

# Preliminary Lithologic Log for a Stratigraphic Corehole on Horn Island, Mississippi Sound

By Gregory S. Gohn, Juergen Reinhardt, David S. Powars,  
J. Stephen Schindler, Byron D. Stone, Donald G. Queen,  
and Eugene F. Cobbs

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Prepared in cooperation with the U.S. National Park Service, Gulf Islands National Seashore

This report is preliminary and has not been reviewed for conformity with  
U.S. Geological Survey editorial standards or with the North American  
Stratigraphic Code



# Preliminary Lithologic Log for a Stratigraphic Corehole on Horn Island, Mississippi Sound

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## INTRODUCTION

The U.S. Geological Survey (USGS) drilled a 510-foot-deep, continuously cored stratigraphic test hole on Horn Island, Mississippi Sound, during April and May, 1991. The Horn Island corehole was drilled as part of a field study of the Neogene and Quaternary geology of the Mississippi Coastal Zone. This report provides lithologic descriptions of the recovered cores and a copy of the corehole electric log.

The USGS Horn Island core site is located at the center of Horn Island in the Horn Island West 7.5-minute quadrangle (fig. 1). The site is immediately north of the National Park Service (NPS) Ranger Station and immediately west of the access road that links that compound with the NPS dock on Mississippi Sound. The ground elevation at the drill site is estimated from topographic maps to be +5 ft.

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<sup>1</sup>Deceased.

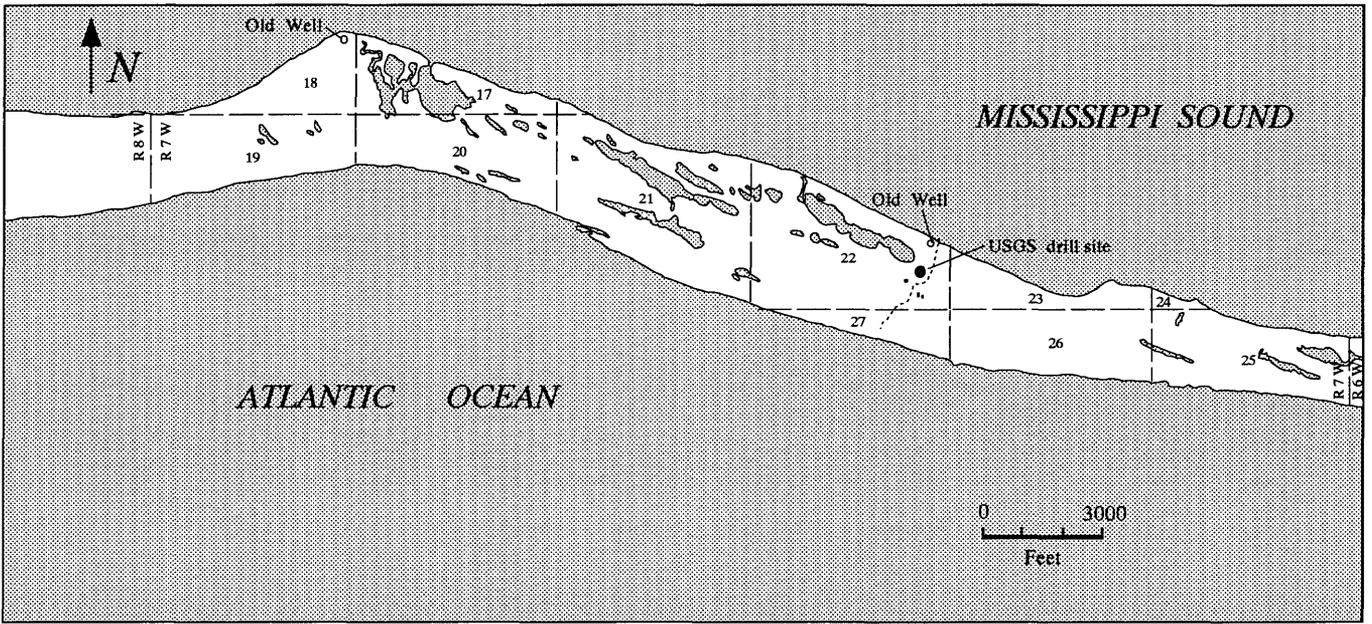


Figure 1. Map of the central part of Horn Island showing the location of the USGS drill site. Sections within Township 9 South, Range 7 West, are indicated.

Two test holes were drilled at the Horn Island site. The first hole was continuously sampled to a depth of 510 ft where mechanical problems forced abandonment of the hole. An unsampled second hole was drilled to a depth of 519 ft at the same site to allow the collection of geophysical logs. Therefore, the lowest Horn Island sample comes from the 500- to 510-ft drilling run, whereas the geophysical logs for the Horn Island site go to depths of about 519 ft. A three-point electric log (normal resistivity) was run from the base of the casing at 186 ft to a depth of 516 ft. A gamma-ray log was run from the top of the hole to a depth of 517 ft. The two holes were drilled by a USGS drill crew (D. Queen, E. Cobbs, and USGS Volunteer-for-Science Shon Cobbs).

#### **Acknowledgments.**

We are grateful to the staff of the National Park Service, Gulf Islands National Seashore, for access to the Horn Island drill site and for their continuous generous support of the drilling project. We thank the Mississippi Bureau of Geology for running the electric-log and gamma-ray surveys in the Horn Island corehole.

#### **LITHOLOGIC DESCRIPTIONS**

A preliminary lithologic log of the corehole was made at the drill site during drilling (D.S. Powars, J. Reinhardt, J.S. Schindler, and B.D. Stone). Supplementary core descriptions (G. Gohn) were made at the USGS office in Reston, VA, during 1993 and 1994.

In the following core descriptions, assessments of grain sizes and sorting, mineral percentages, and colors are semiquantitative visual estimates made using standard charts and visual aids. All of the indicated colors describe completely dry samples unless otherwise noted. All of the corehole sands consist predominantly of quartz.

**Lithologic log: USGS-Horn Island No.1 corehole:**

Drillers: U.S. Geological Survey, Branch of Eastern Regional Geology, April-May, 1991

Location: Horn Island, Mississippi Sound, at the Ranger Station

Section 22 (SE/4, SE/4), Township 9 S, Range 7 W

Horn Island West 7.5-minute quadrangle

Total depth: 510 feet

Abbreviations used on the lithologic log are as follows  
(multiply millimeters by 0.03937 to obtain inches):

Sand fraction: vfine = very fine (0.063 to 0.125 mm), fine (0.125 to 0.250 mm), med = medium (0.250 to 0.500 mm), cse = coarse (0.500 to 1.00 mm), vcse = very coarse (1.00 to 2.00 mm),

Granule fraction: (2.00 to 4.00 mm),

tr = trace.

Depth (ft):

**0 to 10 ft:** No coring. Spot descriptions of auger samples from the drill-site notes are as follows:

1 ft - SAND, med-cse, massive, white to tan.

1.5 ft - SAND, med-cse, heavy-mineral laminations.

Modern roots common down to 2.5 ft.

6 ft - SAND, white (N9) to yellowish- gray (5Y8/1).

7 ft - SAND, med-cse, white (N9) to yellowish-gray (5Y8/1).

9 ft - SAND, med-cse, white (N9) to yellowish-gray (5Y8/1).

10 ft - SAND, med-cse, light-olive-gray (5Y6/1), root noted.

