UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LITHOLOGIC AND BOREHOLE GEOPHYSICAL DATA, GREEN SWAMP AREA, FLORIDA

OPEN-FILE REPORT 78-574

Prepared in cooperation with

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

UNITED STATES
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By Hayes F. Grubb, John W. Chappelear, and James A. Miller

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Tallahassee, Florida

1978

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

H. William Menard, Director

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ABSTRACT

Continuous unconsolidated cores were obtained at 74 sites in the Green Swamp area to evaluate the potential for downward leakage to the Floridan aquifer. Depth of the core holes ranged from 21 to 227 feet and averaged about 87 feet. Lithology was determined by microscopic examination of the core from each hole. Geophysical logs were obtained from 59 of the 74 core holes. This report presents the detailed lithologic and geophysical data for these core holes.

INTRODUCTION

Increased use of ground water since the early 1960's in two areas near the Green Swamp area has focused attention on the long-term water supply potential of this sparsely populated area and the hydraulic relationship between the near-surface sediments and the underlying Floridan aquifer. Stewart (1968) and Cherry and others (1970, p. 59, 60, and 86) discussed the effects of ground water withdrawal on water levels in the aquifers and flow of streams in the Middle Gulf area which is located just west of the Green Swamp. Stewart and others (1971) showed the effects of increased ground water use in the phosphate mining area which is located adjacent to and south of the Green Swamp. Robertson (1973, p. 15 and 21) documented the effects of increased withdrawal of ground water in the Lakeland Ridge area which

is adjacent to the Green Swamp on the southwest. Most of these groundwater supplies are obtained from the Floridan aquifer which is the principal limestone aquifer throughout central Florida.

Pride, Meyer, and Cherry (1961, 1966) identified a nonartesian aquifer above the Floridan aquifer in the Green Swamp, with clay confining beds separating the two aquifers. The sandy material above the Floridan aquifer referred to by Pride and others (1961, 1966) as the nonartesian aquifer has also been referred to as the clastic aquifer (Knochenmus, 1976, p. 34) and the sand aquifer (Grubb, 1978). The latter designation is used in this report.

The potential for downward leakage from the sand aquifer to the Floridan aquifer was evaluated in an earlier report (Grubb 1978) as a part of the cooperative effort by the U.S. Geological Survey and the Southwest Florida Water Management District to evaluate the long-term water-supply potential of the Green Swamp area.

The detailed data used to make this evaluation were not included in the previous report. The purpose of this report is to present the lithologic and geophysical data in a form which will be useful to those interested in the natural resources of the Green Swamp area.

DATA COLLECTION AND CORE HOLE LOCATION

The lithologic and geophysical data presented herein were obtained from 74 core holes located in the Green Swamp. These holes ranged in depth from 21 to 227 feet and averaged 87 feet deep. Continuous cores of the unconsolidated sediments were obtained from land surface to the top of the Floridan aquifer by rotary drilling with a 4-inch diameter phosphate barrel. The lithology and percentage of sand were determined by microscopic examination of the cores. Geophysical logs were obtained for 59 of the 74 core holes. The detailed lithologic description of the core is presented first, followed by a strip log and the geophysical logs. The strip logs show the percentage of clay and sand or limestone by standard symbols on a bar graph. The location of each core hole is shown on figure 1, along with a core hole number, geologic age, and stratigraphic designation of the uppermost limestone penetrated. Each core hole number consists of two letters and four numerals assigned to each location prior to drilling. These numbers are cross-referenced in table 1 with the land-net designation and the location according to latitude and longitude.

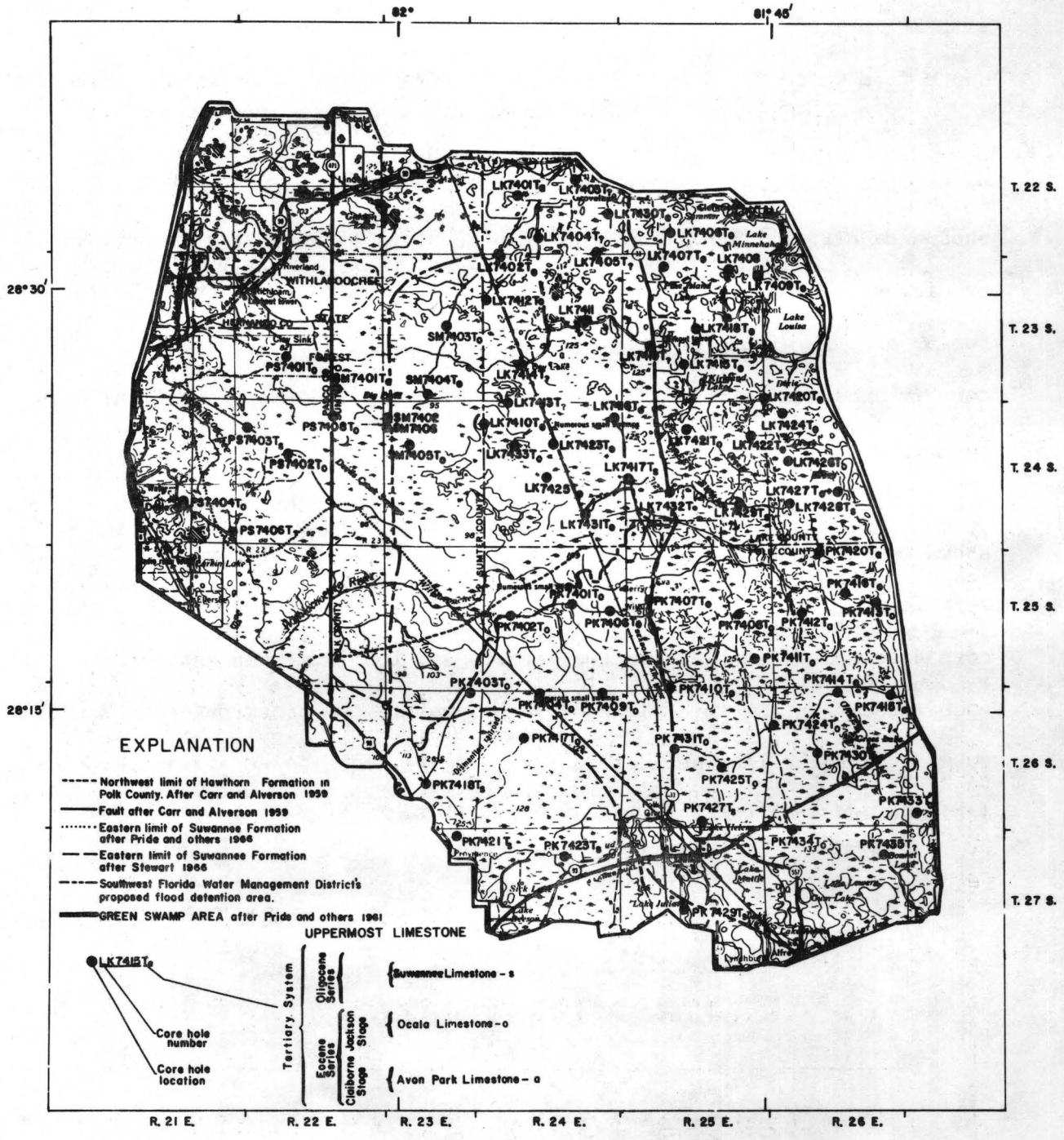

Figure 1.--Green Swamp area and location of core holes.

Table 1.--Core hole numbers, location, description and depth

Core hole number	Location			Date drilled	Depth	Land surface altitude (ft)	Log on page
	Township and range	Latitude	Longitude				
LK 7401	T. 22S. R. 24E. Sec. 20 SE¼SW¼NE¼	283331N	815540.1	9-23-74	103	100	16
LK 7402	23 24 6 NW¼NE¼NE¼	283112N	815629.1	9-24-74	60	101	22
LK 7403	22 24 14 SW¼SW¼SW¼	283404N	815317.1	9-20-74	83	100	26
LK 7404	22 24 33 SW¼NW¼NE¼	283201N	815450.3	9-20-74	72	105	31
LK 7405	22 24 35 SW¼SE¼SE¼	283122N	815226.1	9-18-74	84	109	34
LK 7406	22 25 33 NW¼NW¼NW¼	283207N	814921.1	9-17-74	81	135	38
LK 7407	23 25 5 SE¼SW¼NE¼	283054N	814938.1	9-16-74	91	100	43
LK 7408	23 25 2 SE¼NE¼SW¼	283041N	814700.1	9-16-74	221	150	47
LK 7409	23 25 1 SW¼SE¼SE¼	283024N	814533.1	9-12-74	104	115	51
LK 7410	24 24 6 SW¼SW¼SW¼	282508N	815720.1	7-17-74	59	105	57
LK 7411	23 24 14 SW¼SE¼SW¼	282844N	815305.1	7-24-74	96	107	65
LK 7412	23 24 7 SE¼SE¼SW¼	282932N	815704.1	7-16-74	42	102	132
LK 7413	24 24 5 NW¼NW¼NW¼	282558N	815617.1	7-19-74	40	101	57
LK 7414	23 24 29 NE¼SW¼NE¼	282726N	815616.7	7-22-74	84	101	62
LK 7415	23 25 28 SE¼SW¼NE¼	282722N	814844.1	7-26-74	122	121	69
LK 7416	24 24 1 NE¼NW¼SE¼	282529N	815135.1	7-31-74	81	112	74
LK 7417	24 25 19 SE¼NW¼NW¼	282314N	815112.1	8-06-74	160	112	81
LK 7418	23 25 15 SW¼SW¼SW¼	282840N	814816.1	9-11-74	227	105	87
LK 7419	23 25 20 SW¼NW¼SW¼	282806N	815014.1	7-24-74	72	115	91
LK 7420	23 26 31 SW¼SW¼SW¼	282608N	814524.1	9-06-74	102	122	94
LK 7421	24 25 9 NW¼SE¼NE¼	282455N	814837.1	7-30-74	71	118	97
LK 7422	24 25 12 NW¼NE¼SW¼	282443N	814602.1	9-05-74	97	116	101
LK 7423	24 24 9 NE¼NE¼SE¼	282435N	815423.1	7-18-74	51	104	137
LK 7424	24 26 6 SE¼NW¼SE¼	282522N	814443.1	9-09-74	103	115	104
LK 7425	24 24 21 NE¼NW¼NE¼	282318N	815440.1	7-17-74	47	106	107

Table 1.--Core hole numbers, location, description and depth--(Continued)

Core hole number	Location			Date drilled	Depth	Land surface altitude (ft)	Log on page
	Township and range	Latitude	Longitude				
LK 7426	T.24S. R.26E. Sec.18 NW¼NE¼SE¼	282348N	814434.1	9-05-74	102	127	110
LK 7427	24 26 21 NE¼SE¼SE¼	282243N	814226.1	8-30-74	112	125	113
LK 7428	24 26 30 SW¼NE¼NE¼	282219N	814435.1	9-03-74	93	122	117
LK 7429	24 25 26 NW¼NE¼NE¼	282232N	814640.1	9-04-74	102	118	120
LK 7430	22 24 25 NE¼SE¼NW¼	283247N	815154.1	9-18-74	112	105	124
LK 7431	24 24 26 NE¼NE¼SW¼	282157N	815258.1	8-01-744	45	103	81
LK 7432	24 25 20 NE¼SE¼SE¼	282245N	814926.1	9-04-74	81	115	127
LK 7433	24 24 8 NE¼SE¼SW¼	282425N	815605.1	7-18-74	37	102	22
PS 7401	23 22 26 SE¼NW¼NW¼	282740N	820508.1	7-11-74	49	77	149
PS 7402	24 22 14 SW¼NW¼NW¼	282408N	820514.1	7-09-74	42	84	158
PS 7403	24 22 9 NW¼NE¼NW¼	282505N	820655.1	7-10-74	29	74	162
PS 7404	24 21 25 SE¼NW¼NE¼	282220N	820933.1	7-08-74	54	107	162
PS 7406	24 22 32 SW¼NE¼SE¼	282109N	820733.1	7-09-74	60	75	154
PS 7408	23 23 6 NW¼NW¼SW¼	282532N	820318.1	7-10-74	26	88	158
SM 7401	23 23 31 SW¼DE¼NW¼	282631N	820303.1	7-11-74	99	91	140
SM 7402	24 23 4 NE¼SW¼SW¼	282522N	820109.1	7-12-74	97	95	144
SM 7403	23 23 14 SE¼SE¼SE¼	282840N	815835.1	7-16-74	40	100	132
SM 7404	23 23 34 SE¼NE¼SE¼	282616N	815921.1	7-15-74	24	96	149
SM 7405	24 23 10 NW¼SE¼SW¼	282430N	815958.1	7-15-74	21	95	137
SM 7406	23 23 9 NE¼NW¼NW¼	282509N	820108.1	7-15-74	40	93	154
PK 7401	25 24 15 SE¼SE¼NE¼	281839N	815331.1	8-09-74	61	111	167
PK 7402	25 24 17 SE¼SW¼SW¼	281809N	815614.1	8-09-74	21	110	167
PK 7403	26 23 1 NE¼NE¼NE¼	281530N	815730.1	8-13-74	157	110	174
PK 7404	26 24 4 NE¼NE¼NW¼	281531N	815457.1	8-14-74	60	117	174
PK 7406	25 24 13 NE¼SE¼SW¼	281819N	815202.1	8-08-74	82	115	179

Table 1.--Core hole numbers, location, description and depth -- (Continued)

Core hole number	Location				Date drilled	Depth	Land surface altitude (ft)	Log on page
	Township and range			Latitude	Longitude				
PK 7407	T.25S.	R.25E.	Sec.17 NE¼SW¼NW¼	281843N	815011.1	8-07-74	116	155	183
PK 7408	25	25	14 SW¼SW¼SE¼	281809N	814651.1	8-16-74	106	129	186
PK 7409	26	24	2 NE¼NE¼NE¼	281530N	815228.1	8-14-74	63	122	189
PK 7410	25	25	32 SW¼SE¼SE¼	281532N	814930.2	8-19-74	83	135	192
PK 7411	25	25	25 SW¼SW¼SW¼	281629N	814620.1	8-15-74	118	128	195
PK 7412	25	26	17 NW¼SE¼SW¼	281823N	814406.1	8-29-74	102	122	198
PK 7413	25	26	14 SW¼SW¼NE¼	281836N	814053.1	8-22-74	100	135	202
PK 7414	26	26	4 SE¼NE¼NE¼	281524N	814227.1	8-21-74	82	131	205
PK 7415	26	26	1 NW¼SW¼NW¼	281512N	814017.1	8-21-74	104	120	209
PK 7416	25	26	15 NE¼NW¼NW¼	281859N	814209.1	8-26-74	119	120	215
PK 7417	26	24	17 NE¼NE¼NE¼	281341N	815521.1	8-14-74	63	125	254
PK 7418	26	23	22 SE¼SE¼SE¼	281206N	815926.1	10-08-74	48	115	218
PK 7420	25	26	4 NW¼SW¼NW¼	282031N	814321.1	8-27-74	120	120	221
PK 7421	27	23	1 SW¼NE¼NW¼	281008N	815810.1	10-08-74	69	135	246
PK 7423	27	24	10 NE¼NE¼NW¼	280923N	815352.1	10-08-74	72	135	226
PK 7424	26	25	12 NE¼NE¼SE¼	281412N	814524.1	8-19-74	104	135	229
PK 7425	26	25	23 NW¼SW¼NW¼	281239N	814715.1	9-27-74	106	130	233
PK 7427	26	25	34 NE¼NE¼SW¼	281040N	814752.1	10-04-74	123	150	237
PK 7429	27	25	21 NE¼SE¼NW¼	280723N	814850.1	10-07-74	164	165	246
PK 7430	26	26	16 NW¼SW¼SW¼	281306N	814322.1	8-20-74	84	133	258
PK 7431	26	25	16 NW¼NW¼SW¼	281317N	814913.3	9-26-74	109	132	262
PK 7433	26	27	31 SW¼SE¼NW¼	281045N	813908.1	10-03-74	160	139	254
PK 7434	27	26	5 SW¼NW¼NW¼	281008N	814418.3	9-30-74	99	139	266
PK 7435	27	26	2 SW¼SW¼SW¼	280927N	814028.1	10-01-74	112	132	270

Two types of geophysical logs were obtained: electric and natural-gamma. The electric logs were obtained with a logging system known as a "differential" single-point system (Keys and MacCary, 1971, p. 31). These logs show the resistance, in ohms, of the sediments and borehole fluid between two inhole electrodes. Single-point logs were especially useful in this study because of their response to changes in lithology. The higher resistance, found usually in the upper part of the core holes, generally corresponds to sand beds. Clay beds are characterized by low resistance. Limestone may be expressed by either high or intermediate resistance, depending largely on the degree of consolidation of the rock.

The natural-gamma logs represent a measure of the natural-gamma radiation of the earth materials penetrated by the core hole. The sources of natural-gamma radiation in the sediments of the Green Swamp area are the radioisotopes of potassium-40 in clayey strata or the products of the uranium- and thorium-decay series, normally associated with phosphate deposits. Therefore a high natural-gamma count does not necessarily indicate the presence of a clay bed.

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LK7401

Lake County 283331N0815540.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0-3.0	Sand, light gray, clear to frosted, medium-to coarse-grained. Just enough medium gray clay to bind sand loosely.
3.0-12.0	55% light brown, clear to stained, medium-grained, fairly well sorted sand; 35% light and dark brown mottled, indurated, crumbly clay matrix; 10% coarse-grained sand.
12.0-20.5	50% white to light brown, clear to stained, medium-grained, fairly well sorted, sub-rounded sand; 40% light and dark brown, mottled, poorly consolidated clear matrix; 10% coarse-grained sand.
20.5-21.0	White, clear to frosted, medium-to coarse-grained sand, with light brown tint. Trace of heavy minerals.
21.0-22.5	70% sand as above; 30% tan, fairly well consolidated clay matrix.
22.5-25.5	No sample.
22.5-27.5	80% sand as 20.5-21.0 interval; 20% light tan and white mottled soft clay matrix.
27.5-28.0	95% white to light gray, clear to frosted, medium-to coarse-grained, rounded sand. 5% very coarse-grained sand. Trace of heavy minerals and light tan clay.
28.0-29.0	75% sand as above; 25% light brown, soft, fairly well consolidated clay matrix.
29.0-30.5	75% white, clear to frosted, fine to medium-grained, angular to sub-rounded sand; 25% tan, soft, fairly well consolidated, slightly crystalline, clay matrix. Trace of heavy minerals.
30.5-31.5	As above, with clay matrix light tan and brown mottled.

31.5-32.0	90% white to light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 10% coarse-grained sand. Trace of heavy minerals.
32.0-35.0	95% light greenish blue, soft, waxy clay matrix. 5% white, clear, fine-to medium-grained, angular to sub-angular sand. Pockets of pure sand in upper 1 foot of interval.
35.0-38.0	55% white to light gray, clear to frosted, medium-to coarse-grained, rounded sand; 25% fragments of white microcrystalline, hard, porous, silicified limestone containing minor relic fossil material; 20% tan and light gray mottled, poorly consolidated clay matrix.
38.0-39.0	70% white to light brown, clear to stained, medium-to coarse-grained, rounded sand; 30% tan and light green mottled, soft clay matrix. Trace of limestone.
39.0-40.5	As above with minor mottling of dark brown, pure waxy clay.
40.5-41.5	40% white sand as 38.0-39.0 interval; 40% dark brown, soft clay matrix; 20% limestone.
41.5-43.0	65% sand as 38.0-40.5 interval; 30% dark brown, fairly well consolidated clay matrix, mottled with pure, very dark brown, well consolidated, waxy clay; 5% limestone.
43.0-45.0	No sample.
45.0-48.0	55% white to light gray to light brown, clear to stained, fine-to medium-grained, angular to sub-rounded sand; 35% medium and very dark brown mottled, indurated, fairly well consolidated clay matrix; 5% coarse-grained sand; 5% white to brown, microcrystalline, hard, porous, silicified limestone with relic fossil material.
48.0-49.0	As above with decrease in sand to 40%; increase in clay to 50%; increase in limestone to 10%, a few black clay streaks with a trace of marcasite.
49.0-49.5	50% white, clear to frosted, medium-grained sand; 50% medium gray, dark and light brown mottled and banded, indurated, well consolidated clay matrix.
49.5-50.0	95% light brown and light gray mottled, soft, well consolidated clay matrix; 5% white to light brown, clear to frosted, medium-grained sand.

50.0-52.0	50% light gray to light brown, clear to stained, medium-grained, fairly well sorted, sub-rounded sand; 40% medium brown and dark gray mottled, soft to indurated, fairly well consolidated clay matrix; 5% coarse-grained sand; 5% white to light gray microcrystalline, indurated, porous, silicified limestone, with minor relic fossil material. A few large fragments of limestone.
52.0-52.5	50% sand as above; 40% medium gray, soft clay matrix; 10% limestone as above, with a few large fragments of limestone.
52.5-53.0	70% off-white, clear to frosted, fine-to coarse-grained, angular to sub-rounded sand; 30% light brown, dark brown and medium gray banded, soft, poorly consolidated clay.
53.0-55.0	60% dark gray, soft clay matrix with minor light brown mottling; 35% light gray with light brown tint, clear to stained, medium-grained, fairly well sorted, sub-rounded sand; 5% fine and coarse-grained sand.
55.0-56.0	As above with trace of silicified limestone, clay is medium brown with minor medium gray mottling.
56.0-56.5	60% sand and limestone as above; 40% light and dark brown mottled, indurated clay matrix with minor dark gray mottling.
56.5-57.0	50% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 50% medium brown, well consolidated clay matrix.
57.0-60.0	As above, trace of white to light brown, microcrystalline, hard, silicified limestone.
60.0-61.0	50% white to light brown, clear to frosted, medium-grained, well sorted, sub-rounded sand; 50% light and dark brown mottled, indurated clay, with minor dark gray mottling, trace of white and light brown mottled microcrystalline, indurated, silicified limestone with scattered relic fossils.
61.0-62.0	70% light brown and dark gray mottled, soft clay matrix; 25% sand as 60.0-61.0; 5% white microcrystalline, indurated, silicified limestone.

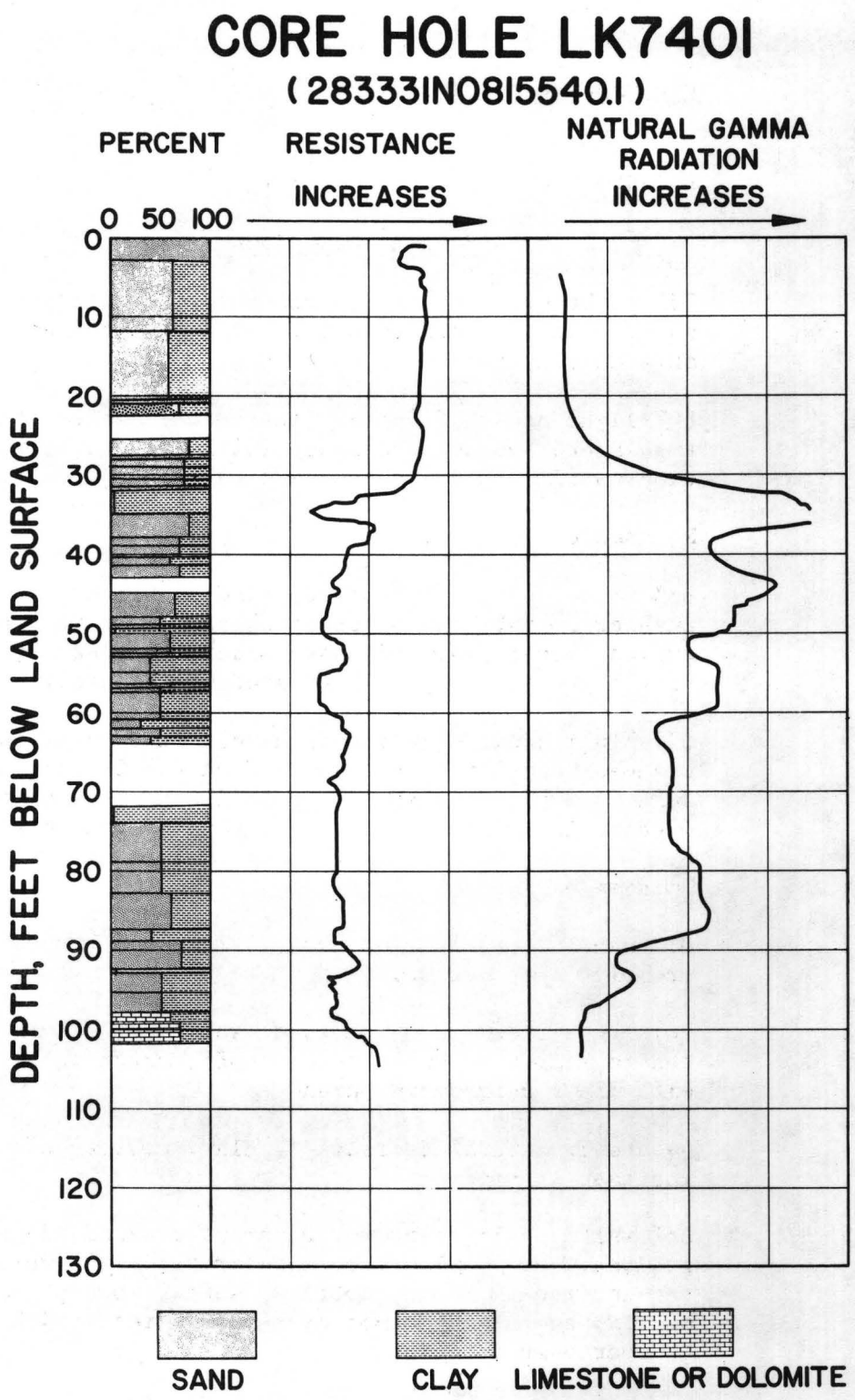
62.0-63.0	50% dark greenish gray, soft clay matrix; 40% sand as 49.550.0; 10% limestone as 45.0-48.0, trace of marcasite.
63.0-64.0	60% black, soft, waxy clay matrix; 35% sand as above; 5% coarse-grained sand.
64.0-72.0	No sample.
72.0-74.0	98% dark gray, soft, waxy clay; 2% light gray, clear to stained, medium-grained, fairly well sorted, sub-rounded sand, trace of limestone as 45.0-48.0.
74.0-79.0	50% light tan, clear to stained, coarse-to medium-grained, sub-rounded sand; 50% dark gray and dark brown mottled, indurated clay matrix, trace of limestone as 45.0-48.0.
79.0-83.0	As above with increase in limestone to 15%, corresponding decrease in sand.
83.0-87.5	40% dark gray and dark brown mottled, soft clay matrix; 35% sand as 74.0-79.0; 25% fragments of off-white and light gray mottled, microcrystalline, indurated silicified limestone, with relic fossil material
87.5-89.0	60% medium brown and dark gray mottled, soft clay matrix; 30% white, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 10% white, very fine-grained, indurated, silicified limestone, with relic fossil material.
89.0-92.5	60% light tan, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 30% dark gray and dark brownish gray mottled, indurated, clay matrix; 10% coarse-grained sand.
92.5-93.0	95% light brown and dark gray mottled, soft, waxy clay matrix; 5% sand as above.
93.0-95.5	50% sand as 89.0-92.5; 50% dark gray, soft, waxy clay, mottled with pockets of fairly pure sand.

Rocks of Miocene Age

95.5-98.0	50% light and dark brown and dark gray mottled, soft clay matrix; 25% white, clear to frosted, fine to coarse-grained, angular to sub-rounded sand; 25% small fragments of very light gray, microcrystalline, indurated, fossiliferous limestone.

Rocks of Eocene Age

98.0-99.0	60% creamy, soft, highly weathered, microcrystalline coquina, with pockets of sand as above in matrix of 40% light gray clay.
99.0-102.8	70% limestone as above, pockets of sand as above in matrix of 30% dark brown clay, contains Pseudorbitolina cubensis (Cushman and Bermudez) and Discorbis inornatus (Cole).


CORE HOLE LK7401
(283331N0815540.1)
PERCENT
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RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7402

Lake County 283112N0815629.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	75% light gray, frosted, medium to coarse-grained, sub-rounded to rounded sand; 25% medium gray, indurated clay matrix.
1.0-2.0	85% light brown, frosted, fine to medium-grained, angular to sub-rounded sand; 10% light brown, soft clay matrix; 5% coarse to very coarse-grained sand.
2.0-6.0	No sample.
6.0-6.5	95% white, clear to frosted, find to medium-grained, angular to sub-rounded sand; 5% coarse to very coarse-grained sand; trace of heavy minerals; just enough very light tan clay to bind sand very loosely.
6.5-7.5	65% light brown, clear to stained, fine to medium-grained, angular to sub-rounded sand; 30% dark brown, soft, crumbly clay matrix, containing streaks of black organic material; 5% coarse to very coarse- grained sand.
7.5-10.5	No sample.
10.5-11.5	85% sand as 6.5-7.5 interval; 15% medium brown, soft, crumbly, clay matrix.
11.5-12.2	70% light brown to white sand, as above; 30% very light tan to medium brown, mottled, soft, crumbly clay matrix with minor dark brown streaks.
12.2-12.5	As above, with 5% decrease in clay; corresponding increase in sand.
12.5-13.5	65% white to light brown, clear to stained, fine-grained, very well sorted angular sand; 25% very light tan and medium brown, mottled, soft, crumbly clay matrix, containing minor dark gray streaks; 10% medium to coarse-grained sand.
13.5-14.5	No sample.

14.5-15.5	60% white to clear, fine-grained, fairly well sorted, angular sand; 30% creamy, indurated clay matrix; 10% medium to coarse-grained sand.
15.5-16.7	65% white to clear, fine to medium-grained, angular to sub-rounded sand; 35% very light tan to dark brown mottled, indurated clay matrix. Scattered coarse to very coarse-grained sand.
16.7-17.5	70% sand, as above; 30% creamy, very light brown, mottled, indurated, crumbly clay matrix; trace of heavy minerals.
17.5-19.5	60% white, clear, fine-grained, well sorted angular sand; 40% light tan, soft, waxy clay matrix; trace of heavy minerals.
19.5-21.5	70% white to clear, fine to medium-grained, angular to sub-rounded sand; 30% off-white, indurated, powdery clay matrix; trace of heavy minerals.
21.5-23.0	80% pale green, soft, waxy clay matrix with minor dark brown bandings; 20% sand as above; trace of heavy minerals; a 1/2-inch very sandy layer is present in the lower 0.5 foot of the interval.
23.0-24.0	65% sand, as 19.5-21.5 interval; 35% light tan, indurated clay matrix; trace of heavy minerals.
24.0-24.5	75% light, greenish gray, soft, waxy clay; 25% sand, as above; trace of heavy minerals and white phosphate.
24.5-25.5	70% white, clear to frosted, medium-grained, very well sorted, sub-angular, to sub-rounded sand; 30% light, greenish gray, soft clay matrix with minor dull orange streakings; trace of heavy minerals.
25.5-27.0	50% white, clear, fine to medium-grained, angular to sub-rounded sand; 50% light, greenish gray, soft, waxy clay; integrated with pure light greenish-gray, soft, waxy clay.
27.0-29.0	80% sand as 24.5-25.5 interval; 20% pale green, soft clay; trace of heavy minerals.
29.0-29.5	50% white, clear, fine-grained, fairly well sorted, angular sand; 25% medium-grained sand; 25% light tan to medium brown, mottled, soft clay matrix, with minor mottled black soft clay; trace of heavy minerals.

29.5-32.0	60% pale green, soft, waxy clay matrix; 40% sand, as above; a 2-inch band of fine-grained, well sorted, angular sand with just enough light purple clay to bind sand loosely occurs at 31.2 feet.
32.0-33.0	50% pale green, soft clay, with thin integrated white, clear, fine-grained, well sorted angular sand; 35% sand as 29.0-29.5 interval; 15% off-white soft clay.
33.0-34.0	90% sand as 29.0-29.5 interval; 10% white, indurated, crumbly clay matrix; trace of heavy minerals.
34.0-38.5	No sample.
38.5-40.0	65% sand, as 29.0-29.5 interval; 35% off-white, indurated to soft clay matrix.

Rocks of Miocene Age

40.0-41.0	60% pale green, indurated clay; 25% fine to coarse white phosphate nodules; 15% off-white, clear to frosted, fine to medium-grained sand, in white to pale green, mottled, soft clay matrix.
41.0-42.5	50% light green to light brown, banded, indurated clay matrix; 40% fine to very coarse, light tan phosphate nodules; 10% sand, as above.
42.5-49.5	No sample.

Rocks of Eocene Age

49.5-60.0	60% small fragments of creamy, microcrystalline, hard, porous limestone and light brown to light gray mottled, cryptocrystalline, hard, tight, silicified limestone containing relic fossil material; 20% white, clear to frosted, fine to medium-grained sand; 20% very large foraminifera; trace of black to brown to tan, fine to coarse phosphate nodules, pisolitic silica, highly weathered.

LK 7433

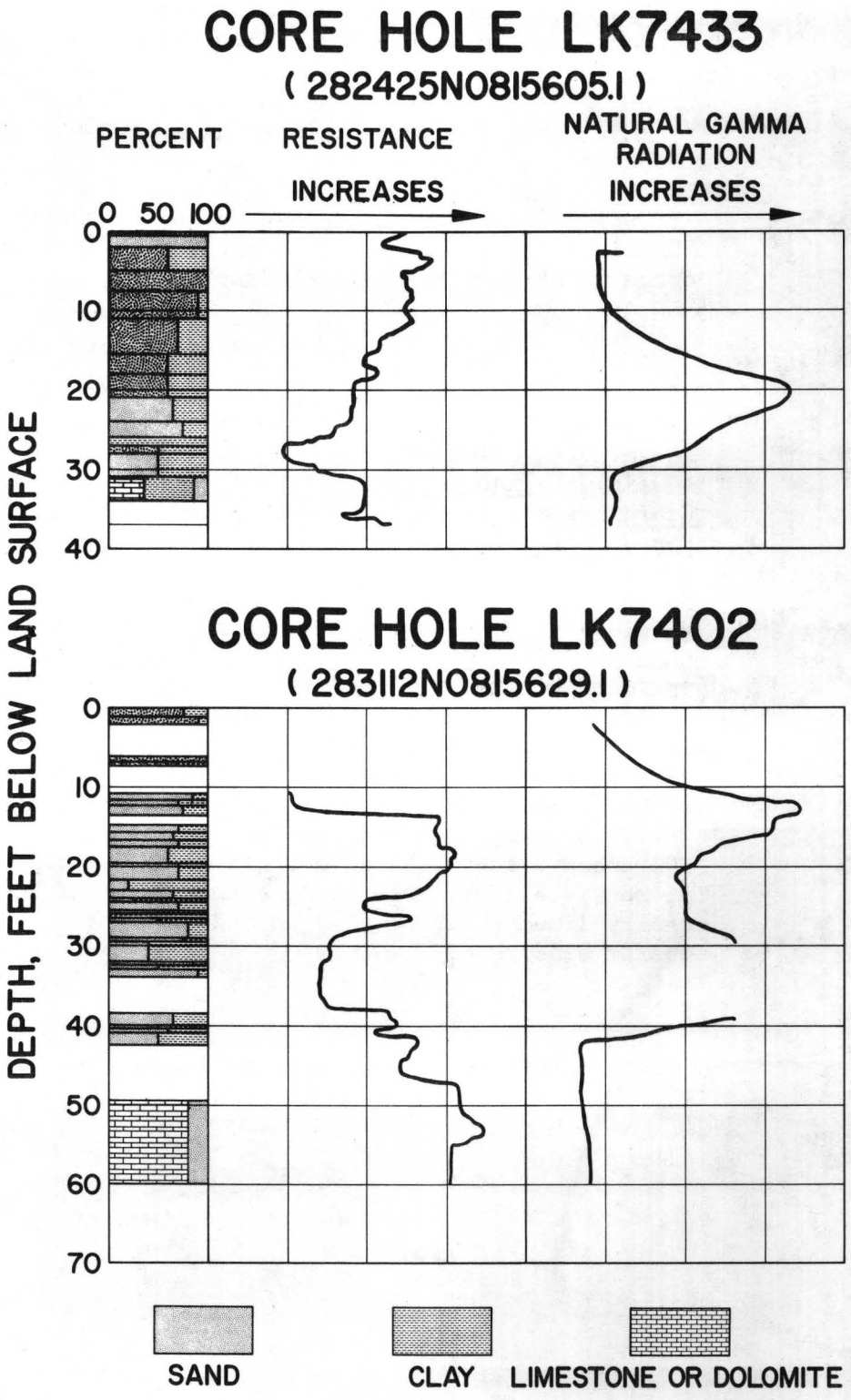
Lake County 282425N0815605.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-0.5	50% white to light gray, clear to frosted, medium to fine-grained, fairly well sorted, sub-rounded to sub-angular quartz sand; 50% light, soft, highly organic clay matrix, trace of heavy minerals.
0.5-1.5	As above with trace of light gray clay.
1.5-2.0	Off-white, clear to frosted, medium to fine-grained, fairly well sorted, sub-angular to sub-rounded quartz sand, trace of heavy minerals.
2.5-5.0	60% white to light gray, clear to frosted, medium to fine grained, fairly well sorted, sub-rounded to sub-angular quartz sand; 40% dark gray, soft clay matrix, trace of heavy minerals.
5.0-7.5	Light tan, clear to frosted, medium to fine-grained, fairly well sorted, sub-rounded to sub-angular quartz sand, trace of heavy minerals.
7.5-11.0	90% white to light tan, clear to frosted, medium-grained, poorly sorted, sub-rounded quartz sand; 10% light brown, clay matrix with minor white mottling, trace of heavy minerals.
11.0-15.5	70% white, clear to frosted, medium-grained, poorly sorted, sub-rounded quartz sand; 30% light to dark brown, mottled and banded, soft clay matrix, trace of heavy minerals.
15.5-18.0	60% white, clear to frosted, medium-grained, fairly well sorted, angular quartz sand; 40% light to medium brown, gray mottled, soft clay matrix, trace of fine-grained muscovite flakes.
18.0-21.0	As above.

21.0-24.0	65% white, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 35% medium brown and light tan mottled and banded, indurated clay matrix, trace of heavy minerals and fine-grained muscovite flakes. Last 0.4 foot of interval is composed of very light gray, indurated, powdery clay.
24.0-26.0	75% white, clear, fine grained, angular quartz sand; 25% light to medium brown, mottled, soft clay matrix, trace of heavy minerals and foraminifera.

Rocks of Eocene Age

26.0-27.0	60% off-white, soft, fairly well consolidated, calcareous clay matrix; 40% off-white, large to small foraminifera, including Echinocythereis okeechobiensis (Swain), Lepidocyclina ocalana floridana (Cushman), Cibicides mississippiensis ocalanus (Cushman), and Reussella sculptilis (Cushman).
27.0-28.0	50% white, clear, fine to medium-grained, poorly sorted quartz sand; 50% dark to medium brown mottled, soft clay matrix that has creamy, soft, calcareous clay inclusions.
28.0-31.0	50% white, clear, fine-grained, well sorted, angular quartz sand; 50% greenish gray, soft clay matrix; trace of heavy minerals.
31.0-34.0	50% creamy, soft, calcareous clay matrix; 35% creamy microcrystalline, indurated, porous, fossiliferous, chalky limestone, 15% fine to medium-grained, clear quartz sand.
34.0-37.0	No sample.


CORE HOLE LK7433
(282425N0815605.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0
10
20
30
40
CORE HOLE LK7402
(283112N0815629.1)
0
10
20
30
40
50
60
70
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

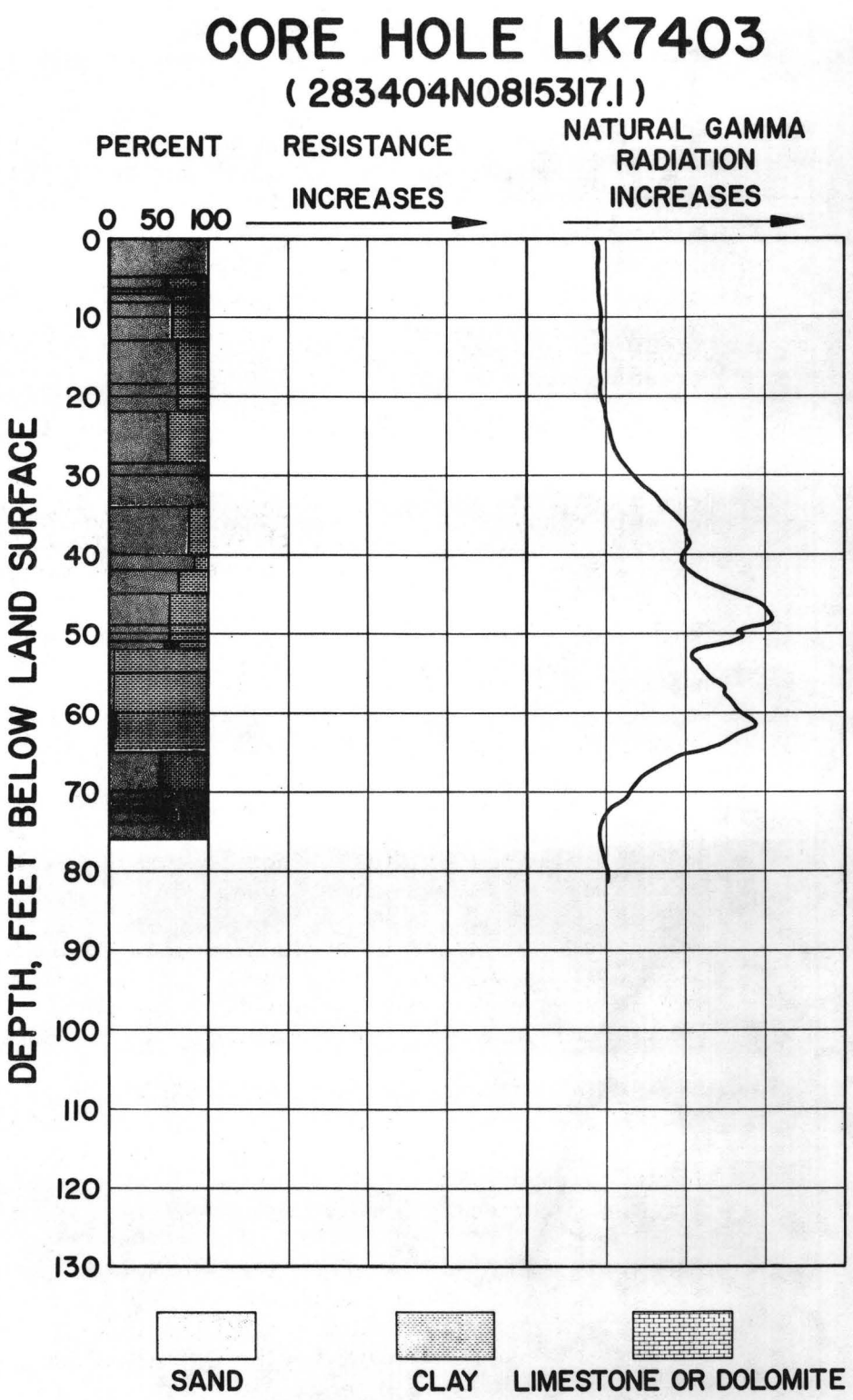
LK7403

Lake County 283404N0815317.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-5.0	90% light tan, stained, medium-grained, fairly well sorted, sub-angular to sub-rounded unconsolidated sand; 10% coarse-to very coarse-grained sand.
5.0-6.0	55% white, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 40% white, orange, and dull yellow mottled, indurated, crumbly clay matrix; 5% coarse-to very coarse-grained sand.
6.0-7.0	60% pink and white, clear to stained, fine-to very coarse-grained, angular to rounded sand; 35% white, pink, orange, dull yellow and very pale green banded, indurated clay matrix; 5% coarse-to very coarse-grained sand.
7.0-8.0	35% white, pink, and tan mottled, indurated, crumbly clay matrix; 30% light gray, frosted, coarse-to very coarse-grained, fairly well sorted, rounded to well rounded sand; 30% fine to medium-grained sand; 5% small pebbles.
8.0-13.0	65% white, clear, fine-grained, angular, well sorted sand; 35% off-white, indurated, well consolidated clay matrix with some orange and tan streaking and mottling; trace of heavy minerals and fine to medium muscovite flakes; occasional coarse-to very coarse-grained sand.
13.0-18.5	65% light gray, clear, frosted, fine-to medium-grained, fairly well sorted, sub-rounded sand; 30% light gray and tan mottled, indurated clay matrix; 5% coarse-grained sand.
18.5-22.0	65% light gray, clear to frosted, medium-grained, well sorted, sub-rounded sand; 30% white, soft, crumbly clay matrix; 5% coarse-grained sand; trace of heavy minerals.

22.0-28.5	60% white, clear, fine-to medium-grained, sub-angular sand; 40% very light tan, indurated clay matrix.
28.5-34.0	70% white, clear, fine grained, well sorted, angular sand; 30% white, soft clay matrix; scattered bands of coarse-grained sand.
34.0-40.0	80% white to light gray, clear to frosted, medium-to fine-grained, sub-angular to rounded sand; 20% white and light tan mottled, soft clay matrix; trace of heavy minerals.
40.0-42.0	85% sand, as above; 15% soft, white and medium tan mottled, poorly consolidated clay matrix; trace of heavy minerals.
42.0-45.0	70% sand, as 34.0-40.0 interval; 30% very pale green with minor white mottling, indurated clay matrix; trace of heavy minerals.
45.0-49.0	60% light gray, clear to frosted, medium-grained, well sorted, sub-rounded sand; 40% light green, indurated clay matrix with pockets of white, soft, powdery clay; trace of heavy minerals.
49.0-51.0	Sand, as above; 40% light gray and dull orange, mottled, soft, waxy clay matrix.
51.0-52.0	65% light gray, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 30% light tan, indurated clay matrix; 5% coarse to very coarse grained sand.
52.0-55.0	96% green, soft, waxy clay matrix; 3% white, clear, fine-grained, angular, well sorted sand; 1% small fossiliferous material and a few fragments of lignite; minor orange mottling in last 0.1 foot and also a thin band of sand in last 0.1 foot.
55.0-65.0	97% light, bluish green, soft, waxy, clay matrix with minor light to medium brown mottling and streaking; 3% sand and small fossiliferous material, as above.
65.0-70.0	50% light gray, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 50% light green, soft, waxy clay matrix, with minor pockets of sand and off-white microcrystalline, silicified limestone; trace of heavy minerals.

70.0-71.0	50% light gray, clear to frosted, medium-grained, fairly well sorted, sub-angular to sub-rounded sand; 35% light green and light brown mottled soft, clay matrix with black organic matter and minor mottling by very light tan, soft, waxy clay; 5% fine to very coarse brown phosphate nodules; 5% coarse-to very coarse-grained sand; 5% pisolitic silica and off-white microcrystalline, silicified limestone.
	Rocks of Miocene Age
71.0-72.0	Light tan and dark brown mottled, soft, waxy, well consolidated clay.
72.0-72.5	Sand as 70.0-71.0 interval, without organic matter.
72.5-74.0	55% sand; 30% tan and brown mottled, indurated crumbly clay matrix; 5% phosphate; 5% coarse-to very coarse-grained sand; 5% silica and limestone as 70.0-71.0 interval.
74.0-76.0	65% light tan and dark brown mottled, soft, waxy clay; 35% sand, as 70.0-71.0 interval.
	Rocks of Eocene Age(?)
76.0-83.0	No sample, lost circulation.


CORE HOLE LK7403
(283404N0815317.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7404

Lake County 283201N0815450.3

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	Light brown to light gray, clear to stained, medium-grained, fairly well sorted, sub-rounded sand, with trace of brown and gray mottled clay.
1.0-4.0	75% sand, as above; 25% dark brown, soft, crumbly clay matrix.
4.0-7.0	70% medium brown, stained, medium-grained, fairly well sorted, sub-rounded sand, with scattered coarse to very coarse grains; 30% very dark to very light brown mottled, very poorly consolidated clay matrix.
7.0-11.0	60% tan, clear to stained, medium grained, fairly well sorted, sub-rounded sand; 30% light tan and light brown mottled, indurated clay matrix; 5% coarse-grained sand; 5% fine-grained sand; trace of heavy minerals.
11.0-16.0	65% white, clear to frosted, medium-grained, fairly well sorted, sub-angular to sub-rounded sand; 30% tan, indurated clay matrix, with minor streaks of dark brown soft clay; 5% coarse-grained sand.
16.0-17.0	60% light tan, clear to stained, medium-grained, fairly well sorted, sub-angular to sub-rounded sand; 35% tan and light brown mottled, indurated clay matrix, with minor, very dark brown clay mottling and streaking; 5% coarse-grained sand.
17.0-17.5	50% white, frosted, fine-to medium-grained, angular to sub-rounded sand; 50% very light tan, and very light brown mottled, indurated clay matrix, with minor streaking and mottling by a very dark brown clay.
17.5-20.5	55% very light tan, stained, fine-to medium-grained, angular to sub-rounded sand; 40% very light tan and very light brown mottled and streaked indurated clay matrix; 5% coarse-to very coarse-grained sand.

20.5-23.5	50% very light tan, stained, medium-to very-coarse grained, sub-rounded to well-rounded sand; 50% tan and light brown banded and mottled, indurated clay matrix with minor mottling and streaking by dark brown clay.
23.5-27.0	60% light, clear to frosted, fine-to very coarse-grained, angular to well-rounded sand; 40% off-white, very light tan mottled, indurated clay matrix; trace of heavy minerals.
27.0-30.5	65% sand, as above; 35% light brown, soft clay matrix; trace of heavy minerals.
30.5-31.0	65% sand, as 23.5-27.0 interval; 35% tan, indurated clay matrix; trace of heavy minerals.
31.0-35.0	70% white, clear to frosted, medium-to fine-grained, angular to sub-rounded sand; 25% light to medium tan, soft clay matrix; 5% coarse-to very coarse-grained sand; trace of heavy minerals.
35.0-36.5	No sample.
36.5-39.0	60% white, clear to frosted, medium-to fine-grained, angular to sub-rounded sand; 40% light tan, soft clay matrix; trace of heavy minerals.
39.0-40.0	70% sand, as above; 30% tan, soft clay matrix; trace of heavy minerals.
40.0-44.0	60% white, clear to frosted, medium-to fine-grained, angular to sub-rounded sand; 40% light tan, soft, clay matrix; trace of heavy minerals.
44.0-46.0	No sample.
46.0-46.5	65% white, clear to frosted, fine-grained, sub-angular, fairly well sorted sand; 30% very light tan, indurated, crumbly, clay matrix; 5% medium-grained sand.
46.5-47.0	70% white, clear to frosted, fine-grained, well sorted, sub-angular sand; 30% white and light tan mottled, indurated clay matrix.
47,0-48.0	50% light brown, soft, waxy clay matrix; 30% sand, as 46.5-47.0 interval; 20% white, microcrystalline, indurated, porous, silicified limestone.

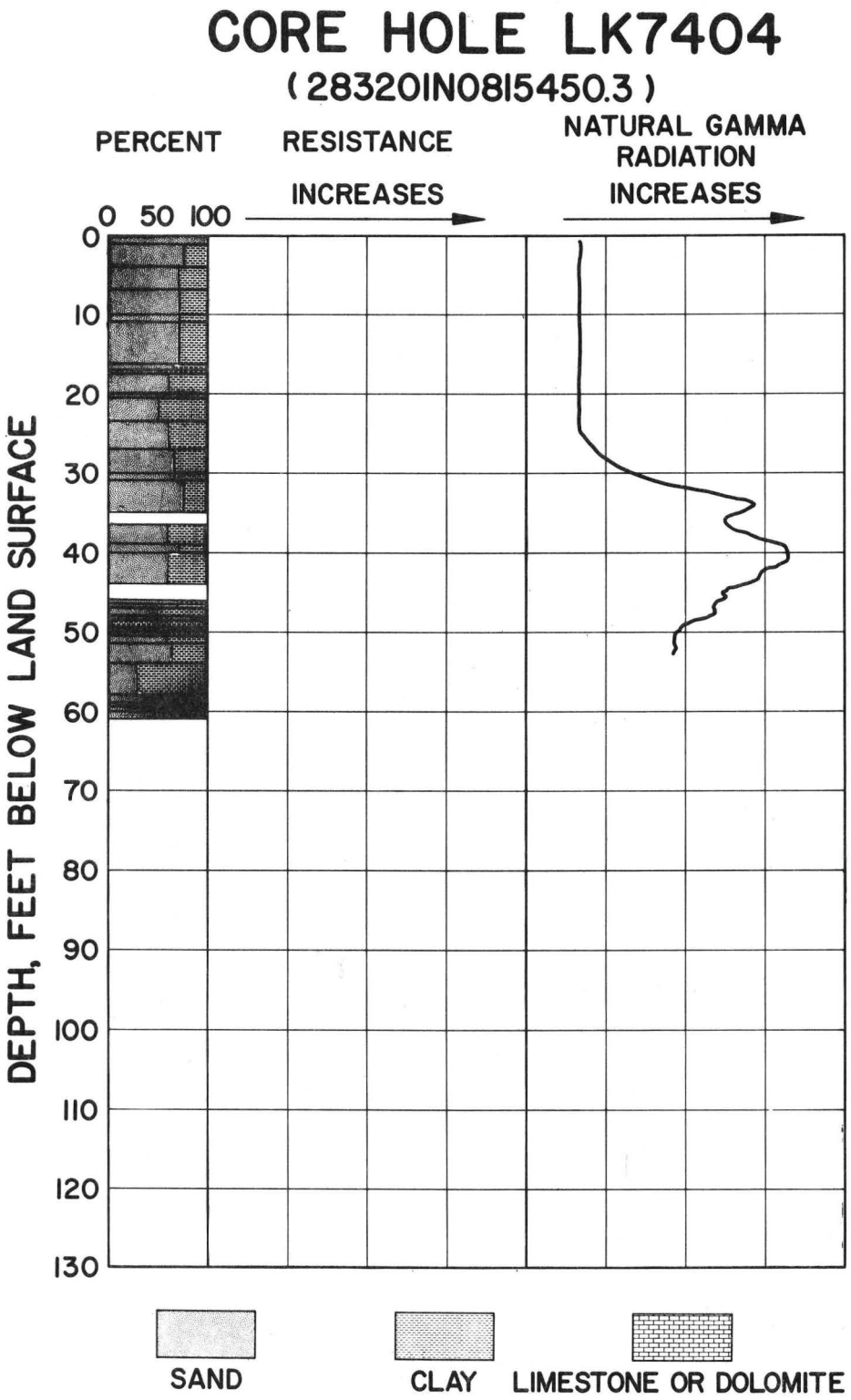
48.0-48.5	65% white, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 35% tan, soft, clay matrix; interbedding by medium brown, soft, waxy clay; trace of heavy minerals.
48.5-49.5	95% medium brown, soft, waxy, clay matrix; 5% sand as above.
49.5-49.7	70% brown with green tint, soft clay; 25% light brown, soft, clay matrix, with minor mottling; 5% sand, as 48.0-48.5 interval.
49.7-50.5	60% sand as 48.0-48.5 interval; 40% medium brown, soft clay, mottled with medium brown soft, waxy clay; trace of fine grained rose quartz; trace of white micro-crystalline, indurated, porous, silicified limestone.
50.5-51.5	60% sand, as 48.0-48.5 interval; 40% light brown, soft clay matrix, banded with pure, medium brown, soft, waxy clay; trace of heavy minerals; trace of silicified lime-stone, as 49.7-50.5 interval.
51.5-54.0	65% sand, as 48.0-48.5 interval; 35% tan, soft, clay matrix, with dark brown mottling; contains pockets and bands of light grayish brown, pure, waxy, clay; trace of silicified limestone, as 49.7-50.5 interval.
54.0-58.0	70% medium brown, bluish green, light brown, soft clay, with dark gray mottling; 30% sand, as 48.0-48.5 interval; pockets and bands of clay; trace of heavy minerals.
58.0-59.0	60% medium brown to dark gray banded, soft, clay matrix; 40% light gray, clear to frosted, medium-grained, fairly well sorted, sub-angular to sub-rounded sand; trace of pisolitic silica.
59.0-59.5	60% light gray, clear to stained, medium-grained, fairly well sorted, sub-angular to sub-rounded sand; 40% medium brown, soft, clay matrix, mottled with black, soft clay.

Rocks of Miocene Age

59.5-61.0	50% buff and light gray, microcrystalline, hard, tight to porous, silicified limestone fragments with relic fossil material; 40% black and medium brown mottled, soft, crumbly, clay matrix; 8% light gray, clear to frosted, medium-grained, fairly well sorted, sub-angular to sub-rounded sand; 2% fine-grained sand.

Rocks of Eocene Age(?)

61.0-72.4	Lost circulation; no sample.


CORE HOLE LK7404
(283201N0815450.3)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7405

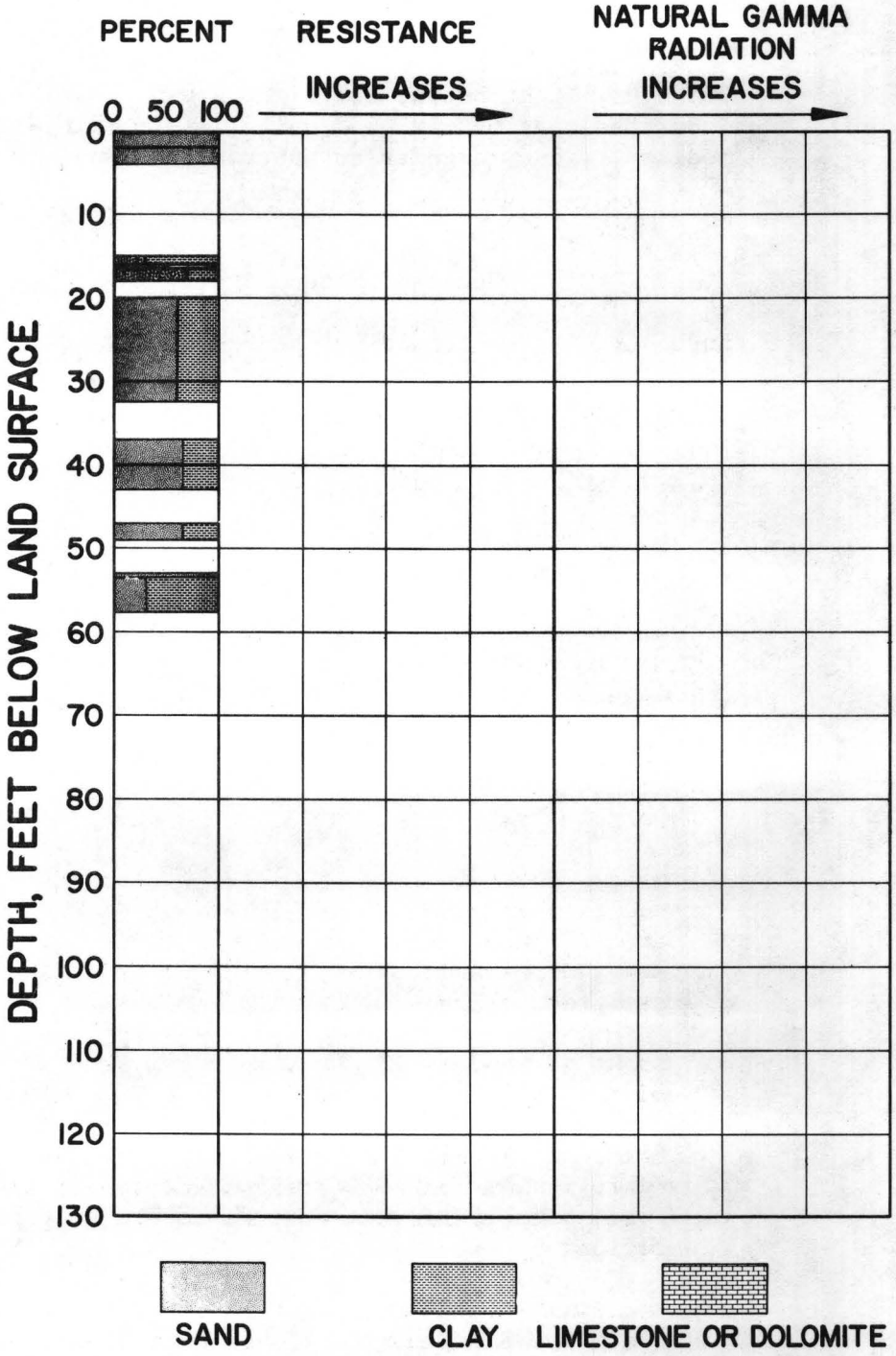
Lake County 283122N0815226.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-2.0	95% light gray, clear to stained, medium-grained, fairly well sorted, sub-rounded sand; 5% fine and coarse-grained sand.
2.0-4.0	95% tan, stained, medium-grained, fairly well sorted, sub-rounded sand; 5% fine and coarse-grained sand.
4.0-15.0	No sample.
15.0-16.0	70% light gray, soft, waxy clay matrix; 30% white, frosted, medium-to very coarse-grained, rounded sand.
16.0-16.5	50% light gray, soft, waxy clay matrix; 50% sand, as above.
16.5-18.0	60% light gray, frosted, coarse-to very coarse-grained, rounded sand; 30% off-white, indurated, fairly well consolidated clay matrix; 10% medium grained sand.
18.0-20.0	No sample.
20.0-32.5	50% white, clear to frosted, medium-grained, fairly well sorted, angular sand; 40% off-white to tan, indurated clay matrix; 10% medium-to very coarse-grained sand; trace of fine to medium muscovite.
32.5-37.0	No sample.
37.0-43.0	65% white, clear to frosted, fine-grained, angular, fairly well sorted sand; 35% very light tan to off-white, indurated, crumbly, clay matrix; trace of heavy minerals and fine to medium muscovite.
43.0-47.0	No sample.
47.0-49.0	60% sand as above; 35% off-white, indurated, crumbly, clay matrix; 5% medium grained sand; trace of fine-to medium-grained muscovite.
49.0-53.0	No sample.

53.0-53.5	80% light gray, clear, medium-grained, rounded, well sorted sand; 20% white and light green, mottled, indurated clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
53.5-57.5	70% blue, light brown, and light green, mottled, indurated clay matrix; 30% white, clear, fine-to medium-grained, angular to sub-rounded sand.
57.5-63.1	No sample.
	Rocks of Eocene Age(?)
63.1-84.1	Lost circulation; could not be re-established; fragments of limestone on end of drill bit.

CORE HOLE LK7405

(283122N0815226.1)



LK7406

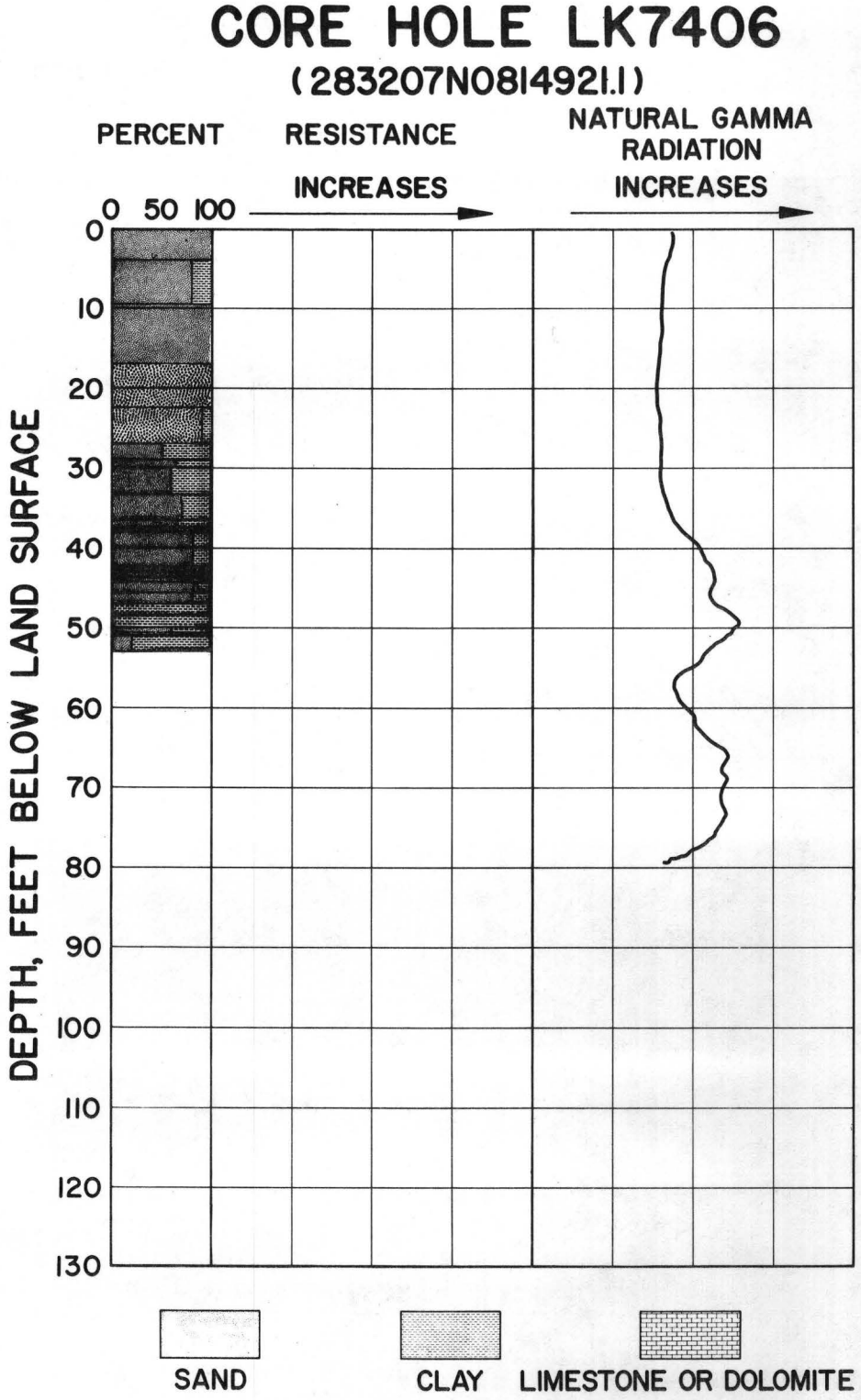
Lake County 283207N0814921.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-4.0	Tan, stained, medium-to fine-grained, angular to sub-rounded quartz sand.
4.0-9.5	80% dull yellow, stained, fine-to medium-grained, angular to sub-rounded quartz sand; 20% bright orange, indurated, fairly well consolidated, clay matrix.
9.5-17.0	White, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; trace of heavy minerals.
17.0-22.5	White, frosted, medium-to very coarse-grained, sub-rounded to well rounded quartz sand with pink tint.
22.5-27.0	90% white, frosted, coarse-to very coarse-grained, rounded to well rounded quartz sand; 10% pink and light tan, mottled, soft clay matrix.
27.0-29.0	50% white, frosted, fine-to very coarse-grained, angular to sub-rounded sand; 50% medium brown, soft clay matrix.
29.0-30.0	60% white, clear to frosted, fine-grained, fairly well sorted, angular sand; 35% dull red and white banded (1/8 to 1/2-inch) soft clay matrix; 5% medium-to very coarse-grained sand; trace of fine to medium muscovite flakes; trace of heavy minerals.
30.0-33.2	60% sand, as above; 40% clay, as above, but darker red in color.
33.2-36.5	70% sand, as 29.0-30.0 interval; 30% pink, indurated clay matrix with numerous small white specks and minor dull yellow mottling; trace of muscovite and heavy minerals as above.
36.5-37.5	65% sand, as 29.0-30.0 interval; 35% clay, as 33.2-36.5 interval; trace of muscovite and heavy minerals.
37.5-38.0	65% sand, as 29.0-30.0 interval; 35% bright orange, soft clay matrix with numerous white specks and some white, thin bands; trace of heavy minerals and muscovite.

