Hunt Oil

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Introduction

This report was prepared in order to describe the lithologic character of well cuttings, drilled to the 4500' level, from Jessup in Wayne County Georgia. The formational names used are those accepted by the U.S. Geological Survey for the Southeastern Coastal Plain. ~~Where possible~~

Where possible, formations are arranged individually as units. Where not possible, they are grouped together as series names: e.g. Miocene: Undifferentiated. Previous investigators of Coastal Plain stratigraphy, including Paul and Esther Applin, have described Tertiary and Cretaceous geology in several reports. In some instances the author has used their lithologic descriptions as a guide for placing formational boundaries in this report.

Species determination for Foraminifera and Ostracoda, however useful for a complete study of these well cuttings, are beyond the scope of this report. Instead, only a note of their presence or absence will be stated.

In the lithologic description of the well cuttings the dominant type of sediment is mentioned first,

followed by the ~~accessory~~ & less plentiful constituents in the sample. The sediment colors will be matched with colors chosen from a rock color Chart distributed by the Geological Society of America (1957).

When reading this report keep in mind that much of the "silt" found in some of the samples may be drilling mud left behind in the sample at the well site. Separation of this "silt" from the actual sample description has been impossible. Also note that during drilling it is possible for sediment from one level to be mixed into samples from lower portions of the section. It is not possible to separate the mixed sediment after the deed has been done.

Pliocene to Recent (Undifferentiated)	Thickness (feet)	Depth (feet)
sand: poorly sorted, with rock fragment, pebbles, plant remains, sparse phosphate grains; pale yellowish brown 10yR 6/2	10'	10'
sand: fine to medium grained, subangular, red-brown clay, white, chalky limestone, plant fibres light brown 5y R 5/6	10'	20'
sand; medium to coarse, subangular feldspathic*; interbedded with clay limonitic - 20'-30' level rarely phosphatic and micaceous moderate yellowish brown 10yR 5/4	50'	70'
sand: medium to coarse, feldspathic interbedded with lenses of brownish and dark grey clay, clean sand 100'-110', 120-130' fine grained white limestone fragments yellowish grey 5y 7/2	80'	150'

* Sahuaroite feldspar and colorless potassic varieties only are found in various horizons of the whole section.

Pliocene to Recent Cont.: Thi. D.

sand: mostly fine subangular, some coarse rounded grains, feldspathic, phosphatic calcareous silt: greenish well green clay clast light olive grey 5y 6/1 10' 160'

sand: as above, some silt and clay clast; limestone with sand and small phosphate granules, micaceous accessory garnets epidot, fish teeth. light olive grey 5y 6/1 silty layer with sand, no limestone 210-220 60' 220

sand: fine to coarse subangular to rounded pebble size sand, feldspathic, rounded phosphates & all types; fine grained indurated sand with calcareous cement. quartzite pebbles. fine brown clay, fish teeth, mica, garnet, glauconite epidote. Towards bottom of layer the abundance of large size sand and phosphates decrease as the amount of brown clay increases the color grades from light olive grey 5y 6/1 to pale yellowish brown 10yR 6/2 120' 350'

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Miocene: Hawthorn Formation — Thi D

Sand: fine angular to coarse subrounded. 50' 400'
feldspathic, phosphatic - brown, grey & black
sand grains, Calcareous silt, ~~clay~~ clasts of silt
angular dolomitic limestone fragments
Color grades from pale greenish yellow
10y 8/2 to yellowish grey 5y 7/2

Sandy limestone: 60' 460
arenaceous, phosphatic, white, fine
Saccharoidal limestone: (soft)
sand - silt size to coarse, angular
to subround coarsely phosphatic, feldspathic
large calcareous shale fragments, blocky.
mottled appearance due to dark phosphatic
white limestone. Yellowish grey 5y 7/2.

Sandy Limestone: limestone: sandy, saccharoidal 70' 560
and white, crystalline, dense. many at
520-530, 550-560.
sand as above, some micas, garnet.
fish teeth.
calcareous silt, yellowish grey 5y 7/2

Hawthorn Cont:	Thi.	D.
Sand: silt to some coarse sizes angular + subangular. phosphatic feldspathic, calcareous silt, saccharoidal limestone (soft) light olive grey 5Y 5/2	10'	570'
Sand: fine to medium subangular somewhat indurated. less phosphatic with ltgt pinkish as well as black + grey. interbedded with calcareous silt small forams and ostracods. 620-640	100'	670'
Tampa Limestone		
Limestone: soft, white, dull chalky granular; sand - fine to medium in a chalky matrix sediment. phosphates; few ostracods; very light grey N8	20'	690'

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Oligocene: Suwannee Limestone — Thi D.

