

**GEORGIA
STATE DIVISION OF CONSERVATION**

DEPARTMENT OF MINES, MINING AND GEOLOGY
GARLAND PEYTON, Director

**THE GEOLOGICAL SURVEY
Bulletin Number 74**

**LOGS OF SELECTED WELLS IN THE
COASTAL PLAINS OF GEORGIA**

by

Esther R. and Paul L. Applin



**ATLANTA
1964**

Depth (feet)	Description
3650-3680	Samples not studied.
3680-3700	Like sample at 3640-3650 ft.
3700-3710	Shale, like sample at 3640-3650 ft.; fragments of light-gray, hard, dense, fine-grained, micaceous, glauconitic sandstone begin to show in the samples.
3710-3720	Shale, like sample at 3700-3710 ft., and many fragments of white, loosely consolidated, fine-grained sandstone containing a few shell fragments and fish teeth.
3720-3736	Samples not studied.
3736	Sidewall core. Sandstone, white, loosely consolidated, fine-grained, glauconitic.
3736-3840	Samples not studied.

Comanche Series undifferentiated

3825	Top of Comanche Series is placed on basis of electric log correlation in connection with the data from samples.
3840-3850	Sand, unconsolidated, containing greenish-yellow and pink grains, coarse-grained, and a little feldspar.
3850-3870	Samples not studied.
3870-3880 ²	Sand like sample at 3840-3850 ft., and yellow, green, and multi-colored, hard, very finely micaceous shale.

CLINCH COUNTY

Operator: Wiley P. Ballard, Jr.	GGs. No. 496
Landowner: Timber Products Co. Well 1A	Elevation: 214 ft. (derrick floor)
Location: Land District 7, Land Lot 306; 2050 ft. east and 1760 ft. south of northwest corner of Land Lot 306.	Total depth: 4232 ft. Completed: Feb. 8, 1956

Summary of Stratigraphy

	Depth (feet)	Thickness (feet)
Tertiary		
Eocene		1528
upper, Ocala Limestone, upper member	492	188
	(1st sample)	
lower member	680	260
middle, undifferentiated	940?	740
lower, beds of Wilcox age	1680	340

²Samples below 3880 ft. not studied.

	Depth (feet)	Thickness (feet)
Paleocene		
Beds of Midway age.....	2020	540
Cretaceous		
Gulf		
Beds of Navarro age.....	2560	320
Beds of Taylor age.....	2880	140
Beds of Austin age.....	3020	340
Atkinson Formation, upper member.....	3360	430
lower member.....	3790	220
Comanche undifferentiated	4010	145

Pre-Cretaceous

Igneous rocks.....	4155 to	77
	total depth	

Lithologic and paleontologic description of cutting samples.

Depth (feet)	Description
0- 492	No samples.

Tertiary

Eocene Series

Upper Eocene. Ocala Limestone. Upper Member.

- 492- 522 Coquina, chalky, nodular; composed of worn and broken chalky specimens of Foraminifera. Dominant species are *Operculina ocalanus* and several varieties of *Lepidocyclus ocalana*. Other determinable fossils are *Asterocyclina* cf. *A. asterisca*, *Sphaerogypsina globula*, *Heterostegina ocalana*, and a few specimens of smaller Foraminifera. Fragments of bryozoans and fossil bi-valves are also present.
- 522- 610 Coquina, like preceding sample but more chalky and more firmly consolidated. Samples contain worn fragments of large specimens of *Lepidocyclus* and *Operculina*, and some rounded quartz grains. Samples at 572-582 feet and 600-610 feet contain specimens of *Pseudophragmina flintensis*.
- 610- 620 Coquina, like preceding samples, but "mud conditioner" composes about one-half of washed concentrate.
- 620- 660 Coquina, composed mainly of worn and broken fragments of *Lepidocyclus*, *Operculina*, *Camerina?* and a few other genera of larger Foraminifera; also hard chalky nodules composed of comminuted fossil debris.
- 660- 680 Dolomite(?), light-brown, slightly chalky, highly calcitic, moderately porous; seems to be an altered coquina.