Start coring at 10-ft depth.

**Run 1, 10 to 14 ft:**

10.0 ft to 10.8 ft: No recovery.

10.8 ft to 14.0 ft:

SAND, fine-med, cse (1-3 %) in basal foot, loose, no acid fizz, no fossils noted, massive, mottled very pale orange (10YR8/2), pale-yellowish-brown (10YR6/2), and grayish-orange (10YR7/4).

**RUN 2, 14 to 18 ft:**

14.0 ft to 16.5 ft:

SAND, fine-med, locally cse (1 %), loose, no acid fizz above 14.6 ft, faint acid fizz below 14.6 ft, very sparse shell fragments (sand-sized to 0.25-inch) below 14.6 ft, massive, yellowish-gray (5Y8/1) in top half foot, very pale orange (10YR8/2) below 14.5 ft.

16.5 ft to 18.0 ft: No recovery.

**RUN 3, 18 to 20 ft:**

18.0 ft to 19.0 ft:

SAND, vfine-med, cse (5%), loose, faint acid fizz, sparse shell fragments (sand-sized), massive, pinkish-gray (5YR8/1) to yellowish-gray (5Y8/1).

19.0 to 20.0 ft: No recovery.

**Run 4, 20 ft to 22 ft:** No recovery.

**Run 5, 22 ft to 24 ft:**

22.0 ft to 23.0 ft:

SAND, vfine-fine, silt (20%), loose, slight acid fizz, common shell fragments (sand-sized to 0.25 inch), massive, mottled pinkish-gray (5YR8/1) and yellowish-gray (5Y8/1).

23.0 ft to 24.0 ft: No recovery.

**Run 6, 24 ft to 26 ft:**

24.0 ft to 25.0 ft:

SAND, fine-cse, loose, slight acid fizz, common shell fragments (sand- and granule-sized), probable burrows are represented by 0.25- to 0.5-inch-wide concentrations of shell fragments, wood, and cse sand, yellowish-gray (5Y7/2).

Thin clay layer at 24.2 ft to 24.3 ft: CLAY, silty and sandy (vfine-med), slight acid fizz, sparse shell fragments (sand-sized), dusky-yellow-green (5GY5/2).

25.0 ft to 26.0 ft: No recovery.

**Run 7, 26 ft to 28 ft:**

26.0 ft to 27.0 ft:

SAND, med-vcse, loose, strong acid fizz, common to locally abundant shells and shell fragments (sand- and granule-sized), irregular shell concentrations are probable burrows, dominantly yellowish-gray (5Y8/1).

27.0 ft to 28.0 ft: No recovery.

**Run 8, 28 ft to 30 ft:**

28.0 ft to 28.9 ft:

SAND, fine-cse, loose, faint acid fizz, sparse scattered shell fragments (sand- and granule-sized), massive, slightly darker than yellowish-gray (5Y8/1).

----- sharp

28.9 ft to 29.8 ft:

SAND vfine-vcse, silty, loose, strong acid fizz, common shell fragments (sand- and granule-sized), indistinct texture mottling suggests bioturbation, slightly darker than pinkish-gray (5YR8/1).

29.8 ft to 30.0 ft: No recovery.

**Run 9, 30 to 32 ft:**

30.0 ft to 31.8 ft:

SAND, fine-med, locally fine-cse, well-sorted, loose, faint acid fizz, very sparse scattered shell fragments (sand- and granule-sized), massive, pinkish-gray (5YR8/1).

31.8 ft to 32.0 ft: No recovery.

**Run 10, 32 ft to 35 ft:**

32.0 ft to 35.0 ft:

SAND, fine-med, well-sorted, loose, faint acid fizz, very sparse scattered shell fragments (sand- and granule-sized), phosphate and possible glauconite (1%) noted, yellowish-gray (5Y8/1).

**RUN 11, 35 ft to 40 ft:**

35.0 ft to 35.15 ft:

Recovered only a 2.5-inch bivalve fragment with adhering fine-med sand as above.

35.15 ft to 40.0 ft: No recovery.

MAJOR LITHOLOGY CHANGE ACROSS MISSING INTERVAL;  
COARSER LITHOLOGIES ABOVE, FINER LITHOLOGIES BELOW

**Run 12, 40 to 45 ft:**

40.0 ft to 41.0 ft:

SAND, vfine, silty, mica (1%), phosphate(?) (1%), strong acid fizz, common to abundant shell fragments (sand-sized to 0.75 inch), local shell concentrations are probable burrows, light-gray (N8).

-----sharp, burrowed, 0.5-inch relief

41.0 ft to 41.25 ft:

CLAY, silty, moderate acid fizz, very sparse shell fragments (sand-sized), common burrows (clay-lined(?), sand-filled, 0.5-inch diameter and smaller), light-olive-gray (5Y5/2).

-----sharp, irregular

41.25 ft to 42.0 ft:

SAND, vfine, silty, mica (vfine-med, 3%), strong acid fizz, common (upper part) to abundant (lower part) shell fragments (sand-sized) and whole valves, plant material (sand-sized, 1-3%), common spicules (0.1-inch long), benthic Foraminifera noted, yellowish-gray (5Y7/2).

42.0 ft to 45.0 ft: No recovery.

**Run 13, 45 ft to 50 ft:**

45.0 ft to 45.7 ft:

CLAY, silty, moderate acid fizz, sparse scattered shell fragments (sand- and granule-sized), common burrows (subvertical, unlined(?), sand-filled, curving, cylindrical), grayish-olive-green (5GY3/2) to grayish-green (10GY5/2)-moist.

----- sharp, burrowed, 1-inch relief

45.7 ft to 47.0 ft:

SAND, vfine, silty, as at 40 to 41 ft. Mica (5%, silt-med), indistinct texture mottling suggests bioturbation, sparse scattered shell fragments.

47.0 ft to 50.0 ft: No recovery.

**Run 14, 50 ft to 53 ft:**

50.0 ft to 50.75 ft:

CLAY, silty, moderate acid fizz, sparse scattered shell fragments (sand-sized), microfauna noted, common burrows (unlined, sand-filled [vfine-silt], 1-inch diameter), bivalve possibly in life position in one burrow, olive-gray (5Y4/1)-moist.

-----gradational

50.75 ft to 52.75 ft:

CLAY, silty, weak acid fizz, sparse scattered shell fragments (sand-sized), common burrows (sand-filled [vfine, very silty], indistinct boundaries, sparse sand-sized shell fragments), clay - olive-gray (5Y4/1)-moist, sand - grayish-yellow (5Y8/4)-moist.

52.75 ft to 53.0 ft: No recovery.

**Run 15, 53 ft to 57 ft:**

53.0 ft to 55.8 ft:

SILT, clayey, moderate acid fizz, sparse scattered shell fragments (sand-sized and small whole valves), microfauna noted, common burrows (unlined, silt-filled, cylindrical, 0.25-inch diameter), clay - closest to light-olive-gray (5Y5/2), silt - yellowish-gray (5Y7/2).

55.8 ft to 57.0 ft: No recovery.

**Run 16, 57 ft to 60 ft:**

57 ft to 58 ft:

Lithology and burrows as at 53.0 ft to 55.8 ft.

58 ft to 60 ft: No recovery.

