, gray, finely micaceous; some interbedded sandstone, light-gray, fine-grained, subangular, quartzose, feldspathic, slightly micaceous and chloritic, dirty (sandstone content decreases toward the bottom)
- 694 - 713 Shale, same as above, but silty
- 713 - 739 Shale, same as above; and interbedded sandstone, gray, fine-grained, at the base fine- to medium-grained, subangular, quartzose, feldspathic, slightly micaceous and chloritic, dirty
- 739 - 769 Sandstone, white, coarse- to medium-grained, subrounded to subangular, quartzose, moderately micaceous and chloritic, moderate amount of green grains and dark minerals, at the base in part calcareous

- 769 - 783 Sandstone, same as above, but in part medium- to fine-grained, at the base dirtier; and shale, gray, micaceous, at the top silty to sandy, slightly pyritic
- 783 - 789 Sandstone, same as above
- 789 - 797 Sandstone, white, coarse-grained, subrounded, quartzose, few green grains
- 797 - 804 Sandstone, same as above; some sandstone, light-tan, medium- to fine-grained, subangular to subrounded, quartzose, calcareous, moderately micaceous and chloritic, moderate amount of green grains
- 804 - 812 Sandstone, light-tan to light-gray, fine-grained, subangular, quartzose, feldspathic, slightly micaceous, dirty; and shale, gray, micaceous
- 812 - 821 Shale, gray, micaceous, silty
- 821 - 835 Sandstone, light-tan to light-gray, very fine grained, quartzose, feldspathic, moderately micaceous, in part calcareous
- 835 - 843 Shale, gray, finely micaceous, coaly plant fossils; some sandstone, same as above
- 843 - 863 Shale, same as above
- 863 - 873 Sandstone, light-gray, fine-grained, subangular, quartzose, slightly feldspathic; and interbedded shale, same as above
- 873 - 934 Sandstone, gray, very fine grained to silt, subangular to subrounded, quartzose, moderately micaceous, at the top argillaceous cement, in part calcareous; laminated with shale, dark-gray and carbonaceous at the top to gray and micaceous from 889 downward, at the base silty and sandy
- 934 - 946 Shale, gray, micaceous, moderately hard, at the base very silty
- 946 - 950 Shale, same as above; and siltstone
- 950 - 957 Sandstone, light-gray to white, fine-grained, subangular, quartzose, feldspathic, micaceous, calcareous
- 957 - 991 Shale, gray, finely micaceous, hard; laminated with some

sandstone, light-gray to white, fine-grained to silt, subangular, quartzose, feldspathic, micaceous

991-1016 Shale, same as above

TOP LEE FORMATION 1016

- 1016-1028 Sandstone, very light gray, fine- to very fine grained, subrounded, quartzose, micaceous, moderate amount of coaly material
- 1028-1038 Sandstone, same as above, but some medium grains; some shale, light-gray, very micaceous, moderately hard
- 1038-1045 Sandstone, same as above, but medium- to coarse-grained; some siltstone, light-gray, quartzose, argillaceous; some shale, dark-gray to light-gray and greasy
- 1045-1086 Sandstone, white, coarse- to medium-grained in upper two-thirds, balance is medium-grained with some very coarse grains at the bottom, subrounded to subangular, quartzose, slightly micaceous and chloritic, a few green grains, nearly clean
- 1086-1093 Shale, dark-gray, silty, micaceous
- 1093-1127 Sandstone, light-reddish gray, fine-grained with a few medium grains, subangular, quartzose, micaceous, interstitial hematite
- * 1127-1147 Sandstone, light-gray, fine- to very fine grained, subangular to subrounded, quartzose, clean, very slightly calcareous near the base
- 1147-1163 Sandstone, same as above, but laminated with coaly to argillaceous and micaceous material
- 1163-1177 Shale, dark-gray, sandy to very sandy, micaceous
- 1177-1185 No sample
- 1185-1200 Shale, dark-gray, slightly silty, micaceous; at 1192-1200 some underclay, light-gray, pyritic; at 1192-1200 some coal
- * 1200-1206 Sandstone, light-gray to white, medium- to fine-grained, subangular to subrounded, quartzose, slightly micaceous but nearly clean, moderate amount of poorly-developed siderite nodules