38.0-40.0	80% sand, as 29.0-30.0 interval; 20% light orange, indurated clay matrix, with thin light bands; trace of heavy minerals and muscovite.
40.0-42.5	80% white and yellow, clear to stained, fine-to medium-grained, angular to sub-rounded sand; 20% dull yellow, indurated clay matrix with minor light brown and white mottling and banding; trace of heavy minerals.
42.5-43.0	55% white, clear and yellow, stained, medium-grained, fairly well sorted, sub-angular sand; 25% fine-grained sand; 20% clay, as 40.0-42.5 interval; trace of heavy minerals.
43.0-43.5	70% sand, as above; 30% very pale green, indurated clay matrix with some white and medium brown mottling and banding.
43.5-44.5	65% sand, as 42.5-43.0 interval; 20% white, light tan, medium brown mottled and banded, indurated crumbly clay matrix; 15% medium-grained sand.
	Rocks of Miocene Age
44.5-45.7	85% sand, as 42.5-43.0 interval; 15% off-white, indurated, crumbly clay matrix with minor light brown mottling; trace of heavy minerals.
45.7-47.0	75% sand, as 42.5-43.0 interval; 20% white, light brown, and buff mottled, indurated, crumbly clay matrix with black organic streaks; 5% white, pisolitic silica; trace of heavy minerals.
47.0-48.5	99% medium grained, indurated, blocky, waxy clay matrix; 1% white, clear, fine-to medium-grained, angular sand.
48.5-50.0	99% off-white, indurated, well consolidated clay matrix; 1% white, clear, fine-to medium-grained, angular sand.
50.0-51.0	45% white to pink to tan phosphate nodules; 40% light buff, indurated clay matrix; 15% white, clear, fine-to medium-grained, angular quartz sand.
51.0-53.0	80% very light gray with tan tint, indurated porous silt; 20% phosphate as above; trace of white sand, as above.
53.0-77.0	No sample; lost circulation at 59 feet.

Rocks of Eocene Age(?)

77.0-81.0	No sample; circulation could not be re-established; top of interval based on natural gamma log.


CORE HOLE LK7406
(283207N0814921.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7407

Lake County 283054N0814938.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0.1.5	Light gray and brown, clear and stained, medium-to coarse-grained, sub-rounded sand.
1.5-3.5	90% dark brown, stained, medium-grained, fairly well sorted, sub-rounded sand; 10% dark brown, soft, crumbly clay matrix.
3.5-6.0	No sample.
6.0-8.0	60% light gray, frosted, very coarse-to coarse-grained, fairly well sorted, rounded sand; 40% tan, soft, clay matrix.
8.0-9.0	50% light gray, frosted, medium-grained, fairly well sorted, sub-rounded sand; 50% very light and medium tan, banded, indurated, micaceous clay matrix.
9.0-12.0	50% white, clear to frosted, fine-to medium-grained, angular to sub-angular sand; 50% clay, as above; trace of muscovite flakes.
12.0-15.5	60% light gray, frosted, very coarse-to coarse-grained, fairly well sorted, rounded sand; 40% light brown, indurated, fairly well consolidated clay matrix; trace of muscovite flakes.
15.5-16.5	55% white, clear, fine-grained, well sorted, angular sand; 40% off white, indurated, crumbly clay matrix; 5% medium muscovite flakes.
16.5-17.5	50% very light tan, soft, crumbly clay matrix; 45% white, clear, fine-to medium-grained, angular to sub-rounded sand; 5% medium to coarse muscovite flakes.
17.5-18.0	95% white to light gray, clear to frosted, very coarse-to medium grained sand; 5% very light tan to creamy, indurated, crumbly clay matrix.
18.0-23.0	60% white, clear, fine-grained, well sorted, angular sand; 35% very light tan, indurated, crumbly clay matrix; 5% coarse-to very coarse-grained sand; trace of heavy minerals.

23.0-26.5	55% light gray, frosted, very coarse-grained, well rounded, fairly well sorted sand; 25% tan, soft, poorly consolidated, crumbly clay matrix; 20% fine-grained sand.
26.5-28.5	75% clear, fine-grained, angular, well sorted sand; 20% light tan, soft clay matrix; 5% very coarse to coarse-grained sand.
28.5-41.0	75% white, clear, fine-to medium-grained, angular to sub-angular sand; 20% light tan, soft clay matrix; 5% very coarse-to coarse-grained sand; trace of heavy minerals.
41.0-41.5	65% white to light gray, clear to frosted, coarse-to very coarse-grained, well sorted, well rounded sand; 25% medium brown, soft clay matrix; 10% fine-to medium grained sand; trace of heavy minerals.
41.5-42.2	65% white to light gray, clear to frosted, medium-grained, fairly well sorted, sub-angular sand; 35% white and light brown mottled, soft clay matrix.

Rocks of Miocene Age

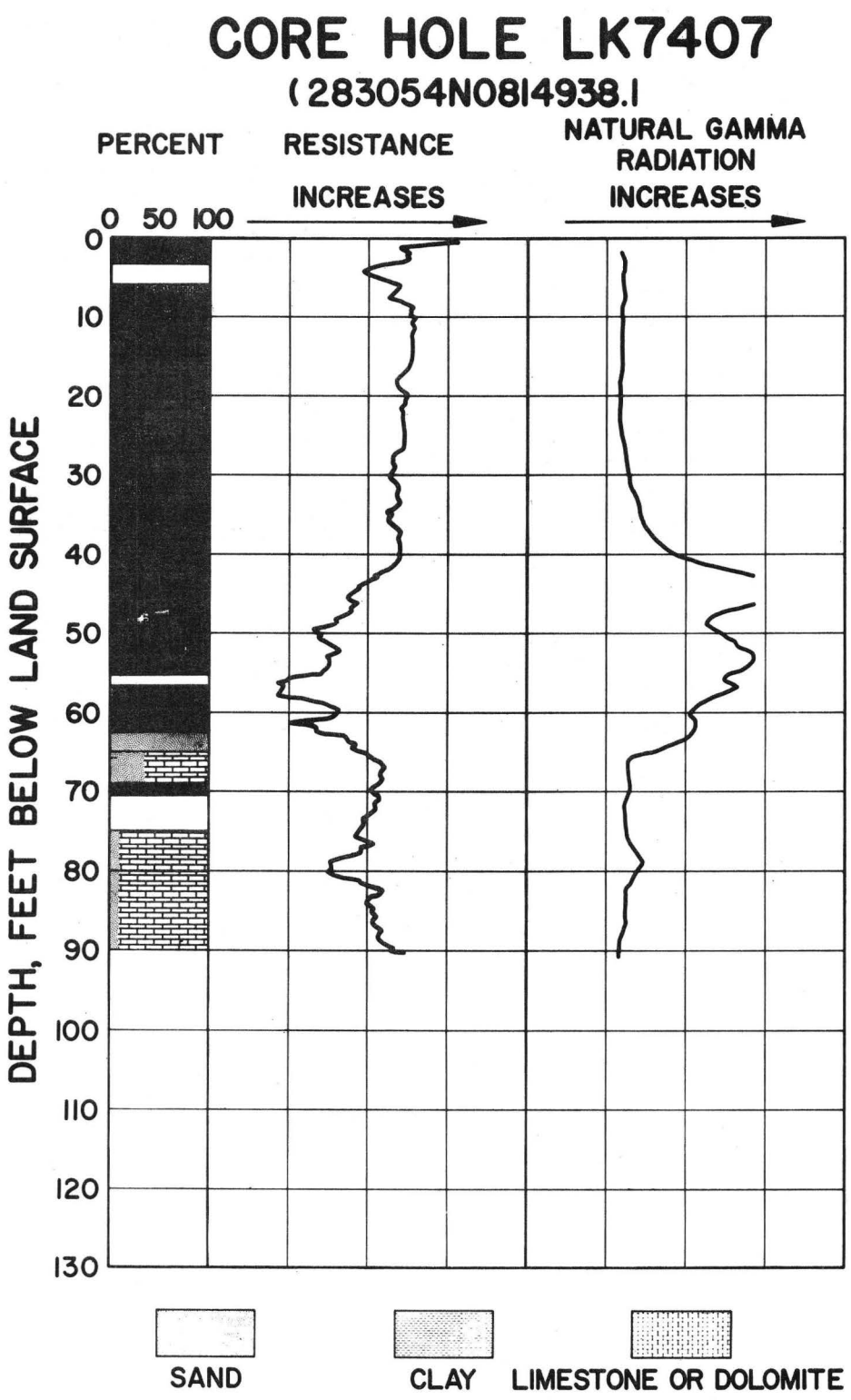
42.2-42.5	55% sand, as 41.5-42.2 interval; 45% brown and light tan mottled, soft clay matrix; trace of fossil fragments.
42.5-44.5	50% sand, as 41.5-42.2 interval; 50% medium brown, soft clay matrix, mottled with very light tan, soft, well consolidated clay; trace of fossil fragments; several pieces of fine-to medium-grained, clear, sub-angular, rose quartz.
44.5-46.0	No sample.
46.0-48.0	40% dark brown and medium gray mottled, soft clay matrix; 35% light gray, clear to frosted, fine-to medium-grained, angular, sub-rounded sand; 15% fine to medium black phosphate nodules; 10% pisolitic silica; trace of rose quartz.
48.0-49.5	98% very light brown, soft, waxy clay with minor mottling by dark brown, soft waxy clay; 2% sand and phosphate, as above.
49.5-51.0	50% dark gray and light tan mottled, soft, waxy clay matrix; 35% multicolor, fine to very coarse phosphate fragments and nodules; 15% white, clear, medium-grained well sorted, sub-rounded sand.

51.0-51.5	60% greenish gray, soft clay matrix; 25% white, clear, medium-to fine-grained, angular to sub-rounded sand; 15% fine to coarse, multicolored phosphate fragments and nodules.
51.5-53.0	95% medium brown, soft, waxy clay matrix; 4% light gray, clear to frosted, medium-to coarse-grained, sub-rounded sand; 1% medium to very porous, multicolored phosphate fragments and nodules.
53.0-53.2	40% medium brown and medium gray, mottled, soft clay; 35% white, clear, fine-to medium-grained, angular to sub-rounded sand; 25% fine to very coarse black phosphate nodules.
53.2-54.0	40% fine to very coarse, black to brown, phosphatized fossil material and phosphate nodules; 35% light tan, indurated clay matrix; 25% sand, as above.
54.0-55.2	55% medium, greenish gray, soft clay matrix; 40% sand as 53.0-53.2 interval; 5% phosphate as 53/2-54.0 interval.
55.2-56.5	No sample.
56.5-57.5	65% medium, greenish gray and light brown mottled, soft clay matrix; 20% fine to very coarse multicolored phosphate; 15% white, clear to frosted, medium-grained, fairly well sorted, sub-angular to sub-rounded sand.
57.5-58.5	50% white to light gray, clear to frosted, medium-to coarse-grained, sub-rounded to rounded sand; 35% clay, as 56.5-57.5 interval; 15% multicolored medium to very coarse phosphate.
58.5-58.7	55% white, clear, fine-to medium-grained, sub-angular to sub-rounded sand; 35% light brown, soft clay; 10% multicolored, fine to very coarse phosphate.
58.7-60.5	65% dark bluish gray, medium gray, and brownish gray mottled, soft, waxy clay matrix; 30% sand, as above; 5% phosphate, as above.
60.5-62.5	60% light and medium gray mottled, soft, silky clay matrix; 20% phosphate as 58.5 to 58.7 interval; 20% sand as 58.5-58.7 interval.

62.5-65.0	50% fragments of creamy, very fine crystalline, porous, indurated, well consolidated dolomite; 40% sand, as 58.5-58.7 interval; 10% phosphate as 58.5-58.7 interval.
65.0-69.5	65% medium gray, indurated, well consolidated, porous, very fine crystalline dolomite; 35% white, clear, fine-grained, well sorted angular sand; trace of black to brown, fine to very coarse phosphate nodules; several large chunks of dark gray and medium brown mottled silicified limestone.

Rocks of Eocene Age

69.5-70.5	50% very large foraminifera; 35% medium brown and white mottled, indurated, poorly consolidated, crumbly clay matrix; 15% clear to frosted, fine-to coarse-grained sand, contains Lepidocyclina ocalana floridana (Cushman), and Camerina sp.
70.5-75.0	No sample.
75.0-90.9	60% creamy, microcrystalline, hard porous linestome, contains 30% large to small fossils and 10% fine-to coarse-grained sand; highly weathered.


CORE HOLE LK7407
(283054N0814938.1
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7408

Lake County 283041N0814700.01

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-4.0	Tan, stained, medium-grained, poorly sorted, sub-rounded quartz sand; trace of heavy minerals.
4.0-10.5	50% white, clear to orange stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 50% orange, soft clay matrix with minor yellow mottling.
10.5-12.0	80% white to tan, clear to frosted, coarse-to medium-grained, fairly well sorted, sub-rounded quartz sand; 20% light to dark orange, soft clay matrix with slight tan tint.
12.0-17.0	75% white, clear to frosted, very-coarse to coarse-grained, fairly well sorted rounded quartz sand, with abundant medium grained sand; 25% tan and orange mottled, soft clay matrix.
17.0-21.0	75% sand, as above; 25% white and orange mottled, soft clay matrix.
21.0-24.0	85% sand, as 12.0-17.0 interval; 15% clay as 17.0-21.0 interval.
24.0-26.0	75% white frosted, very-coarse to medium-grained, sub-rounded to rounded quartz sand; 25% pink to white, soft clay matrix with 1/8 to 1/4-inch bands of hard clay.
26.0-28.5	80% white to light gray, frosted, very coarse-grained, poorly sorted, rounded quartz sand; 20% white and orange mottled, soft clay matrix; a 1-inch band of yellow clay at 27.2 feet.
28.5-30.5	80% white to light gray, frosted, very coarse-grained, poorly sorted, rounded quartz sand; 20% pink and white mottled, soft clay matrix.
30.5-31.0	75% sand, as above; 25% white and dull yellow banded, soft clay matrix.

31.0-32.0	80% white, frosted, very coarse-grained, well sorted, well rounded quartz sand; 20% white and dull yellow mottled, soft, poorly consolidated clay matrix. Some orange mottling in lower 0.2 feet.
32.0-35.0	45% fine grained, white, frosted, angular, well sorted quartz sand; 40% sand as 31.0 to 32.0 interval; 15% white, dull yellow and pink mottled, soft clay matrix.
35.0-43.0	No sample.
43.0-45.5	75% white, clear to frosted, fine-grained, well sorted, sub-angular quartz sand with scattered orange grained sand; 25% dull yellow, tan, orange, brown and pink mottled, soft clay matrix.
45.5-56.0	No sample.
56.0-59.0	50% sand, as 43.0-45.5 interval; 35% brown, dull yellow and white mottled and banded, soft clay matrix; 15% coarse-grained sand.
59.0-61.5	70% white, clear to frosted, fine-grained, very well sorted angular quartz sand; 30% very thin alternating bands (1/32 to 1/8-inch) of white, dull yellow and orange, soft clay matrix; trace of coarse-grained sand.
61.5-62.5	Sand as above, without coarse-grained sand; 30% clay as above, with banding less well defined.
62.5-63.5	70% white to light brown, clear to stained, fine-to medium-grained, sub-angular quartz sand; 30% light golden brown, soft clay matrix.
63.5-64.0	70% clay matrix of alternating bands (1/32 to 1/8-inch) of dark brown and light greenish brown, soft, waxy clay; 30% sand, as above.
64.0-69.0	No sample.

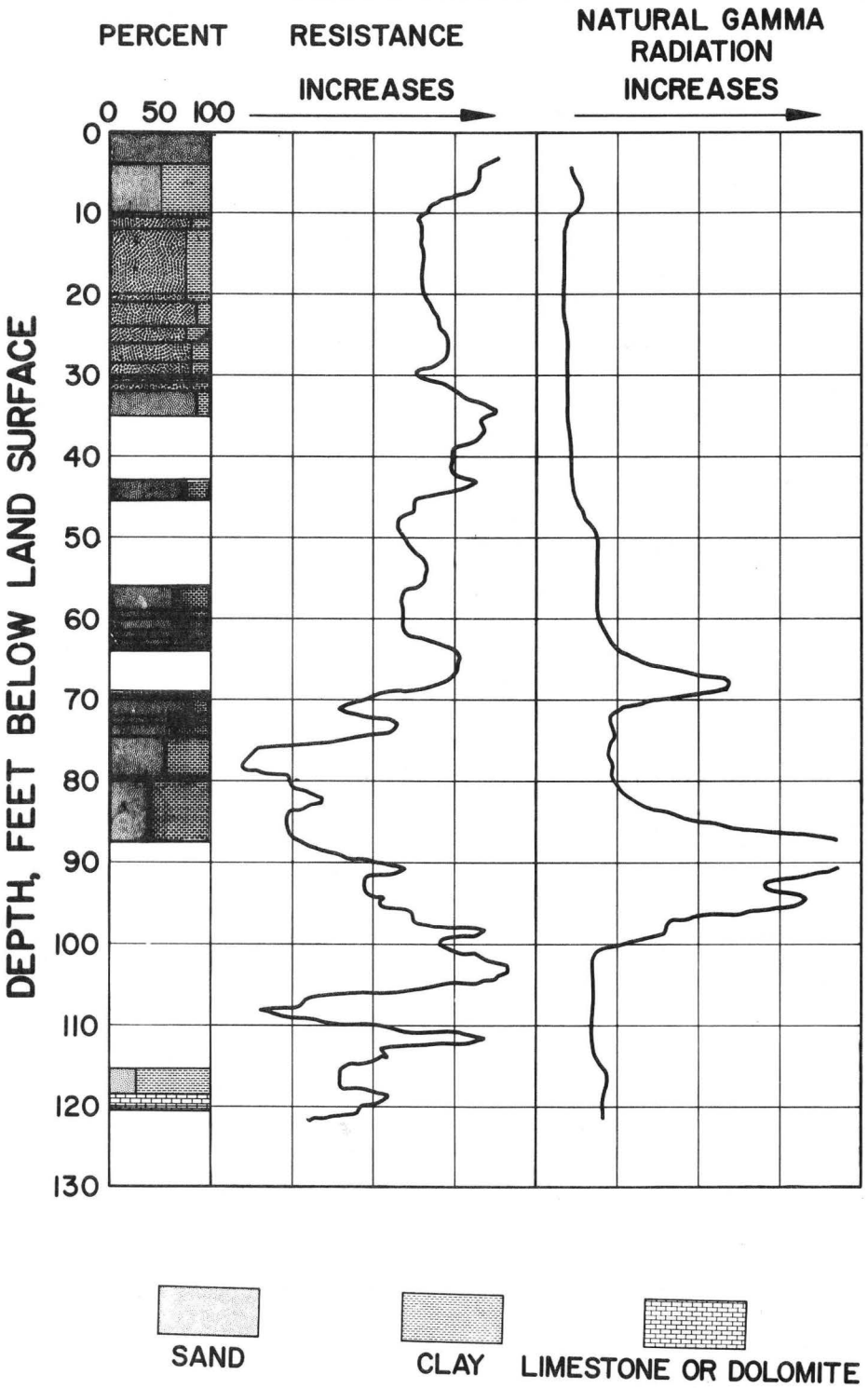
Rocks of Miocene Age

69.0-69.5	Same as 63.5-64.0 interval.
69.5-70.0	60% medium brown, soft clay; 40% white, clear, fine-grained, well sorted, sub-angular quartz sand; trace of black organic material.

70.0-72.0	80% sand, as above; 20% very light, greenish gray, dull yellow and light tan mottled, soft clay matrix; trace of black organic material.
72.0-73.0	85% sand, as 70.0-72.0; 15% light pink and white mottled, soft clay matrix; trace of organic material.
73.0-74.5	55% sand, as 70.0-72.0 interval; 40% light greenish gray, soft clay matrix; 5% reddish brown, fine phosphate nodules and blades.
74.5-79.5	50% sand, as 70.0-72.0 interval; 45% very light greenish gray and dull yellow mottled, indurated, well consolidated clay matrix; 5% phosphate as 73.0-74.5 interval.
79.5-87.5	60% matrix of light to medium brownish gray, soft, fairly well consolidated clay; 20% fine to large pebble size black phosphate nodules and reddish brown fine phosphate nodules and blades; 15% white, clear, fine- to medium-grained, fairly well sorted, sub-angular quartz sand; 5% large fragments of light gray to light brown microcrystalline, indurated, fairly tight dolomite; very large fragments (2-inch diameter) of light brown, microcrystalline, hard, tight, dense dolomite at base of interval.
87.5-115.5	No sample.
115.5-118.5	75% light greenish gray, soft, waxy clay matrix; 20% light tan to pink to orange, fine to very coarse phosphate nodules; 5% white, fine-grained, fairly well sorted, angular quartz sand; lower 0.5 feet of interval is pure clay.
118.5-120.5	Large fragments of white microcrystalline, indurated, porous, vuggy, dolomitic limestone, abundant fossil molds and casts; trace of light gray, indurated, well consolidated, clay coating.
120.5-176.0	No sample.
176.0-180.0	Cavity.
180.0-181.0	No sample.
181.0-201.0	Cavity; circulation lost, could not be re-established.
201.0-220.9	No sample.

CORE HOLE LK7408

(283041N0814700.1)

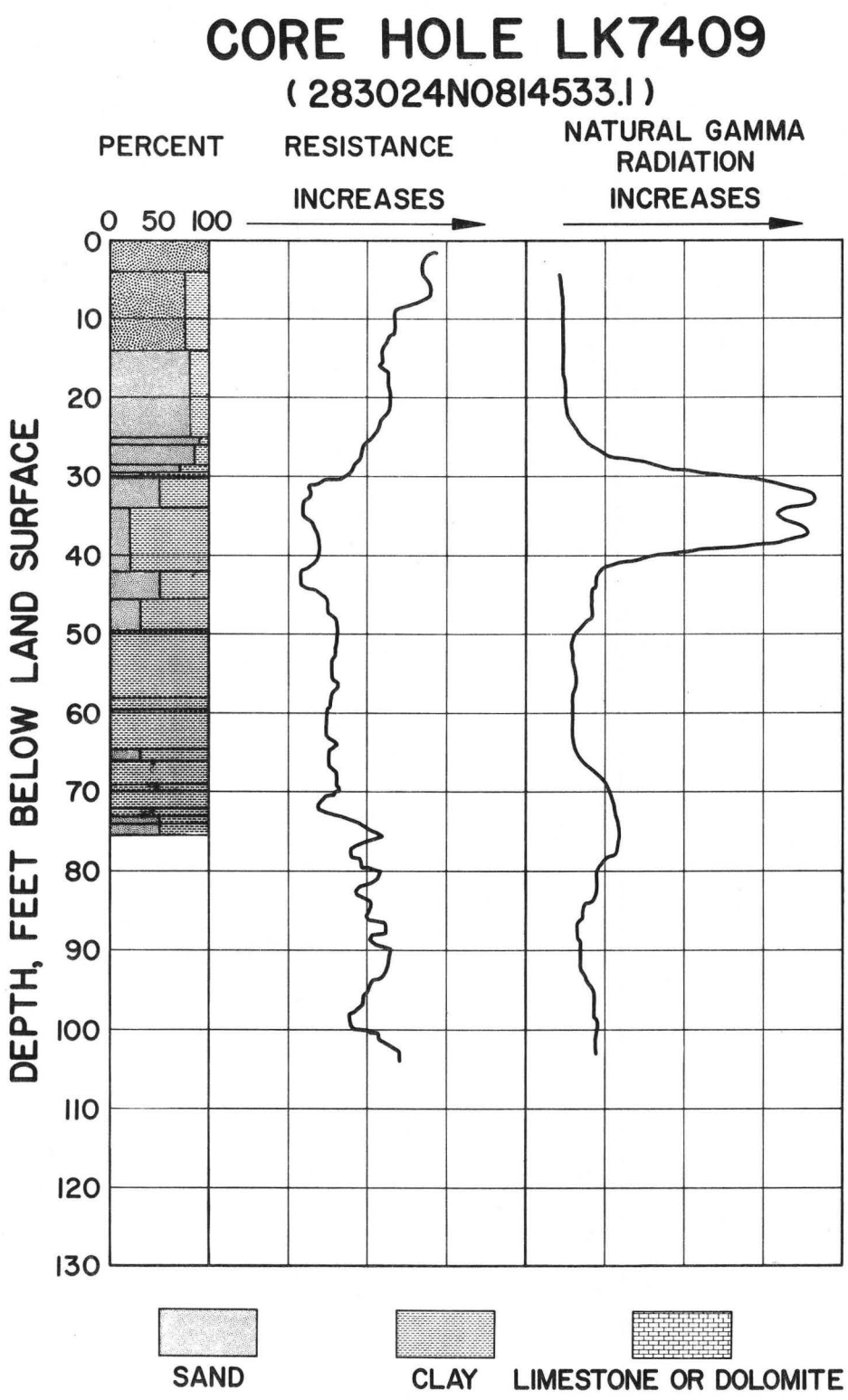


LK7409

Lake County 283024N0814533.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-4.0	White and light brown, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand.
4.0-14.0	75% white to light tan, clear to frosted, medium-grained, fairly well sorted, sub-angular quartz sand; 25% tan, brown, and light gray mottled, soft clay matrix.
14.0-26.0	80% white, clear to frosted, fine-to medium-grained, well sorted, sub-angular quartz sand; 20% very light brown, dark brown and white mottled, soft clay matrix; a decrease to 10% tan and white mottled, soft clay matrix in the lower 1 foot with corresponding increase in sand; trace of heavy minerals.
26.0-28.5	85% white to yellow, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular quartz sand; 15% white, very light brown to tan mottled, indurated clay matrix; trace of heavy minerals.
28.5-29.5	65% white, clear, fine-grained, fairly well sorted angular quartz sand; 30% very light gray, soft clay matrix; 5% heavy minerals; has tan and orange bands in lower 0.3 foot.
29.5-30.5	70% light gray and light brown mottled, soft clay; 30% white to yellow, clear, fine-grained, fairly well sorted angular quartz sand.
30.5-34.0	50% white, clear to frosted, fine-grained, fairly well sorted angular quartz sand; 50% medium to dark brown mottled, soft, sticky clay matrix mottled with white, soft, sticky, waxy clay; trace of heavy minerals and multicolored, medium phosphate nodules.
34.0-42.0	80% medium brown, light gray, dark brown mottled, soft clay matrix with much mottling by pure clays of the above mentioned colors; 15% white, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular quartz sand; 5% multicolored, fine to very coarse phosphate nodules and blades; trace of heavy minerals.

42.0-45.5	50% orange, tan, light brown and white mottled soft clay matrix with pockets of pure light brown clay; 45% white, clear to frosted, fine-to medium-grained, well sorted, sub-angular to sub-rounded quartz sand; 5% red to orange, fine to medium phosphate blades and nodules.
45.5-49.5	70% light gray, white and tan mottled, soft clay matrix; 25% sand as above; 5% phosphate as above. Some small white microcrystalline, indurated, porous, dolomitic limestone fragments.
49.5-58.0	99% very light gray, soft, well consolidated clay; 1% sand as 42.0-45.5 interval; trace of phosphate.
58.0-59.5	Clay as above with very light green tint; trace of phosphate, sand as 42.0-45.5 interval.
59.5-64.5	99% light gray brown tinted, soft clay; 1% sand as 52.0-45.5 interval; trace of phosphate.
64.5-66.0	70% medium bluish gray, indurated, clay matrix having pockets of sand as below in a matrix of 40% very light gray clay; 25% white, clear to frosted, fine-grained, well sorted, angular, quartz sand; 5% multi-colored, fine phosphate nodules and blades.
66.0-69.0	Same as 59.5-64.5 interval.
69.0-72.0	No sample.
72.0-73.0	Light greenish gray, indurated clay; trace of phosphate, sand as 42.0-45.5 interval.
73.0-74.0	50% sand as 42.0-45.5 interval; 50% medium bluish gray, indurated clay matrix, very thinly interbedded with very light gray indurated clay; trace of phosphate.
74.0-75.5	50% very light tan, calcareous, indurated clay matrix; 40% white, clear to frosted, fine-to medium-grained, fairly well sorted, angular to sub-rounded, quartz sand; 10% red to brown to light tan, fine to coarse phosphate nodules and blades.
75.5-104.0	No sample.


CORE HOLE LK7409
(283024N0814533.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7410

Lake County 282508N0815720.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0-1.0	White, clear to frosted, medium-to fine-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; trace of dark gray clay.
1.0-2.0	Sand as above; trace of light brown clay.
2.0-3.0	95% white to dark brown, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 5% dark brown, soft clay matrix.
3.0-5.0	Light brown, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; trace of light brown clay.
5.0-6.0	55% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 45% light brownish gray, indurated, clay matrix; trace of heavy minerals.
6.0-8.5	60% light gray and tan mottled, indurated clay matrix; 40% white, clear to frosted, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; trace of heavy minerals.
8.5-12.5	50% sand as above; 50% light gray, tan and medium brown mottled, soft, clay matrix; trace of heavy minerals.
12.5-14.0	80% white, clear, fine-grained, fairly well sorted, angular quartz sand; 20% light gray to tan, soft clay; mottled with 80% purple, soft clay containing up to 20% white sand; trace of heavy minerals.
14.0-15.0	65% sand as above; 35% tan to gray, indurated, clay matrix, banded with 1/8 to 1/2-inch purple bands; trace of heavy minerals.
15.0-16.0	70% sand as 12.5-14.0 interval; 30% tan, light gray, brownish gray and purple mottled, indurated clay matrix; trace of heavy minerals.

16.0-18.0	60% sand as 12.5-14.0 interval but fairly well sorted; 40% light to medium brownish gray, soft to indurated clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
18.0-18.5	75% dark gray, green, medium brown and tan mottled, soft, waxy clay mottled with white indurated powdery clay; 25% white, clear, fine-grained, well sorted, sub-angular quartz sand; trace of black to tan, fine phosphate nodules.
18.5-20.0	80% off-white, indurated, fairly well consolidated, calcareous clay matrix; 20% sand as above; trace of fine to medium, multicolored phosphate nodules and blades; trace of creamy, microcrystalline, indurated, porous, fossiliferous limestone fragments; contains Elphidium chipolense (Cushman).
20.0-25.0	40% off-white, indurated, fairly well consolidated clay matrix; 30% sand as 18.0-18.5 interval; 30% off-white microcrystalline, indurated, porous, fossiliferous limestone fragments; trace of phosphate.
25.0-27.0	80% light tan, fine to coarse grained, indurated, porous, sandy limestone; 10% white, soft clay matrix; 10% white to clear, fine-to medium-grained, well sorted, angular quartz sand; trace of brown to black, fine to coarse phosphate nodules.
27.0-29.0	90% very light gray, indurated clay matrix mottled with light greenish gray clay; 10% light tan, clear, fine-grained, well sorted, angular quartz sand; trace of foraminifera.
29.0-31.0	95% bluish gray and brownish green mottled, indurated, waxy clay; 5% sand as above; minor white clay mottling.
31.0-33.0	Very thinly (1/16 to 1-inch) interbedded light greenish gray, soft, waxy, pure clay and very light gray, soft clay with trace of sand.
33.0-34.0	70% tan to light greenish gray mottled, soft, crumbly, poorly consolidated, calcareous clay matrix; 20% light tan, coarse grained, limestone fragments; 10% white, clear, fairly well sorted, angular, fine-grained quartz sand; trace of brown, coarse to fine phosphate nodules.

34.0-45.0	80% very pale greenish gray and white mottled, soft clay matrix; 20% off-white to very light gray, microcrystalline, indurated, porous, slightly sandy, fossiliferous limestone fragments.

Rocks of Eocene Age

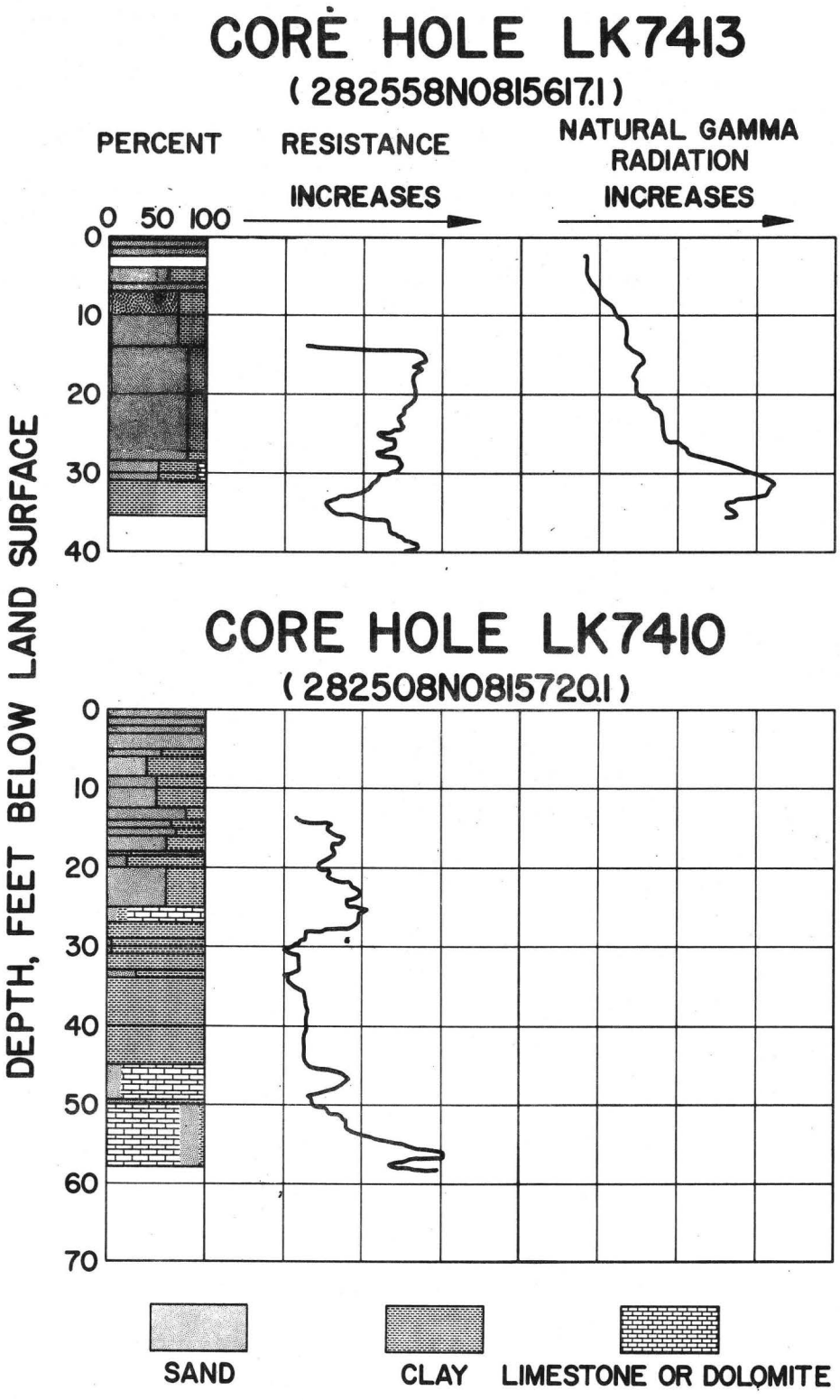
45.0-49.0	85% off-white to very light greenish gray, microcrystalline, hard, porous limestone fragments with some sparry calcite replacement; 10% clear, medium- to fine-grained, fairly well sorted sand; 5% black to brown, coarse to medium phosphate nodules; contains Lepidocyclina ocalana floridana (Cushman).
49.0-50.0	55% medium brown, soft, calcareous clay; 40% fine to medium grained sand mottled with white, soft, poorly consolidated, calcareous clay; 5% limestone fragments as above.
50.0-59.0	75% tan to light gray, fine to coarse, shell fragments and foraminifera; 20% clear, fine-to medium-grained, fairly well sorted quartz sand; 5% white, soft, unconsolidated, calcareous clay.

LK7413

Lake County 282558N0815617.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0-0.5	70% black, soft, unconsolidated, highly organic clay; 30% white, clear, fine-grained, fairly well sorted, sub-angular, quartz sand with scattered medium grained sand.
0.5-1.5	Brown and white, fine-grained, well sorted, sub-rounded quartz sand with scattered medium grained sand and just enough brown clay to bind.
1.5-2.5	White, clear, fine-grained, poorly sorted, sub-angular quartz sand; just enough light tan clay to bind; abundant medium-grained sand; trace of very fine phosphate.
2.5-4.0	No sample.
4.0-6.0	50% white, clear, very fine-grained, fairly well sorted, sub-angular quartz sand; 40% tan, soft, clay matrix; 10% medium grained, white, clear sub-rounded sand.
6.0-7.0	95% white, clear, fine-grained, fairly well sorted, sub-angular quartz sand; 5% black to brown, very fine phosphate.
7.0-10.0	70% white, clear, medium-grained, sub-rounded, fairly well sorted quartz sand; 30% gray to tan clay matrix.
10.0-14.0	70% white, clear, very fine-to fine-grained, fairly well sorted, sub-angular quartz sand; 30% tan to light gray, well consolidated clay matrix; trace of black, very fine phosphate.

14.0-28.4	80% light brown to white, clear, fine-grained, fairly well sorted, sub-angular quartz sand; 20% tan to light gray, indurated clay matrix; 1/4 to 1/2-inch wide bands of white, clear, fine-grained, fairly well sorted sand scattered throughout; 3-inch wide band of white, clear, fine-grained, well sorted, sub-angular, quartz sand at 21.4 feet; 6-inch wide band of white,clear, fine grained, fairly well sorted sub-angular, quartz sand at 27.5 feet; abundant medium grained sand; trace of black to brown fine to very fine phosphate.
	Rocks of Miocene Age
28.4-29.6	60% white to tan, clear, fine-grained, fairly well sorted sub-angular quartz sand; 40% light gray to tan, soft clay matrix; abundant medium-grained sand; trace of black to brown, very fine phosphate.
29.6-31.0	50% white, clear, fine-grained, fairly well sorted sub-angular quartz sand; 40% light greenish gray and tan mottled, soft clay matrix; 10% cream colored, small limestone fragments; trace of black to brown, fine phosphate and medium-grained sand.
31.0-35-5	White to tan, indurated, very well consolidated fossiliferous clay; some replacement of fossiliferous material by light gray chert.
	Rocks of Eocene Age(?)
35.5-40.0	No sample. Lost circulation at 34.4 feet; top of interval based on geophysical logs.


CORE HOLE LK7413
(282558N0815617.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0
10
20
30
40
CORE HOLE LK7410
(282508N0815720.1)
0
10
20
30
40
50
60
70
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7414

Lake County 282726N0815616.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	Light brown and light gray, clear to stained, fine- to medium-grained, sub-angular to sub-rounded sand with just enough light gray clay to bind the sand loosely.
1.0-4.0	80% tan, clear to stained, fine-to medium-grained, angular to sub-rounded sand; 20% light brown and tan, indurated clay matrix; trace of heavy minerals and lignite.
4.0-6.5	65% white, clear to frosted, fine-grained, fairly well sorted, angular sand; 30% dull yellow, soft, clay matrix with minor light brown and white mottling; 5% medium-grained sand.
6.5-7.5	50% sand as above; 50% white, indurated, clay matrix with minor light brown mottling; trace of heavy minerals.
7.5-9.0	55% white, yellow and orange, clear to stained, fine-grained, fairly well sorted, angular sand; 40% light brown, tan and white banded, soft clay matrix; 5% medium-grained sand; clay bands are 1/32 to 1/4-wide.
9.0-12.0	50% white, frosted, fine-to medium-grained, angular to sub-rounded sand; 50% white and light brown mottled, soft clay matrix.
12.0-12.5	55% white, soft clay matrix; 40% white, frosted, medium-grained, fairly well sorted, sub-rounded sand; 5% coarse-to very coarse-grained sand.
12.5-13.5	50% white, yellow and orange, clear to stained, fine-grained, angular, well sorted sand; 50% medium brown, indurated clay matrix with minor white banding.
13.5-15.5	60% white, clear to frosted, fine-grained, angular, well sorted sand; 40% white, indurated clay matrix.

15.5-18.2	60% sand as above; 40% white and light brown mottled, indurated clay matrix.
18.2-20.5	60% white, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 40% white and medium brown mottled, indurated clay matrix.

Rocks of Miocene Age

20.5-21.5	60% white, light brown, indurated clay matrix; 40% white, clear to frosted, fine-grained, angular, well sorted sand; trace of heavy minerals.
21.5-23.5	80% medium brown and very pale green banded, indurated, waxy clay matrix with 1/16 to 1/2-inch bands of sand as below; 20% white, clear, fine-to medium-grained, angular to rounded sand; trace of white, fine to medium phosphate nodules.
23.5-25.0	70% medium to dark brown, very pale green and white mottled, indurated clay matrix; 30% sand as above; trace of phosphate and black organic material.
25.0-26.0	75% white, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 25% white, indurated, crumbly clay matrix; trace of heavy minerals and multicolored, coarse to very coarse phosphate nodules.
26.0-27.0	80% light brown, very pale green and white banded, soft, waxy clay matrix with minor black and dark brown streaking; 20% light gray, frosted, medium-to fine-grained sub-angular to rounded sand; trace of heavy minerals and phosphate.
27.0-28.0	60% tan and white banded, indurated clay matrix with minor black and dark brown streaking; 40% sand as above; trace of phosphate.
28.0-28.7	60% white, indurated, crumbly clay matrix; 40% sand as 26.0-27.0 interval; trace of medium phosphate nodules.
28.7-30.5	60% white, light brown and very pale green mottled, indurated clay matrix, with minor black and brown streaking; 40% sand as 26.0-27.0 interval; trace of phosphate.

30.5-31.5	60% white, medium and light brown banded, indurated clay matrix; 40% sand as 26.0-27.0 interval; trace of phosphate.
31.5-32.5	70% light gray, clear to frosted, fine-to medium-grained, sub-anglular sand; 30% tan, white and light brown banded, indurated crumbly clay matrix; trace of heavy minerals and medium to coarse tan phosphate nodules.
32.5-34.5	70% light green, white and medium brown mottled, soft clay matrix; 20% sand as above; 10% white, medium to very coarse phosphate nodules; trace of heavy minerals.
34.5-36.0	99% medium green, soft waxy clay matrix with medium to very dark brown streaking, 1% white, clear, fine-grained, angular, well sorted sand.
36.0-36.7	50% light gray, clear to frosted, medium-grained, fairly well sorted, sub-angular to rounded sand; 40% medium greenish brown, soft clay matrix with banding by pure, medium green soft, waxy clay; 10% white to very light tan, medium to very coarse phosphate nodules; trace of heavy minerals.
36.7-39.7	65% light gray, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 35% medium to light tan, soft, crumbly clay matrix; trace of medium to very coarse, very light tan to white phosphate nodules.
39.7-40.5	60% white and very light green mottled, indurated, fairly well consolidated clay matrix; 40% white, clear to frosted, fine-grained, angular, fairly well sorted sand; trace of heavy minerals and off-white medium to coarse phosphate nodules.
40.5-41.5	50% sand as above; 45% very pale green, soft clay matrix with minor light brown mottling; 5% medium to very coarse, tan and white phosphate nodules; trace of heavy minerals.
41.5-46.2	75% white, clear to frosted, fine-grained, angular, fairly well sorted sand; 25% very pale green and dull yellow banded, soft crumbly clay matrix with minor black and very dark brown organic material; trace of medium to very fine off-white phosphate nodules.

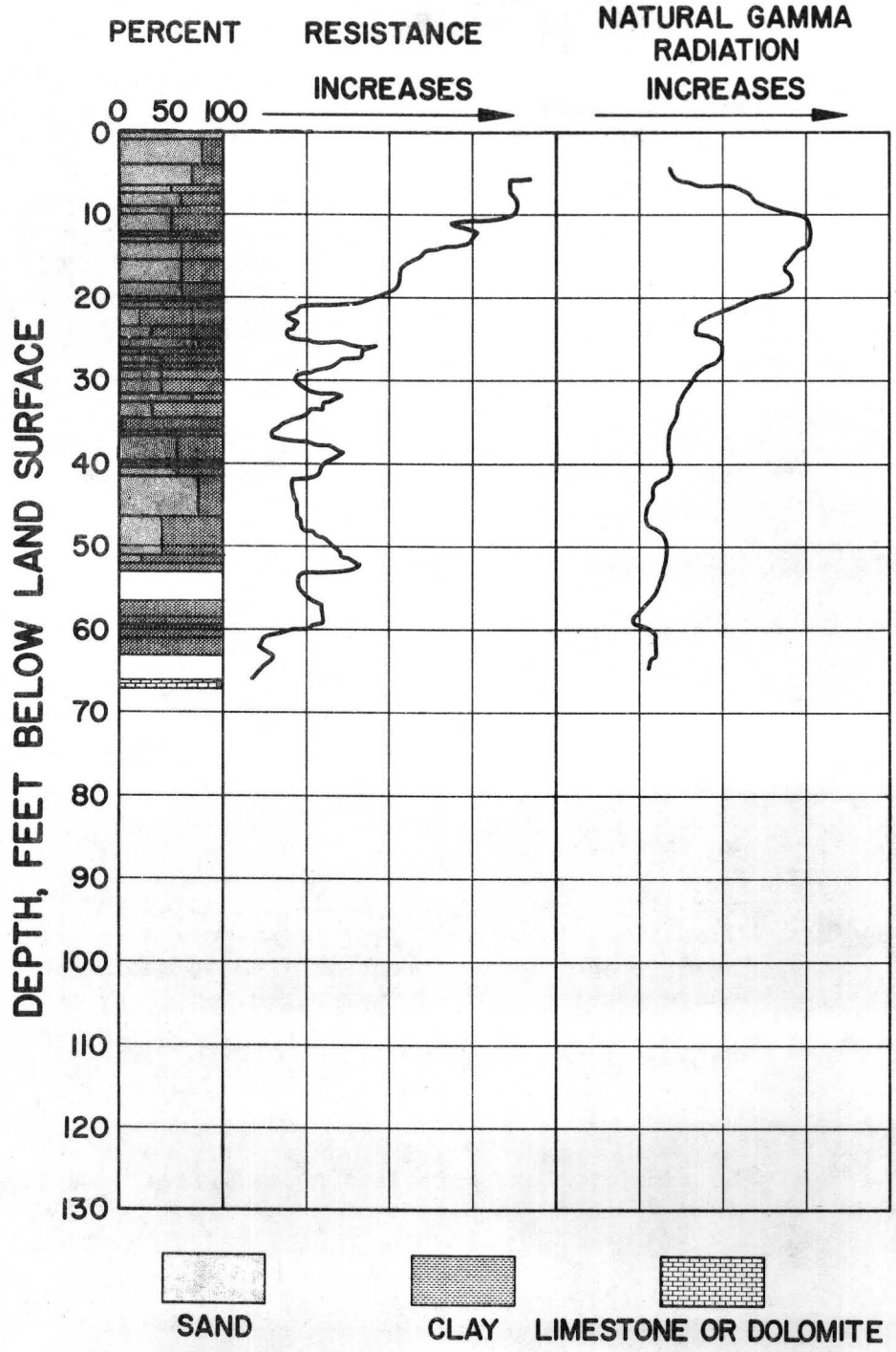
46.2-51.0	60% white and light brown mottled, indurated, crumbly clay matrix; 40% white, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; trace of tan, fine to very coarse phosphate nodules.
51.0-52.0	80% off-white, hard, slightly calcareous, well consolidated siltstone; 20% white, fine-grained, sand; trace of tan, fine phosphate nodules.
52.0-53.0	Very light gray, soft clay; trace of tan, fine to coarse, phosphate nodules and white, fine-grained sand.
53.0-56.5	No sample.
56.5-58.5	Very light gray, hard, platy, silty clay.
58.5-59.5	Very light greenish gray, hard, well consolidated clay; trace of light brown and tan, fine to medium phosphate nodules.
59.5-60.0	Light greenish gray, hard, platy clay.
60.0-61.0	Medium green, hard, platy clay.
61.0-63.0	70% very light gray, indurated, crumbly, calcareous clay; 30% coarse to very coarse fragments of pisolitic silica; trace of tan to brown, medium phosphate nodules, medium-grained sand.
63.0-66.0	No sample.
66.0-67.0	95% light gray, microcrystalline, hard, fairly tight limestone; 5% white, clear, fine-to medium-grained sand; trace of brown to tan, fine to medium phosphate nodules. Highly weathered.
67.0-77.0	No sample.

Rocks of Eocene Age(?)

77.0-83.7	No sample. Lost circulation at 77 feet. Cavity from 77 to 80 feet.

CORE HOLE LK7414

(282726N0815616.1)

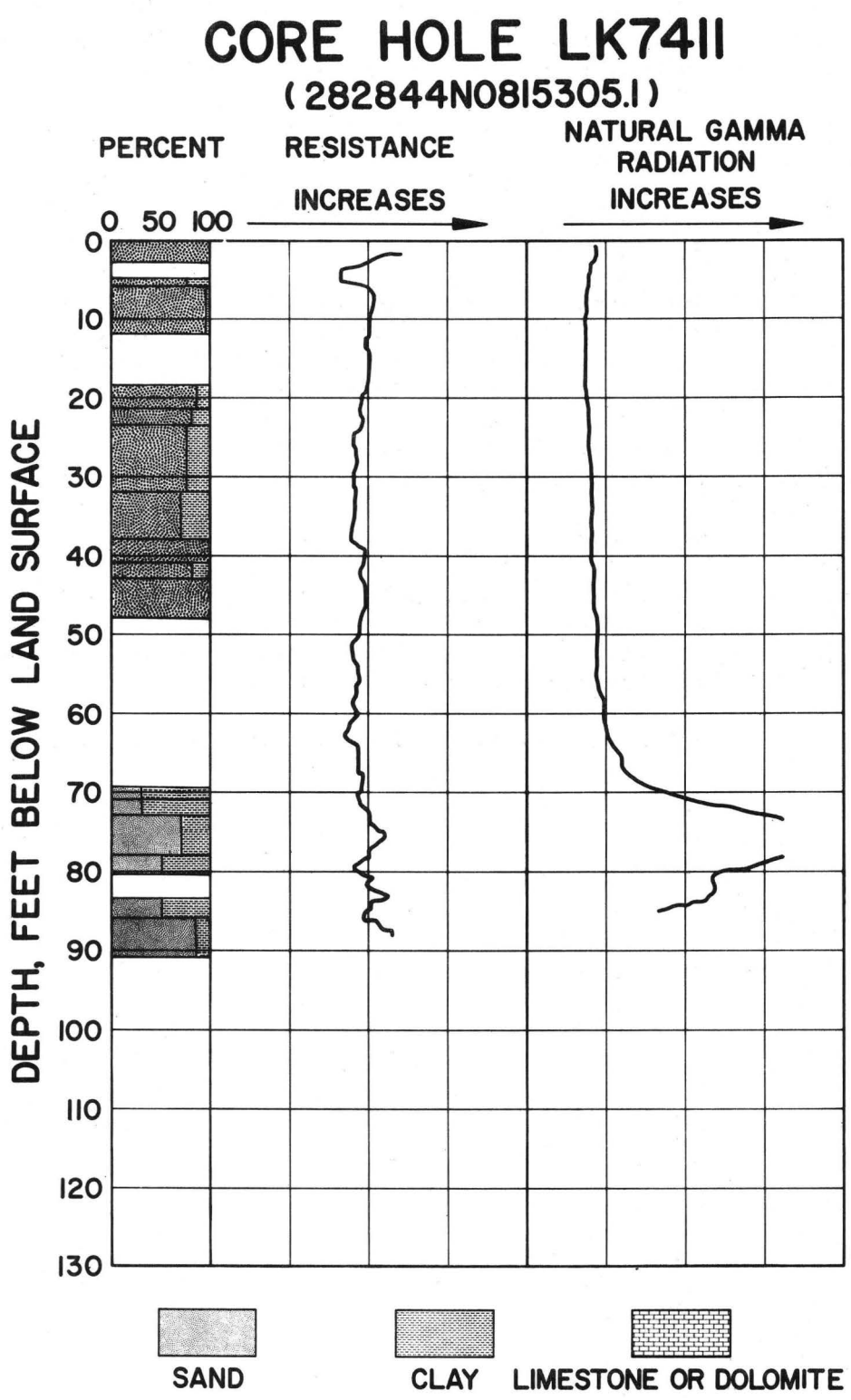


LK7411

Lake County 282844N0815305.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-3.0	White to light brown, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; trace of light gray to brown clay. Not enough clay to bind the sand.
3.0-5.0	No sample.
5.0-6.0	75% white, clear, medium-grained, fairly well sorted sub-rounded quartz sand; 25% brownish gray, soft clay with dull orange bands.
6.0-12.0	95% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 5% light brownish gray and white mottled clay matrix.
12.0-18.5	No sample.
18.5-21.5	85% white, clear to frosted, medium-grained, poorly sorted, sub-angular quartz sand; 15% brownish gray and yellow mottled, soft clay matrix.
21.5-23.5	80% sand as above; 20% medium brown, soft clay matrix.
23.5-32.0	75% sand as 18.5-21.5 interval; 25% light brown and light tan mottled, soft clay matrix.
32.0-38.0	70% sand as 18.5-21.5 interval; 30% brown, soft clay matrix; trace of heavy minerals.
38.0-41.0	Sand as 18.5-21.5 interval; just enough clay to bind sand.
41.0-43.0	75% sand as 18.5-21.5 interval; 25% medium brown to tan, soft clay matrix.
43.0-48.0	95% white to yellow, clear to frosted, coarse-grained, fairly well sorted, sub-rounded quartz sand; 5% tan, soft clay matrix; trace of heavy minerals.
48.0-69.5	No sample.

69.5-73.0	70% dark gray and dark brownish gray banded, soft clay matrix, 30% white to light gray, clear, well sorted, angular, fine-grained quartz sand.
	Rocks of Miocene Age
73.0-78.0	70% light gray, clear, fine-grained, fairly well sorted, angular quartz sand; 30% brownish gray, soft clay matrix.
78.0-80.5	50% white to light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 50% dark gray to dark brownish gray, soft clay matrix. Entire interval is irregularly inter-bedded with thin 1/8 to 1/4-inch beds of clay and sand. Abundant coarse black phosphate, trace of white, soft gypsum.
80.5-83.5	No sample.
83.5-86.0	50% white to light gray, clear, fine-grained, fairly well sorted, sub-angular to angular quartz sand; 50% very dark gray to very dark brownish gray mottled and banded, soft clay matrix.
86.0-96.0	85% sand as above; 15% dark brown, soft clay.


CORE HOLE LK7411
(282844N0815305.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7415

Lake County 282722N0814844.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-3.0	90% tan, medium-grained, fairly well sorted, sub-rounded quartz sand; 10% tan clay; trace of lignite.
3.0-5.5	70% white with light orange tint, medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 30% tan to light orange to white, mottled soft clay.
5.5-12.0	70% light tan, medium-grained, fairly well sorted, sub-rounded quartz sand; 30% tan to light orange to white mottled, soft clay.
12.0-18.0	80% white, frosted, coarse-grained, rounded, fairly well sorted quartz sand; 20% tan to light orange to white mottled soft clay.
18.0-23.0	65% sand as above; 35% orange and tan mottled, soft clay; a few very small quartz pebbles.
23.0-30.0	50% white, frosted, fine-grained, poorly sorted, sub-rounded quartz sand; 50% white soft clay matrix; abundant medium to coarse sand grains.
30.0-34.0	75% white, clear to frosted, medium grained, poorly sorted, sub-rounded quartz sand; 25% white, soft clay matrix; trace of muscovite.
34.0-38.0	65% white, clear, very fine-grained, well sorted, sub-angular quartz sand; 30% white, soft clay matrix; 5% fine muscovite flakes; abundant white, frosted, coarse grained, rounded quartz sand.
38.0-42.5	70% white, clear, very fine-grained, very well sorted, angular quartz sand; 25% white, soft clay matrix; 5% fine muscovite flakes.
42.5-50.0	80% white, clear, very fine-grained, very well sorted, angular quartz sand; 20% white, soft clay matrix; trace of fine muscovite flakes.

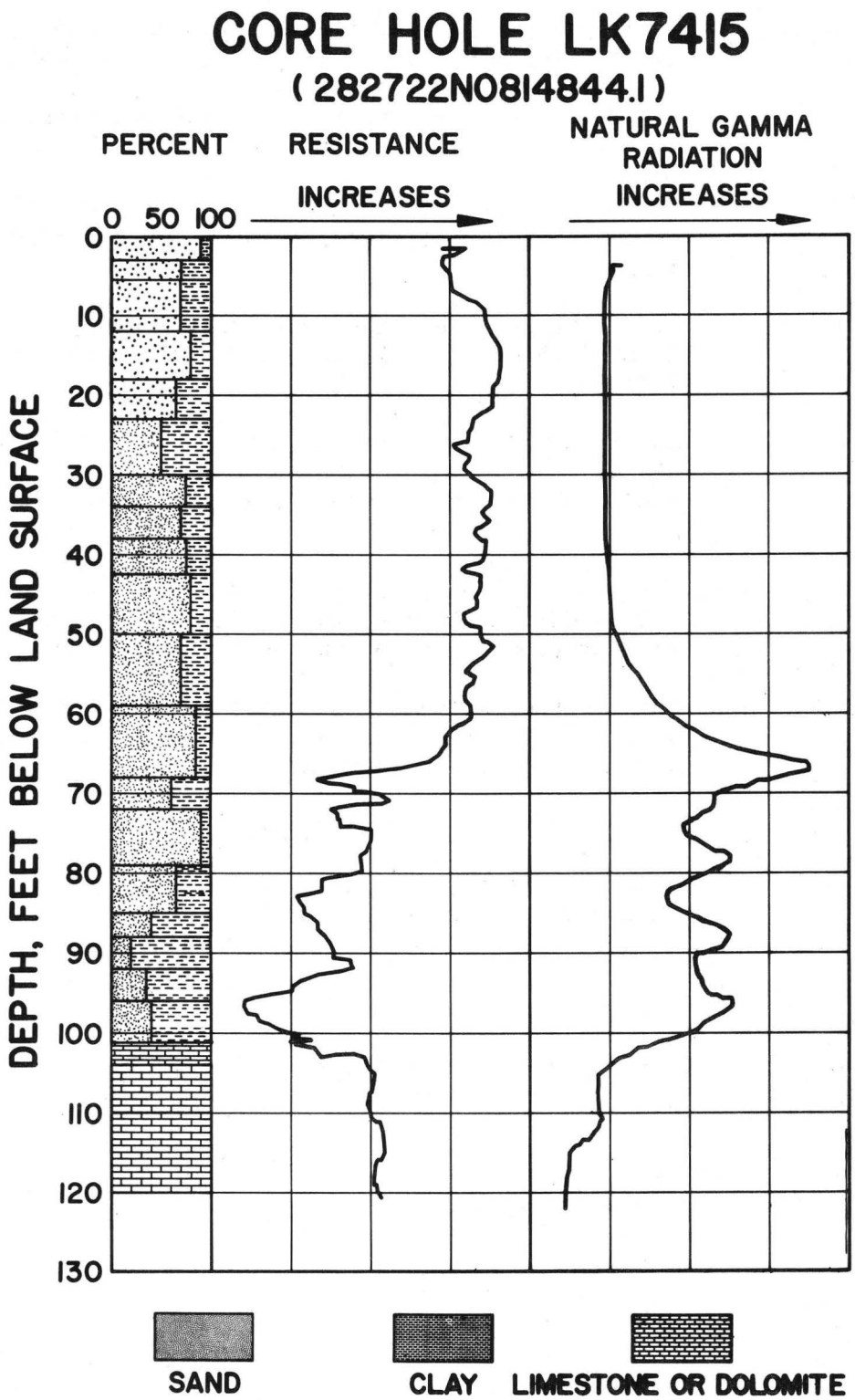
Rocks of Miocene Age

50.0-59.0	70% white, clear, very fine-grained, well sorted, angular quartz sand with abundant clear, medium-grained, rounded sand; 30% white, soft clay matrix; trace of very fine, black phosphate.
59.0-68.0	85% sand as above; 15% light gray, soft clay matrix; trace of marcasite; trace of fine black phosphate.
68.0-69.0	70% light gray, fine-grained, fairly well sorted, sub-angular quartz sand; 30% light brownish gray to dark gray mottled and banded, soft, clay; trace of lignite and marcasite; trace of white, soft, very fine crystalline gypsum.
69.0-72.0	60% light gray, fine-grained, well sorted, sub-angular quartz sand; 40% light to medium gray, mottled and subtly banded soft gray clay.
72.0-79.0	90% white, clear, fine-grained, well sorted, sub-angular quartz sand; 10% light gray, soft clay matrix.
79.0-80.0	65% white, clear, medium-grained, fairly well sorted, sub-rounded quartz sand; 35% light gray, indurated clay with a few streaks of pure clay in matrix; abundant coarse to fine, light gray to black phosphate; trace of pisolitic silica.
80.0-82.0	65% white, clear, fine-grained, poorly sorted, sub-angular quartz sand; 35% light gray to creamy to tan mottled, soft clay matrix; phosphatic fossil material and large and small, black to very light gray phosphate nodules.
82.0-83.0	70% white, clear, very fine-grained, well sorted, angular quartz sand; 30% creamy, soft clay matrix; abundant very fine, green glauconite; trace very light gray, small phosphate nodules.
83.0-85.0	35% light tan, soft clay matrix; 35% large to small, brown to black phosphate nodules and phosphatic fossil material; 30% white, fine-grained, well sorted, sub-angular quartz sand.

85.0-88.0	60% off-white to very light gray, indurated clay matrix with light green to gray to cream mottling; 20% sand as above; 20% phosphate and phosphatic fossil material as above. Interval has bands of pure clay throughout.
88.0-90.0	80% very light gray, soft clay matrix; 10% sand as 83.0-85.0 interval; 10% phosphate as 85.0-88.0 interval.
90.0-92.0	80% light greenish gray, soft clay matrix; 10% sand as 83.0-35.0 interval; 10% phosphate as 85.0-88.0 interval.
92.0-95.0	65% light gray, indurated, clay matrix; 25% white, clear, fine grained, well sorted, sub-angular quartz sand; 10% fine to medium, brown to black, phosphate nodules.
95.0-96.0	70% light to dark greenish gray to cream mottled, indurated clay matrix; 20% sand as above; 10% fine to coarse, black to brown phosphate nodules.
96.0-101.0	60% light greenish gray, indurated clay matrix; 20% sand as 92.0-95.0 interval; 20% fine to coarse, brown to black phosphate nodules.

Rocks of Eocene Age

101.0-121.7	White limestone, soft to hard; drilling tool dropped into a 2-foot cavity at 101.0 feet.


CORE HOLE LK7415
(282722N0814844.1)
PERCENT
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0 50 100
0
10
20
30
40
50
60
70
80
90
100
110
120
130
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7416

Lake County 282529N0815135.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-3.2	80% white to light gray to light brown, clear to stained, medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 10% coarse to very coarse-grained sand; 10% dark gray, soft clay matrix.
3.2-6.0	No sample.
6.0-9.0	60% very light tan, stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 30% light brown, to very light tan mottled soft clay; 10% coarse to very coarse-grained sand.
9.0-12.0	No sample.
12.0-12.5	80% white with light pink cast, clear to frosted, medium to coarse-grained, poorly sorted, sub-rounded quartz sand; 20% very light tan with pink cast, soft clay matrix.
12.5-13.5	90% white with slight pink cast, clear to frosted, medium to coarse-grained, poorly sorted sub-rounded quartz sand; 10% light brown, white and pink mottled, soft clay matrix.
13.5-16.0	75% white, frosted, medium-to coarse-grained, fairly well sorted, sub-rounded quartz sand; 25% light tan, soft clay matrix; trace of heavy minerals.
16.0-19.0	65% sand as above; 35% dull yellow and tan mottled, indurated to soft clay matrix; trace of heavy minerals.
19.0-21.0	80% off-white, frosted, medium grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 20% light tan and medium brown banded, indurated clay matrix; trace of heavy minerals.
21.0-24.0	60% white, frosted, medium-grained, poorly sorted, sub-rounded quartz sand; 40% light gray with tan cast, soft clay matrix; trace of heavy minerals.