**Run 17, 60 ft to 64 ft:**

60.0 ft to 62.0 ft:

SILT, clayey, mica (silt, tr), moderate acid fizz, common shell fragments (sand-sized and small whole valves), probable indistinct burrows (silt-rich, roughly 0.25-inch diameter), olive-gray (5Y4/1)-moist.

----- sharp, 0.25-inch relief    MAJOR LITHOLOGY CHANGE

62.0 ft to 63.2 ft:

CLAY, silty, highly organic, no acid fizz, common to abundant plant material, common burrows (sand-filled [vfine-fine], cylindrical, subhorizontal, with clayey spreiten, 0.25- to 0.5-inch diameter), thin discontinuous laminae of vfine-fine sand, clay - olive-black (5Y2/1)-wet, sand - yellowish-gray (5Y8/1)-wet.

63.2 ft to 64.0 ft: No recovery.

**Run 18, 64 ft to 70 ft:**

64.0 ft to 66.4 ft:

Lithology and burrows as at 61.7 ft to 63.2 ft. Addition of two 2-inch-diameter, 1-inch-deep, concave-downward burrows with nested clayey spreiten.

-----sharp between core segments

66.4 ft to 66.8 ft:

PEAT, clayey and sandy (vfine-fine), wood and other plant material, no acid fizz, moderate brown (5YR3/4).

66.8 ft to 70.0 ft: No recovery.

**Run 19, 70 ft to 75 ft:**

70.0 ft to 70.9 ft:

CLAY, silty, highly organic, no acid fizz, common comminuted plant material, light-brownish-gray (5YR6/1).

----- sharp between core segments

70.9 ft to 71.85 ft:

PEAT, very slightly clayey, no acid fizz, variety of plant material including sticks, stems, and wood, moderate brown (5YR3/4).

71.85 ft to 75.0 ft: No recovery.

**Run 20, 75 ft to 80 ft:**

75.0 ft to 75.5 ft:

CLAY, slightly silty, highly organic, no acid fizz, common comminuted plant material, brownish-gray (5YR4/1), plant material is black.

----- sharp between core segments

75.5 ft to 76.9 ft:

WOOD, probably one log, parting surfaces in wood lie at about 25 degrees to horizontal.

76.9 ft to 80.0 ft: No recovery.

**Run 21, 80 ft to 85 ft:**

80.0 ft to 81.8 ft:

CLAY, slightly silty, highly organic, no acid fizz, sparse comminuted plant material, mottled olive-black (5Y2/1) and grayish-brown (5YR3/2).

----- sharp, 0.5-inch relief MAJOR LITHOLOGY CHANGE

81.8 ft to 82.1 ft:

CLAY, silty, dense compared to overlying material, no acid fizz, common irregular silt/sand (vfine) bodies (root casts?, 0.1- to 0.25-inch diameter), common dark rootlets from above (0.1- to 0.25-inch diameter), light-olive-gray (5Y4/2) mottled with light-olive-brown (5Y5/6)-moist.

82.1 ft to 85.0 ft: No recovery.

**Run 22, 85 ft to 90 ft:**

85.0 ft to 85.5 ft:

CLAY, silty, dense, no acid fizz, sparse rootlets?, brownish-gray (5YR4/1)-moist.

----- sharp, irregular, 0.5-inch relief

85.5 ft to 86.0 ft:

SAND, v̄fine, silty, highly irregular, convoluted clay layers, fluidized bed?, common rootlets (0.1- to 0.25-inch diameter).

----- contact between core boxes

86.0 ft to 86.9 ft:

CLAY, silty, dense, subconchoidal fracture when broken, mica (silt, 1-3%), no acid fizz, plant material (sand, 1%), massive, light-olive-gray (5Y6/1).

----- gradational across 0.5 inch

86.9 ft to 90 ft:

SAND, v̄fine-med, well-sorted, loose, no acid fizz, massive, original high water content, core now conforms to core box), yellowish-gray (5Y8/1) to nearly white.

**Run 23, 90 ft to 95 ft:**

90.0 ft to 92.7 ft:

SAND, v̄fine-med at top grades down to med-v̄cse at base, pebbles in basal 2 inches (quartz, quartzite, chert; rounded, maximum 1-inch diameter), no intraclasts noted, no acid fizz, yellowish-gray (5Y8/1).

----- sharp, 0.5-inch relief

92.7 ft to 93.5 ft:

CLAY, slightly silty, dense, no acid fizz, common plant material (mostly sand-sized), indistinct discontinuous laminae, medium-light-gray (N6) in top 2.5 inches, browner than light gray (N7) below.

93.5 ft to 95.0 ft: No recovery.

**Run 24, 95 ft to 100 ft:**

95.0 ft to 96.2 ft:

CLAY, silty, dense, mica (1%, silt), no acid fizz, sparse plant fragments (sand-sized to 0.5 inch), light-greenish-gray (5GY8/1).

96.2 ft to 100.0 ft: No recovery.

**Run 25, 100 ft to 105 ft:**

100.0 ft to 101.2 ft:

SAND, fine-cse, slightly coarser downward, granules and pebbles in basal 2 inches (quartz, quartzite, chert; maximum 0.5-inch diameter), sparse, gray, clay intraclasts in basal 2 inches, loose, no acid fizz, pinkish-gray (5YR8/1) to yellowish-gray (5Y8/1).

----- sharp

101.2 ft to 101.9 ft:

Unusual lithology: CLAY, silty, hard, dense, contains quartz and phosphate gravel, no acid fizz. This bed may represent soft-sediment deformation during loading of the overlying gravely sand.

----- gradational

101.9 ft to 103.6 ft:

SAND, vfine-fine, silty, slightly clayey, loose to friable, mica (silt to med, 1-3%), sparse disseminated plant fragments (sand-sized), yellowish-gray (5Y7/2).

103.6 ft to 105.0 ft: No recovery.

**Run 26, 105 ft to 110 ft:**

105.0 ft to 105.4 ft:

CLAY, silty and sandy (vfine), sticky, dense, no acid fizz, medium-gray (N5)-wet.

----- sharp, 0.25 inches relief

105.4 ft to 106.2 ft:

CLAY, silty and sandy (vfine), mica (1%, silt), no acid fizz, light-olive-gray (5Y5/2)-moist; interbedded with highly irregular 0.5- to 2.0-inch-thick beds of SAND, vfine, no acid fizz, yellowish-gray (5Y8/1)-moist.

----- sharp, slightly irregular

106.2 ft to 106.7 ft:

SAND, vfine, silty, mica (3%, silt), no acid fizz, pinkish-gray (5YR8/1).

----- sharp between core segments

106.7 ft to 107.0 ft:

CLAY, silty and sandy (vfine), mica (5%, silt), no acid fizz, indistinct texture mottling, yellowish-gray (5Y8/1) to light gray (N7).

----- sharp between core segments

107.0 ft to 108.8 ft:

SAND, vfine-fine, loose, original high water content (core now conforms to core tray), mica (silt, 3%), no acid fizz, disseminated plant material (sand-sized, 1%), low-angle cross laminations defined by mica and plant material in basal 6 inches, yellowish-gray (5Y8/1).

108.8 ft to 110.0 ft: No recovery.

**Run 27, 110 ft to 115 ft:**

110.0 ft to 110.7 ft:

CLAY, silty, mica (1%, silt-vfine), no acid fizz, common burrows (subvertical, sand-filled, up to 1.0-inch diameter), mottled yellowish-gray (5Y7/2), light gray (N7), and grayish-orange (10YR7/4).

