

Q
JHCN

Clay ~~0-144~~ 0-150

~~7024~~ 7030.

all
inclusive

8400 to 8135

8137

8140 to 8143

8149 - 8150

5068 to 5099 inclusive

Columbia Co

Aug 16, 1928

1.0 mi N of Lake City
extensive borrow pits at City dump
in flatwoods just north of a swampy area
Material exposed above water level
is all sand - no clay

Winfield Station 6:3

8.5 mi N of Lake City
becoming more rolling but through
low hills (about 10 ft high) shows
low sand on top and a lot of gray
calcareous sandstone below

First 6 mi. out of Lake City
toward White Springs is fairly
typical flatwoods with patches of
swamp. Then gradually more
rolling country and dry sand
with depressions and occasional
showings of limestone or limy
sandstone.

11.0 mi from Lake City on
road to White Springs
following section in road cut

Loose grayish yellow sand - 2 to 5 ft
Brown sand more compact 1 1/2 ft
Greenish clay, resembles butter
earth but with sand widely
mixed in. Small pieces of
white rock (pyrophyllite?) at top. 2 ft

This clay shows only at left side of
road near south end of cut

Columbia - Hamilton Co

Aug 16, 1928

At Suwannee R. crossing on
White Springs - Lake City Highway
extensive borrow pits along
the highway - fill on both sides
of the river shows only fine
sand. No clay. Some pieces
of siliceous limestone but it
is somewhat doubtful whether
they are in place or not.

On the north (White Springs)
side of river can not see anything
but sand in the river bank.
On this side the river looks
about 5 feet of being out of its
banks while on the south
side it has actually overflowed
its banks to a small extent.

About 800 ft north of the
river in higher ground there is
a borrow pit on west side of
road. This has small showings of
plastic sticky pale greenish
fine textured clay beneath
6 to 7 ft of sand.

White Springs

Some sections 8 ft or more in
depth near the outlet of the Springs
in the main part of town show
fine sand above and compact
clayey sand below

Hamilton Co.

Aug 16, White Springs.

Paul Camp will be back Saturday

At bridge on side road running SW from main road in White Springs, bluff on N. side Suwannee R. shows small amount of greenish clay with rather clayey sand above and below. A few silicified oyster shells in the clayey sand below the principal layer of clay which I saw. Bluff mostly covered with trees and bushes. Therefore no real good sections.

Went about 3.7 miles east from White Springs station on gravel road. All sandy flatwoods with dark subsoil for the most part. No clay seen. Ditches seldom more than 12 to 18 inches deep.

5.1 mi out of White Springs toward Jasper. Brown pit in flatwoods shows dirty sand. Some pieces of sandstone up to a foot across lying around.

11.9 mi out of White Springs toward Jasper. All flatwoods so far. Yucca, grass, etc. and occasional cypress shows in fairly well drained. A ditch here shows only loose sand and ballpans to depth of 2 ft.

Hamilton Co.

Aug 16, 1928

About 5 mi NW of Jasper on main highway & very partly rolling country. About here we see the main top soil, grading downward into a yellowish brown clayey sand. Some of this might be a fairly good grade of molding (probably about 2 1/2 ft) thick. Overburden of only the top soil. But pit in particular on the S. side of the road at 5.5 miles. Many of the cornfields around here are under for water.

Alapaha River is well out of its banks. About this time last year not only was it dry but there were excavations to 4 ft depth in its bed. It is over much cotton and cornfields in the direction of Jasper.

Going up the hill to the west of the river a deep cut shows only loose sand near the top and compact clayey sand below.

12.4 mi from Jasper on road to Jennings where road goes down hill to cross a bridge about 8 ft section of compact sand and friable sandstone. Mixed gray and brown. Some concretionary masses of fairly hard ss. & little of loose sand on top. Canebrakes in bottom pit on roadside ditch.

Columbia Co.

Aug 16, 1928

Lake City.

1.9 mi S. of intersection of two main highways on highway No. 2. On both sides of a valley which crosses the road clay shows in the ditches mainly on the West side. Mixed red and light gray which least weathered grading into uniform brown above. The greater part of it is so sandy that it could not be good for anything. Some of the gray part has good elasticity but little sand but no large enough amount which is uniformly good.

Went 4 miles south of Lake City on main road. Saw no clay that seems to offer any possibilities whatever. The same applies to all of the country around Lake City. As far as I have seen it.

Baker Co.