- * 1206-1213 Sandstone, same as above; and siltstone, gray, very argillaceous and dirty
- 1213-1227 Sandstone, white, medium- to coarse-grained with some very coarse to granule-size grains at the bottom, sub-rounded to subangular, quartzose, slightly micaceous and chloritic, few green grains, calcareous
- 1227-1235 Shale, gray, in part silty and very micaceous
- 1235-1238 Sandstone, light-gray, fine- to very fine grained, subangular, quartzose, slightly feldspathic, micaceous, small amount of coaly material, very slightly calcareous
- 1238-1311 Shale, dark-gray, moderately hard, very finely micaceous
- 1311-1321 Shale, same as above; some siltstone, very light tan, quartzose, clean
- 1321-1335 Siltstone, very light tan, quartzose, in part micaceous, moderate amount of poorly-developed siderite nodules, grading downward to off-white and clean
- 1335-1344 No sample
- * 1344-1375 Sandstone, very light gray to white, very fine grained, subangular, quartzose, nearly clean, at 1355-1367 few laminations of coaly and micaceous shale, very slightly calcareous at the bottom
- 1375-1382 Sandstone, light-gray, fine- to very fine grained, subangular, quartzose, coal grains, micaceous, chloritic, slightly calcareous
- 1382-1400 Shale, gray, soft, micaceous, very slightly pyritic, sideritic, at the top in part sandy and silty; and siltstone, gray, quartzose
- 1400-1441 Shale, dark-gray, moderately hard, carbonaceous, slightly silty; probably a thin coal at 1436-1441
- 1441-1484 Sandstone, light-gray to white, fine- to very fine grained, subrounded, quartzose, slightly feldspathic, at 1441-1451 an occasional argillaceous lamination; at 1451-1455 some interbedded shale, gray
- * 1484-1492 Sandstone, gray, fine-grained to silt, quartzose, clean; and shale, gray, silty, micaceous

- 1492-1509 Shale, same as above; and siltstone, gray, quartzose; both pyritic in lower half; at 1500-1509 some coal
- * 1509-1545 Sandstone, white, in upper half medium- to fine-grained, in lower half medium-grained with an occasional coarse to very coarse grain, subangular to subrounded, quartzose, slightly micaceous, few green grains, some dark grains, at the bottom slightly calcareous
- 1545-1554 Shale, gray and micaceous to dark-gray and carbonaceous, some coaly plant fossils
- 1554-1578 Sandstone, light-gray, very fine grained to silt, quartzose, slightly feldspathic, slightly micaceous, at the top in part gray and argillaceous, in the lower two-thirds very calcareous
- 1578-1593 Shale, gray, silty, hard
- 1593-1597 No sample
- 1597-1630 Shale, dark-gray, moderately hard, rather carbonaceous, silty; at 1617-1624 interbedded with siltstone, dark-gray, quartzose
- 1630-1635 Shale, gray, very micaceous, somewhat silty; some sandstone, very light gray, fine- to very fine grained, subangular to subrounded, quartzose, moderately feldspathic, moderately micaceous and chloritic
- 1635-1687 Sandstone, light-gray to white, fine-grained, subangular to subrounded, quartzose, moderately feldspathic, moderately micaceous and chloritic, small amount of scattered argillaceous material and interstitial bituminous material, at 1679-1687 in part fine- to medium-grained, sideritic, increased amount of mica
- * 1687-1698 Sandstone, white, fine- to medium-grained, subangular to subrounded, quartzose, slightly feldspathic, very slightly micaceous and chloritic, very slightly sideritic, nearly clean
- * 1698-1720 Sandstone, same as above, but mostly medium-grained, some fine grains, a few coarse grains
- 1720-1732 Sandstone, same as above, but mostly fine-grained, increase in accessory minerals especially chlorite
- * 1732-1737 Sandstone, same as 1698-1720

- 1737-1752 Sandstone, same as above with an increase of accessory minerals toward the bottom
- 1752-1768 Sandstone, same as above, but light-gray, medium- to fine-grained, at 1652-1656 in part very fine grained to silt, at the base a small amount of coaly material
- 1768-1775 Sandstone, same as lower part above, one milky-white quartz pebble fragment; some shale, dark-gray, hard, micaceous, in part carbonaceous
- 1775-1782 Shale, same as above, but slightly micaceous; a little coal
- 1782-1808 Siltstone, at the top light-gray grading downward to gray, quartzose, argillaceous, moderately micaceous
- 1808-1842 Shale, gray, micaceous, rather soft, at the top and bottom silty, in the middle finely pyritic
- 1842-1852 Shale, gray, silty, micaceous, rather soft; and sandstone, light-tannish gray, very fine grained, subangular to subrounded, quartzose, very slightly feldspathic and micaceous, nearly clean
- 1852-1860 Shale, same as above, but moderately hard
- 1860-1867 Shale, tannish-gray, underclay; some shale, same as above
- 1867-1891 Shale, gray, silty, micaceous; and interbedded sandstone, light-tannish gray, very fine grained to silt, subangular to subrounded, quartzose, very slightly feldspathic and micaceous, nearly clean (shale content decreases to 25% toward the bottom)
- * 1891-1898 Sandstone, white, coarse-grained, moderate amount of pebble fragments of milky-white quartz, subangular, quartzose, clean
- * 1898-1903 Same as 1867-1891 (sample may be out of place)
- * 1903-1914 Sandstone, white, medium-grained, some coarse grains and fine grains, subangular to subrounded, quartzose, clean
- * 1914-1942 Sandstone, same as above, but fine-grained except for a few coarse grains at 1925-1931
- * 1942-1957 Sandstone, same as above, but medium- to fine-grained with

some coarse grains, some fragments of milky-white quartz pebbles

*1957-1977 Sandstone, same as above, but medium- to coarse-grained, no pebble fragments except at 1957-1961 and 1967-1972

