6. SITE 575[1]

Shipboard Scientific Party[2]

HOLES 575, 575A, 575B, 575C

Date occupied: 20 April 1982

Date departed: 24 April 1982

Time on site: 3.9 days

Position: 05°51.00′N, 135°02.16′W

Water depth (sea level; corrected m, echo-sounding): 4536

Water depth (rig floor; corrected m, echo-sounding): 4552

Bottom felt (m, drill pipe): 4550

Penetration (m): 575—98.6
575A—208.4
575B—119.0
575C—15.8

Number of cores: 575—11
575A—33
575B—14
575C—2

Total length of cored section (m): 575—98.6
575A—114.6[3]
575B—115.7[3]
575C—15.8

Total core recovered (m): 575—99.35
575A—140.53[4]
575B—118.68[4]
575C—15.91

Core recovery (%): 575—100
575A—136[4]
575B—119[4]
575C—100

Oldest sediment cored:
Depth sub-bottom (m): 208.4
Nature: Nannofossil ooze
Age: earliest Miocene
Measured velocity (km/s): 1.6

Basement: Not reached

Principal results: Site 575 (05°51.00′N, 135°02.16′W), in water 4536 m deep, overlies acoustically well stratified sediments at least 0.57 s thick in a region where basement relief is minimal. Seismic records show evidence of considerable erosion throughout the region, and there is a seamount 1000 m high 10 km to the northeast. The operational objective of drilling this site, which was to recover a complete and undisturbed section of Eocene to Quaternary central Pacific sediments, was met only partially because of a lack of time. Hydraulic piston coring was used to drill four holes: 575 (0 to 98.6 m sub-bottom, 11 cores); 575A (93.8 to 208.4 m, 33 cores); 575B (3.3 to 119.0 m, 14 cores); and 575C (0 to 15.8 m, 2 cores).

A nearly complete and undisturbed section from lowest Miocene (22 Ma) to Pleistocene was recovered. The section was divided into a topmost cyclic siliceous calcareous ooze (0 to 32.3 m sub-bottom) and a lower calcareous ooze chalk (30 to 208.4 m sub-bottom). Centimeter-thick sandy to pebbly turbidite layers, containing mostly sand-sized foraminifers, basalts, and/or volcanic glass, were intercalated throughout the section.

With few exceptions, all major planktonic microfossils are well represented. They allow most early Miocene to Pleistocene biozonal boundaries to be recognized. The exceptions occur in the very compressed upper 30 m of the section, where the zones are difficult to distinguish.

The rates of sediment accumulation are variable but moderate (15.4 to 20 m/m.y.) in the older (12.5 to 22 Ma) part of the cored section and much lower (about 3.6 m/m.y.) and constant in the younger part (0 to 9 Ma). A hiatus, or perhaps a further compression of the depositional record, occupies the interval from 9 to 12.5 Ma.

The changes in natural remanent magnetization (NRM) intensity are correlated with changes in both sedimentation rate and lithology. The values are generally high (on the order of 10^{-6} G or above) in the upper unit (0 to 30 m) and in the brown subunits of the lower calcareous chalk unit. As at other sites, the physical properties are sensitive indicators of changes in lithology, particularly changes in carbonate content. Pore-water chemistry shows trends consistent with the findings at previous sites.

BACKGROUND AND OBJECTIVES

The JOIDES Ocean Paleoenvironment Panel proposed Site 575 as the northernmost in a three-site north–south transect at a latitude of approximately 133°W. Site 575 is on the northern flank of the equatorial high-productivity zone and just south of the Clipperton Fracture Zone. The sedimentary section recovered at Site 575 documents the migration of the site from about 3°S at 39 Ma, across the equatorial high-productivity zone, to its present location at about 5°50′N. Our operational objectives were to recover a complete and undisturbed section as deep as the hydraulic piston core (HPC) allowed, to repeat the hydraulic piston coring to ensure complete recovery, and, if time permitted, to rotary core the rest of the section to basement.

A detailed survey of the area around Site 575 was conducted for the Joint Oceanographic Institutions by the R/V *Thomas Washington* (Ariadne Leg I). Seabeam bathymetry, as well as digital, single-channel, water, and air gun data were collected. Additional seismic data were collected for the vicinity of Site 575 by Lamont's R/V *Conrad* (*Conrad* 15-1) in 1971. The region around Site

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[1] Mayer, L., Theyer, F., et al., *Init. Repts. DSDP*, 85: Washington (U.S. Govt. Printing Office).

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[3] Not including overlap (see Operations).

[4] Including overlap (see Operations).

575 is characterized by moderate relief, with water depths ranging from 4500 m in the northeastern end of the survey area to approximately 4680 m in the western end (Fig. 1). Ten kilometers northeast of the site, a double-peaked seamount rises 1000 m above the regional mean seafloor depth.

The section is typically 0.5 to 0.6 s thick and seismically well stratified (Fig. 2). There is evidence of erosion throughout the area in both the low-frequency and 3.5-kHz records. Some of the erosion can be linked directly to the seamount (moating), but much of it seems to be regional in extent and may be related to the site's proximity to the Clipperton Fracture Zone. The spot selected for coring is one of the few places in the area that has retained the youngest part of the section (Fig. 2). This spot may be protected by the seamount from erosion by regional currents.

The ridges and valleys trend east–west in the eastern end of the area and north–northwest/south–southeast in the western end. The drill site is in a flat, elongated area that trends east–west and overlies a very slight basement depression. Sediment thickness is approximately 0.57 s to acoustic basement (Fig. 2); there is some seismic evidence that the acoustic basement is not basalt. Except for the seamount, basement relief is minimal, with a subdued north–northwest/south–southeast trend.

The closest previously drilled DSDP site is Site 70 (6°20.08′N, 140°21.72′W), which was drilled on Leg 8. Site 70, however, is north of the Clipperton Fracture Zone and is thus probably less like the section at Site 575 than the section at Site 71. At Site 71 (at 4°28.28′N, 140° 18.91′W), 558 m of uppermost Eocene to Quaternary calcareous and siliceous oozes and chalks were recovered. Acoustic basement at Site 71 proved to be indurated chalk and chert.

OPERATIONS

The D/V *Glomar Challenger* arrived in the vicinity of Site 575 at 0000Z on 21 April after completing the 150-mi. steam from Site 574 in 16.5 hr. In transit we collected continuous seismic profiles (air gun and 3.5 kHz), bathymetric, and magnetic data. Because the bathymetric features in the region of the proposed site run roughly northwest–southeast, we planned an approach that took us through a point northeast of the site and from there along a track at right angles to the orientation of

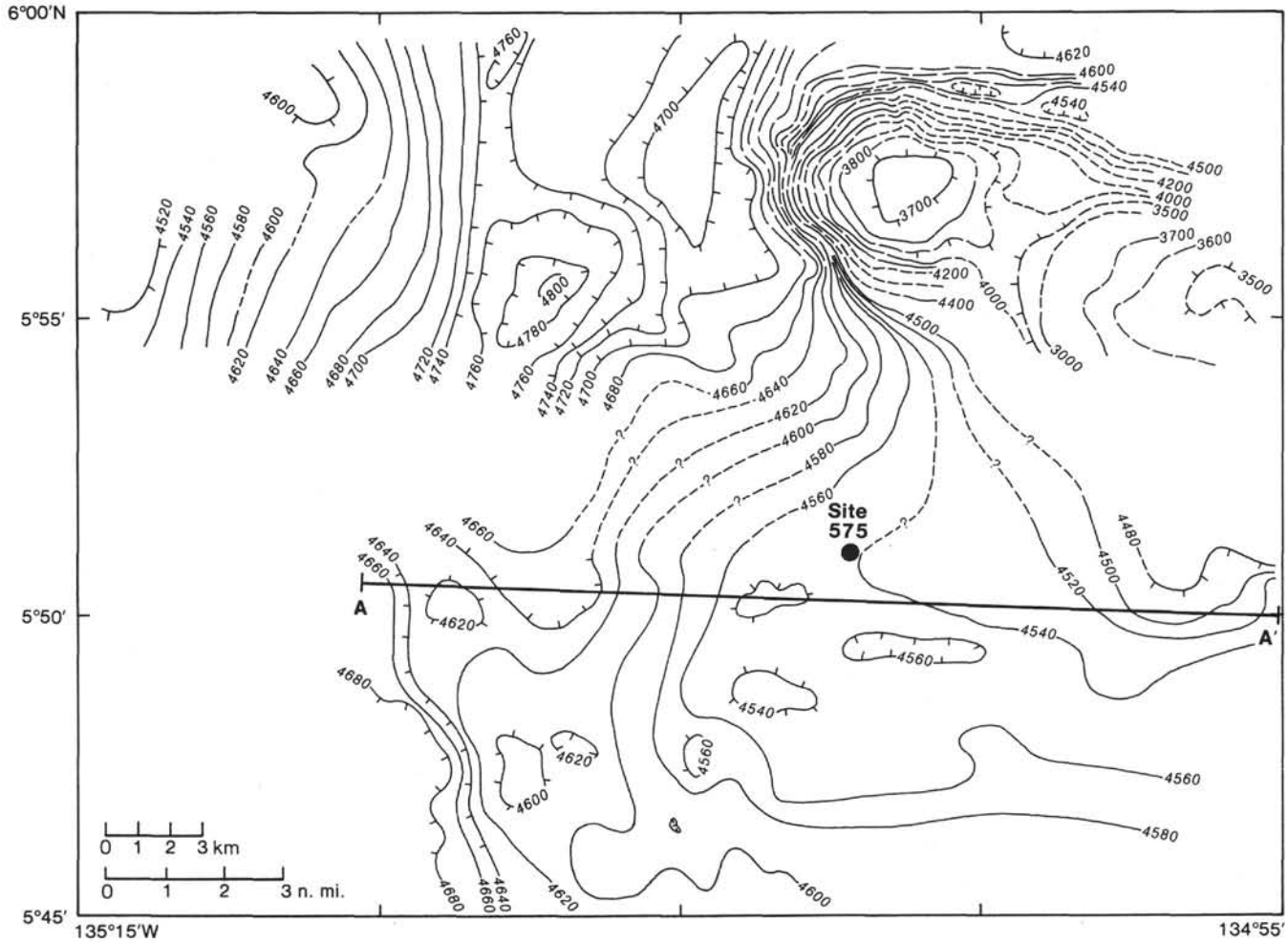

Figure 1. Bathymetry at Site 575 (20-m contour interval; 100-m contour interval for depths <4500 m). Uncorrected water depth (velocity = 1.5 km/s) of site is 4528 m. Corrected water depth is 4536 m. Profile A–A′ is the seismic profile shown in Figure 2.

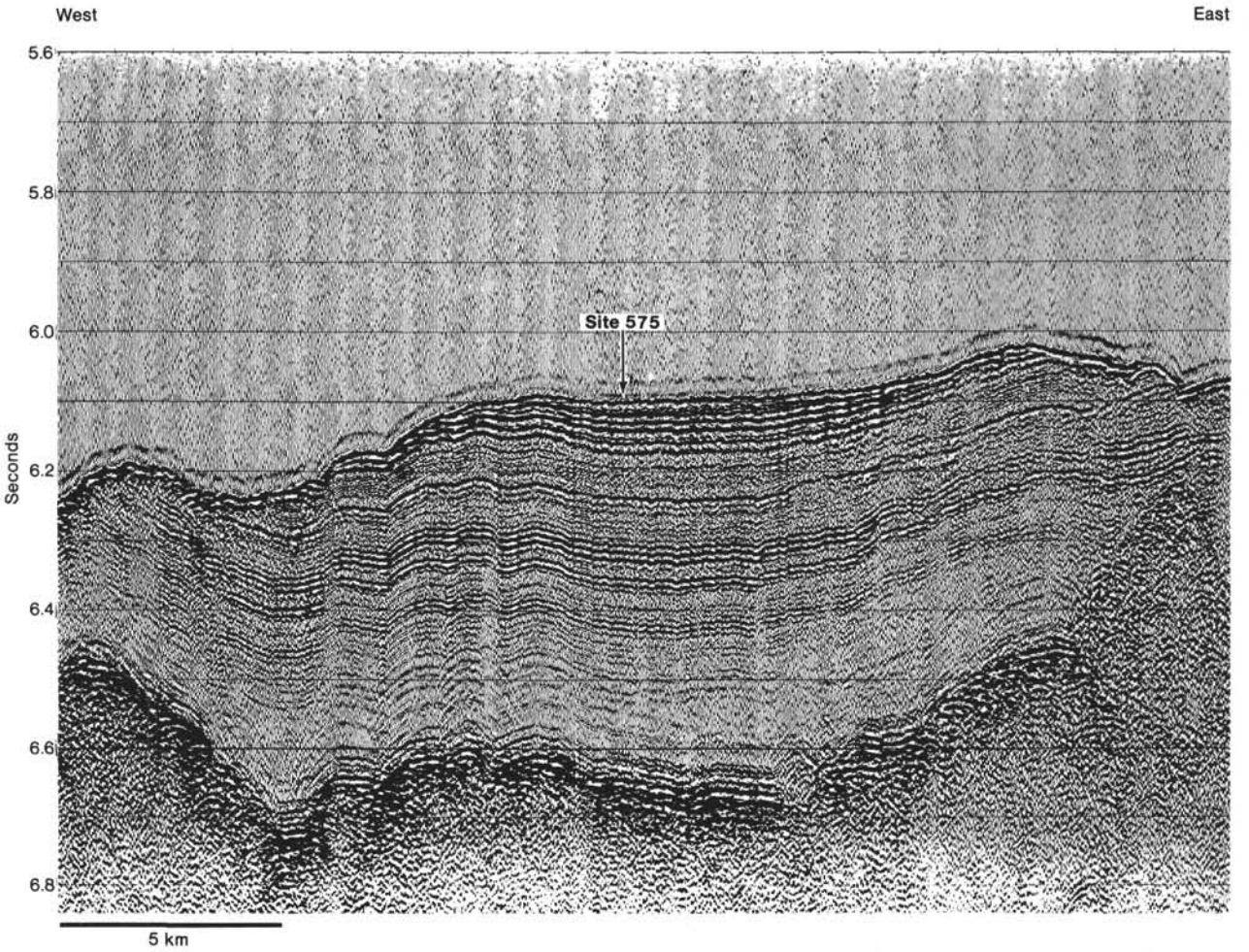

Figure 2. Seismic profile near Site 575 (see Shipley et al., this volume).

the bathymetry. Our target was a small flat region with a water depth of about 4550 m (uncorrected) and approximately 0.58 s of sediment overlying acoustic basement.

We entered the area covered by Seabeam bathymetry (from R/V *Thomas Washington*, Ariadne Leg I) at 0010Z on 21 April. As at Site 574, relative bathymetric relationships displayed on the Seabeam chart agreed with our findings, but the absolute depth values disagreed by 10 to 30 m. In general, the Seabeam depths were greater than those measured by the *Challenger's* echo sounder. Nonetheless, we had little difficulty in finding our location with respect to the bathymetry and the seismic section, and at 0104Z we crossed the proposed site. We continued past the site for approximately 1 n. mi., and at 0113Z we turned to return to the proposed site.

An unexpectedly strong current pushed us quite a bit north as we tried to return to the site, but since the flat area we wanted to drill extended to the north we dropped the beacon (at 0140Z, 21 April). We continued to survey for 1 n. mi. past the beacon.

The beacon was acquired quickly, and drill pipe run-in began at 0400Z on 21 April. In accordance with our primary directive, we rigged the 9.5-m variable-length HPC (VLHPC) and began coring. The first core established the mudline at 4550 m. We acquired 10 more 9.5-m hydraulic piston cores without difficulty. We exerted more that 40,000 lb. of pullout force on Core 12 (which was at 98.6 m sub-bottom), however, and the quick disconnect parted, leaving the core barrel in the mud.

We realized that we did not have enough time both to hydraulic piston core the upper section twice and to rotary drill to basement. Since a switch to rotary drilling would involve 24 hr. of pipe trip time, we decided not to try to rotary drill to basement but to re-rig the VLHPC with a 5-m barrel to see how deep we could get. To try to reduce the necessary pullout force we decided to wash 5 m after each core and then to pull up 2 m before shooting the next core. By coring in this manner the core barrel would travel through 2 m of wash and 3 m of previously uncored material. The resulting core is, in essence, only 3 m long, but the surface area of the corer exposed to undisturbed sediment is reduced.

We washed down to just above our deepest penetration in Hole 575 and began Hole 575A at 93.8 m sub-bottom. We collected five 3-m cores. The sediment seemed rather soft, so we tried a full 5-m core for Core 6, but we needed to exert 30,000 lb. of pullout force to retrieve the core barrel, so we went back to the 3-m method. We collected a total of 33 3-m cores and penetrated to a sub-bottom depth of 208.4 m (Table 1). The 1- to 2-m wash

Table 1. Coring summary, Site 575.