Depth (feet)	Description
Upper Eocene. Ocala Limestone. Lower Member.	
680- 700	Coquina, 50 percent of sample, composed of hard, chalky, worn, and finely comminuted fossil debris; 25 percent, grayish-brown, finely granular, calcitic dolomite.
700- 720	Coquina, composed of worn and broken, moderately finely comminuted fossil debris; some small nodular fragments of finely granular grayish-brown dolomite. The chalky and dolomitic materials contain traces of pyrite(?). Samples contain poorly preserved specimens of <i>Amphistegina pinarensis cosdeni</i> , <i>Fabiania cubensis</i> , <i>Rotalia cushmani</i> , <i>Gyroldina</i> cf. <i>G. nassauensis</i> , calcareous algae and a few echinoid fragments.
720- 730	Coquina, composed of chalky, worn, rolled, and broken molds of fossils. The chalky material shows traces of glauconite(?) and pyrite. Fauna is similar to that in the preceding sample with the addition of a few small specimens of <i>Lepidocyclina</i> sp.
730- 740	Coquina, moderately hard, chalky, finely comminuted, containing a trace of glauconite. Fossil material abundant, but badly worn and mostly undeterminable. <i>Amphistegina pinarensis</i> is the dominant foraminifer; miliolids and a few other species of small Foraminifera are present. Sample contains a little dolomite.
740- 760	No samples.
760- 770	Coquina, worn and finely broken as in preceding sample. Sample contains many fragments of finely granular light-tan dolomite, but little determinable fossil material.
770- 810	No samples.
810- 820	Like sample at 760-770.
820- 840	Coquina, dolomitic, chalky, containing glauconitic areas; dolomite composes about 50 percent of the coquina and is unevenly distributed. Fossils composing coquina are mainly several varieties of <i>Lepidocyclina ocalana</i> . Echinoid fragments are also present.
840- 890	Chalk, white, dolomitic, calcitic, somewhat glauconitic; contains specimens of <i>Lepidocyclina</i> , and traces of an originally high, but now much altered fossil content. Sample at 880-890 contains much caved material.
890- 940	Dolomite, light-cream, porous, slightly chalky, calcitic; probably recrystallized coquina.
Middle Eocene. Undifferentiated.	
940- 970	Dolomite, light-tan, finely granular, porous, chalky, calcitic, containing worn chalky molds of Foraminifera, <i>Amphistegina</i> sp., <i>Operculinoides</i> , and others.
970- 980	Chalk, light-cream, moderately hard, dolomitic, containing specimens of <i>Amphistegina</i> sp. and <i>Lepidocyclina</i> sp.
980-1000	Limestone, white, hard, nodular, porous, chalky, slightly dolomitic. Limestone is composed chiefly of well-sorted, worn, finely broken

Depth (feet)	Description
	molds of small Foraminifera and other fossil debris. Seemingly indigenous specimens are <i>Amphistegina</i> cf. <i>A. nassauensis</i> and <i>Operculinoides</i> (?) sp. Sample at 990-1000 ft. contains a small amount of fine-grained, subangular, quartz sand.
1000-1040	No samples.
1040-1050	Similar to material described at 980-1000, but less well consolidated; contains a few fragments of dark grayish-brown, finely granular dolomite, similar to that described at 700-720 ft.
1050-1090	Limestone, light-cream, moderately hard, chalky, calcitic, dolomitic, coquinoïd. Limestone composed of fine to coarse, worn fragments of molds of <i>Operculinoides</i> , <i>Lepidocyclus</i> , <i>Operculina</i> , <i>Camerina</i> , bryozoan fragments and undeterminable microfossil and macrofossil debris.
1090-1160	Lithologically similar to the preceding sample, but contains many specimens of <i>Lepidocyclus</i> (<i>Phiolepidina</i>) r. <i>douvillei</i> Lisson, and <i>L. cedarkeysensis</i> ; also bryozoan and echinoid fragments.
1160-1190	Limestone, coquinoïd, chalky, calcitic, composed of coarse to fine, worn fossil debris, not usually determinable, but includes <i>Lepidocyclus</i> sp., <i>Amphistegina</i> sp., bryozoan, echinoid and bivalve fragments. A trace of glauconite present on some of the fossil fragments.
1190-1220	No samples.
1220-1240	Sand, fine to medium-grained, subangular, clear quartz; fragments of grayish-white, very finely granular, slightly porous dolomite; and fragments of white, moderately hard, irregularly sandy, glauconitic coquina composed of worn and broken molds of microfossils and macrofossils. Note. The two samples, 1220-1230 and 1230-1240, seem to be out of place and were possibly mis-numbered.
1240-1280	Coquina, white, moderately hard, calcitic, chalky, composed of worn fragments of microfossils and macrofossils and a small amount of irregularly distributed glauconite. The fossil material is usually undeterminable, but fragments of <i>Lepidocyclus</i> sp., bryozoans and echinoids were recognized.
1280-1310	Coquina, composed of worn and usually broken cream limestone molds of fossils, among which are specimens of <i>Amphistegina nassauensis</i> , <i>Epistomaria semimarginata</i> , <i>Discorbis inornatus</i> , <i>Eponides gunteri</i> , <i>Lepidocyclus</i> (<i>Polylepidina</i>) <i>antillea</i> , and many specimens of smaller Foraminifera and ostracodes.
1310-1325	No samples.
1325-1370	Limestone, light-cream, porous, chalky, probably a water-worn, altered coquina showing only traces of fossil molds. About 50 percent of sample is grayish-brown moderately finely crystalline dolomite, and a little light-gray chert. A trace of selenite is present in some of the chips of dolomite. Fragments of <i>Asterocyclus asterisca</i> (an upper Eocene form) in sample at 1350-1360 ft. is probably caving.