----- sharp, burrowed?

110.7 ft to 114.5 ft:

SAND, vfine, silty, slightly clayey at 111.4 ft to 111.6 ft, sparse disseminated plant fragments (sand-sized), no acid fizz, mostly massive, a few discontinuous laminae of fine-grained plant material at 111.9 ft to 112.0 ft, numerous wavy continuous and discontinuous laminae of fine-grained plant material at 114.0 ft to 114.5 ft, dominantly pinkish-gray (5YR8/1)-moist, yellowish gray (5Y7/2)-moist, in basal foot.

114.5 ft to 115.0 ft: No recovery.

**Run 28, 115 ft to 120 ft:**

115.0 ft to 118.6 ft:

SAND, vfine, silty, loose, mica (silt-med, 3-5%), no acid fizz, numerous (typically 3 to 5 per inch) continuous and discontinuous wavy laminae of silty clay or fine-grained plant material (0.1- to 0.25-inch thick), laminae locally interrupted by burrows (vertical, conical, narrowing downward, sand-filled, 0.2-inch-wide), sparse irregular bodies of plant material (0.5-inch wide) also may be burrows, sand - dominantly yellowish-gray (5Y7/2), clay - medium-gray (N5), organic material - brownish-gray (5YR4/1)-moist.

118.6 ft to 120.0 ft: No recovery.

**Run 29, 120 ft to 125 ft:**

120.0 ft to 122.5 ft:

SAND, vfine, silty at top, broadly gradational down to vfine-med with cse (5%) at bottom, loose, no acid fizz, massive, very light gray (N8) to light gray (N7) at top grades down to pinkish-gray (5YR8/1) with minor mottling of pale-yellowish-orange (10YR8/6) at base.

122.5 ft to 125.0 ft: No recovery.

**Run 30, 125 ft to 127.5 ft:**

125.0 ft to 127.0 ft:

SAND, vfine-med, slightly silty, loose, no acid fizz, massive, very pale orange (10YR8/2).

127.0 ft to 127.5 ft: No recovery.

**Run 31, 127.5 ft to 130 ft:**

127.5 ft to 129.5 ft:

SAND, fine-vcse with granules (5%, mostly chert) at top, grades down to vfine-fine at base, loose, no acid fizz, massive, yellowish-gray (5Y8/1).

129.5 ft to 130.0 ft: No recovery.

**Run 32, 130 ft to 135 ft: No recovery.**

**Run 33, 135 ft to 140 ft:**

135.0 ft to 136.8 ft:

SAND, vfine-vcse, granules (5%), loose, no acid fizz, massive, coarsest fraction concentrated in irregular bodies, yellowish-gray (5Y8/1).

136.8 ft to 140 ft: No recovery.

**Run 34, 140 ft to 142.2 ft:**

140 ft to 142.2 ft:

SAND, fine-med with cse-vcse (5%) at top, grades down to med-vcse with granules and small pebbles (10-15%; mostly chert, 0.25 inch maximum diameter), loose, no acid fizz, massive, yellowish-gray (5Y8/1).

**Run 35, 142.2 ft to 147 ft:**

142.2 ft to 144.2 ft:

SAND, med-vcse, small granules (5%) in top 6 inches, loose, no acid fizz, massive, yellowish-gray (5Y8/1).

144.2 ft to 147.0 ft: No recovery.

**Run 36, 147 ft to 150 ft:**

147.0 ft to 149.0 ft:

SAND, fine-vcse with granules (1%) at top, grades down to med-vcse with granules and small pebbles (10%; mostly chert and quartz, 0.25 maximum diameter), loose, no acid fizz, massive, yellowish-gray (5Y8/1).

149.0 ft to 150.0 ft: No recovery.

**Run 37, 150 ft to 155 ft:**

150.0 ft to 150.2 ft:

SAND, med-vcse, similar to 147.0 ft to 149.0 ft.

150.2 ft to 155.0 ft: No recovery.

**Run 38, 155 ft to 160 ft:**

155.0 ft to 156.1 ft:

SAND, cse-vcse, granules and small pebbles (20%, 0.4-inch maximum diameter), loose, no acid fizz, possible sparse smeared-out clay intraclasts, massive, light-gray (N7).

----- sharp, slight relief

156.1 ft to 156.6 ft:

CLAY, silty, no acid fizz, common sand(vfine)-silt laminae (0.1-inch and thinner), some may be burrows, clay - brownish-black (5YR2/1), sand-silt - (5Y8/1)-moist.

----- sharp, flat

156.6 ft to 158.9 ft:

SAND, vfine-med at top, grades down to med-cse with granules (10%, quartz, phosphate, plant material) in basal 3 inches, loose, massive, dominantly yellowish-gray (5Y7/2)-moist.

158.9 ft to 160.0 ft: No recovery.

**Run 39, 160 ft to 162:**

160.0 ft to 161.6 ft:

SAND, med-cse at top grades down to med-cse with vcse and granules (10%), sparse intraclasts throughout (granule-sized, clay, medium-gray), no acid fizz, pale yellowish-brown (10YR6/2)-moist.

----- indistinct texture boundary, inclined 45 degrees

161.6 ft to 162.0 ft:

SAND, vfine-med, loose, no acid fizz, massive, dominantly yellowish-gray (5Y7/2)-moist.

**Run 40, 162 ft to 167 ft:**

162.0 ft to 164.4 ft:

SAND, fine-med, cse (10%), loose, no acid fizz, irregular patches of clay above 162.7 ft are possible burrow linings, sand - dominantly pale olive (10Y6/2)-moist, clay - light-brownish-gray (5YR6/1)-wet.

164.4 ft to 167.0 ft: No recovery.

**Run 41, 167 ft to 170 ft:**

167.0 ft to 168.1 ft:

SAND, fine-cse, similar to 162.0 ft to 164.4 ft, but lacks clay.

168.1 ft to 170.0 ft: No recovery.

**Run 42, 170 ft to 175 ft:**

170.0 ft to 170.8 ft:

SAND, med-vcse, granules (10-20%) in bottom half, loose, massive, no acid fizz, dominantly yellowish-gray (5Y8/1).

170.8 ft to 175.0 ft: No recovery.

## MAJOR LITHOLOGY CHANGE ACROSS MISSING INTERVAL.

### **Run 43, 175 ft to 180 ft:**

175.0 ft to 175.4 ft:

SAND, vfine-fine, silty, loose to friable, massive, no acid fizz, yellowish-gray (5Y7/2).

----- sharp, flat

175.4 ft to 180.0 ft:

SAND, vfine, to SILT, clayey (10-20%), semi-indurated to slightly friable, no acid fizz, common irregular clay wisps represent clay-lined burrows (about 0.5-inch diameter), a second burrow type is present in bottom half (unlined, sand/silt-filled, 0.5-inch diameter), closest to yellowish-gray (5Y7/2).

### **Run 44, 180 ft to 185 ft:**

180.0 ft to 184.25 ft:

SILT, clayey, semi-indurated, no acid fizz, clay-lined burrows as at 175.4 ft to 180.0 ft, no sand-filled burrows noted, closest to yellowish-gray (5Y7/2).

184.25 ft to 185.0 ft: No recovery.

### **Run 45, 185 ft to 190 ft:**

185.0 ft to 186.5 ft:

SILT, clayey, semi-indurated to slightly friable, no acid fizz, massive, yellowish-gray (5Y7/2).