24.0-26.0	85% white to very light brown, clear to frosted, medium-to coarse-grained, poorly sorted, sub-rounded to rounded quartz sand; 15% light tan and light brown mottled, soft clay; trace of heavy minerals.
26.0-27.0	80% white, frosted, medium-to coarse-grained, sub-rounded quartz sand; 20% light tan, light brown and dull yellow mottled, indurated clay matrix; trace of heavy minerals.
27.0-28.0	75% white to light gray, clear to frosted, medium-to coarse-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 20% very light tan, indurated clay matrix; 5% very coarse-grained sand.
28.0-30.0	50% light tan, indurated clay matrix; 45% white to light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 5% coarse and very coarse grained sand.
30.0-33.5	65% sand as above; 35% light tan, indurated, clay matrix.
33.5-43.5	65% sand as 28.0-30.0 interval; 35% off-white to very light gray, indurated clay matrix.
43.5-44.0	65% white, frosted, coarse-to medium-grained, fairly well sorted, sub-rounded quartz sand; 35% light tan, soft clay matrix.
44.0-49.0	50% white, frosted, fine-grained, silty, angular quartz sand; 40% very light gray to off-white, indurated to soft clay matrix; 10% very coarse to medium grained-sand; trace of heavy minerals. Band from 48.0-48.2 of very light tan, silty, coarse-grained sand.
49.0-54.0	60% sand as above; 40% white, indurated to soft, fairly well consolidated clay matrix; trace of heavy minerals.
54.0-55.0	70% sand as 44.0-49.0 interval; 30% very light tan, soft clay matrix; trace of heavy minerals.
55.0-55.5	Same as 54.0-55.0 but with abundant coarse to very coarse-grained quartz sand.

55.5-57.5	60% white, clear to frosted, fine-grained, fairly well sorted, angular, silty, microcrystalline quartz sand; 40% tan, soft clay matrix; trace of heavy minerals and very porous coarse-grained quartz sand.
57.5-68.0	Same as above but no very coarse or coarse-grained quartz sand.

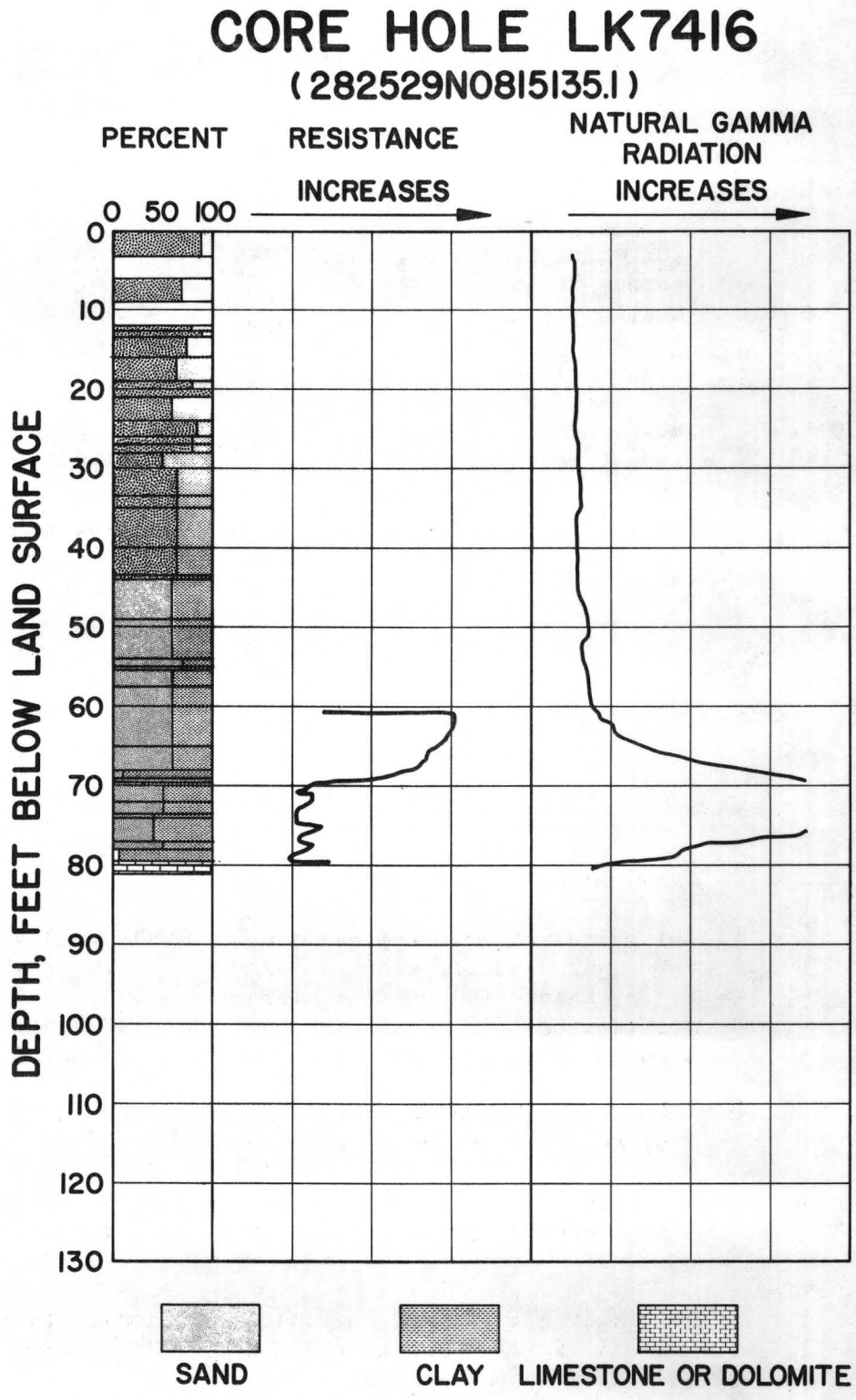
Rocks of Miocene Age

68.0-69.0	90% olive green and deep bluish green mottled, soft, sticky clay matrix; 10% white, clear, fine-to medium-grained, angular, fairly well sorted quartz sand; trace of heavy minerals.
69.0-69.5	95% sand as above; 5% light greenish brown, soft clay matrix mottled with pure brownish green, soft sticky clay..
69.5-70.0	70% very dark brown, deep olive green and cream mottled, indurated, waxy clay matrix; 30% sand as 68.0-69.0 interval.
70.0-72.0	50% sand as 68.0-69.0 interval; 50% medium grained, soft, sticky clay matrix. Clay and sand occur as 1/8 to 1/16-inch bands throughout interval.
72.0-73.5	50% sand as 68.0-69.0 interval; 50% light olive green, soft, fairly well consolidated clay matrix with minor medium bluish green mottling.
73.5-74.0	60% light gray and cream mottled, soft, crumbly clay matrix; 40% white, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; trace of pyrite.
74.0-77.0	60% light green to cream, off-white, light brown and light gray mottled, soft, crumbly clay matrix; 40% white, clear to frosted, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; trace of heavy minerals; trace of black to brown to tan, fine to very coarse phosphate nodules and blades.
77.0-78.0	50% white, clear to frosted, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; 50% deep bluish green, soft, waxy clay occurring in pockets throughout sand; trace of heavy minerals.

78.0-79.5	95% varved, light olive green and light to dark brown, soft, waxy, clay matrix mottled with white to cream, soft clay; 5% white, clear to frosted, fine-to medium-grained, well sorted, angular, sub-rounded quartz sand.

Rocks of Eocene Age

79.5-80.0	60% white to yellow, microcrystalline, indurated, porous limestone matrix with 40% large foraminifera. Chalky and highly weathered; contains Lepidocyclina ocalana floridana (Cushman); Reussella sculptilis (Cushman) and Sphaerogypsina globula (Reuss).
80.0-81.0	80% creamy, microcrystalline, indurated, porous limestone matrix with 20% large foraminifera; chalky and highly weathered.


CORE HOLE LK7416
(282529N0815135.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7417

Lake County 282314N0815112.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	White to light brown, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand; trace of light brown to light green clay.
1.0-3.0	Sand as above; trace of brown clay.
3.0-11.5	90% sand as 0.0-1.0 interval; 10% very dark brown and light brown mottled, soft clay matrix.
11.5-12.5	90% sand as 0.0-1.0 interval; 10% dark gray to tan to light brown mottled, indurated clay matrix.
12.5-13.5	90% sand as 0.0-1.0 interval; 10% light gray and dark brown mottled, soft clay matrix.
13.5-18.5	60% sand as 0.0-1.0 interval; 40% medium to dark brown indurated clay matrix.
18.5-19.5	55% light tan to white, medium-grained, clear to frosted, fairly well sorted, sub-rounded quartz sand; 45% pinkish tan, indurated clay; trace of heavy minerals.
19.5-22.0	60% white, clear, medium-grained, fairly well sorted, sub-angular quartz sand; 40% medium to very dark brown, banded and mottled, indurated, waxy clay matrix with some very irregular, thin 1/32-inch streaks of organic material.
22.0-22.5	60% sand as above but grains are sub-rounded; 40% clay as above but no organic material.
22.5-23.5	80% light tan, stained, medium-grained, poorly sorted, sub-rounded quartz sand; 20% light tan, indurated clay.
23.5-28.5	65% light gray, clear to frosted, medium-to fine-grained, fairly well sorted, sub-angular quartz sand; 35% light brown, indurated clay matrix.

28.5-29.5	70% sand as above, but is light tan; 30% light tan, indurated, well consolidated clay; trace of heavy minerals.
29.5-30.5	50% light tan, clear to frosted, medium-grained, well sorted, sub-angular to sub-rounded quartz sand; 50% very light to light tan, indurated clay matrix; trace of heavy minerals.
30.5-31.0	70% light gray, indurated clay with small (1/2-inch diameter) pockets of black, carbonaceous material; 30% sand as above.
31.0-32.0	75% very light tan, indurated clay matrix; 25% white to very light tan, clear to frosted, fine-to medium-grained, fairly well sorted, sub-rounded quartz sand.
32.0-32.5	70% white and light brown, clear to stained, medium-grained, fairly well sorted, rounded to sub-rounded quartz sand; 30% medium brown, indurated, well consolidated clay matrix.
32.5-34.0	60% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 40% medium brown, indurated clay.
34.0-35.0	80% sand as above; 20% light brown, indurated clay.
35.0-36.0	75% light to medium brown mottled, indurated clay matrix; 25% sand as 32.5-34.0 interval.
36.0-37.0	80% sand as 32.5-34.0 interval; 20% light to medium brown mottled, indurated clay; entire interval banded with dark gray, soft clay containing up to 30% sand.
37.0-39.0	75% dark gray, dark brown and light brown mottled and banded, soft, waxy clay; 25% sand as 32.5-34.0 interval.
39.0-40.0	60% sand as 32.5-34.0 interval; 40% dark gray, light brown and dark brown mottled and banded, soft clay.
40.0-41.0	80% sand as 32.5-34.0 interval; 20% light to medium brown mottled, indurated clay matrix; trace of heavy minerals.
41.0-45.0	70% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 30% light and dark brown and medium brown, banded, indurated clay matrix.

45.0-51.0	60% sand as above; 40% light to medium brown, banded, indurated clay matrix; bands contain medium brown, soft, waxy clay;
51.0-56.0	55% sand as 41.0-45.0 interval; 45% light brown, soft clay matrix with minor banding by medium brown clay; trace of heavy minerals.
56.0-64.0	90% sand as 41.0-45.0 interval; 10% light to medium brown to tan mottled, soft to indurated clay matrix; trace of heavy minerals.
64.0-72.0	90% white, clear to frosted, medium-grained, sub-rounded quartz sand; 10% light brownish gray, indurated clay matrix; trace of heavy minerals.
72.0-80.0	Sand as above with just enough light brown clay to bind the sand very loosely; trace of heavy minerals.
80.0-83.0	Sand as 64.0-72.0 interval; trace of pyrite and light brown clay.
83.0-84.0	70% sand as 64.0-72.0 interval; 30% light gray and light brown mottled, indurated clay matrix; trace of heavy minerals and pyrite.
84.0-85.5	90% sand as 64.0-72.0 interval; 10% light gray, soft clay matrix; trace of heavy minerals and pyrite.
85.5-94.5	No sample.
94.5-100.5	Light brown to white, clear to stained, fine-to medium-grained, angular to sub-rounded quartz sand; just enough light brownish gray, soft clay to bind sand very loosely; trace of organic matter.
100.5-107.5	75% light brownish gray to white, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 25% very dark brownish gray, dark gray and light brown mottled, soft to indurated clay matrix; trace of black organic material.
107.5-110.0	60% very dark gray, soft clay matrix; 40% white to light gray, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; trace of pyrite.

110.0-113.0	95% black and dark brown mottled, soft, waxy clay matrix; 5% sand as above; trace of pyrite.
113.0-115.5	Clay as above; trace of sand.
115.5-129.0	80% light brown, stained, medium-to fine-grained, fairly well sorted, angular to sub-rounded, silty quartz sand; 20% light brown, soft clay matrix mottled with black, indurated to soft, well consolidated clay containing 60% sand; trace of white crystals of radiating gypsum.
129.0-133.0	60% white, clear to frosted, medium-grained, well sorted, sub-angular to sub-rounded quartz sand; 40% light brown, soft, indurated clay matrix; trace of heavy minerals, pyrite and black organic material.
133.0-140.0	70% white to light brown, clear to stained, medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 30% light brown, indurated to soft clay matrix with minor medium brown mottling; trace of pyrite, heavy minerals and white, radiating crystals of gypsum.

Rocks of Miocene Age

140.0-142.0	60% sand as above; 40% light and medium brown mottled, soft clay matrix; trace of pyrite and gypsum.
142.0-146.5	55% light gray, clear to frosted, medium-grained, fairly well sorted, rounded to sub-rounded quartz sand; 45% black, soft, poorly consolidated clay matrix; trace of gypsum, black organic material, marcasite, silicified limestone fragments and coarse to very coarse, black phosphate nodules.

Rocks of Oligocene Age

146.5-160.0	95% light gray, microcrystalline, hard, porous, highly weathered limestone matrix with abundant fossil material. 5% medium-grained, clear, sub-angular to sub-rounded quartz sand; some sparry calcite replacement of limestone; at 155 feet turns to tan and light green mottled, soft, highly weathered fossiliferous limestone mottled with black soft clay.

LK7431

Lake County 282157N0815258.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	95% white to light brown, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 5% dark gray to dark brown, soft clay matrix; trace of heavy minerals and black, fine to medium phosphate.
1.0-1.5	Very light tan, clear to frosted, medium-to fine-grained, sub-angular to sub-rounded quartz sand.
1.5-2.0	Sand as 0.0-1.0 interval with just enough dark brown, soft clay to bind sand very loosely.
2.0-4.0	White to brown, loose, medium-grained sand.
4.0-8.5	80% white to light tan, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 20% medium to light brown, soft, fairly well consolidated clay matrix; trace of heavy minerals.
8.5-19.0	95% white, clear to frosted, medium grained, fairly well sorted, sub-rounded quartz sand; 5% light brown to gray, soft clay matrix; contains a few thin (1/4-inch), dull yellow bands; trace of heavy minerals.
19.0-20.5	80% white, clear, fine-grained, fairly well sorted, sub-angular quartz sand; 20% medium brownish gray, soft clay matrix; trace of heavy minerals.
20.5-25.5	75% white, clear, medium-to fine-grained, fairly well sorted, sub-rounded quartz sand; 25% light brownish gray, soft clay matrix; contains a 3-inch band of white, fine grained sand at 24.9 feet; trace of heavy minerals.
25.5-28.0	60% white, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 40% buff, soft, fairly well consolidated clay matrix; trace of coarse grained sand and heavy minerals.

28.0-29.0 60% sand as above; 40% dark gray, indurated, well consolidated clay matrix; trace of heavy minerals; a few white, soft clay inclusions.

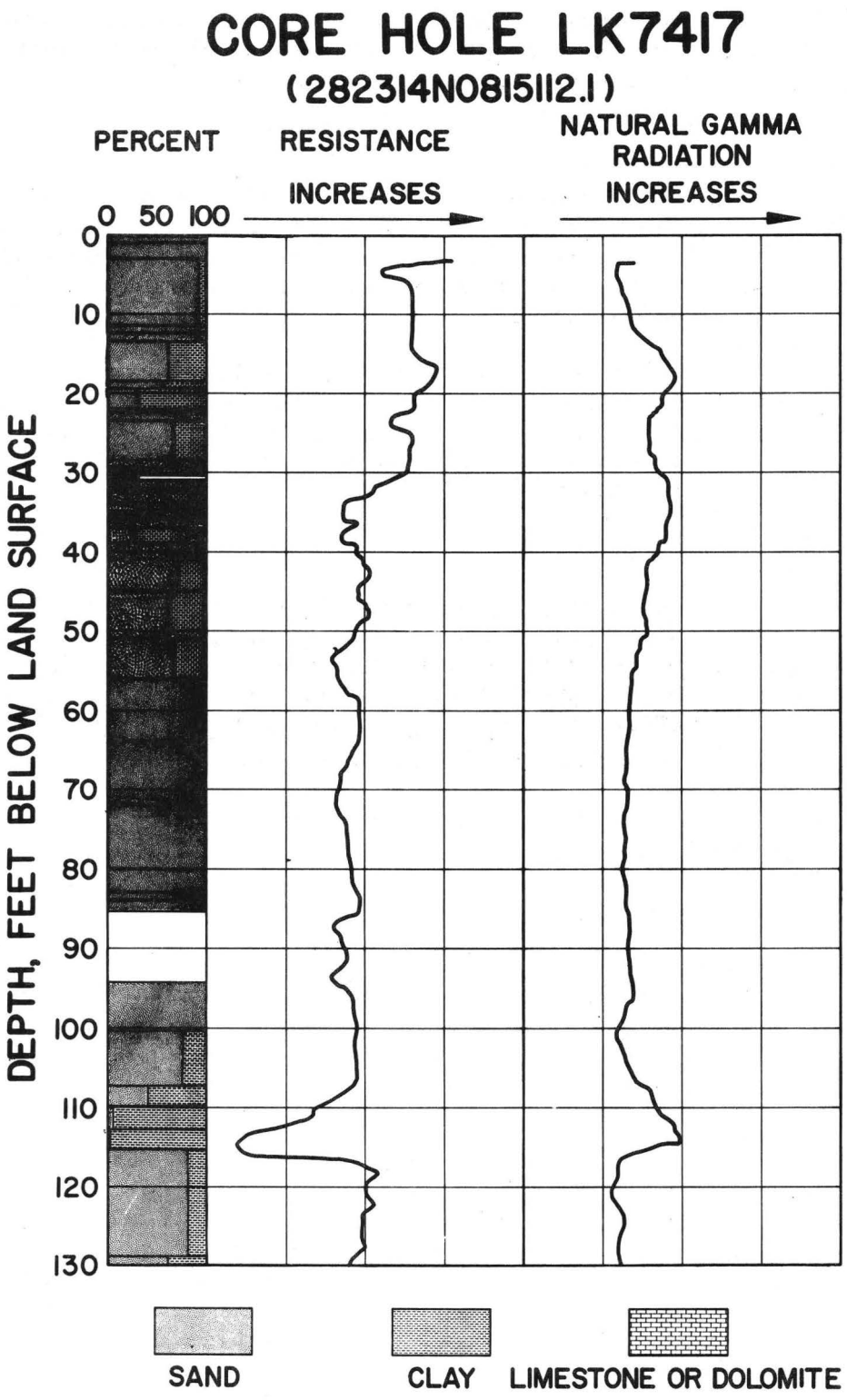
Rocks of Miocene Age

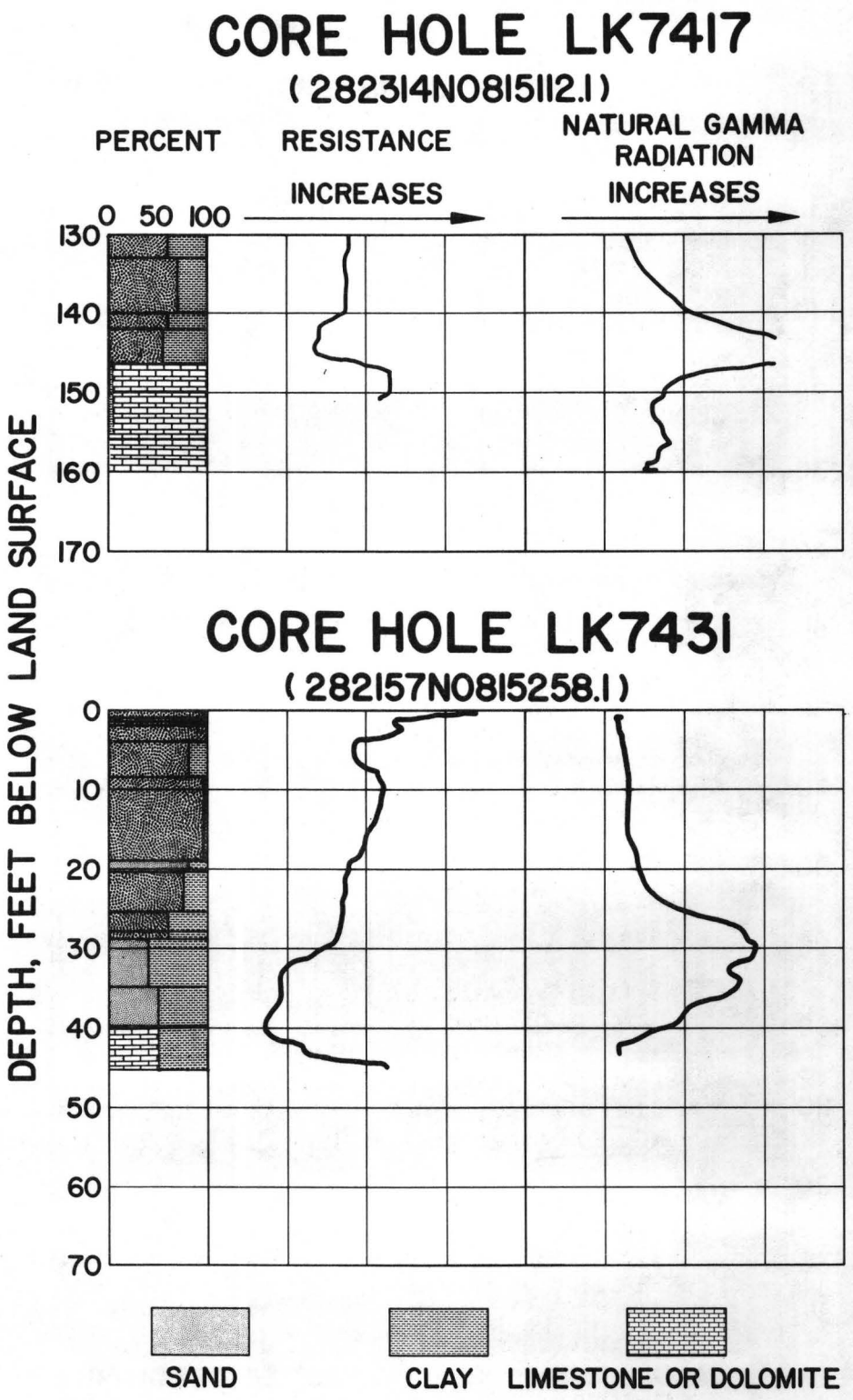
29.0-35.0 69% blue green, light brown and white mottled, soft clay matrix; 40% white, clear, fine-grained, fairly well sorted, sub-angular quartz sand; many small nodules of cream, soft, fine sandy clay; trace of heavy minerals.

35.0-40.0 50% blue green, soft clay matrix; 35% white, clear, fine grained, fairly well sorted, angular quartz sand; 10% white to light gray, pisolitic silica; 5% black to tan, phosphate and phosphatic fossil fragments.

Rocks of Eocene Age

40.0-45.0 50% cream, microcrystalline, indurated, porous, highly fossiliferous limestone; 50% cream to off-white, soft, calcareous, chalky, clay matrix; contains Sphaerogypsina globula (Reuss), Reussella sculptilis (Cushman), Lepidocyclina ocalana floridana (Cushman), and Cibicides mississippiensis ocalanus (Cushman).


CORE HOLE LK7417
(282314N0815112.1)
PERCENT
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0 50 100
0
10
20
30
40
50
60
70
80
90
100
110
120
130
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE


CORE HOLE LK7417
(282314N0815112.1)
PERCENT
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0 50 100
130
140
150
160
170
CORE HOLE LK7431
(282157N0815258.1)
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7418

Lake County 282840N0814816.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-4.0	No sample.
4.0-7.0	60% white, clear to frosted, medium-grained, poorly sorted, sub-rounded quartz sand; 40% light gray, soft, clay matrix with pink and yellow mottling.
7.0-8.0	70% light greenish gray, indurated clay matrix with pink banding and mottling; 30% white, clear, fine-grained, fairly well sorted, sub-angular quartz sand.
8.0-10.0	60% white, clear to frosted, fine-grained, well sorted, sub-rounded quartz sand; 40% clay as 7.0-8.0 interval.
10.0-20.0	70% white, clear to frosted, fine-grained, poorly sorted sub-angular quartz sand; 30% tan, soft, poorly consolidated clay matrix; abundant medium-to coarse-grained sand; trace of heavy minerals.
20.0-26.0	70% white, clear, fine-grained, fairly well sorted, sub-angular quartz sand; 30% tan, soft clay matrix; trace of heavy minerals and medium-grained sand.
26.0-28.0	95% light brownish gray, soft clay matrix; 5% fine-grained scattered sand.
28.0-30.0	70% white to light gray, clear to frosted, fine-to medium-grained, poorly sorted, sub-rounded quartz sand; 30% light gray to light tan, soft clay matrix.
30.0-40.0	60% clear to frosted, fine-to medium-grained, poorly sorted, sub-angular to sub-rounded quartz sand; 40% medium brownish gray, soft clay; banded throughout with bands of pure sand.
40.0-46.0	No sample.
46.0-59.0	50% dark gray, highly organic, soft clay matrix; 45% white to light gray, clear to frosted, fine-grained, poorly sorted, sub-angular quartz sand; 5% massive marcasite; many bands and streaks of pure clay.

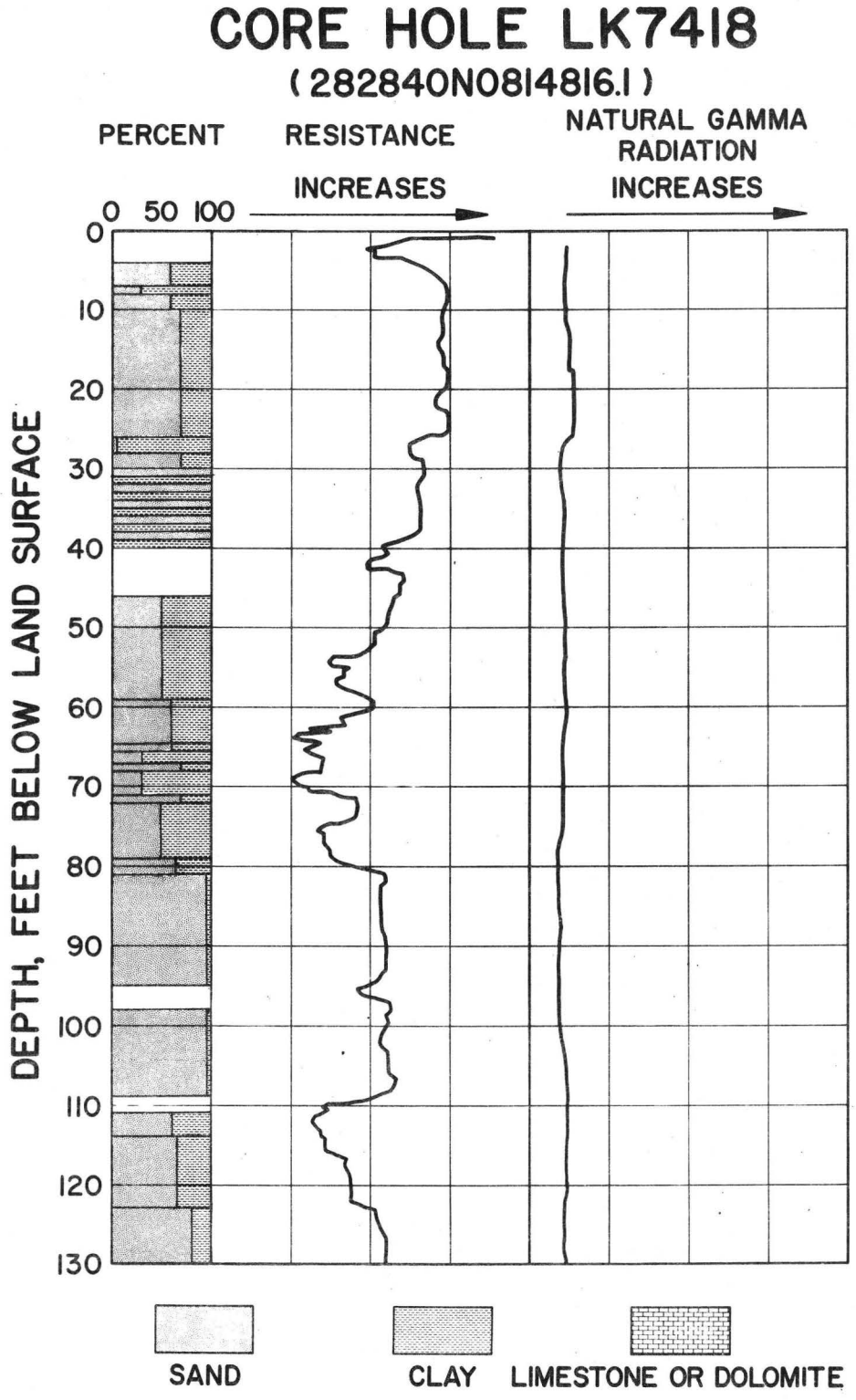
59.0-64.5	60% white to light gray, clear to frosted, fine-grained, poorly sorted quartz sand; 40% dark brownish gray, soft clay matrix; abundant coarse-to medium-grained sand.
64.5-65.5	60% white, clear, fine-grained, fairly well sorted, sub-angular quartz sand; 40% very dark gray, soft clay matrix; scattered medium and coarse-grained sand.
65.5-72.0	70% very dark greenish gray to black, soft, waxy clay; 20% light gray, fine-grained, well sorted, sub-angular quartz sand; 10% marcasite; some lenses and pods of pure clay; very sandy bands at 67 feet and 71 feet.
72.0-79.0	50% white to light gray, clear to frosted, fine-grained, fairly well sorted, sub-angular quartz sand; 50% dark gray to dark brownish gray, indurated clay matrix; a 2-inch band of fine-grained sand in 10% soft clay matrix at 73 feet and a 1-inch band of same at 74 feet, a 1/2-inch band of fine-grained sand in just enough clay to bind very poorly at 74.5 feet.
79.0-81.0	65% light gray, clear to frosted, fine-grained, fairly well sorted, sub-angular quartz sand; 35% black, soft clay matrix; abundant medium-grained sand.
81.0-95.0	95% light gray, clear to frosted, fine-to medium-grained, sub-angular to sub-rounded quartz sand; 5% gray, soft clay matrix.
95.0-98.0	No sample.
98.0-109.0	Same as 81.0-95.0 interval.
109.0-111.0	No sample.
111.0-114.0	60% white, clear to frosted, fine-grained, well sorted, sub-angular quartz sand; 40% gray and grayish brown banded, indurated clay matrix.
114.0-123.0	65% white, clear to frosted, fine-grained, well sorted, sub-angular quartz sand; 35% tan, soft with streaks and bands of dark gray pure clay; clay is indurated from 114.0-115.5 feet; clay is soft from 115.5-116.0 feet; clay is indurated from 116.0-117.1 feet and contains very little grayish color.

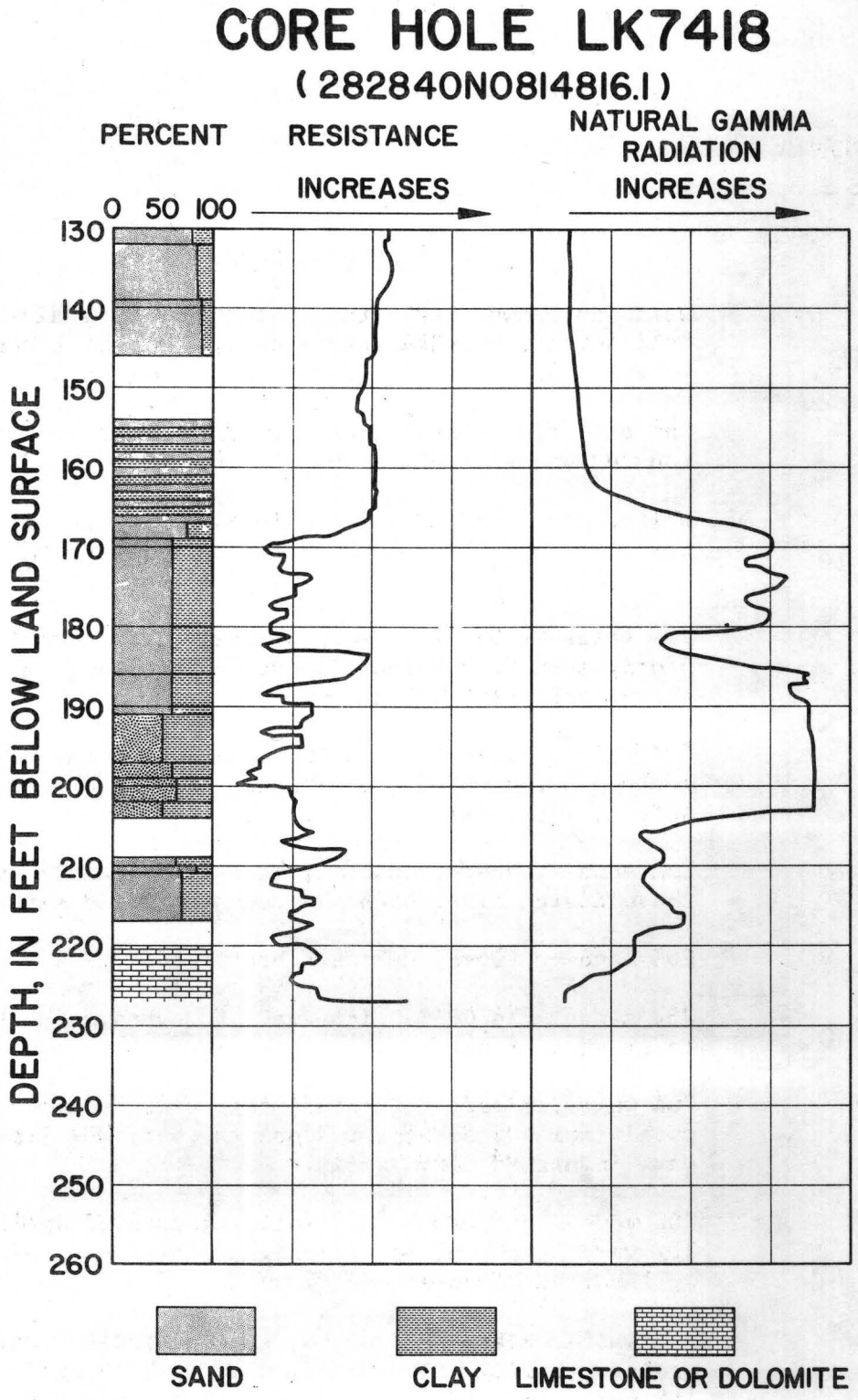
123.0-132.0	80% white, clear to frosted, fine-grained, poorly sorted, sub-angular to rounded quartz sand; 20% light gray, soft clay matrix; trace of coarse-grained sand.
132.0-139.0	85% sand as above; 15% light brownish gray, soft, poorly consolidated clay matrix.
139.0-146.0	Sand as 123.0-132.0 interval; 10% light brownish gray, soft, poorly consolidated clay matrix.
146.0-154.0	No sample.
154.0-167.0	60% white, clear, fine-grained, fairly well sorted, sub-angular quartz sand; 40% brownish gray to black clay; sand is interbedded and interlensed within the clay; trace of fine phosphate nodules.
167.0-169.0	75% white, clear to frosted, fine-grained, fairly well sorted, sub-rounded quartz sand; 25% gray and tan, interbedded, soft clay matrix; abundant medium and coarse-grained sand; clay becomes very dark gray from 168.6-169.0 feet.
169.0-186.0	60% light gray, clear, fine-grained, fairly well sorted, sub-angular quartz sand; 40% tan and very dark gray mottled, soft clay matrix; abundant coarse-grained sand; trace of heavy minerals and marcasite.
186.0-187.0	Sand and clay as above with many lenses of pure, very dark gray, soft, waxy clay.
187.0-191.0	60% light gray, clear to frosted, medium-grained, sub-rounded, poorly sorted quartz sand; 40% dark gray, indurated clay matrix; numerous very sandy lenses and pure clay bands throughout interval; abundant light gray, clear to frosted, coarse-grained quartz sand.
191.0-199.0	50% white, clear to frosted, coarse-grained, fairly well sorted, rounded quartz sand; 50% dark gray, black, organic, soft, waxy clay matrix.
199.0-202.0	65% white, clear to frosted, fine-grained, poorly sorted, sub-angular quartz sand; 35% tan and dark gray banded, soft clay matrix; abundant coarse-to medium-grained sand; trace of marcasite and heavy minerals.

202.0-204.0	50% sand as above; 50% very dark gray, soft clay matrix.
204.0-209.0	No sample.
209.0-210.0	65% white, clear, fine-grained, fairly well sorted, sub-rounded quartz sand; 35% tan to dark gray mottled, soft clay; trace of chert and small shell fragments.
210.0-211.0	85% sand as above; 15% light brownish gray, soft clay.
211.0-217.0	70% white to light gray, clear to frosted, medium-grained, poorly sorted, rounded quartz sand; 30% very dark gray soft clay matrix with many pockets of pure clay. A 1/4-inch streak of black, soft, waxy, fossiliferous clay shale at 212.8 feet; trace of marcasite.
217.0-220.0	No sample.

Rocks of Eocene Age

220.0-227.0	Light brown, microcrystalline, porous limestone.


CORE HOLE LK7418
(282840N0814816.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

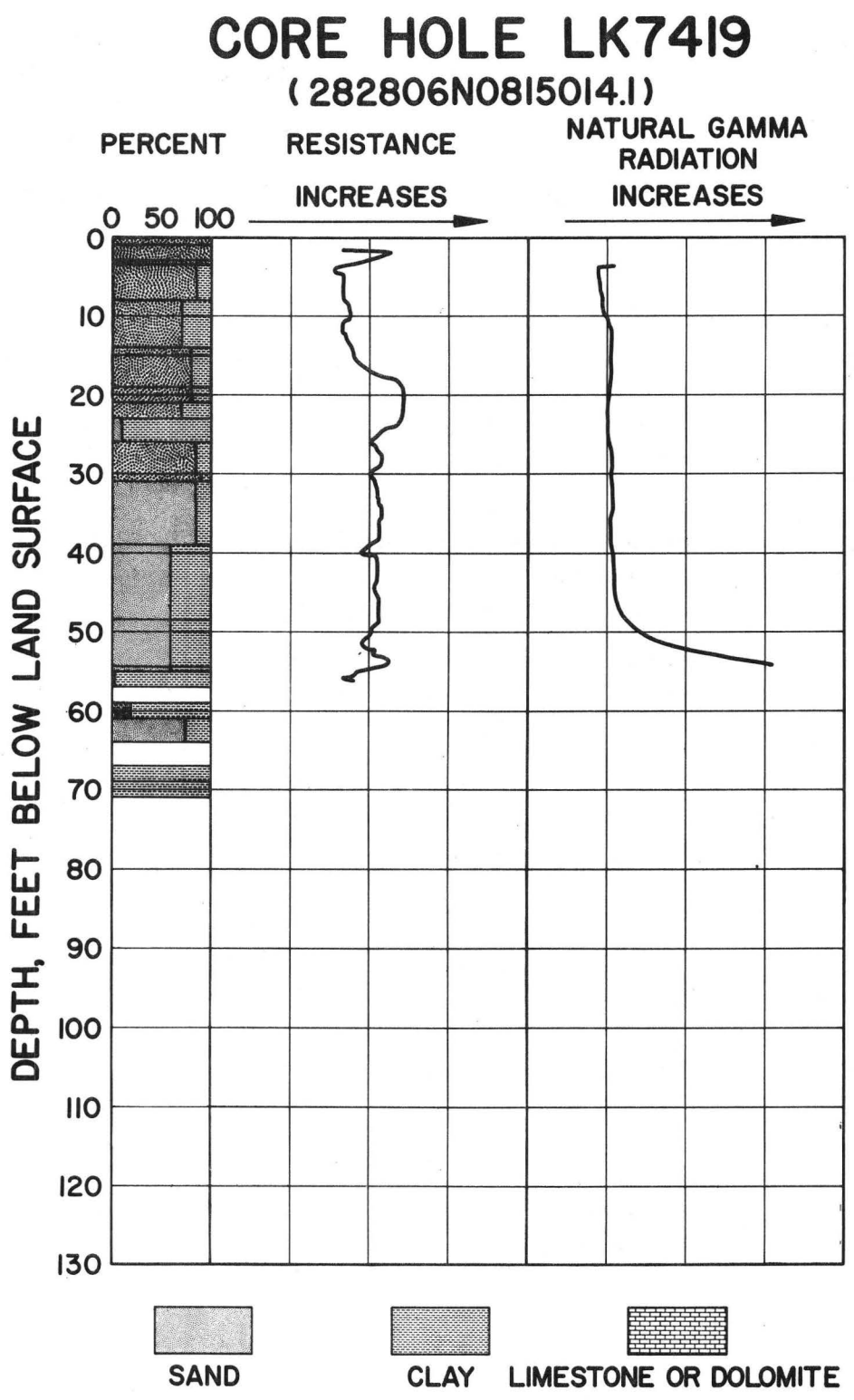

CORE HOLE LK7418
(282840N0814816.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, IN FEET BELOW LAND SURFACE
130
140
150
160
170
180
190
200
210
220
230
240
250
260
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7419

Lake County 282806N0815014.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	White to brown, clear to frosted, medium-grained, well sorted, rounded quartz sand; trace of brown to gray clay.
1.0-3.0	White to tan, medium-grained, fairly well sorted, rounded quartz sand; trace of tan clay.
3.0-3.5	White, clear to frosted, medium-grained, fairly well sorted, sub-angular quartz sand; trace of heavy minerals.
3.5-8.0	85% white to brown, clear to frosted, medium-grained, poorly sorted, sub-rounded quartz sand; 15% dark brown, soft clay matrix.
8.0-14.0	70% white, clear to frosted, medium-grained, poorly sorted, sub-rounded quartz sand; 30% light brown, soft clay matrix.
14.0-15.0	80% sand as above; 20% tan, indurated, fairly well consolidated clay; abundant coarse-grained sand.
15.0-19.0	80% sand as above; 20% dark brown, soft clay.
19.0-21.0	75% sand as 14.0-15.0 interval; 25% very dark brown to gray, soft clay.
21.0-23.0	70% white, clear to frosted, coarse-to medium-grained, poorly sorted, sub-rounded quartz sand; 30% light tan, indurated clay matrix.
23.0-26.0	90% very light tan to off-white, indurated siltstone 10% very light tan to off-white, very fine-grained, well sorted, angular quartz sand.
26.0-30.0	85% white, clear to frosted, very coarse-to coarse-grained, fairly well sorted, well rounded quartz sand; 15% very light tan, soft clay with silty areas throughout; trace of heavy minerals.

31.0-39.0	85% white, clear, fine-grained, well sorted, angular quartz sand; 15% very light gray to off-white, poorly consolidated, silty clay matrix; scattered coarse-to very coarse-grained sand.
39.0-54.5	60% white, clear, fine-grained, well sorted, angular quartz sand; 40% off white, silty, soft clay matrix; trace of heavy minerals.
54.5-55.0	As above but color is very pale greenish gray.
55.0-57.0	98% very pale greenish gray, soft clay matrix; 2% white, clear, fine-to very fine-grained, well sorted, angular quartz sand; trace of heavy minerals.
57.0-59.0	No sample.
59.0-61.0	80% very pale greenish gray, indurated, silty clay matrix; 20% sand as 55.0-57.0 interval; trace of heavy minerals.
61.0-61.5	70% white, clear, fine grained, well sorted, angular quartz sand; 25% white to very pale green, indurated clay matrix; 5% pisolitic silica; trace of heavy minerals.
61.5-64.0	Sand as above occuring as 1/8-inch wide bands in a pale, green, soft, waxy clay matrix.
64.0-67.0	No sample.
	Rocks of Miocene Age
67.0-69.0	Off-white, soft to indurated, powdery clay.
69.0-71.0	Very light gray and dull yellow mottled, soft, powdery clay.
	Rocks of Eocene Age(?)
71.0-72.0	Drill bit fell into cavity; circulation lost, could not be re-established.


CORE HOLE LK7419
(282806N0815014.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7420

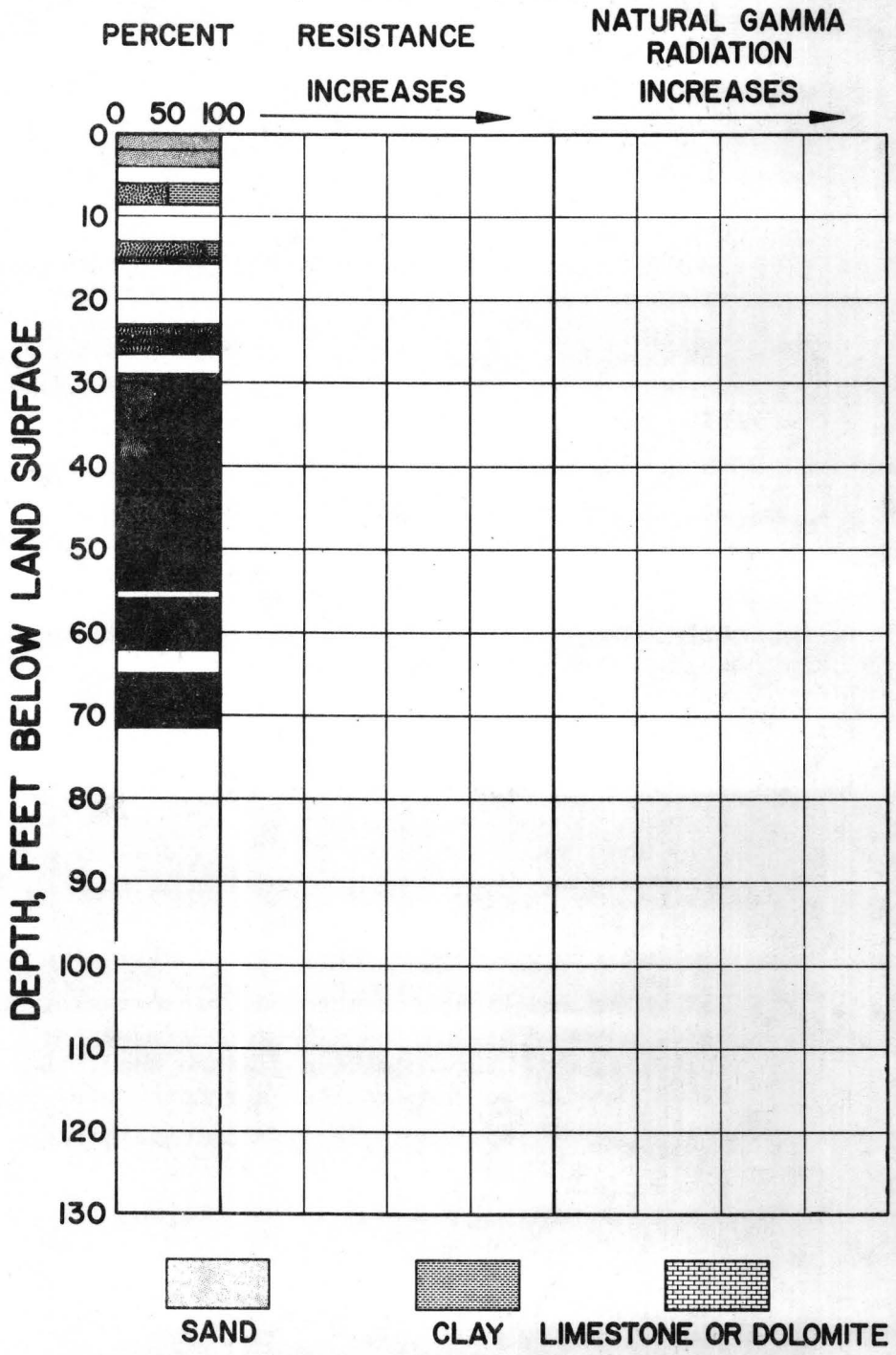
Lake County 282608N0814524.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-2.0	Medium brown, coarse-to medium-grained, stained, poorly sorted, sub-rounded sand.
2.0-4.0	Tan, stained, coarse-to medium-grained, sub-rounded sand.
4.0-6.0	No sample.
6.0-8.5	50% bright orange and yellow, stained, coarse-to very coarse-grained, well sorted, rounded sand; 50% brick red, light to medium tan and dull yellow mottled, indurated, crumbly clay matrix.
8.5-13.0	No sample.
13.0-15.0	85% light gray to yellow, clear to stained, coarse-to very coarse-grained, poorly sorted, rounded sand; 15% light tan, indurated, crumbly clay matrix.
15.0-15.5	60% white, frosted, coarse-to very coarse-grained, poorly sorted, rounded sand; 40% white, indurated clay matrix.
15.5-23.0	No sample.
23.0-24.5	Sand as 15.0-15.5 interval with just enough very light tan clay to bind sand very loosely.
24.0-25.5	75% sand as 15.0-15.5 interval but is fairly well sorted; 25% white, soft clay matrix.
25.5-26.5	70% white to light brown, clear to stained, medium-to very coarse-grained sand; 30% light brown, light tan and orange mottled, soft, crumbly clay matrix.
26.5-29.0	No sample.
29.0-49.0	70% white, clear to frosted, fine-to very coarse-grained, angular to rounded, silty sand; 30% white, soft clay matrix; trace of heavy minerals.

49.0-53.0	60% sand as above; 40% clay as above.
53.0-62.0	55% white, clear, very fine-to fine-grained, very well sorted, angular, silty sand; 45% white, soft, clay matrix; trace of heavy minerals.
62.0-65.0	No sample.
65.0-65.5	50% white to light gray, clear to frosted, very coarse-grained, well rounded sand; 40% tan and white mottled, soft clay matrix; 10% sand as 53.0-62.0 interval. A few small quartz pebbles; trace of heavy minerals.
65.5-66.5	65% sand as 53.0-62.0 interval; 35% light to medium brown mottled, soft clay matrix; trace of heavy minerals.
66.5-66.7	85% light to medium golden brown and very dark brown, very thinly banded, soft, waxy clay matrix; 15% white to yellow, clear to stained, very fine-to fine-grained, angular, well sorted, silty sand.
66.7-67.5	65% white, clear to frosted, fine-grained, angular, well sorted sand; 35% pale greenish gray, soft clay matrix with minor mottling by light to medium brown clay; trace of heavy minerals.
67.5-71.0	70% white to yellow, clear, fine-to medium-grained, angular to sub-rounded sand; 30% very pale greenish gray and white, soft clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
71.0-71.5	75% white and light tan mottled, microcrystalline, hard, porous, silicified limestone fragments; 15% white, clear, fine-to medium-grained sand; 10% brown, medium to very coarse phosphate nodules; highly weathered.
71.5-79.1	No sample.
	Rocks of Eocene Age(?)
79.1-102.4	Circulation lost at 79.1 feet; could not be re-established.

CORE HOLE LK7420

(282608N0814524.1)

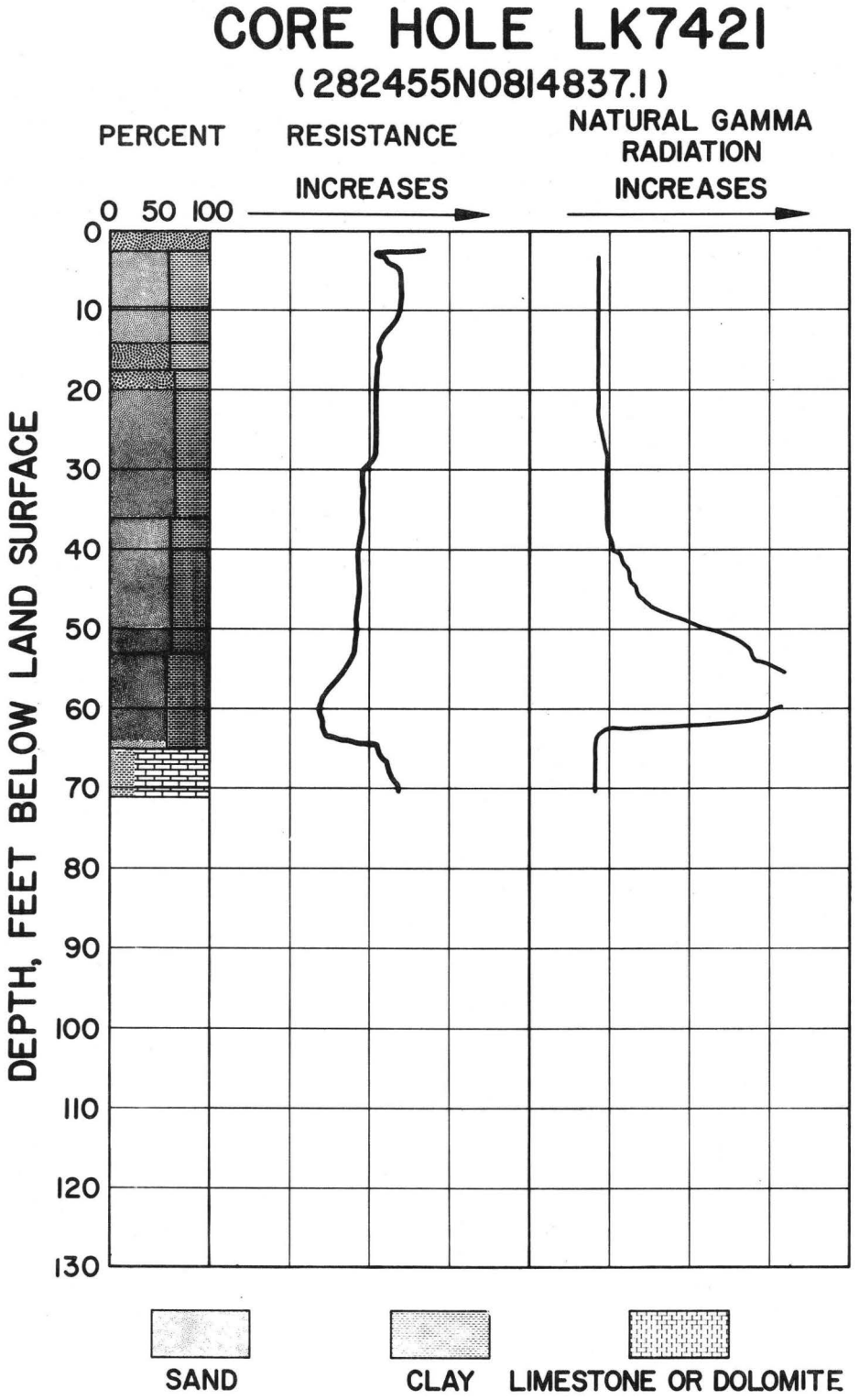


LK7421

Lake County 282455N0814837.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-2.5	Light gray to light brown, clear, very-coarse to medium-grained, poorly sorted, sub-rounded quartz sand; trace of light gray to light brown, soft clay; a few small quartz pebbles.
2.5-14.0	60% white, clear, fine-grained, fairly well sorted, sub-angular quartz sand; 40% cream, indurated clay matrix; scattered medium-to coarse-grained sand.
14.0-17.5	60% white, clear, very coarse-to medium-grained, well-rounded, poorly sorted quartz sand; 40% white to cream, fairly well indurated clay matrix.
17.5-20.0	65% white to light gray, clear to frosted, fine- to very coarse-grained, poorly sorted, sub-angular to well-rounded quartz sand; 35% tan, fairly well indurated clay matrix.
20.0-36.0	60% white, clear to frosted, fine-to very coarse-grained, poorly sorted, sub-angular to well-rounded quartz sand; 40% cream, fairly well indurated clay matrix.
36.0-53.0	50% white, clear, fine-grained, well sorted, angular quartz sand; 40% light tan, fairly well indurated clay matrix; 10% coarse-to very coarse-grained, white to light gray, frosted, well-rounded quartz sand in bands scattered throughout interval.
	Rocks of Miocene Age
53.0-65.0	55% white, clear, fine-grained, poorly sorted, sub-angular quartz sand; 45% dark gray and tan mottled and streaked, soft clay matrix.

65.0-71.0	75% very light gray, indurated highly fossiliferous, chalky, clayey limestone; 20% clay which coats the limestone; 5% light gray, frosted, very coarse-grained, well-rounded quartz sand; contains Sphaerogypsina globula (Reuss), Reussella sculptilis (Cushman), and Cibicides mississippiensis ocalanus (Cushman).


CORE HOLE LK7421
(282455N0814837.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7422

Lake County 282443N0814602.1

DEPTH INTERVAL (feet	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	95% white and brown, clear to stained, medium-to very coarse-grained, sub-angular to rounded sand; 5% medium brown, crumbly clay matrix.
1.0-3.0	White to light brown, clear to stained, coarse-to medium-grained, sub-rounded sand; trace of very dark to light gray, soft clay.
3.0-10.5	No sample.
10.5-11.0	95% white and brown, clear to stained, coarse-to medium-grained, fairly well sorted, sub-rounded sand; 5% medium brown, indurated, crumbly clay.
11.0-11.5	60% sand as above; 40% very dark gray, soft crumbly clay.
11.5-12.0	70% sand as 10.5-11.0 interval; 30% light and medium brown, soft clay matrix.
12.0-12.5	65% light brown, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 30% medium brown, indurated clay matrix; 5% coarse-to very coarse-grained sand.
12.5-14.5	75% sand as above; 25% medium brown, soft clay.
14.5-15.5	No sample.
15.5-18.0	80% sand as 12.0-12.5 interval; 20% light brown, indurated, crumbly clay matrix.
18.0-19.5	70% white, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 30% medium brown, indurated, clay matrix with thin (1/16 to 1/4-inch) bands of dark gray clay.
19.5-20.5	No sample.
20.5-26.0	60% sand as 18.0-19.5 interval; 40% tan, indurated clay matrix with minor medium brown and dark gray mottling and streaking.

26.0-28.5	No sample.
28.5-30.2	70% sand as 20.5-26.0 interval; 30% medium brown and tan mottled, indurated clay matrix.
30.2-32.5	70% sand as 20.5-26.0 interval; 30% medium brown and light brownish gray banded, indurated clay matrix; bands are 1/4-inch wide.
32.5-34.5	No sample.
34.5-36.5	80% white, clear to frosted, medium-to coarse-grained, sub-rounded to rounded sand; 20% tan and medium brown mottled, indurated, crumbly clay matrix.
36.5-38.5	70% white, clear to frosted, medium-grained, well sorted, sub-angular to sub-rounded sand; 30% tan, soft, crumbly, slightly silty clay matrix.
38.5-39.5	80% white to light gray, frosted, coarse-to very coarse-grained, sub-rounded to rounded sand; 20% tan, indurated clay matrix.
39.5-41.5	80% sand as above, 20% dark brown and light tan banded, soft clay matrix.
41.5-48.5	No sample.
48.5-50.0	80% white to light gray, clear to frosted, medium-to very coarse-grained, sub-rounded to rounded sand; 20% light brown and tan mottled, indurated, crumbly clay matrix.
50.0-53.5	No sample.
53.5-55.5	75% sand as 48.5-50.0 interval but mostly medium-grained; 25% tan, indurated clay matrix.
55.5-58.5	No sample.
58.5-60.5	80% sand as 48.5-50.0 interval but mostly coarse-to very coarse-grained; 20% light brown, soft clay matrix.
60.5-61.5	50% light tan soft clay matrix; 45% white, clear to frosted, very fine-to fine-grained, angular, well sorted sand; 5% coarse-to very coarse-grained sand; trace of heavy minerals.
61.5-68.5	No sample.

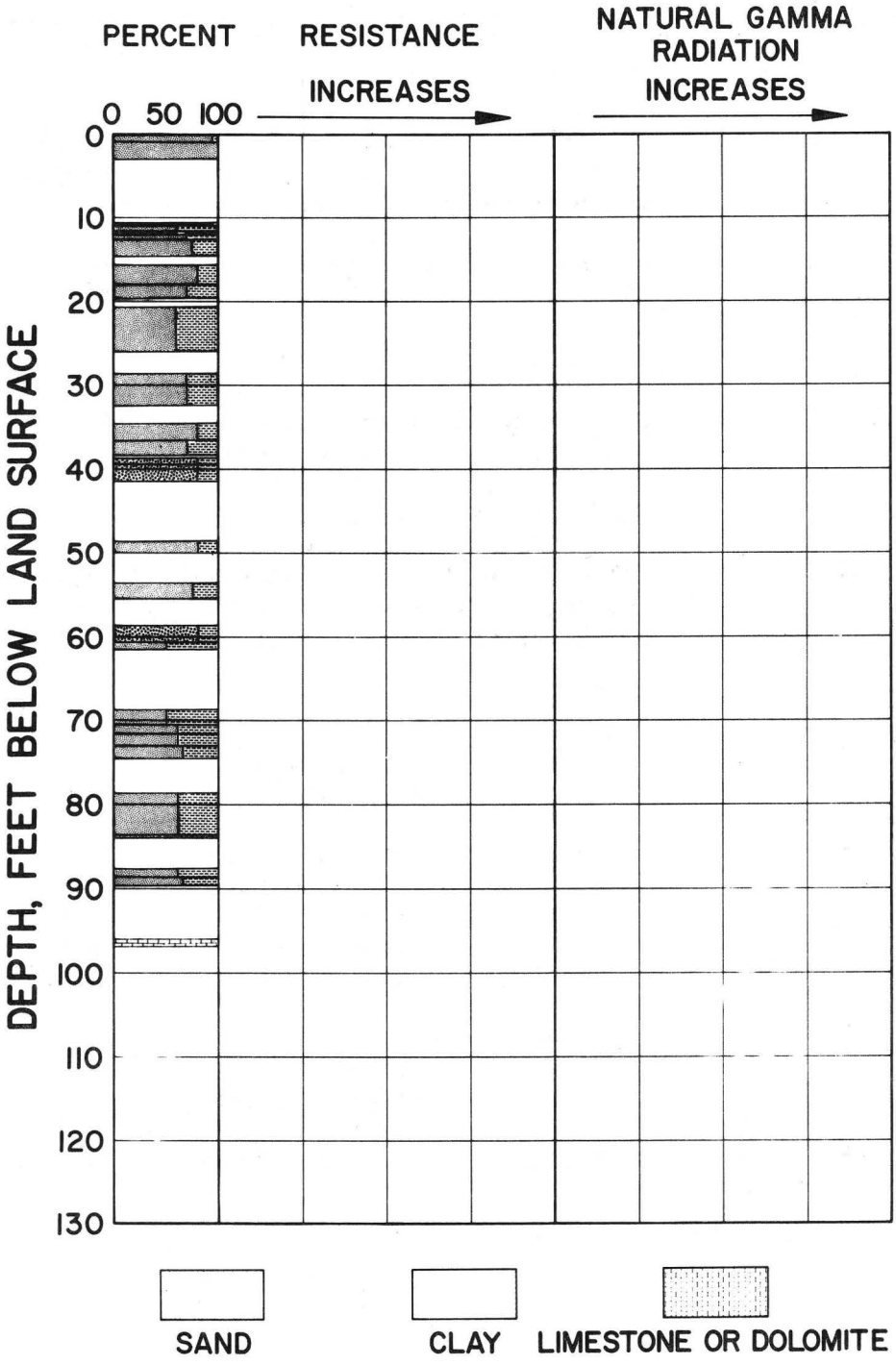
68.5-70.5	50% sand and 50% clay as 60.5-61.5 interval; trace of heavy minerals and pyrite.
70.5-71.5	40% light tan and light gray mottled, soft clay matrix; 35% sand as 60.5-61.5 interval; 25% coarse- to very coarse-grained sand.
71.5-73.0	50% sand as 60.5-61.5 interval; 40% light tan, soft clay matrix; 10% coarse-to very coarse-grained sand; trace of heavy minerals.
73.0-74.5	40% coarse-to very coarse-grained sand; 35% light tan, clay matrix; 25% sand as 60.5-61.5 interval.
74.5-78.5	No sample.
78.5-83.5	60% white, clear to frosted, very fine-to fine-grained, silty, angular, well sorted sand; 40% very light tan, soft clay matrix; trace of coarse-grained sand and heavy minerals.
83.5-84.0	50% sand as 78.5-83.5 interval; 40% very light gray, indurated, crumbly clay matrix; 10% coarse-to very coarse-grained sand; trace of heavy minerals.
84.0-87.5	No sample.
87.5-88.5	60% sand as 78.5-83.5 interval; 40% light tan, indurated, crumbly clay matrix; trace of heavy minerals.
88.5-89.5	60% white to light gray, clear, medium-grained, fairly well sorted, sub-rounded sand; 35% light tan, light gray and light green mottled, indurated, crumbly clay; 5% light gray, clear, rounded, coarse-grained sand; trace of heavy minerals, pyrite and pisolitic silica.
89.5-96.0	No sample.

Rocks of Eocene Age

96.0-96.8	Dark gray and greenish gray weathered limestone.