Depth (feet)	Description
1370-1410	Limestone, white moderately hard, chalky, showing traces of fossil structure and ornamentation. Some limestone fragments are glauconitic. Washed concentrate contains worn fragments of larger Foraminifera, and a few fragments of dolomite and chert.
1410-1440	Limestone, white to light-cream, moderately hard, porous, chalky, containing abundant fragments of specimens of <i>Pseudophragma</i> (<i>Proporocyclina</i>) <i>teres</i> , <i>Lepidocyclina</i> (<i>Polylepidina</i>) <i>antillea</i> , <i>Amphistegina lopeztrigo</i> , and many bryozoan fragments.
1440-1460	Limestone, cream, moderately hard, porous, coquinoid, somewhat glauconitic and dolomitic, containing abundant broken and worn specimens of a number of species and genera of Bryozoa.
1460-1500	Limestone, cream, chalky, glauconitic, dolomitic, containing many bryozoan fragments, fragments of fossil bivalves and other fossil debris. The glauconite is dark green, and occurs as small irregular inclusions in depressions in the limestone and as partial filling for some of the fossils.
1500-1520	Limestone, white coquinoid, chalky, dolomitic, glauconitic, containing abundant specimens of <i>Operculinoides gravelii</i> Cole, bryozoan fragments, and other undeterminable fossil debris.
1520-1570	No samples.
1570-1640	Coquina, 50 percent of sample, composed of worn and fragmental which limestone molds of small specimens of Foraminifera and other fossils; 50 percent of sample is fine-grained quartzitic sand containing a few phosphate nodules and fragments of dolomite limestone molds of small specimens of Foraminifera and $\frac{1}{3}$ fragmental fossil material.
1640-1670	Sand, fine to medium-grained, subangular, clear quartz, containing a few black phosphatic nodules, is about 90 percent of sample. Fragmental fossil material is about 10 percent of sample. In the sample at 1650-1670, the sand and the fossil molds each compose about 50 percent of the cuttings.
1670-1680	Limestone, white, moderately hard, coquinoid, containing abundant specimens of a strongly beaded tumid <i>Camerina?</i> sp., and of <i>Discocyclina</i> (<i>Asterocyclina</i>) <i>monticellensis</i> Cole and Ponton. Other fragmental fossil material is present but unidentifiable.

Lower Eocene. Beds of Wilcox age.

1680-1690	Limestone, chalky, dolomitic, glauconitic, containing a trace of fragmental fossil material and light-gray chert. Note. This material is similar to some in higher samples and may be out of place. Top of lower Eocene is based, in part, on electric log characteristics of the Ballard well.
1690-1700	Limestone, chalky, dolomitic, fossiliferous containing fragments of light-gray chert and specimens of <i>Asterocyclina monticellensis</i> Cole and Ponton, (probably caving); <i>Discocyclina weaveri</i> (characteristic of the Salt Mountain Limestone), fragments of large