186.5 ft to 190.0 ft: No recovery.

**Run 46, 190 ft to 195 ft:**

190.0 ft to 191.0 ft:

SAND, vcse, gravely (quartz and chert granules and small pebbles up to 0.25 inch), core badly distorted, small amount of medium-gray clay at base.  
PROBABLY CONTAMINATION.

191.0 ft to 195 ft: No recovery.

**Run 47, 195 ft to 200 ft:**

195.0 ft to 198.0 ft:

SILT, clayey, semi-indurated, plant debris (sand-sized, disseminated, 1%), no acid fizz, common irregular clay bodies represent clay-lined burrows (0.1- to 0.25-inch diameter), closest to yellowish-gray (5Y7/2).

198.0 ft to 200.0 ft: No recovery.

**Run 48, 200 ft to 205 ft:**

200.0 ft to 201.3 ft:

SILT, clayey, indurated to slightly friable, blocky fracture, mica (silt-vfine, 1%), no acid fizz, common irregular clay bodies represent clay-lined burrows (0.1- to 0.25-inch diameter), silt - pale-greenish-yellow (10Y8/2), clay - light-olive-gray (5Y6/1).

201.3 ft to 205.0 ft: No recovery.

**Run 49, 205 ft to 210 ft:**

205.0 ft to 207.0 ft:

SILT, clayey, indurated to locally friable, blocky fracture, mica (silt-fine, 3%), no acid fizz, distinct texture mottling suggest bioturbation, dominantly pale-greenish-yellow (10Y8/2).

207.0 ft to 210.0 ft: No recovery.

**Run 50, 210 ft to 215 ft:**

210.0 ft to 214.8 ft:

CLAY, silty, indurated, blocky fracture, sparse small slickensided fracture planes, no acid fizz, abundant dark rootlets throughout, faint color mottling - pale-greenish-yellow (10Y8/2) and yellowish-gray (5Y7/2).

214.8 ft to 215.0 ft: No recovery.

**Run 51, 215 ft to 220 ft:**

215.0 ft to 217.0 ft:

CLAY, silty, rooted, as in 210.0 ft to 214.8 ft.

217.0 ft to 220.0 ft: No recovery.

**Run 52, 220 ft to 228 ft:**

220.0 ft to 224.0 ft:

SAND, vfine, silty, friable to slightly indurated, mica (silt-vfine, 1%), sparse plant fragments (disseminated, sand-sized), no acid fizz, locally with continuous laminae (0.1- to 0.25-inch thick) of noncalcareous silty clay, sand - close to light-olive-gray (5Y6/1), clay - medium-light-gray (N6).

224.0 ft to 228.0 ft: No recovery.

**Run 53, 228 ft to 234 ft:**

228.0 ft to 229.7 ft:

CLAY, silty, indurated, blocky fracture with minor slickenside development, mica (silt, tr), no acid fizz, sparse to locally common dark rootlets, closest to yellowish-gray (5Y8/1).

229.7 ft to 234.0 ft: No recovery.

**Run 54, 234 ft to 240 ft: No recovery.**

**Run 55, 240 ft to 250 ft:**

240.0 ft to 242.5 ft:

SILT, to SAND, vfine, clayey (5%), no acid fizz, massive to indistinctly texture mottled, yellowish-gray (5Y7/2).

242.5 ft to 250.0 ft: No recovery.

**Run 56, 250 ft to 255 ft:**

250.0 ft to 254.8 ft: No recovery.

254.8 ft to 255.0 ft:

SILT, to SAND, vfine, similar to 240.0 ft to 242.5 ft. Sample was plug in bit, position in interval is uncertain.

**Run 57, 255 ft to 260 ft:**

255.0 ft to 259.4 ft:

SAND, vfine, very silty, clayey (5-10%), mica (vfine-med, tr), no acid fizz, common irregular clay blebs represent clay-lined burrows, "clotted" texture mottling also suggests bioturbation, closest to light-olive-gray (5Y6/1).

----- sharp, burrowed, 0.5-inch relief

259.4 ft to 260.0 ft:

CLAY, very silty, hackly fracture, no acid fizz, sparse burrows or root casts (sand-filled, 0.1- to 0.25-inch diameter), pale olive (10Y6/2).

**Run 58, 260 ft to 270 ft:**

260.0 to 260.5 ft:

CLAY, very silty, hackly to blocky parting, faint acid fizz, no fossils noted, sparse scattered rootlets and small root casts, grayish-yellow-green (5GY7/2) to pale olive (10Y6/2).

260.5 ft to 270.0 ft: No recovery.

**Run 59, 270 ft to 275 ft:**

270.0 ft to 275.0 ft:

SAND, vfine, silty, clayey (10%), dense, no acid fizz, common burrows (clay-lined, sand-filled, 0.5-inch maximum diameter), sand - light-olive-gray (5Y6/1), mottled with grayish-orange (10YR7/4) in basal foot, clay - greenish-gray (5GY6/1).

**Run 60, 275 ft to 280 ft:**

275.0 ft to 275.5 ft:

SAND, vfine, silty, similar to 270.0 ft to 275.5 ft but slightly less clayey; shell fragments are present (up to 0.25 inch) but may be restricted to rind of core.

275.5 ft to 277.5 ft: No recovery.

277.5 ft to 280 ft: See run 61.

**Run 61, 280 ft to 281 ft. NOTE, interval from 277.5 ft to 280.0 ft (run 60) recovered during run 61.**

277.5 ft to 278.5 ft:

SAND, vfine, as at 275.0 ft to 275.5 ft. Chalky shell fragments (up to 0.5 inch) and wood fragments (up to 0.25 inch) in core interior.

----- gradational across 5 inches due to burrowing

278.5 ft to 281.0 ft:

SAND, vfine, silty, slightly clayey (5%) at top grades down to CLAY, silty, no acid fizz throughout interval, massive to blocky (ped?) fabric below 279.75 ft, sparse rootlets and roots (up to 0.125-inch diameter), yellowish-gray (5Y7/2).

**Run 62, 281 ft to 283.5 ft:**

281.0 ft to 281.5 ft:

SAND, silty, as in 279.0 ft to about 279.75 ft.

281.5 ft to 283.3 ft: No recovery.

283.3 ft to 283.5 ft: See run 63.

**Run 63, 283.5 ft to 286 ft: NOTE, interval from 283.3 ft to 283.5 ft (run 62) recovered during run 63.**

283.3 ft to 283.7 ft:

SILT, slightly clayey, friable, no acid fizz, yellowish-gray (5Y7/2).

----- gradational color and texture boundary

283.7 ft to 286.0 ft:

CLAY, silty, dense, variable acid fizz (none to moderate), mica (silt-*vfine*, 1-3%), common burrows (unlined, sand-filled (*vfine*), curving to irregular, up to 0.5-inch diameter), locally absent to locally common shell fragments (chalky, up to 0.25 inch, concentrated on a few parting surfaces but also disseminated in sand and clay), possible microfauna, clay - close to greenish-gray (5GY6/1)-dry and olive gray (5Y4/1) where slightly damp.

**Run 64, 286 ft to 290 ft:**

286.0 ft to 287.9 ft:

CLAY, silty, with sand-filled burrows and calcareous fauna as at 283.7 ft to 286.0 ft.