Core	Date (Apr. 1982)	Local time (hr.)	Depth from drill floor (m)	Depth below seafloor (m)	Length cored (m)	Length recovered (m)	Recovery (%)
Hole 575							
1	21	0502	4550.2–4557.5	0.0–7.3	7.3	7.36	100+
2	21	0625	4557.5–4567.0	7.3–16.8	9.5	9.66	100+
3	21	0735	4567.0–4576.5	16.8–26.3	9.5	9.70	100+
4	21	0830	4576.5–4585.2	26.3–35.0	8.7	8.72	100+
5	21	0945	4585.2–4594.7	35.0–44.5	9.5	9.60	100+
6	21	1043	4594.7–4604.0	44.5–54.0	9.5	9.53	100+
7	21	1143	4604.0–4613.5	54.0–63.5	9.5	9.62	100+
8	21	1311	4613.5–4623.0	63.5–73.0	9.5	9.56	100+
9	21	1420	4623.0–4630.2	73.0–80.2	7.2	7.22	100+
10	21	1530	4630.2–4639.1	80.2–89.1	8.9	8.91	100+
11	21	1640	4639.1–4648.6	89.1–98.6	9.5	9.47	99
					98.60	99.35	100
Hole 575A							
1	21	2108	4644.0–4649.1	93.8–98.9	5	5.11	100
2	21	2230	4647.4–4652.5	97.2–102.3	5	5.12	100
3	21	2330	4651.3–4655.3	101.1–105.3	5	4.25	85
4	22	0050	4655.4–4660.1	105.2–109.9	5	4.73	95
5	22	0150	4659.2–4664.3	109.0–114.1	5	5.06	100
6	22	0300	4664.3–4669.3	114.1–119.1	5	5.13	100
7	22	0400	4668.6–4673.5	118.4–123.3	5	4.90	98
8	22	0500	4673.3–4676.6	123.1–126.4	5	3.72	65
9	22	0610	4675.5–4678.4	125.4–128.2	5	2.92	58
10	22	0720	4677.5–4682.3	127.3–132.1	5	4.78	96
11	22	0820	4680.8–4685.9	130.6–135.7	5	5.05	100
12	22	0920	4685.3–4689.8	135.1–139.6	5	4.45	89
13	22	1030	4689.0–4693.1	138.8–142.9	5	4.11	82
14	22	1130	4692.1–4696.6	141.9–146.4	5	4.50	90
15	22	1305	4694.9–4699.3	146.7–149.1	5	4.36	87
16	22	1420	4698.2–4702.1	148.0–151.9	5	3.94	79
17	22	1530	4700.2–4703.9	150.0–153.7	5	3.74	75
18	22	1640	4702.7–4707.2	152.5–157.0	5	4.48	90
19	22	1750	4707.0–4711.0	156.8–160.8	5	3.96	79
20	22	1906	4711.0–4714.9	160.8–164.7	5	3.91	78
21	22	2025	4714.9–4718.9	164.7–168.7	5	4.00	80
22	22	2135	4718.3–4722.6	168.3–172.4	5	4.32	86
23	22	2245	4722.3–4725.2	172.1–175.0	5	3.91	78
24	23	0005	4724.4–4729.4	174.2–179.2	5	4.99	100
25	23	0059	4727.4–4732.2	177.2–182.0	5	4.83	97
26	23	0205	4730.3–4735.9	180.1–185.7	5	4.76	95
27	23	0310	4735.1–4738.6	184.9–188.4	5	3.56	71
28	23	0410	4737.4–4740.8	187.2–190.6	5	3.36	67
29	23	0510	4739.9–4743.9	189.7–193.7	5	4.05	81
30	23	0615	4563.8–4748.1	193.6–197.9	5	4.31	86
31	23	0715	4747.6–4752.0	197.4–201.8	5	4.41	88
32	23	0820	4751.5–4755.3	201.3–205.1	5	3.89	78
33	23	0920	4754.5–4758.6	204.3–208.4	5	4.06	81
					165.00	142.67	136
Hole 575B							
1	23	1230	4553.5–4563.0	3.3–12.8	9.5	9.60	100
2	23	1340	4562.2–4571.7	12.0–21.5	9.5	9.52	100
3	23	1450	4571.2–4579.9	21.0–29.7	9.5	8.70	92
4	23	1600	4579.7–4589.3	29.5–39.1	9.5	9.64	100
5	23	1715	4589.2–4598.5	39.0–48.3	9.5	9.30	98
6	23	1825	4598.2–4606.2	48.0–56.0	9.5	8.02	84
7	23	1935	4605.6–4614.9	55.4–64.7	9.5	9.37	99
8	23	2045	4614.9–4624.0	64.7–73.8	9.3	9.14	98
9	23	2200	4624.0–4631.6	73.8–81.4	9.5	7.61	80
10	23	2330	4631.6–4641.2	81.4–91.0	9.5	9.63	100
11	24	0038	4641.1–4649.8	90.9–99.6	9.5	8.69	91
12	24	0145	4649.8–4659.4	99.6–109.2	9.5	9.62	100
13	24	0305	4659.4–4664.3	109.2–114.1	5.0	4.90	98
14	24	0405	4664.3–4669.2	114.1–119.0	5.0	4.94	99
					123.80	118.68	119
Hole 575C							
1	24	0715	4549.2–4555.5	0.0–6.3	6.3	6.39	100
2	24	0850	4555.5–4565.0	6.3–15.8	9.5	9.52	100
					15.8	15.91	100

Note: All four holes were hydraulic piston cored. Lengths cored and recovered for Holes 575A and 575B include overlap (see Operations).

zone at the top of each core was of course badly disturbed, but the remaining 3 to 4 m were, in general, almost completely undisturbed. For reasons we do not yet understand, starting each core above the bottom of the hole appears to improve core quality. We probably could have gone deeper with the 3-m cores, but we decided not to, because time was running out and we wanted to get cores from overlapping depth intervals in at least the upper 100 m of the section.

At 1700Z on 23 April, we pulled back up to the mudline and started Hole 575B with the 9.5-m VLHPC. We decided to continue to shoot the core from 2 m above the bottom of the hole and proceeded to take 12 7.5-m cores, coring to a sub-bottom depth of 109.2 m. At that depth we switched to the 5-m HPC and took two full-length 5-m cores. Hole 575B ended at 119.0 m sub-bottom. When we pulled back out to the mudline we took two more 9.5-m cores (Hole 575C) to attempt to retrieve Plio–Pleistocene sediment that was undisturbed and therefore suitable for the study of the site's magnetostratigraphy. This attempt was successful: we recovered two undisturbed cores representing the interval from 0 to 15.8 m sub-bottom. Core 2 of Hole 575C came on deck at 1650Z on 24 April. We had agreed to begin pulling pipe at 1700Z, so this core was the last acquired on Leg 85. The pipe was pulled and the rig floor secured in a record time of 7.5 hr. At 2250Z on 24 April the *Glomar Challenger* turned toward the setting sun and got under way for an 8-day steam to Hawaii and the conclusion of Leg 85.

LITHOSTRATIGRAPHY

Lithostratigraphic Subdivision

We divided the sediments at Site 575 into two units: a cyclic siliceous calcareous ooze (Unit I) and a calcareous ooze chalk (Unit II). The division into units is based on sediment composition as determined from smear slide observation; a further division into subunits was based on color (Table 2). Thin turbidites of foraminiferal ooze occur throughout the succession.

Table 2. Lithostratigraphy of Site 575.

Unit	Unit sub-bottom depth (m)	Unit depth (Hole-Core-Section, level in cm)
I (cyclic siliceous calcareous ooze)		
A (mottled brown ooze)	0–14.1	575-1-1, 1 to 575-2-5, 75 575B-1-1, 1 to 575B-2-6, 45 575C-1-1, 1 to 575C-2-4, 150
B (brown white ooze)	14.1–25.7	575-2-5, 75 to 575-3-6, 140 575B-2-6, 45 to 575B-4-3, 150 575C-2-4, 150 to 575C-2,CC
C (gray brown ooze)	25.7–32.3	575-3-6, 140 to 575-4-4, 150 575B-4-3, 150 to 575B-5-4, 70
II (calcareous ooze chalk)		
A (pale brown ooze)	32.3–68.5	575-4-4, 150 to 575-8-4, 50 575B-5-4, 70 to 575B-10-2, 30
B (green ooze)	68.5–94.6	575-8-4, 50 to 575-11-4, 100 575A-1-1, 1 to 575A-1,CC 575B-10-2, 30 to 575B-14-2, 150
C (yellow brown ooze)	94.6–136.5	575-11-4, 100 to 575-11,CC 575A-2-2, 20 to 575A-12-1, 150 575B-14-2, 150 to 575B-14,CC
D (varicolored ooze chalk)	136.5–208.4	575A-12-1, 150 to 575A-33,CC

Note: Sub-bottom depths for Subunits IA to IIB are calculated from Hole 575 and for Subunits IIC to IID from Hole 575A only.

Unit I: Cyclic Siliceous Calcareous Ooze (upper Miocene to Pleistocene)

The sediments in Unit I (0 to 32.3 m) contain siliceous and calcareous microfossils, amorphous iron oxides, pyrite, and a relatively large amount of pelagic clay (up to 30%). The high clay content is consistent with the low sediment accumulation rate calculated for the upper 30 m of the site (Table 3). Bioturbation and sediment reworking are extensive, as evidenced by the presence of intense mottling of brownish color and mixtures of biogenic particles of different ages. The calcareous microfossils are intensely fragmented, and many are faint or barely visible under the microscope, characteristics suggestive of extensive dissolution. We divide the cyclic siliceous calcareous ooze unit into Subunits IA (mottled brown ooze), IB (brown and white ooze), and IC (gray brown ooze).

Subunit IA: Mottled Brown Ooze (upper Miocene to Quaternary)

The mottled brown ooze subunit (0 to 14.1 m) is heavily bioturbated, contains abundant burrows (Planolites common), and varies from brownish white (10YR 8/1 to 9/2) through dark grayish brown (10YR 6/2 to 3/2). The darker brown color probably results from the relative abundance of clays and iron oxides (up to 30%). The sediment ranges from clayey siliceous calcareous ooze to siliceous nannofossil and calcareous radiolarian diatom oozes. Microfossil composition varies widely. Nannofossils are rare to abundant (5 to 70%), foraminifers are absent to common (0 to 30%), and radiolarians and diatoms are common (5 to 20%). In terms of particle size, clay is abundant (40 to 75%) and silt and sand are common to abundant (silt, 25 to 40%; and sand, 5 to 40%). This subunit was 2 m thicker in Hole 575C than in Hole 575, probably because recovery in the Hole 575C mudline core was better. This subunit grades down into the brown white ooze.

Subunit IB: Brown and White Ooze (upper Miocene)

The brown white ooze subunit (14.1 to 25.7 m) ranges from very pale brown (10YR 7/3) to white (N9) radiolarian nannofossil to nannofossil oozes, and it contains very little pelagic clay (0 to 1%). Foraminifers are rare (trace to 5%), and nannofossils are common to dominant (14 to 92%). Biogenic silica may comprise up to 35% of the sediment, with radiolarians often more abundant than diatoms. The grain-size distribution is similar to that in the overlying (mottled brown ooze) subunit. This subunit grades down into the gray brown ooze.

Subunit IC: Gray Brown Ooze (upper Miocene)

The gray brown ooze (25.7 to 32.3 m) is a mottled light gray pale brown (2.5Y 7/2, 10YR 7/3) to dark brown (10YR 5/3 to 3/3) clayey radiolarian ooze. Both radiolarians and pelagic clay are abundant (radiolarians, 45%; pelagic clay, 40%), and calcite is common (10%). A layer of volcanic ash occurs at 29.5 m. There is a gradational contact between Subunit IC and the underlying (calcareous ooze chalk) unit.

Unit II: Calcareous Ooze Chalk (lower to upper Miocene)

The calcareous ooze chalk (32.3 to 208.4 m) comprises the remainder of the section drilled at Site 575. It consists of nannofossil oozes, with rare to common siliceous microfossils (0 to 20%) and foraminifers (0 to 20%). The sediments of Unit II contain rare to common sand (3 to 20%), rare to abundant silt (3 to 50%), and abundant to dominant pelagic clay (45 to 90%). Color was used to divide the unit into Subunits IIA (pale brown ooze), IIB (green ooze), IIC (yellow brown ooze), and IID (varicolored ooze chalk). The color changes do not seem to reflect major changes in sediment composition, although the more siliceous layers tend to be darker in color and display more prominent burrow mottling.

Subunit IIA: Pale Brown Ooze (middle to upper Miocene)

The pale brown ooze subunit (32.3 to 68.5 m) is characterized by its uniform very pale brown (10YR 8/3), brown white (10YR 8/1 to 8/2), to white (N9) color, and it is virtually devoid of burrow mottling. This subunit is composed of siliceous nannofossil to nannofossil oozes. In terms of particle size, clay is dominant (80 to 88%), sand is common (9 to 17%), and silt is rare to common (3 to 10%). Nannofossils are abundant (45 to 60%), and radiolarians, diatoms, and foraminifers are rare to common (radiolarians, 4 to 12%; diatoms, 1 to 6%; foraminifers, 2 to 6%). Subunit IIA rests with a very sharp contact on the underlying green subunit. The contact is a prominent color change from very pale brown (10YR 8/2) to light greenish gray (5G 8/1).

Subunit IIB: Green Ooze (lower to middle Miocene)

The green ooze subunit (68.5 to 94.6 m) consists of weakly mottled, greenish white (5G 9/1) to light greenish gray (5GY 7/1 to 8/1) siliceous nannofossil to nannofossil oozes that are similar in composition to those in the overlying subunit. Volcanic debris (particles about 3 mm in diameter) occurs in Cores 575-9 and 575-10, and a pebble of ignimbrite was found in Core 10. The green subunit grades down into the yellow brown subunit.

Subunit IIC: Yellow Brown Ooze (lower Miocene)

The yellow brown ooze subunit (94.6 to 136.5 m) contains yellowish white (2.5Y 8/1 to 8.2) to yellow (5Y 7/3), yellow brown (2.5Y 7/4, 10YR 6/4), and very pale brown (10YR 7/3 to 8.4) nannofossil to siliceous nannofossil ooze. The darker yellow brown (10YR 7/4) sediments tend to occur as discrete layers, and they are more bioturbated and richer in biogenic silica (up to 50%). In terms of particle size, sand in this subunit is common (5 to 20%), silt is common to abundant (5 to 50%), and clay is abundant (43 to 85%). Nannofossils are abundant to dominant (50 to 90%), radiolarians are common (3 to 20%), diatoms are rare to common (3 to 10%), and foraminifers are trace to common (>1 to 9%). Pyrite, iron oxides, and pelagic clay are also present in trace amounts. The yellow brown subunit grades down into the varicolored subunit.

Subunit IID: Varicolored Ooze Chalk (lower Miocene)

The varicolored ooze chalk subunit (136.5 to 208.4 m) is composed of yellow white (5Y 8/1), white (N9), pale purple (5P 7/2 to 8/2), gray (N6 to N7), and greenish gray (5G 8/1–9/1 to 5GY 7/1–8/1) foraminiferal nannofossil ooze, nannofossil ooze, and nannofossil chalk. The subunit is characterized by color banding and mottling, with streaks of the darker colors, particularly pale purple (5P 6/1 to 6/2). Between 158 and 178 m sub-bottom, the sediments are more uniform in color (brownish white to very pale brown and greenish white to greenish gray) and less banded and mottled. Sand-sized particles are rare to abundant (1 to 50%) in Subunit IID, silt is common to abundant (5 to 40%), and clay is common to dominant (20 to 90%). Nannofossils are common to dominant (30 to 93%), foraminifers are rare to abundant (2 to 50%), and radiolarians and diatoms occur in amounts from trace to common (radiolarians, <1 to 7%; diatoms, <1 to 7%). Iron oxides are rare to common (1 to 10%), and there are traces of pyrite. The content of biogenic silica decreases gradually from about 10% to 1–2% with increasing depth.

The section below 150 m is characterized by sporadic thin (5 cm or less) beds of chalk. The presence of undisturbed beds of chalk suggests that the chalk ooze variations at the other Leg 85 sites are primary features and not entirely drilling artifacts.

Foraminiferal Turbidites

Beds of foraminiferal sand and ooze are common throughout the succession cored at Site 575 (Fig. 3). These beds vary in thickness from a few millimeters to 45 cm and generally contain a darker colored layer of altered volcanic glass at the base. In general, the basal contacts of the foraminifer-rich turbidites are planar (possibly erosional). At some levels the volcanic glass includes welded aggregates (ignimbrite pebbles) and fragments of basalt up to 1 cm in diameter. Most beds display fining-upward sequences, with coarse foraminiferal and volcaniclastic sands at the base grading into fine-grained foraminiferal oozes above.

The foraminiferal assemblages in the turbidites are reworked and contain a benthic fauna that is older and inhabits shallower water than the fauna of the surrounding oozes (Thomas, this volume). These data suggest that the sands were deposited by turbidity currents originating from a topographic high in the immediate area. A seamount 1000 m high and 10 km to the northeast is a potential source region.