Depth (feet)	Description
	echinoid spines, and other fossil material. <i>Robulus</i> cf. <i>R. midwayensis</i> occurred in one fragment of limestone.
1700-1720	Sand, very fine to coarse.
1720-1750	Sand, like preceding sample, and about 50 percent small fragments of fossil material composed of white chalky limestone. Small black phosphatic nodules occur at 1740-1750 feet.
1750-1760	No sample.
1760-1770	Sand, very fine to coarse-grained, subangular, clear quartz, and some nodular fragments of white, hard, glauconitic, sandy limestone composed of broken and fragmental molds of fossils.
1770-1780	Sand as in the preceding sample, about 80 percent; about 20 percent white sandy limestone molds of fossil fragments.
1780-1800	Like the preceding sample with the addition of many fragments of limestone similar to that in sample at 1760-1770 feet.
1800-1820	No samples.
1820-1870	Sand, fine to very coarse, subangular, clear quartz; abundant gray and some white fragments of <i>Ostrea</i> -like bivalves that have been finely broken and worn; small nodules composed of white chalky limestone, fossil fragments, and glauconite. At 1850-1860 feet, sample contains fragments of several species of Bryozoa and some fragments of <i>Camerina</i> sp.
1870-1800	Sand, fine to very coarse, clear quartz, containing large black nodules of phosphate, constitutes most of sample. A smaller part of sample is composed of fragments of a coquinoid limestone, part of which are gray, sandy and glauconitic, and part are white, porous, glauconitic and fossiliferous. A few worn specimens of <i>Pseudophragmina</i> (?) sp. are apparently indigenous.
1880-1900	No samples.
1900-1930	Sand, fine to very coarse, subangular, clear quartz. Sample contains a few specimens of <i>Discocyclina weaveri</i> and small fragments of other fossils like those described from higher levels in the lower Eocene.
1930-1980	Sand, like preceding sample, and abundant gray and white, sandy, somewhat glauconitic fragments of <i>Ostrea</i> , other fossil bivalves, and unidentified fossil material.
1980-2020	Sand, fine to very coarse, subangular, clear, quartz, containing a few phosphatic nodules, and many fragments of white, glauconitic, sandy, fossiliferous limestone; fragments of gray and white, sandy, glauconitic, badly worn, fossil bivalves; pink-stained, sandy, glauconitic, porous, fossiliferous limestone; and other fossil debris. Some of the material is probably caving.

Paleocene Series

Beds of Midway Age

2020-2040 Lithology and fauna like the preceding sample, with the addition

Depth (feet)	Description
	of many fragments of fine-grained, highly glauconitic dolomite. A few fragments contain selenite inclusions and a few are chalky. Some fragments of dolomite are sandy.
2040-2060	No samples.
2060-2070	Sand, fine to very coarse, subangular, clear quartz, about 50 percent of sample; about 50 percent white, glauconitic, sandy limestone that contains small fragments of Ostracodes and undeterminable fossils.
2070-2090	Limestone, white, moderately hard, sandy, glauconitic, and somewhat fossiliferous like the preceding sample. Sample contains a little sand, and a few fragments of glauconitic sand cemented with selenite.
2090-2120	Sand, fine to very coarse grained, about 50 percent of sample; 50 percent white, moderately hard, sandy and glauconitic limestone like the preceding sample. The limestone contains fragments of microfossils and macrofossils.
2120-2130	No sample.
2130-2150	Limestone, light-gray, highly sandy, glauconitic; sand is moderately fine grained and contains a trace of mica.
2150-2180	Sand, fine to very coarse, and fragments of sandy limestone and worn fossils that are probably caving from higher levels.
2180-2200	Sand, fine to coarse-grained, with medium-sized grains common at 2180-2200 feet; many small fragments of light-gray, very finely sandy and glauconitic, chalky limestone. A few small poorly-preserved specimens of Foraminifera are possibly indigenous in the sample. Coarse grains of sand are common at 2190-2200 feet.
2200-2250	Sand, fine to coarse-grained, about 25 percent of sample; 75 percent gray, hard, finely sandy and glauconitic, calcareous clay, or argillaceous, calcareous sandstone. The clay contains scattered flakes of mica and small, poorly-preserved fragments of fossils. At 2210-2220 feet, a few fragments of <i>Nodosaria affinis</i> wash from the clay.
2250-2260	Sand, fine to coarse, about 25 percent of sample; 75 percent gray, glauconitic, finely sandy, calcareous clay. The clay contains specimens of <i>Nodosaria affinis</i> , <i>Robulus</i> sp., <i>Cibicides alleni</i> , and <i>Cytheropteron midwayensis</i> .
2260-2300	Like the preceding sample with the addition of abundant fragments of light-brown, hard, highly glauconitic, coquinoid limestone composed mainly of finely comminuted fossil debris in a dolomitic and chalky matrix.
2300-2330	Limestone, white, hard, chalky, irregularly porous and glauconitic, containing many traces of fragmentary fossil material; a few poorly preserved free specimens of <i>Anomalina</i> sp., <i>Cibicides</i> (?) sp., and others.
2330-2380	Limestone, white, hard, very finely porous and glauconitic, show-