CORE HOLE LK7422

(282443N0814602.1)



LK7424

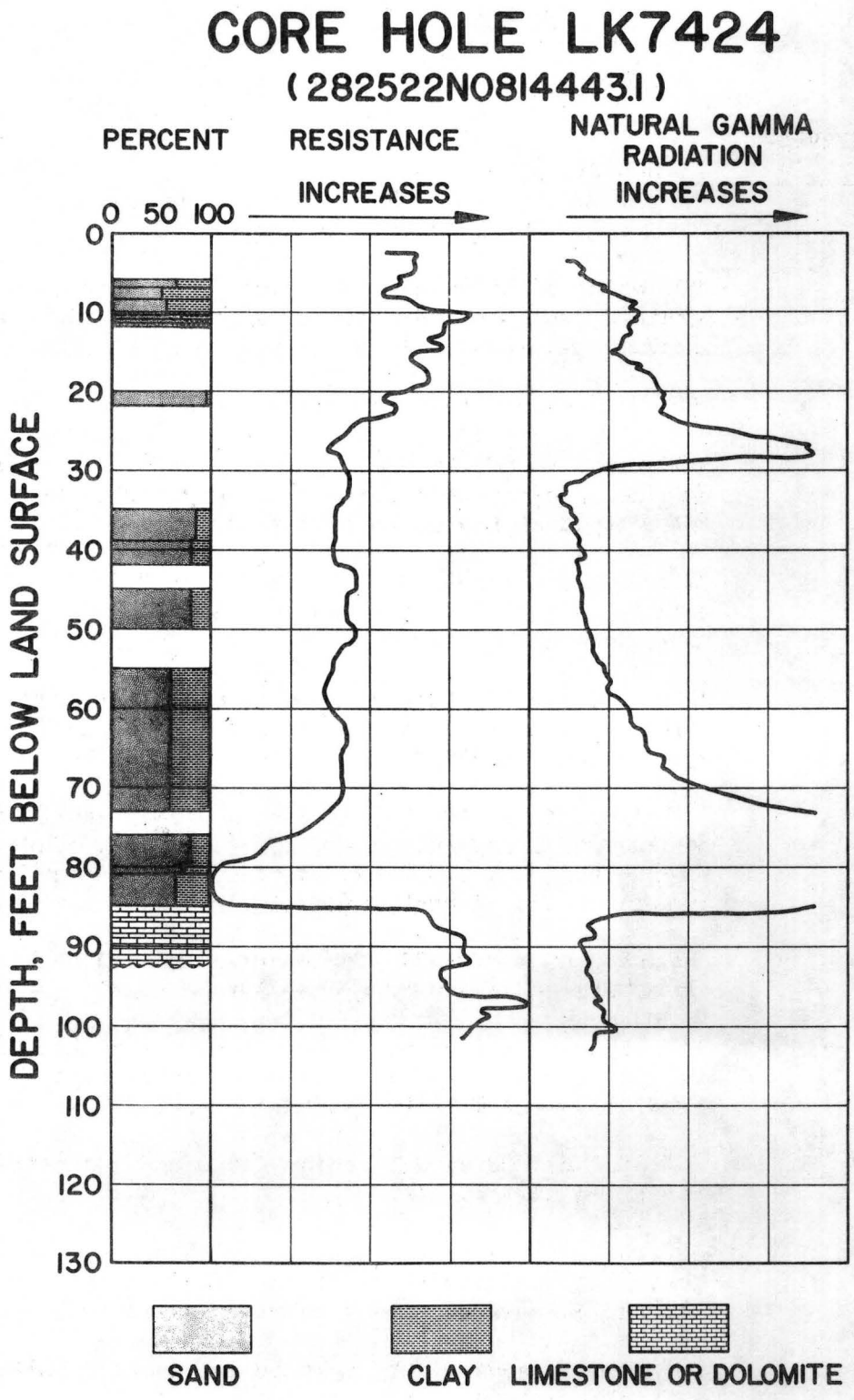
Lake County 282522N0814443.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-6.0	No sample.
6.0-7.0	65% light brown, fine-to coarse-grained, angular to rounded quartz sand; 35% medium brown, indurated clay matrix.
7.0-8.5	50% light tan, frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 50% light tan and light brown mottled, indurated clay matrix with minor blue mottling.
8.5-10.5	55% sand as 7.0-8.5 interval; 45% tan, indurated clay matrix.
10.5-11.0	70% sand as 7.0-8.5 interval; 30% light brown, soft clay matrix.
11.0-11.5	75% white to light brown, frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 25% brown, soft clay matrix.
11.5-12.0	70% white to brown, clear to stained, medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 30% black, light and dark brown mottled, soft crumbly clay matrix.
12.0-20.0	No sample.
20.0-22.0	95% light tan, stained, medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 5% tan, soft clay matrix.
22.0-35.0	No sample.
35.0-39.0	85% light tan, stained, fine-grained, well sorted, angular quartz sand; 15% tan, soft clay matrix; trace of medium muscovite flakes and medium-grained sand.

39.0-42.0	70% white, clear to frosted, fine-grained, well sorted, angular quartz sand; 20% light tan, soft silty clay matrix; 10% white, frosted, coarse-to very coarse-grained, rounded sand; trace of medium muscovite flakes.
42.0-45.0	No sample.
45.0-50.0	80% sand as 39.0-42.0 interval; 20% light tan, indurated clay matrix; trace of muscovite flakes.
50.0-55.0	No sample.
55.0-73.0	60% light gray, frosted, fine-grained, well sorted, angular quartz sand; 40% medium greenish gray, soft clay matrix; slightly silty.
73.0-76.0	No sample.
76.0-80.0	80% white, frosted, fine-to very fine-grained, angular, silty, very well sorted quartz sand; 20% light brown, indurated clay matrix with a slight gray tint; trace of coarse-to very coarse-grained sand.
80.0-81.0	75% sand as above; 25% clay as above with dark gray mottling.
81.0-85.0	65% sand as 76.0-80.0 interval; 35% clay as 80.0-81.0 interval; contains Sphaerogypsina globula (Reuss).

Rocks of Eocene Age

85.0-103.0	Light gray, microcrystalline, indurated, porous limestone with scattered small foraminifera; highly weathered.


CORE HOLE LK7424
(282522N0814443.1)
PERCENT
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0 50 100
0
10
20
30
40
50
60
70
80
90
100
110
120
130
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7425

Lake County 282318N0815440.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	90% white to brownish gray, clear to stained, medium-grained, well sorted, rounded quartz sand; 10% dark gray, very organic, loose clay matrix.
1.0-2.0	Sand as above; trace of medium brown clay.
2.0-4.0	60% white to medium brown, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 40% very dark brown, soft clay matrix.
4.0-9.0	60% white to light tan, frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 40% tan, soft clay matrix.
9.0-11.5	White, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; trace of heavy minerals.
11.5-17.5	55% light tan, frosted, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; 45% light brown and light tan mottled, soft, sticky clay matrix; trace of heavy minerals.
17.5-19.0	55% sand as above; 45% light brown and tan mottled, soft, sticky clay matrix; has purple cast.
19.0-25.0	65% light tan, frosted, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 35% medium brown, soft clay matrix.
25.0-26.0	65% sand as above; 35% medium brown and tan mottled, indurated clay matrix.
26.0-27.0	60% white, frosted, fine-to medium-grained, angular to sub-rounded quartz sand; 35% tan, indurated clay matrix; 5% coarse-to very coarse-grained sand.
27.0-30.0	70% sand as above; 30% light to medium tan, banded, soft clay matrix.

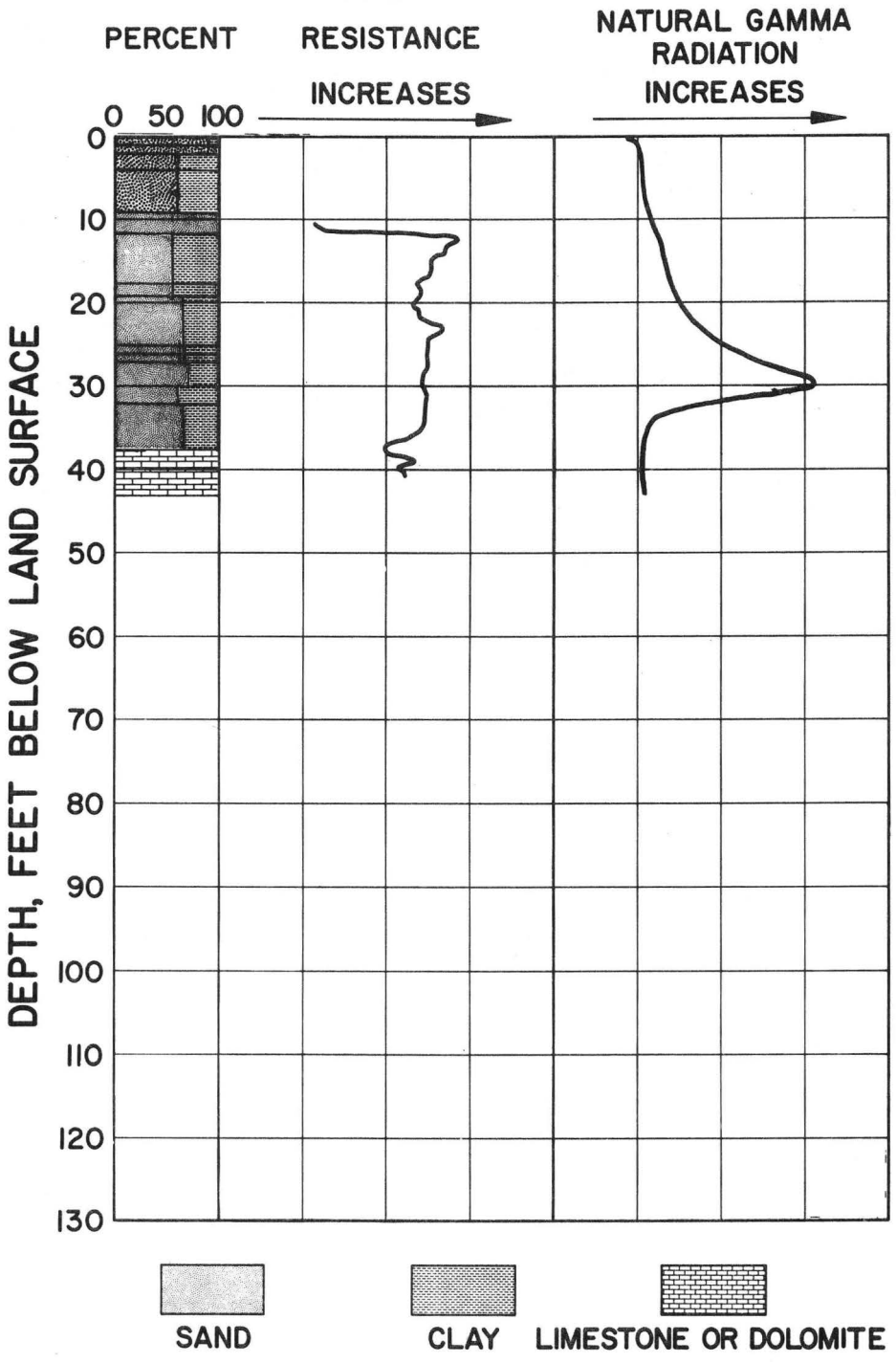
30.0-32.0	60% sand as 26.0-27.0 interval; 40% light tan, soft, silty clay matrix with white, very hard clay fragments at the base of this interval.
32.0-37.5	65% light gray to white, clear to frosted, medium- to fine-grained, fairly well sorted, angular to sub-rounded quartz sand; 35% dull yellow and tan mottled, indurated to soft, clay matrix; a few fragments of white, microcrystalline, silicified limestone; a few thin (1/4-inch) bands of pure, medium brown clay.

Rocks of Eocene Age

37.5-44.0	75% white to light gray, indurated, microcrystalline, porous, silicified, limestone fragments; 20% light brown, soft, lightly calcareous clay matrix; 5% sand as above; trace of relic fossil material.
44.0-47.0	Cavity.

CORE HOLE LK7425

(282318N0815440.1)



LK7426

Lake County 282348N0814434.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-6.0	No sample.
6.0-7.0	White, frosted, medium-grained, fairly well sorted, sub-rounded sand; trace of white to light tan clay and heavy minerals; abundant coarse-to very coarse-grained sand.
7.0-8.0	75% white to dark brownish gray, clear to frosted, medium-grained, poorly sorted, sub-rounded quartz sand; 25% very dark brownish gray, soft clay matrix; abundant coarse-to very coarse-grained sand.
8.0-12.7	No sample.
12.7-13.0	70% white, clear to frosted, medium-grained, poorly sorted, sub-rounded sand; 30% light brown, indurated clay matrix; abundant coarse-to very coarse-grained sand.
13.0-16.5	60% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 40% light gray, indurated clay matrix; abundant coarse-to very coarse-grained sand; trace of heavy minerals.
16.5-18.5	No sample.
18.5-20.5	65% sand and 35% clay as 13.0-16.5 interval.
20.5-23.0	80% white, clear to frosted, coarse-grained, well sorted, rounded sand; 20% tan, soft clay matrix; abundant coarse-grained sand.
23.0-26.5	No sample.
26.5-28.5	Same as 20.5-23.0 interval.
28.5-31.5	75% white, clear to frosted, coarse-grained, poorly sorted, rounded sand; 25% off-white, soft clay matrix.
31.5.33.0	No sample.

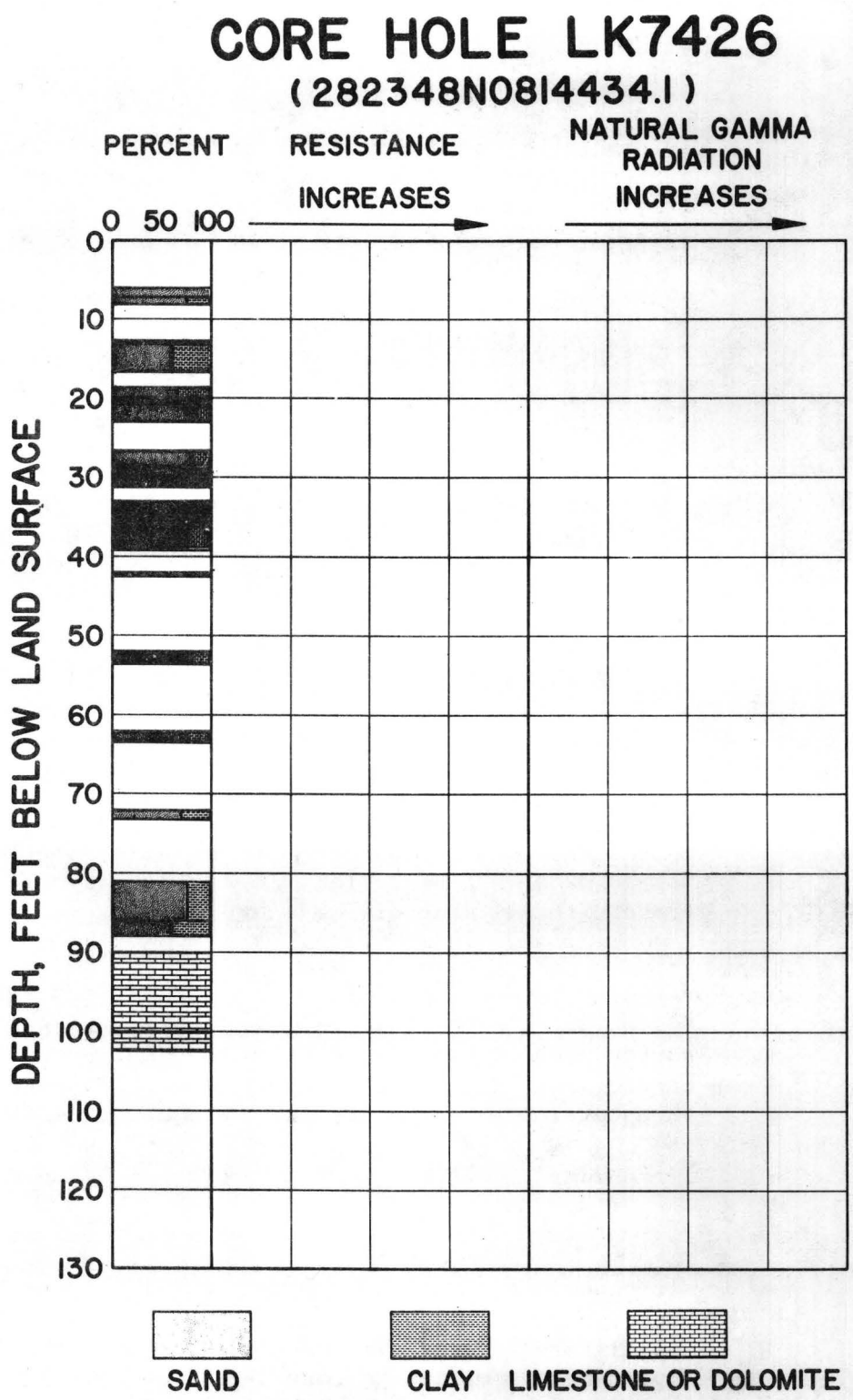
33.0-39.0	Same as 28.5-31.5 interval; a few coarse sand grains.
39.0-42.0	No sample.
42.0-42.5	80% white, clear to frosted, coarse-to medium-grained, rounded to sub-rounded sand; 20% brownish gray, soft clay matrix; scattered very coarse-grained sand.
42.5-52.0	No sample.
52.0-53.5	80% sand as 42.0-42.5 interval; 20% white, soft clay matrix.
53.5-62.0	No sample.
62.0-63.5	75% white, clear, frosted, medium-grained, poorly sorted, sub-rounded sand; 25% light tan, soft clay matrix.
63.5-72.0	No sample.
72.0-73.0	70% white, clear to frosted, fine-grained, fairly well sorted, angular sand; 30% very light gray, soft clay matrix; tract of heavy minerals.
73.0-81.0	No sample.
81.0-86.0	75% white, clear, fine-grained, angular, fairly well sorted sand; 25% very light gray, soft clay matrix; trace of heavy minerals.

Rocks of Miocene Age

86.0-88.0	60% white, clear, fine-grained, angular, fairly well sorted sand; 40% greenish gray and light brown banded, soft clay matrix; trace of tan to black phosphate, pyrite and pisolitic silica.
88.0-90.0	No sample.

Rocks of Eocene Age

90.0-102.5	Microcoquina; matrix of microcrystalline, light brown, porous, indurated limestone with 85% fossiliferous material; trace of sparry calcite replacement and fine-to coarse-grained sand; contains Sphaerogypsina globula (Reuss), Reussella sculptilis (Cushman).


CORE HOLE LK7426
(282348N0814434.1)
PERCENT RESISTANCE INCREASES
NATURAL GAMMA RADIATION INCREASES
0 50 100
0
10
20
30
40
50
60
70
80
90
100
110
120
130
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7427

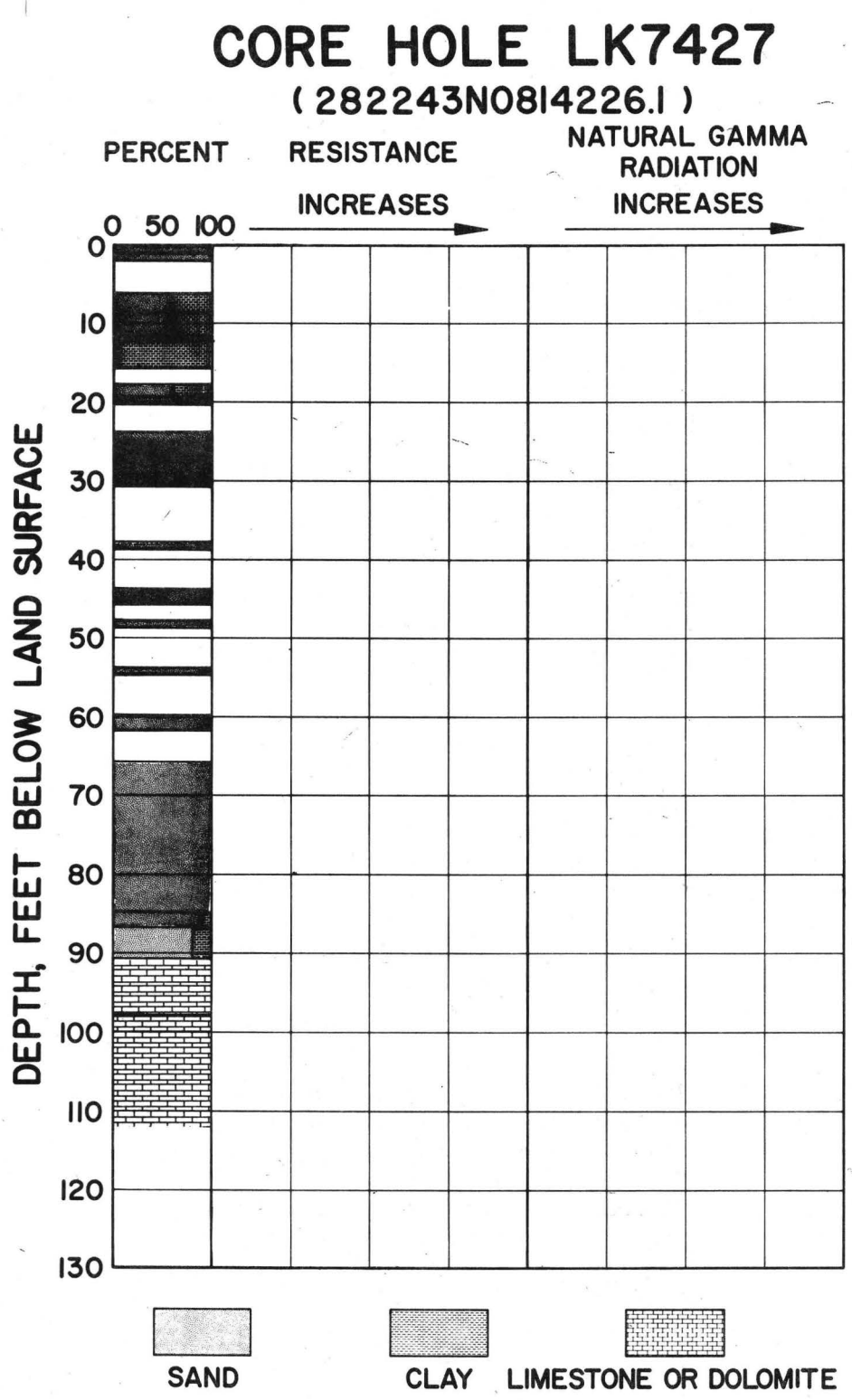
Lake County 282243N0814226.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	White to light brown, clear to stained, fine-grained, well sorted, sub-rounded sand.
1.0-2.0	Tan, fine grained, fairly well sorted, sub-rounded sand.
2.0-6.0	No sample.
6.0-8.5	60% white, clear to frosted, fine-grained, fairly well sorted, sub-angular quartz sand; 40% brown and gray mottled, indurated clay matrix; trace of heavy minerals.
8.5-11.7	60% sand as above; 40% gray, yellow and pink mottled and streaked, indurated clay matrix; trace of heavy minerals.
11.7-12.0	60% white, clear to frosted, fine-grained, fairly well sorted, sub-rounded sand; 40% very light gray, indurated clay matrix; trace of heavy minerals.
12.0-15.5	95% very light gray, soft clay matrix with bright orange and deep maroon bands; 5% sand as above; trace of heavy minerals.
15.5-17.5	No sample.
17.5-19.2	60% white to gray, clear to frosted, medium-grained, fairly well sorted, rounded sand; 40% red, yellow, and white mottled, soft clay matrix.
19.2-20.2	White, medium-grained, fairly well sorted, sub-rounded sand with just enough white clay to bind sand very loosely.
20.2-23.5	No sample.
23.5-30.5	White, clear to frosted, medium-grained, fairly well sorted, sub-angular sand with just enough soft clay to bind sand very loosely; trace of heavy minerals.

30.5-37.5	No sample.
37.5-38.5	White, clear to frosted, medium-to coarse-grained, sub-rounded sand with just enough tan clay to bind.
38.5-43.5	No sample.
43.5-45.5	Sand and clay as 37.5-38.5.
45.5-47.5	No sample.
47.5-48.5	Sand and clay as 37.5-38.5.
48.5-53.5	No sample.
53.5-54.5	Sand and clay as 37.5-38.5.
54.5-59.5	No sample.
59.5-61.5	White, clear, fine-grained, well sorted, sub-angular sand with just enough light gray clay to bind the sand very loosely; trace of heavy minerals.
61.6-65.5	No sample.
65.5-84.5	Sand and clay as 59.5-61.5.
84.5-86.5	90% white, clear, fine-grained, angular, very well sorted sand; 10% very light brownish gray, soft clay matrix; trace of heavy minerals.
86.5-90.5	80% sand as above; 20% dark gray to dark brownish gray, soft clay matrix; trace of heavy minerals.

Rocks of Eocene Age

90.5-96.0	Microcoquina; highly weathered matrix of creamy, soft, porous limestone with abundant large to small fossils; contains Reussella sculptilis (Cushman),
96.0-112.0	Microcrystalline coquina; creamy, microcrystalline, indurated, porous limestone matrix with abundant large and small fossils; some replacement by sparry calcite.


CORE HOLE LK7427
(282243N0814226.1)
PERCENT RESISTANCE INCREASES
NATURAL GAMMA RADIATION INCREASES
0 50 100
0
10
20
30
40
50
60
70
80
90
100
110
120
130
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7428

Lake County 282219N0814435.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	80% light brown, clear to frosted, coarse-to fine-grained, poorly sorted, rounded to angular sand; 20% brownish gray, indurated clay matrix.
1.0-2.0	Sand as above; trace of light gray to tan clay.
2.0-3.5	95% sand as 0.0-1.0 interval; 5% tan clay matrix; a band of very dark gray, soft clay from 3.0 to 3.2 feet.
3.5-6.0	No sample.
6.0-7.2	80% white, light brown, frosted, coarse-to very coarse-grained, sub-rounded sand; 20% brown, indurated clay matrix.
7.2-12.5	No sample.
12.5-13.5	Same as 6.0-7.2 interval.
13.5-15.0	90% white, milky, coarse-grained, fairly well sorted, rounded sand; 10% light brown, soft clay matrix.
15.0-17.5	No sample.
17.5-18.5	90% white, clear to frosted, medium-grained, poorly sorted, sub-rounded sand; 10% light brown, soft clay matrix; some coarse-grained sand.
18.5-19.5	90% light brown, frosted, medium-grained, fairly well sorted, sub-angular sand; 10% light to dark brown, soft clay matrix; some coarse-grained sand.
19.5-22.7	No sample.
22.7-23.7	80% white to tan, clear to frosted, medium-grained, fairly well sorted, sub-angular sand; 20% dark brown, soft clay matrix; scattered coarse-grained sand.
23.7-25.5	80% sand as above; 20% medium brown, soft clay matrix with some white mottling.

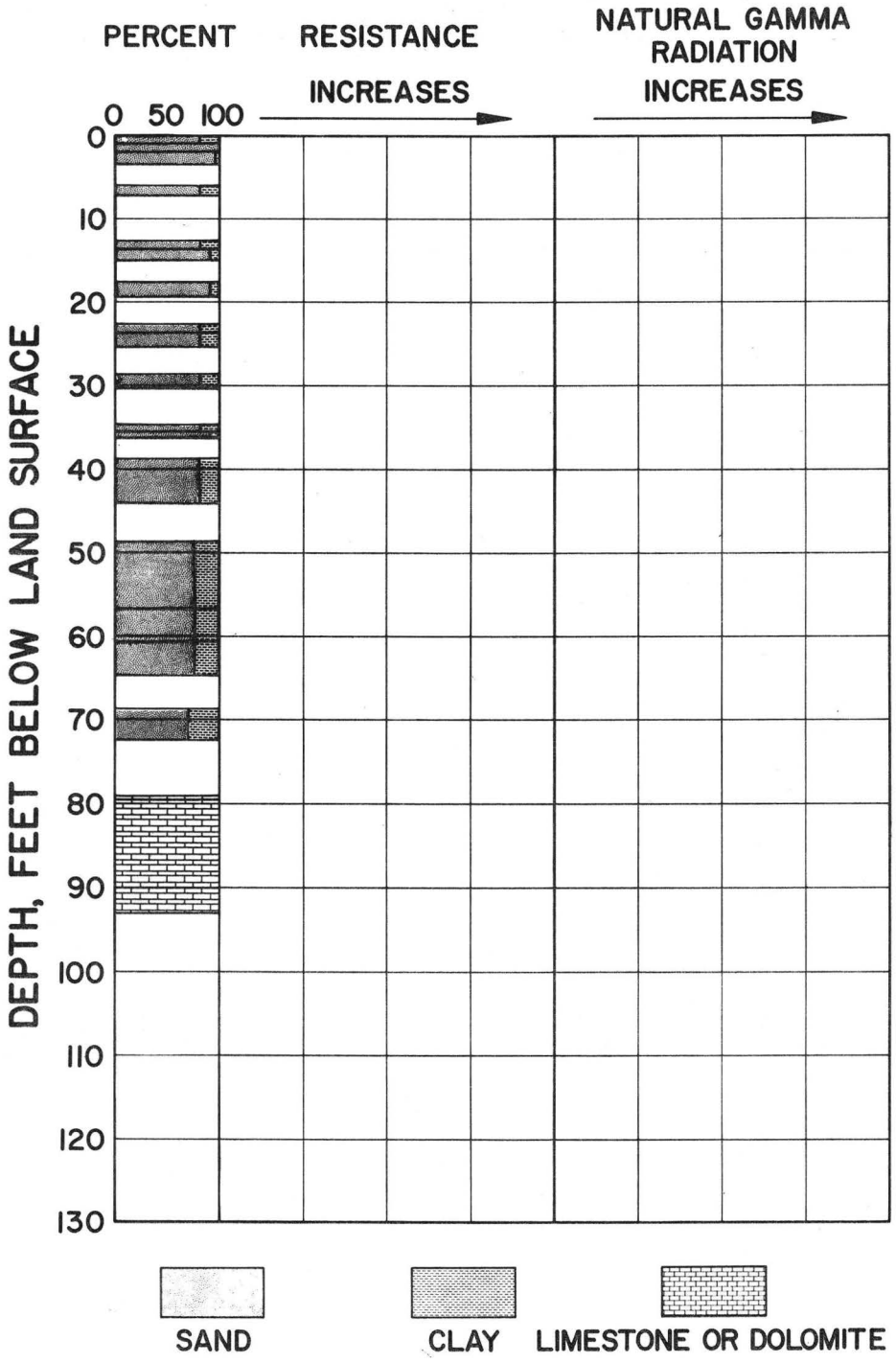
25.5-28.5	No sample.
28.5-35.5	80% white, clear to frosted, medium-grained, fairly well sorted, sub-angular sand; 20% medium brown, soft clay matrix with some white mottling; abundant coarse grained sand.
35.5-36.5	90% white, clear to frosted, medium-to coarse-grained, sub-rounded sand; 10% white to brown mottled, soft clay matrix.
36.5-38.5	No sample.
38.5-44.0	80% white, clear to frosted, fine-grained, angular, fairly well sorted sand; 20% light tan, soft clay matrix; abundant coarse-to medium-grained sand; trace of heavy minerals.
44.0-48.5	No sample.
48.5-50.5	75% sand as 38.5-44.0 interval; 25% light tan, soft clay matrix. trace of heavy minerals.
50.5-56.5	75% white to light gray, clear, fine-grained, angular, well sorted sand; 25% brownish gray, soft clay matrix; scattered coarse-to medium grained-sand; trace of muscovite flakes.
56.5-60.5	75% white, clear to frosted, fine-grained, angular, well sorted sand; 25% brownish gray, soft clay matrix; trace of heavy minerals and muscovite flakes.
60.5-64.5	75% white, clear to frosted, fine-grained, angular, well sorted sand; 25% brownish gray, soft, poorly consolidated clay matrix; turns to light gray clay at 64.0 feet; trace of pyrite, muscovite flakes and heavy minerals.
64.5-68.5	No sample.
68.5-72.5	70% white to light gray, clear to frosted, fine-grained, angular, very well sorted sand; 30% medium grained, soft, poorly consolidated, silty clay matrix; some white mottling between 71.6 and 72.4 feet; trace of heavy minerals and muscovite flakes.
72.5-79.0	No sample.

Rocks of Oligocene Age

79.0-93.0 Microcoquina; very light gray, indurated, microcrystalline, porous, highly weathered limestone matrix with abundant fossils; no diagnostic fauna.

CORE HOLE LK7428

(282219N0814435.1)



LK7429

Lake County 282232N0814640.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-2.5	95% white, clear, fine-grained, fairly well sorted, sub-rounded sand; 5% dark brown, dark gray, soft clay matrix; abundant medium-grained sand.
2.5-6.0	No sample.
6.0-14.7	70% white, clear to frosted, fine-grained, fairly well sorted, sub-rounded sand; 30% creamy to light tan, indurated clay matrix; scattered medium-to coarse-grained sand.
14.7-20.7	85% white to light gray, clear to frosted, coarse-to very coarse-grained, poorly sorted, sub-rounded sand; 15% tan, soft clay matrix.
20.7-23.0	95% white. clear to frosted, fine-grained, poorly sorted, sub-angular sand; 5% light tan, soft clay matrix; abundant coarse-to very coarse-grained sand.
23.0-35.5	No sample.
35.5-39.7	80% white, clear to frosted, very fine-grained, well sorted, sub-angular sand; 20% light tan, soft clay matrix; trace of medium-grained sand and fine muscovite.
39.7-41.0	65% sand as above; 35% clay as above; trace of muscovite flakes.
41.0-48.5	No sample.
48.5-58.5	Same as 39.7-41.0 interval.
58.5-78.0	50% white, clear to frosted, very fine-grained, well sorted, sub-angular sand; 50% light tan to very light gray, soft clay matrix; trace of coarse-to very coarse-grained sand and fine to very fine muscovite.
78.0-79.0	60% sand as above; 40% medium to dark gray, banded, soft clay matrix; trace of muscovite.

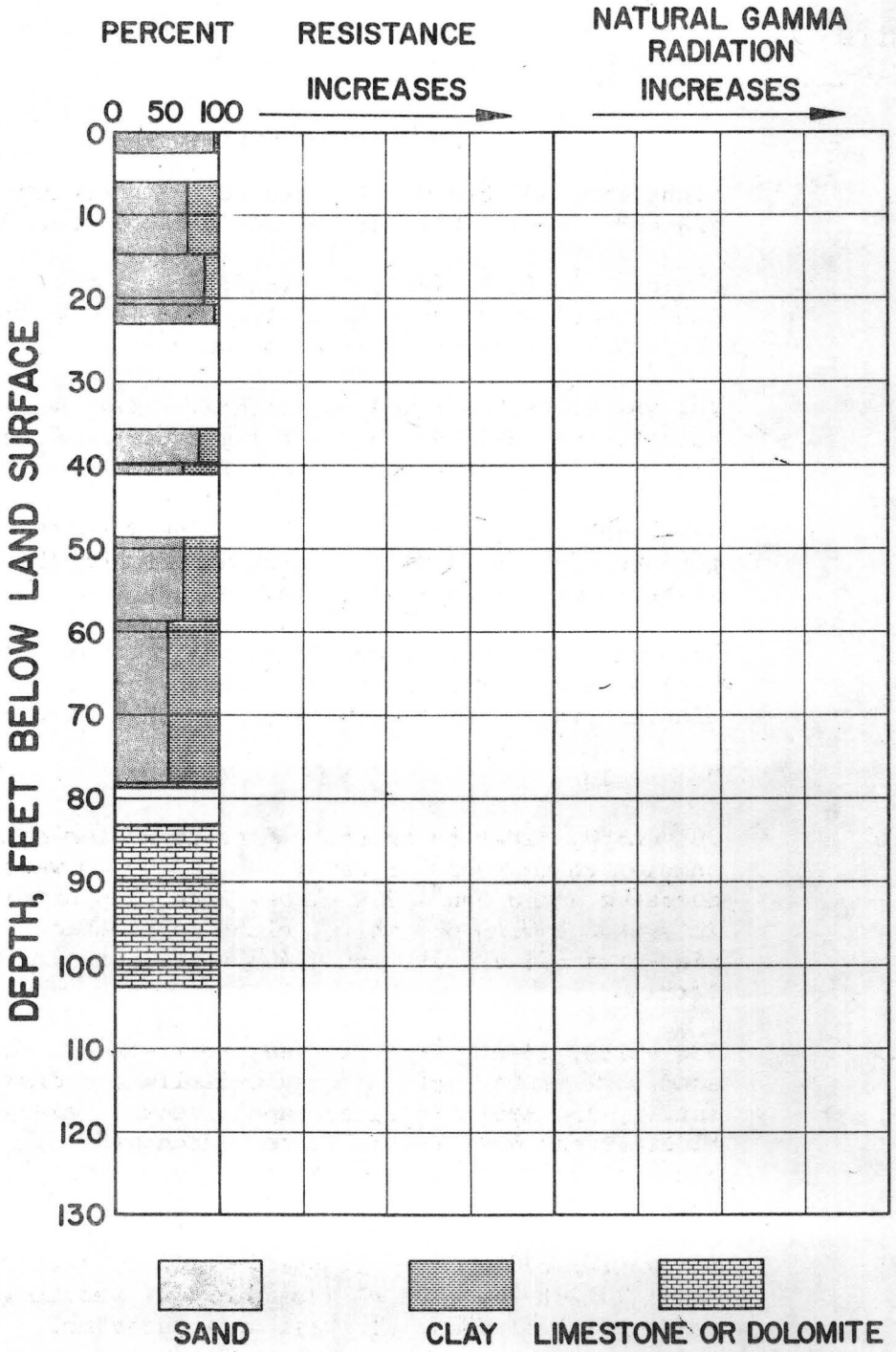
79.0-83.0	No sample.

Rocks of Oligocene Age

83.0-102.5	Creamy, microcrystalline, soft, porous, chalky, fossiliferous limestone; slightly clayey; no diagnostic fauna.

CORE HOLE LK7429

(282232N0814640.1)



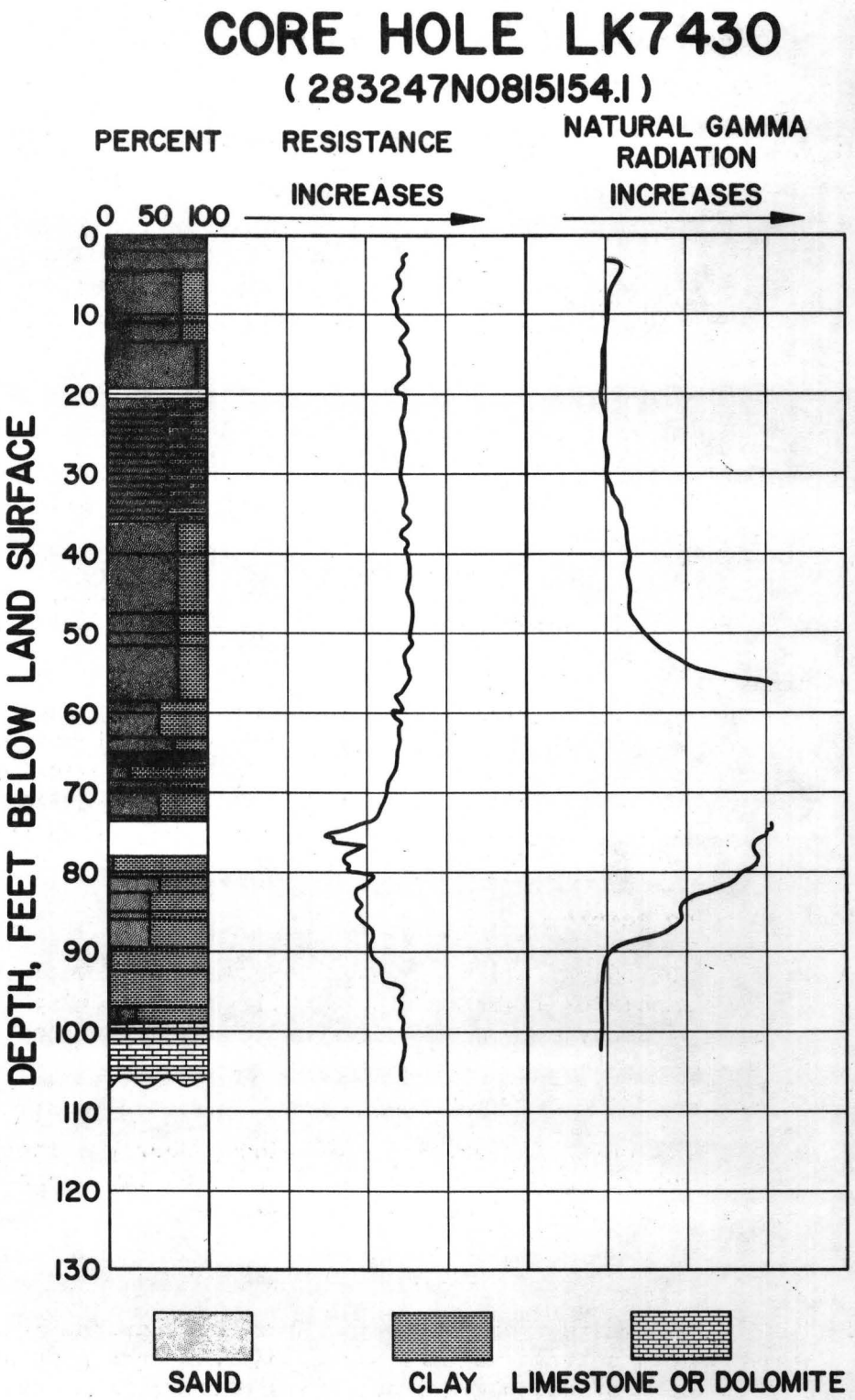
LK7430

Lake County 283247N0815154.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-2.0	Light gray and brown, clear to stained, medium-grained, fairly well sorted, sub-angular sand.
2.0-4.5	90% tan, stained, medium-grained, fairly well sorted, sub-rounded sand; 5% fine grained sand; 5% coarse-grained sand; trace of light brown clay.
4.5-11.0	70% white, frosted, medium grained, fairly well sorted, sub-rounded sand; 25% light tan, soft clay matrix; 5% fine-to coarse-grained sand.
11.0-13.5	75% light gray, frosted, medium-to very coarse-grained, sub-rounded to well rounded sand; 25% light to medium tan, soft clay matrix.
13.5-19.2	85% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 10% white, soft clay matrix; 5% coarse to very coarse-grained sand.
19.2-20.5	No sample.
20.5-36.0	50% white, clear to frosted, fine-to medium-grained, angular to sub-angular sand; 30% coarse-to very coarse-grained sand; 20% white, soft clay matrix; interbedded with 60% white, clear to frosted, fine-grained, angular sand, 40% white, soft clay matrix.
36.0-47.5	55% white, clear, fine-grained, well sorted, angular sand; 30% white, soft, poorly consolidated clay matrix; 15% medium-grained sand; trace of heavy minerals and muscovite; 1/4 to 1-inch wide bands of very coarse-grained sand throughout this interval.
47.5-51.5	55% white, clear, fine-grained, angular, well sorted sand; 30% white, soft clay matrix; 15% medium-grained sand; trace of heavy minerals and muscovite.
51.5-58.5	70% white, clear, fine-grained, angular, very well sorted sand; 30% very light gray, soft clay matrix; trace of heavy minerals and fine to coarse muscovite.

58.5-63.0	50% very light gray, soft clay matrix; 40% sand as above; 10% medium-grained sand; trace of heavy minerals and muscovite.
63.0-65.0	65% sand as 51.5-58.5 interval; 35% off-white, indurated clay matrix; trace of heavy minerals and muscovite.
65.0-65.5	85% light gray, clear to frosted, medium-grained, fairly well sorted, sub-angular sand; 10% very light green, soft clay; 5% fine and coarse-to very coarse-grained sand and trace of heavy minerals.
65.5-65.7	60% very pale green, soft clay matrix; 40% light gray, clear to frosted, fine-to medium-grained, angular to sub-rounded sand.
65.7-66.0	55% sand as above; 45% very light gray, soft clay matrix; trace of heavy minerals.
66.0-66.7	70% white, clear to frosted, fine-to very fine-grained, angular, well sorted sand; 30% very pale green, soft clay matrix; trace of heavy minerals.
66.7-68.2	80% off-white, soft, crumbly clay matrix; 15% light gray, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 5% coarse-grained sand; trace of heavy minerals and small fragments of white microcrystalline, soft, porous, silicified limestone.
68.2-69.5	60% sand as above; 40% white, very pale green mottled, indurated, crumbly clay matrix; trace of limestone fragments as above.
69.5-73.0	50% very light gray soft clay matrix; 45% white, clear, fine-grained, angular sand; 5% medium-grained sand; trace of heavy minerals.
73.0-73.5	50% light bluish green, soft clay; 45% light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 5% fine-grained sand; trace of heavy minerals.
73.5-78.0	No sample.
78.0-80.0	98% white, and creamy mottled, soft, powdery, clay matrix; 2% white, clear, fine-grained, angular, well sorted sand.

80.0-80.7	70% pale green, light brown and white mottled, soft, crumbly clay matrix; 30% sand as above; trace of phosphate.
	Rocks of Miocene Age
80.7-82.5	50% sand as 78.0-80.0 interval; 50% pale green, soft, poorly consolidated clay matrix; trace of brown phosphate nodules and blades; trace of white, microcrystalline, hard, porous, silicified limestone fragments.
82.5-85.0	60% creamy, soft, poorly consolidated, crumbly clay matrix; trace of phosphate as 80.7-82.5 interval; 30% white, microcrystalline, hard porous, silicified limestone fragments; 10% sand as 78.0-80.0 interval.
85.0-86.0	60% light green and creamy mottled, soft clay matrix; 35% limestone fragments as 82.5-85.0 interval; 5% sand as 78.0-80.0 interval.
86.0-89.5	60% clay as 85.0-86.0 interval; trace of black, medium to very coarse phosphate nodules; 30% limestone fragments as 82.5-85.0 interval; 10% white, clear, fine-to medium-grained, angular to sub-rounded sand.
89.5-92.5	98% light gray and creamy mottled, soft, crumbly clay matrix; 2% sand as above.
92.5-97.0	Creamy, buff, brown and green mottled, soft clay matrix; trace of fossil fragments and pisolitic silica.
97.0-99.0	75% off-white, soft, crumbly clay matrix; 15% light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 10% light tan, microcrystalline, indurated, porous, silicified limestone fragments.
	Rocks of Eocene Age
99.0-107.0	80% off-white, microcrystalline, hard, porous limestone with 20% small fossils; highly weathered; contains Lepidocyclina ocalana floridana (Cushman), Sphaerogypsina globula (Reuss), Reussella sculptilis (Cushman).
107.0-112.0	No sample.


CORE HOLE LK7430
(283247N0815154.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

LK7432

Lake County 282245N0814926.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-3.0	60% white, clear to frosted, coarse-grained, poorly sorted, rounded sand; 40% light brown to light tan, indurated clay matrix.
3.0-6.0	No sample.
6.0-7.0	50% white, clear to frosted, fine-grained, angular, poorly sorted sand; 50% off-white, soft, silty clay matrix.
7.0-7.5	70% white, clear to frosted, coarse-grained, poorly sorted, sub-rounded sand; 30% light tan, soft clay matrix.
7.5-18.5	50% white, clear to frosted, very fine-grained, fairly well sorted, angular sand; 50% off-white, soft, silty clay matrix interbedded with the following: 70% white, clear to frosted, very coarse-grained fairly well sorted, rounded sand; 30% off-white, soft, indurated clay matrix.
18.5-19.5	No sample.
19.5-42.0	50% white, clear, fine-grained, angular, well sorted sand; 50% light tan, soft, silty clay matrix; trace of heavy minerals and medium-to coarse-grained sand.
42.0-47.5	No sample.
47.5-50.5	70% white, clear, medium-grained, poorly sorted, sub-rounded to sub-angular sand; 30% tan, soft clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
50.5-52.5	50% white to light gray, clear, fine-grained, fairly well sorted, angular sand; 45% very dark gray and dark brownish gray, soft clay matrix; 5% black, fine phosphate nodules.

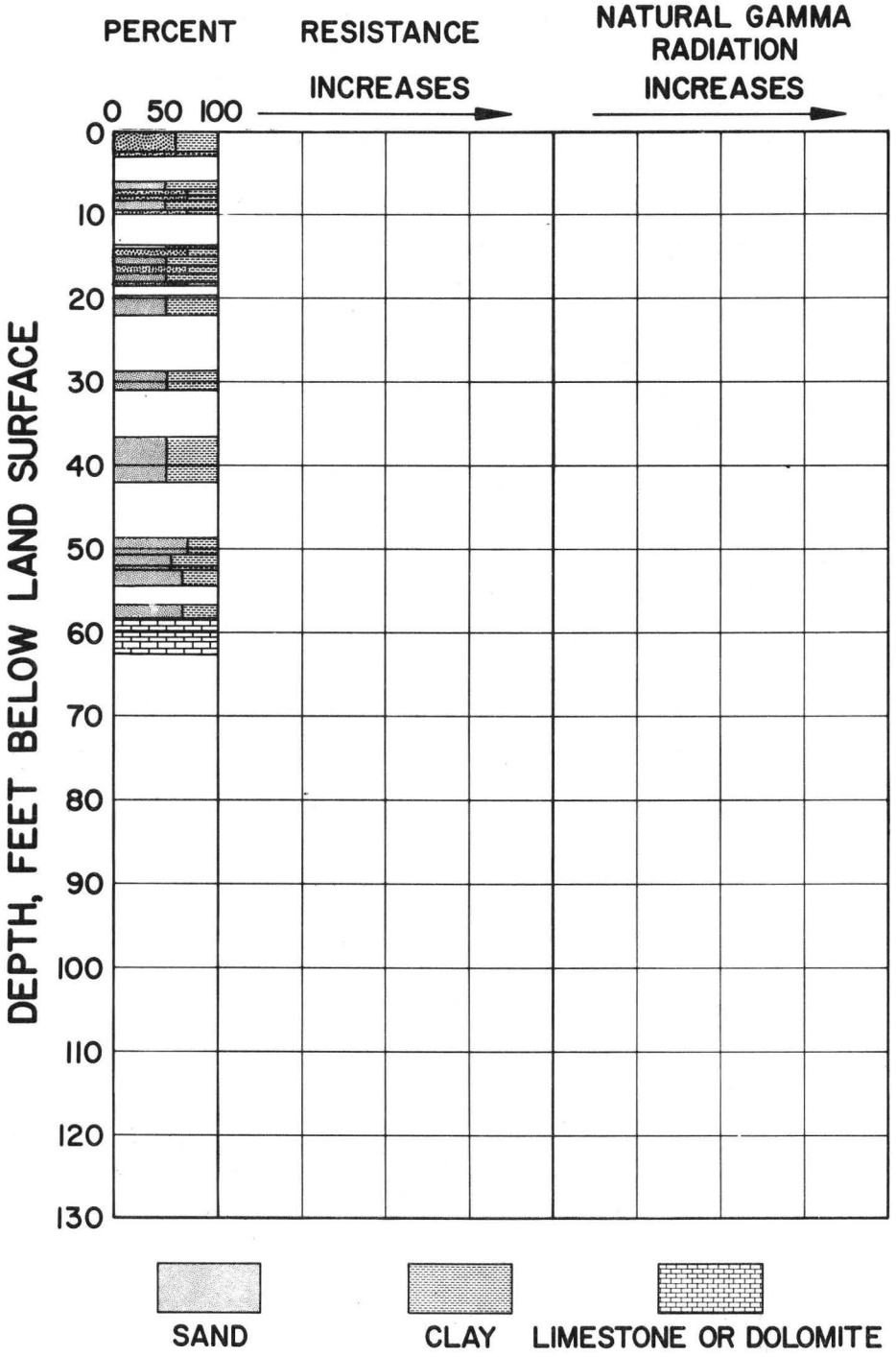
52.5-54.5	60% sand as above; 35% light greenish gray, soft clay matrix; 5% phosphate as above.
54.5-56.5	No sample.
56.5-58.5	Same as 52.5-54.5.

Rocks of Eocene Age

58.5-62.5	Very light gray, soft to indurated, microcrystalline, porous, poorly consolidated, highly weathered microcoquina; contains Lepidocyclina ocalana floridana (Cushman), Sphaerogypsina globula (Reuss), Cibicides mississippiensis ocalanus (Cushman), Reussella sculptilis (Cushman).
62.5-81.4	No sample.

CORE HOLE LK7432

(282245N0814926.1)



SM7403

Sumter County 282840N0815835.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-5.0	No sample.
5.0-6.0	60% white to light brown, clear to stained, medium-grained, fairly well sorted, sub-rounded sand; 40% medium to dark brown, indurated clay matrix with purple tint.
6.0-7.0	60% sand as above; 40% medium to light brown mottled, soft clay matrix.
7.0-8.0	65% sand as 5.0-6.0 interval; 35% medium to light brown to light tan mottled, indurated clay matrix.
8.0-11.0	No sample.
11.0-12.0	50% white, clear to frosted, fine-grained, angular, fairly well sorted sand; 50% very light greenish gray, indurated clay matrix; trace of heavy minerals.
12.0-12.5	65% sand as above; 35% clay as above with a slight pink cast.
12.5-15.0	No sample.
15.0-15.5	75% white to light yellow, clear to stained, medium-grained, fairly well sorted, sub-rounded sand; 25% light yellow and light tan mottled, soft clay matrix; 1.5-inch band of white, medium-grained sand at 16.2 feet; trace of heavy minerals.
15.5-16.0	75% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 25% light brown soft clay matrix; trace of heavy minerals.
16.0-17.0	75% white, clear, fine-grained, fairly well sorted, sub-angular sand; 25% light greenish gray and tan mottled, soft clay matrix; 1/4-inch bands of greenish gray, soft, sticky clay; trace of heavy minerals.

17.0-22.0	No sample.
22.0-29.0	75% light gray, indurated clay matrix; 25% white, clear, fine-grained, angular, well sorted sand.
29.0-29.5	60% white, clear, fine-grained, fairly well sorted, sub-angular sand; 40% pale green and white mottled, soft clay matrix; trace of heavy minerals and fish teeth.
29.5-30.0	70% light brownish gray, white to creamy mottled, soft clay matrix; 30% sand as above.
30.0-31.0	95% brownish gray and greenish gray, white and creamy mottled, soft clay matrix; 5% sand as 29.0-29.5 interval.
31.0-31.5	90% olive green and bluish green, mottled soft clay matrix; 8% sand as 29.0-29.5 interval; 2% very light tan phosphate nodules.
31.5-32.0	75% olive green to bluish green, soft clay matrix mottled with creamy, soft fossiliferous clay; 20% sand as 29.0-29.5 interval; 5% phosphate as 31.0-31.5 interval.
32.0-32.7	75% light greenish gray and bluish green and olive green mottled, banded, soft clay matrix; 25% sand as 29.0-29-5 interval; trace of tan phosphate.
32.7-33.0	White, microcrystalline, hard, porous, silicified limestone with relict fossiliferous material.
33.0-34.0	Bluish green to greenish gray to buff, soft, sticky clay.

Rocks of Eocene Age

34.0-40.0	Creamy, microcrystalline, soft, porous limestone with abundant lignite and foraminifera; highly weathered; contains Lepidocyclina ocalana floridana (Cushman), Reussella sculptilis (Cushman), Cibicides mississippiensis ocalanus (Cushman).

LK7412

Lake County 282932N0815704.1

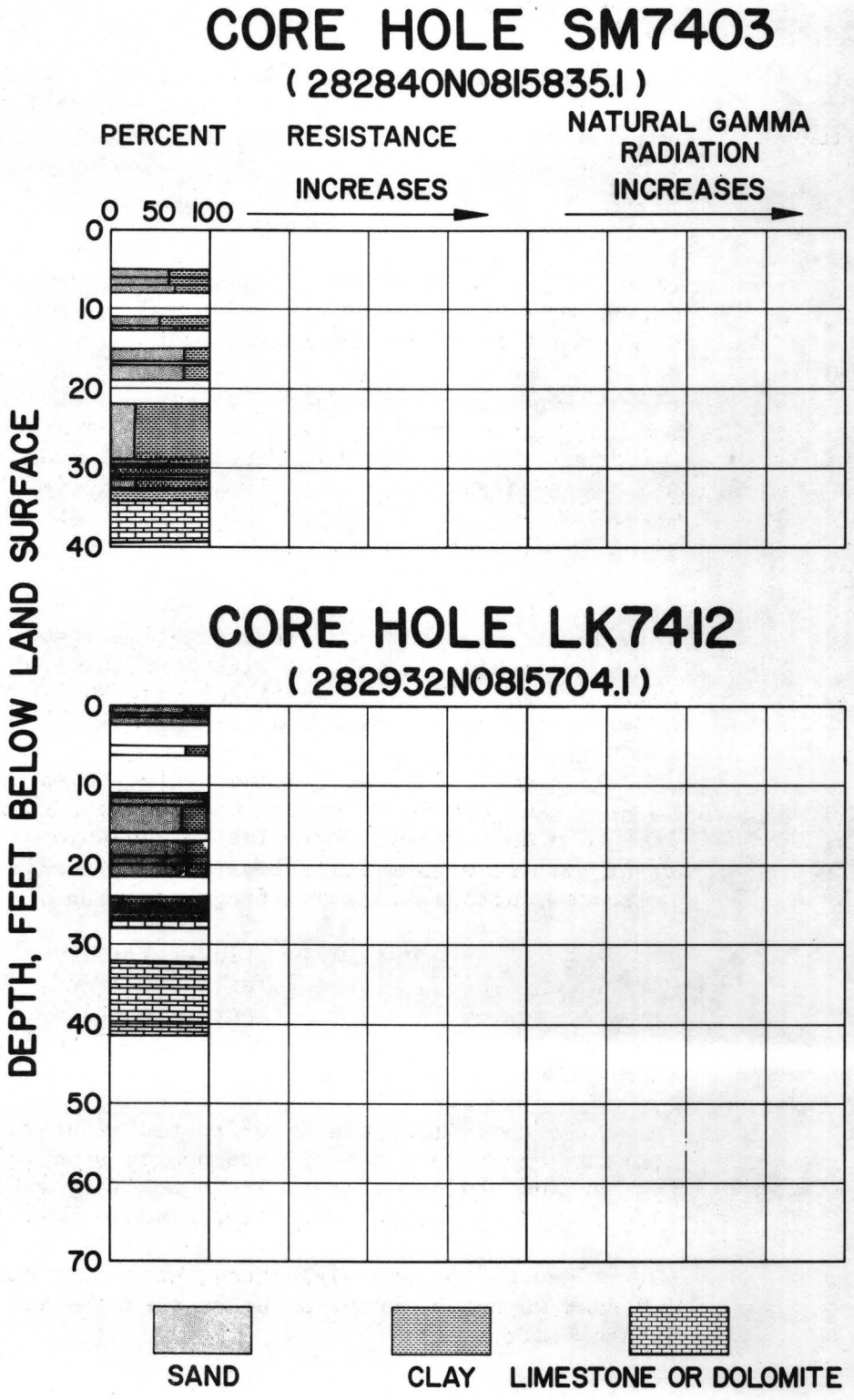
DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	75% white to light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand, 25% black, soft clay matrix.
1.0-1.5	70% brown, stained, medium-grained, well sorted, sub-rounded sand; 30% dark brown, soft clay matrix.
1.5-2.5	White to light tan, clear to stained, medium-grained, fairly well sorted, sub-rounded sand; trace of light to medium tan clay.
2.5-5.0	No sample.
5.0-5.5	75% white, frosted, medium-grained, fairly well sorted, sub-rounded sand; 25% very light brown, soft clay matrix; trace of heavy minerals.
5.5-11.0	No sample.
11.0-11.5	75% white, frosted, fine-to medium-grained, sub-rounded sand; 25% very light gray, soft, sticky clay matrix.
11.5-12.5	95% white, frosted, medium-grained, fairly well sorted, sub-rounded sand; 5% very light gray, soft clay matrix; trace of heavy minerals.
12.5-16.0	70% white, frosted, fine-to medium-grained, angular to sub-rounded sand; 30% very light brown, indurated to soft clay matrix; trace of heavy minerals.
16.0-17.0	No sample.
17.0-19.0	75% white, clear to frosted, fine-grained, angular, well sorted sand; 25% tan, soft clay matrix.
19.0-21.5	75% sand as above; 25% light tan and white mottled, soft clay matrix.
21.5-24.0	No sample.

Rocks of Miocene Age

24.0-25.0	90% creamy and light greenish gray to off-white mottled, soft clay matrix; 9% white, clear, fine-grained, angular, well sorted sand; 1% light tan, fine to medium phosphate nodules; trace of heavy minerals.
25.0-25.5	60% sand as above; 35% very light greenish gray, soft clay matrix; 5% phosphate as above; trace of heavy minerals.
25.5-26.0	95% dark greenish gray, soft clay matrix; 5% white, clear, fine-grained, angular, fairly well sorted sand.
6.0-27.0	90% light bluish green, soft clay matrix, 10% sand as above.

Rocks of Eocene Age

27.0-28.0	Very light gray, microcrystalline, hard, porous, vuggy, silicified limestone with abundant fossil casts and molds; highly weathered; contains Sphaerogypsina globula (Reuss), Camperina sp. and Heterostegina sp.
28.0-32.0	No sample.
32.0-41.7	Light gray to creamy, microcrystalline, hard, porous, silicified, fossiliferous limestone.


CORE HOLE SM7403
(282840N0815835.1)
PERCENT
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0 50 100
0
10
20
30
40
CORE HOLE LK7412
(282932N0815704.1)
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
SAND
CLAY
LIMESTONE OR DOLOMITE

SM7405

Sumter County 282430N0815958.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	White, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; trace of yellow to orange sand grains and dark gray clay.
1.0-2.0	55% light gray, dull yellow and light brown mottled, indurated clay matrix; 45% white to yellow to orange, clear to frosted, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; trace of heavy minerals and medium to fine limonite nodules.
2.0-2.5	55% clay as above; 45% sand as above; trace of white, microcrystalline, indurated, porous limestone fragments.
2.5-4.5	70% clay as 2.0-2.5 interval; 30% sand as 1.0-2.0 interval; trace of limestone fragments.
4.5-5.5	50% light gray, dull yellow and medium brown mottled, soft, sticky clay matrix; 25% white, clear to frosted, fine-to medium-grained, angular to sub-angular quartz sand; 25% white to dull yellow, microcrystalline, indurated, porous limestone fragments.
5.5-9.5	70% white, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular quartz sand; 30% dull yellow, white and light purple mottled, soft clay matrix; trace of heavy minerals and yellow sand grains.
9.5-10.0	70% white to yellow, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; 30% tan, medium brown and light brown mottled, soft clay matrix; trace of heavy minerals.
10.0-12.0	90% off-white to very light gray, soft clay matrix; 10% sand as above; trace of heavy minerals and limestone fragments.

Rocks of Eocene Age

12.0-21.3	70% off-white, very fine-grained, soft, porous, chalky limestone with 30% large to small foraminifera and shell fragments; matrix of off white, soft, poorly consolidated, calcareous clay; contains Sphaerogypsina globula (Reuss), Lepidocyclina ocalana floridana (Cushman), Cibicides mississippiensis ocalanus (Cushman), Reussella sculptilis (Cushman).

LK7423

Lake County 282435N0815423.1

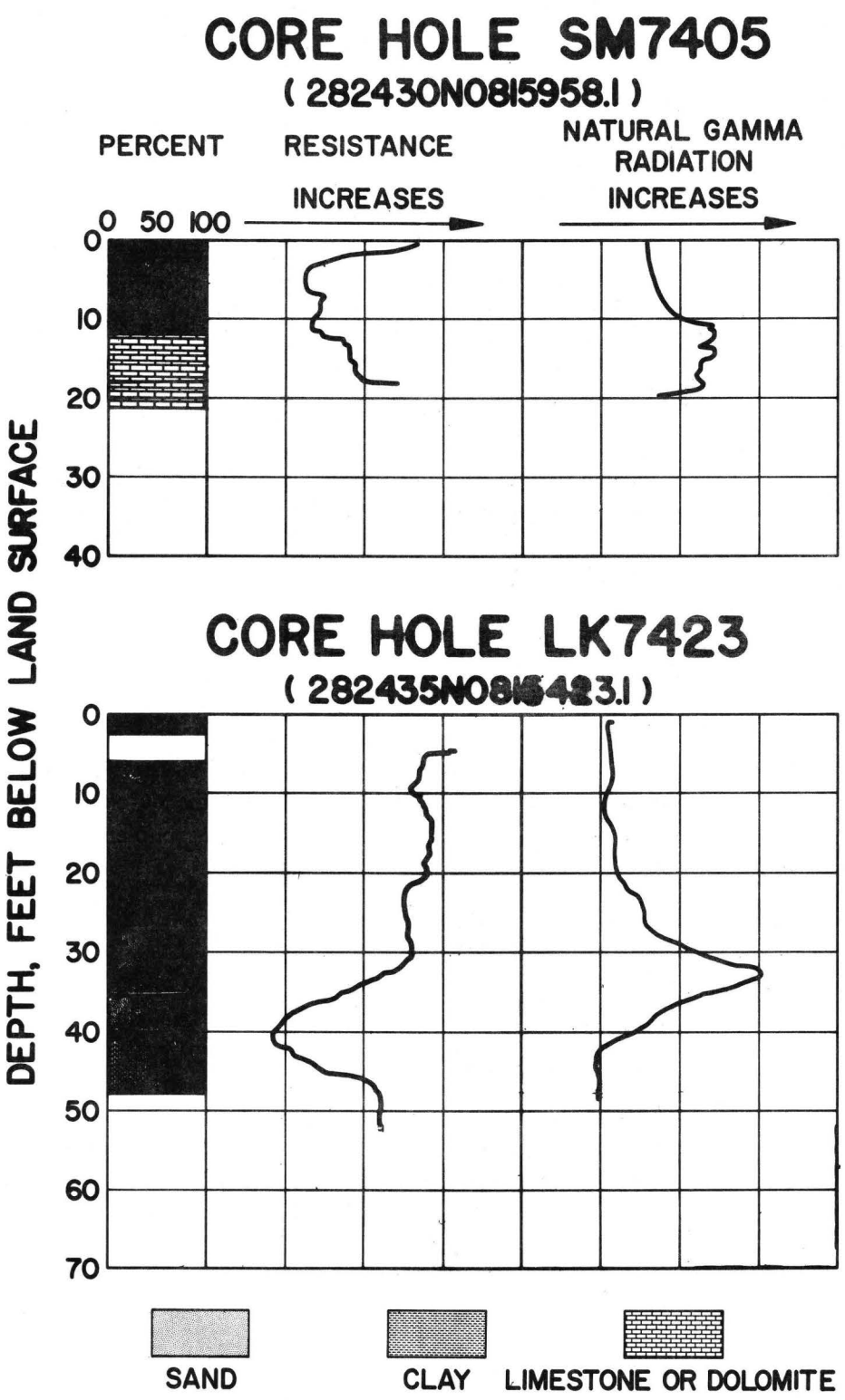
DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	Light gray, clear to frosted, medium-grained, well sorted, sub-rounded to rounded quartz sand; trace of light gray clay.
1.0-2.0	60% white to brown, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 40% dark brown, soft, crumbly clay matrix.
2.0-2.5	60% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 40% light tan, soft, crumbly clay matrix with minor dull yellow mottling; trace of heavy minerals.
2.5-6.0	No sample.
6.0-6.5	65% light grayish brown, dull yellow and dull orange mottled, indurated, clay matrix; 35% sand as 2.0-2.5 interval; trace of heavy minerals.
6.5-11.5	80% sand as 2.0-2.5 interval; 20% light tan, soft, poorly consolidated clay matrix; trace of heavy minerals.
11.5-15.5	70% sand as 2.0-2.5 interval; 30% light tan, indurated, clay matrix; trace of heavy minerals.
15.5-20.2	65% sand as 2.0-2.5 interval; 35% tan, indurated, soft clay matrix.
20.2-25.5	80% white, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; 20% tan, indurated clay matrix; trace of heavy minerals.
25.5-27.5	55% white, clear to frosted, fine-grained, well sorted, angular quartz sand; 40% very light tan, silty, soft clay matrix; 5% coarse-to medium-grained sand; trace of heavy minerals.
27.5-33.0	55% fine-grained sand as above; 40% light to very light tan and indurated, silty clay matrix; 5% medium-grained sand.