The turbidites in the upper part of the succession are generally poorly consolidated and highly porous; they contain more water than the more competent surrounding oozes. The foraminiferal sands toward the base of the cored succession, however, have undergone a high degree of dewatering and contrast with the surrounding oozes by being more indurated. The preferential induration of calcarenites in shallow-water carbonates is well known; it results from grain-size differences and higher permeability.

Carbonate Stratigraphy

Shipboard carbonate bomb analyses were made on sediment from Holes 575, 575A, and 575B at 1.5-m intervals (Fig. 4). The carbonate record for Site 575 is similar to the records for Site 573 and 574; the Pleistocene to upper Miocene section shows cyclic alternations between high-carbonate and low-carbonate intervals, and the lower to middle Miocene section shows relatively constant, high calcium carbonate values (80 to 95%). In the middle part of the lower Miocene, there is a shift from constant carbonate values of about 94% to relatively constant carbonate values of about 86%. This shift coincides with an increase in the proportion of siliceous microfossils.

The sedimentation rate curve for Site 575 reveals a hiatus (see Sediment Accumulation Rates) at a depth of 32 m. This hiatus coincides with an abrupt decrease in the carbonate content of the sediments from 92% (at 33 m) to 10% (at 27 m). Thus, the hiatus may be related to an increase in carbonate dissolution. This depth is also the level at which the sediments change from constant high carbonate values to cyclic high and low carbonate values. Analysis of Site 575 carbonate curves indicates that these data may be correlated with the Neogene carbonate event stratigraphy of the equatorial Pacific.

BIOSTRATIGRAPHY

The sediments recovered at Site 575 represent an almost complete sequence from the lower part of the lower Miocene through the upper Pleistocene (Fig. 5; see also Barron et al., this volume, for an updated version of this biostratigraphic summary). The preservation of the calcareous microfossils is good except in the upper 30 m of Holes 575, 575B, and 575C and in Sections 575A-3,CC, -4,CC and 575B-14,CC, where the planktonic foraminifers and nannofossils are strongly to moderately dissolved. The diatoms and radiolarians are well preserved throughout.

Two sequences can be distinguished. The lower sequence, which extends from the bottom of Hole 575A to the top of Core 4 in Holes 575 and 575B, has a high sedimentation rate (15 to 20 m/m.y.), and all early and middle Miocene zones can be found for each microfossil group studied. The lower/middle Miocene boundary occurs in Sections 575-9,CC and 575B-10,CC, and the middle/upper Miocene boundary lies in Core 4 in both Holes 575 and 575B.

Between Section 575-3,CC and the first section of Core 575-4, in the upper part of Subzone B of the *Coscinodiscus yabei* diatom Zone, there is a hiatus that seems to be comparable to hiatuses found at Sites 573 and 574. The upper sequence, which lies above this hiatus (above 30 m sub-bottom) and extends between the lower part of the upper Miocene and the upper Pleistocene, has a very low rate of sedimentation (3 m/m.y.). The diatom zonation suggests another possible hiatus between the lowermost Pleistocene and the uppermost Pliocene (in Sections 575-1-3 and -4). In both Holes 575 and 575B, there is

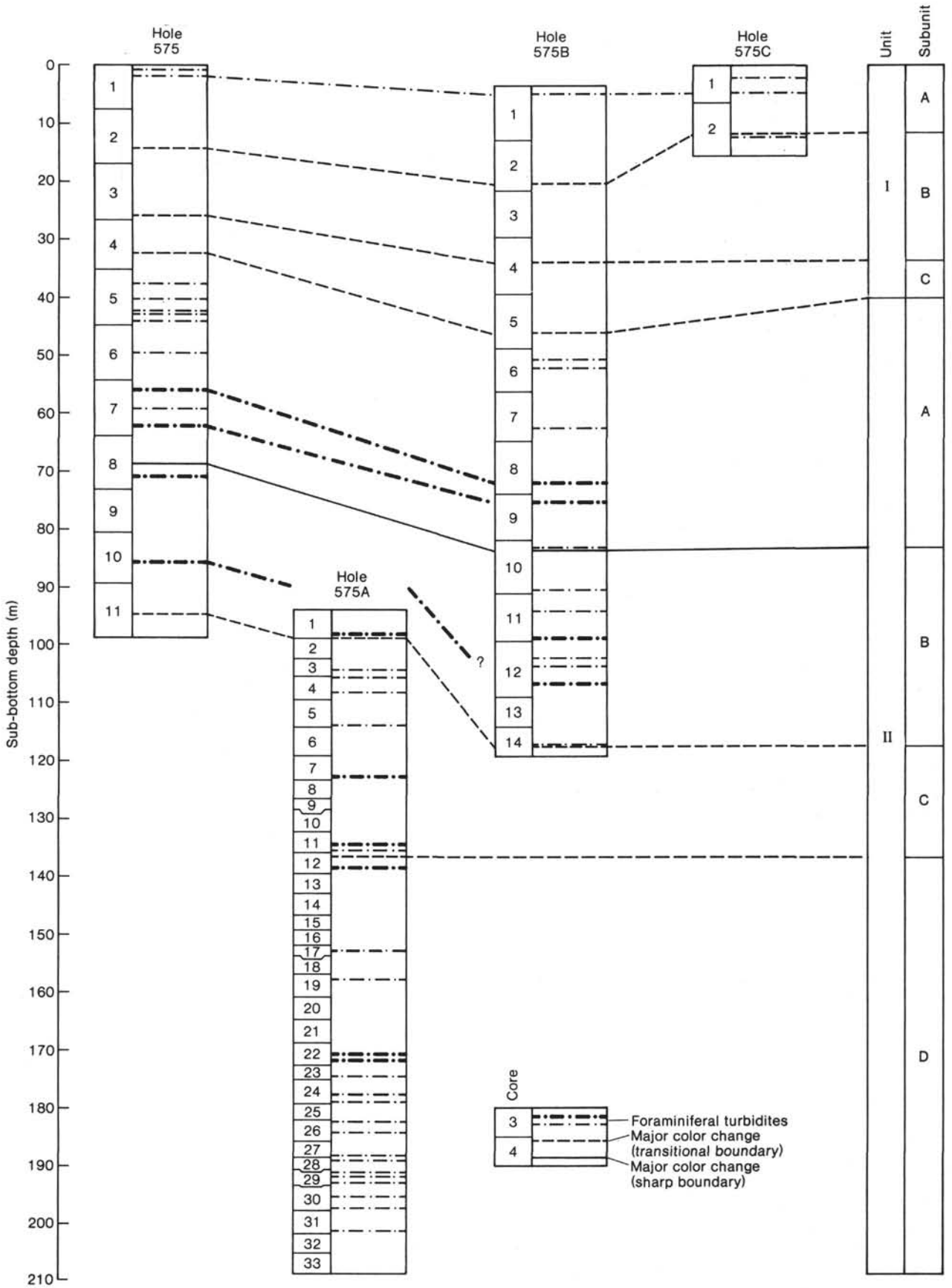

Figure 3. Hole-to-hole correlation of lithostratigraphic boundaries and foraminiferal turbidite layers at Site 575.

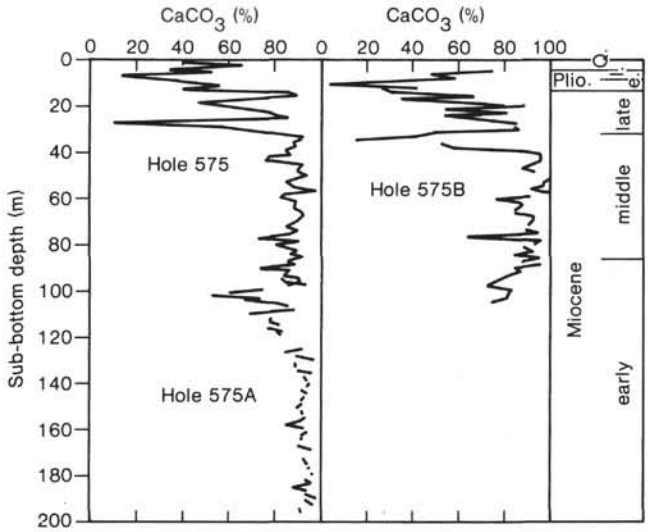

Figure 4. Carbonate content of sediments from Holes 575, 575A, and 575B (as indicated by shipboard analysis).

considerable reworking of radiolarians, diatoms, and nannofossils in Core 1, with lesser amounts in Cores 2 and 3.

Throughout the sequence, there are distinct turbidite layers containing reworked planktonic foraminifers from Zone N12 (for the uppermost layer) through P21 (for the lowest one). The benthic foraminifers in these layers also seem to be reworked; they inhabit shallower water depths than the *in situ* benthic foraminifers.

Planktonic Foraminifers

The sediments recovered from Site 575 yield abundant to common planktonic foraminifers. Preservation is good to moderate throughout the section except for the uppermost 25 m of the sequence (Cores 575-1 through -3) and a short interval in Cores 575A-3 and -4 and the age-equivalent Core 575B-14.

The rich foraminiferal assemblages recovered can readily be assigned to the standard zonal sequence (Fig. 5). The dissolution curve for planktonic foraminifers is shown in Figure 6. The evolution of *Orbulina* from *Praeorbulina*, which could be traced at Site 574, was also recovered at this site; the transition occurs in Cores 575-9 and 575B-10. The N7/N8 zonal boundary was difficult to recognize because of intense dissolution near the boundary. The interval from Zones N6 through N8 appears to be greatly condensed, although both the overlying zones (N9 through N12) and the underlying zones (N4 and N5) are very expanded.

Many discrete layers of foraminiferal sand that exhibit a distinct downward increase in grain size occur throughout the recovered sequence. The turbidite layers that occur in the uppermost part of the sequence (e.g., in Sample 575-1-4, 51–52 cm) contain a mixed assemblage indicative of Zones N12 through NN17. Those in the lower part of the sequence, on the other hand (e.g., Sample 575A-31-3, 70–71 cm), contain a Zone P21 assemblage. In general, the assemblages in a given turbidite layer are a few to several zones older than those in the *in situ* sediments, and the time lapse between the oldest reworked fossil and the *in situ* assemblage appears to decrease with increasing sub-bottom depth. If this trend continues downward through the uncored sequence at this site, the age of the basement for Site 575 and the turbidite source area is nearly the same.

Nannofossils

The nannofossils at Site 575 are generally common to abundant and well preserved. The placoliths are only moderately well preserved in Sections 575-2,CC and -3,CC. The discoasters and placoliths are highly dissolved in Sections 575-1,CC and 575A-3,CC and -4,CC. Nannofossil species occurrence is shown in Figure 7.

The top of Hole 575 (Section 575-1-1, ≈15 cm) is upper Pleistocene (Zone CN15), but strong dissolution prevents any age determination for Section 575-1,CC. Sections 575-2,CC through -4,CC correspond to the upper Miocene and the upper part of the middle Miocene. Because of the low rate of sedimentation, not all of Bukry's (1971) nannofossil zones could be found by examining the core-catcher samples.

Zones CN3 and CN4 (which occur from Sections 575-7,CC to 575A-5,CC) could not be separated with precision because *Helicopontosphaera ampliaperta* is absent at Site 575. *Sphenolithus heteromorphus* is common to abundant throughout Zone CN3–4 except in Section 575-7,CC, where it is absent. Section 575-7,CC also contains the first specimen of *Reticulofenestra pseudoumbilica* and the last specimen of *Cyclicargolithus floridanus*, so it can be placed in Zone CN4.

The oldest nannofossils at the site belong to Subzone CN1b. The presence of common specimens of *Cyclicargolithus abisectus* from Sections 575A-31,CC to -33,CC indicates the proximity of Subzone CN1a.

Radiolarians

Radiolarians in Holes 575 and 575A are common and well preserved, and the oldest among them may be assigned to the upper part of the *Cyrtocapsella tetrapera* Zone. Section 575A-33,CC marks the latest occurrence of *Theocyrtis annosa*. The zonal sequence observed is shown in Figure 5.

There is considerable reworking of Miocene and Oligocene species at the top of the cored sequence (in Core 575-1). Reworking is less common in Cores 575-2 and -3, although minor amounts of reworking occur throughout the recovered material.

The Quaternary and Pliocene zones in the top two cores of Site 575 are either missing or greatly compressed. From about 30 m downhole, all zones are present and apparently complete. Hole 575B contains the same sequence as Hole 575 and terminates in the *Calocycletta costata* Zone.

Diatoms

Diatoms are abundant to few, and preservation is good to moderate in the section cored at Site 575. The sequence is easy to zone from the late Quaternary *Pseudoeunotia doliolus* Zone (Sample 575-1-1, 51–52 cm) to the early Miocene Subzone A of the *Rossiella peleacea* Zone (Section 575C-33,CC) (Fig. 5).

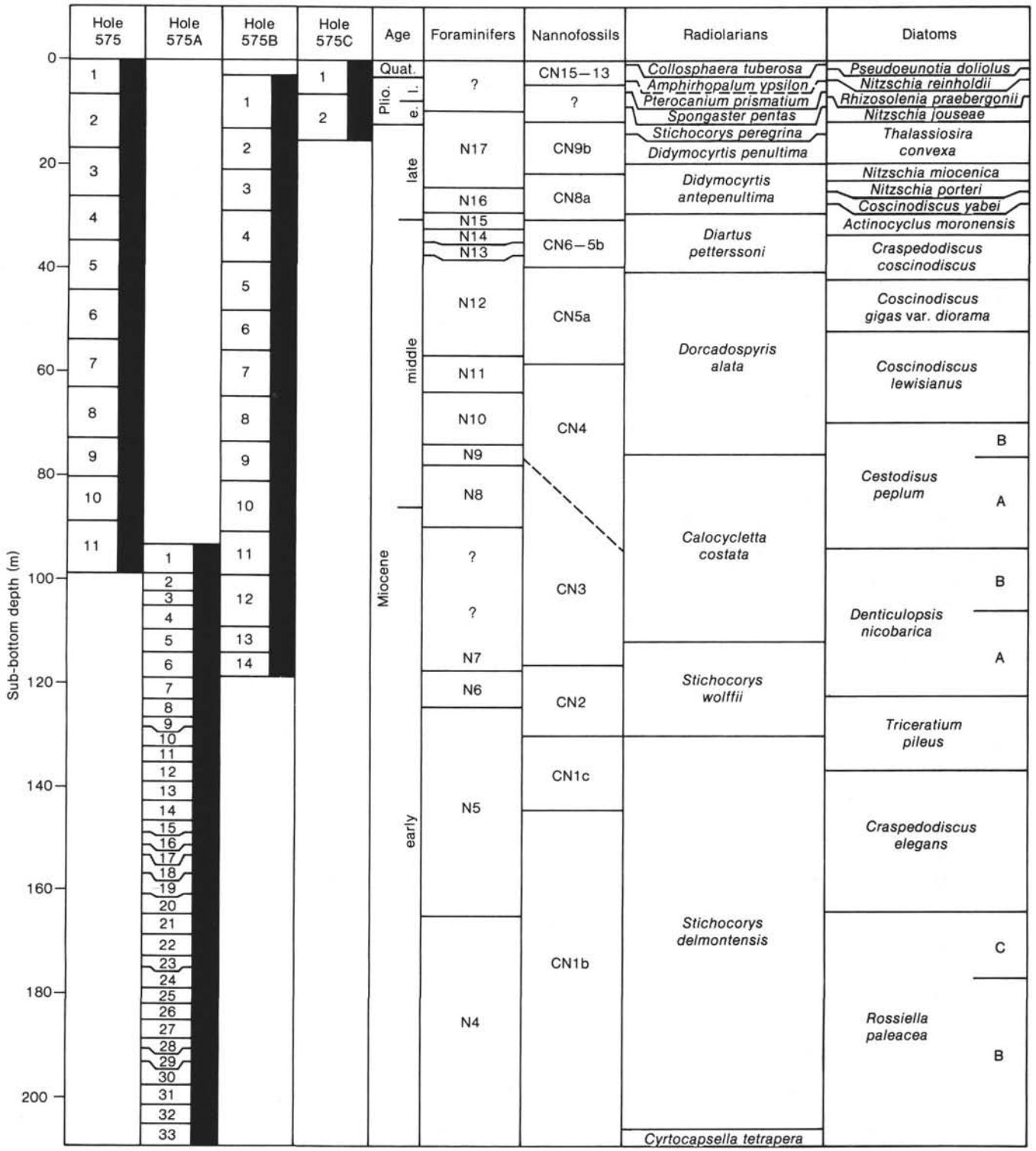

Figure 5. Summary of biostratigraphy at Site 575.

The uppermost part of the section (Cores 575-1 to -3) accumulated very slowly (≈3 m/m.y.), and further study will be necessary to locate the zonal and subzonal boundaries. Nevertheless, the diatoms suggest a hiatus or an even more greatly compressed section for the uppermost Pliocene to lowermost Quaternary: specimens of *Mesocena quadrangula* (a silicoflagellate that lived from 0.8 to 1.3 Ma) are common in Sample 575-1-3 (51–53 cm), and specimens of *Thalassiosira convexa* and *Rhizosolenia praebergonii* (which lived from 2.1 to 3.0 Ma) are present in Sample 575-1-4 (47–48 cm).