Limestone: granular, cream colored fossiliferous. Dolomitic limestone: crystalline pink, grey and brown, dense fragments recrystallized; limestone: as a worn fragment and fossils— echinoid spines, bryozoans, ostracods (few) sand - fine to medium grained in a chalky matrix at top of formation 690-700 *Dictyoconus Sp. appear at 710'-720' Color grades from very pale orange 10YR 8/2 to pinkish grey 5YR 8/1 as the dolomitic limestone appears 710'-720' — 40' — 730

* found in Suwannee Lms. by Aplin + Aplin 1944, and indicates a reflouriding of the species.

Upper Eocene: Jackson Group: Ocala Limestone.

Limestone: granular mixture of fossil shell fragments, bryozoans, all broken, worn & recrystallized, white to light cream (no soft chalk); Some dolomitic, light brown crystalline limestone; sand - fine, some medium sparsely phosphatic. Large. Forams, & small. Dictyoconus* sp. dentalina sp. Very light grey N8 — 20' — 750

Ocala Limestone cont.: Thi D.

* In the Ocala Limestone the presence of Dictyoconus sp. presents a problem. It is possible that coring in of overlying Suwannee Lms caused the fossil to appear, or only the lower portion of the Ocala is present. The latter possibility ~~which~~ is supported by the 150' section of Ocala + presence of only a not the 600' approx that is usually found. Puri (1957) indicates that Dictyconus cookie is found in the Inglis Fm (lower Ocala). In either case, the only way to check would be to identify the other fossils present in the Ocala section.

Limestone: granular, chalky fragments 110' 860'
of shells, bryozoans, foraminifera, large + small (many species
fewer crystalline dolomitic limestone fragments
Some sand: fine to med, subangular, sparsely phosphatic

Limestone: as above, less dolomitic 30' 890
limestone, less sand, echinoid plates +
spines, clasts of recrystallized and cemented
fossil fragments
presence of Periarchus lyelli floridanus*
(echinoid)
distinctive fossil marking the bottom of
the Ocala, or the Inglis formation Puri (1957.

Ocala Cont:

	Thk	Depth
Limestone: as above, much sand.* fine to coarse pebbles, subangular to round, feldspathic, phosphatic. some large pale grey, fine grained, angular dolomitic limestone fragments	10'	900'

* a sandy layer near the base of the Ocala Lms. is noted by Cooke (1943)

Middle Eocene: Claiborne: Avon Park Limestone

Limestone: granular, chalky, earthy recrystallized fossil fragments (indistinguishable) a few large forams. some sand - fine to med, phosphates. White to yellowish grey 5Y 8/1	30'	930'
Limestone chalky, recrystallized fossil fragment. Dolomitic limestone - Coarse crystalline, increasing in quantity with depth. pale blue grey fine grained dolomitic limestone., few lg. forams. Chalky layer at 960-970. yellowish grey 5Y 8/1	40'	970'

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	Thi	D.
Tallahassee Limestone no samples	670'	1640'
Limestone: white, granular chalky recrystallized; dolomite - light tan, coarse crystalline. sand - fine to medium, sparsely phosphatic and feldspathic. Small forams, bryozoans, few ostracods, yellowish grey 5y 7/2.	40'	1680'
Limestone: fine granular mixture of recrystallized fossil fragments and light tan + cream colored crystalline dolomite. fossiliferous with many species lg + small forams. an increasing amount of soft chalky cement with depth. little sand and phosphates. Chert 1700 - 1710. pinkish grey 5yR 8/1	40'	1720'
Limestone: med. - fine granular mixture with dolomite as above, few fossils. interbedded with varying amounts of gypsum and chert. Some sand and sparse chalky cement. pinkish grey 5yR 8/1	50'	1770

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Talahassee limestone cont.

Limestone: mixture with dolomite and sand. Some fine ~~grain~~ saccharoidal limestone with worn fossil fragments tan, crystalline dolomite, sand - fine to coarse, feldspathic sparse phosphate, tan chert. some gypsum. Light brownish grey 5yR 6/1 — 10' — 1780.