Aug 17, 1928

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starting out of Lake City to east on
highway No. 1, flatwoods begin
at 2 1/2 miles. Slight elevation
at about 8 miles
7.4.3 - Sanderson

1.4 mi E of Sanderson in roadside
ditch. Yellow clayey sand with some
flatwoods shows beneath about 1 to 1 1/2 ft
of ordinary gray surface sand.

2.9 mi E of Sanderson borrow pit
shows only gray sand and hardpan

4.2 mi E of Sanderson borrow pit
shows mottled brown and light gray
compact clayey sand beneath
about 1 1/2 ft of loose surface
sand

5.0 mi E of Sanderson ditch and
borrow pit show two foot section
of mottled brown and gray compact
clayey sand below about 1/2 ft
of loose to dark gray surface sand

Along road on both sides of valley
of Little St. Marys River. Roadside
cuts and ditches show loose
light gray to yellow sand in
surface with compact clayey
sand below. All somewhat
the same formation which has
been noted above. Small amounts
of real clay in spots but probably
from a single source. I will try to get
for a good sized sample.

Baker Co

Aug 17, 1928

Macclenny

8

1.1 mi S of highway No. 1 on
road to Rayford, going up hill on
S. side of Turkey Creek
section exposed in road cut
and ditch.

Soil - gray sand - 1/2 foot +
Yellow sand at time more
compact and clayey with depth 1 1/2 foot
Thin compact sand rather clayey
Some mottling with red and brown 4 ft
Clay, gray mottled with red 2 ft
Clayey sand, gray and brown 2 ft +

beds are horizontal but the
only contacts which can be traced
are the top and bottom of the
clay. When the slope of the
ground drains the clay member
the surface at top a more
uniform brown color. Clay looks
rather good for brick but is too thin
and too much overburden to be of
any use. It is somewhat sandy
so could not stand much pressure
with the sand above and below
it. Sedimentary deposit, probably
phloemer.

Baker Co. - Union Co.

Aug 17, 1928

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Borrow pit in fork of roads
3.7 mi S from Macclenny on road
to Rayford - section.

Dark gray loose sand (top soil) 6 inches
yellow sand 1 to 1 1/2 ft
Hard gray sand with
brown flintlike concretions 2 ft.

At State Farm station (near Rayford)
drainage ditch shows gray clayey sand
with many abundant concretions (only
slightly harder than the rest) of
brown siliceous sand. A fragment of clay
in the sand is recognizable and small
spots would be plastic enough to
mold but all too sandy for any great
bricks products.

All the way from Macclenny to
Rayford sandy flatwoods.

Around Rayford and between
there and State Farm there are a few
exposures of clayey sand - gray and
brown to reddish similar to that
between Sanderson and Macclenny
very slightly different - has enough clay
to be for bricks.

Flatwoods with sandy soil all the
way from Rayford to State Farm.

Aug 17, 1928

Bradford Co. - Baker Co.

Out from Starke toward
Baldwin as far as the county
line practically all flatwoods except
a small strip of upland sand a half
mi. from Starke. A few cut
showing another clayey sand below
the top soil.

Baker County

No clay seen in ditches along
highways in passing from
Bradford to Baldwin

Duval Co.

From Baldwin to Bradford look
like no clay seen along road to
Starke

Star St. Mary

Mr. Tyler at the nursery
says and well they report clay
at depth of 6 to 8 ft but at
is loose and sandy. He says
all the clay is knobby after
then is much clay - outcroppings
mostly near the streams.

Aug 18, 1928

Baldwin - Duval Co.

Extensive ditches and borrow
pits near the intersection of
the two roadways give a
good opportunity of examining
the underlayment material and
many places to a depth of
as much as 4 feet. Practically
all gray sand in places
some yellow clayey sand below
the gray sand. Abundant
concretions of limonite sandstone
No clay whatever seen around
here

A little north of Baldwin
at intersection of S.A. and A.C.
also only gray sand in sight

2.0 mi N of Baldwin on road
to Callahan ditches crossing road
show only gray sand to depth of
3 feet

On road from Baldwin
to Callahan it is all flatwoods
with gray sand to Nassau Co.
line

Aug 18, 1928

Nassau Co.

On road from Baldwin
to Callahan
14.1 mi N of Baldwin practically
all flatwoods and swamp so
far with gray to black sand
and much some hard pan.

Just south of crossing of Thomas
Creek is small area of light
colored clay & sand. Much
black jack oak.