Core 575B-3 appears to be anomalously thick for the time interval it represents and may contain transported sediment from the nearby seamount. Section 575B-2,CC contains specimens of *Nitzschia miocenica* and is therefore less than 7.3 m.y. old, whereas the assemblages in

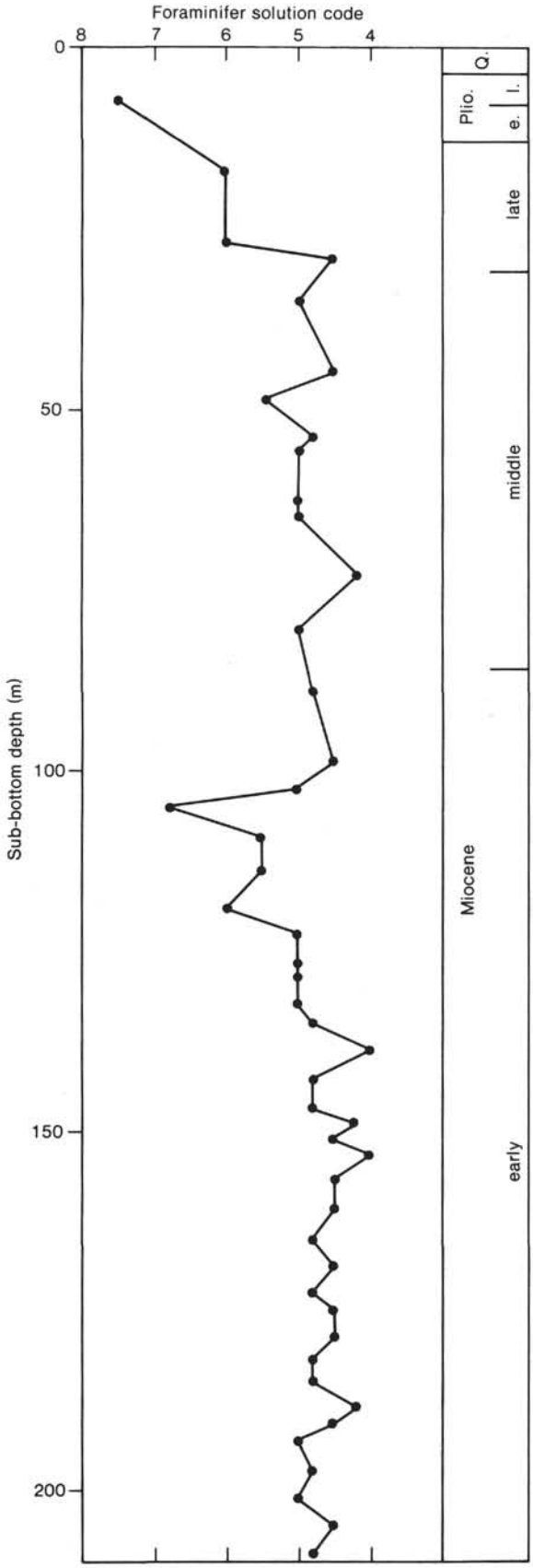

Figure 6. Foraminifer dissolution curve at Site 575 (solution code after Berger and von Rad, 1972).

Section 575B-3,CC are aged more than 8.0 Ma (the date of the last occurrence of *Thalassiosira burckliana*; Barron, this volume). The intervening samples contain latest middle Miocene diatoms, including *Coscinodiscus tuberculatus* and *Denticulopsis punctata* f. *hustedtii*. The relatively high sediment accumulation rate for this core (≈10 m/m.y.) contrasts with the much lower rate for this interval in Hole 575 (≈3 m/m.y.).

The early late Miocene hiatus at Sites 573 and 574 (9.8 to 10.5 Ma) is expanded at Site 575, as indicated by the close proximity of the first appearance datum of *Nitzschia cylindrica* s. ampl. (8.7 Ma) (Section 575-3,CC) and the last appearance datum of *Coscinodiscus vetustissimus* var. *javanica* (10.7 Ma) (Sample 575-4-1, 52–53 cm).

Comparison of the early Miocene diatom sequence within the *Triceratium pileus* and *Craspedodiscus elegans* zones (18.0 to 19.9 Ma) at Site 575 with the equivalent sequence at Site 71 (Barron, 1983) suggests that the Site 575 sequence is more complex. Keller (1981) argues for a short hiatus at 244 m sub-bottom (at the boundary between the *T. pileus* and *C. elegans* zones) at Site 71, so Site 575 may not contain this early Miocene hiatus.

Benthic Foraminifers

Benthic foraminifers are absent or extremely rare in Sections 575-1,CC through -3,CC and rare in the remainder of the section (except in the foraminiferal turbidites). Preservation is moderate to good and does not seem to be linked to the dissolution of planktonic foraminifers. The diversity of the assemblage is high (as many as 52 taxa in counts of 200 specimens), especially in the lower cores (Core 11 and below).

The main faunal constituents are *Epistominella exigua, Nuttallides umbonifera,* and species of *Gyroidinoides, Oridorsalis, Cibicidoides, Stilostomella,* and *Pleurostomella. Cibicidoides* species are much less common than at the other sites, especially below Section 575-8,CC (lower Miocene). Specimens of *Stilostomella* and *Pleurostomella* are most abundant below Section 575-10,CC (i.e., in the lower Miocene). *Uvigerina graciliformis* peaks in abundance in Section 575-4,CC, the first sample below the interval where benthic foraminifers are rare or absent as a result of dissolution, as at Site 574.

Site 575 differs from the other sites in that there are fewer specimens of the common genera (*Epistominella, Oridorsalis, Cibicidoides, Gyroidinoides*), especially in the lower Miocene. No single species or species group takes their place; many rare species are present instead (mainly species of miliolids, nodosariids, pleurostomellids, and agglutinants), with the result that diversity is high, as noted above. The ratio of rectilinear to rotaliid species is higher at Site 575 than at the other sites.

The lower few centimeters of some of the turbidites contain abundant benthic foraminifers. The assemblages in the turbidites are different from those in the normal sediments. Some species are found in both the turbidites and the other sediments, but the specimens of these species are larger in the turbidites. Large, thick-walled species (e.g., *Favocassidulina favus, F. subfavus, Globocassidulina subglobosa, Cibicidoides grimsdalei, Stilostomella abyssorum,* and *Oridorsalis umbonatus*) are well

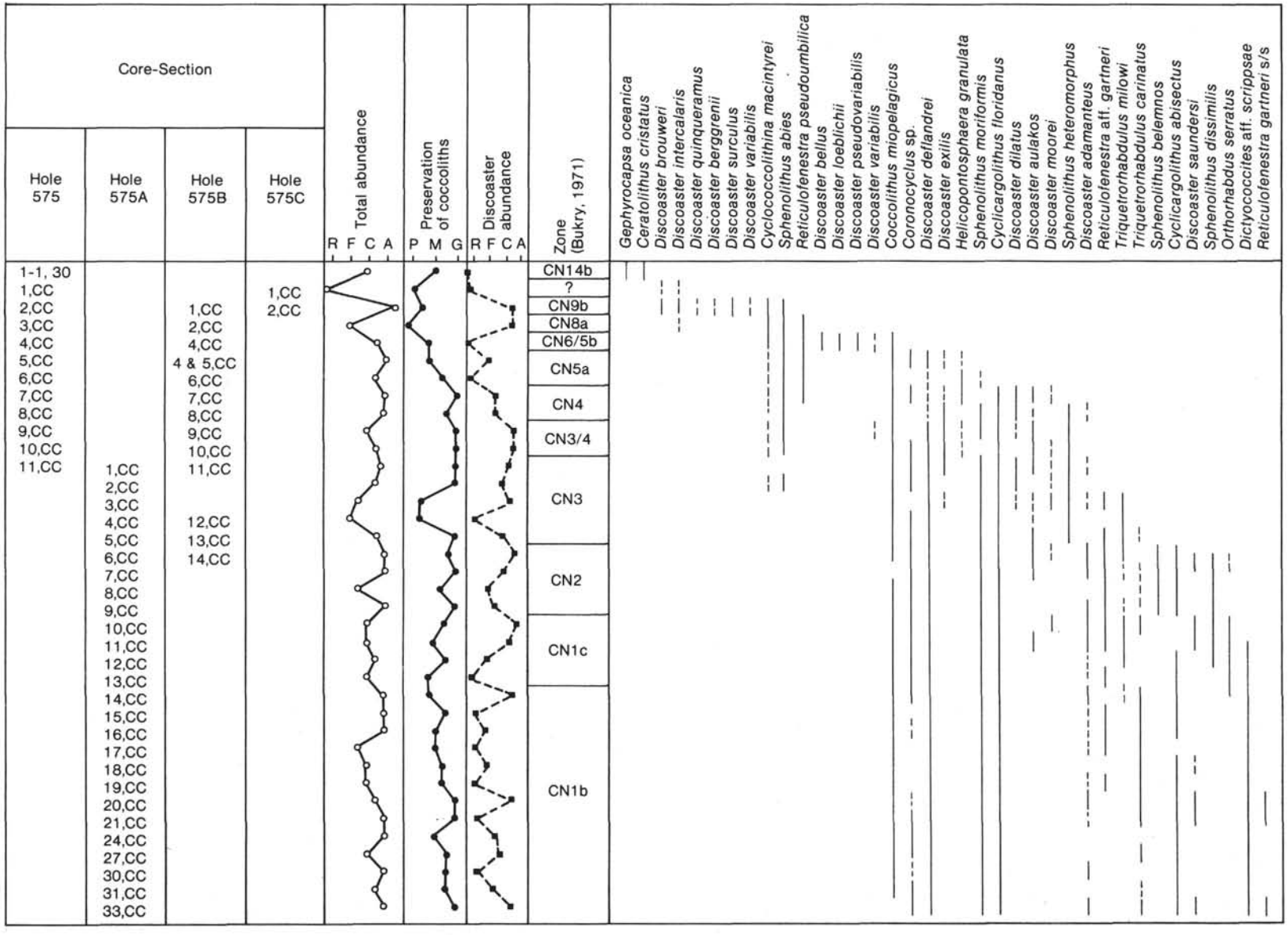

Figure 7. Occurrence of nannofossil species at Site 575.

represented in the turbidites. Some species in the turbidites are absent in the normal sediments (e.g., *Bulimina jarvisi, Eggerella propinqua,* and *Uvigerina spinulosa*; other species in the turbidites are extremely rare in the normal sediments (e.g., *Hanzawaia cushmani* and *Planulina renzi*). Some of the species present in the turbidites are typical of the Oligocene and Eocene.

SEDIMENT ACCUMULATION RATES

The age–depth plot for Site 575 (Fig. 8) indicates long intervals of relatively constant sedimentation rate. During the interval from 12.5 to 22.2 Ma the rates average 18.0 m/m.y. (Table 3). The slightly higher sedimentation rate at the base of the section (20.0 to 22.2 Ma) may reflect the proximity of the site to the equator during this time. This interval is followed by a hiatus that represents about 3.5 m.y. The interval above the hiatus (<9 Ma) is characterized by a low sedimentation rate (3 m/m.y.). For a more detailed discussion see Barron et al. (this volume).

The extrapolated age of surface sediments from the data shown in Figure 8 is 1.6 Ma. This age is much older than the late Pleistocene age estimated for samples taken in the upper section of Core 1 of Site 575. Thus, as inferred from the biostratigraphic analysis, a hiatus or an interval of much lower sedimentation rate must occur in the late Pliocene or early Pleistocene.

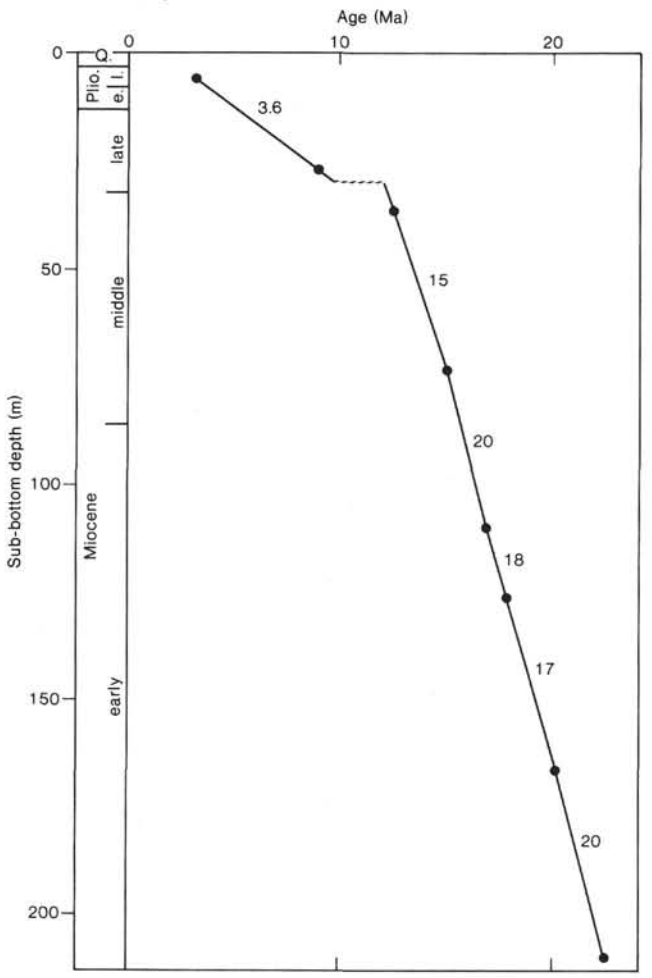

Figure 8. Age versus depth-in-hole based on biodatums at Site 575. Numbers on curve represent sedimentation rate in m/m.y.

Table 3. Sedimentation rates and carbonate and noncarbonate mass accumulation rates at Site 575.

Sub-bottom depth (m)	Age (Ma)	Sedimentation rate (m/m.y.)	Mean dry bulk density (g/cm^3)	Mean $CaCO_3$ (%)	Mean mass accumulation rate ($[g/cm^2]/1000$ yr.)		
					Total	$CaCO_3$	Non $CaCO_3$
6	3.2	3.6	0.60	56	0.21	0.12	0.09
27	9.0						
Hiatus							
36	12.5	15.4	0.99	88	1.52	1.34	0.18
73	14.9	19.5	0.91	83	1.77	1.47	0.30
110	16.8	17.8	0.92	80	1.64	1.31	0.33
126	17.7	17.4	1.10	91	1.91	1.74	0.17
166	20.0	20.0	1.08	94	2.20	2.07	0.13
210	22.2						

The mass accumulation rates for total sediment and for the carbonate and noncarbonate sediment fractions were calculated by using shipboard physical property and carbonate bomb analyses (Table 3; Fig. 9). The carbonate accumulation rate closely follows the total sediment mass accumulation rate, whereas the noncarbonate rate shows an inverse relationship. The noncarbonate accumulation rate is low in the highest sedimentation rate interval (between 20.0 and 22.2 Ma, or between 166 and 210 m). Above this interval (i.e., at 14.9 to 17.7 Ma, or 73 to 126 m), the noncarbonate rate increases to the maximum value for Site 575. In general, carbonate accumulation rates decrease with decreasing age. Thus, the relationship between noncarbonate and carbonate deposition at Site 575 is weakly negative (Fig. 10), unlike the relationships at Sites 572, 573, and 574 (see also Theyer et al., this volume).

PHYSICAL PROPERTIES

The physical properties measured for this site included wet-bulk density (ρ_b), porosity, sonic velocity (V_p), formation factor (F), and shear strength. Measurements were made at regular intervals except where the sediment was disturbed. A discussion of the data collection techniques, procedures, and pertinent references is presented in the introductory section before the individual site chapters. All numerical data are listed in the Appendix (this volume).

The data for Site 575 are plotted against depth and presented in Figures 11 to 16. The profile for formation factor (Fig. 14) is incomplete in the intervals from 30 to 60 m and 100 to 160 m and because of a malfunction in the conductivity meter. Overall, formation factor increases slightly with increasing depth, the range of values changing from 1.5–2.0 to 2.0–2.5.