----- sharp, heavily burrowed

287.9 ft to 289.2 ft:

SILT, slightly clayey, friable, no acid fizz, common burrows (from overlying bed extend down to 289.2 ft or deeper, filled with clayey *vfine* sand, unlined), silt - yellowish-gray (5Y8/1), burrows - about pale brown (5YR5/2).

289.2 ft to 290 ft: No recovery.

**Run 65, 290 ft to 295 ft: No recovery.**

**Run 66, 295 ft to 300 ft:**

295.0 ft to 296.4 ft:

SILT, with clayey sand-filled burrows, as at 287.9 ft to 289.2 ft; sparse roots (hairline and slightly thicker).

296.4 ft to 300.0 ft: No recovery.

**Run 67, 300 ft to 305 ft:**

300.0 ft to 300.4 ft:

SILT, clayey (30-40%), friable, no acid fizz, common plant fragments, yellowish-gray (5Y8/1).

----- gradational due to burrowing

300.4 ft to 301.0 ft:

SAND, vfine, silty, friable, clayey (10%), mica (vfine, 1%), no acid fizz, massive, close to yellowish-gray (5Y7/2).

----- gradational due to burrowing

301.0 ft to 303.4 ft:

CLAY, silty, dense, no acid fizz in clay or sand, common burrows (horizontal and vertical, sand-filled (vfine), some with oxidation halos within the burrow, up to 0.5-inch diameter), clay - grayish-olive-green (5GY3/2), sand - darker than yellowish-gray (5Y7/2).

303.4 ft to 305.0 ft: No recovery.

**Run 68, 305 ft to 310 ft:**

305.0 ft to 307.6 ft:

CLAY with sand-filled burrows similar to 300.0 ft to 303.4 ft. Burrows constitute 50 percent of the core volume in basal foot. Sand in burrows is vfine to fine.

307.6 ft to 310.0 ft: No recovery.

**Run 69, 310 ft to 315 ft:**

310.0 ft to 313.0 ft:

SAND, vfine, locally vfine-fine, silty, clayey (10%), friable, weak acid fizz, locally common shell fragments (chalky, most abundant from 311.0 ft to 312.5 ft, sand-sized to 0.25 inch), sparse plant fragments (granule-sized), sparse irregular clay blebs are probable burrow linings (up to 0.25-inch diameter), sand - closest to yellowish-gray (5Y7/2), clay - grayish-green (10GY5/2).

313.0 ft to 315.0 ft: No recovery.

**Run 70, 315 ft to 320 ft:**

315.0 ft to 319.0 ft: No recovery.

319.0 ft to 320.0 ft: See run 71.

**Run 71, 320 ft to 325 ft: NOTE, interval from 319.0 ft to 320.0 ft (run 70) recovered during run 71.**

319.0 ft to 320.0 ft:

SAND, vfine, similar to 310.0 ft to 313.0 ft; locally sparse to common, chalky shell fragments.

320.0 ft to 325.0 ft:

SILT, clayey, locally with vfine sand (10-20%), friable, no acid fizz, close to grayish-yellow (5Y8/4); complexely mixed with:

SAND, vfine, very silty, slightly clayey, friable, no acid fizz, found in curving tube shapes and irregular masses (burrows or root casts?), close to pale-yellowish-brown (10YR6/2). This lithology decreases downward in the interval.

**Run 72, 325 ft to 330 ft:**

325.0 ft to 325.8 ft:

SILT and SAND, same two lithologies as at 320.0 ft to 325.0 ft.

325.8 ft to 327.0 ft:

CLAY, silty (decreases downward), sparse scattered wood fragments (up to 2.0 inches), common roots (up to 0.2-inch diameter), and branching rootlets, yellowish-gray (5Y8/1) to very pale orange (10YR8/2).

327.0 ft to 330.0 ft: No recovery.

**Run 73, 330 ft to 340 ft:**

330.0 ft to 332.3 ft:

CLAY, silty, dense, no acid fizz, common dark, locally branching rootlets, grayish-yellow (5Y8/4).

----- sharp

332.3 ft to 334.8 ft:

CLAY, silty, no acid fizz, grayish-green (10GY5/2), and SILT to vfine SAND, loose to friable, mica (silt-vfine, 1%), no acid fizz, parting lineations locally, close to yellowish-gray (5Y7/2).

The two lithologies are interbedded (mostly continuous beds, wavy to tabular) on a 1.0- to 0.1-inch scale. Common burrows (unlined, irregular, sand-filled (silt-vfine)) in top foot. Poker-chip parting locally.

----- sharp between core segments

334.8 ft to 336.1 ft:

SAND, vfine, silty, friable, no acid fizz, massive, closest to yellowish-gray (5Y7/2).

336.1 ft to 340.0 ft: No recovery.

**Run 74, 340 ft to 350 ft:**

340.0 ft to 340.5 ft: Disrupted sample from core catcher.

SAND, as at 334.8 ft to 336.1 ft. Large bivalve fragments in a clayey matrix.

3405.5 ft to 350.0 ft: No recovery.

**Run 75, 350 ft to 355 ft:**

350.0 ft to 355.0 ft:

SAND, vfine, silty, slightly clayey (less than 5% to locally 5-10%), friable, acid fizz-faint or absent, sparse to locally common shell fragments (chalky, sand-sized to 0.25 inch), common burrows (clay-lined, sand-filled (vfine) tubes up to 0.5-inch diameter), yellowish-gray (5Y7/2) to locally light-olive-gray (5Y6/1), clay linings - greenish-gray (5GY6/1).

**Run 76, 355 ft to 357 ft:**

355.0 ft to 355.8 ft:

SAND, vfine, shelly, as at 350.0 ft to 355.0 ft; except strongly calcite-cemented, hard, strong acid fizz, shells up to 1.0 inch in cross section.

355.8 ft to 357.0 ft: No recovery.

**Run 77, 357 ft to 360 ft:**

357.0 ft to 360.0 ft:

SAND, vfine, shelly, with clay-lined burrows as at 350.0 ft to 355.0 ft. Shells common to locally abundant.

**Run 78, 360 ft to 370 ft:**

360.0 ft to 360.4 ft:

SILT, clayey (30-40%), friable, mica (silt, 1%), no acid fizz, very pale orange (10YR8/2).

360.4 ft to 370.0 ft: No recovery.

**Run 79, 370 ft to 380 ft:**

370.0 ft to 372.9 ft:

SAND, vfine, silty, sparingly clayey (less than 5%), friable, slightly oxidized above 370.6 ft, no acid fizz above 370.6 ft, strong acid fizz from shells below that depth, common shells and shell fragments (mostly disseminated, shell concentration at 371.1 ft to 371.4 ft), common burrows (clay-lined, sand-filled, up to 0.5-inch diameter), browner than very light gray (N7).

372.9 ft to 376.3 ft:

CLAY, silty, locally absent, acid fizz absent to locally strong (from shells), sparse to locally abundant shells and shell fragments (mostly disseminated, shell concentration in basal 3 inches of interval, sand-sized fragments to 1.0-inch-wide whole valves), common to abundant burrows (unlined, sand-filled, mostly vertical, variable 0.25- to 1.0-inch diameter), clay - greenish-gray (5GY6/1), sand - lighter than light-olive-gray (5Y6/1).

376.3 ft to 380.0 ft: No recovery.

**Run 80, 380 ft to 385 ft:**

380.0 ft to 380.4 ft:

CLAY, silty, with abundant shells, as at base of 376.3-372.9-ft interval.