Dolomite: med to coarse granular mixture of light cream colored crystalline dolomite and whitish saccharoidal limestone. Sand, light tan chert gypsum. some layers chalky 1810-1820 - coarse, very cherty + gypsiferous. Yellowish grey 5y 7/2 — 90 — 1860

The Talahassee limestone and the underlying Lake City limestone are mixed with sand ~~at~~ Some ~~places~~ levels and glauconitic sand at ~~other places~~ levels. This is probably due to a facies change into the clastic formations: Suwannee and Tallahatta the Middle Eocene equivalents in parts of Western Georgia. (Stringfield 1966 pg 33)

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Lake City Limestone — Thi. — D.

Dolomite: medium grained coarsens with depth. coarse crystalline angular fragments of light tan dolomite. limestone - saccharoidal, and chalky cement; blue grey chert, platy gypsum, nodular anhydrite. sparse sand with phosphates. Yellowish grey 5Y 7/2 to pale brown — 30' — 1890'

Dolomite - medium granular, light grey and tan crystalline angular dolomite saccharoidal limestone, chalky cement, worn fossils, less evaporites; some chert, sand, glauconitic 1900-1910 yellowish grey 5Y 7/2 — 20' — 1910'

Limestone, granular, recrystallized fossiliferous. coarse crystalline light tan dolomite. blacky anhydrite platy gypsum, light brown and white chert, glauconitic sand with rare phosphates occasional Chalcopyrite crystals. bryozoans, and species large + small foramens echinoid spines. yellowish grey 5Y 7/2 — 10' — 1920

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Lake City Limestone Cont:

Dolomite: light tan and dark brown 20 1940
coarse crystalline dolomite; fine grained,
white, limestone and fine glauconitic sand.
~~to~~ much calcareous silt,
few forams, anhydrite, chert, Calcopyrite
cryst. Pale olive 10Y 6/2

Sand: fine, angular-subangular, 50' 1990'
glauconitic. Calcareous silt.
dark brown and pale orange, coarse
crystalline dolomite. fine, chalky white
fragmental limestone. sparse mica, some
anhydrite, gypsum + chert, ~~occasional~~ rare:
calcite crystals and garnets. Light olive grey 5Y 5/2

Sand: fine to medium grained, glauconitic 50' 2040
calcareous silt; limestone: fine grained
chalky, pinkish white; dolomite; lt. tan
and dark grey angular crystalline fragments.
chert, phosphates; anhydrite 1990-2000
~~clay~~ clast, glauconite. 2030-2040
occasional mica, gypsum, rare garnets
light olive grey 5Y 5/2

Lower Eocene: Wilcox age: Oldsman limestone and Clastic Equivalent (Undifferentiated)

Glauconitic Calcareous silt: 90' 2130
sand: silt to fine grained some medium clay clasts - roughly laminated with micas + fine glauconite. limestone: fine grained, pinkish to white; dolomite: dark brown and light tan cryptalline; chert, abundant 2060-2070 fossils: lg + Sm. forams. ostracods.

glauconitic, Sandy, limestone in Calcareous clay: 170' 2300
Calcareous clay from silt to clay size particles; sand: fine to medium some coarse sizes. subangular, glauconitic, micaceous limestone occurs as coarse grained arenaceous types with glauconite and a white cryptalline fragment, + fine grained; dolomite; light tan, cryptalline
clay clasts, some with, others without glauconite globules.
The layer is increasingly micaceous with depth. chert + phosphates in small numbers occur at some levels. Greenish grey 5 GY 6/1

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Lower Eocene Cont.:

Calcareous mud: sand: fine to 20' 2320'
medium, subangular; limestone: chalky
fine grained, white. less glauconite
than above, some chert; mud clast; ostracods.
Medium light grey N6

Calcareous mud, glauconitic sand 180' 2500
sand - fine to medium, occasionally coarse
abundant limestone: arenaceous, glauconitic
light pinkish to white, saccharoidal, fine grained
chert of clay: lenticular shape, grey and black
Some have glauconite globules, most are micaceous
phosphates: black, brown and grain second grain
< 2350-2360
increase in calcareous mud towards the bottom of
the section. Much less mud (total) than previous 20'.
few fossils small + large forams, ostracods
lignite (sparse) ~~2420~~ 2430-2440
Light olive grey 5Y 6/1

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Paleocene: Clayton formation. This D.