Rocks of Miocene Age

33.0-33.5	50% white, clear to frosted, medium-grained, well sorted, rounded quartz sand; 50% medium gray and light tan mottled, soft, silty clay matrix; trace of heavy minerals.
33.5-35.5	85% light tan, brownish gray and greenish gray mottled and banded, soft, waxy clay matrix; 10% white, clear to frosted, fine-grained, silty, well sorted quartz sand; 5% medium-to coarse-grained sand; trace of heavy minerals and tan, medium to fine phosphate nodules and blades.
35.5-39.5	75% medium gray, soft sticky clay matrix; 10% white, clear, fine-to medium-grained, angular to sub-rounded quartz sand; 15% white, medium to coarse phosphate nodules and blades; trace of heavy minerals.
39.5-40.0	80% medium gray, soft, fairly well consolidated, sticky clay matrix with minor bluish gray mottling; 15% phosphate as above; 5% sand as above.
40.0-40.5	70% light greenish gray and bluish gray mottled, soft, sticky clay matrix; 15% sand as 35.5-39.5 interval; 15% phosphate as 35.5-39.5 interval.

Rocks of Eocene Age

40.5-45.0	80% creamy, soft, porous, chalky, powdery, calcareous, highly weathered calcareous clay matrix; 20% creamy, microcrystalline, porous, chalky limestone fragments with large to small foraminifera; contains Sphaerogypsina globula (Reuss) and Lepidocyclina ocalana floridana (Cushman).
45.0-48.0	80% calcareous clay as above; 15% white, clear to frosted, fairly well sorted, medium-grained quartz sand; 5% limestone fragments as above.
48.0-51.4	No sample.

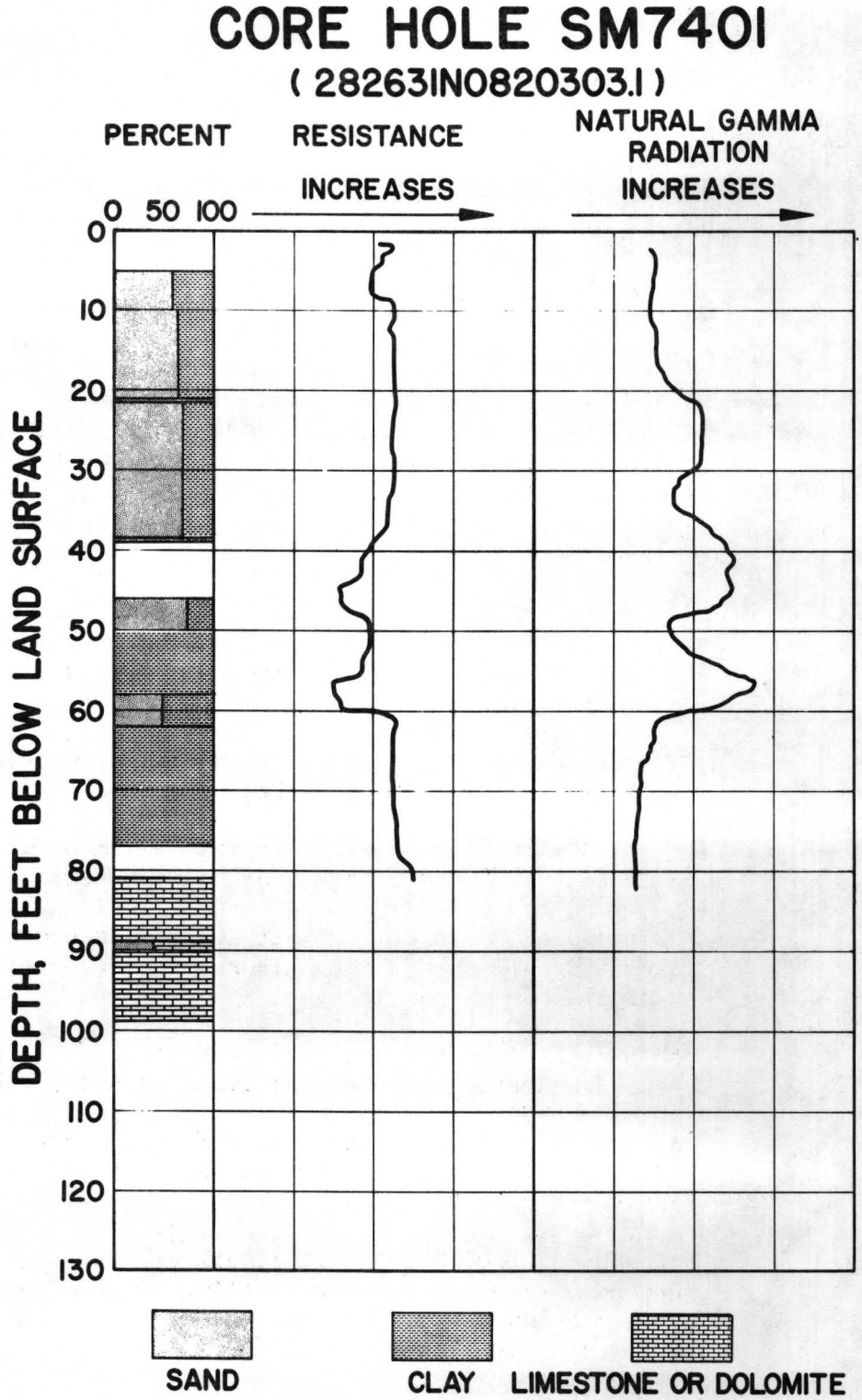

CORE HOLE SM7405
(282430N0815958.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0
10
20
30
40
CORE HOLE LK7423
(282435N0815423.1)
0
10
20
30
40
50
60
70
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

SM7401

Sumter County 282631N0820303.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-0.4	Black, loose, organic sand.
0.4-1.8	White, loose sand; streaks of tan clay.
1.8-5.0	No sample.
5.0-10.0	60% white, clear, fine-grained fairly well sorted, sub-angular, quartz sand; 40% tan and gray mottled, indurated clay; scattered small pockets and lenses of white and orange mottled, fine-grained quartz sand.
10.0-21.5	65% white, clear, fine-grained, fairly well sorted, sub-angular quartz sand; 35% tan and gray mottled clay matrix; thin lenses of white, clear, fine-grained, fairly well sorted quartz sand with just enough clay to bind throughout the interval; trace of black to brown, very fine phosphate.
21.5-39.0	70% white, clear to frosted, fine-grained, fairly well sorted, sub-rounded quartz sand; 30% brownish gray, indurated clay; lenses of light brown, to white, clear, fine-grained, fairly well sorted, sub-angular quartz sand with just enough clay to bind; trace of black to brown, very fine phosphate nodules.
39.0-46.0	No sample.
46.0-50.0	75% white to light gray, clear, fine-grained, fairly well sorted, sub-rounded quartz sand; 25% black and very dark brownish gray, indurated clay matrix; trace of very fine to fine phosphate nodules.
	Rocks of Eocene Age
50.0-58.0	Cream, soft, poorly consolidated, very highly fossiliferous, calcareous clay. Fossils are large foraminifera and small shell fragments. From 54.1 to 55.1, 1-inch wide bands of brownish gray and greenish gray, soft, well consolidated, waxy clay with 30% sand in some parts; contains Lepidocyclina ocalana (Cushman) and Reussella sculptilis (Cushman).

58.0-62.0	50% white to light brownish gray, clear, fine-grained, fairly well sorted, sub-rounded quartz sand; 50% matrix of black, indurated clay very dark brownish gray streaks; trace of black, fine to very fine phosphate nodules.
62.0-77.0	Very light gray, indurated, calcareous, well consolidated, highly fossiliferous clay; poorly consolidated from 67.9 to 76.9.
77.0-81.0	No sample.
81.0-99.0	Gray to greenish gray, soft to hard limestone; at 88.9 a 1-foot band of dark brown and light brown and light gray and white mottled, soft, fairly well consolidated, calcareous clay with 40% fine-grained sand.


CORE HOLE SM7401
(282631N0820303.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

SM7402

Sumter County 282522N0820109.1

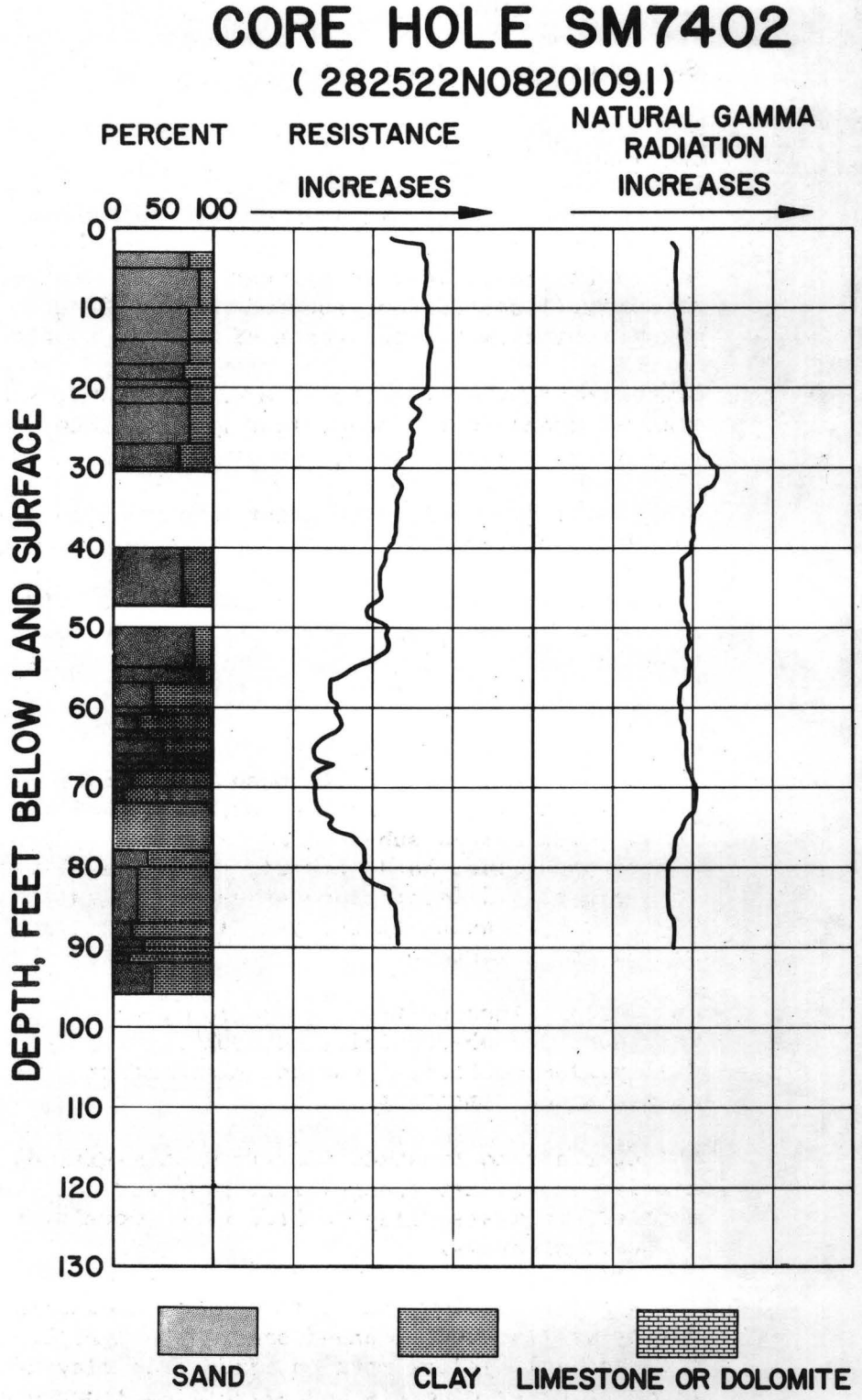
DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-0.6	Black, loose, organic sand.
0.6-2.0	White, loose sand streaked with trace of brownish clay.
2.0-3.0	No sample.
3.0-5.0	75% light gray, clear to frosted, medium-grained, well sorted, rounded quartz sand; 25% dark brownish gray, soft clay matrix.
5.0-10.0	85% white to light tan, clear to frosted, medium-grained, fairly well sorted, rounded quartz sand; 15% light brown, indurated clay matrix; trace of heavy minerals.
10.0-14.0	75% sand as above; 25% light to medium brown, indurated clay matrix; trace of heavy minerals.
14.0-17.0	75% sand as 5.0-10.0 interval; 25% medium brown, indurated clay matrix; trace of heavy minerals.
17.0-19.0	70% sand as 5.0-10.0 interval; 30% medium brown, indurated clay matrix with minor light tan mottling; trace of heavy minerals.
19.0-22.0	75% sand as 5.0-10.0 interval; 25% medium to light brown, indurated clay matrix; trace of heavy minerals.
22.0-27.0	75% sand as 5.0-10.0 interval; 25% medium brown, indurated clay matrix with minor light bluish gray mottling; trace of heavy minerals.
27.0-30.5	65% sand as 5.0-10.0 interval; 35% dark brown, indurated clay matrix with mottling of pure very dark grayish brown, soft, waxy clay from 29.1 to 30.4 feet; trace of heavy minerals.
30.5-40.0	No sample.

40.0-47.5	70% brown, clear to stained, medium-grained, sub-rounded, fairly well sorted quartz sand; 30% black and very dark brown mottled, indurated clay matrix; trace of heavy minerals.
47.5-50.0	No sample.
50.0-55.0	80% sand as 40.0-47.5 interval; 20% clay as 40.0-47.5 interval; trace of heavy minerals.
55.0-57.0	50% lignite; 40% light gray and light brown, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 10% light brown, indurated clay matrix.
57.0-60.0	60% black, organic, indurated clay matrix with minor dark brown mottling; 25% lignite; 15% sand as abcve; trace of marcasite.
60.0-61.0	60% black, indurated, organic clay matrix; 40% sand as 55.0-57.0 interval; trace of lignite and marcasite.
61.0-63.0	75% black, indurated, organic clay matrix with minor dark brown mottling; 25% sand as 55.0-57.0 interval; trace of lignite and marcasite.
63.0-64.0	65% black, indurated, organic clay matrix with minor dark brown mottling; 35% white to light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; trace of marcasite.
64.0-66.0	50% sand as 63.0-64.0 interval; 50% medium brown and medium grayish brown mottled, soft, waxy, organic clay matrix; trace of heavy minerals.
66.0-67.0	65% sand as 63.0-64.0 interval; 35% black and very dark grayish brown mottled, organic, indurated clay matrix; trace of marcasite and heavy minerals.
67.0-68.0	60% clay as 66.0-67.0 interval; 40% sand as 63.0-64.0 interval; trace of heavy minerals and marcasite.
68.0-70.0	80% black and very dark grayish brown mottled, indurated, organic, sticky, waxy clay matrix; 20% sand as 63.0-64.0 interval; trace of heavy minerals and marcasite.
70.0-72.0	90% black, soft, well consolidated, sticky, waxy, organic clay matrix; 10% sand as 63.0-64.0 interval; trace of heavy minerals and marcasite.

72.0-76.0	Black and dark brown mottled, soft, crumbly, waxy, organic clay; trace of sand, heavy minerals and marcasite.
76.0-78.0	Black, organic, crumbly, soft clay with light brown tint; trace of sand.
78.0-80.0	65% black to very dark brown, soft, crumbly, organic clay matrix; 35% sand as 63.0-64.0 interval.
80.0-87.0	75% dark brown and black mottled, soft, crumbly, organic clay matrix; 25% sand as 63.0-64.0 interval.
87.0-89.0	80% black and dark brown mottled, soft, crumbly, organic clay matrix; 20% sand as 63.0-64.0 interval.
89.0-91.0	70% black and dark brown mottled, soft, organic, waxy clay matrix with scattered, small wood fragments; 30% sand as 63.0-64.0 interval; trace of marcasite.
91.0-92.0	85% clay as 89.0-91.0 interval, with wood fragments; 15% sand as 63.0-64.0 interval.

Rocks of Miocene Age

92.0-96.9	60% black and dark brown mottled, organic, indurated to soft, crumbly, waxy clay matrix with scattered wood fragments; 40% sand as 63.0-64.0 interval.


CORE HOLE SM7402
(282522N0820109.1)
PERCENT
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0 50 100
0
10
20
30
40
50
60
70
80
90
100
110
120
130
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

SM7404

Sumter County 282616N0815921.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	90% light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 10% dark gray, soft clay matrix; trace of heavy minerals.
1.0-1.5	White to light gray, fine-to medium-grained, sub-rounded sand; just enough light gray clay to bind sand very loosely; trace of heavy minerals.
1.5-1.7	Very light gray, clear to frosted, medium-to fine-grained, sub-rounded sand.
1.7-2.5	70% white to light gray, fine-to medium-grained, sub-rounded sand; 30% very dark brownish gray, soft clay matrix.
2.5-4.0	No sample.
4.0-5.5	70% light gray, soft, well consolidated clay matrix; 30% white to yellow, clear to stained, medium-grained, fairly well sorted sub-rounded sand; band of white, microcrystalline, hard, porous, silicified limestone from 5.0 to 5.5 feet; trace of heavy minerals and light gray to white microcrystalline, porous, hard, silicified limestone.
5.5-8.5	70% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 30% light gray and dull yellow mottled, indurated clay; trace of heavy minerals and limestone.
8.5-9.0	White, clear to frosted, fine-to medium-grained, sub-angular sand; just enough light gray and dull yellow mottled, indurated clay to bind sand loosely; trace of heavy minerals.
9.0-9.5	70% white to yellow, clear to stained, medium-grained, fairly well sorted, rounded sand; 30% light brownish gray and dull yellow mottled, indurated clay matrix; trace of heavy minerals and silicified limestone.

9.5-11.5	90% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 10% off-white, indurated, clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
11.5-12.5	50% white to light gray, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 45% bluish gray, brownish gray and dull yellow mottled, soft clay matrix; trace of heavy minerals and white to light gray, microcrystalline, hard, porous, silicified limestone.
12.5-13.0	60% sand as above; 40% clay matrix as above; trace of pisolitic silica, fragments of white, microcrystalline, hard, porous, silicified limestone with relict fossils and heavy minerals.
	Rocks of Eocene age
13.0-24.0	60% off-white, soft, poorly consolidated, calcareous clay matrix; 40% off-white, microcrystalline, soft, porous, cherty limestone with fossils; fairly pure clay from 14.0 to 14.8 feet and from 20.0 to 21.0 feet; some mottling by light gray, soft, clay from 14.0 to 16.0 feet; contains Sphaerogypsina globula (Reuss), Reussella sculptilis (Cushman) and Jugosocythereis bicarinata (Swain).

PS7401

Pasco County 282740N0820508.1

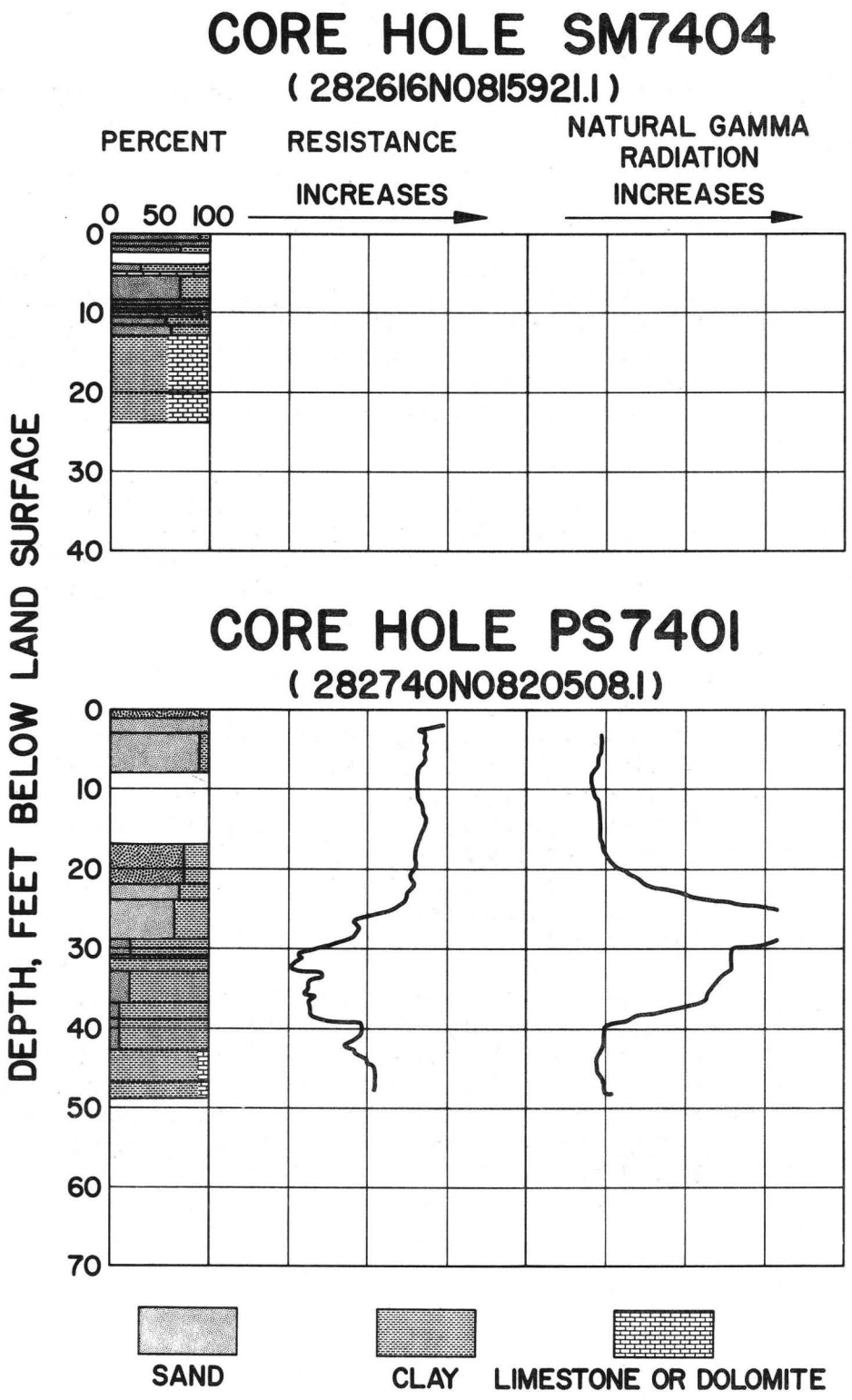
DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.1	White to light brown, clear to stained, fine-to medium-grained, fairly well sorted, sub-rounded quartz sand; trace of light brown and dark gray clay.
1.1-3.0	Light tan, clear to stained, fine-grained, well sorted, angular quartz sand; trace of heavy minerals.
3.0-8.0	90% very light purple, stained, fine-grained, fairly well sorted, sub-angular quartz sand; 10% very light purple, indurated to soft clay matrix; trace of heavy minerals.
8.0-17.0	No sample.
17.0-22.0	75% white, medium brown to dark brown, clear to stained, medium-to fine-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 25% light and dark brown mottled, soft clay matrix; trace of heavy minerals.
22.0-24.0	70% white, clear, fine-grained, fairly well sorted, sub-angular sand; 30% thinly (1/16 to 1/4-inch) crossbedded, tan and light brown indurated clay matrix; trace of heavy minerals.
24.0-29.0	65% white, clear, fine-grained, well sorted angular quartz sand; 35% very light gray, indurated clay matrix; trace of heavy minerals.
29.0-31.0	80% dull yellow, green and bluish green mottled, soft clay matrix; 20% sand, as above; clay has 20% white mottles in lower 0.3 foot; trace of heavy minerals.
31.0-31.5	80% dull yellow and medium greenish gray mottled, soft clay matrix; 20% sand, as 24.0-29.0 interval; a few sandy pockets; trace of heavy minerals.

Rocks of Miocene Age

31.5-32.0	White, soft, crumbly clay with very minor mottling by light greenish gray, sticky clay.
32.0-33.0	White, soft, crumbly clay, with very minor mottling by a light greenish-gray, soft, sticky clay.
33.0-37.0	80% white, greenish-gray, light gray, dull yellow and medium brown mottled, soft, sticky clay matrix; 20% white, clear to frosted, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; trace of heavy minerals and multicolored medium to very coarse phosphate nodules and blades.
37.0-39.0	90% off-white, creamy, soft calcareous clay matrix with minor mottling by greenish gray and dull yellow mottled, soft clay; 6% very small to very large foraminifera; 4% fine-grained sand as 33.0-37.0 interval; trace of light to dark brown, coarse to very coarse phosphate nodules.

Rocks of Eocene Age

39.0-43.0	90% medium brown, light bluish to greenish gray mottled, soft, sticky clay matrix, mottled with cream soft, calcareous clay; 7% white, clear, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; 3% small to large foraminifera; the green to bluish gray clay contains the sand and the cream, calcareous clay contains the foraminifera.
43.0-49.0	90% cream, soft, poorly consolidated, calcareous clay matrix; 10% creamy, fine-grained, indurated, porous, highly fossiliferous limestone; band of medium to dark brown, soft, well consolidated, sticky, waxy clay from 46.0 to 46.2 feet; contains Sphaerogypsina globula (Reuss), and Lepidocyclina ocalana floridana (Cushman).


CORE HOLE SM7404
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PERCENT
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0 50 100
0
10
20
30
40
CORE HOLE PS7401
(282740N0820508.1)
0
10
20
30
40
50
60
70
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

SM7406

Sumter County 282509N0820108.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-0.7	90% light gray, clear to frosted, medium-grained, well sorted, sub-rounded sand; 10% black, soft organic clay matrix; trace of heavy minerals.
0.7-2.0	Sand, as above, with a trace of brownish gray clay.
2.0-3.0	Sand, as 0.0-0.7 interval, but is tan in color, and the quartz is stained.
3.0-3.5	80% sand, clear to stained, medium-grained, fairly well sorted, sub-rounded sand; 20% light brown, soft clay matrix.
3.5-4.5	55% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 45% medium brown, soft clay matrix; trace of heavy minerals.
4.5-5.5	55% white, clear to frosted, fine-to medium-grained, sub-angular to sub-rounded sand; 45% medium brown, indurated clay matrix with light gray tint; trace of heavy minerals.
5.5-9.5	60% white, clear to frosted, fine-to medium-grained, sub-angular sand; 40% light to medium gray, indurated to soft clay matrix; dull yellow mottling and a light clay band from 7.5 to 8.0 feet.
9.5-11.5	No sample.
11.5-13.5	80% sand, as 5.5-9.5 interval; 20% light to medium brownish gray, indurated clay matrix, minor yellow mottling.
13.5-14.5	No sample.
14.5-16.5	85% sand, as 5.5-9.5 interval; 15% light gray, indurated to soft clay matrix with minor yellow mottling.
16.5-17.5	No sample.

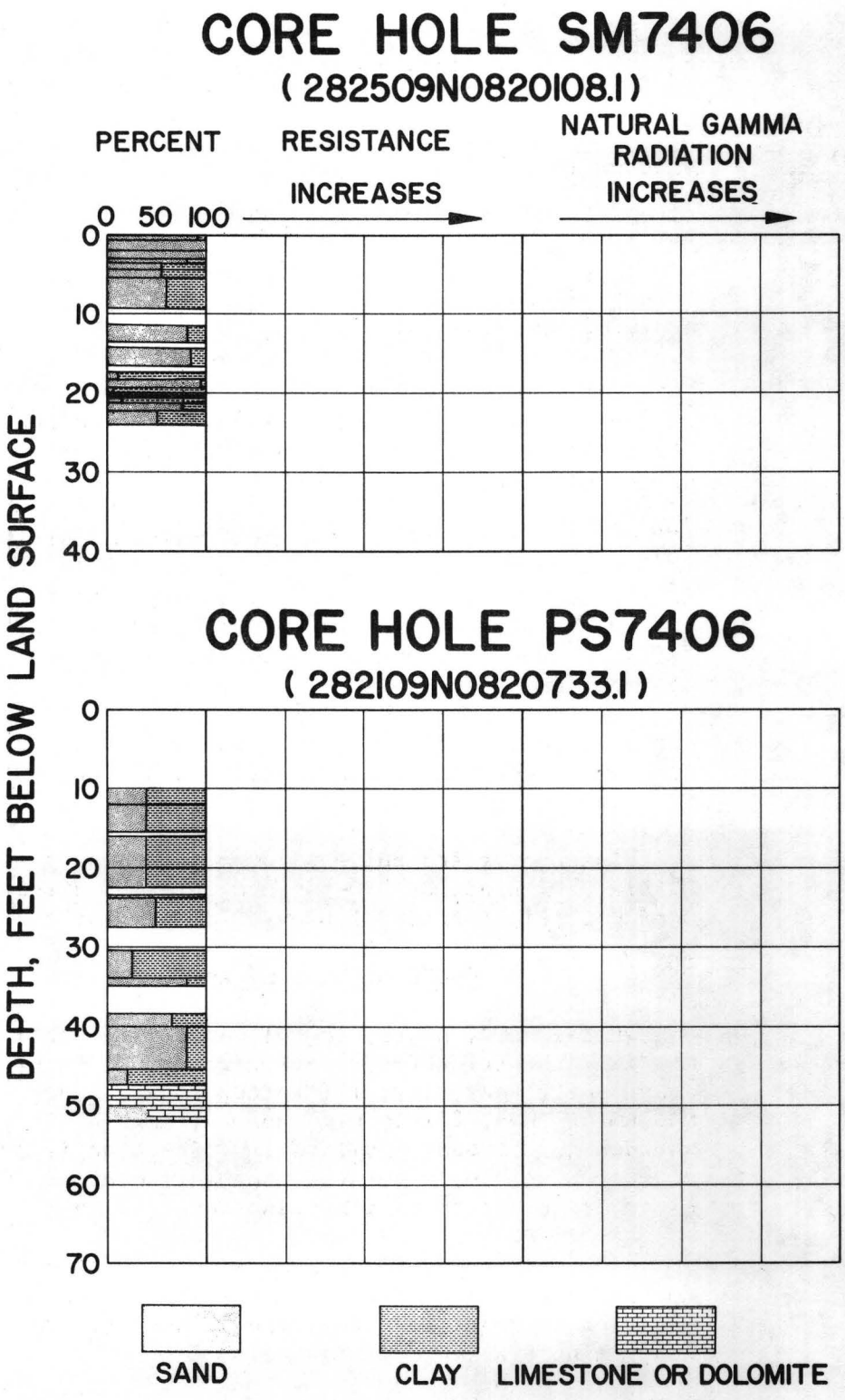
17.5-18.5	90% greenish gray and dull yellow mottled, soft, waxy, sticky clay matrix, with some minor bluish gray mottling; 10% sand, as 5.5-9.5 interval.
18.5-19.5	90% white, frosted, medium-grained, fairly well sorted, sub-rounded sand; 5% light gray, soft, poorly consolidated clay matrix; trace of heavy minerals.
19.5-20.5	95% off-white and greenish gray mottled, soft, waxy clay matrix; 5% white, frosted, fine-grained, fairly well sorted, sub-angular sand.
20.5-20.7	90% greenish gray, soft, waxy clay matrix, mottled with off-white nodules and black organic material; 10% sand, as above; trace of heavy minerals.
20.7-21.5	85% off-white to buff, soft waxy clay matrix, with very light greenish gray mottling; 15% white, clear, fine-grained, angular, well sorted sand; trace of heavy minerals.
21.5-22.5	75% white, clear, fine-grained, angular, very well sorted sand; 25% light greenish gray and white mottled, soft clay matrix; trace of heavy minerals.
22.5-24.0	50% sand, as above; 50% greenish gray and tan mottled, soft clay matrix.
24.0-40.0	No sample.

PS7406

Pasco County 282109N0820733.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-0.5	Black, stained, fine-to medium-grained sand. Organic material prominent.
0.5-2.0	White to gray sand.
2.0-3.0	Black to brown sand with angular fragments of iron oxide.
3.0-10.0	No sample.
10.0-12.0	60% light greenish gray, indurated clay matrix with some yellow and light purple banding and mottling; 40% white, clear, fine-grained, angular, well sorted sand; trace of heavy minerals.
12.0-15.5	60% very pale, greenish gray, medium brown and tan mottled and banded indurated clay matrix, with pockets of white indurated clay; 40% sand as above; trace of heavy minerals.
15.5-16.0	No sample.
16.0-20.5	60% tan to dull yellow, indurated clay matrix; 40% white, clear, fine-grained, angular, well sorted sand.
20.5-22.5	60% pale greenish gray, dull yellow and tan mottled, indurated clay matrix; 40% sand, as above.
22.5-23.5	No sample.
23.5-23.7	60% very light gray, indurated clay matrix with minor orange mottling; 40% sand, as 16.0-20.5 interval.
23.7-27.5	50% sand, as 16.0-20.5 interval; 50% light gray, indurated clay matrix.
27.5-30.5	No sample.

30.5-34.0	75% very pale greenish gray, soft, waxy clay matrix, becomes mottled and banded with light purple between 32.0 and 33.6 feet; 25% sand, as 16.0-25.5 interval.
34.0-35.0	80% white, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded sand; 20% light brown indurated clay matrix; trace of heavy minerals.
35.0-38.5	No sample.
38.5-40.0	65% white to yellow, clear to stained, fine-grained, sub-angular, fairly well sorted sand; 35% dull yellow to light gray and very pale green mottled, soft clay matrix; pockets of white indurated clay in last 0.5 feet.
40.0-45.5	80% white to light gray, clear to frosted, fine-grained, fairly well sorted, sub-angular sand; 20% very light gray to very pale greenish gray, soft clay matrix with minor mottling by pale green clay and dull yellow, soft, sticky clay; trace of heavy minerals.
	Rocks of Miocene Age
45.5-47.5	80% calcareous clay matrix; 15% creamy, very fine-grained, indurated porous limestone with abundant fossils; 5% sand, as above.
47.5-50.0	Large nodules of white and yellow mottled micro-crystalline, hard, porous limestone; trace of sand.
50.0-52.0	60% white microcrystalline, indurated, porous limestone; 40% sand, as 40.0-45.5 interval.
	Rocks of Eocene Age(?)
52.0-60.0	Lost circulation, could not be re-established.


CORE HOLE SM7406
(282509N0820108.1)
PERCENT RESISTANCE INCREASES
NATURAL GAMMA RADIATION INCREASES
0 50 100
0
10
20
30
40
CORE HOLE PS7406
(282109N0820733.1)
0
10
20
30
40
50
60
70
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

PS7408

Sumter County 282532N0820318.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	90% light gray to brown, clear to stained, fine-to medium-grained, fairly well sorted quartz sand; 10% light brown, soft clay matrix.
1.0-5.0	70% light gray, clear to stained, fine-to medium-grained, fairly well sorted, sub-rounded quartz sand; 30% dark gray, indurated clay matrix with minor medium brown mottling.
5.0-6.5	55% white, clear, fine-to medium-grained, fairly well sorted, sub-angular to angular quartz sand; 45% tan to dark brown, dull yellow and white purple mottled and banded, indurated clay matrix, with 1/32 to 1/8-inch irregular bands of organic material throughout; trace of heavy minerals.
6.5-7.0	60% dull yellow, light bluish gray and brown mottled and banded, indurated clay matrix; 40% sand, as above; trace of heavy minerals and organic material.
7.0-8.0	75% bluish gray and dull yellow mottled, soft clay matrix; 10% sand, as 5.0-65 interval; 15% disseminated wood particles; trace of heavy minerals and siderite.
	Rocks of Miocene Age
8.0-10.0	85% white, soft, poorly consolidated, calcareous clay matrix with stringers of very light green to bluish gray, soft, waxy clay; 15% white, clear, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; half of sand fraction is cream, microcrystalline, indurated, porous limestone fragments; trace of heavy minerals and siderite.
10.0-14.0	70% sand, as above; 30% white, soft, calcareous clay, mottled with areas containing almost 100% sand; sand fraction is about 20% limestone fragments; trace of heavy minerals.

14.0-16.0	60% white, clear, fine-to very fine-grained, fairly well sorted angular quartz sand; 40% light greenish gray to white, soft calcareous clay matrix; trace of heavy minerals and limestone fragments.
16.0-17.0	70% very pale green, soft, crumbly, calcareous clay matrix with minor very pale, bluish green mottling; 30% creamy, microcrystalline, indurated, porous, fossiliferous limestone fragments; trace of white, clear, fine-to medium-grained sand.
17.0-18.0	75% creamy to pale green, mottled, soft, crumbly clay matrix; 25% limestone fragments as above; trace of sand, as above.

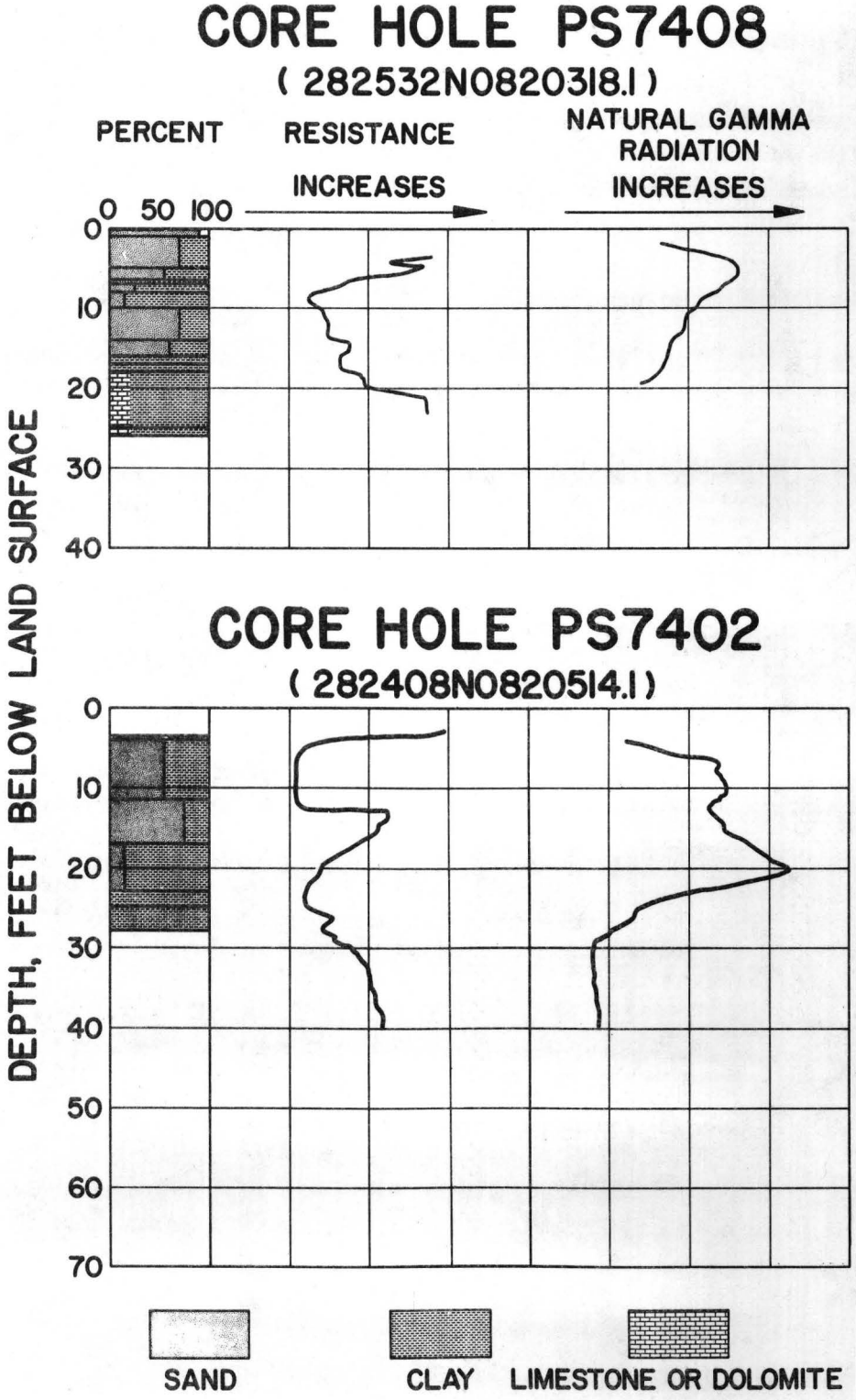
Rocks of Eocene Age

18.0-26.0	80% off-white to creamy to soft, calcareous clay matrix; 20% white to creamy, fine-grained, indurated, porous, chalky limestone, with large to small fossil casts and molds.

PS7402

Pasco County 242408N0820514.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-3.5	No sample.
3.5-4.0	60% white, clear to frosted, fine-grained, poorly sorted, angular quartz sand; 40% brownish gray, indurated clay matrix; trace of heavy minerals.
4.0-11.5	55% white, clear to frosted, medium-grained, poorly sorted, sub-rounded quartz sand; 45% light gray, indurated clay matrix; trace of heavy minerals.
11.5-17.0	75% white, clear to frosted, fine-grained, fairly well sorted, sub-angular quartz sand; 25% light gray, indurated, soft clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
17.0-23.0	85% pale greenish gray soft, waxy clay matrix with many nodules of white, soft clay; 15% white, clear to frosted, fine-grained, fairly well sorted, sub-angular quartz sand; trace of heavy minerals.
23.0-25.0	Pure, pale greenish gray, soft, waxy clay with nodules of white, soft clay.
	Rocks of Eocene Age
25.0-28.0	White, soft, fairly well consolidated, slightly fossiliferous, calcareous clay; contains *Bythocypris gibsonensis* (Howe and Chambers).
28.0-42.0	No sample.


CORE HOLE PS7408
(282532N0820318.1)
PERCENT RESISTANCE INCREASES
0 50 100
NATURAL GAMMA RADIATION INCREASES
0
10
20
30
40
CORE HOLE PS7402
(282408N0820514.1)
0
10
20
30
40
50
60
70
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

PS7403

Pasco County 282505N0820655.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-0.5	Black, loose sand.
0.5-3.0	White, coase to fine-grained sand.
3.0-9.5	No sample.
9.5-10.5	95% white, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 5% light gray, indurated clay matrix; trace of heavy minerals.
10.5-12.0	90% sand, as above; 10% light gray, indurated, orange banded clay matrix.
12.0-14.5	No sample.
14.5-19.5	70% white, clear, fine-grained, well sorted, angular quartz sand; 30% light greenish gray and light gray banded and mottled, soft clay matrix; a very sandy band from 18.0 to 18.2 feet; trace of heavy minerals.
19.5-20.0	60% white and light greenish gray mottled, soft clay; 40% sand, as above; trace of small shell fragments.
20.0-21.5	Sand, as 14.5-19.5 interval, with just enough light gray, soft clay to bind sand loosely; has bands of pale green and tan banded soft clay from 20.6 to 20.8 feet and 21.4 to 21.5 feet.
21.5-23.0	95% white, clear, fine-grained, fairly well sorted, angular quartz sand; 5% very light gray, soft clay matrix; trace of heavy minerals.
	Rocks of Oligocene Age
23.0-25.0	70% creamy, indurated, porous, microcrystalline, highly fossiliferous limestone, with some sparry calcite replacement; 30% matrix of creamy, soft, fairly well consolidated, calcareous clay; no diagnostic fauna.
25.0-28.6	No sample.

PS7404

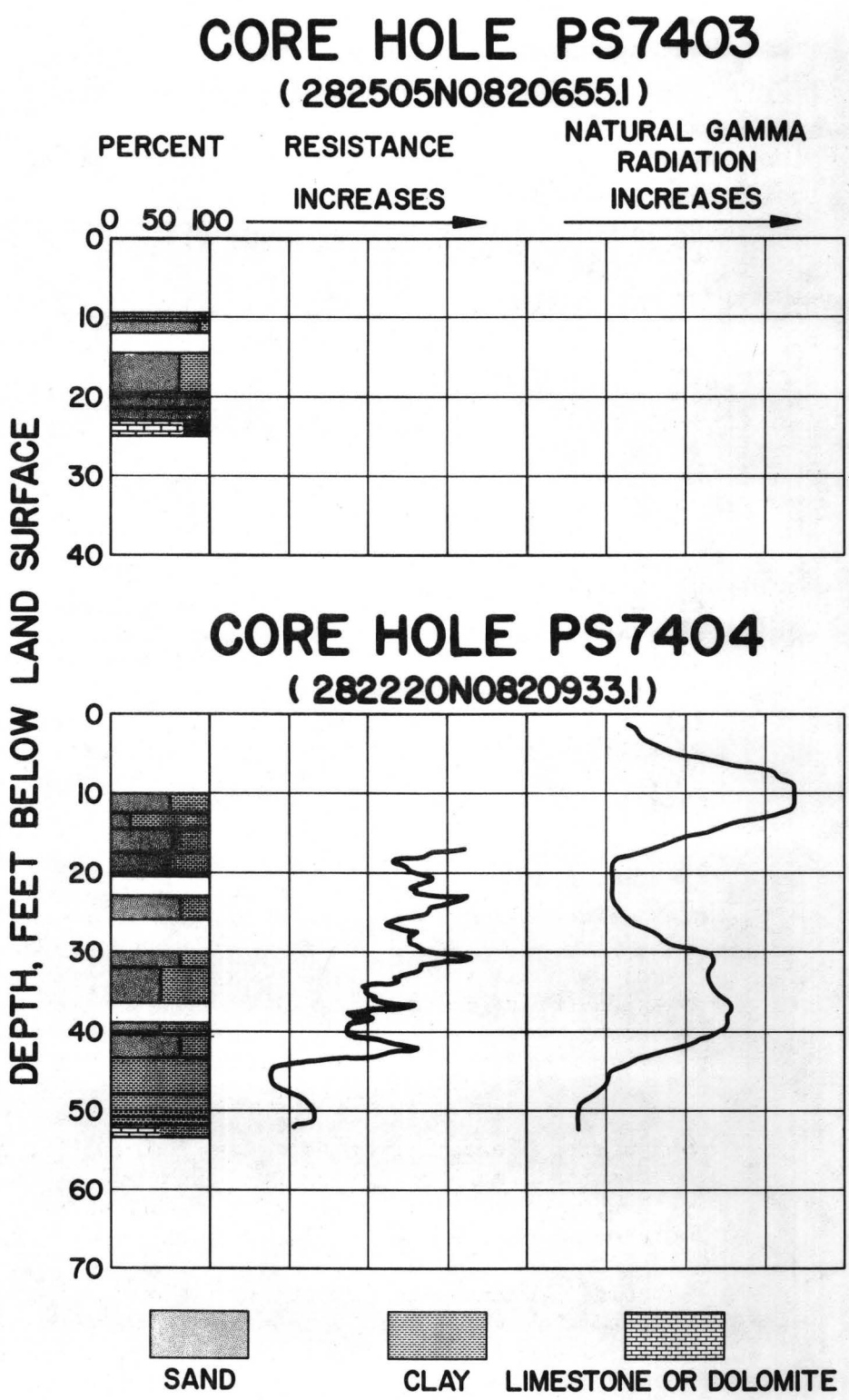
Pasco County 282220N0820933.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	Black, loose, sand. Organic material prominent.
1.0-3.0	Yellowish, fine-to medium-grained sand.
3.0-10.0	No sample.
10.0-12.5	60% white to yellow, clear, fine-grained, fairly well sorted, angular quartz sand; 40% very light gray, indurated clay matrix; with 1/8 to 1/4-inch wide yellow clay bands; trace of heavy minerals.
12.5-14.5	80% very light gray and light brown mottled soft clay matrix; 20% white, clear, fine-grained, fairly well sorted angular quartz sand.
	Rocks of Miocene Age
14.5-17.5	65% white to tan, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 35% interbedded light brown and very light gray, soft, indurated clay matrix; beds are 1/8 to 1/2-inch wide; trace of gypsum.
17.5-20.5	60% sand, as above; 40% light golden brown, soft, clay matrix; light tan and greenish gray mottling in lower 0.5 feet.
20.5-23.0	No sample.
23.0-26.0	70% sand, as 14.5-17.5 interval; 30% light golden brown indurated clay matrix.
26.0-30.0	No sample.
30.0-32.0	70% white, clear, fine-grained, fairly well sorted, angular quartz sand; 30% white and light brown banded and mottled, soft clay matrix; trace of black organic material.

32.0-36.5	50% sand, as above; 50% clay, as above; trace of black organic material.
36.5-39.0	No sample.
39.0-40.5	50% white, clear, fine-grained, well sorted, angular quartz sand; 50% light gray, tan, dark brown and white mottled, banded, soft clay matrix; trace of black organic material.
40.5-43.5	75% white, clear, fine-grained, well sorted, angular quartz sand; 25% yellow and dark brown mottled and banded indurated clay matrix.

Rocks of Eocene Age

43.5-48.0	White, soft clay with trace of fossiliferous material.
48.0-51.0	No sample.
51.0-52.0	Off-white, indurated, fairly well consolidated, fossiliferous clay with some off-white microcrystalline, indurated, porous, fossiliferous limestone nodules.
52.0-53.5	50% off-white, microcrystalline, indurated, porous, fossiliferous limestone; 50% white, indurated, calcareous, well consolidated clay; many fossil molds and casts.


CORE HOLE PS7403
(282505N0820655.1)
PERCENT RESISTANCE INCREASES
0 50 100
NATURAL GAMMA RADIATION INCREASES
0
10
20
30
40
CORE HOLE PS7404
(282220N0820933.1)
0
10
20
30
40
50
60
70
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7402

Polk County 281809N0815614.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-0.5	White to light gray, clear, medium-grained, well sorted, sub-rounded quartz sand.
0.5-1.0	Light tan, stained, medium-grained, fairly well sorted, sub-rounded quartz sand; trace of light brown clay.
1.0-1.5	White to light brown, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; trace of light gray and light brown clay.
1.5-6.0	Sand, as above, with many brown, stained grains; trace of light brown and light gray mottled clay.
6.0-6.5	70% white to dull yellow, clear to frosted, fine-to medium-grained, fairly well sorted, angular to sub-angular quartz sand; 30% light brown, light gray and light mottled, indurated clay matrix; trace of heavy minerals and limestone.
6.5-8.5	70% white, clear to frosted, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; 30% dull yellow, light gray, white and orange mottled, indurated clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
8.5-10.0	60% white, clear to frosted, fine-grained, fairly well sorted, sub-angular quartz sand; 40% dull yellow, purple, light greenish gray and white mottled and banded, soft clay matrix.
10.0-13.5	50% blue, greenish gray mottled, indurated clay matrix, mottled with white, soft to indurated pure clay; 40% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 10% white to tan medium to very coarse phosphate nodules.

13.5-15.5	50% sand, as above; 50% greenish gray, creamy and medium brown mottled, soft clay matrix, mottled with pure clay of greenish gray, creamy and medium brown color; trace of phosphate and heavy minerals.

Rocks of Eocene Age

15.5-20.8	60% creamy, soft, very poorly consolidated, calcareous clay matrix; 40% creamy, microcrystalline, soft, porous limestone, with abundant fossils; contains Lepidocyclina ocalana floridana (Cushman), and Echinocythereis okeechobiensis (Swain).

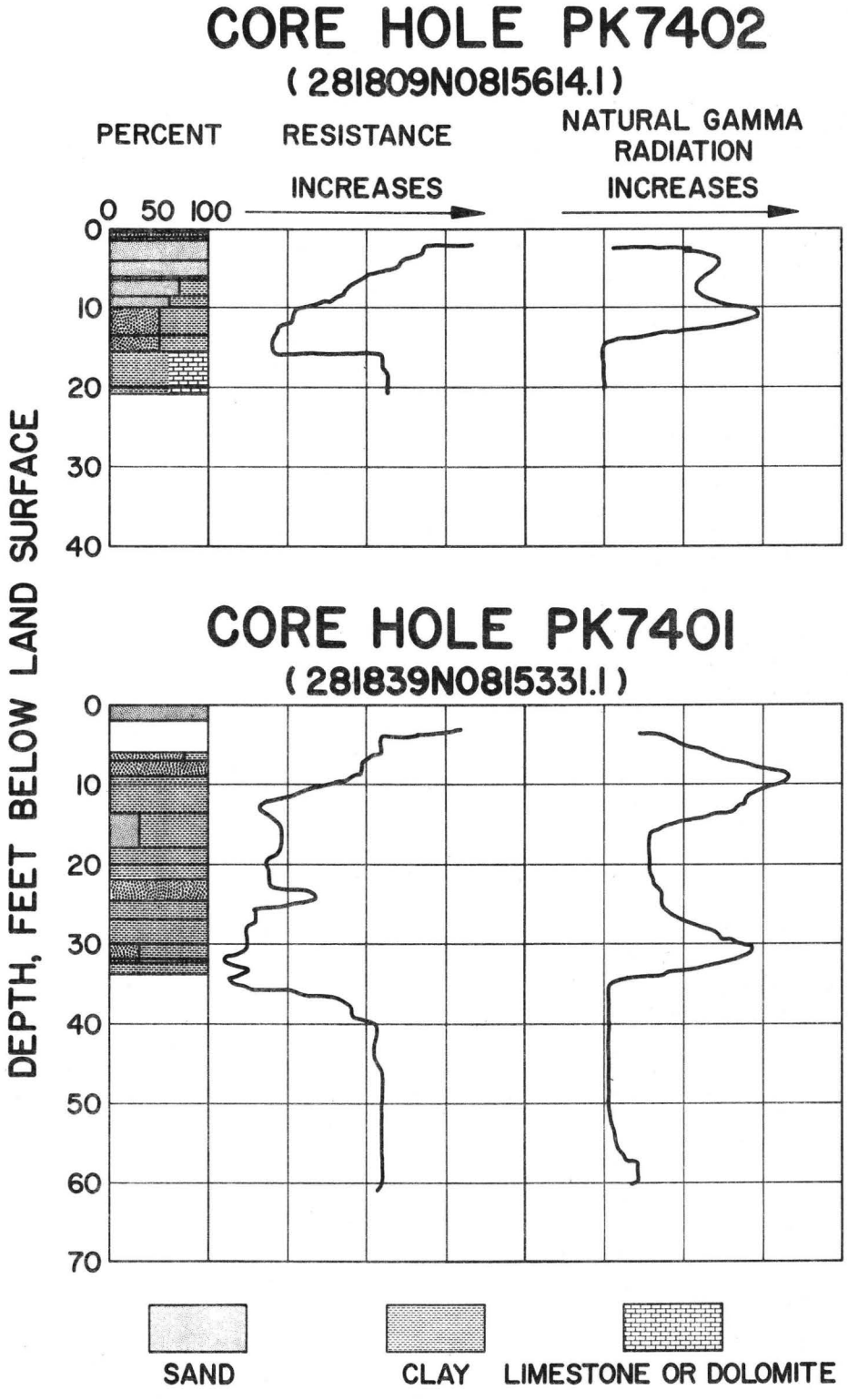
PK7401

Polk County 281839N0815331.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-2.0	Gray to light yellowish brown, clear to slightly stained, very fine-to medium-grained, sub-angular to sub-rounded sand; trace of light yellowish brown clay.
2.0-6.0	No sample.
6.0-7.0	75% brown, stained, medium-grained, sub-rounded to rounded, water polished sand; 25% yellowish brown, gray mottled clay matrix.
7.0-9.0	Light tan with gray cast, medium-to fine-grained, frosted sand; trace of clay and very fine-grained black, heavy minerals.
9.0-13.5	Blue-gray clay with white mottling.
13.5-18.0	70% light gray silty clay; 30% very fine-to fine-grained sand, disassociated and concentrated in pockets.
18.0-22.0	Light gray silty clay.
	Rocks of Miocene Age
22.0-24.5	85% white, medium-to coarse-grained, rounded, water-polished, well sorted quartz sand; 15% fine grained, angular to sub-angular quartz sand; trace of phosphate and pisolitic silica.
24.5-27.0	White to green silt; abundant pisolitic silica.
27.0-30.0	Bluish gray silt with pockets of medium-to course-grained sand.
30.0-32.5	55% bluish gray clay; 30% dark brown, medium-grained, water-polished sand; 15% off-white to light tan, medium to fine phosphate nodules; sand occurs in thin beds throughout the interval.

Rocks of Eocene Age

32.5-34.0	55% creamy, highly fossiliferous clay; 45% large whole and broken foraminifera and bryozoans; contains Sphaerogypsina globula (Reuss), Lepidocyclina ocalana floridana (Cushman), Jugosocythereis bicarinata (Swain).
34.0-61.0	No sample.


CORE HOLE PK7402
(281809N0815614.1)
PERCENT
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0 50 100
0
10
20
30
40
CORE HOLE PK7401
(281839N0815331.1)
0
10
20
30
40
50
60
70
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7403
Polk County 281530N0815730.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	Light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand.
1.0-2.0	Light brown, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand.
2.0-8.0	No sample.
8.0-13.5	95% light tan, frosted, medium-grained, well sorted, sub-rounded quartz sand; 5% tan, indurated, poorly consolidated, crumbly clay matrix; trace of heavy minerals.
13.5-17.0	80% white to light tan sand, as above; 20% medium brown, indurated, crumbly clay matrix; trace of heavy minerals.
17.0-23.5	55% light brown, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 45% medium to dark brown mottled, indurated clay matrix; trace of heavy minerals.
23.5-24.5	65% light, gray to white, clear to frosted, medium-grained, well sorted, sub-rounded quartz sand; 35% medium brown, indurated clay matrix; trace of heavy minerals.
24.5-27.0	75% sand, as above; 25% light brown, indurated clay matrix; trace of heavy minerals.
27.0-39.0	75% sand, as 23.5-24.5 interval; 25% tan, indurated, crumbly clay matrix.
39.0-44.5	80% white to light tan, clear to stained, fine-grained, fairly well sorted, angular quartz sand; 20% light brown, indurated clay matrix; trace of heavy minerals.
44.5-50.0	80% sand, as above; 20% light brown and very light tan mottled, indurated, crumbly clay matrix; trace of heavy minerals.

50.0-52.0	55% sand, as 39.0-44.5 interval; 45% dark greenish gray and brownish gray mottled, indurated, waxy clay matrix with minor dark brown and light gray mottling; trace of phosphate and heavy minerals.
52.0-54.0	50% light brown, light green and medium greenish gray mottled, indurated clay matrix; 45% sand, as 44.5-50.0 interval; 5% black to gray to tan, fine to very coarse phosphate nodules.
54.0-56.0	50% sand, as 44.5-50.0 interval; 50% light brown and medium gray banded and mottled, indurated clay matrix; trace of heavy minerals and phosphate.
56.0-60.0	50% very light tan, light brown and green mottled banded soft clay matrix; 25% white and light gray, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; 25% black to tan, fine to very coarse phosphate nodules; trace of heavy minerals.
60.0-62.0	50% clay as above; 45% sand, as above; 5% small phosphate pebbles; trace of heavy minerals and phosphate nodules.
62.0-62.5	60% very light tan and dark gray, soft, waxy clay; 40% white, clear, fine-grained, fairly well sorted, sub-angular quartz sand; abundant large fragments of light gray to very dark gray chert.
62.5-63.5	90% medium brown, soft, sticky clay with minor dark gray mottling; 10% light brown, stained, medium-grained, fairly well sorted, sub-rounded quartz sand; trace of black, medium-grained phosphate nodules.
63.5-65.0	60% light gray, stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 40% dark gray and dark brown mottled, soft clay matrix; trace of heavy minerals and black to tan, medium to coarse phosphate nodules.
65.0-66.0	65% sand, as above; 35% medium gray and medium brownish gray mottled, soft clay matrix; trace of heavy minerals and phosphate.
66.0-68.0	95% dark, bluish gray, dark brownish gray, mottled and banded, soft, sticky clay matrix, with pockets of pure tan clay; 5% white, clear to frosted, fine-grained, well sorted, angular quartz sand.

68.0-69.0	97% dark bluish gray, dark brown and dark greenish gray mottled, soft, sticky clay matrix with a few fragments of white silicified limestone; 3% sand, as above.
69.0-71.0	50% sand, as 66.0-68.0 interval; 50% light gray, indurated, crumbly clay matrix; half of sand fraction is pisolitic silica and fragments of silicified limestone and chert.
71.0-91.0	No sample.
91.0-95.0	50% light brown, frosted, medium-grained, fairly well sorted, sub-angular quartz sand; 50% dark gray and medium brown mottled, soft, sticky clay matrix; trace of phosphate and limestone fragments.
95.0-97.0	50% sand, as above; 50% black, soft, crumbly clay matrix; sand fraction is 20% white, silicified limestone fragments and pisolitic silica; trace of marcasite.
97.0-98.0	55% sand, as 91.0-95.0 interval; 45% black and dark gray, soft, crumbly clay matrix; trace of marcasite and limestone fragments.
98.0-103.5	70% sand as 91.0-95.0 interval; 30% dark gray and dark brown mottled, soft, crumbly clay matrix, with scattered pockets of black, soft clay; trace of limestone fragments.
103.5-106.0	50% medium brown, soft, crumbly clay matrix; 30% white, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; 20% white silicified limestone, chert and pisolitic silica.
106.0-120.0	No sample.
120.0-128.0	45% black and medium grayish, mottled, crumbly clay matrix; 30% sand as 103.5-106.0 interval; 25% limestone, chert, and pisolitic silica, as above; trace of large foraminifera; interval contained a 4-inch diameter fragment of dark gray chert that had replaced fossilized limestone.

Rocks of Eocene Age

128.0-157.0	70% creamy, soft, microcrystalline, porous, highly weathered limestone; 30% large to small foraminifera; limestone becomes harder toward bottom of interval; contains *Camerina sp.* and *Lepidocyclina ocalana floridana* (Cushman).