380.4 ft to 385.0 ft: No recovery.

**Run 81, 385 ft to 390 ft:**

385.0 ft to 389.2 ft:

CLAY, silty, shelly, with sand-filled burrows as at 372.9 ft to 376.3 ft. No shells present from 386.7 ft to 388.2 ft.

389.2 ft to 390.0 ft: No recovery.

**Run 82, 390 ft to 395 ft:**

390.0 ft to 390.55 ft:

SAND, vfine, silty, slightly clayey, slightly friable, moderate acid fizz, common shell fragments (chalky, sand-sized to 0.25 inch), possible clay-lined burrows, slightly browner than light-gray (N7).

----- lithologically sharp, strongly disrupted by burrows

390.55 ft to 391.2 ft:

SILT, slightly clayey (5%), no acid fizz, strongly disrupted by abundant burrows containing sand (vfine, clayey) from overlying bed, silt - dominantly grayish-yellow (5Y8/4), burrows - close to light-olive-gray (5Y6/1).

----- sharp

391.2 ft to 392.4 ft:

CLAY, slightly silty, subconchoidal fracture, no acid fizz, common laminations (less than 0.1 inch to 0.25 inch, fine silt, mostly continuous), sparse to common burrows (unlined sand-filled (vfine-silt), dominantly horizontal, 0.2 inch diameter and smaller), dominantly lighter than pale-olive (10Y6/2) with very light colored laminations.

392.4 ft to 395.0 ft: No recovery.

**Run 83, 395 ft to 400 ft:**

395.0 ft to 399.0 ft:

CLAY, silty, with small sand-filled burrows, similar to 391.2 ft to 392.4 ft. Few laminations; burrows are larger (up to 0.5 inch), more common, and have coarser (vfine-fine) fill. Broadly gradational color change from about 396.8 ft to 397.4 ft, lighter than pale-olive (10Y6/2) above, medium-light-gray (N6) below.

----- sharp between core segments

399.0 ft to 400.0 ft:

SAND, vfine-fine, silty, friable, no acid fizz, sparse burrows (clay-lined or clay-filled, up to 0.25 inch diameter), browner than light-gray (N7).

**Run 84, 400 ft to 410 ft:**

400.0 ft to 401.0 ft:

SAND, vfine-fine, silty, with clay-lined burrows as at 399.0 ft to 400.0 ft.

-----sharp between core segments

401.0 ft to 401.8 ft:

CLAY, silty, and SILT, friable, no acid fizz, interbedded on a 0.1- to 1.0-inch scale, dominantly tabular beds, parting lineation in silt layers, both lithologies cut by common burrows (sand-filled from above 401.0 ft, branching, unlined, maximum 1-inch diameter), clay - very light gray (N8), silt - yellowish-gray (5Y8/1).

----- sharp, irregular

401.8 ft to 402.2 ft:

SAND, vfine-fine, silty, friable, no acid fizz, sparse scattered quartz granules, common clay intraclasts (sand-sized to 1 inch), about light-olive-gray (5Y6/1).

----- sharp, burrowed, 1-inch relief

402.2 ft to 403.6 ft:

SILT, very clayey, friable to compact, no acid fizz, sparse dark rootlets (maximum 0.1 inch diameter), cut by common burrows (clay-lined, sand-filled from above, branching), silt - lighter than yellowish-gray (5Y7/2), burrow linings - brownish-gray (5Y6/1), burrow fills - pinkish-gray (5YR8/1).

----- sharp between core segments

403.6 ft to 404.8 ft:

SAND, vfine, very silty, friable, no acid fizz, common burrows (sand-in-sand, some with very thin clay linings, maximum 0.5-inch diameter), about yellowish-gray (5Y7/2).

404.8 ft to 410.0 ft: No recovery.

**Run 85, 410 ft to 420 ft:**

410.0 ft to 410.2 ft:

SAND, vfine, very silty, as at 403.6 ft to 404.8 ft.

----- sharp, slightly undulating

410.2 ft to 417.0 ft:

CLAY, silty, lightweight, no acid fizz, locally sparse to common silt laminae (tabular to wavy, mostly continuous, hairline to 0.25-inch thickness), parting lineations in silts, locally shows poker-chip parting, common burrows in basal foot (silt-filled, unlined, maximum 0.5-inch diameter), clay - medium-light gray (N6) and locally darker, silt - yellowish-gray (5Y8/1).

417.0 ft to 420.0 ft: No recovery.

**Run 86, 420 ft to 430 ft:**

420.0 ft to 420.7 ft:

CLAY, silty, with sand-filled burrows as at 416.0 ft to 417.0 ft.

----- gradational

420.7 ft to 420.9 ft:

SAND, vfine-fine, silty, friable, no acid fizz, common clay intraclasts (sand- and granule-sized), light-brownish-gray (5YR6/1).

----- sharp, over 1.25-inch relief, burrowed

420.9 ft to 425.5 ft:

CLAY, very silty, dense, faint acid fizz locally, mostly noncalcareous, common burrows down to 421.3 ft (sand-filled from above, branching, unlined about 0.25-inch diameter), 1-inch wood fragment at 421.5 ft, 2-inch wood fragment at 421.8 ft, common dark roots (maximum 0.25-inch diameter) and dark hairline rootlets, subtle texture mottling suggests root casts, clay - lighter than yellowish-gray (5Y/2), burrows - brownish-gray (5Y4/1).

----- broadly gradational

425.5 ft to 430 ft:

SILT, slightly clayey, friable, mica (silt, 1%), no acid fizz, root types as at 420.9 ft to 425.5 ft - decrease in abundance downward; sparse, widely spaced clay beds (up to 0.4-inch thick), parting lineations in silts, about yellowish-gray (5Y7/2).

**Run 87, 430 ft to 440 ft:**

430.0 ft to 432.0 ft:

SAND, vfine, silty, friable, no acid fizz, mica (silt-med, 1-3 %), massive, yellowish-gray (5Y7/2) at top grades down to slightly more neutral color (grayish) at base.

----- sharp, burrowed

432.0 ft to 435.0 ft:

CLAY, very silty at top - decreases downward, dense, no acid fizz, common burrows in top half of interval (sand-filled from above, unlined, maximum 0.5 -inch diameter), sparse dark hairline rootlets down to 433 ft, fine-silt laminations locally (0.1- to 0.5-inch thick, continuous, yellowish-gray (5Y7/2) at top grades down to greenish-gray (5GY6/1) mottled with yellowish-gray (5Y8/1) at base.

435.0 ft to 440.0 ft: No recovery.

**Run 88, 440 ft to 450 ft:**

440.0 ft to 450.0 ft:

CLAY, slightly to moderately silty, dense, brittle, mica (silt, tr); below 446 ft - subconchoidal fracture, rare slickensided fractures, common burrows (silt-filled, irregular); above 446 ft - abundant fine-silt laminations (mostly tabular and continuous, 0.05- to 0.2-inches thick, increase in abundance upward, displayed as lighter and darker color banding), clay - grayer than grayish-yellow-green (5GY7/2), silt - yellowish-gray (5Y8/1).

**Run 89, 450 ft to 460 ft:**

450.0 ft to 450.3 ft:

CLAY, as at 446.0 ft to 450.0 ft.