Depth
(feet)

Description

- ing abundant traces of an original very finely fragmental fossil content. This material is more firmly consolidated than in the higher samples. A few fragments of *Nodosaria* cf. *N. affinis* are in the sample at 2370-2380 ft.
- 2380-2400 Limestone, light-gray, argillaceous, chalky, very finely porous, containing irregularly distributed nodules of glauconite and of phosphate. Poorly preserved specimens of smaller Foraminifera are: *Robulus midwayensis*, *Nodosaria affinis*, *Vaginulina longiforma*, *Cibicides alleni*, *Cibicides howelli*, *Cibicides vulgaris*, *Chilostomelloides eocenica*, and many specimens of the ostracode *Bairdia suborbiculata*.
- 2400-2410 Like the preceding sample, but containing many fragments of light gray, chalky, very finely sandy, somewhat micaceous limestone.
- 2410-2430 No samples.
- 2430-2480 Sand, fine to coarse-grained, and cavings of fossiliferous material and limestone. The sample at 2450-2460 feet contains specimens of *Robulus midwayensis*, *Robulus degolyeri*, *Nodosaria affinis*, *Adhaerentia midwayensis*, *Ammobaculites paleocenica*, and ostracodes as in sample at 2380-2400 feet.
- 2480-2510 Limestone, clayey, very finely sandy, slightly glauconitic and micaceous, and a few large, irregular-shaped, dull, phosphatic nodules. Some cavings from higher levels.
- 2510-2530 No samples.
- 2530-2540 Like the sample at 2480-2510 feet.
- 2540-2560 No sample.

Cretaceous

Gulf Series

Beds of Navarro age

- 2560-2580 Sand, fine to very fine, clear quartz, about 75 percent of sample; about 25 percent fragments of several kinds of limestone from slightly higher depths, and some phosphatic nodules. Nodular fragments of pyrite fairly common; a few phosphatic molds and fragments of gastropods and cup-corals; a few specimens of *Globotruncana arca*, *Gyroldina* cf. *G. globosa*, and *Planulina spissicostata*.
- 2580-2610 Sand, fine to coarse-grained, and small fragments of limestone probably caving from higher levels; a few fragments of soft, gray, micaceous, silty clay. The fauna is the same as that in the preceding sample, with the addition of *Pseudotextularia plummerae*.
- 2610-2620 No sample.
- 2620-2630 Sand, very fine to coarse, clear quartz; very fine grains dominant. Sample also contains fragments of soft, gray, micaceous, very silty clay, many pyrite nodules, and some specimens of Foraminifera.

Depth (feet)	Description
	minifera characteristic of the Navarro Group.
2630-2640	No sample.
2640-2680	Clay, gray, soft, silty, about 50 percent of sample; 50 percent fine to very fine grained clear quartz sand; a few pyrite nodules and a few specimens of Navarro microfossils.
2680-2710	Clay, gray, soft, silty, micaceous, about 50 percent of sample; 50 percent fine to very fine grained sand; a few specimens of <i>Globotruncana</i> sp.
2710-2750	No samples.
2750-2770	Like sample at 2680-2710 feet.
2770-2780	No sample.
2780-2790	Like sample at 2680-2710 feet.
2790-2810	No samples.
2810-2830	Like sample at 2680-2710 feet.
2830-2840	No sample.
2840-2850	Like sample at 2680-2710 feet.
2850-2870	No samples