150 ft North of this creek
roadside ditch going up hill
shows 1 ft of mottled gray
and yellow clay very sandy but
plastic beneath about two
feet of gray sand & 1 ft
of extremely very small

2.3 mi from Callahan on Baldwin road.

80.4 slope
Going down hill which very likely
represents the difference in elevation
of the two local stages of
Pleistocene submergence. Three
pieces of yellow plastic clay containing
some fine sand. Can not find
any continuous layer of it along
side of ditch so it might be
here. I have hauled from elsewhere
as occurs only as lumps in the
loose sand.

The road from Baldwin comes into
Callahan from the west. It is only
on the edge of the village itself
near the RR that there begins
to be any clay in sight just

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beneath the top soil.

Callahan

Clay deposit worked by Callahan Brick and Tile Co is in poorly drained flatwoods. Naturally the water level is within 1 to 3 ft of the surface. Probably higher in very rainy weather. They put a shallow trench around the pits they are working to carry off rain water and then pump the water which does get in, into a worked out pit. Permanent ponds with fish and water lilies.

Depth to water level in pit now being pumped, about 6 ft. Overburden from a little less to usually more than a foot of sandy soils. Clay as it naturally occurs is mostly rather mottled with gray and brown to reddish. Distinctly sandy but good plasticity. Some of the brick look very sandy.

0-144 clay

Callahan - cut from bank of pit.

There is no assurance that this is not made or leached from the average since it appears to vary irregularly.

1.9 mi E of here on Fernandina road a similar clay shows in ditch. Only about 1 ft thick.

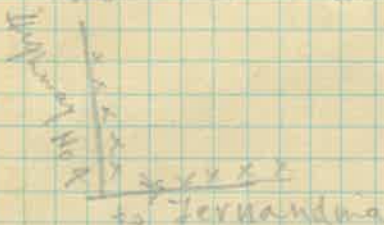
Aug 18, 1928
Callahan

14

0-145 clay

2.0 mi N of Callahan at intersection of Fernandina road with main highway (Florida 4) Bank sample to 2 ft depth thickness.

Overburden 1 ft. gray sand. Clay is gray mottled with red and brown. Some sand in it. Shows no bedding.



Along the main highway for 400 ft North of the intersection and on the Fernandina road for an equal distance east the clay shows in the ditch immediately below the surface soil.

Bored down three feet below the bottom of the ~~main~~ pit section as sampled and still found plastic clay, perhaps a little more sandy and with larger proportion of gray color than that above.

Outcrops are just north of a branch and there is a little slope toward it, so some degree of drainage would be possible.

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Nassau Co. Aug 18, 1928

4.0 mi N of Callahan on highway (Florida 4) clay similar to the last sample (0-145) shows for a few hundred feet in roadside ditches. 1 ft of clay above 8 inches gray sand overburden. Bottom of clay not exposed. General color brown on weathered surface but where broken into it is seen to be mottled gray and reddish brown. Has considerable fine sand but good plasticity.

Flatwoods along here but nearly all the trees destroyed.

5.0 mi N of Callahan on same highway. The mottled plastic sandy clay is exposed in ditches along the road and in ditch leading away from the road to the eastward. Best section shows 1 ft sandy overburden 1 1/2 ft clay gray mottled with red. A considerable part of the way since the last note the clay shows in the ditches.

6.6 mi N of Callahan. going up hill into higher ground. Small oak woods. Dry sandy bottom. 1 ft shows gray white sand to 3 or 4 ft depth. so far the road is east of the R R.

Nassau Co. Aug 18, 1928

7.4 mi N of Callahan.

3 ft ditch shows almost black sand and limonite hard pan, somewhat concretary.

9.5 mi N of Callahan on Florida 4. Only sand in ditch since last note.

16.9 mi N. of Callahan on No. 4

Top of hill north of Pigeon Creek. Deep dry sand with small oak trees on both sides of the creek. S. side of valley in cut and gully on roadside.

Since last note and more especially since I heard all the material exposed in roadside ditches is sandy with tendency to wash where there is a valley. Mostly hardwoods, but dry sand where made cut by valley.

17.3 mi N. of Callahan

In valley of Pigeon Creek. Road material left on East side of road shows following section.