The sonic velocity data (Fig. 13) increase from approximately 1.5 km/s at the top of the hole to 1.6 km/s at 200 m. The anomalously high velocities at depths of 38, 40, 42, 98, 118, 130, 160, and 180 m correspond to the depths of foraminiferal turbidites. The high sonic ve-

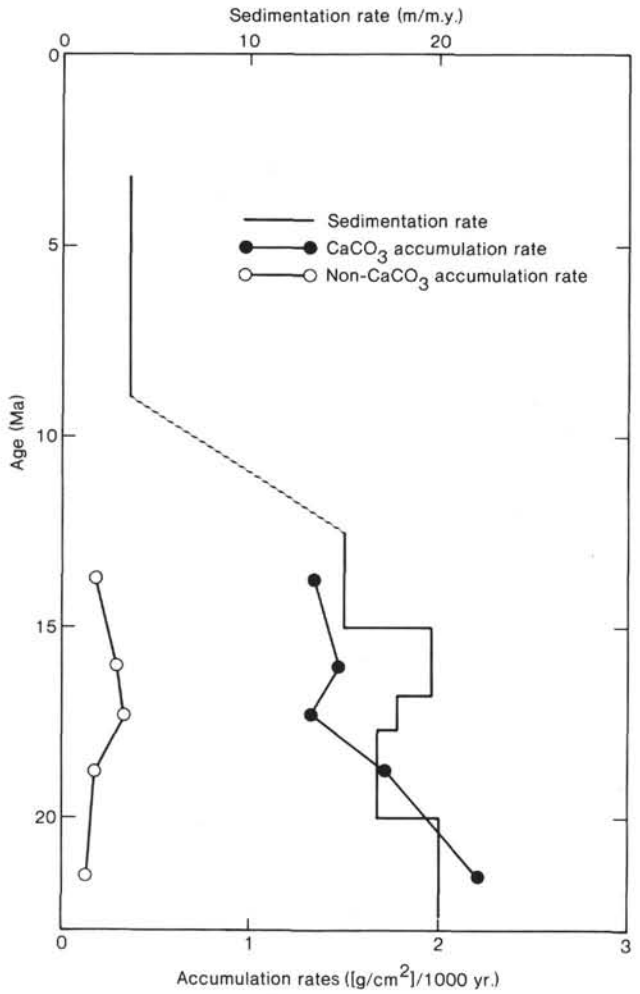

Figure 9. Sedimentation rate and average mass accumulation rates for carbonate and carbonate-free sediments at Site 575.

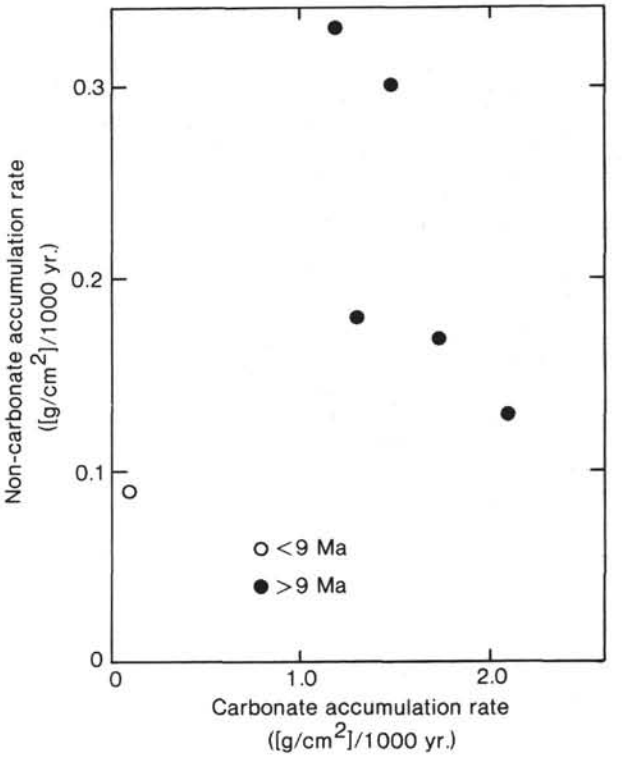

Figure 10. Carbonate versus carbonate-free mass accumulation rates at Site 575.

localities create contrasts in acoustic impedance that should appear as reflectors in the seismic survey.

The porosity and wet-bulk density data (Figs. 12 and 11) show similar but opposite trends (1.2 to 1.5 g/cm^3 and 85 to 65%) for the topmost 30 to 40 m. The interval from 40 to 130 m shows data scattered about comparatively constant mean values (1.6 g/cm^3 and 60%, respectively). Below (from 130 to 180 m), wet-bulk density generally increases (from 1.6 to 1.8 g/cm^3) and porosity generally decreases (from 65 to 55%). Below 180 m the values remain approximately constant (1.8 g/cm^3 and 55%, respectively).

Thermal conductivity increases from about 1.5 mcal/cm·s·°C at the surface to about 2.7 mcal/cm·s·°C at 25 m. It then remains generally stable until the bottom of the hole, with the exception of high values (up to 3.9 mcal/cm·s·°C) at about 175 m (Fig. 15).

A shear strength profile is presented in Figure 16. For the first 80 m, the values gradually increase from 100 to 400 g/cm^2. From 100 to 190 m the data show considerable scatter around an approximate mean value of 200 g/cm^2.

PALEOMAGNETISM

At Site 575 only a few polarity changes could be distinguished by 180° changes in the measured NRM_0 declinations. These apparent reversals are not accompanied by changes in the sign of the inclination. Conversely, sign changes in the inclination are not accompanied by a 180° rotation of the declination. Holes 575, 575A, 575C, and the top of Hole 575B (Cores 1 to 9) show reasonably strong NRM_0 magnetizations, with means varying from 2.4 to 3.7 $\times$ 10^{-6} G.

Hole 575C was cored because the first two cores in Holes 575 and 575B were badly disturbed. The sequence recovered from Hole 575C is complete and undisturbed down to a depth of 15.8 m below the seafloor, a depth that corresponds to an age of at least 5 m.y. The dark brown sediments recovered from Hole 575C show the strongest magnetization of the sediments recovered at this site, averaging 6.14 ($\pm$ 4.06) $\times$ 10^{-6} G. In general, the NRM intensities at this site seem to correlate better with changes in sedimentation rate than with changes in color of sediment.

INTERSTITIAL-WATER CHEMISTRY

The concentration of alkalinity, calcium, and strontium in the interstitial water increases gradually, and after an initial increase the concentration of magnesium decreases gradually (Fig. 17). The profiles for this site are difficult to interpret because we did not drill to basement, and the reactions at greater depths may be affect-

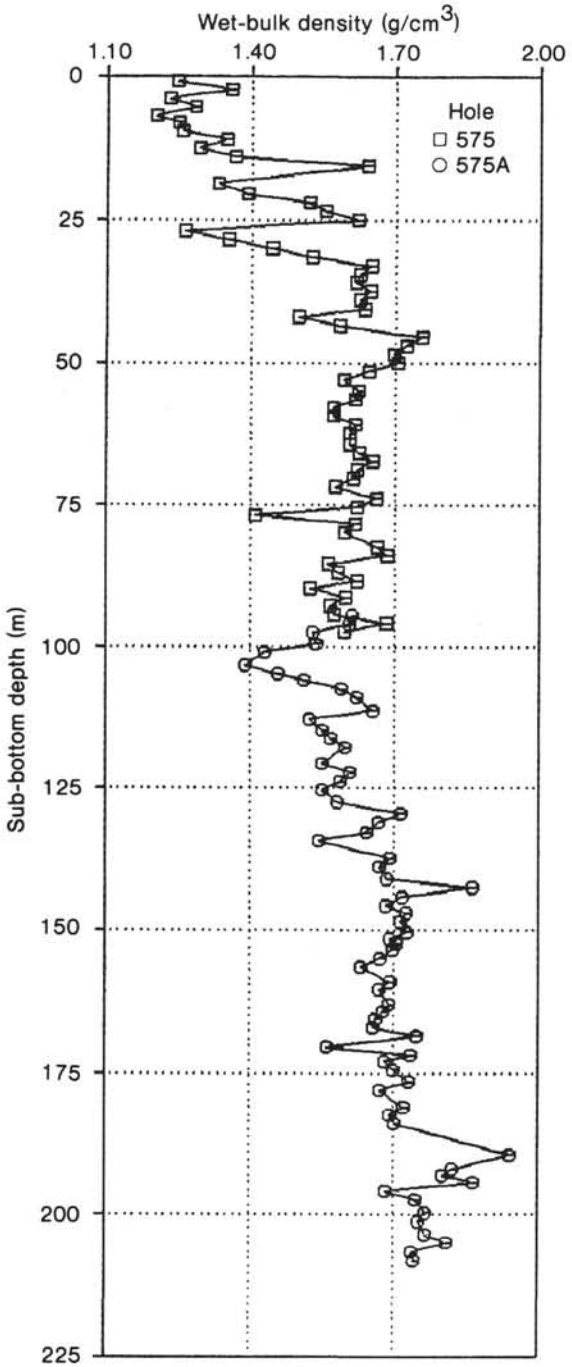

Figure 11. Wet-bulk density versus depth for Site 575.

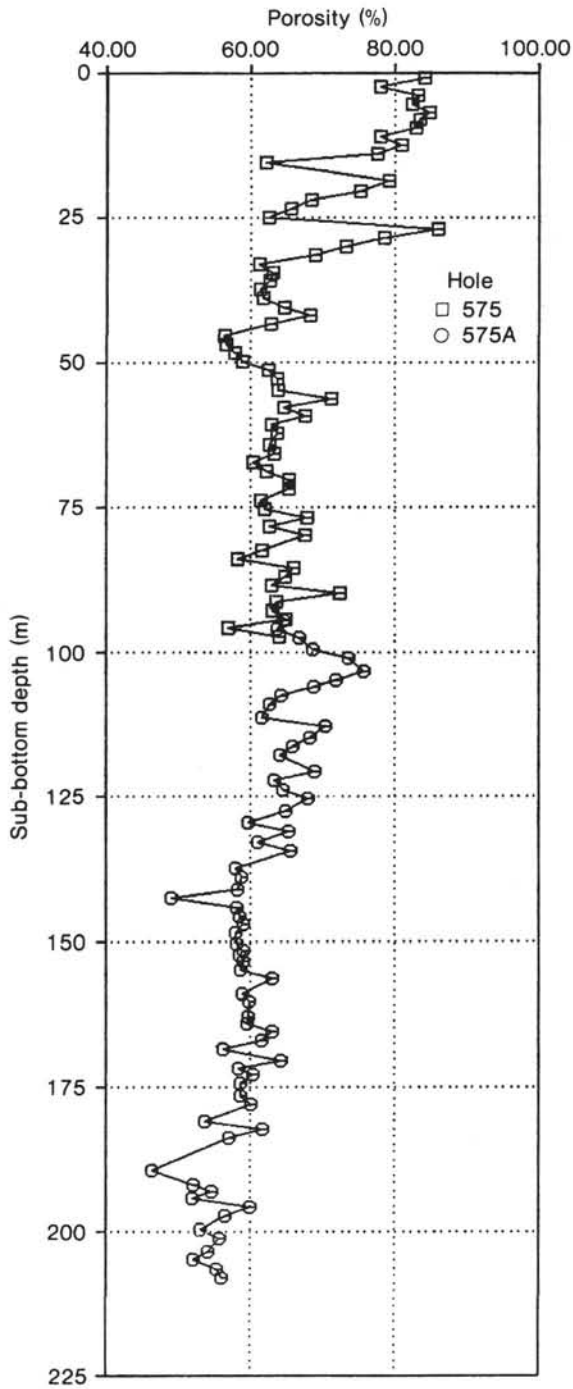

Figure 12. Porosity versus depth for Site 575.

ing the concentration gradients we observed. The abrupt increase in alkalinity near 180 m sub-bottom coincides with an increase in sediment accumulation rate. The concentration of magnesium and calcium may be influenced by the alteration of basaltic material. This would be indicated if the magnesium concentrations were to decrease and the calcium values were to increase down to basement.

The steady downhole increase in the concentration of strontium indicates calcite recrystallization. The shallow first occurrence of chalk (near 160 m) suggests that the increases in strontium are related to the diagenesis of calcite. However, the strontium profile may also be affected by reactions with volcanic material within the sediments or by the alteration of underlying basalt.

SUMMARY AND CONCLUSIONS

Located at almost 6°N and just south of the Clipperton Fracture Zone, Site 575 is the northernmost of three sites that were drilled in a north–south transect of the equatorial sedimentary bulge at approximately 133°W. Lack of time prevented us from drilling to basement. Nevertheless, the objectives of drilling the site, which were

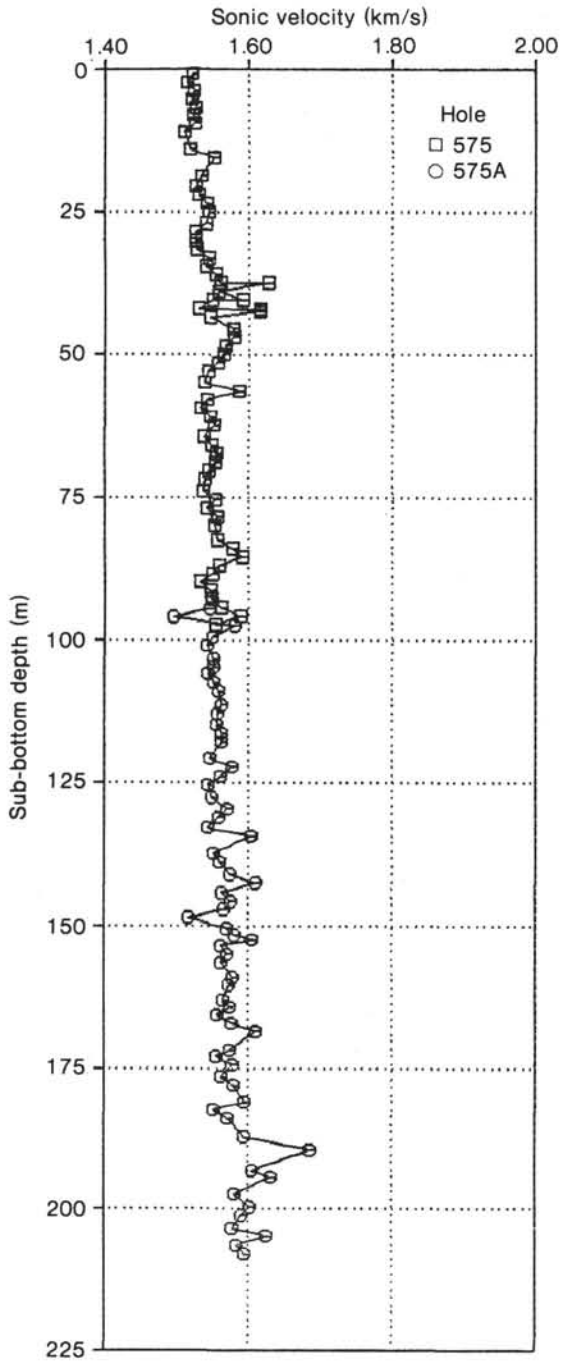

Figure 13. Sonic velocity (V_p) versus depth for Site 575.

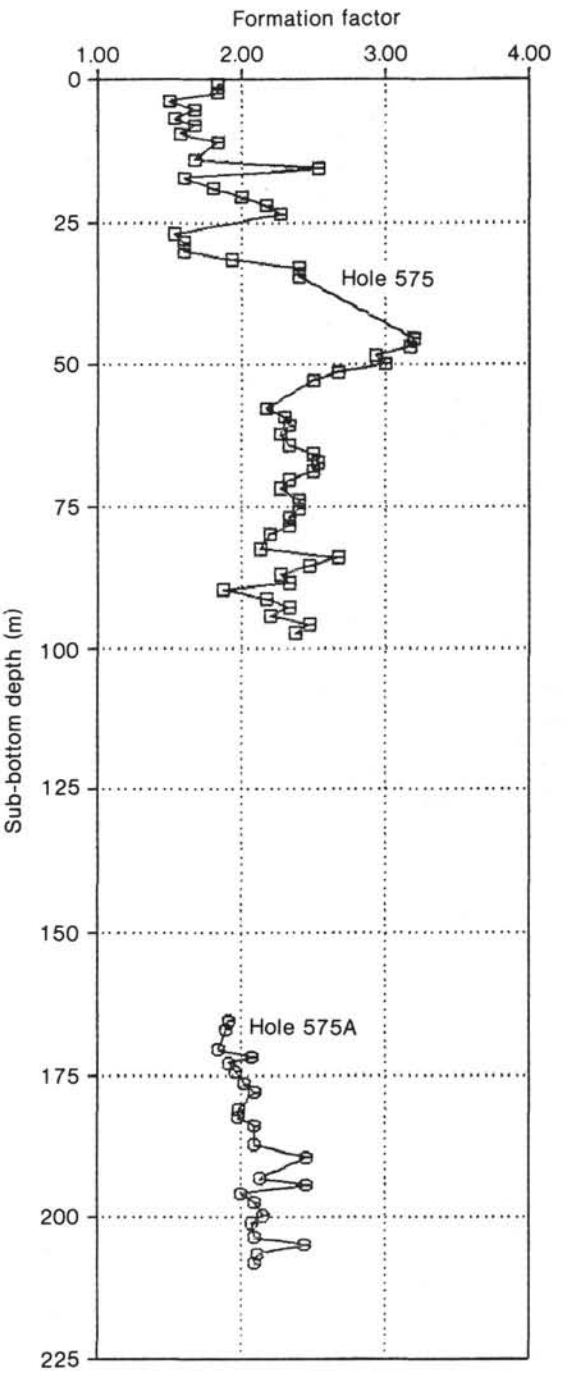

Figure 14. Formation factor (horizontal) versus depth for Site 575.

to study its paleoenvironment and stratigraphy, were met. Three HPC holes were drilled, which penetrated to a depth of 208.4 m sub-bottom and ended in lowermost Miocene sediment. In total, 374.47 m (the upper 120 m overlap) of sediment were recovered, most of it undisturbed. As expected, the nearly complete Neogene section bears out the tectonic depositional model most widely accepted for the equatorial Pacific high fertility belt (van Andel et al., 1975); the early to middle Miocene (12 to 22 Ma) sediments record a highly productive environment dominated by the equatorial belt, whereas the sediments deposited in the most recent 10 m.y. testify to the site's emergence from beneath this belt and its migration to the north.