Beds of Taylor age

2870-2880	Sand, fine to coarse grained, and gray shale, harder than in preceding samples; pyrite nodules fairly common; many fragments of <i>Inoceramus</i> . Fauna includes several species of <i>Globotruncana</i> not seen at higher levels and specimens of <i>Globigerina</i> , <i>Haplophragmoides calculus</i> , <i>Citharina wadei</i> , <i>Bolivina incrassata</i> , <i>Globorotalites conicus</i> , <i>Cibicides stephensoni</i> , <i>Planoglobulina glabrata</i> , <i>Kyphopyxa christneri</i> , <i>Loxostoma clavatum</i> , <i>Gaudryina laevigata</i> , several species of ostracodes, and other fossils.
2880-2890	No sample.
2890-2900	Like sample at 2870-2880 feet, but contains no <i>Inoceramus</i> fragments.
2900-2910	No sample.
2910-2920	Like sample at 2870-2880 feet.
2920-3020	No samples.

Beds of Austin age

(electric log correlation)

3020-3110	No samples.
3110-3130	Shale, gray, soft, and sand as in sample at 2870-2880 feet. Sample contains specimens of Foraminifera and a few Ostracodes. The Ostracodes were first observed in the sample at 2870-2880 feet. No <i>Inoceramus</i> fragments noted.
3130-3140	Clay, gray, moderately soft, micaceous; pyrite nodules, and <i>Inoceramus</i> fragments; cavings of limestone and fossil fragments from higher levels. About 50 percent of sample is fine to

Depth (feet)	Description
	medium-grained quartz sand containing a few cylindrical nodules of pyrite. Specimens of Cretaceous Foraminifera in the sample are, chiefly, several species of <i>Globotruncana</i> , <i>Cibicides stephensoni</i> , <i>Citharina wadei</i> , <i>Bulimina</i> sp., and others.
3140-3160	Clay, gray, micaceous about 50 percent of sample; about 50 percent fine to coarse-grained sand; samples contains <i>Inoceramus</i> fragments and some specimens of Cretaceous Foraminifera. <i>Planulina texana</i> and <i>Bolivina incrassata</i> are fairly common.
3160-3200	Samples are lithologically similar to the preceding sample, and contain many fragments of <i>Inoceramus</i> and nodules of pyrite. Specimens of Cretaceous Foraminifera are fairly common, and many of them are probably indigenous. Species of <i>Globotruncana</i> are most common; <i>Robulus</i> sp. is common; and several fragments of <i>Kyphopyxa</i> are present. <i>Citharina texana</i> occurs at 3180-3190 feet.
3200-3220	Shale, brownish-gray, marly. Shale is more indurated than in the preceding samples, and contains many <i>Inoceramus</i> fragments. The sample contains a small amount of sand, some pyrite nodules, and a few nondiagnostic specimens of Cretaceous Foraminifera.
3220-3250	Shale, brownish-gray, marly, containing numerous very small specimens of <i>Gümbelina</i> and <i>Globigerina</i> . These minute, cream specimens of Foraminifera do not seem to be crushed, but give the shale a slightly speckled appearance. Specimens of several species of <i>Globotruncana</i> are fairly common, and specimens of <i>Globigerina cretacea</i> , <i>Citharina wadei</i> , <i>Robulus</i> sp., and others are present.
3250-3260	No sample.
3260-3290	Like the sample at 3220-3250 feet.
3290-3300	No sample.
3300-3320	Like the sample at 3220-3250 feet.
3320-3330	Like the preceding sample with the addition of a small amount of very fine grained quartz sand and a little fine-grained glauconite.
3330-3350	Shale, brownish-gray, thinly flaky, containing a few fragments of <i>Inoceramus</i> and a few nodules of pyrite. About 20 percent of sample is very fine grained sand and some very fine grained glauconite. Fauna consists mainly of very small specimens of <i>Globigerina</i> and <i>Gümbelina</i> .
3350-3360	No sample.
Atkinson Formation. Upper Member (electric log correlation).	
3360-3380	The upper member of the Atkinson Formation in this well is a shallow-water marine facies. Shale, brownish-marl, marly, and cavings. At 3370-3380 feet, the sample is composed of 50 percent