----- sharp between core segments

450.3 ft 452.0 ft:

SAND, vfine-fine, silty, moderately well-sorted, loose, high original water content-core now conforms to core box, no acid fizz, dark minerals (vfine-fine, 5%), common clay intraclasts in basal 3 inches ( yellowish-gray, sand-, granule- and small-pebble-sized), massive, about yellowish-gray (5Y7/2).

----- sharp between core segments

452.0 ft to 456.8 ft:

CLAY, slightly silty, dense, brittle, subconchoidal fracture, as at 446.0 ft to 450.0 ft. Thin fine-silt laminations at 452.0 ft to 452.8 ft.

----- sharp

456.8 ft to 456.9 ft:

SAND, vfine, silty, loose, no acid fizz, very light gray (N8).

----- sharp

456.9 ft to 460.0 ft:

CLAY, slightly silty, similar to 452.0 ft to 456.8 ft; but badly disrupted, probably swirled during coring, no acid fizz, slightly greener than very light gray (N8).

**Run 90, 460 ft to 470 ft:**

460.0 ft to 465.5 ft:

CLAY, disrupted core similar to 456.9 ft to 460.0 ft.

465.5 ft to 470.0 ft:

CLAY, slightly silty, dense, subconchoidal fracture, no acid fizz, isolated silt laminae (1 to 3 per foot of section, 0.1- to 0.5-inches thick, poorly developed parting lineations), common burrows below 469.5 ft (sand-filled (vfine), unlined, branching.), clay - greener than grayish-yellow-green (5GY7/2), silt - closest to yellowish-gray (5Y7/2).

**Run 91, 470 ft to 480 ft:**

470.0 ft to 472.1 ft:

CLAY, silty, dense, subconchoidal fracture, mica (1-3%), moderate acid fizz from shells only, sparse scattered shell fragments (sand-sized and rarely larger), common burrows in bottom half of interval (sand-filled (vfine), unlined, horizontal, 0.25- to 0.5-inch diameter), greenish-gray (5GY6/1).

----- sharp, undulating, minimum 1-inch relief

472.1 ft to 473.2 ft:

SAND, vfine, silty, mica (silt-vfine, 1%), weak to moderate acid fizz, irregular clay blebs (maximum 0.5 inch) are probable burrow linings, sparse shell fragments (chalky, sand-sized to 0.25 inch), about yellowish-gray (5Y7/2).

----- sharp, undulating, 0.5-inch relief

473.2 ft to 476.2 ft:

SILT, slightly clayey, friable, mica (silt, tr), no acid fizz; locally sparse to common, dark hairline rootlets, abundant burrows (sand-filled (vfine-silt), shelly, from above, clay-lined, branching, 0.5-inch to over 1 inch in diameter), yellowish-gray (5Y8/1).

----- indistinct contact

476.2 ft to 477.2 ft:

CLAY, silty, and SILT, complexly interbedded at a scale of 0.5 inches and less, no acid fizz, medium light gray (N6).

477.2 ft to 480.0 ft: No recovery.

**Run 92, 480 ft to 483 ft:**

480.0 ft to 480.25 ft:

CLAY, silty, no acid fizz, common burrows (sand-filled (vfine-silt), irregular), about yellowish-gray (5Y8/1).

----- sharp

480.25 ft to 481.9 ft:

SAND, vfine, slightly silty and clayey, friable, mica (silt-vfine, 1%), moderate acid fizz from shells, sparse to common (at base) shell fragments (sand-sized to 0.5 inch, chalky), sparse plant fragments (sand-sized), light-yellowish-gray (5Y8/1), to light-olive-gray (5GY6/1) at base.

----- sharp, burrowed

481.9 ft to 482.0 ft:

CLAY, silty, as in lower core at 483.0 ft to 487.7 ft.

482.0 ft to 483.0 ft: No recovery.

**Run 93, 483 ft to 490 ft:**

483.0 ft to 487.7 ft:

at top: CLAY, silty, irregular fracture, mica (silt, tr), no acid fizz, common dark hairline rootlets (decrease in abundance downward), common burrows down to 483.7 ft (sand-filled (vfine) from above, irregular, branching), light-greenish-gray (5GY8/1);

grades down to

SILT, clayey, friable, mica (silt, 1-3%), no acid fizz, indistinct texture mottling, close to very pale orange (10YR8/2).

487.7 ft to 490.0 ft: No recovery.

**Run 94, 490 ft to 500 ft:**

490.0 ft to 490.3 ft:

CLAY, silty, badly disrupted during coring, faint acid fizz from matrix, abundant shell fragments (sand-sized to 0.25 inch), possible sand-filled burrows, greenish-gray (5GY6/1).

----- sharp, 1-inch relief

490.3 ft to 491.1 ft:

SILT and SAND, vfine, friable, mica (silt-fine, 3%), no acid fizz, distinctly texture mottled, irregular clay blebs are probable burrow linings, very pale orange (10YR8/2) at top grades down to yellowish-gray (5Y7/2).

----- sharp between core segments

491.1 ft to 494.75 ft:

CLAY, silty, to clayey SILT, friable, mica (silt, 3-5%), no acid fizz, sparse plant material (disseminated, sand- and granule-sized), stick or root at 493.6 ft (charcoal, 1.25-inch long), possible clay-lined burrows in top 1.25 ft, clay - close to grayish-yellow-green (5GY7/2), sand/silt - close to yellowish-gray (5Y8/1).

494.75 ft to 500.0 ft: No recovery.

**Run 95, 500 ft to 510 ft:**

500.0 ft to 501.25 ft:

SILT, and SAND, vfine, well-sorted, original high water content-core now conforms to core box, loose, mica (silt-fine, 1%), dark minerals (silt, vfine, 1-3%, possible glauconite), faint acid fizz from shell fragments, sparse scattered shell fragments (sand-sized), yellowish-gray (5Y7/2).

----- sharp between core segments

501.25 ft to 502.0 ft:

SILT, slightly clayey, friable, mica (silt, 3-5%), no acid fizz, common burrows (sand-in-sand, clay-lined, with spreiten, about 0.2-inch diameter), yellowish-gray (5Y7/2).

----- sharp between core segments

502.0 ft to 502.5 ft:

SILT, and SAND, vfine, as at 501.25 ft to 500.0 ft.

----- sharp between core segments

502.5 ft to 503.4 ft:

CLAY, silty, to clayey SILT, friable, mica (silt, 3-5%), no acid fizz, common burrows (sand- (vfine) and silt-filled, unlined, subhorizontal, 0.1- to 0.25-inch diameter), greener than yellowish-gray (5Y7/2).

Sample bag marked 504+ ft:

SAND, med-cse, well-sorted, loose, no acid fizz, dark minerals (1-3%), yellowish-gray (5Y8/1).

Sample bag marked 504.5 ft: four-inch-long core segment

SAND, med, well-sorted, yellowish-gray (5Y8/1); with adhering pebbles (quartz, phosphate, and lithic fragments) of uncertain origin.

504.5 ft to 510 ft: No recovery.

BASE OF HORN ISLAND COREHOLE

# MISSISSIPPI BUREAU OF GEOLOGY

DATE 5/17/91

File No. O-042

USGS-Horn Island No. 1 Corehole

Mississippi, Jackson County, Section 22, Township 9S, Range 7W

Driller: U.S. Geological Survey

Log Interval: 188 ft to 516 ft

Recorder: Gilliland

Datum: ground