Two sedimentary units express the lithostratigraphic makeup of the sequence: an upper Miocene to Quaternary cyclic siliceous calcareous ooze (Unit I, 0 to 32.3 m sub-bottom) and a lower to middle Miocene calcareous ooze chalk (Unit II, 32.3 to 208.4 m). Unit I is characterized by cyclic alternations in carbonate content, whereas Unit II has relatively high (94%), constant carbonate values down to the middle part of the lower Miocene, where there is a slight decrease in the mean carbonate content (to about 86%). Subunits based on color can be

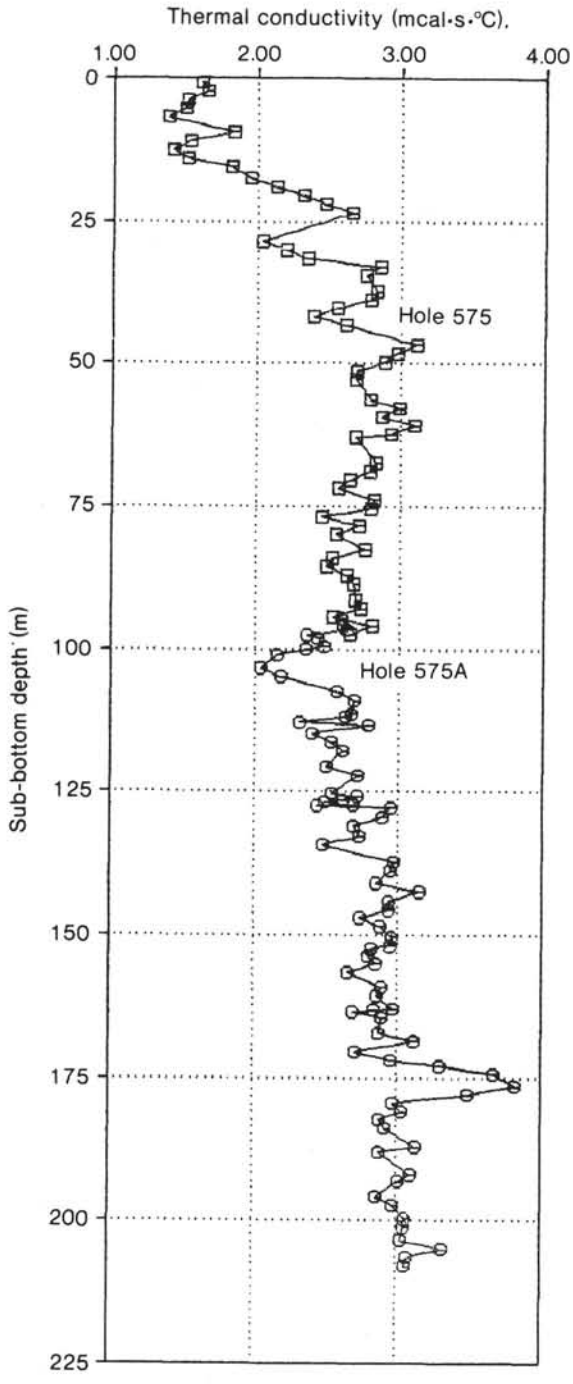

Figure 15. Thermal conductivity versus depth for Site 575.

distinguished in both units, and centimeter-thick sandy to pebbly turbidites are intercalated throughout them. The turbidites are composed primarily of allochthonous foraminifers and volcanic debris.

Except for a hiatus from 9.0 to 12.5 Ma, the sequence was complete from the lowest Miocene (22 Ma) to the upper Pleistocene. All major microfossils occur throughout, although the preservation of calcareous skeletons is poor to almost nil in the upper unit (cyclic siliceous calcareous ooze). The upper unit is characterized not only by calcareous dissolution, but also by microfossil reworking and extreme stratigraphic compression; as a result, some of the biozonal boundaries in these upper Neogene sediments could not be recognized. In contrast, the expanded sequence in Unit II and the excellent preservation of microfossils (except for a very brief interval about 17 Ma) make it one of the most complete lower Neogene sequences available from the equatorial Pacific.

Foraminifers in the sandy to pebbly turbidites indicate grading downsection, with coarser grains lower in the record. The planktonic and benthic foraminifers in these layers are considerably older than those in the *in situ* sediments, and the benthic foraminifers suggests that the layers originated in shallower water.

The sediment accumulation rates confirm the twofold lithostratigraphic subdivision. Moderate and variable rates of 14 to 20 m/m.y. characterize the siliceous nannofossil oozes of Unit II, and a very low but virtually constant rate of 3 m/m.y. generated the siliceous calcareous Unit I. The small fluctuations in rate in the lower unit are not necessarily correlated with the subunits; the maximum rate of 20 m/m.y. prevails between about 22 and 20 Ma. There is a prominent hiatus between about 9.0 and 12.5 Ma.

NRM intensity is correlated with both sedimentation rate and lithology as expressed by color. Consistently high values, on the order of 10^{-6} G or above, are typical of the sediments in Unit I and for most of the browner intervals in Unit II.

Physical properties show strong gradients over the topmost 30 to 40 m, followed by scatter about a constant mean in the subsequent 40 to 130 m sub-bottom; at 130 m a shift toward a new mean begins. In general, the changes in data closely reflect changes in lithology, particularly carbonate content. Sonic velocity (V_p) appears to have fluctuations of greater amplitude than at previous sites, although some of the fluctuations are the result of the turbidites interspersed in the column. The seismic section (the upper 200 m) consists of a zone of strong, closely spaced reflectors, which is underlain by a long interval with very weak, closely spaced reflections. As at most of the Leg 85 sites, the upper, seismically stratified zone correlates extremely well with the interval of large-amplitude, short-wavelength fluctuations in wet-bulk density.

The trends in inorganic pore-water geochemistry are comparable to those at the earlier sites, although the gradients are more compressed and possibly indicative of reactions deeper in the section. The evidence for a hiatus at 9.0 to 12.5 Ma is supported by the geochemical evidence.

In conclusion, the sedimentary column cored at Site 575 records a picture that is comparable to that of the other sites: first, deposition took place from about 22 to 12.5 Ma under the direct influence of the equatorial belt; and then (from 12.5 Ma to the present) the belt's influence waned as the underlying lithosphere migrated toward the northwest.

Finally, there is evidence of multiple episodes of erosion in the seismic records around the site, and this, the proximity of a prominent seamount, and the consistent appearance of brief turbidites (which contain basalt pebbles, volcanic glass, and allochthonous foraminifers) tell

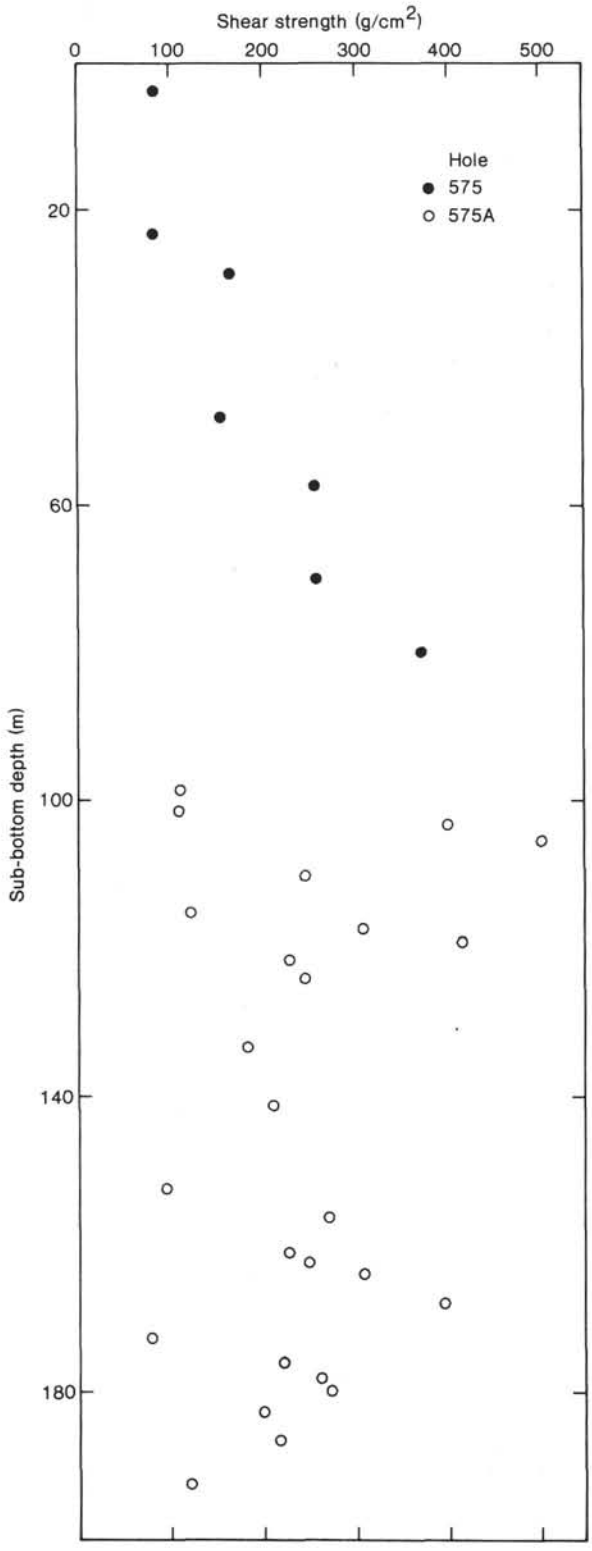

Figure 16. Shear strength versus depth for Site 575.

a story of discrete erosional, redepositional, and possibly volcanic events that punctuate the last 20 m.y. of the region's geological history.

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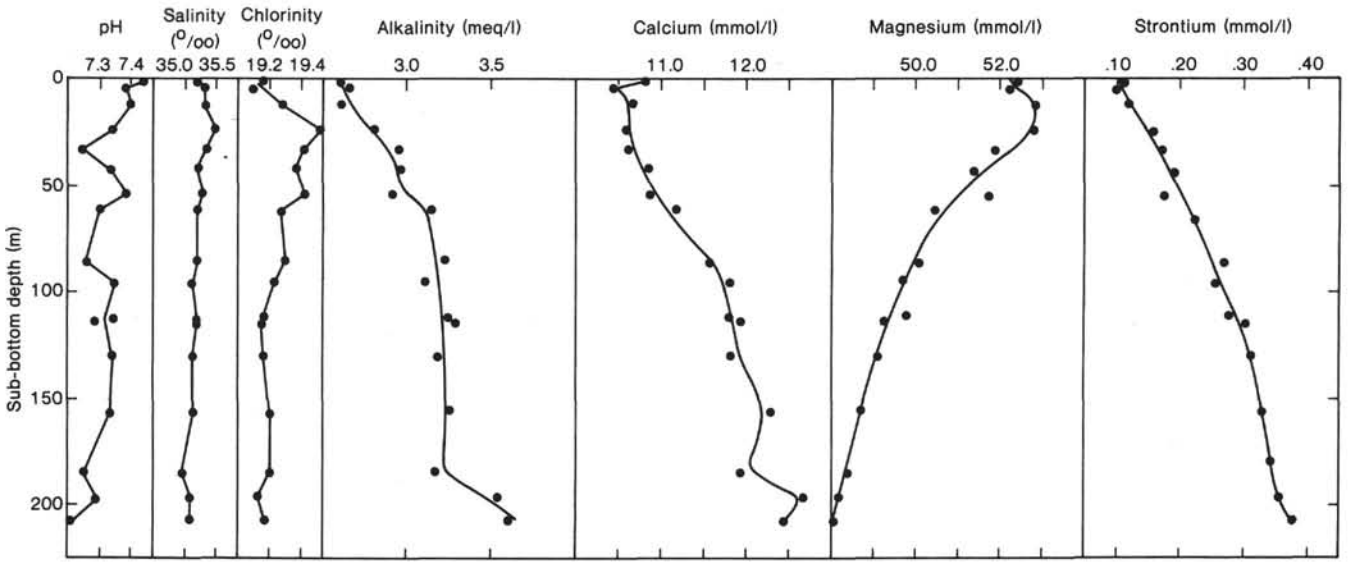
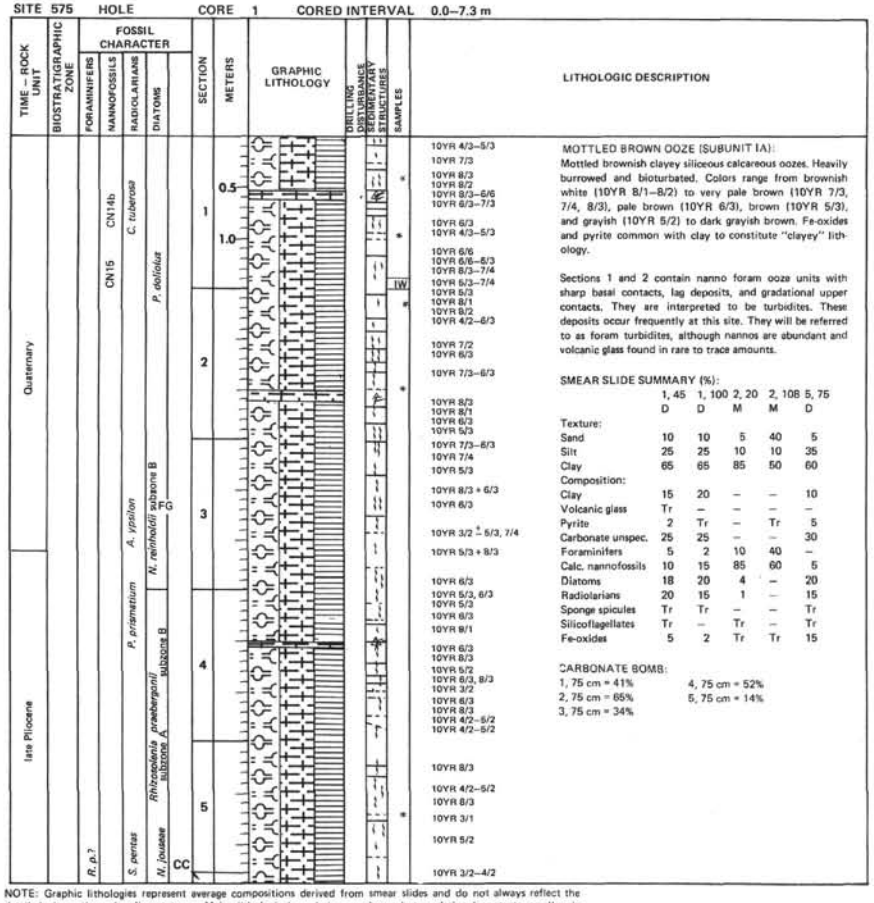


Figure 17. Interstitial-water chemistry, Site 575.

SITE 575 HOLE CORE 1 CORED INTERVAL 0.0–7.3 m



10YR 4/3–5/3
10YR 7/3
10YR 8/3
10YR 8/2
10YR 8/3–6/6
10YR 6/3–7/3
10YR 6/3
10YR 4/3–5/3
10YR 6/6
10YR 6/6–6/3
10YR 8/3–7/4
10YR 5/3–7/4
10YR 5/3
10YR 8/1
10YR 8/2
10YR 4/2–6/3
10YR 7/2
10YR 8/3
10YR 7/3–6/3
10YR 8/3
10YR 8/1
10YR 6/3
10YR 5/3
10YR 7/3–8/3
10YR 7/4
10YR 5/3
10YR 8/3 + 6/3
10YR 6/3
10YR 3/2 ± 5/3, 7/4
10YR 5/3 + 8/3
10YR 6/3
10YR 5/3, 6/3
10YR 5/3
10YR 6/3
10YR 8/1
10YR 6/3
10YR 8/3
10YR 5/2
10YR 8/3, 8/3
10YR 3/2
10YR 6/3
10YR 8/3
10YR 4/2–5/2
10YR 4/2–5/2
10YR 8/3
10YR 4/2–5/2
10YR 8/3
10YR 3/1
10YR 5/2
10YR 3/2–4/2

LITHOLOGIC DESCRIPTION

MOTTLED BROWN OOZE (SUBUNIT IA):
Mottled brownish clayey siliceous calcareous oozes. Heavily burrowed and bioturbated. Colors range from brownish white (10YR 8/1–8/2) to very pale brown (10YR 7/3, 7/4, 8/3), pale brown (10YR 6/3), brown (10YR 5/3), and grayish (10YR 5/2) to dark grayish brown. Fe-oxides and pyrite common with clay to constitute "clayey" lithology.