1977-1981 No sample

*1981-1985 Sandstone, same as 1957-1977, but medium- to fine-grained, no pebble fragments

1985-1992 No sample

*1992-2033 Sandstone, white, coarse- to medium- to fine-grained in varying amounts throughout, subangular to subrounded, quartzose, clean, at 2000-2003 and 2016-2031 some pebble fragments, at 2013-2016 large amount of pebble fragments including one whole pebble 6 m.m. x 4 m.m. x 4 m.m.

2033-2047 Sandstone, white to light-gray, medium- to fine-grained, subangular to subrounded, quartzose, occasional pebble fragment, slightly micaceous and chloritic, at the bottom a small amount of coaly material

2047-2055 Shale, light-tannish gray, underclay, moderately hard, coaly plant fossils; some siltstone, light-tannish gray, quartzose, clean; a little coal

2055-2060 Coal

2060-2089 Sandstone, light-gray but at the top white to light-tan, fine-grained, in the middle and at the bottom some medium grains, subangular, quartzose, slightly micaceous and chloritic, rather dirty in the lower half, at 2079-2082 a few argillaceous laminations

2089-2103 Shale, gray to dark-gray, hard, in part finely micaceous, many coaly plant fossils

2103-2108 Shale, rather light-gray, in part with an olive cast, soft to moderately hard; and siltstone, light-gray, quartzose, micaceous

2108-2136 Shale, gray, slightly silty in the lower two-thirds, micaceous, siderite nodules, hard to moderately hard; interbedded in the lower two-thirds with a little siltstone, gray, quartzose

- 2136-2148 Sandstone, white, fine- to very fine grained, subangular to subrounded, quartzose, very slightly feldspathic; a little coal (probably overlies the sandstone)
- 2148-2263 Sandstone, same as above, but mostly fine-grained, at 2221-2226 a few medium to coarse grains, at 2216-2221 and 2258-2263 occasional quartz pebble fragments, at 2242-2252 very calcareous
- 2263-2274 Sandstone, white, fine- to coarse-grained, subangular to subrounded, quartzose, very slightly feldspathic, clean
- TOP BLUESTONE FORMATION (MISSISSIPPIAN) 2274
- 2274-2280 Shale, light-olive gray, claystone, moderately hard to soft
- 2280-2284 Shale, pale-green; a little siltstone, light-gray, quartzose
- 2284-2300 Shale, pale-green to light-olive gray to maroon to red, in part very calcareous
- 2300-2307 Shale, same as above, but no maroon; a little siltstone, light-green, quartzose, calcareous
- 2307-2323 Shale, pale-green to brick-red, silty; a little sandstone, white, fine-grained, angular to subangular, quartzose, clean, calcareous; at 2317-2323 some siltstone, dusty-red, quartzose
- 2323-2337 Siltstone, olive-gray to dusty-red, quartzose, rather argillaceous; in the lower half some shale, brick-red
- 2337-2352 Shale, gray, silty, hard
- 2352-2358 Limestone, gray, argillaceous, fossiliferous; some shale, same as above
- 2358-2387 Siltstone, white to very pale green, quartzose
- 2387-2408 Siltstone, pale-green to light-gray, quartzose, very slightly calcareous
- 2408-2423 Siltstone, light-gray, quartzose, argillaceous laminations, very slightly calcareous
- 2423-2435 Siltstone, light-tan, quartzose, coaly to argillaceous laminations, very slightly calcareous
- 2435-2453 Siltstone, same as above, but not laminated

- 2453-2460 Siltstone, light-tan to gray, quartzose, very slightly calcareous; and shale, dark-gray, carbonaceous, moderately hard
- 2460-2507 Shale, same as above, scattered very fine pyrite in the lower three-fourths
- 2507-2545 Shale, same as above; some interbedded sandstone, white, fine-grained, angular, quartzose, clean except for a little pyrite, calcareous; at 2515-2545 shale is not carbonaceous and sandstone is only slightly calcareous
- 2545-2562 Shale, gray; and interbedded siltstone, gray, quartzose
- 2562-2569 Shale, gray; interbedded with a little siltstone, same as above
- 2569-2577 Shale, gray; interbedded with some siltstone, same as above, but slightly pyritic

TOP PRINCETON SANDSTONE 2577