Fine loamy sand, gray at top and getting lighter colored below	1 1/2 ft
Fine red and orange clayey sand	3 1/2 ft
Plastic laminated clay, gray and red mixed, containing very little sand	2 ft
Fine clayey sand, yellow and gray in alternating layers	3 ft

Nassau Co. Aug 18, 1928

17.3 mi N of Callahan

hammock vegetation in this valley

18.7 N. of Callahan

S. Side St Mary river at bridge on highway No. 4. Bluff is a little back from the river so that no good natural section is exposed. Dry sandy land at top with mixed small oaks and pines.

Section			
0-146	Light loose sand	3 ft	①
	Yellow clayey sand	1 ft	②
8-147	Clayey sand, mottled orange and gray	2 ft	③
	Plastic clay - gray and red	5 ft	④
	Fine yellow clayey sand	1 ft	⑤
	Bottom not exposed. This is only at little above below the top of the bridge which is 2.5 ft or so above the river.		

The clay shows concentric rings, alternating red and lighter color.

None } filling station

The clay is a definite bed which seems to extend back into the hill with some increase in overburden above that shown. The contact between the

Nassau Co. Aug 18, 1928

Loose surface sand and the clayey sand below is probably the result of weathering processes. Going back into the hill it increases in elevation with a corresponding increase in thickness of the clayey sand.

It seems to me that the clay between here and Callahan occurs only at elevations from about 15 ft to around 35 ft above sea level.

Separate samples of the clay and of the clayey sand above it.

Aug 20, 1928
Nassau Co.

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Bluff on St. Mary's R about 1/4 mi
W of mouth of Pigeon Creek. 1/4
mi showing of clay mostly sandy.
At lower elevation than that of
cut at bridge on main highway.
Banks mostly covered with brush
and no good section exposed.

Turned E on dirt road just south
of St. Mary's R. about 1/2 mi
E on dirt road going down
hill toward Pigeon Creek about
6 ft of red clayey sand, with
a little loose clay sand on top.
Some thin streaks of gray clay
through the red sand but most
of only a cent.

(Hydroad)

0-148
Clay

3/4 mi E of St. Mary's R. bridge on
highway Florida A. 1. Drove highway
cut going up hill on left side
of Pigeon Creek.

Exposed section:

gray and yellow fine sand	2 ft.
clay, mottled red gray and yellow	6 ft.
clayey sand, yellow gray and red	15 ft.

The clay seems to be a definite
bed and probably the same
one as sample 10-147 near
St. Mary's R. bridge. Upper part
yellow and more sandy.
Mixed black & red clay & vegetation
well exposed. Two feet is probably
about the minimum overburden.

Nassau Co.
Aug 20.

0-148 Pond known as Pigeon Creek tract
owned by Bishop (tiller) Thomas.
This is about 1/4 mi or a little
more back from the river.

Bluff on S. side St. Mary's River
just east of mouth of Pigeon Creek.
Small amount of fine grained
clay, white and gray clay shows
at bottom. Mostly covered with
soil and vegetation.

0-149
Clay

Orange Bluff
200 ft down stream from small
cut just east of a small branch
coming in from the south.
May thickness of clay actually
exposed in river bluff about 3 ft.
Bierbrun in places as little as
six inches of soil. Beneath the
clay is a foot or two of sand and
then soft limestone somewhat mixed
with clay. A few well worn quartz
pebbles about at the top of the
limestone. I think there are some
small pieces of the soft white
limestone in the lower part of the
clay.

This clay shows on the surface
at a number of places on the
bluff near here at about
10 to 12 ft elevation.
Height may be more than
3 ft but that is about all
actually seen. All except one

Nassau Co.
Aug 20.

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or two loose here at Orange Bluff
are deserted. Sample is contaminated
with vegetable material but clay is
at such shallow depth that it may
likely would be so even by
digging farther into the bank.

Between Orange Bluff and Kings
 Ferry brown clay shows in shallow
roadside ditches for much of the
way.

Kings Ferry.

Maximum thickness of section exposed
about 5 feet.
Two kinds of clay seen ground
level. A red very sticky clay
underlain by coarse clayey sand
with some pebbles and a light
gray clay. The gray clay is
limestone fragments of soft
limestone and appears to be
down into soft white limestone
a mass. No outcrops of
soft limestone visible.

At 1.5 mi and again at 1.6 mi
from Kings Ferry on road to
Willard. Ditches show mottled
gray and yellow clay. Sandy clay
under loose gray sand.
No possible value.

Nassau Co.
Aug 20.

5.6 mi from Kung Ferry on road
to Hilliard just after coming out of
Little St. Johns River Swamp to
S.W. plashed clay in roadside
ditch. Mainly yellowish brown
somewhat mottled. Thickness
18 inches in sight beneath
soil over broken
bottom not exposed.