Depth (feet)	Description
	shale and 50 percent fine to coarse-grained sub-angular, clear quartz sand.
3380-3390	No sample.
3390-3410	Shale, brownish-gray, flaky, and a little fine-grained, argillaceous, micaceous, glauconitic sandstone. Sample contains specimens of Cretaceous Foraminifera, many of which seem to be caving from higher levels.
3410-3420	Shale, brownish-gray flaky, containing pyrite nodules, <i>Inoceramus</i> fragments, and small specimens of long-ranging species of Cretaceous fossils (Foraminifera). Sample contains small irregular-shaped nodules of siderite similar to those usually present in sandy beds of the upper Atkinson in the southeastern region.
3420-3450	Shale, brownish-gray, flaky, and fragments of white, irregularly glauconitic, weakly phosphatic, calcareous, medium-grained sandstone, containing many fragments of <i>Ostrea</i> -like fossil bivalves. About two-thirds of the sample is composed of moderately coarse, subangular, clear quartz sand that washes from the sandstone. A few specimens of species of Cretaceous Foraminifera and Ostracoda in the sample are probably caving from higher depths.
3450-3470	Sandstone, fine-grained, glauconitic, irregularly micaceous, fossiliferous; fragments of brownish-gray, flaky shale; and very fine to coarse-grained unconsolidated sand that composes about one-third of the sample. Fragments of <i>Inoceramus</i> , and specimens of <i>Gumbelina</i> , <i>Globigerina</i> , and a few other non-diagnostic Cretaceous microfossils are present. Much of the fossil material is probably caving from higher levels, although fragments of <i>Ostrea</i> -like bivalves are probably indigenous. Shell fragments are common in the sandstone chips. The quartz grains in the sandstone seem to be finer than in the preceding samples, and the sandstone itself is less argillaceous and calcareous.
3470-3480	Shale, like the preceding sample; many fragments of white, dense, fine to medium-grained, calcareous, irregularly micaceous sandstone; some fine to coarse-grained unconsolidated sand; and cavings of limestone and <i>Inoceramus</i> fragments.
3480-3490	No sample.
3490-3500	Like sample at 3470-3480; very few specimens of Foraminifera and few shell fragments.
3500-3540	Shale, brownish-gray, flaky; a few fragments of sandstone, shells, phosphatized bones, and cavings from higher levels.
3540-3550	Shale, brownish-gray, flaky, is about two-thirds of the sample, and one-third is fine to medium-grained unconsolidated sand, and a few fragments of white, fine-grained, calcareous, glauconitic, irregularly micaceous sandstone. Sample also contains a few specimens of Foraminifera, <i>Inoceramus</i> fragments, and cavings of limestone from higher levels.

Depth (feet)	Description
3550-3560	Like the preceding sample, but contains more sand and sandstone and proportionally less shale; shell fragments are common in the sandstone.
3560-3570	Sand, fine to moderately coarse, clear quartz; a small amount of shale; a few fragments of sandstone; cavings of material and fossils from higher levels.
3570-3580	No sample.
3580-3590	Like sample at 3560-3570 feet.
3590-3600	No sample.
3600-3610	Sand, fine to very coarse grained; some fragments of shale and shells; a few specimens of Foraminifera.
3610-3630	Like sample at 3600-3610 feet; a few pink grains in the sand, and a few fragments of very thick shelled bivalves.
3630-3640	No samples.
3640-3660	Like the sample at 3610-3630, but contains no pink grains of sand. Sample contains macrofossil shell fragments and many large nodules of pyrite.
3660-3690	No samples.
3690-3720	Shale, brownish-gray, about 75 percent of sample; 25 percent fine to medium-grained sand. Sample contains a few <i>Inoceramus</i> fragments, and a few fragments of other bivalves.
3720-3730	No sample.
3730-3770	Shale, brownish-gray; about 20 to 50 percent of sample is very fine to medium-grained clear quartz sand.
3770-3780	Shale about 75 percent of sample, and 25 percent very fine to medium-grained quartz sand. The sample contains fragments of several types of glauconitic sandstone, fragments of <i>Inoceramus</i> and other fossil bivalves, and a few specimens of Foraminifera.
3780-3790	Shale like the preceding sample, about 50 percent, and about 50 percent fine to medium-grained sand. Fragments of white, glauconitic, calcareous sandstone contain small pieces of shells of fossil bivalves.

Atkinson Formation. Lower Member.