Sections 1 and 2 contain nanno foram ooze units with sharp basal contacts, lag deposits, and gradational upper contacts. They are interpreted to be turbidites. These deposits occur frequently at this site. They will be referred to as foram turbidites, although nannos are abundant and volcanic glass found in rare to trace amounts.

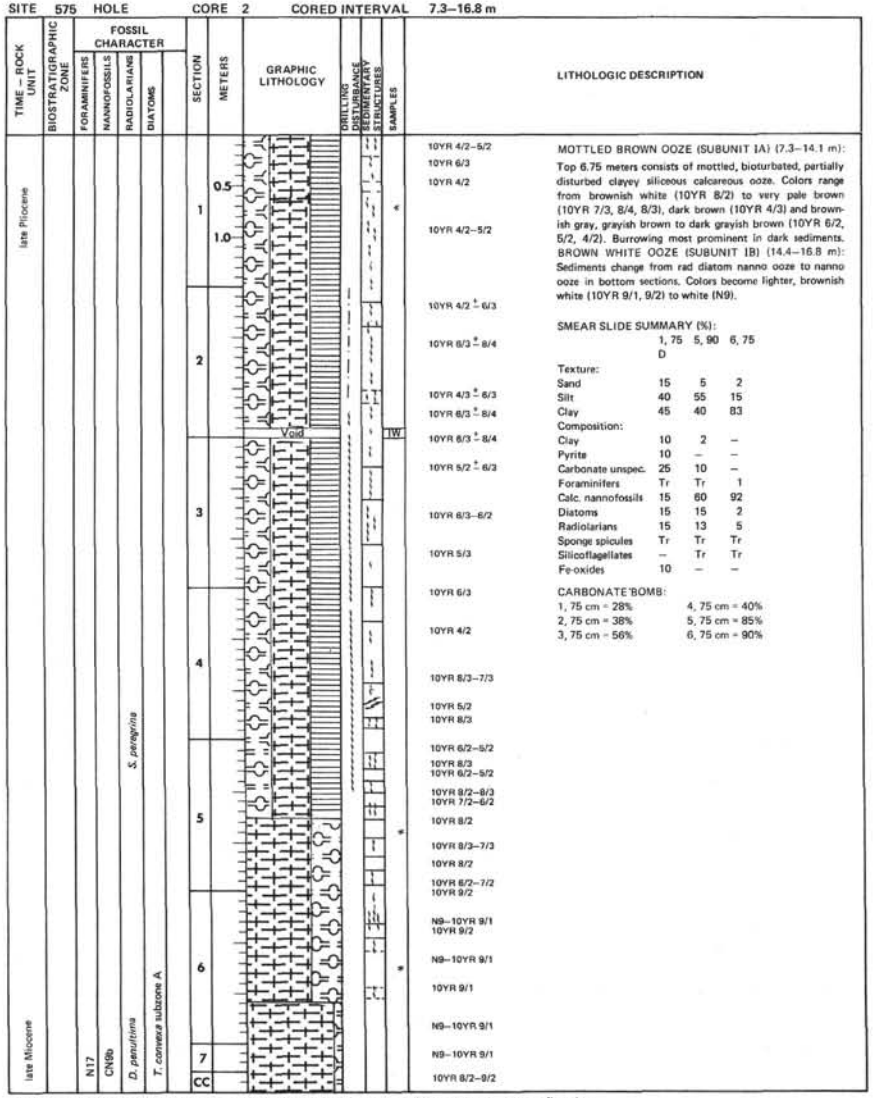
SMEAR SLIDE SUMMARY (%):

	1, 45 D	1, 100 D	2, 20 M	2, 108 M	5, 75 D
Texture:					
Sand	10	10	5	40	5
Silt	25	25	10	10	35
Clay	65	65	85	50	60
Composition:					
Clay	15	20	–	–	10
Volcanic glass	Tr	–	–	–	–
Pyrite	2	Tr	–	Tr	5
Carbonate unspec.	25	25	–	–	30
Foraminifers	5	2	10	40	–
Calc. nannofossils	10	15	85	60	5
Diatoms	18	20	4	–	20
Radiolarians	20	15	1	–	15
Sponge spicules	Tr	Tr	–	–	Tr
Silicoflagellates	Tr	–	Tr	–	Tr
Fe-oxides	5	2	Tr	Tr	15

CARBONATE BOMB:
1, 75 cm = 41%
2, 75 cm = 65%
3, 75 cm = 34%
4, 75 cm = 52%
5, 75 cm = 14%

NOTE: Graphic lithologies represent average compositions derived from smear slides and do not always reflect the detailed alternation of sediment types. Major lithologic boundaries are shown but gradational contacts, small-scale cyclicity and ooze-chalk alternations are represented schematically. Color changes approximate to lithologic changes.

SITE 575 HOLE CORE 2 CORED INTERVAL 7.3–16.8 m



10YR 4/2–5/2
10YR 6/3
10YR 4/2
10YR 4/2–5/2
10YR 4/2 ± 6/3
10YR 8/3 ± 8/4
10YR 4/3 ± 6/3
10YR 8/3 ± 8/4
10YR 8/3 ± 8/4
10YR 5/2 ± 6/3
10YR 8/3–8/2
10YR 5/3
10YR 6/3
10YR 4/2
10YR 8/3–7/3
10YR 5/2
10YR 8/3
10YR 6/2–5/2
10YR 8/3
10YR 6/2–5/2
10YR 8/2–8/3
10YR 7/2–6/2
10YR 8/2
10YR 8/3–7/3
10YR 8/2
10YR 6/2–7/2
10YR 9/2
N9–10YR 9/1
10YR 9/2
N9–10YR 9/1
10YR 9/1
N9–10YR 9/1
N9–10YR 9/1
10YR 8/2–8/2

LITHOLOGIC DESCRIPTION

MOTTLED BROWN OOZE (SUBUNIT IA) (7.3–14.1 m):
Top 6.75 meters consists of mottled, bioturbated, partially disturbed clayey siliceous calcareous ooze. Colors range from brownish white (10YR 8/2) to very pale brown (10YR 7/3, 8/4, 8/3), dark brown (10YR 4/3) and brownish gray, grayish brown to dark grayish brown (10YR 6/2, 5/2, 4/2). Burrowing most prominent in dark sediments.
BROWN WHITE OOZE (SUBUNIT IB) (14.4–16.8 m):
Sediments change from rad diatom nanno ooze to nanno ooze in bottom sections. Colors become lighter, brownish white (10YR 9/1, 9/2) to white (N9).

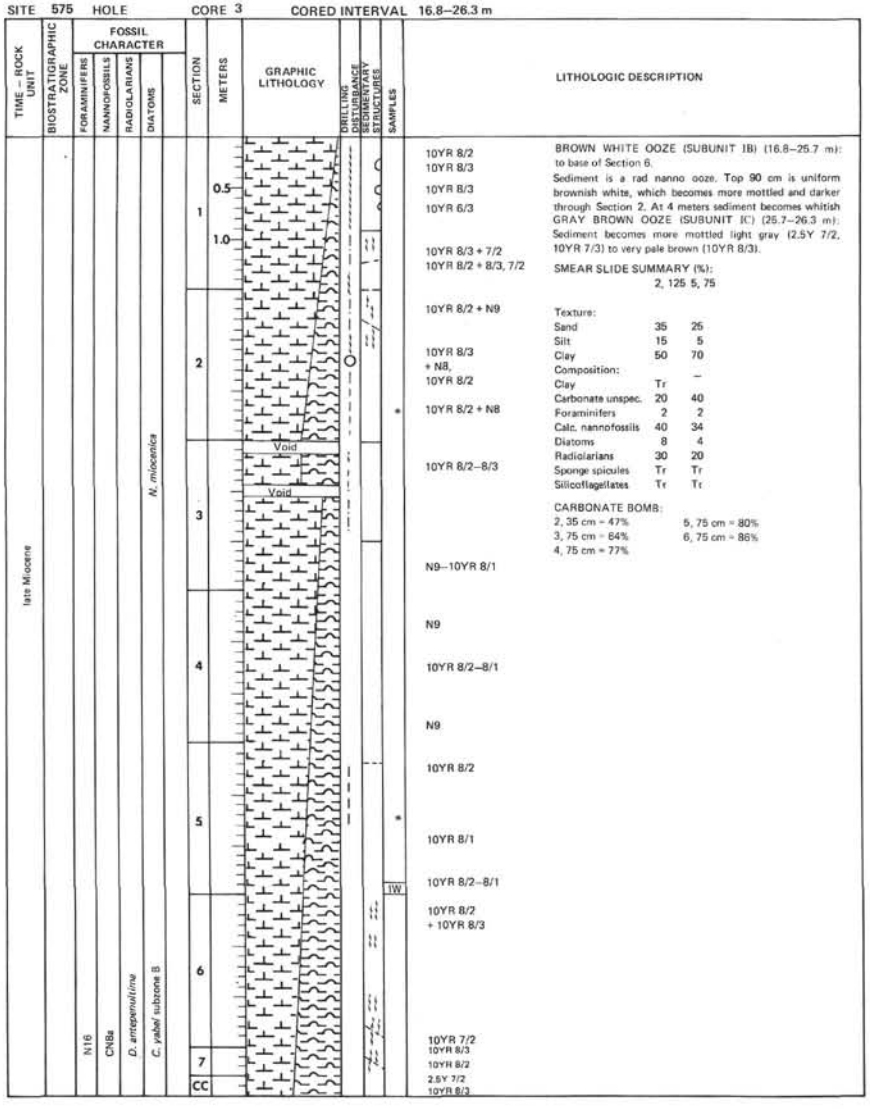
SMEAR SLIDE SUMMARY (%):

	1, 75 D	5, 90	6, 75
Texture:			
Sand	15	5	2
Silt	40	55	15
Clay	45	40	83
Composition:			
Clay	10	2	–
Pyrite	10	–	–
Carbonate unspec.	25	10	–
Foraminifers	Tr	Tr	1
Calc. nannofossils	15	60	92
Diatoms	15	15	2
Radiolarians	15	13	5
Sponge spicules	Tr	Tr	Tr
Silicoflagellates	–	Tr	Tr
Fe-oxides	10	–	–

CARBONATE BOMB:
1, 75 cm = 28%
2, 75 cm = 38%
3, 75 cm = 56%
4, 75 cm = 40%
5, 75 cm = 85%
6, 75 cm = 90%

NOTE: Graphic lithologies represent average compositions derived from smear slides and do not always reflect the detailed alternation of sediment types. Major lithologic boundaries are shown but gradational contacts, small-scale cyclicity and ooze-chalk alternations are represented schematically. Color changes approximate to lithologic changes.

SITE 575 HOLE CORE 3 CORED INTERVAL 16.8–26.3 m



LITHOLOGIC DESCRIPTION

BROWN WHITE OOZE (SUBUNIT IB) (16.8–25.7 m): to base of Section 6.

Sediment is a rad nanno ooze. Top 90 cm is uniform brownish white, which becomes more mottled and darker through Section 2. At 4 meters sediment becomes whitish GRAY BROWN OOZE (SUBUNIT IC) (25.7–26.3 m): Sediment becomes more mottled light gray (2.5Y 7/2, 10YR 7/3) to very pale brown (10YR 8/3).

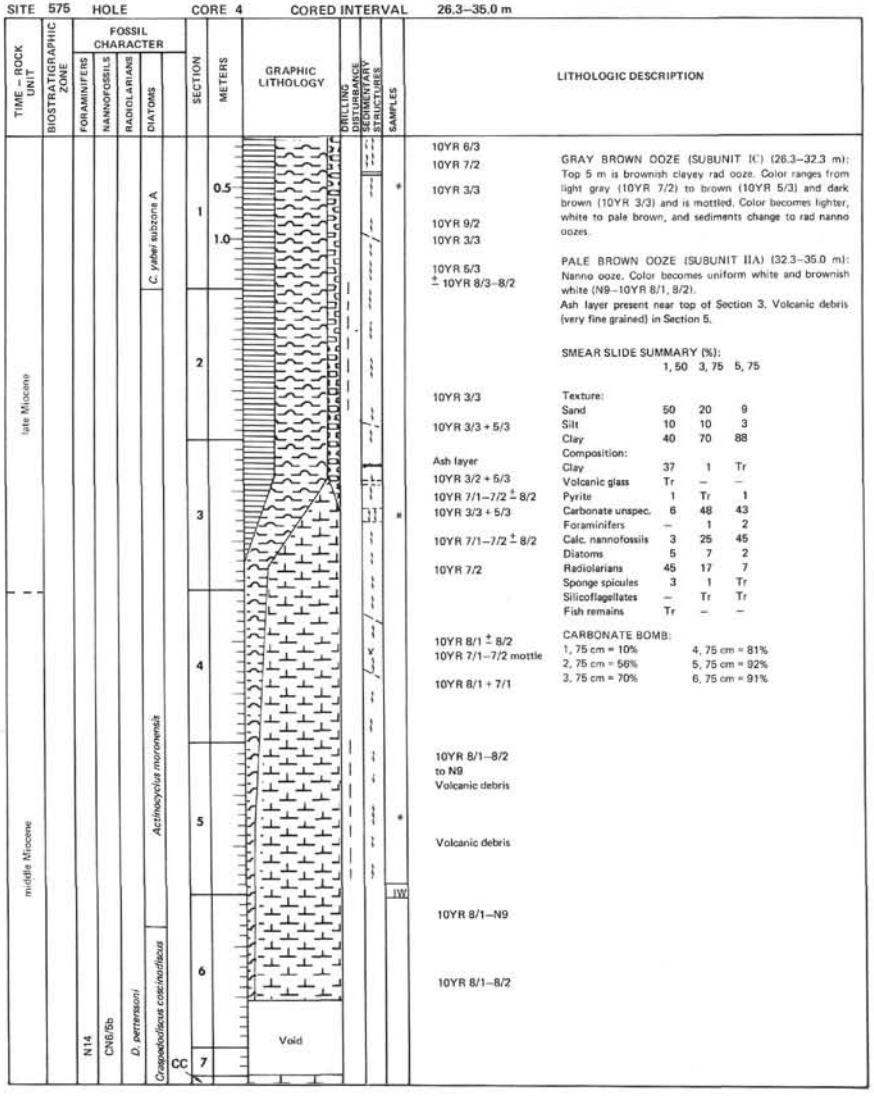
SMEAR SLIDE SUMMARY (%):

	2, 125	5, 75
Texture:		
Sand	35	25
Silt	15	5
Clay	50	70
Composition:		
Clay	Tr	–
Carbonate unspec.	20	40
Foraminifers	2	2
Calc. nannofossils	40	34
Diatoms	8	4
Radiolarians	30	20
Sponge spicules	Tr	Tr
Silicoflagellates	Tr	Tr

CARBONATE BOMB:

2, 35 cm = 47%
3, 75 cm = 64%
4, 75 cm = 77%
5, 75 cm = 80%
6, 75 cm = 86%

SITE 575 HOLE CORE 4 CORED INTERVAL 26.3–35.0 m



LITHOLOGIC DESCRIPTION

GRAY BROWN OOZE (SUBUNIT IC) (26.3–32.3 m): Top 5 m is brownish clayey rad ooze. Color ranges from light gray (10YR 7/2) to brown (10YR 5/3) and dark brown (10YR 3/3) and is mottled. Color becomes lighter, white to pale brown, and sediments change to rad nanno oozes.

PALE BROWN OOZE (SUBUNIT IIA) (32.3–35.0 m): Nanno ooze. Color becomes uniform white and brownish white (N9–10YR 8/1, 8/2).