At Beauford Grove church and
school. Dark brown sand stone
in stream with falls and rapids
with pot holes. E. of Highway station
on R.R. - 3.5 mi N. of Hilliard

Aug 24, 1928

Jacksonville to Baldwin along
highway No. 1 saw no clay.
In a few places clayey
sand but mostly ordinary
gray sand in cuts and
ditches.

Maps and Illustrations

- ① N-S section in vicinity of
Wausau showing stratigraphic
relations
- ② Diagrammatic
E-W. section in West Florida
- ③ Sketch map (or actual map)
showing characteristics of
alluvial deposits as affecting
occurrence of clay
- ④ Map of part of Apalachicola
R. showing observed localities
of clay
- ⑤ Sketch map of vicinity of
Estifanulga x
- ⑥ Map of part of Escambia County
showing Apalachicola clay
any of this in Liberty County
- ⑦ Northeast Florida flatwoods,
showing clay outcrops examined
and areas likely to contain clay
- ⑧ Residual and lacustrine
clays - central peninsula
Florida x
- ⑨ Map of Escambia and Santa Rosa Counties
showing clay localities x and areas where
clay may be found near surface,
- ⑩

Prospecting for clay.
indications from surface soil, topography,
vegetation springs etc.

Areas to be avoided
Spruce pine - black jack oak,
small evergreen oak clay is
likely to be under considerable depth
of sand

Flatwoods.
Some tendency to better growth
of pines where there is clay subsoil
than where there is hard pan, but
differences in drainage, cutting burning
etc make it difficult to tell much
about this - look up Harper
on soils - also description of
flatwoods soils in county reports.

Natural growth of cabbage
palmettoes one of best indications of
calcareous subsoil.

Seepage springs - branch heads
etc. effect of clayey sand may
be similar to that of real clay.

What records of gauge height,
discharge and ^{rainfall} are
available in ^{Florida}?

Profiles of rivers?

St. Johns River.

Ch. Lochner

Sumner

Withlacoochee

Oklawaha

Apalachicola

Chocomauchee

Escambia

Yellow - Shoal R.

Jamestown - Univ. of Fla.

Cooperation in Chemical Analysis

has said

Kaylin.

More funds for accurate refraction
indices of kaolinite, collophane
and glauconite.

Scale well

sympom in well samples.

Count up number of bath plants
formerly operated but discontinued

Zurco - any bauxite in that
of Florida? Mineral City) Papish
Vance

Bibliography of minerals and
mineral products of Florida

Thomas F. Sullivan Box 2 box 18
Pictines. Hilliard.

Roll 2

No. 3. Two mi N of Colleton. clay in
roadside ditch Aug 20, 1928

4 (S. 1) ~~X~~ in valley of Pigeon
Creek, Nassau co., or Davis
Highway

5 Sand on side of road washed from
gully up hillside. Dike Highway
Valley of Pigeon Creek

6 clay in highway cut just S
of St. Marys River bridge on
Florida 4

Aug 20, 1928

1 Gully formation in sandy flatwoods
along road about 3 mi W of
Orange Bluff (on roadside)

2. Sand washed out from gully of
preceding picture and spread on
flatwoods (also in wooded swamp
beyond flatwoods)

turned partly past no 3 without
approaching it.

Buckner and Pritchard

Mr C H Stebbins

Gentle and Stockton { Bryce Smith; Mr.
— Cooper — Engineer

Florida Buckner Tile Co.
Russell — three miles off
road one mile toward
Agree Cove Springs,
from Doctors Lake.

Preparations for Legislation
Mapping cost of — will \$545 still
cooperate — how much area per
year? compare importance of
map with that of roads.

Water resources.
work already done — quality of water
drainage.
old report on artesian water

Power from artesian wells.
Provided it does not cause such
depletion as to make scarcity of
water for domestic ^{municipal} and manufacturing
uses and irrigation, and provided
the wells are properly cased so as
to prevent waste and contamination
and provided they are capped and
not allowed to flow except when power
is actually used or stored, there seems
no valid objection to use of artesian
water for power development. Advantages
of silence, ease of operation with attention
Proof that artesian water is replenished by
rainfall. ① Sufficiency of rainfall for
amount of water obtained ② Possibility of
flowing through rock. ③ Observed relation
between ~~head~~ head and rainfall.