3790-3800	Like the preceding sample with the addition of a few fragments of light bluish-gray, hard limestone containing irregular sandy areas.
3800-3820	Shale, a few fragments of fine-grained glauconitic, irregularly micaceous sandstone, and some unconsolidated sand; fragments of phosphatized bone present, and nondiagnostic specimens of Foraminifera.
3820-3830	Shale, like preceding samples, and many fragments of light-gray, hard, very finely sandy limestone containing shell fragments and mica in very sandy areas; a few fragments of phosphatized

Depth (feet)	Description
	bone are present, and a few small ostracodes that are probably indigenous.
3830-3850	Shale, like preceding sample, and fragments of sandy limestone containing embedded shell fragments.
3850-3890	Shale, like preceding sample, and many fragments of light-gray, hard, dense, irregularly silty to finely sandy limestone containing small worn fragments of heavy-shelled bivalves, <i>Ostrea?</i> sp. and others.
3890-3900	Shale, gray, flaky; abundant fragments of light-gray, hard, sandy limestone; hard, calcareous, very fine grained, very micaceous sandstone; large nodules of crystalline pyrite; phosphatic nodules; and small irregular-shaped siderite nodules. Fauna consists of <i>Inoceramus</i> fragments, specimens of small non-diagnostic Cretaceous Foraminifera (mainly <i>Gümbelina</i> , <i>Globigerina</i> , and <i>Globotruncana</i>), fragments of macrofossils (in the sandstone and sandy limestone), fish-scales, a few ostracodes, and a few specimens of the foraminiferal species <i>Ammobaculites comprimatus</i> that occurs in beds of Woodbine age.
3900-3910	No sample.
3910-3930	Sandstone, fine to very coarse-grained, quartz, containing abundant, large, nodular fragments of siderite; the coarse sand contains grains of white and of pink feldspar. Shale like that in preceding samples, fragments of limestone, and many nodules of pyrite are present.
3930-3940	Sandstone, coarse-grained, quartz; many grains are stained red. Sample contains abundant, large, siderite nodules, fragments of flaky shale, shell fragments, and various other materials, and a few specimens of Foraminifera that have caved from higher levels.
3940-3970	No samples.
3970-3980	Sandstone, very coarse grained, quartz, containing many deep-yellow and reddish-tinted grains.
2980-4010	No samples.
Comanche Series undifferentiated	
4010-4020	Sand and siderite nodules as in preceding samples; many fragments of gray shale, a few fragments of gray red-mottled shale, and some very small fragments of red clay-shale.
4020-4060	No samples.
4060-4080	Sand, very coarse, containing many yellow-tinted grains; a few fragments of red and light greenish-gray mottled shale.
4080-4150	No samples.
4150-4160	Sand, coarse to very coarse, quartz, containing many yellow and reddish-tinted grains, and a small amount of chert and feldspar. Sample contains many fragments of mottled red, gray, and sulfur-yellow micaceous mudstone.

Depth (feet)	Description
Pre-Cretaceous	
4155	Igneous rock (electric log correlation).
4160-4190	No samples.
4090-4210	Igneous rock.
4210-4232 T.D.	No samples.

COFFEE COUNTY

Operator: Carpenter Oil Company	GGs. Nos. 468, 509 & 508
Landowner: Composite log of C. T. Thurman wells 1 and 2 and J. H. Knight well 1 ¹	Elevation: 317 ft. (derrick floor, Thurman well 1)
Location: See footnote 1	Total depth: 4130 ft. (Thurman well 1)
	Completed: 1955-1956

Summary of Stratigraphy

	Depth (feet)	Thickness (feet)
Tertiary		
Miocene ² undifferentiated	surface	360
middle, Hawthorn Formation	360	80
Oligocene undifferentiated	440	620
Eocene		
upper, Ocala limestone, upper member	1060	200
middle(?) or upper(?)	1260	100
lower and middle, undifferentiated	1360	470
Paleocene absent?		
Cretaceous		
Gulf		
Beds of Navarro	1830	430
Beds of Taylor age	2260	755
Beds of Austin age	3015 (?)	235
Tuscaloosa Formation	3250	500
Comanche(?) undifferentiated	3750 (?)	360

Pre-Cretaceous

Granite ³	to total depth 4110	20
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Lithologic and paleontologic description of cuttings and cores. Samples are cuttings unless otherwise stated.