PK7404

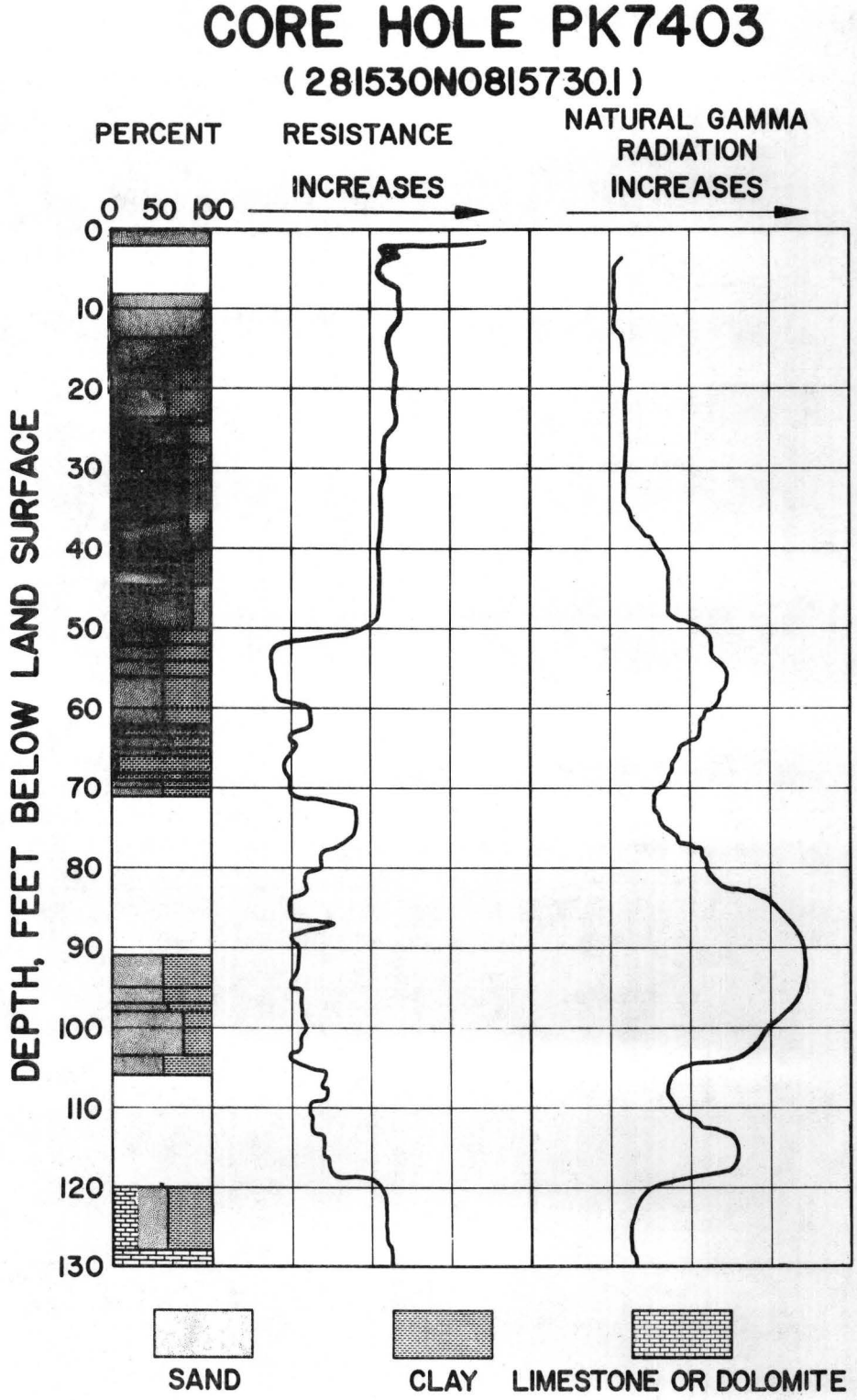
Polk County 281531N0815457.1

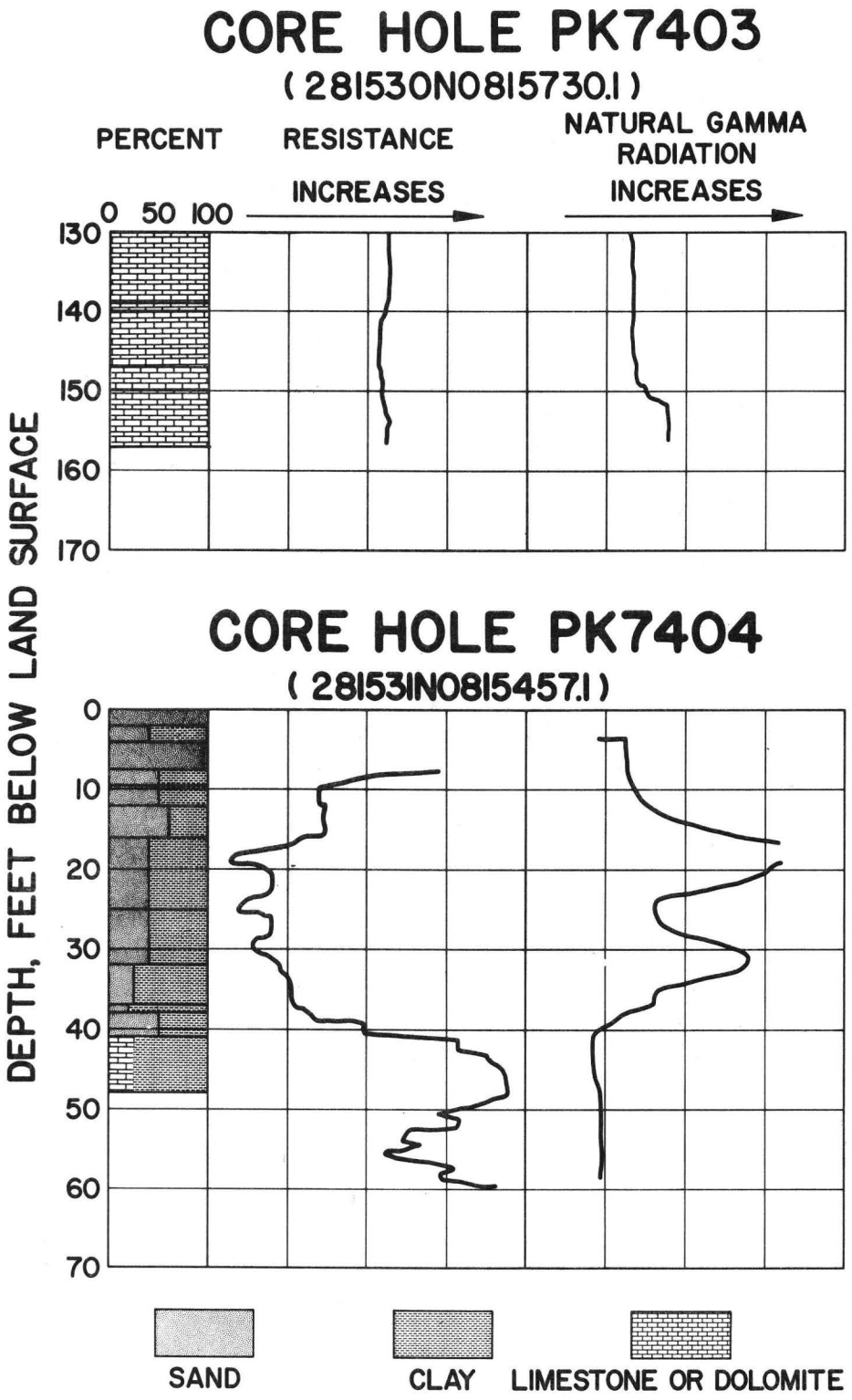
DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-2.0	White to very light brownish gray, clear to frosted, medium-to fine-grained, fairly well sorted, sub-rounded quartz sand.
2.0-4.0	60% black, soft, highly organic clay matrix; 40% white to light tan, clear to frosted, fine-grained, fairly well sorted, sub-angular quartz sand; trace of dull yellow grained sand and heavy minerals.
4.0-7.5	95% white, clear, well sorted, fine-grained, angular quartz sand; 5% black, dull yellow, white, light to medium brownish gray, mottled, soft, sticky clay; trace of siderite and heavy minerals.
7.5-9.5	50% white, clear, fine to medium-grained, fairly well sorted, sub-rounded quartz sand; 50% very light gray, dull yellow and light brown mottled, indurated clay matrix; bright orange and dull brick red mottling in upper 1 foot of this interval; trace of orange quartz sand grains and heavy minerals.
9.5-12.0	50% white, clear, fine-to very fine-grained, angular, well sorted, quartz sand; 50% very light gray, dull yellow and purple mottled, soft, silty clay matrix.
12.0-16.0	60% white, clear, fine-to very fine-grained, very well sorted, angular quartz sand; 40% light gray, soft clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
16.0-25.0	60% light greenish gray and off-white mottled, soft, indurated clay matrix; 40% sand, as above.
25.0-30.0	60% light greenish gray and creamy mottled, soft, sticky clay matrix; 40% white, clear, very fine-grained, fairly well sorted, angular quartz sand; trace of heavy minerals.

30.0-32.0	60% light greenish gray, soft, sticky clay matrix; 40% white, clear, fine-to medium-grained, fairly well sorted, sub-angular quartz sand; trace of heavy minerals; light greenish gray and dull mottled bands of clay in lower 1 foot of this interval.
32.0-37.0	75% light, greenish gray, medium brownish gray, creamy and olive green mottled, soft, sticky clay matrix; 25% white, clear to frosted, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; trace of heavy minerals and multi-colored fine to very coarse phosphate nodules.
37.0-38.0	80% olive green and bluish gray mottled, soft, sticky clay matrix; 20% sand, as above; trace of heavy minerals, phosphate and limestone fragments.
38.0-41.0	50% olive green, light gray and bluish gray mottled, soft, sticky clay matrix; 35% sand, as 32.0-37.0 interval; 15% creamy, microcrystalline, indurated, porous limestone fragments; trace of heavy minerals and phosphate.

Rocks of Eocene Age

41.0-48.0	75% creamy, soft, poorly consolidated, calcareous clay matrix (weathered limestone); 25% cream, fine-grained, indurated, porous limestone with fossil material; contains Lepidocyclina ocalana floridana (Cushman), Cibicides mississippiensis ocalanus (Cushman), Reussella sculptilis (Cushman), and Echinocythereis okeechobiensis (Swain).
48.0-60.0	No sample.


CORE HOLE PK7403
(281530N0815730.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE


CORE HOLE PK7403
(281530N0815730.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
130
140
150
160
170
CORE HOLE PK7404
(281531N0815457.1)
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7406

Polk County 281819N0815202.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	45% dull yellow, stained, medium-grained, well sorted, sub-rounded quartz sand; 35% light brown, indurated clay matrix; 20% dull yellow, stained, coarse-grained, sub-rounded quartz sand.
1.0-2.0	70% light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 10% light brown and light gray mottled, indurated, crumbly clay matrix; 20% coarse-grained sand; trace of heavy minerals and a few large foraminifera.
2.0-6.0	No sample.
6.0-11.0	Light gray, frosted, medium-grained, well sorted, well rounded quartz sand; a trace of light brown and light gray mottled, indurated clay matrix; the upper 0.4 feet of this interval contains 10% clay and 90% sand.
11.0-16.0	65% white, clear to frosted, medium-grained, well sorted sub-angular to sub-rounded quartz sand; 35% very light brown, gray tinted, indurated, crumbly clay matrix; 1/8 to 1/16-inch bands of light purple clay from 11.8 to 13.8 feet; trace of heavy minerals.
16.0-22.0	65% white, clear to frosted, fine-to medium-grained, sub-rounded quartz sand; 35% very light brown, indurated clay matrix; trace of heavy minerals.
22.0-29.0	65% white, clear to frosted, fine-to very coarse-grained, angular to well rounded quartz sand; 35% light brown to very dark brown, indurated clay matrix; trace of heavy minerals.
29.0-30.5	95% very pale green, soft, sticky clay matrix. 5% white, clear, fine-grained, angular, well sorted quartz.

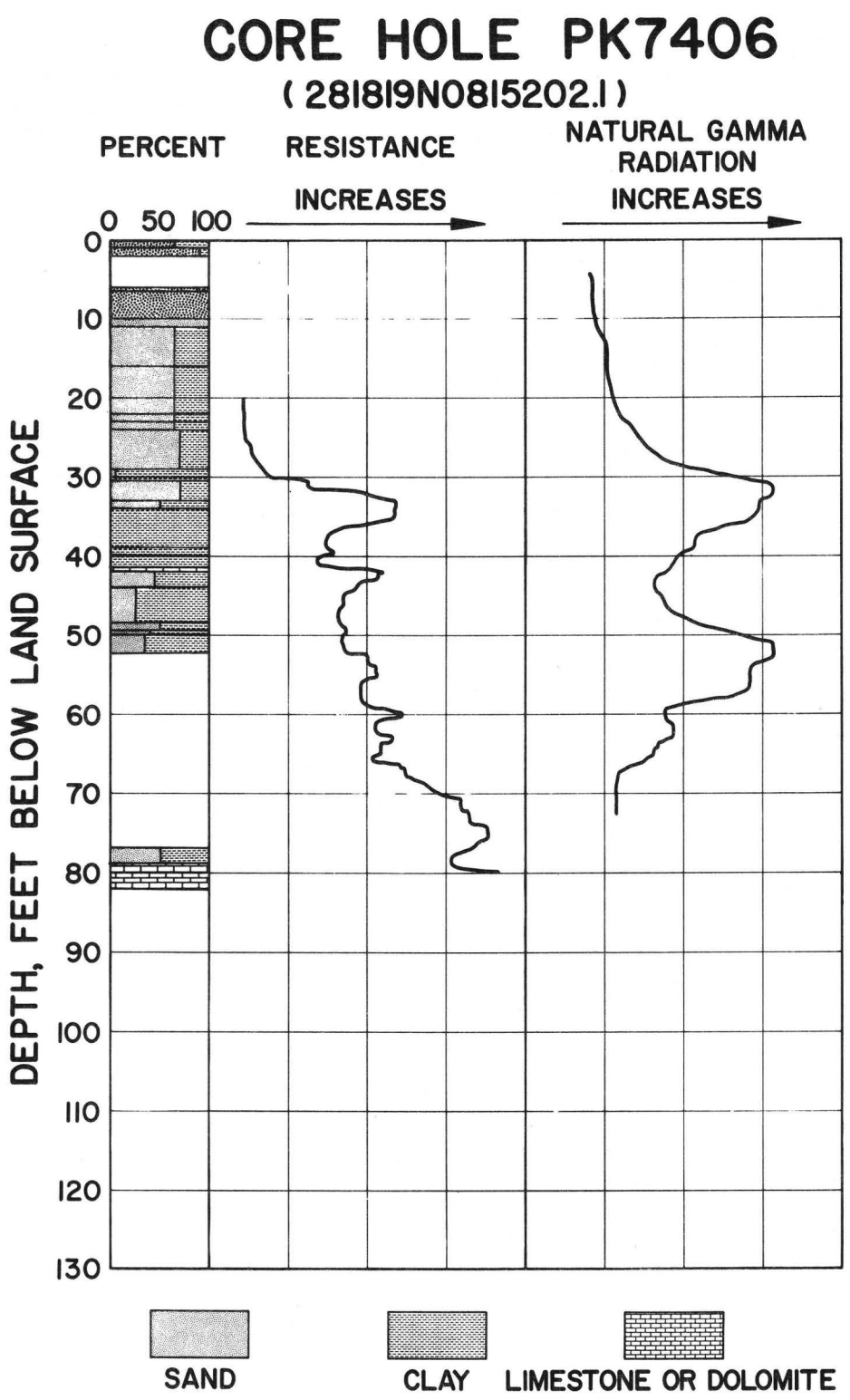
Rocks of Miocene Age

30.5-33.0	70% white to light gray, clear to frosted, fine- to medium-grained, anglular to sub-rounded quartz sand; 30% very light brown and very pale green, soft, sticky clay matrix; trace of heavy minerals.
33.0-34.0	50% white, clear, fine-to medium-grained, angular to sub-rounded quartz sand; 50% very light pale green and white mottled, soft clay matrix; trace of heavy minerals.
34.0-39.0	Very pale green, soft, sticky, waxy clay, pockets of white and medium bluish green clay.
39.0-40.0	Clay, as above; trace of fine-grained sand, green glauconite and pyrite.
40.0-41.5	90% medium bluish green and light pale green mottled, soft, sticky, waxy clay; a few pockets of fine-grained sand; 10% sand, in pockets in the lower 0.4 feet of this interval.
41.5-42.0	85% matrix of white, microcrystalline, soft, porous, highly weathered, dolomitic limestone. 15% light gray to medium brown, medium-grained, well sorted, sub-rounded quartz sand.
42.0-44.0	55% light green and light tan mottled, soft, clay matrix; 45% white and light brown, clear, medium-grained, well sorted, sub-rounded quartz sand.
44.0-45.0	75% very light greenish gray and bluish gray mottled, soft, sticky clay matrix; 25% clear, very fine-grained, angular, well sorted, quartz sand.
45.0-48.5	75% light greenish gray, soft, sticky, clay matrix with purple spots; 25% white and light brown, clear, medium-grained, well sorted, quartz sand; trace of heavy minerals.
48.5-49.5	50% sand, as above; 50% light green and white mottled, indurated clay matrix.
49.5-50.0	60% light greenish gray and light tan mottled, soft, sticky clay matrix; 40% sand, as 45.0-48.5 interval; trace of very light tan, very coarse to medium phosphate nodules; trace of heavy minerals.

50.0-52.5	65% medium gray, light greenish gray, creamy mottled, soft, sticky clay matrix; 25% black to brown to very light tan, fine to very coarse phosphate nodules; 7% white to light brown, clear, medium-grained, well sorted, sub-angular to sub-rounded quartz sand; 3% white, microcrystalline, indurated, chalky, porous, sandy altered limestone fragments.
52.5-77.0	No sample.

Rocks of Eocene Age

77.0-79.0	50% light gray, light green, cream and light tan mottled, fairly well consolidated clay matrix; 40% white, light brown, clear, fine-to medium-grained, angular to sub-rounded quartz sand; 10% black to very light tan to brown, very coarse to fine phosphate nodules; trace of heavy minerals; contains Sphaerogypsina globula (Reuss), and Lepidocyclina ocalana floridana (Cushman).
79.0-82.0	Light, cream, soft, porous, fossiliferous, chalky limestone.


CORE HOLE PK7406
(281819N0815202.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7407

Polk County 281843N0815011.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.5	Light brown, stained, fine-to medium-grained, angular to sub-rounded sand.
1.5-6.0	Light tan, stained, fine-to medium-grained, angular to sub-rounded sand; trace of heavy minerals.
6.0-11.5	70% tan, stained, medium-grained, fairly well sorted, sub-angular to sub-rounded sand; 25% light orange, indurated, crumbly clay matrix; 5% coarse-grained sand.
11.5-14.0	No sample.
14.0-25.0	60% very light tan, clear to stained, fine-to medium-grained, angular to sub-rounded sand; 20% coarse-to very coarse-grained sand; 20% dull orange, soft clay matrix.
25.0-29.5	75% white, clear to frosted, fine-to medium-grained, angular to well rounded quartz sand; 25% very light tan, soft, poorly consolidated clay matrix; trace of very coarse-grained sand.
29.5-36.5	75% white, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 15% white, soft clay matrix; 10% medium-grained sand; abundant coarse and very coarse-grained sand; trace of heavy minerals and muscovite.
36.5-37.5	80% white and light tan, clear to stained, fine-grained, angular quartz sand; 15% white and dull yellow mottled, soft clay matrix; 5% medium-to coarse-grained sand; trace of heavy minerals and medium to fine muscovite.
37.5-41.5	75% sand, as above; 25% dull yellow with white mottled, soft clay matrix; trace of heavy minerals and muscovite.

41.5-50.5	75% fine-grained sand as 36.5-37.5 interval; 20% light to dark dull yellow and white banded and mottled clay matrix; 5% medium-to very coarse-grained sand; trace of heavy minerals and fine to medium muscovite.
50.5-53.5	65% white, clear to frosted, fine-to medium-grained, angular to rounded sand; 35% white, yellow and light brown banded, soft clay matrix; bands are 1/8-inch wide; thin 1/16 to 1/4-inch bands of light green, soft, waxy clay occur throughout interval; trace of heavy minerals, fine to medium muscovite, and coarse- to very coarse-grained sand.

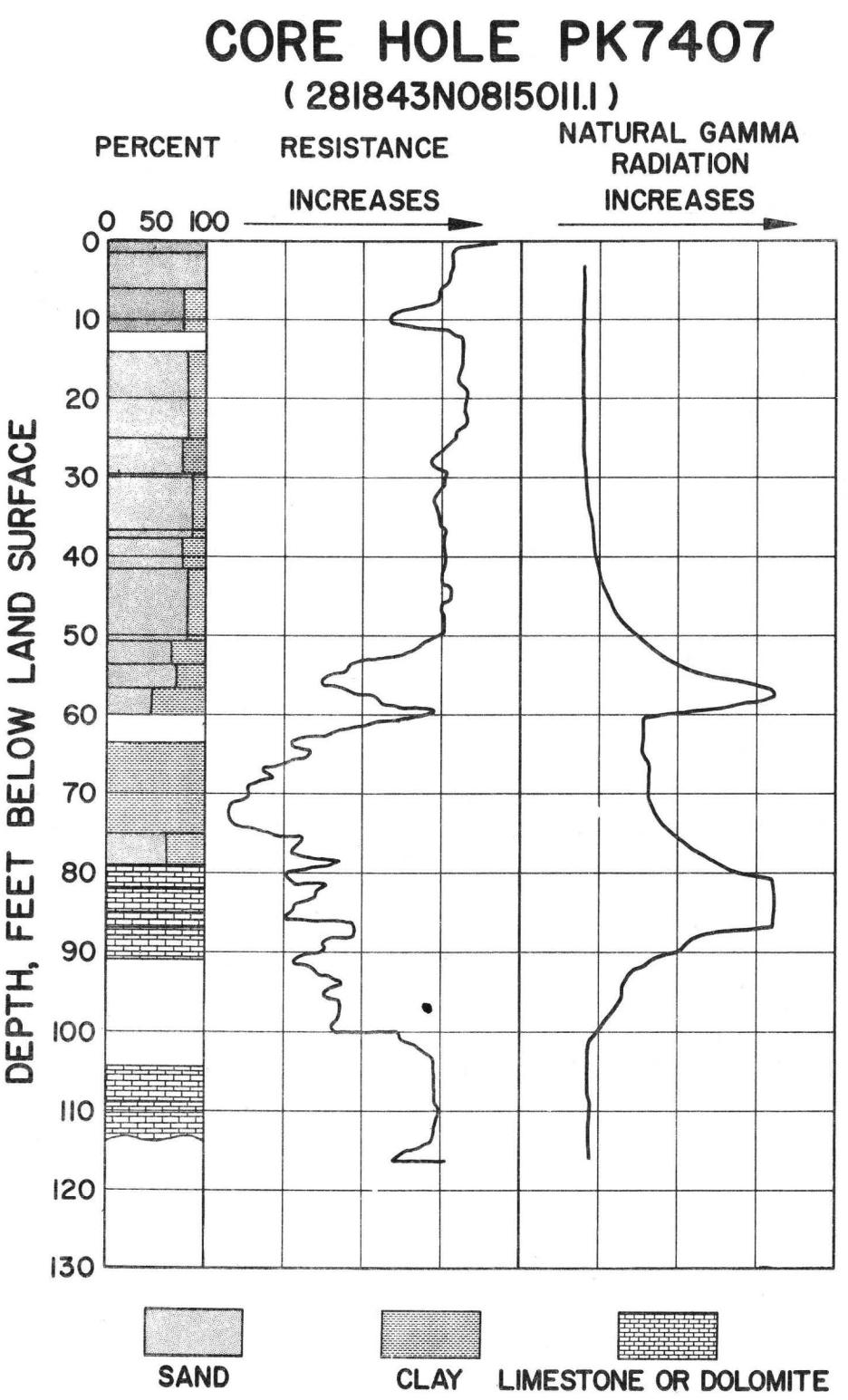
Rocks of Miocene Age

53.5-56.5	45% very light tan, clear to stained, fine-grained, fairly well sorted angular sand; 30% off-white and dull yellow banded and mottled, indurated clay matrix; 20% medium-grained sand; 5% coarse-grained sand; trace of heavy minerals, fine to medium muscovite, and pisolitic silica.
56.5-60.0	55% off-white and dull yellow mottled, indurated clay matrix; 30% white, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; 15% fine to very coarse, multicolored phosphate nodules; trace of heavy minerals.
60.0-63.5	No sample.
63.5-79.0	Medium to dark brown, soft, platey, well consolidated, waxy clay matrix with off-white, soft, well consolidated silt at 64.0 to 64.4 feet, 66.1 to 66.3 feet, and 67.1 to 67.4 feet; trace of quartz sand, phosphate, and heavy minerals.
75.0-79.0	55% light gray, clear to frosted, medium-grained, well sorted, sub-rounded quartz sand; 40% very light gray, indurated clay matrix; 5% brown and tan, fine-to very coarse-grained phosphate fragments and nodules.
79.0-79.2	70% very light gray, indurated, very fine crystalline, porous dolomite matrix; 25% white, clear to frosted, medium-grained, fairly well sorted, sub-angular quartz sand; 5% fine to medium brown to tan phosphate nodules.
79.2-82.0	70% light to medium gray mottled, soft dolomite; trace of sand and phosphate; 30% sand as above.

82.0-85.0	90% medium to light gray mottled, soft, very fine crystalline, dolomitic matrix; 10% light gray, clear, fine-to medium-grained, angular to sub-angular sand; trace of heavy minerals and brown to tan, fine to very coarse phosphate nodules.
85.0-86.0	70% medium to light gray mottled, hard, very fine crystalline dolomite matrix; 20% light gray, clear, fine-grained, angular, fairly well sorted sand; 10% black to brown, fine to very coarse phosphate fragments, nodules and phosphatic fossil fragments.
86.0-87.0	60% dolomite, as above; 30% sand, as above; 10% phosphate, as above.
87.0-87.5	65% light gray, hard, very fine crystalline dolomite matrix; 35% sand, as 85.0-86.0 interval, trace of heavy minerals and black to brown, medium to very coarse phosphate nodules.
87.5-91.0	55% sand as 85.0-86.0 interval; 45% light gray, soft to very fine crystalline dolomite matrix; trace of heavy minerals and black to brown, fine to coarse phosphate nodules and phosphatized fossil material.
91.0-99.5	No sample.
99.5-109.0	60% sand, as 85.0-86.0 interval; 40% light gray, indurated, very fine crystalline dolomite matrix; trace of heavy minerals and black to brown, fine to coarse phosphate nodules.

Rocks of Eocene Age

109.0-116.4	80% creamy, microcrystalline, hard, porous limestone, with 20% large to small fossils, highly weathered.


CORE HOLE PK7407
(281843N0815011.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7408

Polk County 281809N0814651.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	95% white to light gray, clear to frosted, medium-to fine-grained, fairly well sorted, sub-rounded quartz sand; 5% coarse-grained sand; trace of medium blue clay.
1.0-4.0	95% very light tan, clear to frosted, medium-grained, poorly sorted, sub-rounded quartz sand; 5% coarse-grained sand.
4.0-11.0	65% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 35% very light tan, indurated clay matrix; pink mottling from 6.0 to 6.2 feet.
11.0-13.0	65% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 35% light tan and pink mottled indurated clay matrix.
13.0-14.5	70% white, clear to frosted, fine-grained, sub-angular, fairly well sorted quartz sand; 30% very light tan indurated clay matrix; trace of heavy minerals.
14.5-21.0	60% white, clear to frosted, fine-grained, poorly sorted, sub-angular quartz sand; 40% very light tan, indurated clay matrix; trace of heavy minerals.
21.0-24.5	80% white to light gray, frosted, very coarse-to coarse-grained, rounded, fairly well sorted quartz sand; 20% off-white indurated clay matrix.
24.5-45.0	60% white, clear to frosted, fine grained, well sorted, angular, silty sand; numerous bands of white to light gray, clear to frosted, well rounded, coarse to very coarse grained sand; bands are 1 to 2 inches wide; 40% off-white, soft clay matrix; scattered fine gravel from 37.1 to 37.4 feet; trace of heavy minerals.
45.0-56.0	65% white, clear to frosted, fine-grained, well sorted angular quartz sand; 35% off-white, soft, silty clay matrix; trace of coarse-grained sand and heavy minerals.

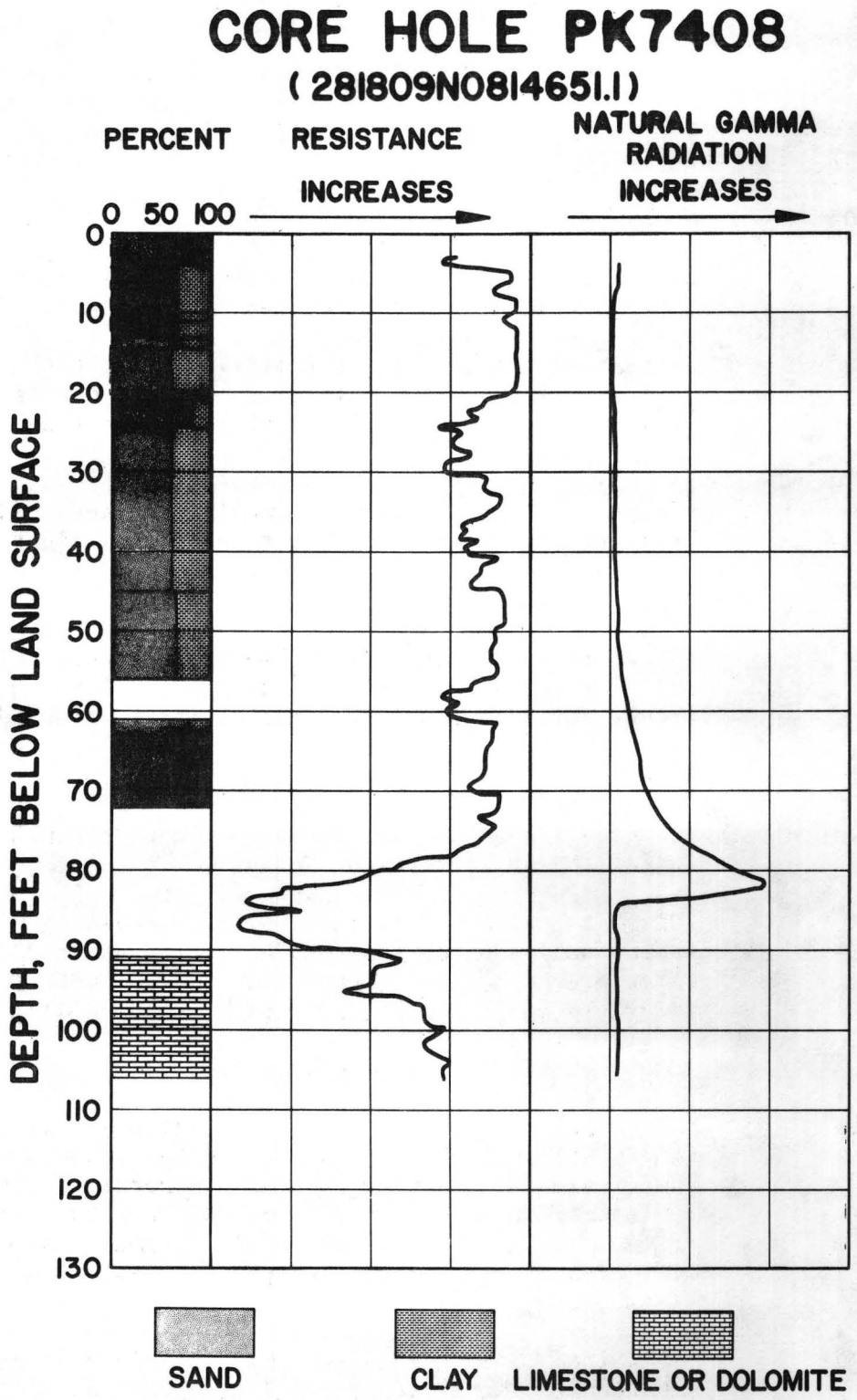
56.0-61.0	No sample.
61.0-72.0	75% white, clear to frosted, fine-grained, angular, well sorted, silty quartz sand; 25% off-white, soft clay matrix; trace of heavy minerals; 68.0 to 72.0 interval is not silty.
72.0-77.0	No sample.

Rocks of Miocene Age(?)

77.0-91.0	Hard; core barrel damaged; no core recovery; interval picked on basis of high natural gamma count.

Rocks of Eocene Age(?)

91.0-106.0	No recovery; wash returned limestone cuttings; interval picked on basis of natural gamma and resistance logs.


CORE HOLE PK7408
(281809N0814651.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7409

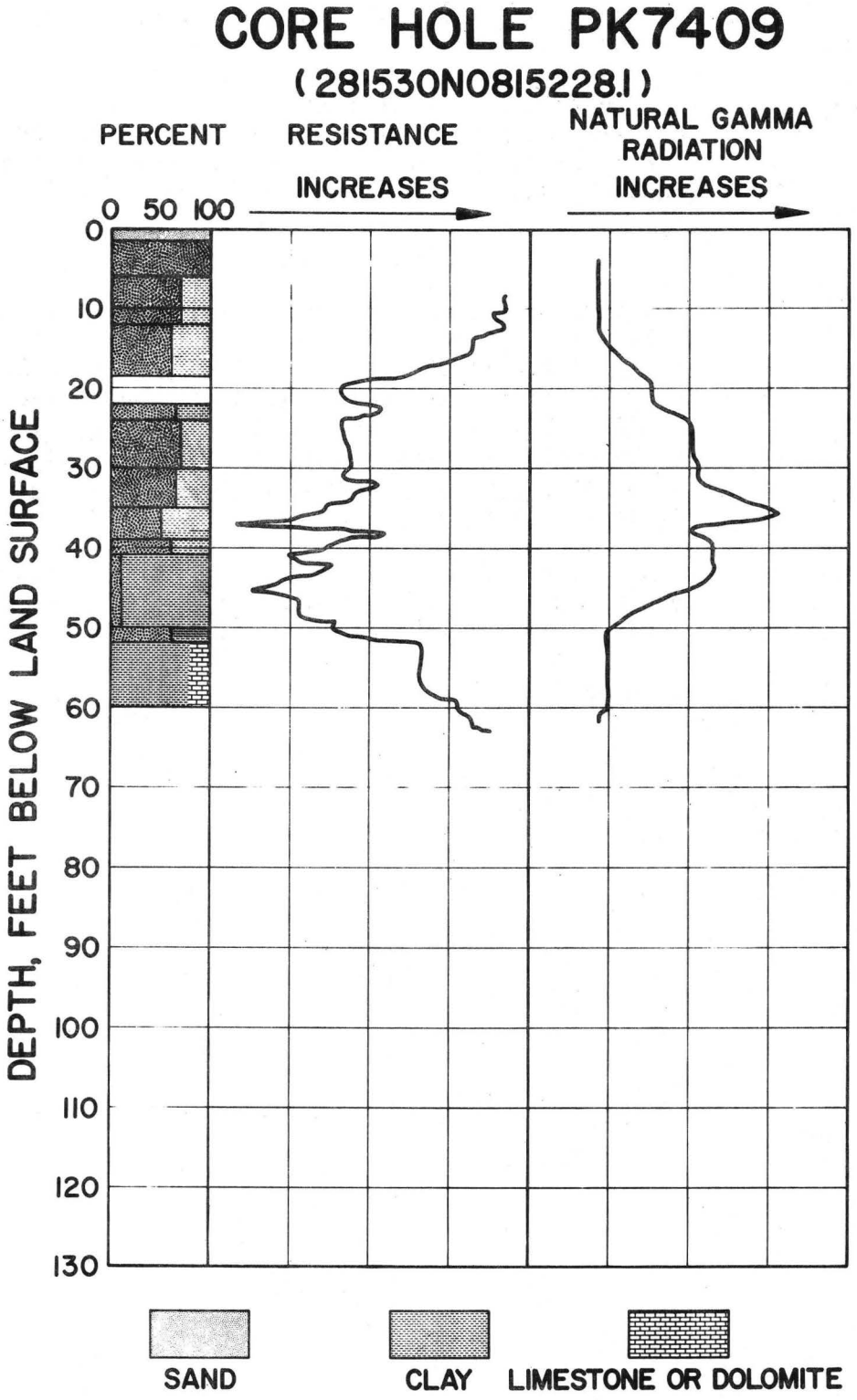
Polk County 281530N0815228.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.5	White, clear to frosted, fine-to medium-grained, fairly well sorted, sub-rounded quartz sand.
1.5-6.0	Light brown, clear to frosted, fine-to medium-grained, fairly well sorted, sub-rounded quartz sand; just enough dark brown clay to bind sand very loosely.
6.0-12.0	70% white, clear to frosted, medium-grained, fairly well sorted, sub-angular quartz sand; 30% light gray and tan mottled, indurated clay; trace of heavy minerals.
12.0-18.5	60% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 40% dark brown, soft clay matrix; trace of heavy minerals.
18.5-22.0	No sample.
22.0-24.0	65% sand, as above; 35% light to medium brown, white mottled, soft clay matrix.
24.0-30.0	70% white, clear to frosted, fine-to medium-grained, fairly well sorted, sub-rounded quartz sand; 30% light greenish gray, light brown and tan mottled, indurated clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
30.0-35.0	65% white to light gray, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 35% light gray and tan mottled, soft to indurated clay matrix; lower 0.2 foot has bands of tan, soft, waxy clay and small fragments of white, microcrystalline, indurated, porous, silicified limestone.
35.0-39.0	50% white, clear, medium-grained, fairly well sorted, sub-rounded quartz sand; 50% light gray, soft clay matrix, mottled with light greenish gray, soft, waxy clay.

39.0-41.0	60% sand, as above; 40% light gray, soft clay matrix.
41.0-50.0	90% tan, light greenish gray and brownish gray mottled, soft clay matrix; 10% sand as 35.0-39.0 interval; in the lower 0.2 foot of this interval sand increases to 40%, clay decreases to 60%.

Rocks of Eocene Age

50.0-52.0	60% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 40% light gray and tan mottled, soft, fairly well consolidated clay matrix; trace of heavy minerals and large to small fossil fragments; contains Sphaerogypsina globula (Reuss), Lepidocyclina ocalana floridana (Cushman), Cibicides mississippiensis ocalanus (Cushman), and Reussella sculptilis (Cushman).
52.0-60.0	80% tan, soft, poorly consolidated, calcareous clay matrix; 20% light tan, microcrystalline, indurated, porous limestone; abundant fossils.
60.0-63.0	No sample.


CORE HOLE PK7409
(281530N0815228.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7410

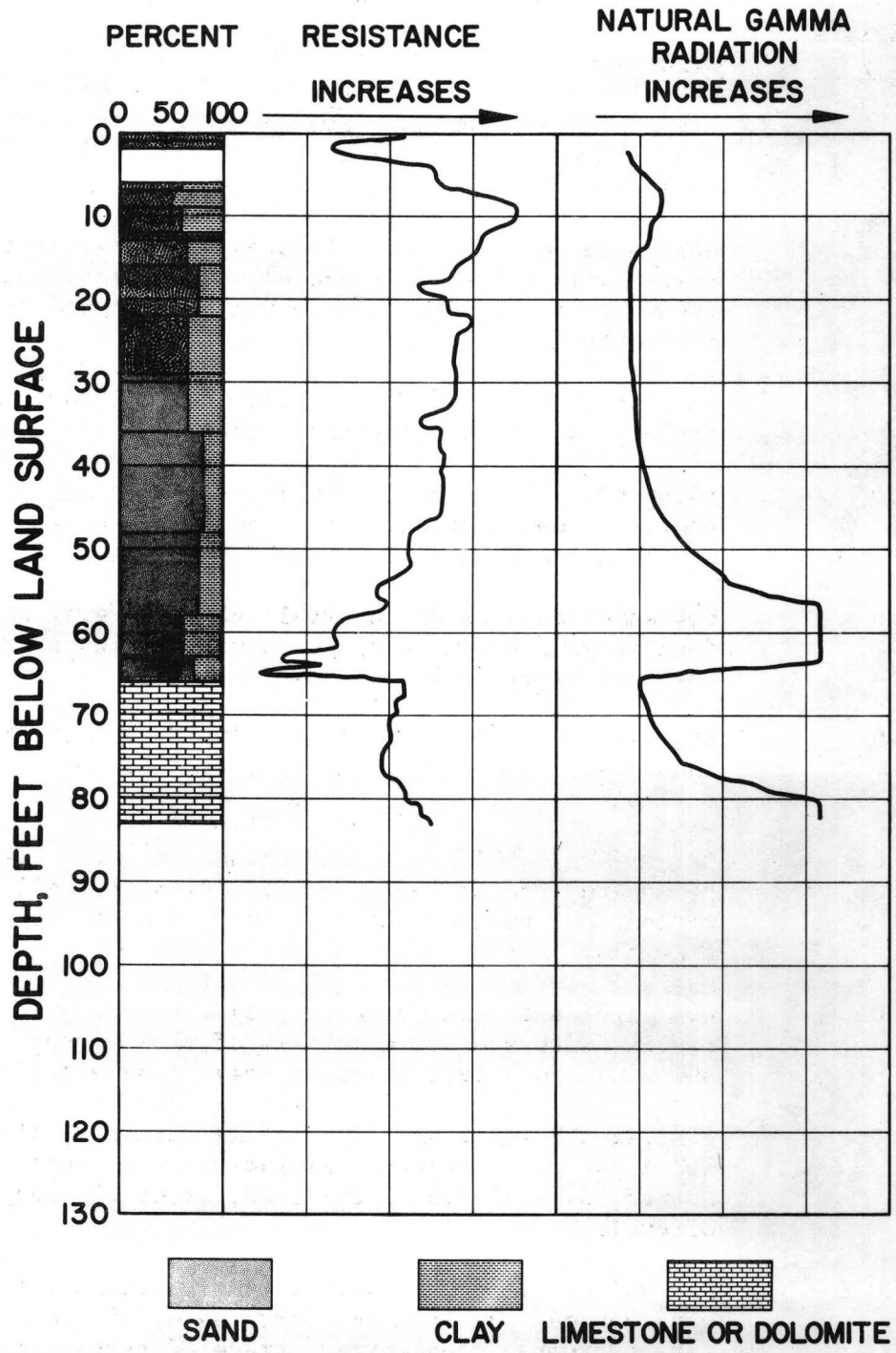
Polk County 281532N0814930.2

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	White to light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; trace of dark gray clay.
1.0-2.0	Sand, as above; trace of light brown clay.
2.0-6.0	No sample.
6.0-7.0	60% white, frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 40% medium gray, brownish gray and brown mottled, indurated clay matrix.
7.0-8.0	50% sand, as above; 50% tan, brown and brownish gray mottled and banded indurated clay.
8.0-9.0	50% sand, as 6.0-7.0 interval; 50% brownish gray and medium gray banded, indurated clay matrix.
9.0-12.0	60% sand, as 6.0-7.0 interval; 40% medium brown indurated clay matrix.
12.0-16.0	65% white to light gray, clear to frosted, medium- to coarse-grained, fairly well sorted, sub-rounded quartz sand; 35% medium brown, indurated clay matrix; a band of loose sand about 0.5 foot wide at 12.4 feet.
16.0-22.0	75% light gray, clear to frosted, very coarse-to coarse-grained, well sorted, rounded quartz sand; 25% medium and light gray banded, indurated clay matrix.
22.0-29.0	65% white, clear to frosted, coarse-to medium-grained, poorly sorted, sub-rounded quartz sand; 35% tan and medium brown mottled, soft clay matrix.
29.0-36.0	65% white, clear, fine-to medium-grained, fairly well sorted, sub-angular quartz sand; 35% light and dark tan, mottled, silty clay matrix.

36.0-48.0	65% sand, as above; 20% tan, soft, silty clay matrix; 15% light gray, clear to frosted, coarse- to very coarse-grained, rounded to well rounded quartz sand.
48.0-58.0	75% white, clear, angular, fairly well sorted, fine grained-quartz sand; 25% light to medium tan, soft clay matrix; trace of heavy minerals, medium-grained muscovite flakes, and pisolitic silica.
	Rocks of Miocene Age
58.0-63.0	60% light gray, clear, fine-grained, fairly well sorted, angular quartz sand; 40% dark and light gray mottled, soft clay matrix; trace of heavy minerals and pisolitic silica.
63.0-66.0	50% sand, as above; 30% brown and gray mottled, soft clay matrix; 20% light gray, dark gray, very coarse to fine phosphate nodules.
	Rocks of Eocene Age
66.0-83.0	White limestone with occasional chert fragments.

CORE HOLE PK7410

(281532N0814930.2)



PK7411

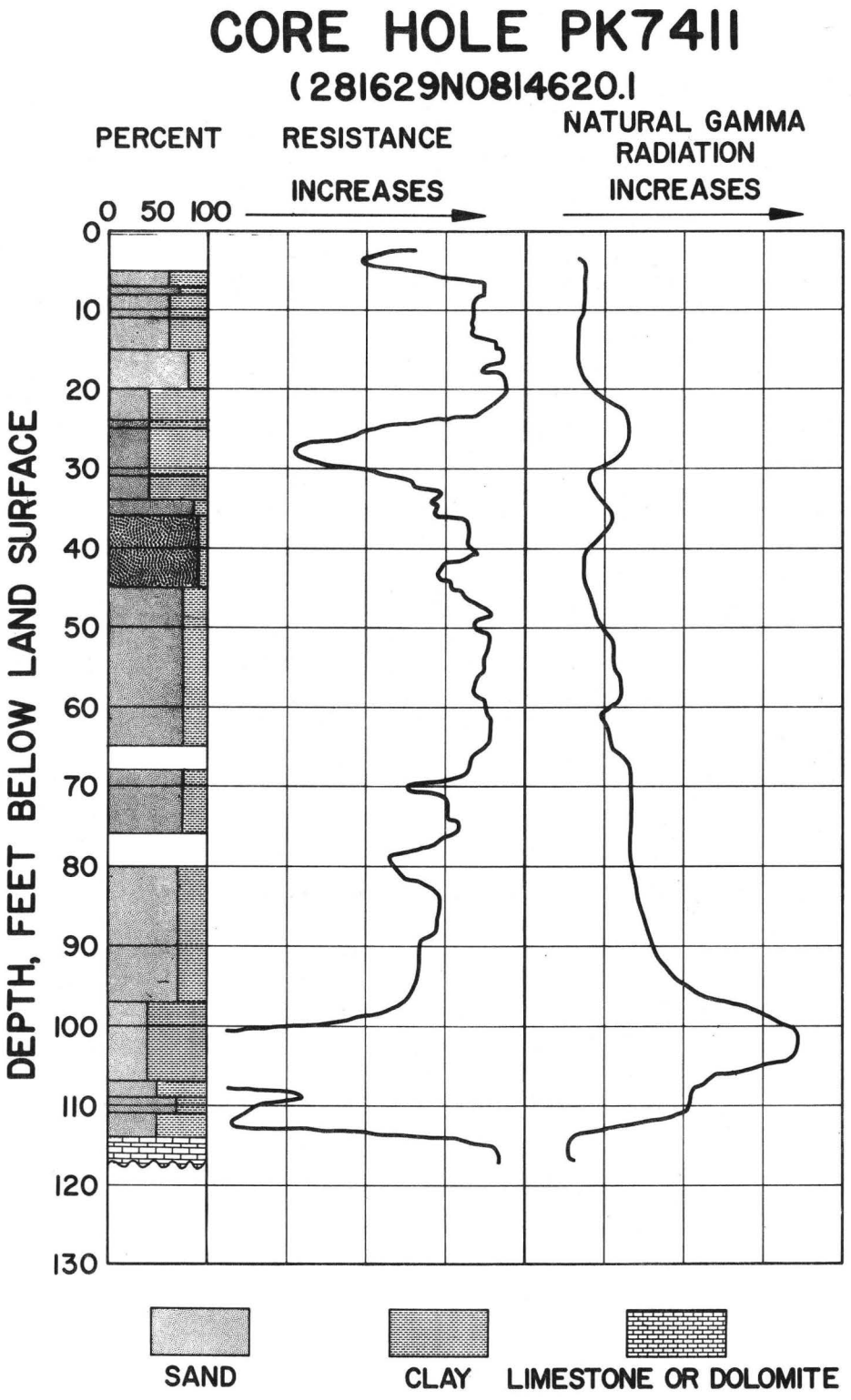
Polk County 281629N0814620.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-5.0	No sample.
5.0-7.0	60% white to light gray, frosted, medium-grained, fairly well sorted sub-rounded quartz sand; 40% light brown and light tan mottled, indurated crumbly clay matrix.
7.0-8.0	70% sand, as above; 30% grayish brown, indurated, crumbly, slightly silty clay matrix.
8.0-11.0	60% sand, as 5.0-7.0 interval; 40% light and dark grayish brown mottled, indurated clay matrix; trace of heavy minerals.
11.0-15.0	60% sand, as 5.0-7.0 interval; 40% dark gray and dark grayish brown mottled, indurated clay matrix; trace of heavy minerals.
15.0-20.0	80% sand, as 5.0-7.0 interval; 20% very light brown, indurated, crumbly clay matrix; becomes soft and dark brown at 18 feet.
20.0-25.0	60% medium to light grayish brown, soft clay matrix; 40% white, frosted, medium-grained fairly well sorted, sub-rounded quartz sand; trace of heavy minerals.
25.0-31.0	60% light and dark brownish gray mottled, soft clay matrix, with scattered streaks of bluish gray clay; 40% sand, as above; trace of heavy minerals.
31.0-34.0	60% light brown, soft clay matrix with gray tint; 40% light gray, frosted, medium-grained, well sorted, sub-rounded quartz sand; trace of heavy minerals.
34.0-36.0	85% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 15% tan, indurated, crumbly clay matrix; trace of heavy minerals.

36.0-45.0	90% white, clear to frosted, very fine-to very coarse-grained, angular to well rounded, silty quartz sand; 10% indurated clay matrix.
45.0-50.0	75% white, clear to frosted, fine-to very fine-grained, angular to well rounded, silty quartz sand; 25% light tan, soft, poorly consolidated clay matrix.
50.0-65.0	75% sand, as above, but contains some very coarse-grained sand; 25% tan, soft clay matrix.
65.0-68.0	No sample.
68.0-76.0	70% white, clear, fine-grained, well sorted, angular, silty quartz sand; 25% tan, indurated clay matrix; 5% light gray, frosted, well rounded, coarse-to very coarse-grained sand; trace of heavy minerals.
76.0-80.0	No sample.
80.0-97.0	70% light gray, frosted to clear, fine-grained, very well sorted, angular, silty quartz sand; 30% light and medium greenish gray, mottled, soft clay matrix; beginning at 89.9 feet, clay is dark greenish gray and has no mottling; trace of heavy minerals.
97.0-107.0	60% dark gray and dark brown mottled, soft sticky clay matrix; 40% light gray, clear, fine-to medium-grained, angular to sub-rounded quartz sand.
107.0-114.0	50% dark gray and medium greenish gray, banded and mottled, soft clay matrix; 30% light gray, clear to frosted, fine-grained, fairly well sorted, angular, silty, quartz sand; 20% white to light gray, clear to frosted, rounded, medium-grained quartz sand; sand increases to 70%, clay decreases to 30% between 109.0 and 111.0 feet.

Rocks of Eocene Age

114.0-118.0	65% highly weathered fragments of very light gray, microcrystalline, indurated, porous limestone; 35% fossils and fossil fragments.


CORE HOLE PK7411
(281629N0814620.1
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7412

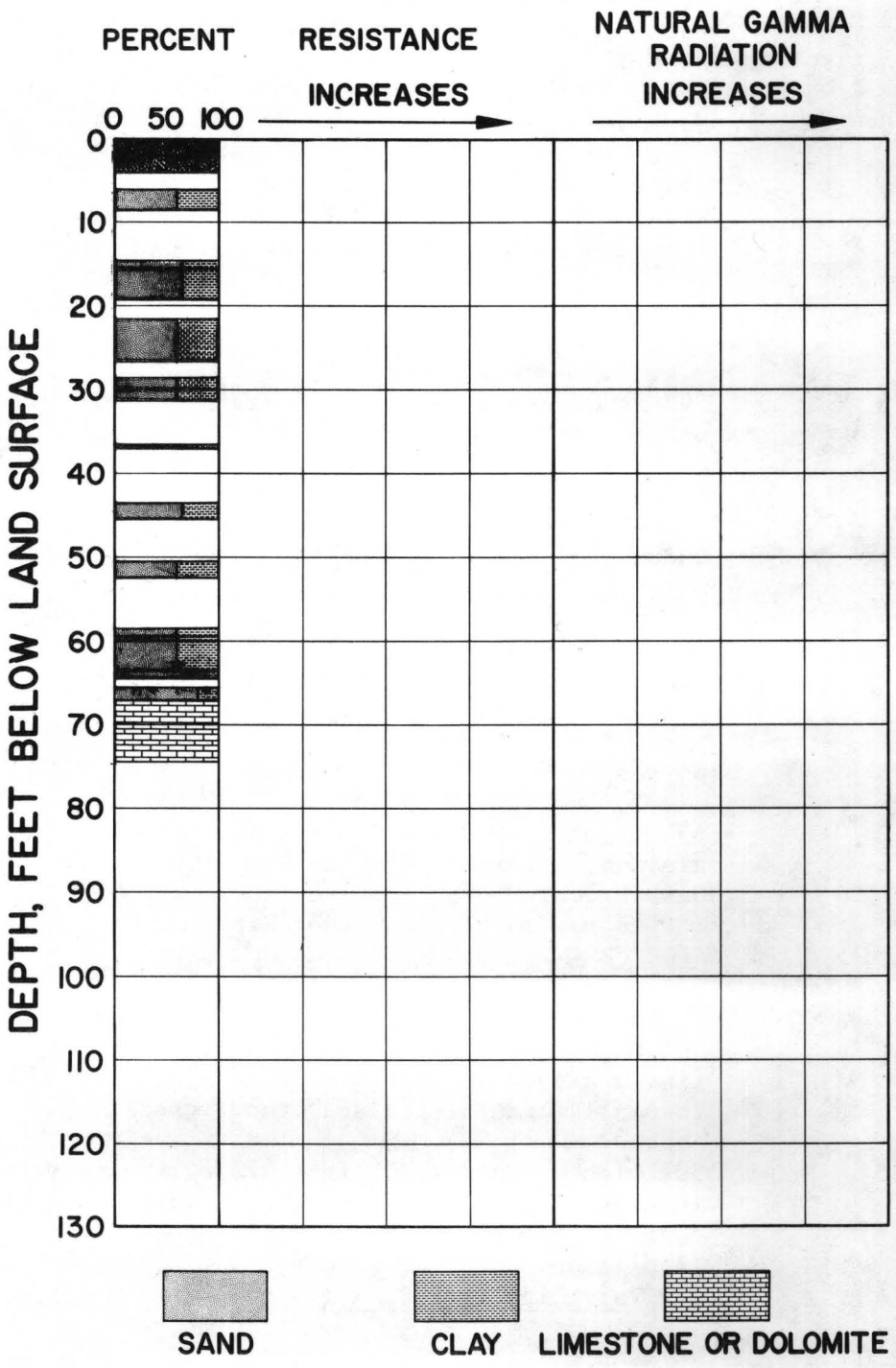
Polk County 281823N0814406.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-2.0	Light brown, stained, medium-to coarse-grained, rounded to sub-rounded sand.
2.0-4.0	Light tan, clear to stained, medium-to coarse-grained, sub-rounded to rounded sand.
4.0-6.0	No sample.
6.0-8.5	60% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 40% off-white indurated, powdery clay matrix.
8.5-14.5	No sample.
14.5-15.5	55% very light tan, clear to stained, medium-grained, sub-rounded sand; 35% off-white, indurated, powdery clay matrix; 10% coarse-grained sand.
15.5-19.5	65% white, frosted, medium-to very coarse-grained, rounded sand; 35% white and off-white, indurated, crumbly, slightly silty clay matrix.
19.5-21.5	No sample.
21.5-26.5	50% white, clear to frosted, fine-grained, angular, well sorted sand; 40% creamy, indurated to soft, silty clay matrix; 10% coarse-to very coarse-grained sand.
26.5-28.5	No sample.
28.5-31.5	55% sand, as 21.5-26.5 interval; 40% creamy, indurated to soft, silty clay matrix; 5% coarse-to very coarse-grained sand.
31.5-36.5	No sample.
36.5-37.0	35% coarse-to very coarse-grained sand, as 28.5-31.5 interval; 35% creamy, indurated, silty clay matrix; 30% fine-grained sand.

37.0-43.5	No sample.
43.5-45.5	60% white, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 35% off-white, indurated clay matrix; 5% coarse-to very coarse-grained sand.
45.5-50.5	No sample.
50.5-52.5	60% light gray, clear to stained, fine-grained, angular, well sorted sand; 40% medium, greenish gray, indurated, silty clay matrix; trace of medium-to very coarse-grained sand.
52.5-58.5	No sample.
58.5-59.5	50% sand, as 50.5-52.5 interval; 40% brownish gray and greenish gray mottled, indurated, silty clay matrix; 10% medium-to very coarse-grained sand.
59.5-63.5	60% sand, as 50.5-52.5 interval; 40% brownish gray, indurated, silty clay matrix, with minor dark gray mottling.
63.5-64.5	80% sand as 40.5-52.5 interval; 20% light gray, indurated, silty, crumbly clay matrix, mottled with pure, very dark gray, soft clay.
64.5-65.5	No sample.
65.5-67.0	65% light gray, clear to frosted, fine-to medium-grained, angular to rounded sand; 20% dark gray and dark brownish gray mottled, soft, crumbly clay matrix; 15% coarse-to very coarse-grained sand.
	Rocks of Eocene Age
67.0-68.5	50% highly weathered fragments of light gray, very fine-grained, indurated, porous limestone. 50% large to small foraminifera and other fossils.
68.5-74.5	50% highly weathered, light brown, microcrystalline, indurated, porous limestone; 50% large foraminifera; contains Dictyoconus sp., Flintina avonparkensis (Applin and Jordan), Lituonella floridana (Cole), and Valvulina floridana (Cole).
74.5-102.0	No sample.

CORE HOLE PK7412

(281823N0814406.1)



PK7413

Polk County 281836N0814053.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-0.5	80% white to light brown, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 20% coarse-grained sand; trace of heavy minerals and just enough medium brown clay to bind the sand very loosely.
0.5-3.0	90% sand as above; 10% coarse-grained sand; trace of heavy minerals.
3.0-6.0	No sample.
6.0-12.0	White to light tan, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; just enough white, light tan and pink mottled clay to bind sand very loosely; trace of heavy minerals.
12.0-13.5	75% white and light brown, clear to frosted, medium- to coarse-grained, sub-rounded quartz sand; 25% dull orange, soft, crumbly clay matrix; trace of heavy minerals.
13.5-14.5	70% white to pink to yellow, frosted and stained, coarse-grained, sub-rounded quartz sand; 30% dull orange, dull yellow and white mottled indurated crumbly clay matrix; trace of heavy minerals.
14.5-19.5	85% white, clear to frosted, coarse-to medium-grained, rounded quartz sand; 15% pink, indurated, crumbly clay matrix.
19.5-20.0	40% white to yellow to orange, clear to stained, coarse-grained quartz sand; 40% medium-grained, sub-rounded quartz sand; 20% dull orange and dull yellow mottled, indurated crumbly clay matrix.
20.0-21.0	85% sand, as above; 15% dull yellow, indurated, fully consolidated, crumbly clay matrix.

21.0-27.0	80% very light gray, clear to frosted, coarse-to very coarse-grained, well sorted, sub-rounded quartz sand; 20% white and very light pink mottled, indurated, crumbly clay matrix.
27.0-29.0	No sample.
29.0-31.0	80% white, frosted, coarse-to medium-grained, sub-rounded quartz sand, 20% off-white, tan and dull yellow mottled, indurated, crumbly clay matrix; trace of heavy minerals.
31.0-31.5	95% sand, as above; 5% very light tan and dull yellow mottled, indurated, crumbly clay matrix; trace of heavy minerals.
31.5-32.5	90% sand, as 29.0-31.0 interval; 10% very light tan, soft, poorly consolidated, crumbly clay matrix.
32.5-36.0	65% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 25% white, indurated, crumbly, powdery clay matrix; 10% light gray, frosted, very coarse-to coarse-grained, sub-rounded quartz sand.
36.0-42.0	No sample.
42.0-45.0	75% white, frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 10% white and tan mottled, indurated, crumbly clay matrix; 15% light gray, frosted, coarse-grained, sub-rounded quartz sand, trace of heavy minerals.
45.0-49.0	70% sand, as above; 30% tan and white mottled, soft, poorly consolidated clay matrix; trace of heavy minerals.
49.0-54.5	No sample.
54.5-60.0	40% light gray, clear, medium-to coarse-grained, rounded quartz sand; 35% white, clear, fine-grained, well sorted, sub-angular, quartz sand; 25% very light tan, soft clay matrix; trace of heavy minerals.
60.0-68.0	85% sand, as above; 15% clay, as above; trace of heavy minerals.

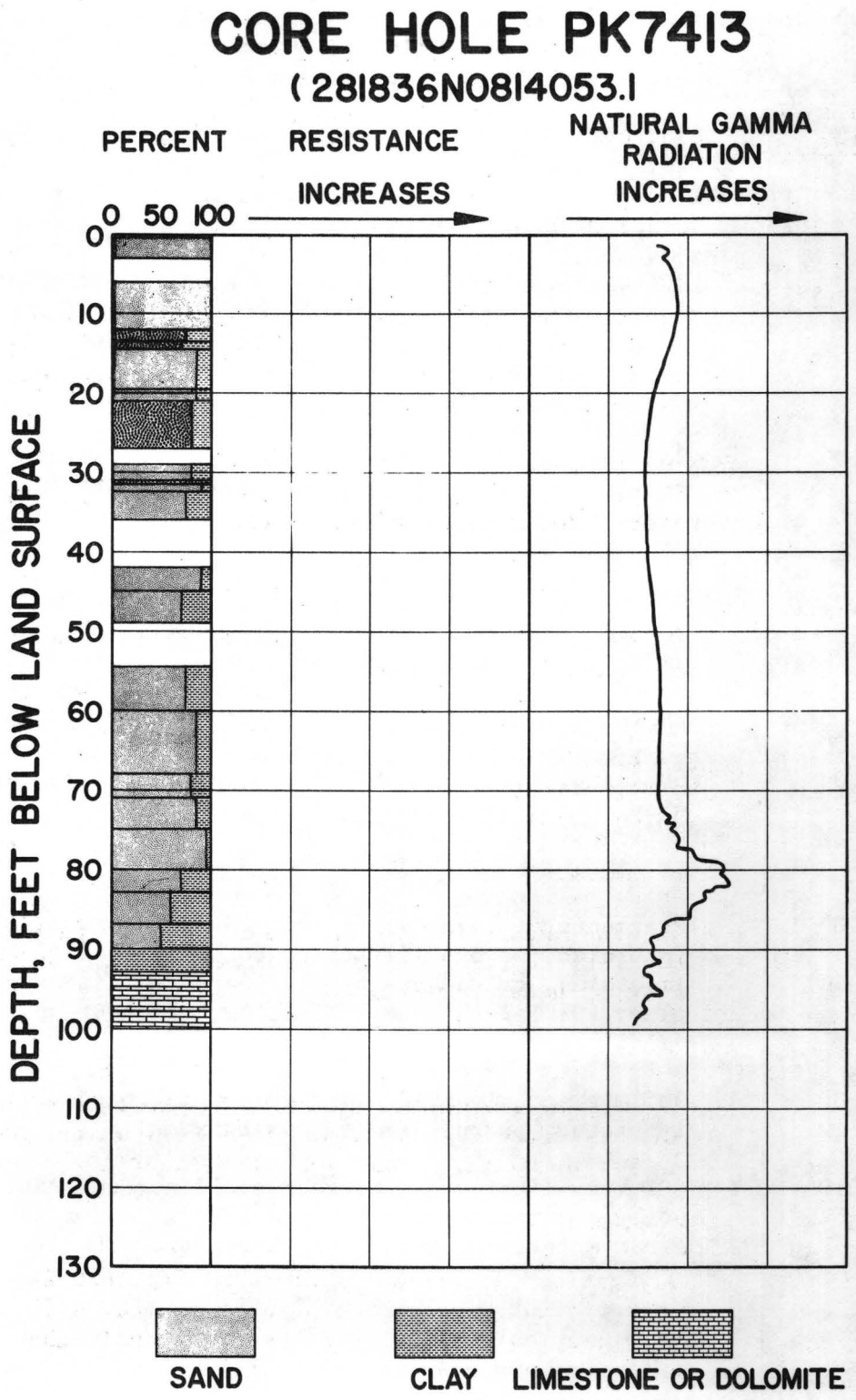
68.0-71.0	80% sand, as 54.5-60.0 interval; 20% very light gray and slight tan mottled, indurated, crumbly clay matrix; trace of heavy minerals.
71.0-75.0	85% white, clear to frosted, medium-grained, fairly well sorted, sub-angular quartz sand; 15% tan, indurated, poorly consolidated, crumbly clay matrix; trace of heavy minerals.
75.0-80.0	95% white, clear to frosted, coarse-to medium-grained, sub-rounded quartz sand; 5% very light tan, soft, crumbly clay matrix; trace of heavy minerals.

Rocks of Miocene Age

80.0-83.0	70% white, clear, fine-grained, angular, well sorted, quartz sand; 30% very pale greenish gray, soft, silty clay matrix; trace of coarse-grained sand and heavy minerals.
83.0-87.0	60% white, clear, fine grained, angular to well sorted quartz sand; 40% light greenish gray, soft, silty clay matrix; trace of coarse-grained sand, heavy minerals and black to tan fine to very coarse phosphate nodules and blades.
87.0-90.0	50% sand, as above; 50% light green, soft, silty, clay matrix; trace of phosphate and heavy minerals.

Rocks of Eocene Age

90.0-93.0	Fragments of light cream colored microcrystalline, indurated, porous limestone; 60% matrix of off-white indurated, calcareous highly weathered limestone clay; 40% large to small fossils; trace of sparry calcite replacement.
93.0-95.0	90% microcoquina; 10% light gray, microcrystalline, indurated, porous limestone matrix.
95.0-100.0	60% very light gray, microcrystalline, indurated, porous, limestone matrix; 40% fossils and fossiliferous materials, highly weathered and crumbly.


CORE HOLE PK7413
(281836N0814053.1
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7414

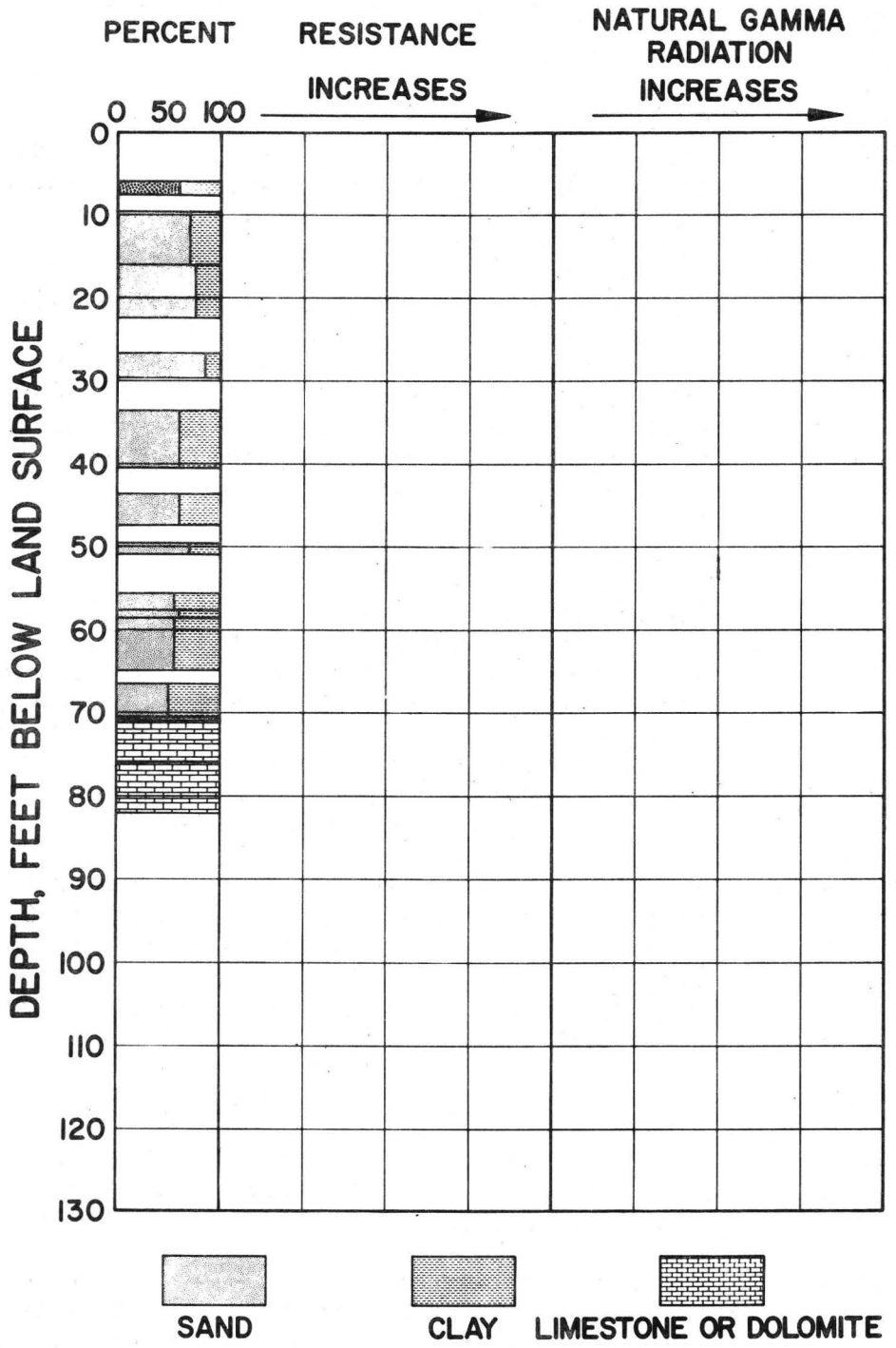
Polk County 281524N0814227.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-6.0	No sample.
6.0-6.5	40% light gray, frosted, coarse-to very coarse-grained, rounded quartz sand; 40% brownish gray, indurated, crumbly clay matrix; 20% fine-to medium-grained sand.
6.5-7.5	40% sand, as above, but is now white in color; 40% very pale, cream colored, soft, crumbly clay matrix; 20% medium-grained sand.
7.5-9.5	No sample.
9.5-16.0	70% sand, as 6.5-7.5 interval; 30% light brown indurated, crumbly clay matrix.
16.0-22.5	75% white, clear to frosted, very coarse-to fine-grained, angular to rounded quartz sand; 25% off-white to very pale tan, indurated, crumbly, silty clay matrix; trace of heavy minerals.
22.5-26.5	No sample.
26.5-29.5	85% sand, as 16.0-22.5 interval; 15% very pale tan to off-white, soft to indurated, silty clay matrix; trace of heavy minerals.
29.5-33.5	No sample.
33.5-40.5	60% sand as 16.0-22.5 interval, but most fine-to very fine-grained; 40% very pale tan to off-white, soft, silty clay matrix; trace of heavy minerals.
40.5-43.5	No sample.
43.5-47.5	60% fine-to very fine-grained sand, as 16.0-22.5 interval; 40% very pale tan to off-white, soft, silty clay matrix; trace of heavy minerals and coarse-to very coarse-grained sand.