Sand: with limestone in calcareous silt 100' 2600'

sand: very fine - fine, some medium angular to subangular. glauconitic, micaceous limestone: fine chalky, white and light to coarse crystalline., Some are arenaceous and glauconitic; also chalky patches on Sand aggregates

few clay clast: finely laminated, dark grey microchert & phosphate, a few small large forms, ostracod, . Olive gray 5Y 4/1 with a definite brownish tinge

Sand, limestone in calcareous silt 260' 2860

sand, as above, but indurated at times. limestone: as above, but less glauc. sand is micaceous, cherty sparsely glauconitic & phosphatic, rare graphite and chalcopyrite silt increases towards the bottom of the layer, few fossils. Dark yellowish brown 10YR 4/2

Upper Cretaceous: Post Tuscaloosa Formations Thi. D.
(undifferentiated)

Sand in calcareous silt: sand: fine to very fine, some medium + coarse, angular to subangular, both loose, and indurated sparse mica, glauconite, chert limestone: recrystallized, fragmental fossil? also, coarse arenaceous, with phosphates and glauconite, limestone decreases in abundance and calcareous silt increases down the sector. 290' 3250

some levels have green and grey, laminated, laminated, ~~mud~~ clay clast
pyrite occurs at some level, few fossil. ostracods, small forams, sharks teeth.
olive grey 5Y4/1 to light olive grey 5Y5/2

Sand. in calcareous silt: sand. more abundant than previous fine grained a few coarse + pebble sizes, sometimes feldspathic Coarsely micaceous. limestone: clear sparry cement (Continuous crystal) enclosing sand, glauconite + micro coarse grained arenaceous, and chalky aggregates. 210' 3460
clay clast: numerous green and dark grey, micaceous ones appear laminated

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Upper Cretaceous con't: Thi D

Cherty : 3350 – 3390
occasional pyrite, sparse glauconite, rare b white
generally unfossiliferous, light olive gray 5Y 6/1

Sand and limestone in Calcareous Clay: 80' 3540
sand: fine, angular, micaceous
clay: as thin wafers or clasts with sand.
limestone: whitish, crystalline, arenaceous
or without sand; white chalky cement
in stringers & inside clay [redacted] and sand
clasts. sparsely glauconitic.
unfossiliferous, olive gray 5Y 4/1

Calcareous Silt: micaceous silt, 110' 3650'
sparse glauconite; sand: fine,
some medium grains. Crystalline
limestone appears 3590', unfossiliferous
olive gray 5Y 4/1

Sand and limestone in Calcareous clay. 100' 3750
sand: mostly fine, some medium, angular
clay: sparsely micaceous glauconitic
limestone: crystalline, arenaceous and glauconitic
chalky fragments.

Upper Cretaceous Cont:

the amount of limestone decreases in 3740-3750'
clay clasts either fine, without glauconite or coarsely glauconitic; hackly shapes
Chert: 3740-3750', rare pyritic as massive aggregates, calcite: columnar aggregate
* few fossils: large and small foram, Ostracods, Olive grey 5y 4/1

* Fossils in this layer might indicate the top surface of the Eutaw formation as described by Counts and Donsky (1963 pg 18). The thickness of the formation is noted to be 145' in Liberty County, Georgia.

Sandy, calcareous, clay 100' 3850
Clay: glauconitic, sparsely micaceous clay clasts; some with glauconite globules, others without. Sand: not as much as previous medium to coarse, feldspathic some chert and phosphate
limestone worn, chalky, light pinkish fossil fragments, crystalline, arenaceous and glauconitic
some horizons have more limestone + sand

upper cretaceous cont'd thi D.

thin others. fossils: several species
of large & small forms, ostracods. 3790-3800
light olive grey 5y 5/2

sandy calcareous clay. 110' 3960'
clay: fine lenticular clasts, spotty with
limonite. sand- fine. some medium & coarse
not much of it. limestone: in small amount:
crystalline, & chalky types.
very few fossils. graphite and aggregates of
pyrite occur at the bottom of the layer
olive grey 5y 4/1

Tuscaloosa Formation

sand, limestone and calcareous clay 140 4100'
sand: fine to coarse grained feldspathic micaceous:
as fine & coarse plates, sparse chert phosphate
and glauconite
clay clast - lenticular dark, laminated.
limestone: white, crystalline arenaceous, glauconitic
light brown, crystalline, chalky and saccharoidal
much barite, some celestite and calcite as cellular aggregate

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Tuscaloosa Fm cont: thi D.