47.5-49.5	No sample.
49.5-51.0	70% sand, as 16.0-22.5 interval; 30% very light tan, soft, silty clay matrix; trace of heavy minerals.
51.0-55.0	No sample.
55.5-57.5	55% sand, as 16.0-22.5 interval; 45% light tan, soft, silky clay matrix; a 1-inch band of coarse-to very coarse-grained quartz sand at 56.8 feet; trace of heavy minerals.
57.5-58.5	60% sand, as 16.0-22.5 interval; 40% light brownish gray, soft, silty clay matrix.
58.5-65.0	55% light gray, clear to frosted, very fine-to fine-grained, angular, very well sorted quartz sand; 45% medium gray, soft, silty clay matrix; trace of coarse-to very coarse-grained sand.
65.0-66.5	No sample.
66.5-70.5	50% medium brownish gray and medium greenish gray banded and mottled soft, silty clay matrix; 45% light brown, clear to stained, very fine-to fine-grained, angular, very well sorted quartz sand; 5% medium-to very coarse-grained quartz sand; trace of heavy minerals and marcasite.
	Rocks of Miocene Age
70.5-71.0	80% black, light brown and light tan banded and mottled, soft, silty, crumbly clay matrix; 20% white, clear, very fine-to fine-grained, angular, well sorted sand; trace of black to brown, medium to very coarse phosphate nodules, coarse-to very coarse-grained sand.
	Rocks of Eocene Age
71.0-72.0	60% light tan, very fine-grained, soft, porous limestone fragments; 40% large to small foraminifera, highly weathered.
72.0-82.0	50% light gray, microcrystalline, hard, porous, limestone fragments; 50% large to small foraminifera and other fossils, highly weathered; contains Camerina sp. and Lepidocyclina ocalana floridana (Cushman).

CORE HOLE PK7414

(281524N0814227.1)



PK7415

Polk County 281512N0814017.1

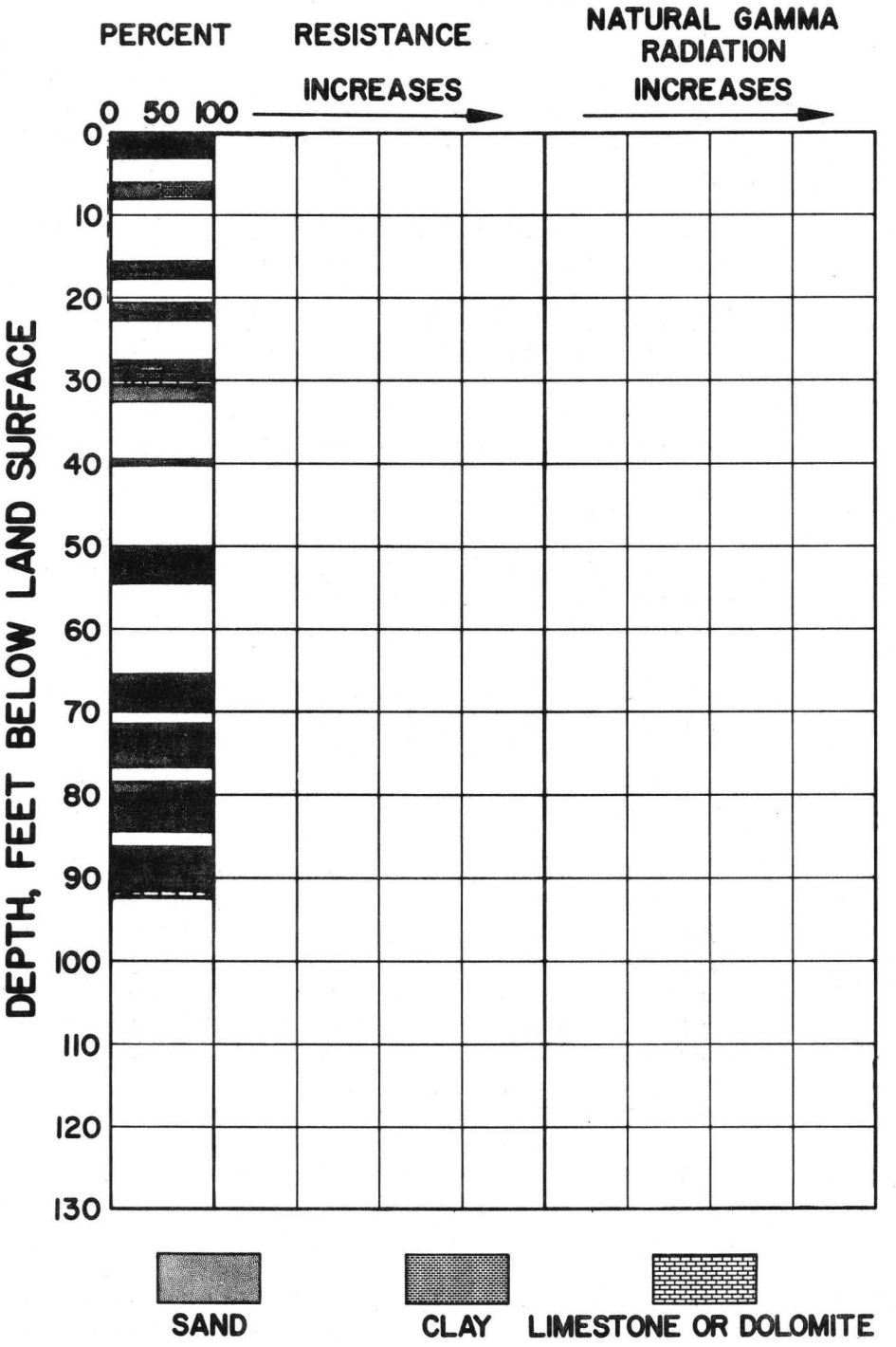
DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	Light gray to orange, clear to stained, fine-to coarse-grained, angular to rounded quartz sand; trace of light brown clay.
1.0-2.5	75% light gray, clear to frosted, fine-to medium-grained quartz sand; 25% light brown and dark gray mottled, soft, poorly consolidated clay matrix.
2.5-3.0	White, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand.
3.0-6.0	No sample.
6.0-7.0	50% white to dark brown, clear to stained, medium-grained, fairly well sorted, sub-rounded sand; 50% very dark brown to very dark grayish brown, soft, clay matrix.
7.0-8.0	50% sand, as above; 50% medium brown, soft, clay matrix.
8.0-15.5	No sample.
15.5-16.5	70% very light tan, medium-grained, clear to frosted, fairly well sorted, sub-angular to sub-rounded sand; 30% light to dark brown, soft clay matrix.
16.5-17.5	85% light brown, stained, medium-grained, well sorted, sub-rounded sand; 15% dark gray and dark brown soft clay matrix.
17.5-20.5	No sample.
20.5-21.5	65% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 35% light brown, indurated clay matrix; trace of heavy minerals.
21.5-22.5	50% sand, as above; 50% very light, cream colored, soft clay matrix; trace of heavy minerals.

22.5-27.5	No sample.
27.5-27.7	Same as 21.5-22.5 interval.
27.7-28.7	50% white, clear to frosted, fine-to medium-grained, sub-angular quartz sand; 50% very light cream colored, indurated clay matrix; a few streaks of medium brown and bluish gray clay; trace of heavy minerals.
28.7-30.0	80% light brown, soft, waxy clay matrix; 20% sand, as above; a 1-inch band of white, fine-to medium-grained, fairly well sorted sand at 29.5 feet.
30.0-30.5	50% off-white, very fine-grained, indurated, porous, vuggy, limestone fragments; 50% light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand.
30.5-32.5	90% white, clear, fine-to medium-grained, sub-angular quartz sand; 10% very light tan, soft, poorly consolidated clay matrix; trace of heavy minerals.
32.5-39.5	No sample.
39.5-40.5	80% sand, as 30.5-32.5 interval; 20% very light tan and light brown mottled, soft clay matrix.
40.5-50.0	No sample.
50.0-54.5	75% white, clear to frosted, fine-grained, angular, well sorted quartz sand; 25% off-white to very light gray, soft, silty clay matrix; trace of heavy minerals.
54.5-65.5	No sample.
65.5-66.5	70% sand, as 50.0-54.5 interval; 30% very light tan, soft clay matrix; trace of heavy minerals.
66.5-67.0	75% white, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; 25% tan, soft clay matrix; trace of heavy minerals.
67.0-69.5	75% white to very light tan, clear to frosted, fine-grained, angular, well sorted sand; 25% light brown, soft, silty clay matrix; trace of heavy minerals and fine muscovite.

69.5-71.5	No sample.
71.5-72.5	75% sand, as 67.5-69.5 interval; 25% light brown, gray tinted, soft clay matrix; trace of coarse-to very coarse-grained sand.
72.5-73.5	85% white to light gray, clear to frosted, medium-grained, fairly well sorted, sub-angular sand; 15% white and light grayish brown mottled, soft clay matrix; trace of heavy minerals.
73.5-73.6	65% white, clear to frosted, very fine-to fine-grained, angular, well sorted sand; 35% light brown and light tan mottled, soft clay matrix; trace of fine-grained muscovite, heavy minerals and black to gray medium phosphate nodules.
73.6-76.5	60% sand, as above; 40% light brown, soft, silty, clay matrix; trace of muscovite and heavy minerals.
76.5-78.5	No sample.
78.5-80.0	Same as 73.6-76.5 interval, but clay is light tan; several 1-inch bands of grayish brown, soft, well consolidated, waxy clay in lower 0.5 foot.
80.0-84.5	50% sand, as 73.5-73.6 interval; 50% interbedded, light grayish brown and medium gray, soft, silty clay matrix; trace of muscovite and heavy minerals.
84.5-86.5	No sample.
	Rocks of Miocene Age
86.5-90.5	50% bluish green and greenish gray mottled, soft, silty clay matrix with tan and medium gray mottling in lower 2 feet; 35% white to light gray, clear to frosted, fine-grained, angular, well sorted quartz sand; 15% coarse-to very coarse-grained sand; trace of heavy minerals and black to buff to brown, medium to very coarse phosphate nodules.
90.5-91.5	65% sand, as above; 35% clay, as above.
	Rocks of Eocene Age
91.5-92.5	Very light gray to off-white, microcrystalline, indurated, porous, limestone fragments with fossiliferous material, highly weathered.
92.5-104.4	No sample.

CORE HOLE PK7415

(281512N0814017.1)



PK7416

Polk County 281859N0814209.1

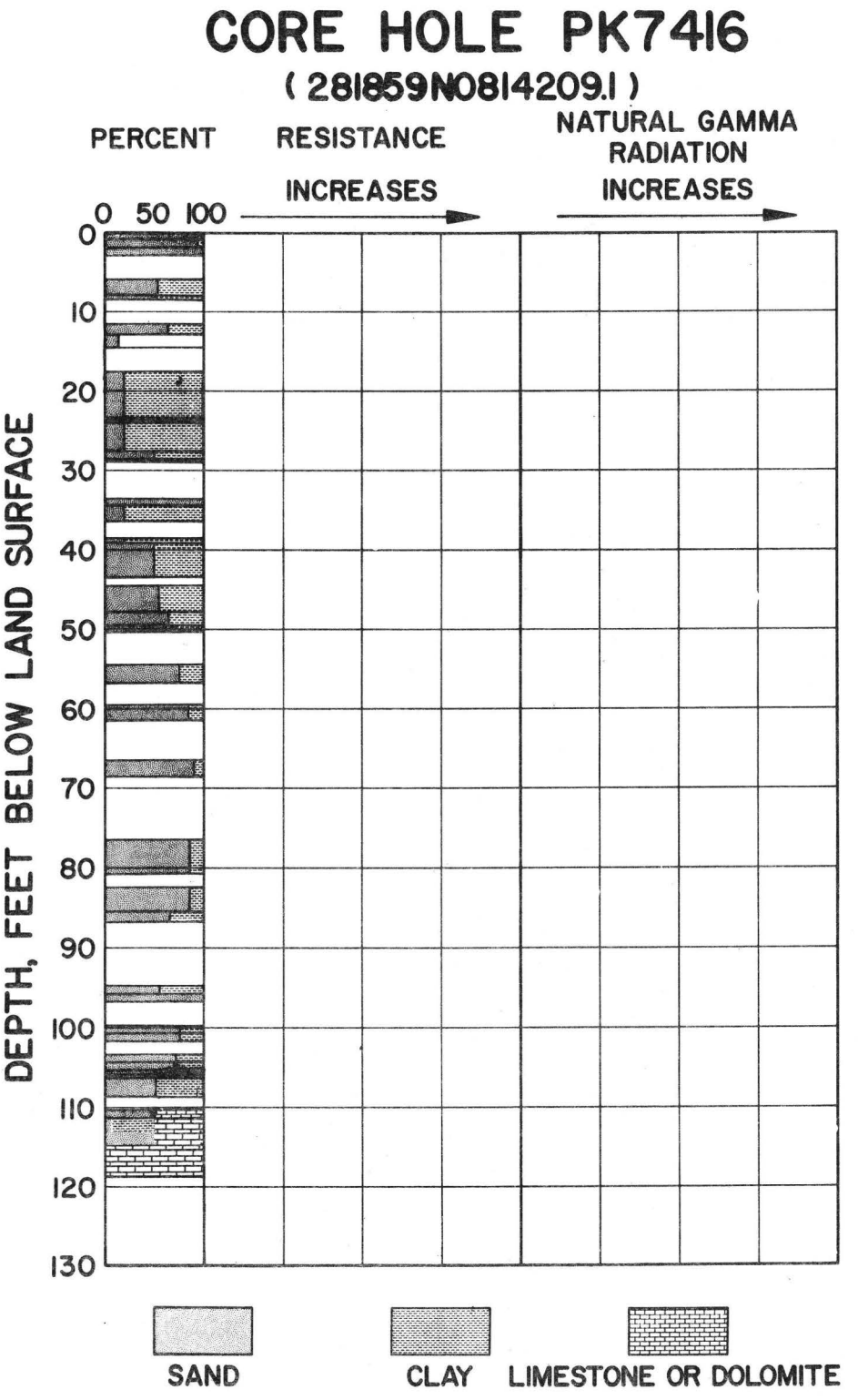
DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	95% white to tan, clear to frosted, medium-grained, well sorted, sub-angular sand; 5% light brown and light gray mottled, soft clay matrix.
1.0-3.0	95% sand, as above; 5% light brown and light tan mottled, soft clay matrix.
3.0-6.0	No sample.
6.0-8.0	55% dark red, stained, white and tan frosted, medium-grained, well sorted, sub-angular to sub-rounded sand; 45% brick red, medium brownish gray and dull yellow banded, indurated clay matrix.
8.0-8.5	50% white to light brown, frosted, medium-grained, well sorted, sub-rounded sand; 50% medium brownish gray, indurated clay matrix.
8.5-11.5	No sample.
11.5-13.0	35% white, clear, fine-grained, well sorted, sub-angular sand; 35% medium brown, indurated clay matrix; 30% medium-to coarse-grained sand; trace of heavy minerals.
13.0-14.5	85% light brown and medium brown, mottled, indurated, silty, waxy clay matrix; 15% white, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded sand; trace of medium-grained glauconite pellets.
14.5-17.5	No sample.
17.5-23.5	80% buff, silty, indurated clay matrix with scattered pockets of dark brown, indurated waxy clay; 20% sand as 13.0-14.5 interval.
23.5-24.0	70% white, clear to frosted, fine-to medium-grained, sub-angular to sub-rounded sand; 30% light to dark brown, indurated, waxy clay matrix.

24.0-27.5	80% medium, grayish brown, indurated, waxy clay matrix; 20% white, clear to frosted, fine-to medium-grained, sub-angular to sub-rounded sand.
27.5-28.7	50% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded sand; 50% medium brown, indurated, slightly silty, waxy clay matrix.
28.7-29.0	95% white, clear to frosted, medium-grained, well sorted, sub-rounded sand; 5% coarse-grained sand, with just enough very light brown indurated clay to bind sand very loosely; trace of heavy minerals.
29.0-33.5	No sample.
33.5-34.5	White to light brown, clear to frosted, fine-grained, angular, well sorted sand; trace of very light buff, soft, waxy clay matrix; trace of heavy minerals.
34.5-37.5	80% dark brown, indurated, silty clay matrix; 20% white to light brown, clear to stained, medium-grained, well sorted, sub-rounded sand.
37.5-38.5	No sample.
38.5-39.5	Same as 34.5-37.5 interval.
39.5-43.5	50% white, clear to frosted, fine-to medium-grained, sub-angular to sub-rounded sand; 50% dark brown indurated, slightly silty clay matrix; some light brown areas.
43.5-44.5	No sample.
44.5-48.0	55% sand, as 39.5-43.5 interval; 45% tan, dark brown and dark grayish brown mottled, indurated, slightly silty clay matrix.
48.0-49.5	65% sand, as 39.5-43.5 interval; 35% light grayish brown, indurated, slightly silty clay matrix, with pockets of dull yellow and medium brown clay.
49.5-50.5	70% sand, as 39.5-43.5 interval; 30% light grayish brown, dark brownish gray mottled, indurated clay matrix.
50.5-54.5	No sample.

54.5-57.0	75% white to tan, clear to stained, medium-grained, fairly well sorted, sub-angular to sub-rounded sand; 25% tan, indurated clay matrix; trace of heavy minerals.
57.0-59.5	No sample.
59.5-61.5	85% sand, as 54.5-57.0 interval; 15% tan to light gray, indurated clay matrix.
61.5-66.5	No sample.
66.5-67.5	90% sand, as 54.5-57.0 interval; 10% tan, soft, clay matrix.
67.5-68.5	90% light gray, stained, fine-grained, well sorted, sub-angular sand; 10% light gray, soft clay matrix.
68.5-76.5	No sample.
76.5-81.0	85% tan, fine to medium-grained, clear to stained, quartz sand; 15% light tan, indurated clay matrix.
81.0-82.5	No sample.
82.5-85.5	85% light brown, clear, medium-grained, well sorted, sub-angular sand; 15% light brown, soft, clay matrix.
85.5-87.0	65% white, frosted, fine-grained, angular, very well sorted, quartz sand; 35% light tannish gray, soft, clay matrix with medium gray banding in lower 1 foot; trace of heavy minerals.
87.0-95.0	No sample.
95.0-96.0	55% light gray to tan, stained, fine-grained, angular, very well sorted quartz sand; 45% light brownish gray, dark gray mottled, soft clay matrix.
96.0-97.0	Sand, as above; just enough light gray, soft clay to bind sand very loosely.
97.0-100.0	No sample.
100.0-101.0	65% sand, as 95.0-96.0 interval; 25% tan, soft clay matrix; 10% medium-to coarse-grained sand; trace of pyrite and heavy minerals.

101.0-102.0	75% sand, as 95.0-96.0 interval; 25% light brown to tan, soft clay matrix; trace of pyrite and heavy minerals.
102.0-103.5	No sample.
103.5-104.5	70% sand, as 101.0-102.0 interval; 30% light gray, soft clay matrix, mottled and banded with black, soft, silty clay; trace of heavy minerals.
	Rocks of Miocene Age
104.5-105.5	Sand, as above; trace of black to brown, medium to fine phosphate nodules.
105.5-106.2	50% tan, brown and black mottled, soft, crumbly silty clay matrix; 40% white, clear to frosted, fine-to medium-grained, sub-angular to sub-rounded sand; 10% black to brown. medium to coarse phosphate nodules.
106.2-106.5	65% light gray, fine-grained, fairly well sorted angular sand; 30% medium-to coarse-grained sand; 5% medium to very coarse phosphate nodules as above; just enough light gray silty clay to bind very loosely; trace of pyrite.
106.5-109.0	50% brown, tan, gray and black mottled, soft, crumbly, silty clay matrix; 35% light gray and light brown, fine-grained, angular, fairly well sorted sand; 10% medium to very coarse sand; 5% phosphate trace of pyrite.
109.0-110.5	No sample.
	Rocks of Eocene Age
110.5-111.5	50% light gray to light tan, microcrystalline, soft, porous, fossiliferous limestone fragments; 45% light gray and tan mottled, soft, crumbly clay matrix; 5% light to brown, clear, fine-grained, angular, well sorted sand.
111.5-113.0	Sand and limestone as above, highly weathered.
113.0-114.5	Microcoquina; 50% medium brown, fine-grained, angular, clear, well sorted sand; 50% medium to coarse sand-sized fossils; some sparry calcite replacement; sand occurs as 1/8 to 1/2-inch bands within the limestone; weathered.

114.5-115.5	Microcoquina; 50% cream colored, microcrystalline, soft, porous limestone; 50% large to small fossils; weathered.


CORE HOLE PK7416
(281859N0814209.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7418

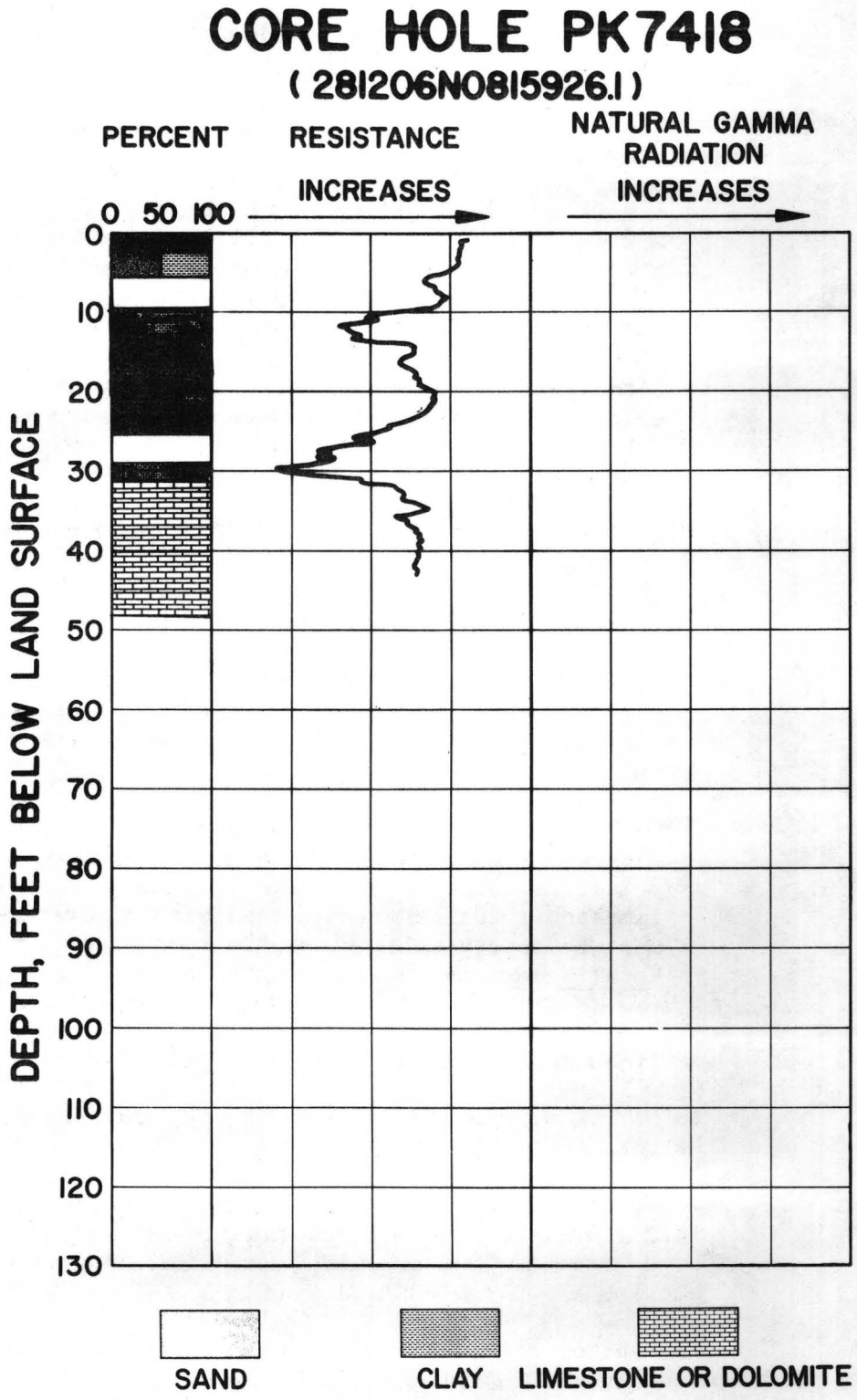
Polk County 281206N0815926.0

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	White, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; trace of heavy minerals.
1.0-1.2	75% white to light brown, clear to stained, fine-to medium-grained, angular to sub-rounded sand; 25% medium brown, soft, crumbly clay matrix.
1.2-2.5	Tan, stained, fine-to medium-grained, angular to sub-rounded sand; trace of heavy minerals, light brown clay and fine-to medium-grained, indurated, fairly tight, limonitic sandstone.
2.5-4.2	50% white to light yellow, clear to stained, fine-to medium-grained, sub-angular to sub-rounded quartz sand; 50% white, light green and light brown mottled, waxy clay matrix; trace of heavy minerals.
4.2-5.7	50% light, clear to frosted, fine-to medium-grained, angular to sub-rounded sand; 50% light brownish gray and light brown mottled, soft, clay matrix; trace of heavy minerals and coarse-grained sand.
5.7-9.5	No sample.
9.5-11.0	98% very pale green, soft, waxy clay matrix; 2% white, clear, fine-grained, angular, well sorted sand.
11.0-13.0	70% light green, indurated to soft, waxy clay matrix with minor light brown mottling; 30% sand, as above.
13.0-19.2	85% sand as 9.5-11.0 interval; 15% white, soft clay clay matrix with minor brown and very pale green banding and mottling; trace of heavy minerals.
19.2-21.2	65% white, clear, fine-to medium-grained, angular to sub-rounded quartz sand; 35% very pale greenish gray indurated clay matrix; very minor light brown mottling; trace of heavy minerals.

21.2-22.2	65% sand, as above; 35% very light brown, very pale green and white mottled, indurated to soft clay matrix; trace of heavy minerals.
22.2-23.5	Sand, as 19.2-21.2 interval, with just enough white clay to bind sand very loosely; trace of white phosphate and heavy minerals.
23.5-24.4	80% pale green, soft, waxy clay matrix; 20% sand, as 19.2-21.2 interval; trace of heavy minerals, phosphate and fragments of white, microcrystalline, hard, porous, silicified limestone with some relic fossil material.
24.4-25.5	85% light bluish green, soft, waxy clay matrix; 15% white, clear, fine-grained, very well sorted, angular sand.
25.5-29.0	No sample.
29.0-31.5	80% light bluish green, soft clay matrix; 20% sand, as 24.4-25.5 interval; a 1/2-inch wide, very sandy band at 31.1 feet; green and brown mottling in lower 0.2 foot; several fragments of light and dark gray mottled microcrystalline to cryptocrystalline, hard, tight to porous, silicified limestone, with abundant relict fossil material.

Rocks of Oligocene Age

31.5-40.0	80% cream-colored, microcrystalline, hard, porous limestone; 20% fossil material with minor replacement by sparry calcite; highly weathered; contains Rotalia mexicana mecatepcensis (Nuttall).
40.0-48.2	75% cream colored, microcrystalline, hard, porous limestone; 25% fossil material; highly weathered.


CORE HOLE PK7418
(281206N0815926.1)
PERCENT
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0 50 100
0
10
20
30
40
50
60
70
80
90
100
110
120
130
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7420

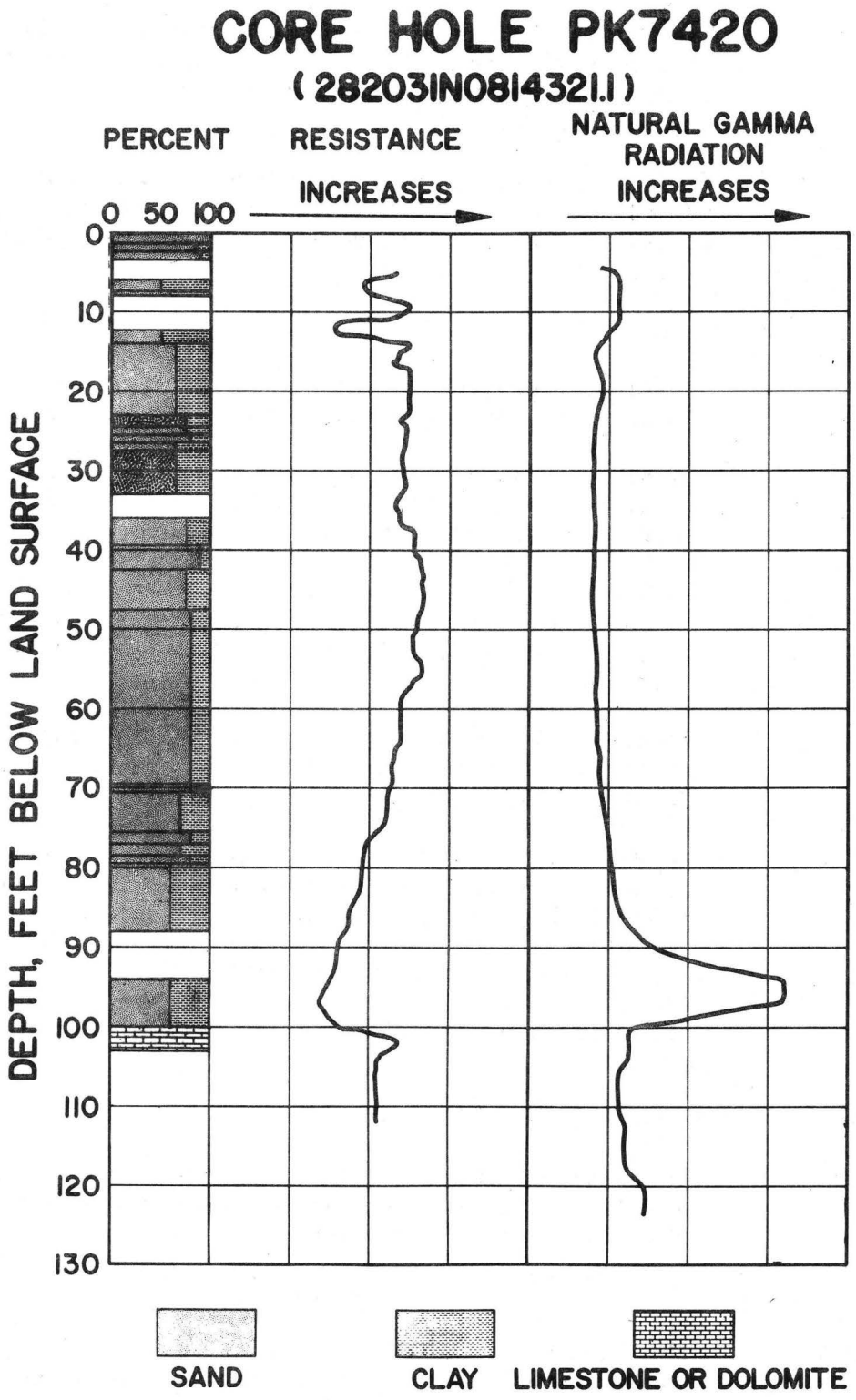
Polk County 282031N0814321.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.5	Light to brown, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand; just enough light brownish-gray clay to bind sand very loosely.
1.5-2.5	85% white, frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 15% dark gray, soft clay matrix.
2.5-3.5	90% light gray sand, as above; 10% light brown indurated clay matrix.
3.5-6.0	No sample.
6.0-6.5	50% very light yellow, frosted, medium-grained, fairly well sorted, sub-angular quartz sand; 50% dull yellow and light gray mottled, soft, sticky clay matrix.
6.5-7.0	60% white, clear to frosted, medium-grained, well sorted, sub-angular to sub-rounded quartz sand; 40% dull yellow, indurated clay matrix with a tan cast.
7.0-12.0	No sample.
12.0-14.0	50% light gray, clear to frosted, medium-grained, well sorted, sub-rounded quartz sand; 50% light gray and bluish-gray mottled, soft clay matrix.
14.0-23.0	65% sand, as above; 35% light gray, indurated clay matrix.
23.0-24.5	70% white to yellow, clear to stained, medium-grained, fairly well sorted, sub-angular quartz sand; 25% light gray, medium brown and tan mottled, soft clay matrix; 5% coarse-grained sand.
24.5-25.5	75% white, clear, medium-grained, fairly well sorted, sub-rounded quartz sand; 25% light to very light gray, soft clay matrix with very minor medium brown mottling.

25.5-26.5	80% white, clear, fine-to medium-grained, fairly well sorted, sub-angular quartz sand; 20% very light gray, indurated clay matrix; trace of heavy minerals.
26.5-33.0	55% white, clear to frosted, fine-grained, poorly sorted quartz sand; 35% light gray, indurated clay matrix; 10% frosted, coarse-to very coarse-grained, well rounded quartz sand.
33.0-36.0	No sample.
36.0-47.5	75% light brown, medium-to very coarse-grained quartz sand; 25% light brown, indurated clay matrix.
47.5-69.5	80% brown, medium-grained, quartz sand; 20% light brown, soft clay matrix; turns to light gray in lower 10 feet of interval.
69.5-70.5	80% white, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 20% light brownish gray, soft micaceous clay matrix; trace of heavy minerals.
70.5-75.5	70% sand, as above; 30% medium gray, soft clay matrix; trace of medium to fine muscovite flakes and heavy minerals.
75.5-79.5	80% white to light gray, clear to frosted, fine-grained, very well sorted, angular, silty, quartz sand; 20% light gray, indurated clay matrix; clay matrix is light greenish gray between 77.0 and 78.4 feet; trace of marcasite.
79.5-88.0	60% sand, as above; 40% greenish gray soft clay matrix.
88.0-94.0	No sample.
94.0-100.0	60% white, frosted, medium-to fine-grained, fairly well sorted, sub-angular quartz sand; 40% greenish gray, soft, silty clay matrix.

Rocks of Eocene Age

100.0-103.0	70% light gray, very fine-grained, indurated, porous limestone; 30% large foraminifera; scattered sparry calcite replacement; highly weathered; might be called oolitic; contains Dictyoconus sp.
103.0-125.0	No sample.


CORE HOLE PK7420
(282031N0814321.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7423

Polk County 280923N0815352.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	Light gray, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand.
1.0-2.5	White to light tan, clear to stained, fine-to medium-grained, angular to sub-rounded quartz sand; just enough light brown clay to bind sand very loosely; trace of heavy minerals.
2.5-6.0	70% white, clear, frosted, fine-to medium-grained, angular to rounded quartz sand; 30% very light gray and tan and dull orange mottled, indurated clay matrix; trace of heavy minerals.
6.0-8.2	60% sand as above; 40% dull orange, light brown, and white, indurated clay matrix.
8.2-11.0	70% sand, as 2.5-6.0 interval; 30% very light tan, indurated clay matrix with minor pink and dull orange streaking; trace of heavy minerals.
11.0-12.0	80% white, clear to frosted, fine-grained, very well sorted angular quartz sand; 20% light tan, indurated clay matrix; trace of heavy minerals.
12.0-13.5	80% white, clear to frosted, fine-to medium-grained, angular to rounded quartz sand; 20% very light brown, indurated clay matrix with minor mottling by dull orange and light gray, waxy clay; trace of heavy minerals.
13.5-14.2	75% light yellow, clear to stained, fine-to medium-grained, angular to rounded quartz sand; 25% light brown and yellow mottled indurated clay matrix; trace of heavy minerals.
14.2-15.5	98% light, medium brownish gray mottled and banded, soft, waxy clay matrix; 2% white, clear, fine-to medium-grained, angular to rounded quartz sand; trace of heavy minerals.

15.5-17.0	85% white, clear to frosted, fine-grained, angular, fairly well sorted quartz sand; 10% white, light brown banded, soft clay matrix; 5% medium grained sand; trace of heavy minerals.
17.0-22.0	60% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 40% very pale greenish gray, indurated clay matrix.
22.0-23.2	95% light green, soft, waxy clay matrix; 5% light gray, clear, medium-grained, fairly well sorted, sub-rounded quartz sand.

Rocks of Miocene Age

23.2-24.0	75% white, clear to frosted, medium-grained, well sorted, sub-rounded to rounded quartz sand; 25% very pale green, soft clay matrix; trace of heavy minerals.
24.0-26.0	90% sand, as above; 10% clay, as above.
26.0-27.0	60% cream colored, soft clay matrix; trace of heavy minerals; 40% sand, as 23.2-24.0 interval.
27.0-27.5	70% sand, as 23.2-24.0 interval; 30% light gray, soft clay matrix.
27.5-28.0	85% cream colored, soft clay matrix; 15% sand, as 23.2-24.0 interval; trace of black, fine-to medium-phosphate nodules.
28.0-28.5	75% very pale green, soft clay matrix; 25% sand, as 23.2-24.0 interval; trace of phosphate and heavy minerals.
28.5-28.7	80% cream colored, soft clay matrix; 20% sand, as 23.2-24.0 interval; trace of phosphate and heavy minerals.
28.7-29.0	40% off-white, soft, poorly consolidated, powdery, crumbly clay matrix; 30% sand, as 23.2-24.0 interval; 30% fine-grained sand; trace of black to tan, fine-to medium-grained phosphate.
29.0-30.5	55% sand, as 23.2-24.0 interval; 30% cream colored, soft clay matrix; 15% black to light tan, fine to very coarse phosphate nodules.

30.5-30.7	55% sand, as 23.2-24.0 interval; 45% very pale green, soft clay matrix; 10% phosphate as 29.0-30.5 interval.
30.7-31.5	60% white, clear, fine-grained, fairly well sorted, angular sand; 35% off-white, very pale green mottled, soft clay matrix; 5% black and tan, fine to medium phosphate nodules.
31.5-37.5	50% cream colored and pale green clay matrix; 30% white, clear to frosted, fine-to medium-grained, angular to rounded quartz sand; 20% multicolored, fine to very coarse phosphate nodules.
37.5-38.5	50% cream colored, indurated, crumbly clay matrix; 30% sand, as 31.5-37.5 interval; 20% phosphate as 31.5-37.5 interval.
38.5-39.0	50% pale green, soft clay matrix with 1/2-inch band of pure pale green clay; 30% sand, as 31.5-37.5 interval; 20% phosphate as 31.5-37.5 interval.
39.0-40.0	60% cream colored, soft crumbly clay matrix with minor dull yellow mottling; 30% sand, as 31.5-37.5 interval; 10% multicolored medium phosphate nodules.
40.0-42.5	90% buff, soft, waxy clay matrix with dull yellow mottling; 10% white, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; trace of multicolored phosphate nodules.
42.5-42.7	50% white and light brown mottled, indurated clay matrix; 40% sand, as above; 10% multicolored, fine-to coarse-grained phosphate.
42.7-44.2	99% buff, soft, crumbly clay matrix with dull yellow mottling; 1% sand, as 40.0-42.5 interval; trace of multicolored, fine-to medium-grained phosphate nodules.
44.2-45.7	60% dull yellow, buff, off-white, and grayish brown mottled, soft, crumbly clay matrix; 30% white, clear, fine-to medium-grained, angular to sub-angular quartz sand; 10% tan and orange, fine-to medium-grained phosphate nodules.
45.7-52.0	No sample.

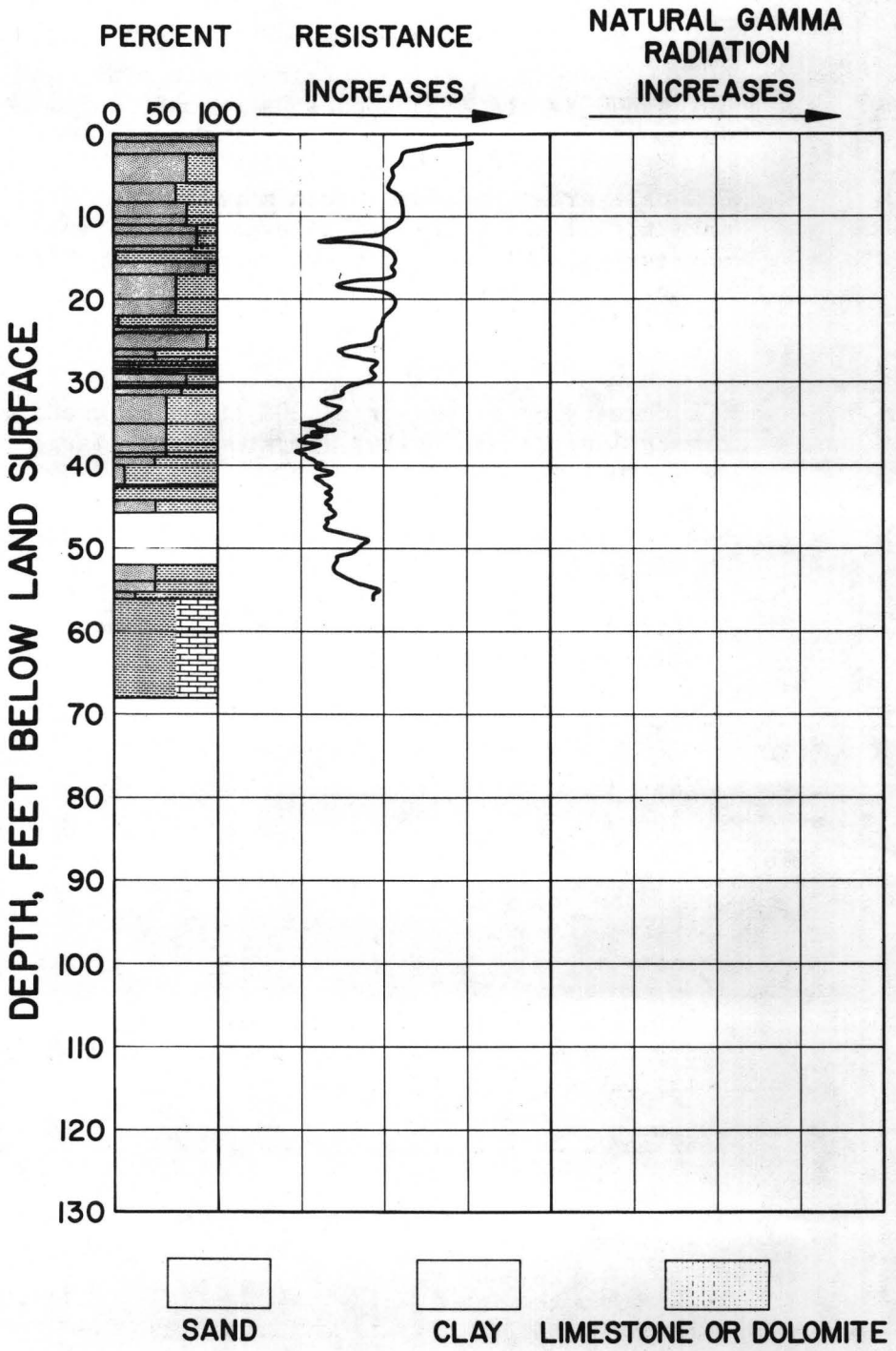
52.0-54.0	60% pale green and tan mottled, soft clay matrix; 30% light gray, frosted, medium-grained, very well sorted, sub-angular sand; 10% multicolored, fine to very coarse phosphate nodules.
54.0-55.2	60% buff and pale green mottled, soft clay matrix; 30% sand, as above; 10% phosphate as 52.0-54.0 interval.
55.2-56.2	80% pale green and dark brown mottled, soft clay matrix; 15% white, clear, fine-to medium-grained, angular to sub-angular quartz sand; 5% pisolitic silica.

Rocks of Oligocene Age

56.2-60.5	60% calcareous clay matrix; 20% cream colored, micro-crystalline, hard, porous limestone; 20% large to small fossils.
60.5-65.0	60% clay as above; 35% limestone as above; 5% fossils as above.
65.0-68.0	60% cream colored, light gray mottled, indurated, calcareous clay matrix.
68.0-72.2	No sample.

CORE HOLE PK7423

(280923N0815352.1)



PK7424

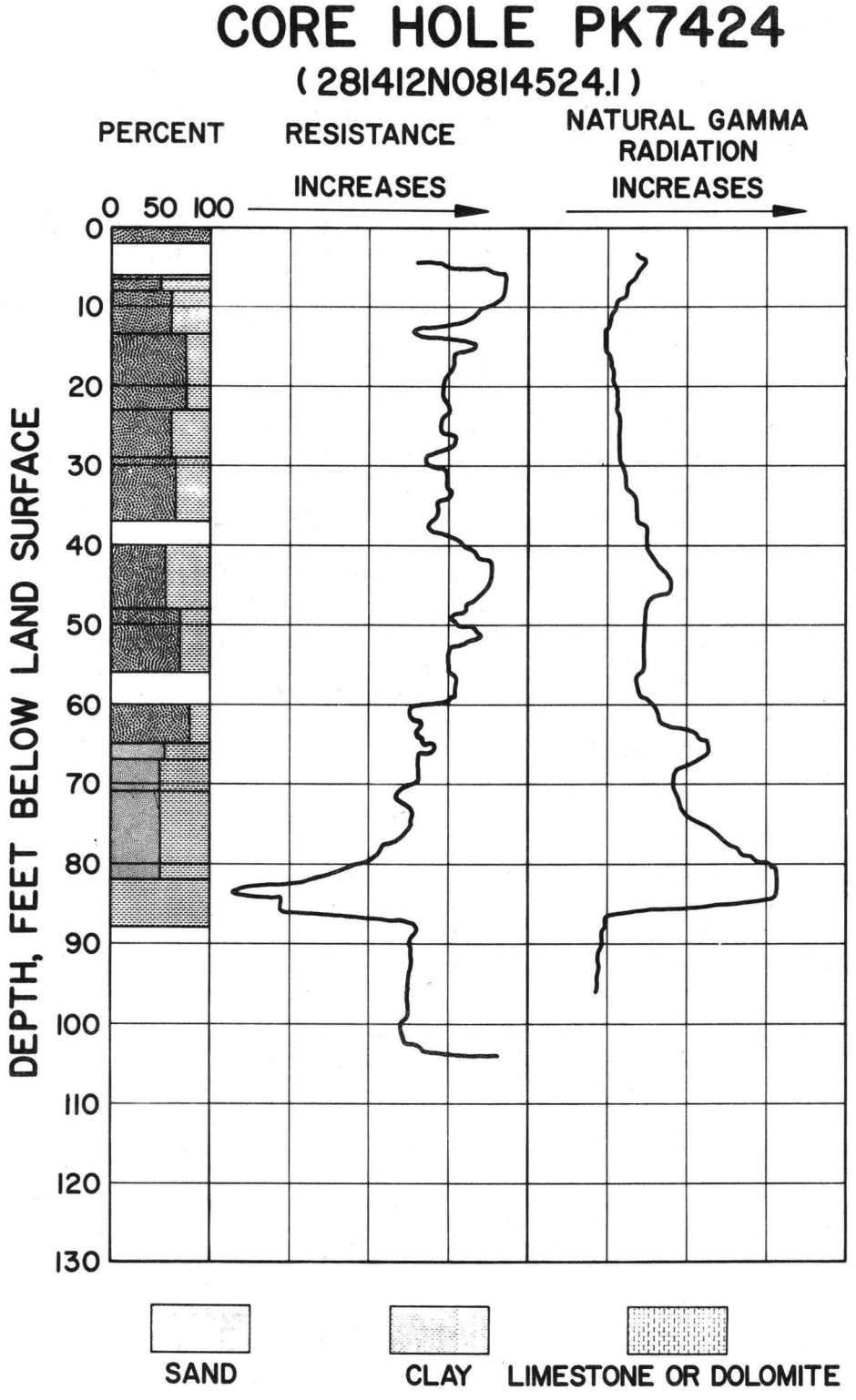
Polk County 281412N0814524.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-2.0	White to light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; trace of heavy minerals and light gray to light brown clay.
2.0-6.0	No sample.
6.0-6.5	50% white, clear to frosted, medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 50% light tan, dull yellow and bright orange mottled, indurated clay; scattered yellow and red quartz grains.
6.5-8.0	50% sand, as above; 50% light gray, soft, sticky, clay matrix with irregular 1/4-inch bands of dull yellow and bright orange.
8.0-13.5	60% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 40% light and medium brown banded, soft clay matrix; trace of heavy minerals.
13.5-23.0	75% white, clear to frosted, medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 25% tan, indurated clay matrix; trace of heavy minerals.
23.0-29.0	60% white, clear to frosted, fine-grained, very well sorted, angular, silty quartz sand; 40% tan, soft clay matrix; trace of heavy minerals.
29.0-37.0	65% sand, as above; 35% very light tan to off-white, soft clay matrix; trace of heavy minerals.
37.0-40.0	No sample.
40.0-48.0	45% sand as 23.0-29.0 interval; 45% light tan to off-white, soft clay matrix; 10% medium-grained sand.
48.0-56.0	70% white, clear to frosted, fine-to medium-grained, fairly well sorted, angular to rounded, quartz sand; 30% tan, soft clay matrix; trace of heavy minerals.

56.0-60.0	No sample.
60.0-65.0	50% coarse-to very coarse-grained, clear, well rounded quartz sand; 30% sand, as 48.0-56.0 interval; 20% light tan to light brown, silty, soft clay matrix.
65.0-67.0	55% white, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 45% tan, soft, silty clay matrix; trace of heavy minerals.
67.0-71.0	50% light gray, stained, fine-grained, well sorted, angular, silty quartz sand; 50% dark greenish gray, soft clay matrix.
71.0-82.0	50% sand, as above; 50% dark greenish gray, soft, indurated clay matrix with dark gray mottling.

Rocks of Eocene Age

82.0-88.0	75% light gray, indurated, powdery, calcareous clay matrix; 25% very large to large foraminifera; contains Sphaerogypsina globula (Reuss), Lepidocyclina ocalana floridana (Cushman), Echinocythereis okeechobiensis (Swain), and Reussella sculptilis (Cushman).
88.0-104.0	No sample.


CORE HOLE PK7424
(281412N0814524.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7425

Polk County 281239N0814715.1

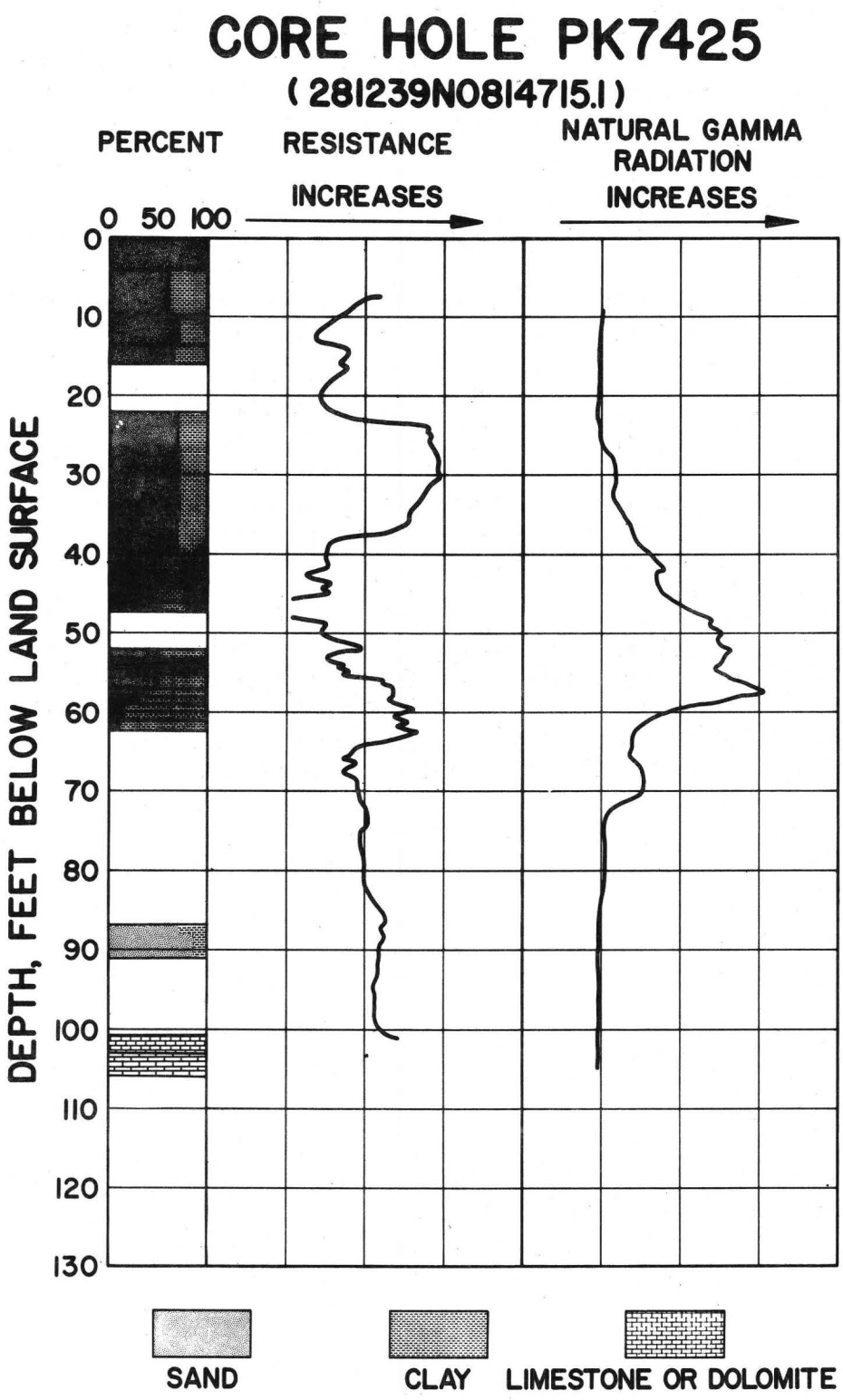
DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-4.0	95% light gray with brown tint, stained, medium-grained, fairly well sorted, rounded quartz sand; 5% coarse-to very coarse-grained sand; trace of medium brownish gray clay.
4.0-10.0	55% white, frosted, medium-grained, fairly well sorted, rounded sand; 40% off-white, soft clay matrix; 5% coarse-to very coarse-grained sand.
10.0-13.5	70% light gray, frosted, fine-to very coarse-grained, angular to well rounded quartz sand; 30% tan, soft clay matrix; trace of heavy minerals.
13.5-16.0	65% white, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 35% light tan, soft clay matrix; trace of heavy minerals.
16.0-22.0	No sample.
22.0-40.0	65% white, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 30% tan, soft clay matrix; 5% medium-grained sand; trace of heavy minerals.
	Rocks of Miocene Age
40.0-41.0	60% light gray, clear, medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 25% very pale green, soft clay matrix; 15% light tan, fine to coarse phosphate.
41.0-42.7	99% bluish green and medium green mottled, soft, waxy clay matrix; 1% white, clear, fine-grained, very well sorted, angular quartz sand; trace of light brown, fine to medium phosphate.
42.7-43.2	95% light gray, clear, medium-grained, well sorted, rounded quartz sand; 5% multicolored, fine to very coarse phosphate nodules; a 1/2-inch band of clay at 42.8 feet.

43.2-43.5	60% sand, as above; 40% very light green, soft clay matrix mottled with medium greenish gray, waxy clay; trace of phosphate.
43.5-43.7	70% medium greenish gray, soft crumbly, waxy clay matrix; 20% sand, as 42.7-43.2 interval, 10% phosphate as 43.2-43.5 interval.
43.7-46.0	55% medium green, soft, waxy clay matrix; 45% white, clear, medium-grained, well sorted sub-rounded quartz sand; trace of phosphate.
46.0-47.2	50% sand, as above; 50% light green, soft clay matrix; trace of phosphate.
47.2-52.0	No sample.
52.0-53.2	50% buff, soft to indurated clay matrix; 40% white, clear, medium-grained, fairly well sorted, sub-rounded sand; 5% fine grained quartz sand; 5% black, fine to very coarse phosphate nodules.
53.2-54.0	60% white, clear, fine to medium-grained, angular to sub-rounded sand; 30% light green, soft clay matrix, mottled with medium brown and deep red clay; 10% multicolored, fine to very coarse phosphate nodules.
54.0-54.5	75% sand, as above; 15% very light green, soft clay matrix; 10% phosphate as above.
54.5-55.0	60% brownish green and medium green mottled and banded, soft clay matrix; 35% white, clear, fine-to medium-grained, angular to sub-rounded quartz sand; 5% multicolored, fine to very coarse phosphate; trace of heavy minerals.
55.0-57.0	50% cream colored, indurated, well consolidated, calcareous siltstone with minor light gray mottling; 45% sand, as above; 5% multicolored fine to medium phosphate; a few cylindrical tubes, approximately 1/2-inch in diameter, are filled with olive green, soft, waxy clay; trace of heavy minerals.
57.0-58.0	60% light tan to light gray, soft, calcareous silt-stone; 40% sand, as 54.5-55.0 interval; trace of phosphate and heavy minerals.
58.0-61.0	85% light gray, indurated, calcareous, siltstone matrix; 15% sand, as 54.5-55.0 interval; trace of phosphate and heavy minerals.

61.0-63.0	90% medium gray, hard, very well consolidated, calcareous siltstone; 10% fine-to medium-grained quartz sand; trace of multicolored, fine to medium phosphate nodules.
63.0-65.0	No sample.

Rocks of Eocene Age

65.0-87.0	No sample. Top of interval based on geophysical logs.
87.0-88.0	70% white, clear to frosted, fine-grained, well sorted, angular quartz sand; 30% white, soft clay matrix; trace of muscovite and heavy minerals.
88.0-91.0	85% sand, as above; 15% tan, indurated clay matrix; trace of muscovite and heavy minerals.
91.0-101.0	No sample.
101.0-105.9	75% cream colored, soft, calcareous clay matrix; 25% cream colored, microcrystalline, soft, porous limestone with large and small fossils; highly weathered; contains Lepidocyclina ocalana floridana (Cushman), and Cibicides mississippiensis ocalanus (Cushman).


CORE HOLE PK7425
(281239N0814715.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7427

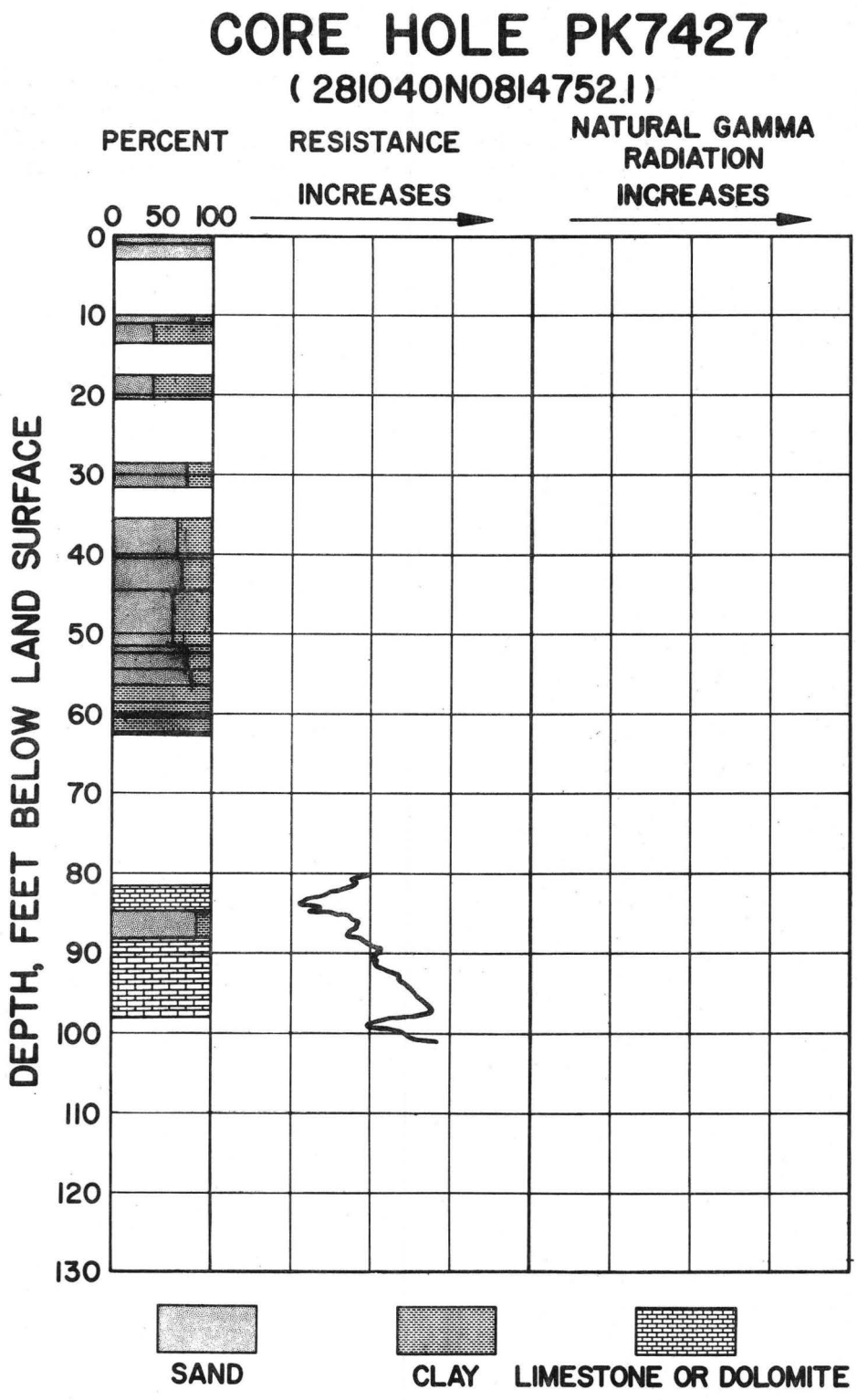
Polk County 281040N0814752.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	Light brown, stained, medium-grained, fairly well sorted, sub-rounded quartz sand.
1.0-3.0	Tan, stained, medium-grained, fairly well sorted, sub-rounded sand.
3.0-10.0	No sample.
10.0-11.0	75% light brown, stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 20% medium brown, soft, crumbly clay matrix; 5% coarse-grained sand.
11.0-13.5	60% tan, light gray mottled, indurated clay matrix; 30% white to tan, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 5% coarse-grained sand; 5% fine-grained sand.
13.5-17.5	No sample.
17.5-20.5	60% light gray, indurated clay matrix with slight light brow; 40% white, frosted, medium-to coarse-grained, sub-rounded to rounded sand.
20.5-=28.5	No sample.
28.5-31.5	75% sand, as 17.5-20.5 interval; 25% tan, indurated clay matrix.
31.5-35.5	No sample.
35.5-40.5	60% white, clear, fine-grained, angular, well sorted, quartz sand; 35% light brown, indurated to soft clay matrix; 5% medium-to coarse-grained sand; trace of fine to medium muscovite flakes and heavy minerals.
40.5-44.5	70% sand, as above; 30% cream colored, indurated clay matrix; trace of muscovite and heavy minerals.
44.5-51.5	60% sand, as 35.5-40.5 interval; 40% tan, soft clay matrix; trace of heavy minerals and muscovite.

51.5-52.5	75% sand, as 35.5-40.5 interval; 25% white to light brown, mottled, indurated clay matrix; trace of muscovite and heavy minerals.
	Rocks of Miocene Age
52.5-54.5	70% white, clear to frosted, fine-to medium-grained, angular to rounded quartz sand; 25% very pale green, soft clay matrix; 5% brown to white, fine to very coarse phosphate nodules; a few small quartz pebbles.
54.5-56.5	35% sand, as above; 25% black, small phosphate pebbles; 20% very pale green and off-white mottled, soft, crumbly clay matrix; 20% black, fine to coarse phosphate nodules; trace of pisolitic silica.
56.5-58.7	Light green, bluish green and light brown mottled, indurated clay matrix; trace of fine-grained sand and phosphate.
58.7-60.5	No sample.
60.5-62.5	99% medium green, soft, waxy, platey clay matrix; 1% white, clear, fine-to medium-grained, angular to sub-rounded quartz sand; trace of fine to very coarse phosphate.
62.5-62.7	Off-white, mottled, soft, porous, very fine crystalline, argillaceous dolomite; trace of fine-to medium-grained quartz sand.
62.7-81.5	No sample.
81.5-84.7	80% light green and gray, soft, very fine crystalline, porous, argillaceous dolomite matrix; 20% white, clear, fine-to medium-grained, angular to sub-rounded quartz sand; trace of medium to fine phosphate fragments.
84.7-88.0	85% light gray, clear to frosted, fine-grained, well sorted, angular quartz sand; 15% light green and very light gray mottled, soft, crumbly clay matrix with a few pockets of medium green, soft waxy clay; trace of heavy minerals.

Rocks of Oligocene Age

88.0-98.0	40% small fossils and large shell fragments; 30% white, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; 30% off-white, microcrystalline, hard, porous limestone; scattered replacement by sparry calcite.
98.0-123.4	No sample.


CORE HOLE PK7427
(281040N0814752.1)
PERCENT
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
0 50 100
0
10
20
30
40
50
60
70
80
90
100
110
120
130
DEPTH, FEET BELOW LAND SURFACE
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7429

Polk County 280723N0814850.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-1.0	Light brown to light gray, stained, medium-grained, fairly well sorted, sub-rounded quartz sand; trace of light gray clay.
1.0-5.0	Tan, stained, medium-grained, fairly well sorted, sub-rounded sand; trace of tan clay and lignite.
5.0-7.5	No sample.
7.5-10.0	50% light tan, indurated clay matrix, with minor white mottling; 40% white to yellow, clear to stained, medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 10% fine-grained sand.
10.0-11.0	98% white, dark brown, and light gray mottled, hard waxy clay; 2% white and clear, fine-to medium-grained, angular to sub-angular sand.
11.0-13.5	90% white, clear to frosted, medium-grained, rounded, fairly well sorted quartz sand; 10% fine-grained quartz sand; just enough tan clay to bind sand loosely; trace of heavy minerals.
13.5-16.0	85% white, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; 15% white to off-white, indurated clay matrix; trace of heavy minerals.
16.0-24.0	No sample.
24.0-53.0	90% sand, as 13.5-16.0 interval; 10% white, indurated crumbly clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
53.0-61.5	95% sand, as 13.5-16.0 interval; 5% light tan, soft, poorly consolidated clay matrix; two 1-inch bands of medium gray, soft pure clay containing phosphate nodules occur in this interval; trace of heavy minerals.

61.5-62.5	60% light brownish gray, soft clay matrix; 20% light gray, frosted, medium-grained, well sorted, rounded to sub-rounded quartz sand; 20% black, fine to very coarse phosphate nodules.
62.5-63.5	80% medium brown and medium gray mottled, soft waxy clay matrix; 20% sand, as above; trace of phosphate as above.
63.5-64.0	75% clay as above; 20% light gray, clear to frosted, fine to medium-grained, angular to sub-rounded quartz sand; 5% brown and black, fine to very coarse phosphate nodules.
64.0-65.5	Very light gray, soft, slightly calcareous clay matrix; trace of phosphate, sand, as above.
65.5-69.5	50% light gray, with slight brown tint, soft clay matrix; 40% sand, as 63.5-64.0 interval; 10% black to brown, fine to medium phosphate nodules; brown, soft, waxy, blocky clay mottling in upper 2 feet of this interval.
69.5-72.5	80% very light gray, soft, slightly calcareous silt matrix; 10% white, clear, medium grained, fairly well sorted, sub-rounded quartz sand; 10% dark to medium brown, medium to very coarse, phosphate nodules.
72.5-73.2	Light gray, soft, slightly calcareous clay matrix; trace of phosphate nodules, white, clear, medium-to fine-grained, fairly well sorted, sub-rounded quartz sand.
73.2-73.5	70% brownish gray, soft clay matrix; 20% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 10% black and brown, fine to very coarse phosphate.
73.5-76.0	75% medium gray, soft, waxy clay matrix; 20% white, clear to frosted, very fine-to fine-grained, angular, well sorted quartz sand; 5% very fine to medium phosphate nodules.
76.0-77.0	95% very light gray, soft, silt matrix; 5% sand, as above; trace of phosphate.
77.0-80.0	No sample.

80.0-82.0	95% cream colored, soft, slightly calcareous silt matrix; 5% sand, as 73.5-76.0 interval; trace of phosphate and small fragments of light gray micro-crystalline, hard dolomite.
82.0-83.0	50% very light gray, indurated clay matrix; 35% light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 15% black to brown, fine to very coarse phosphate nodules; trace of heavy minerals.
83.0-92.5	70% off-white, microcrystalline, hard, porous dolomite matrix; 25% white, clear, fine-to medium-grained, angular to sub-rounded quartz sand; 5% black to brown, fine to very coarse phosphate nodules.
92.5-94.7	50% sand, as above; 50% tan, soft, silty clay matrix; trace of phosphate.
94.7-100.0	80% medium gray, soft, waxy clay matrix; 15% white, clear to frosted, fine-to very fine-grained, angular, well sorted quartz sand; 5% black to brown, very fine to coarse phosphate nodules.
100.0-102.0	Tan and light gray microcrystalline, hard, tight, silty, dolomite, with scattered sand and phosphate.
102.0-103.5	60% light gray, clear to frosted, fine-to medium-grained, sub-angular quartz sand; 25% light tan and light gray mottled, soft clay matrix; 15% black to brown, fine to coarse phosphate nodules.
103.5-105.5	60% off-white and light tan mottled, soft, crumbly, calcareous clay matrix; 35% black to brown, fine to very coarse phosphate nodules; 5% white, clear, fine-to medium-grained quartz sand.
105.5-111.5	No sample.
111.5-112.5	85% white, indurated, calcareous clay matrix; trace of phosphate; 15% sand, as above; trace of light gray and light brown mottled cryptocrystalline, hard, tight, silicified limestone fragments.
112.5-113.5	80% dark and light green mottled, hard waxy clay matrix; 20% white, clear, fine-grained, angular, well sorted, quartz sand; trace of brown, fine to coarse, phosphate nodules; trace of cream colored and light gray mottled, hard, very fine to microcrystalline, tight dolomite fragments.

113.5-115.5	No sample.
115.5-119.0	Light, medium green mottled, hard, fine, crystalline, porous, poorly consolidated dolomite; trace of brown to gray, fine to very coarse phosphate nodules.
119.0-120.0	Light green, hard, fine, crystalline, porous dolomite; trace of white, clear, fine-to medium-grained, angular quartz sand, black to brown, fine to coarse phosphate nodules.
120.0-120.5	White, hard, porous, chalky limestone; trace of fine to coarse phosphate nodules, white, clear, fine-to medium-grained, angular quartz sand.
120.5-121.0	80% medium-grained, soft, crumbly, waxy clay matrix; 10% sand, as above; 10% black to brown, fine to coarse phosphate nodules.
121.0-122.0	75% white, soft, crumbly, calcareous clay matrix; 15% sand, as 120.0-120.5 interval; 10% phosphate as 120.5-121.0 interval.
122.0-123.5	55% medium green, soft clay matrix; 30% light gray, clear, medium-grained, fairly well sorted, sub-rounded quartz sand; 15% multicolored, fine to very coarse phosphate nodules.
123.5-127.5	No sample.
127.5-130.5	75% light greenish gray, soft, silty clay matrix; 15% white, fine-grained, well sorted, angular quartz sand; 10% light gray, very fine-grained, hard, tight, dolomite; trace of phosphate.
130.5-133.2	50% sand, as above; 45% medium brownish gray, soft, crumbly clay matrix; 5% multicolored, fine to very coarse phosphate nodules and phosphatized fossil material.
133.2-138.2	75% light gray, fine-grained, angular, well sorted quartz sand; 20% medium brown, soft, fairly well consolidated clay matrix; becomes silty and brownish gray in lower 3 feet; 5% black to brown, fine to very coarse, phosphate nodules and phosphatized fossil material.

Rocks of Oligocene Age

138.2-144.0	Coquina; 60% cream colored, microcrystalline, hard, porous, limestone matrix; 40% large to small fossils, fossil molds, and fossil casts, weathered.

Rocks of Eocene Age

144.0-164.0	70% light gray, microcrystalline, hard, porous limestone; 30% fossils; contains Rotalia mexicana mecatepcensis (Nuttall), and Lepidocyclina ocalana floridana (Cushman).

PK7421

Polk County 281008N0815810.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-2.0	Light gray to light brown, clear to stained, medium- to fine-grained, angular to sub-rounded quartz sand; trace of medium gray clay.
2.0-5.5	95% sand, as above; 5% medium brown, soft, crumbly clay matrix; abundant plant roots.
5.5-13.0	60% white, frosted, medium-grained, fairly well sorted, rounded quartz sand; 30% off-white indurated clay matrix; 10% fine-grained sand; trace of heavy minerals and coarse-grained sand.
13.0-14.0	75% light gray, frosted, medium-grained, well sorted, sub-rounded quartz sand; 25% off-white, indurated, crumbly clay matrix; trace of heavy minerals.
14.0-15.5	60% very light gray, indurated, somewhat platey clay matrix with minor, very pale green banding; 40% white, clear to frosted, fine-to medium-grained, angular to sub-angular quartz sand.
15.5-19.5	80% white, frosted, medium-grained, well sorted, sub-rounded quartz sand; 20% white, indurated clay matrix; trace of heavy minerals.
19.5-23.5	80% white, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; 20% very light tan and off-white, indurated clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
23.5-25.5	80% light green, hard clay matrix; 15% sand, as above, 5% white, fine to very coarse phosphate nodules; trace of hard shell fragments that have been silicified.
25.5-29.0	65% very light green, hard clay matrix; 35% sand, as 19.5-23.5 interval; trace of hard shell fragments.

29.0-31.0	60% very light gray, clear to frosted, fine-grained, angular, very well sorted quartz sand; 40% medium brown, light greenish gray, and light brown mottled, hard, platey clay matrix with scattered pockets of white, hard, well consolidated clay; trace of heavy minerals.
31.0-36.5	50% light green, light brown and white banded, indurated clay matrix with isolated bands of black and brick red organic material; 30% medium-grained sand; 20% white to tan, clear to stained, fine-to very fine-grained, angular, fairly well sorted quartz sand; a 2-inch band of white clay at 35.8 feet.
36.5-38.0	Alternating beds of sand, as above, with light green, light brown, and yellow, hard, waxy clay.
38.0-41.5	50% sand, as 31.0-36.5 interval; 30% light grayish green, dull yellow, and brownish green, hard clay matrix.
41.5-43.5	60% white, clear to frosted, fine-grained, angular, well sorted quartz sand; 40% tan and light green mottled, hard clay matrix; trace of white, fine to medium phosphate nodules.
43.5-46.5	Olive green and medium brown mottled, hard, waxy, platey clay.
46.5-48.5	50% sand, as 41.5-43.5 interval; 50% light and medium tan, banded clay matrix; trace of brown phosphate blades.
48.5-50.5	Light greenish yellow, soft, well consolidated siltstone, mottled by olive green, soft, waxy clay and medium brown soft waxy clay; trace of fine-to medium-grained sand and brown phosphate nodules.
50.5-56.6	85% white, clear to frosted, fine-grained, angular, very well sorted, quartz sand; 10% light grayish green and dull yellow mottled, soft clay matrix; 5% medium-grained sand; trace of multicolored, fine to coarse phosphate blades.
56.5-58.5	60% light green and cream colored, mottled, soft, waxy clay matrix; 35% sand, as above; 5% phosphate nodules and blades.

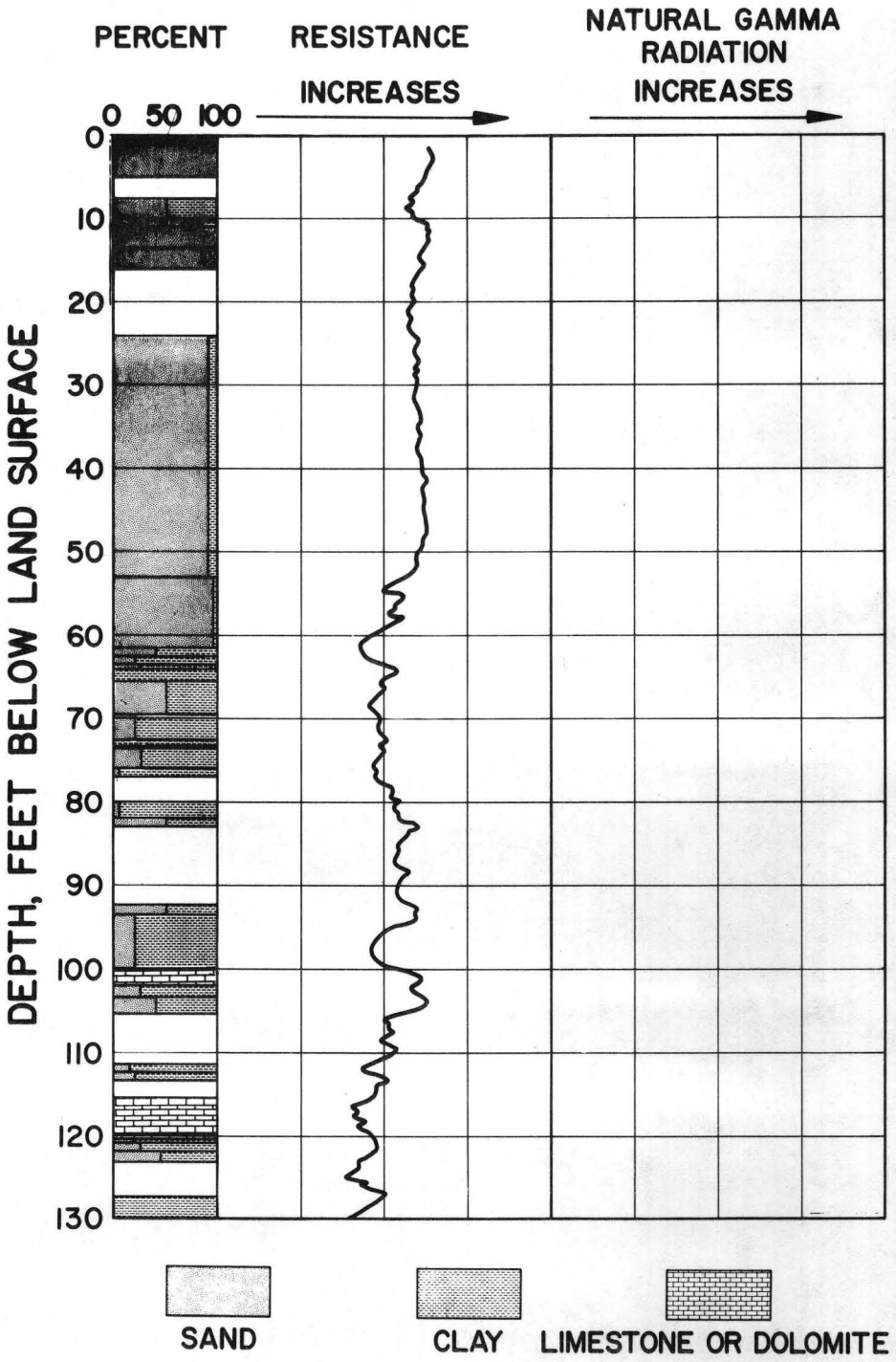
58.5-59.5	60% off-white and medium green mottled, soft clay matrix; 40% white, clear to frosted, fine-grained, angular, very well sorted quartz sand; trace of brown, fine to coarse, phosphate nodules and blades.

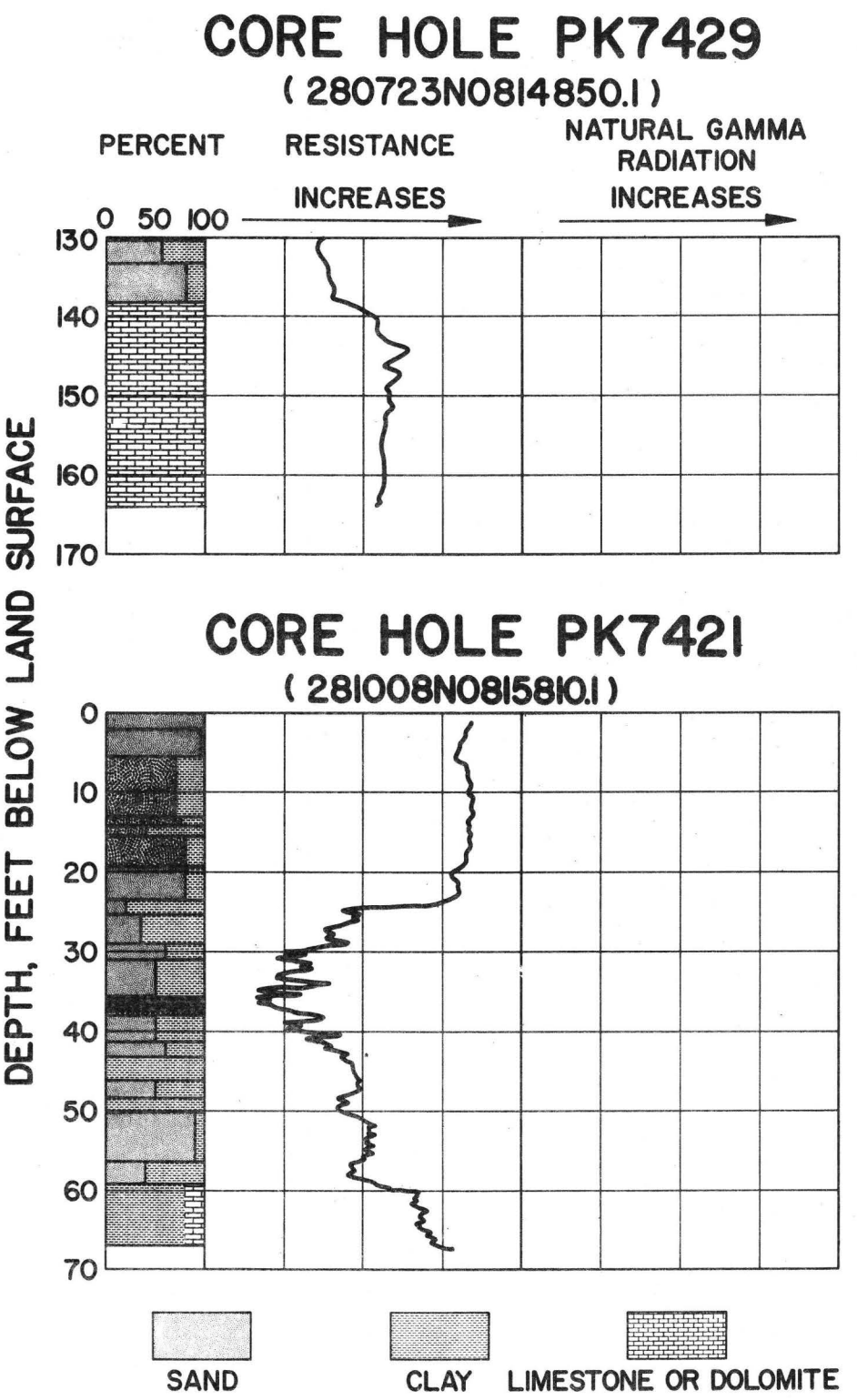
Rocks of Oligocene Age

59.5-67.0	80% off-white, soft, poorly consolidated, calcareous clay matrix; 20% off-white, microcrystalline, indurated, porous, chalky limestone; trace of fossil material; contains Rotalia mexicana mecatepcensis (Nuttall).
67.0-69.2	No sample.

CORE HOLE PK7429

(280723N0814850.1)




CORE HOLE PK7429
(280723N0814850.1)
PERCENT RESISTANCE INCREASES
0 50 100
NATURAL GAMMA RADIATION INCREASES
130
140
150
160
170
CORE HOLE PK7421
(281008N0815810.1)
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7433

Polk County 281045N0813908.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-6.0	Brown to yellow, medium-to coarse-grained, quartz sand.
6.0-8.0	60% white and yellow, clear to stained, fine-to medium-grained, angular to sub-rounded quartz sand; 40% light brown to off-white indurated clay matrix; trace of heavy minerals.
8.0-8.5	60% sand, as above; 40% dull yellow and brick red mottled, indurated clay matrix; trace of heavy minerals.
8.5-9.0	50% white and pink, clear to stained, fine-to medium-grained, angular to sub-rounded quartz sand; 50% brick red, indurated clay matrix, with minor mottling by dull yellow and white clay; trace of heavy minerals.
9.0-12.0	50% sand, as above; 50% cream colored and orange mottled and banded, indurated clay matrix; trace of heavy minerals.
12.0-15.0	60% deep brick red and off-white mottled, indurated clay matrix; 25% white to red, clear to stained, medium-grained, sub-rounded, fairly well sorted quartz sand; 15% fine-grained sand; trace of heavy minerals.
15.0-16.5	55% sand, as above; 45% brick red, indurated clay matrix.
16.5-19.7	No sample.
19.7-24.0	90% white and yellow, clear to stained, medium-grained, sub-angular to sub-rounded quartz sand; 10% off-white to yellow, soft clay matrix; trace of heavy minerals.
24.0-28.0	No sample.

28.0-29.2	65% white, clear to frosted, medium-grained, sub-rounded, fairly well sorted quartz sand; 30% white and cream colored, mottled, soft, crumbly clay matrix; 5% coarse-grained sand; trace of heavy minerals.
29.2-31.5	95% maroon and golden brown mottled, soft, waxy clay matrix with minor light gray and dull yellow mottling; 5% light gray, clear to frosted, medium-grained, sub-rounded, fairly well sorted sand.
31.5-32.2	80% white, frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 20% light brown to off-white, indurated clay matrix; trace of heavy minerals.
32.2-32.5	95% light yellow and very dark brown mottled, waxy clay matrix; 5% white and yellow, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; trace of heavy minerals.
32.5-33.0	65% brick red, soft clay matrix with minor yellow mottling; 35% sand as above.
33.0-34.0	95% light brown and white mottled, soft, waxy clay matrix; 5% white to yellow sand as 32.2-32.5 interval.
34.0-35.0	90% white, orange, and yellow, clear to stained, fine-grained, well sorted, angular quartz sand; 10% bright yellow, soft clay matrix; trace of heavy minerals.
35.0-38.5	80% white, clear to frosted, fine-grained, angular, well sorted quartz sand; 20% orange, soft clay matrix with minor pink and yellow mottling; trace of heavy minerals.
38.5-51.5	75% sand, as above; 25% multicolored 1/16 to 1-inch wide bands of white, red, orange, yellow and pink, soft clay matrix.
51.5-54.5	80% white, yellow and orange, clear to stained, fine-grained, angular, fairly well sorted quartz sand; 20% light yellow, soft clay matrix with minor orange and white mottling; trace of heavy minerals.

54.5-60.0	75% white, pink tinted, fine-grained, clear to stained, angular, well sorted quartz sand; 25% white, light brick red and minor yellow, soft clay matrix in 1/16-inch bands.
60.0-66.0	85% white, clear to frosted, fine-grained, angular, well sorted quartz sand; 15% light yellow and white banded, indurated, crumbly clay matrix; bands are 1/16 to 1/4-inch wide; trace of heavy minerals.
66.0-74.5	85% white to light yellow, clear to stained, fine-grained, angular, well sorted quartz sand; 15% white, yellow, and light brown mottled and banded soft clay matrix; trace of heavy minerals and fine to medium phosphate nodules.

Rocks of Miocene Age

74.5-81.0	80% sand, as above; 20% white and yellow banded and mottled, soft clay matrix; trace of organic material at 77.2 feet; bands are 1/16 to 1/4-inch wide.
81.0-84.0	65% sand, as 66.0-74.5 interval; 35% white and light brick red, banded and mottled, soft clay matrix; bands are 1/16 to 1/4-inch wide.
84.0-89.2	75% white, clear, fine-grained, angular, well sorted quartz sand; 25% pink, white, brick red and yellow mottled and banded, soft clay matrix; trace of fine to medium muscovite.
89.2-92.5	75% sand, as above; 25% off-white and yellow banded, soft clay matrix; trace of muscovite.
92.5-96.0	No sample.
96.0-97.2	45% brown and grayish brown mottled, soft, crumbly clay matrix; 30% multicolored fine to very coarse phosphate nodules and phosphatized fossil material; 25% white, clear, medium-to fine-grained, sub-rounded to angular quartz sand.
97.2-98.0	50% light grayish brown, soft clay matrix with minor mottling by very pale green, soft, waxy clay; 25% sand, as above; 25% phosphate as above.
98.0-98.2	White to yellow, clear to stained, fine-grained, angular, well sorted quartz sand; just enough light orange clay to bind sand very loosely.

98.2-101.5	Same as 97.2-98.0 interval.
101.5-106.2	50% light brownish gray, soft clay matrix; 30% white, clear, medium-grained, fairly well sorted, sub-angular quartz sand; 20% brown to light tan, fine to very coarse phosphate nodules and phosphatic fossil material.
106.2-106.5	75% light greenish gray, soft, waxy clay matrix; 20% white, clear, fine-to medium-grained, angular to sub-angular quartz sand; 5% dark brown, fine to very coarse phosphate nodules and phosphatic fossil material; sand and phosphate occur as 1/4-inch bands within the clay.
106.5-107.0	70% light yellow and white mottled, soft, silty matrix; 25% white, clear, frosted, fine-grained, angular, fairly well sorted quartz sand; 5% phosphate, as above.
107.0-115.0	No sample.

Rocks of Eocene Age

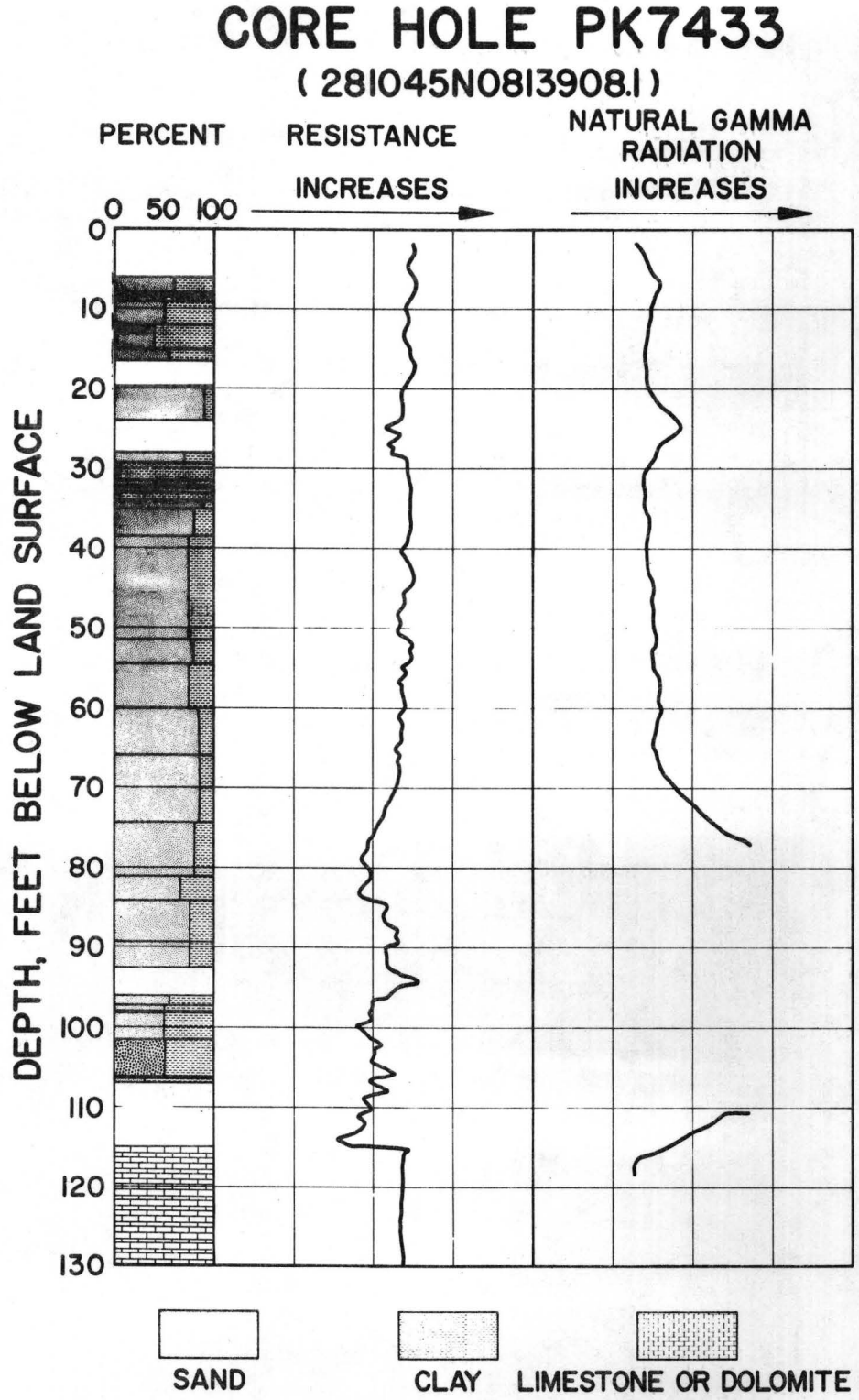
115.0-160.0	50% cream colored, microcrystalline, soft, porous, chalky limestone; 50% small to very large fossils and shell fragments; highly weathered; contains Sphaerogypsina globula (Reuss), Lepidocyclina ocalana floridana (Cushman), and Stromatorbina kendrickensis (Puri).

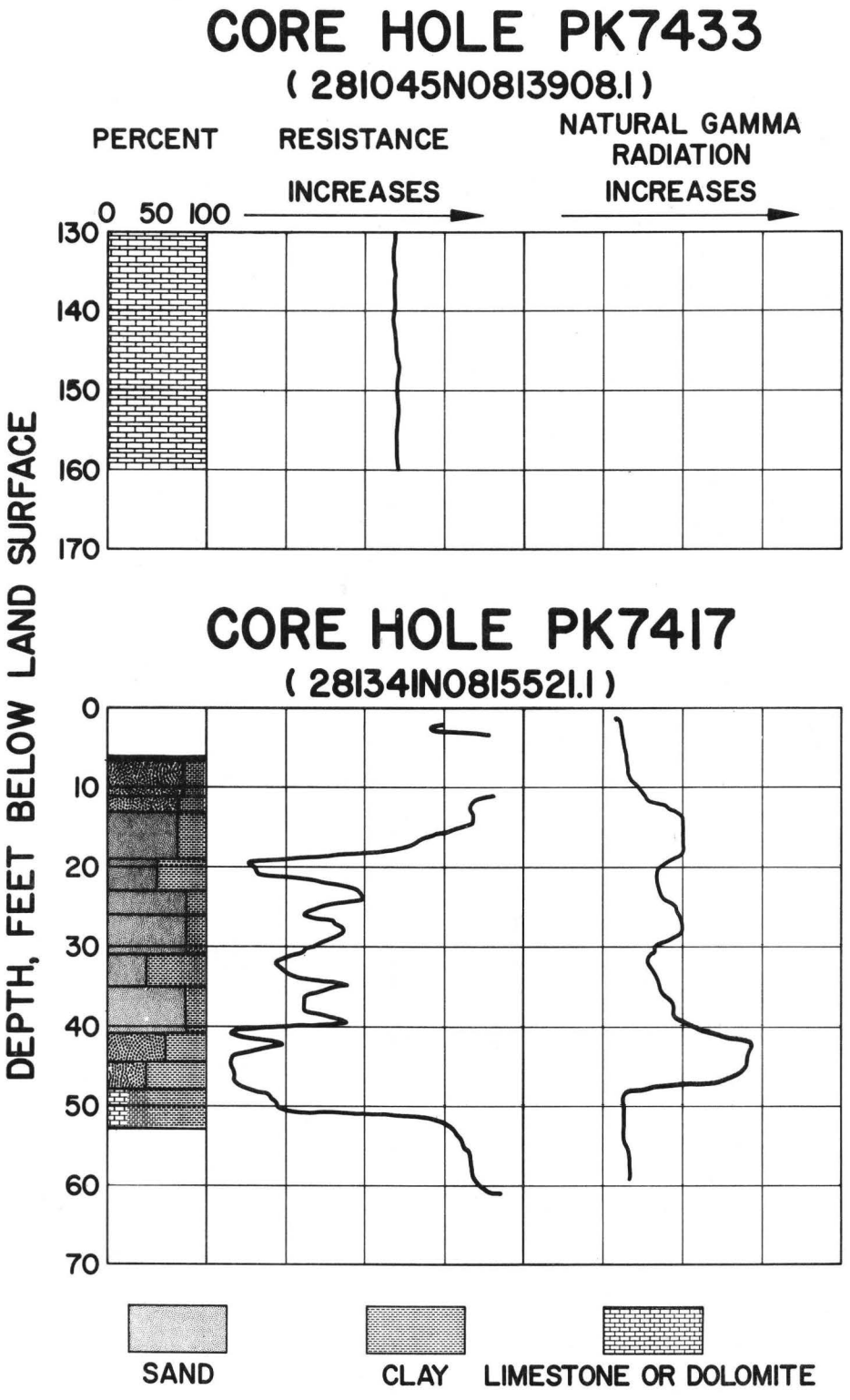
PK7417

Polk County 281341N0815521.1

DEPTH INTERVAL (Feet)	LITHOLOGY
	Post Miocene Rocks
0.0-6.0	No sample.
6.0-6.5	60% white, clear, fine-grained, well sorted, angular quartz sand; 40% light greenish gray, soft clay matrix; trace of fine grained glauconite.
6.5-11.0	75% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 25% tan, soft clay matrix; trace of heavy minerals.
11.0-13.0	70% sand, as above; 30% light brown to tan, soft clay matrix.
13.0-19.0	70% white, clear, fine-grained, well sorted, angular quartz sand; 30% light gray to tan, indurated clay with white mottling in lower 1 foot; trace of heavy minerals.
19.0-23.0	50% white, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 50% light bluish green and white mottled, soft clay matrix; trace of heavy minerals and coarse-grained sand.
23.0-26.0	80% sand, as above but mostly fine-grained; 20% light bluish gray and off-white mottled, soft clay matrix; trace of heavy minerals.
26.0-31.0	80% white, clear, fine-grained, well sorted, angular quartz sand; 20% very light bluish green to very pale green, soft clay matrix; trace of heavy minerals.
31.0-35.0	60% very light greenish gray and dark brown mottled, soft clay matrix; 40% white to brown, clear to frosted, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; trace of heavy minerals; fine-grained sand occurs in the light greenish gray clay and medium-grained sand occurs in the dark brown clay.

35.0-41.0	80% white, clear, fine-grained, well sorted, angular quartz sand; 20% very light gray, soft clay matrix; trace of heavy minerals.
	Rocks of Miocene Age
41.0-44.5	60% white, clear, fine-to medium-grained, fairly well sorted, sub-angular quartz sand; 40% very light, greenish gray, soft clay matrix with many pockets of pure clay; trace of heavy minerals, fossils and tan, medium, phosphate nodules.
44.5-48.0	60% brownish gray and light to medium gray, tan and greenish mottled, soft, sticky clay matrix; 30% white, clear, fine-to medium-grained, fairly well sorted, angular to sub-rounded quartz sand; 10% light gray to black, very coarse to very fine, phosphate nodules and phosphatic fossil material.
	Rocks of Eocene Age
48.0-53.0	80% tan, soft, poorly consolidated, calcareous clay matrix; 20% cream to light tan, microcrystalline, indurated, porous limestone fragments, with abundant fossils and trace of medium to coarse phosphate; contains Sphaerogypsina globula (Reuss), Textularia ocalana (Cushman), Jugosocythereis bicarinata (Swain), and Stromatorbina kendrickensis (Puri).
53.0-63.0	No sample.


CORE HOLE PK7433
(281045N0813908.1)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE


CORE HOLE PK7433
(281045N0813908.1)
PERCENT RESISTANCE INCREASES
0 50 100
NATURAL GAMMA RADIATION INCREASES
130
140
150
160
170
CORE HOLE PK7417
(28134IN0815521.1)
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7430

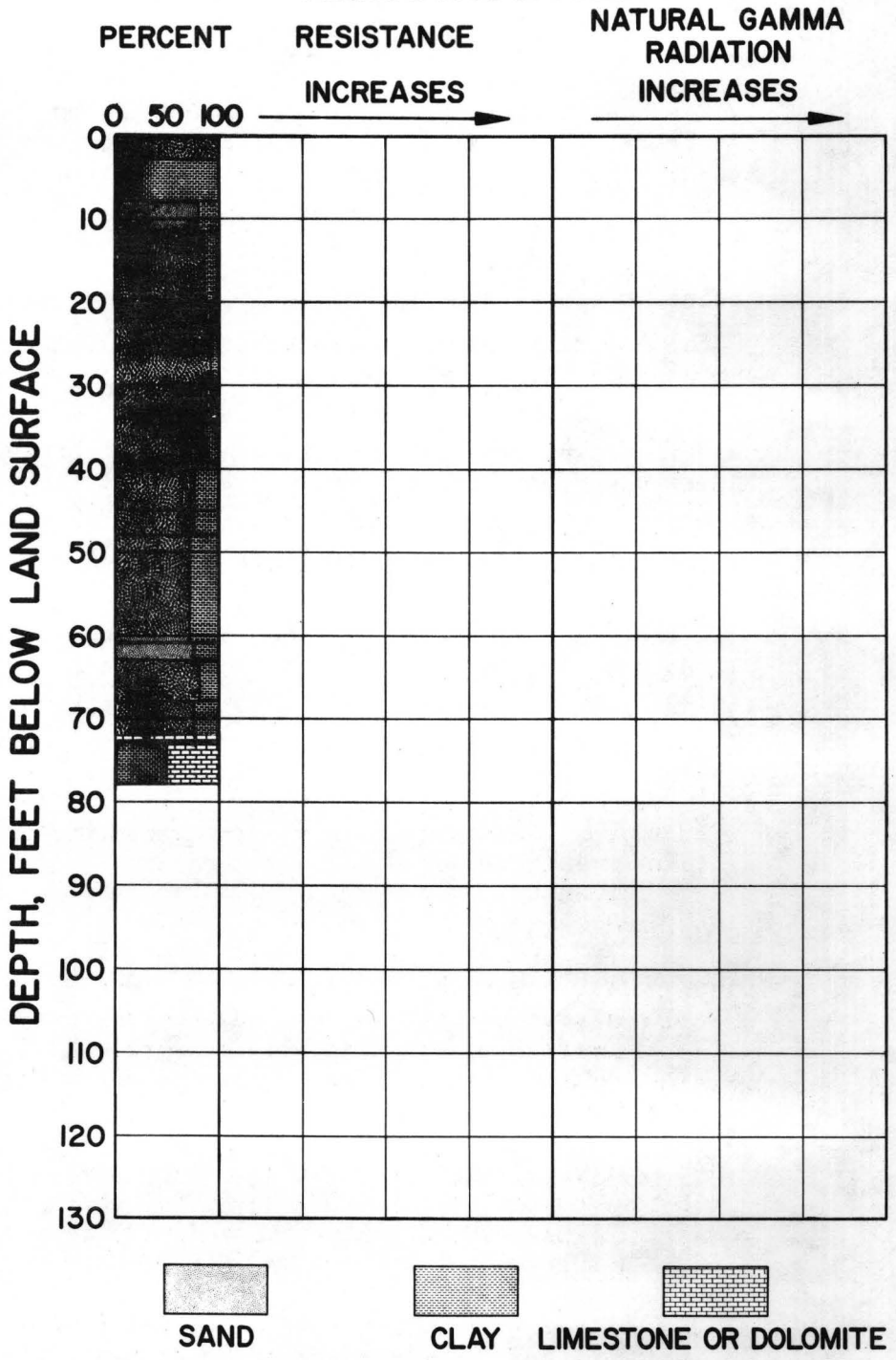
Polk County 281306N0814322.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-3.0	White to light gray, clear to frosted, medium-grained, poorly sorted, sub-rounded quartz sand; trace of light brown and dark gray clay.
3.0-8.0	75% very light gray, soft, waxy clay matrix; 25% white, frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; trace of heavy minerals.
8.0-11.5	80% white, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular quartz sand; 20% very light tan, soft clay matrix with gray tint; trace of heavy minerals.
11.5-20.0	85% sand, as above; 15% light tan, soft clay matrix; trace of heavy minerals.
20.0-34.0	90% sand, as 8.0-11.5 interval; 10% tan, soft clay matrix; trace of heavy minerals.
34.0-39.0	85% white, clear to frosted, fine-to medium-grained, fairly well sorted, sub-angular quartz sand; 15% tan, soft clay matrix; trace of heavy minerals.
39.0-45.0	75% sand, as above; 25% tan, soft clay matrix; trace of heavy minerals and coarse-grained sand.
45.0-48.0	75% white, clear to frosted, coarse-to medium-grained, poorly sorted, silty quartz sand; 25% tan, soft clay matrix.
48.0-61.0	70% white, clear to frosted, fine-to medium-grained, fairly well sorted, angular to sub-rounded, silty quartz sand; 30% tan, soft clay matrix; trace of heavy minerals.
61.0-63.0	75% sand, as above; 25% tan, light gray tinted, soft clay that has medium brown streaks in the lower 1/2-foot; trace of heavy minerals.

63.0-68.0	80% white to light gray, clear, medium-grained, well sorted, sub-angular quartz sand; 20% dark gray, soft clay matrix.
	Rocks of Miocene Age
68.0-72.0	75% white to light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 25% medium gray, soft, poorly consolidated clay matrix; one 2-inch fragment of medium brown cryptocrystalline, hard, fairly tight, silicified limestone, with tan fossiliferous material near the bottom of this interval; trace of heavy minerals and white gypsum.
	Rocks of Eocene Age
72.0-73.0	Medium brown, cryptocrystalline, hard, silicified limestone, contains Sphaerogypsina globula (Reuss), Lepidocyclina ocalana floridana (Cushman), Cibicides mississippiensis ocalanus (Cushman), and Echinocythereis okeechobiensis (Swain).
73.0-78.0	50% tan, microcrystalline, soft, porous, chalky limestone; 50% tan, soft, poorly consolidated calcareous clay matrix; contains abundant fossils.
78.0-84.0	No sample.

CORE HOLE PK7430

(281306N0814322.1)



PK7431

Polk County 281317N0814913.3

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-4.0	80% white to light brown, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 10% fine-grained sand; 10% medium gray and medium brown mottled, soft clay matrix.
4.0-10.5	75% very light gray, indurated porous siltstone; 15% white, clear, fine-to medium-grained, sub-rounded quartz sand; 10% black, medium to very coarse phosphate nodules.
10.5-14.5	55% indurated, off-white, clay matrix; 45% white, clear to frosted, medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand.
14.5-16.0	No sample.
16.0-18.5	75% white, clear to frosted, coarse-to medium-grained, sub-angular to rounded quartz sand; 25% very light tan, indurated clay matrix; trace of heavy minerals.
18.5-20.0	80% sand, as above; 15% very light tan to off-white, indurated, crumbly clay matrix; 5% very coarse-grained sand; trace of heavy minerals.
20.0-21.0	No sample.
21.0-37.0	75% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 20% very light tan, indurated clay matrix; 5% fine-grained sand; trace of heavy minerals and coarse-to very coarse-grained sand.
37.0-42.5	95% white, clear to frosted, coarse-to medium-grained, sub-rounded quartz sand; 5% off-white, soft clay matrix; trace of heavy minerals and very coarse-grained sand.
42.5-44.5	90% sand, as above; 5% fine-grained sand; 5% very light tan, soft clay matrix; trace of heavy minerals and fine to medium muscovite.

44.5-49.0	80% white, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 15% off-white soft clay matrix; 5% medium-to coarse-grained sand; trace of heavy minerals and fine to medium muscovite.
49.0-53.0	95% white, clear to frosted, fine-grained, angular, well sorted quartz sand; 5% off-white, soft clay matrix; trace of fine to medium muscovite and coarse-grained sand.
53.0-56.0	No sample.
56.0-61.5	70% sand, as 49.0-43.0 interval; 25% medium brown to light brown, mottled, soft clay matrix; 5% medium-grained sand; trace of muscovite and coarse-grained sand.
61.5-62.5	65% light gray, clear to frosted, fine-grained, very well sorted, angular quartz sand; 30% medium brown and medium greenish gray mottled, soft clay matrix; 5% medium-grained sand; trace of fine to medium muscovite.
62.5-63.5	75% sand, as above; 25% light gray and dark brown mottled; indurated clay matrix; trace of muscovite.
63.5-64.2	75% light gray, clear, fine-to medium-grained, angular to sub-rounded quartz sand; 25% medium brown, soft crumbly clay matrix with minor black and light gray mottling; trace of heavy minerals.

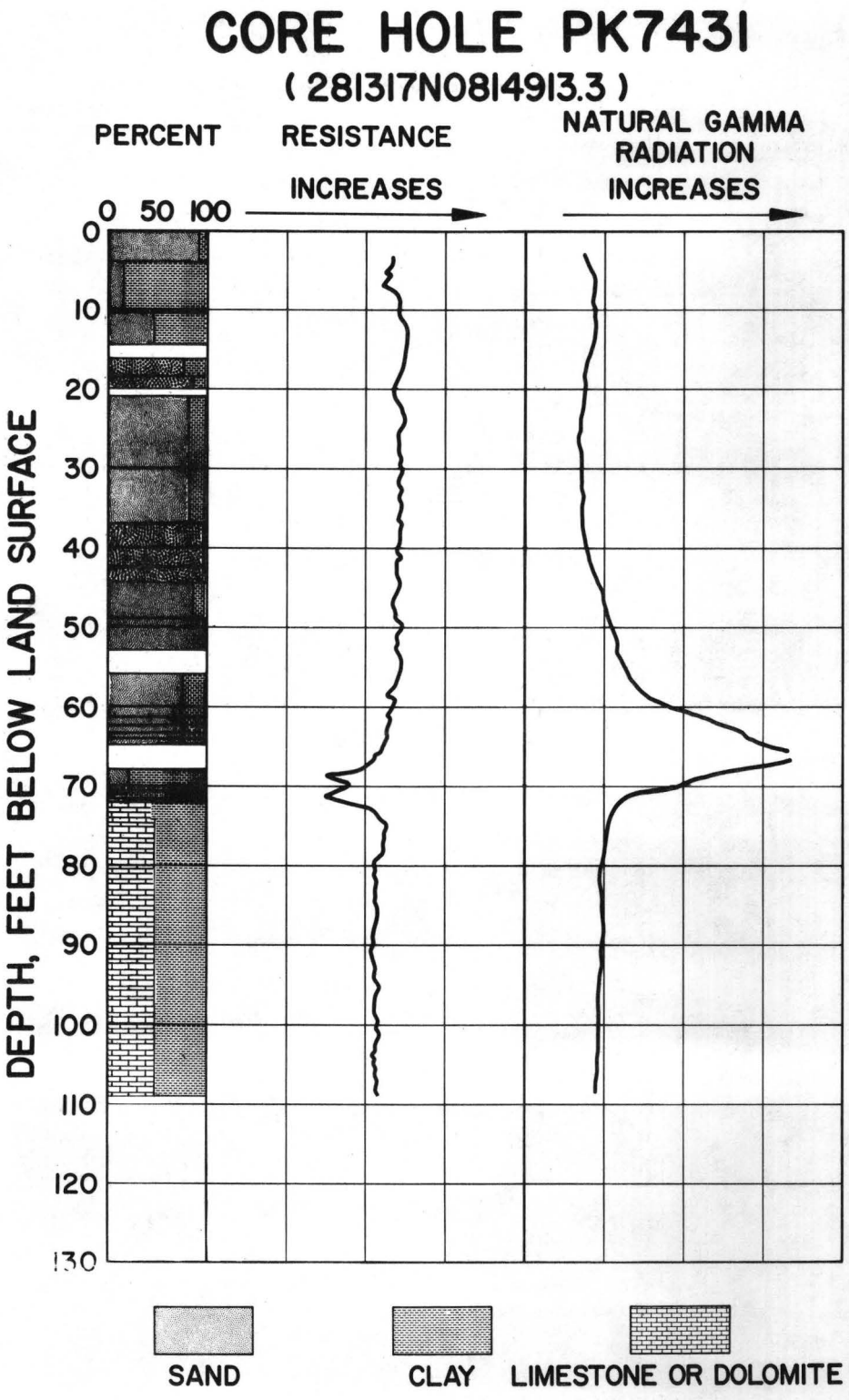
Rocks of Miocene Age

64.2-65.0	50% light and dark brown mottled, crumbly, soft clay matrix; 40% white, clear, fine-to medium-grained, angular to sub-rounded quartz sand; 10% light gray, medium to very coarse phosphate nodules; trace of light gray microcrystalline, hard, tight, silicified limestone fragments.
65.0-68.0	No sample.
68.0-71.0	80% light tan, light brown, dark brown, and black mottled, soft, crumbly clay matrix; 15% white, clear to frosted, fine-to medium-grained, angular to sub-rounded quartz sand; 5% light to dark gray, medium to very coarse phosphate nodules; trace of pisolitic silica.

71.0-71.7	95% light and dark brown, and dark gray mottled, soft, crumbly clay matrix; 5% sand, as above; trace of phosphate, pisolitic silica, and brown to gray microcrystalline; hard, tight, silicified limestone fragments.

Rocks of Eocene Age

71.7-72.2	80% cream colored, soft, poorly consolidated, calcareous, clay matrix; 15% cream colored, soft, porous, very fine-grained limestone; 5% large to small foraminifera.
72.2-74.2	55% cream colored, soft, poorly consolidated, calcareous clay matrix; 25% very light gray, microcrystalline, hard, porous limestone; 20% fossiliferous material; contains Sphaerogypsina globula (Reuss), Lepidocyclina ocalana floridana (Cushman), and Echinocythereis okeechobiensis (Swain).
74.2-109.0	50% calcareous clay, as above; 35% large to small fossils; 15% limestone, as above.


CORE HOLE PK7431
(281317N0814913.3)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7434

Polk County 281008N0814418.3

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-2.0	Tan, stained, fine-to medium-grained, angular to sub-rounded quartz sand.
2.0-4.0	Same as above, but color is light tan.
4.0-8.0	No sample.
8.0-15.0	45% white, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 35% white to off-white, indurated, crumbly clay matrix; 20% medium-to coarse-grained sand; trace of heavy minerals.
15.0-24.0	60% sand, as above; 40% off-white, indurated, crumbly clay matrix; trace of heavy minerals.
24.0-29.5	45% white, clear to frosted, fine-grained, angular, fairly well sorted quartz sand; 30% very light tan, soft clay matrix; 25% medium-grained sand; trace of heavy minerals.
29.5-31.5	80% sand, as above; 20% light tan, soft clay matrix.
31.5-33.5	55% white, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 25% white, indurated clay matrix; 20% fine-grained sand; trace of heavy minerals.
33.5-47.0	70% white, clear to frosted, fine-grained, angular, well sorted quartz sand; 30% very light gray, soft clay matrix; trace of heavy minerals and fine muscovite.
47.0-48.5	No sample.
48.5-51.5	60% sand, as 33.5-47.0 interval; 40% clay as 33.5-47.0 interval; trace of heavy minerals and muscovite.
51.5-53.5	75% sand and 25% clay as 33.5-47.0 interval; trace of heavy minerals and muscovite.

53.5-54.0	85% light gray, clear to frosted, medium-to fine-grained, sub-angular to rounded quartz sand; 15% light brown, indurated clay matrix with banding by dark brown, soft, waxy clay; trace of heavy minerals.
54.0-55.0	80% sand, as above; 20% tan, soft, clay matrix; trace of heavy minerals.
55.0-55.5	50% yellow and light to dark brown banded, soft clay matrix; bands are about 1/8-inch thick; 40% light gray, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 10% medium-grained sand; trace of heavy minerals.
55.5-56.0	60% medium brown clay; 20% light gray, clear to frosted, medium-to fine-grained, angular to rounded quartz sand; sand is interbedded with 20% light brown clay.
56.0-56.2	70% medium brown clay, mottled with light brown clay and sand; 30% sand, as above.

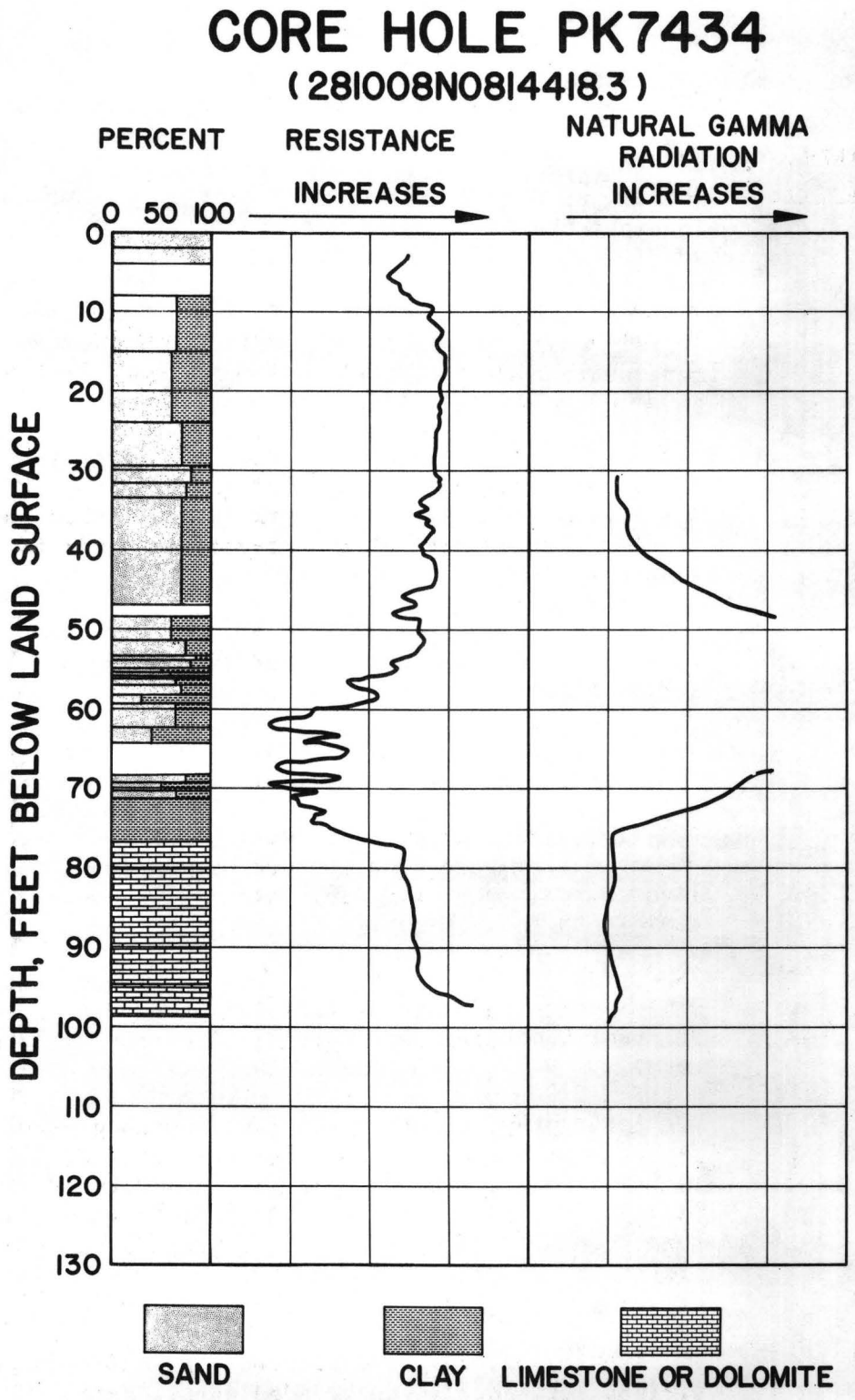
Rocks of Miocene Age

56.2-57.2	35% light brown soft clay matrix; 35% very light tan, fine to very coarse phosphate nodules; 30% light gray clear to frosted, medium-grained, fairly well sorted, rounded quartz sand.
57.2-58.5	40% light gray, clear to frosted, medium-grained, fairly well sorted, rounded to sub-angular quartz sand; 30% light green, soft clay matrix; 25% multi-colored, fine to very coarse phosphate nodules and phosphatic fossil material; 5% fine-grained sand.
58.5-59.5	70% light brown, medium green and bluish green, mottled, indurated, waxy clay matrix; 20% phosphate, as above; 10% sand, as above.
59.5-62.5	45% sand, as 57.2-58.5 interval; 35% light brownish green, soft clay matrix; 20% phosphate as 57.2-58.5 interval.
62.5-64.5	60% off-white, indurated clay matrix, mottled with very pale green silt; 25% light gray, clear to frosted, fine to medium-grained, angular to sub-angular quartz sand; 15% multicolored, fine to very coarse phosphate nodules and phosphatized fossil material.

64.5-68.5	No sample.
68.5-69.5	30% fine-grained sand; 25% light gray, clear to frosted, medium-grained, fairly well sorted, sub-angular quartz sand; 25% medium brownish gray, soft crumbly clay matrix with a few pockets of medium green, pure soft clay; 20% black and brown, fine to very coarse phosphate nodules and phosphatized fossil material.
69.5-70.5	50% light and medium green mottled, soft, crumbly clay matrix; 35% white, clear to frosted, fine-grained, fairly well sorted, angular quartz sand; 10% medium-grained sand; 5% multicolored phosphate.
70.5-71.5	60% sand, as 69.5-70.5 interval; 35% medium green, tan and light green mottled, soft, crumbly clay matrix; 5% phosphate; pockets and streaks of 40% sand and 60% medium green soft clay.
71.5-77.0	90% tan, soft, poorly consolidated, calcareous clay matrix; 10% cream colored microcrystalline; trace of soft, porous limestone fragments made up mostly of large to small fossils.

Rocks of Eocene Age

77.0-98.8	Limestone with fossils as above, highly weathered, contains Lepidocyclina ocalana floridana (Cushman), and Jugosocythereis bicarinata (Swain).


CORE HOLE PK7434
(281008N0814418.3)
PERCENT
0 50 100
RESISTANCE
INCREASES
NATURAL GAMMA
RADIATION
INCREASES
DEPTH, FEET BELOW LAND SURFACE
0
10
20
30
40
50
60
70
80
90
100
110
120
130
SAND
CLAY
LIMESTONE OR DOLOMITE

PK7435

Polk County 280927N0814028.1

DEPTH INTERVAL (feet)	LITHOLOGY
	Post Miocene Rocks
0.0-6.0	90% light gray and light brown, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 5% coarse-grained sand; 5% dark brown to light gray, soft clay matrix.
6.0-9.5	60% light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 30% light gray, dark gray, and dark brown mottled, soft crumbly clay matrix; 5% coarse-grained sand; 5% fine-grained sand.
9.5-15.5	90% light brown, clear to stained, medium-grained, fairly well sorted, sub-rounded quartz sand; 10% medium brown, soft crumbly clay matrix.
15.5-16.5	85% sand, as above; 15% dark and light brown mottled, indurated, crumbly clay matrix.
16.5-23.5	70% light gray, clear to frosted, medium-grained, fairly well sorted, sub-rounded quartz sand; 20% light brown, indurated clay matrix; 10% coarse-grained sand.
23.5-30.5	75% white, clear to frosted, medium-grained, fairly well sorted, sub-angular to sub-rounded quartz sand; 20% tan, indurated clay matrix; 5% coarse-grained sand.
30.5-33.5	70% light gray, clear to frosted, medium-grained, fairly well sorted, sub-angular quartz sand; 20% light brown, indurated, poorly consolidated, crumbly clay matrix; 5% coarse-grained sand; 5% fine-grained sand.
33.5-35.0	No sample.
35.0-38.0	80% light gray, clear to frosted, medium-to coarse-grained, sub-angular to rounded quartz sand; 20% medium brown, indurated clay matrix; trace of heavy minerals.

38.0-40.5	80% sand, as above; 20% light brown, indurated, fairly well consolidated clay matrix; trace of heavy minerals.
40.5-47.0	90% white, clear to frosted, medium-to coarse-grained, sub-angular to rounded quartz sand; 10% tan, indurated, fairly well consolidated clay matrix; trace of coarse-grained sand and heavy minerals.
47.0-51.5	80% white, clear to frosted, fine-grained, well sorted, angular quartz sand; 20% light tan, soft clay matrix; trace of heavy minerals and fine to medium muscovite.
51.5-54.0	70% sand, as above; 30% tan and light gray mottled, soft clay matrix; trace of heavy minerals and muscovite.
54.0-73.5	70% light gray, clear to frosted, fine-grained, well sorted, angular quartz sand; 30% medium gray, soft clay matrix with minor light brown mottling; trace of fine to medium muscovite.
73.5-75.0	75% light gray, clear to frosted, very fine-to medium-grained, angular to rounded quartz sand; 25% medium to light brown, soft, poorly consolidated clay matrix, mottled and banded with buff, white, and black, soft waxy clay; trace of tan to buff, medium to coarse phosphate nodules.
	Rocks of Miocene Age
75.0-76.0	55% very dark, brownish gray, soft, crumbly clay matrix; 45% white, clear to frosted, fine-to very fine-grained, well sorted, angular quartz sand.
76.0-78.0	60% light to very dark brown, mottled, soft, crumbly clay matrix; 35% black to buff, very fine to small pebble sized phosphate nodules; 5% sand, as above.
78.0-78.5	60% dark brown, soft waxy clay; 30% phosphate as 76.0-78.0 interval; 10% white, clear to frosted, very fine-to medium-grained, angular to sub-rounded quartz sand.
78.5-79.2	50% medium brown, soft, waxy clay matrix; 35% phosphate as 76.0-78.0 interval; 15% sand as 78.0-78.5 interval.

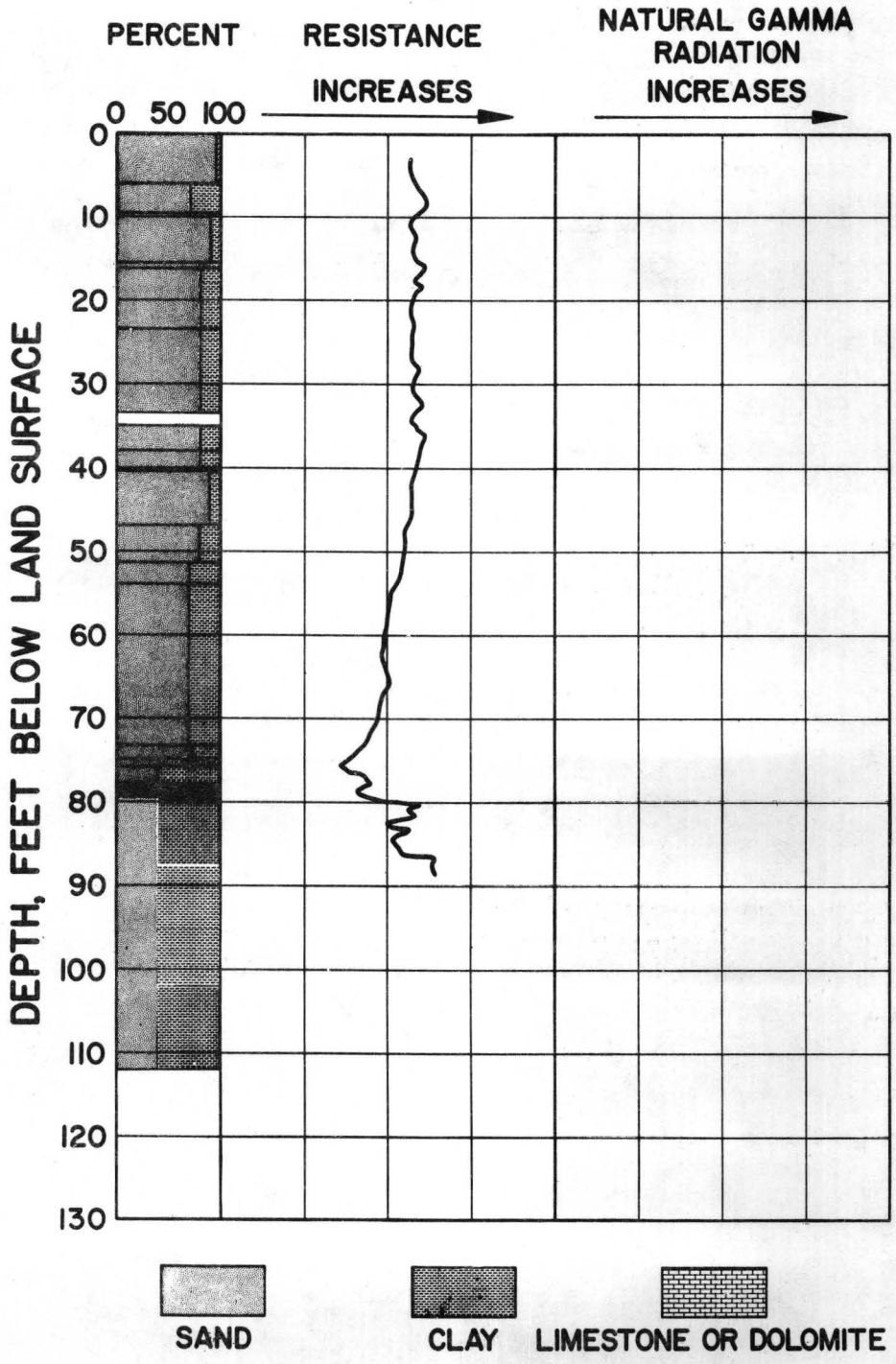
79.2-79.7	45% phosphate as 76.0-78.0 interval; 40% light brown, soft, poorly consolidated clay matrix; 15% sand, as 78.0-78.5 interval.
79.7-112.0	60% light gray and cream colored microcrystalline, hard, tight, limestone fragments, made up of 50% sand and phosphate as 76.0-78.0 and 78.0-78.5 intervals and 50% light gray to buff mottled, crumbly clay matrix; 40% light tan, clear to stained, fine-to coarse-grained, angular to rounded quartz sand; trace of black and brown, fine to very coarse phosphate nodules.

Rocks of Eocene Age(?)

112.0-112.4	Circulation lost and could not be re-established.

CORE HOLE PK7435

(280927N0814028.1)



*U.S. GOVERNMENT PRINTING OFFICE: 1981-740-127/33

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GEOLOGICAL SURVEY
325 John Knox Rd--Suite F240
Tallahassee, Florida 32303

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF THE INTERIOR
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