lignite dark brown, pyritiferous in places
abundant 4050-4060
sparse occurance of brown rounded very fine grained, dense dolomite(?), minute pyrites are sprinkled all through grain. pyrites, massive aggregates, decrease towards bottom of layer. Chert increases downward. Barite & celeste decrease downward.
a small number of large & small forams and ostracods
The limestone give the sample a mottled appearance
Olive grey 5Y 4/1

Sand: medium to coarse subangular to rounded 180" 4180
some fines. feldspathic, calcareous
Clay occurs as fine coating and as hardened dark grey clast
limestone: white, crystalline, dense fine grained
dolomite: brown, reddish brown, and dark grey, coarse crystalline, also fine, tan colored dense, fine with pyrite(?)
lignite, barite, sparse micas, anhydrite, celestite
rare pyrite, garnet, calcite.
Brownish grey 5YR 4/1.

Tuscaloosa Fm. Cont:

Sand and clay clasts in calcareous silt: 50' 4230

Sand: medium & fine, subangular
feldspathic, red stained, coarsely micaceous,
Clay clasts: dark grey, some with glauconite
flakes. Calcareous silt is much lighter
in color than the clasts.
Limestones: cryptalline, worn recrystallized
shell fragments; dolomite: crystalline,
fine grained with minute pyrites.
Lignite, barite, few phosphate pebbles
rare garnets, sparse glauconite
few fossils: large & small forams, ostracods,
Brownish grey 5YR 4/1

Sand: Medium grained, subangular 60' 4290'
feldspathic, red sand,
Calcareous silt - fine, micas
Clay clasts - dark grey, hashy
lignite, small amount of barite,
gypsum, phosphates, pyrites & chert,
rare biotite
Light olive grey 5Y 6/1

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Tuscaloosa Fm. Cont Thi D.

Sandy calcareous clay; 160' – 4450
clay – loose fines and as dark grey and green blocky pieces; sand: fine – med subangular; limestone: chalky white fragments, white and light tan coarse crystalline ~~f~~ grains glauconite; most in 4290 – 4300
lignite, few barites, sparse pyrite, chert, micas limestone concretion 4390 – 4400
rare gypsum calcite. Light olive grey 5Y 5/2

Silty sand: fine to coarse 40' 4490'
subangular to round, many are red; clay clasts: grey, black
weakly calcareous, finely micaceous
some limestone, hematite nodules,
lignite, unfossiliferous. Dark yellowish brown 10YR 4/2

Sand. medium to coarse subangular 10' 4500
to round, red color, a few fine grained
brownish, indurated sand clasts
a few clay clasts, only slightly calcareous.
few limestone fragments: ~~a~~ chalky cement fills pits on
sand grain surfaces. almost free of lignite

Tuscaloosa Fm con't:

sparse glauconite, mica, phosphate granules. no evaporites, unfossiliferous.
Pale Reddish brown 10R 5/4

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Summary

	Thick	Depth
Pliocene to Recent (undiff.)	350′	350′
Sand - fine & mid, phosphatic interbedded with silt, limestone.		
Miocene: Hawthorn Formation	320′	670′
Sand interbedded with limestone, phosphatic, some calcareous silt few fossils fish teeth		
Tampa Limestone	20′	690
Limestone: dull, chalky, sandy few fossils		
Oligocene: Suwannee limestone	40′	730′
fossiliferous, cream colored recrystallized		
Upper Eocene: Jackson Group: Ocala limestone	160′	900
granular limestone, interbedded with dolomitic. fossiliferous. white to tan colored. recrystallized		

Summary Cont

	Thick.	D.
Middle Eocene. Claiborne: Avon Park limestone.		
limestone: chalky, recrystallized. some fossils, Dolomitic	70'	970'
Tallahassee limestone	890'	1860
limestone interbedded with Crystalline dolomite granular, sandy. gypsum.		
Lake City limestone	180'	2040
Interbedded Dolomite and limestone, certain horizons cherty or gypsiferous glauconitic sands become dominant at bottom		
Lower Eocene: Wilcox Age: Aldrich limestone and Clastic equivalent glauconitic silts, sands. and limestones, Calcareous clays, some dolomite, some chert few fossils	440'	2500

Summary Cont

	Thc.	to.
Paleocene: Clayton Formation Sand, limestone, calcareous silt, glauconitic, pyritiferous. fero fossils	860	2860
Upper Cretaceous: Post Tuscaloosa Fms. (undiff.) Sand, calcareous silt limestone, fossils towards bottom	1100'	3960
Tuscaloosa Formation Sand, limestone, calc. clay, lignitic; evaporites pure sand at base of section.	540'	4500

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