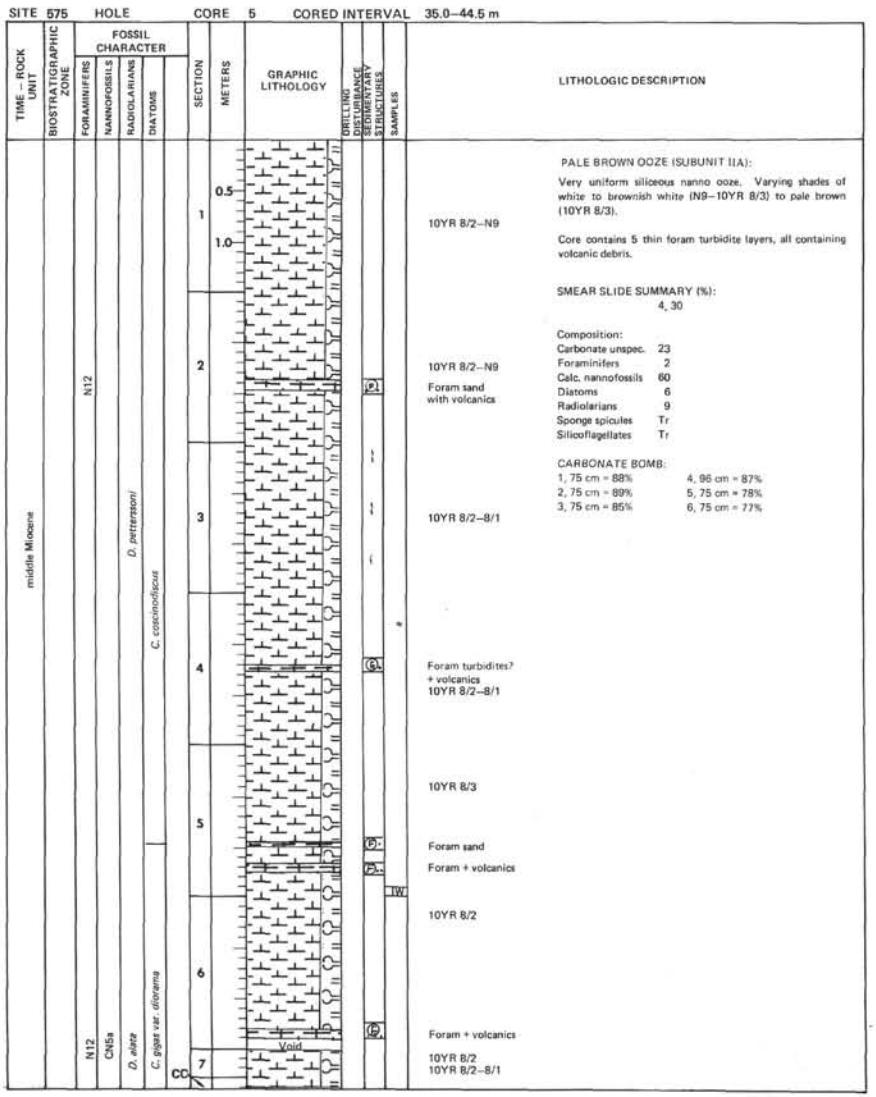
Ash layer present near top of Section 3. Volcanic debris (very fine grained) in Section 5.

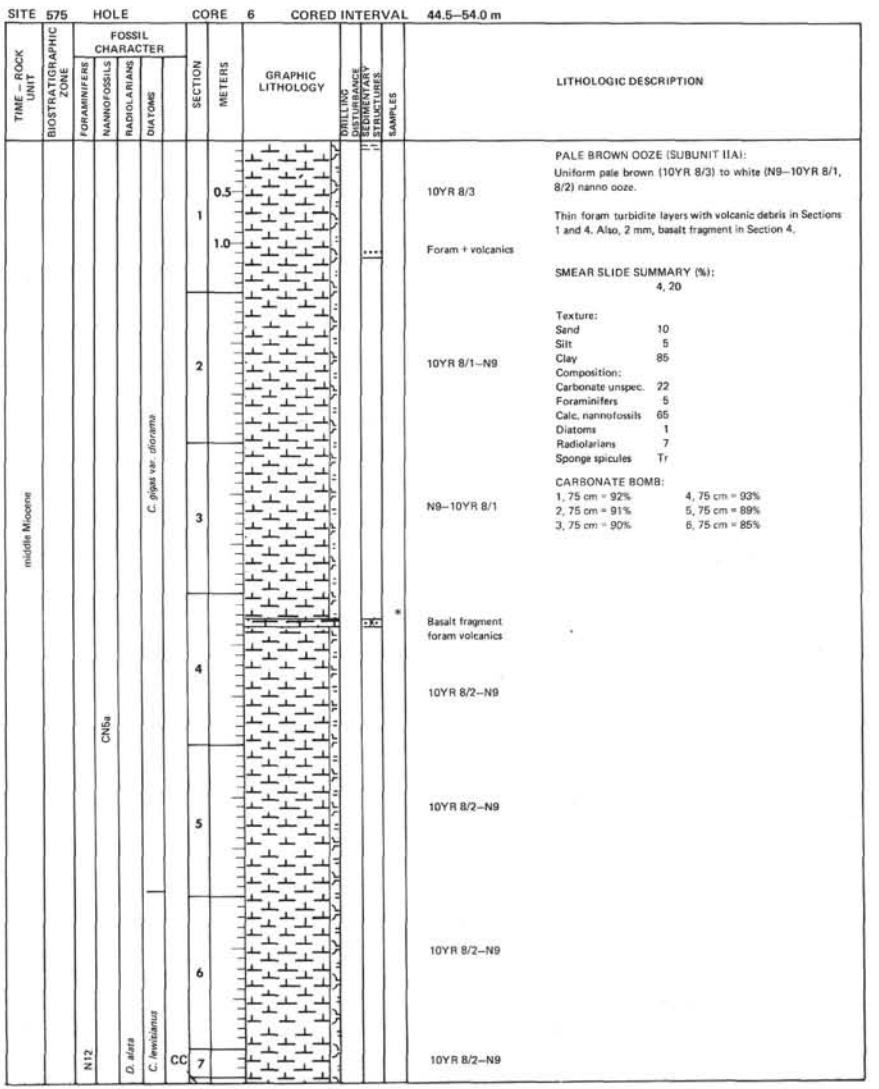
SMEAR SLIDE SUMMARY (%):

	1, 50	3, 75	5, 75
Texture:			
Sand	50	20	9
Silt	10	10	3
Clay	40	70	88
Composition:			
Clay	37	1	Tr
Volcanic glass	Tr	–	–
Pyrite	1	Tr	1
Carbonate unspec.	6	48	43
Foraminifers	–	1	2
Calc. nannofossils	3	25	45
Diatoms	5	7	2
Radiolarians	45	17	7
Sponge spicules	3	1	Tr
Silicoflagellates	–	Tr	Tr
Fish remains	Tr	–	–

CARBONATE BOMB:

1, 75 cm = 10%
2, 75 cm = 56%
3, 75 cm = 70%
4, 75 cm = 81%
5, 75 cm = 92%
6, 75 cm = 91%


SITE 575 HOLE CORE 5 CORED INTERVAL 35.0–44.5 m
TIME – ROCK UNIT
BIOSTRATIGRAPHIC ZONE
FOSSIL CHARACTER
FORAMINIFERS
NANNOFOSSILS
RADIOLARIANS
DIATOMS
SECTION
METERS
GRAPHIC LITHOLOGY
DRILLING DISTURBANCE
SEDIMENTARY STRUCTURES
SAMPLES
LITHOLOGIC DESCRIPTION
middle Miocene
N12
CN5a
D. alata
C. gigas var. diorama
D. petterssoni
C. coscinodiscus
Void
10YR 8/2–N9
Foram sand with volcanics
10YR 8/2–8/1
Foram turbidites? + volcanics
10YR 8/3
Foram sand
Foram + volcanics
10YR 8/2
Foram + volcanics
10YR 8/2
10YR 8/2–8/1
PALE BROWN OOZE (SUBUNIT IIA):
Very uniform siliceous nanno ooze. Varying shades of white to brownish white (N9–10YR 8/3) to pale brown (10YR 8/3).
Core contains 5 thin foram turbidite layers, all containing volcanic debris.
SMEAR SLIDE SUMMARY (%):
4, 30
Composition:
Carbonate unspec. 23
Foraminifers 2
Calc. nannofossils 60
Diatoms 6
Radiolarians 9
Sponge spicules Tr
Silicoflagellates Tr
CARBONATE BOMB:
1, 75 cm = 88%
2, 75 cm = 89%
3, 75 cm = 85%
4, 96 cm = 87%
5, 75 cm = 78%
6, 75 cm = 77%


SITE 575 HOLE CORE 6 CORED INTERVAL 44.5–54.0 m
TIME – ROCK UNIT
BIOSTRATIGRAPHIC ZONE
FOSSIL CHARACTER
FORAMINIFERS
NANNOFOSSILS
RADIOLARIANS
DIATOMS
SECTION
METERS
GRAPHIC LITHOLOGY
DRILLING DISTURBANCE
SEDIMENTARY STRUCTURES
SAMPLES
LITHOLOGIC DESCRIPTION
middle Miocene
N12
CN5a
D. alata
C. lewisianus
C. gigas var. diorama
10YR 8/3
Foram + volcanics
10YR 8/1–N9
N9–10YR 8/1
Basalt fragment foram volcanics
10YR 8/2–N9
10YR 8/2–N9
10YR 8/2–N9
10YR 8/2–N9
PALE BROWN OOZE (SUBUNIT IIA):
Uniform pale brown (10YR 8/3) to white (N9–10YR 8/1, 8/2) nanno ooze.
Thin foram turbidite layers with volcanic debris in Sections 1 and 4. Also, 2 mm, basalt fragment in Section 4.
SMEAR SLIDE SUMMARY (%):
4, 20
Texture:
Sand 10
Silt 5
Clay 85
Composition:
Carbonate unspec. 22
Foraminifers 5
Calc. nannofossils 65
Diatoms 1
Radiolarians 7
Sponge spicules Tr
CARBONATE BOMB:
1, 75 cm = 92%
2, 75 cm = 91%
3, 75 cm = 90%
4, 75 cm = 93%
5, 75 cm = 89%
6, 75 cm = 85%

SITE 575 HOLE CORE 7 CORED INTERVAL 54.0–63.5 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
middle Miocene	N11 / CN4 / *D. altis* / *C. levisianus*	N11	CN4	*D. altis*	*C. levisianus*	1–7, CC	0.5, 1.0					PALE BROWN OOZE (SUBUNIT IIA): Uniform pale brown to white rad nanno ooze. Slightly darker near summit and base of core. Two thick (~50 cm) and one thin (<10 cm) foram turbidite layers with volcanic debris.

10YR 8/2
10YR 8/2–N9
10YR 8/2
10YR 8/2–N9
Foram sand + volcanics
10YR 8/2–N9
10YR 8/2–N9
Foram rich
10YR 8/2
10YR 8/2–N9
5 mm glass pebble
10YR 8/2
10YR 8/2–N9

SMEAR SLIDE SUMMARY (%):

	4, 30
Texture:	
Sand	17
Silt	3
Clay	80
Composition:	
Carbonate unspec.	25
Foraminifers	5
Calc. nannofossils	55
Diatoms	3
Radiolarians	12
Sponge spicules	Tr

CARBONATE BOMB:

1, 75 cm = 88%	4, 75 cm = 83%
2, 75 cm = 99%	5, 75 cm = 90%
3, 75 cm = 85%	6, 75 cm = 89%

SITE 575 HOLE CORE 8 CORED INTERVAL 63.5–73.0 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
middle Miocene	N10 / CN4 / N10 / *D. altis* / *C. peplum* subzone B / *C. levisianus*	N10	CN4	*D. altis*	*C. peplum* subzone B; *C. levisianus*	1–7, CC	0.5, 1.0					PALE BROWN OOZE (SUBUNIT IIA) (63.5–68.5 m): Top 5 m is uniform pale brown to white nanno ooze. GREEN OOZE (SUBUNIT IIB) (68.5–73.0 m): Light greenish gray nanno ooze. Fifty cm below is a very sharp contact with thin purplish gray (5P 4/2) pyrite-rich foram layer. Below this is uniform light greenish gray (5G 8/1) nanno ooze.

10YR 8/2–N9
Burrow with 2.5Y 7/6 fill
Volcanic glass
10YR 8/2–8/1
N9
10YR 8/2
5G 8/1
5P 4/2
Pyrite + forams
5G 8/1
N6
N6
5G 8/1
N6
N6
Foram N7
N5
5G 8/1
5G 8/1
5GY 7/1
5G 8/1
5G 7/1
5G 8/1
5G 8/1

SMEAR SLIDE SUMMARY (%):

	2, 75	4, 106 M	6, 75
Texture:			
Sand	10	50	15
Silt	5	15	5
Clay	85	35	80
Composition:			
Volcanic glass	–	Tr	–
Pyrite	–	8	Tr
Carbonate unspec.	25	5	7
Foraminifers	6	50	9
Calc. nannofossils	60	35	75
Diatoms	5	1	2
Radiolarians	4	1	6
Sponge spicules	Tr	Tr	1
Silicoflagellates	Tr	–	Tr

CARBONATE BOMB:

1, 75 cm = 89%	4, 75 cm = 91%
2, 75 cm = 92%	5, 75 cm = 88%
3, 75 cm = 93%	6, 75 cm = 85%

SITE 575 HOLE CORE 9 CORED INTERVAL 73.0–80.2 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
middle Miocene	N8	N8 N9 N10	CN3/4	*C. costata*	*C. peplum* subzone A / *C. peplum* subzone B	1 2 3 4 5 CC	0.5 1.0				*	5G 8/1 5GY 7/1 Very stiff 5GY 7/1 5G 8/1 5G 8/1 5G 9/1 Volcanic fragments 5G 8/1–9/1 Welded tuff 0, 5 cm pebble 5G 9/1 5G 8/1 5G 7/1 5G 9/1–8/1 5G 9/1 5GY 7/1 5G 9/1 5G 8/1 5GY 7/1 5G 8/1

GREEN OOZE (SUBUNIT IIB):

Uniform, weakly mottled, greenish white–light greenish gray siliceous nanno ooze. Volcanic debris is present in Section 2 (3 mm fragments) and Section 3 (a welded tuff pebble).

SMEAR SLIDE SUMMARY (%):

	4, 75
Texture:	
Sand	17
Silt	3
Clay	80
Compsotion:	
Volcanic glass	Tr
Carbonate unspec.	9
Foraminifers	9
Calc. nannofossils	70
Diatoms	3
Radiolarians	9
Sponge spicules	Tr

CARBONATE BOMB:

1, 75 cm = 90%
2, 75 cm = 87%
3, 75 cm = 73%
4, 75 cm = 91%
5, 75 cm = 81%

SITE 575 HOLE CORE 10 CORED INTERVAL 80.2–89.1 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
middle Miocene / early Miocene	N8	N8	CN3/4	*C. costata*	*C. peplum* subzone A	1 2 3 4 5 6 CC	0.5 1.0				IW	5GY 7/1 Volcanic 3 mm pebble 5G 8/1–9/1 5G 8/1 5GY 7/1 Flow in with 5GY 7/1 + 5G 8/1–9/1 5G 9/1 5GY 7/1 5GY 8/1 5GY 7/1 with N9 flow in 5GY 7/1 5G 8/1 N9 foram sand 10YR 7/3 filled burrow 10 cm long 5G 8/1 5G 9/1 10YR 7/1 mottles 5G 9/1–8/1 with 10YR 8/2–8/1 mottles 5GY 8/1 very stiff 5GY 7/1

GREEN OOZE (SUBUNIT IIB):

Dominantly pale greenish gray (5G 8/1, 5GY 7/1) to greenish white (5G 9/1) siliceous foram nanno ooze. Weakly mottled, with some brownish colors (10YR 7/1, 8/2). Top 4.5 m are highly deformed.

Foram rich interval at 50 cm, Section 4, having high water content. Increasing stiffness.

SMEAR SLIDE SUMMARY (%):

	3, 140
Texture:	
Sand	20
Silt	10
Clay	70
Composition:	
Pyrite	Tr
Carbonate unspec.	30
Foraminifers	15
Calc. nannofossils	40
Diatoms	9
Radiolarians	6
Sponge spicules	Tr

CARBONATE BOMB:

2, 75 cm = 90%
3, 75 cm = 87%
4, 75 cm = 93%
5, 75 cm = 86%
6, 75 cm = 88%

SITE 575 HOLE CORE 11 CORED INTERVAL 89.1–98.6 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N8		CN3	*C. costata*	*D. nicobarica* subzone B							

GREEN OOZE (SUBUNIT IIB) (89.1–94.6 m):

Nanno ooze. Downcore sequence of subtle color change from pale greens (5Y 6/2, 7/2, 5G 8/1) in the upper 5–6 meters, to:

YELLOW BROWN OOZE (SUBUNIT IIC) (94.6–98.6 m): Pale olive gray to very pale brown (10YR 8/2) nanno ooze. Weak mottling at color changes. Volcanic chip (2 x 3 mm) at 6.75 m.

5G 9/1 Very stiff
5Y 6/2
5Y 7/2
5G 8/1
N9
5GY 8/1
5G 8/1
5GY 7/1
5GY 8/1
5GY 7/1
5G 8/1
5GY 7/1
5G 8/1
5Y 8/2
5Y 7/2
5Y 6/2
5Y 8/2 Volcanic chip
N9 + 5Y 8/2
5Y 8/1
10YR 8/2
10YR 8/2

SMEAR SLIDE SUMMARY (%):

	4, 25
Composition:	
Volcanic glass	Tr
Pyrite	Tr
Carbonate unspec.	12
Foraminifers	9
Calc. nannofossils	70
Diatoms	3
Radiolarians	6
Sponge spicules	Tr

CARBONATE BOMB:

1, 70 cm = 74%
2, 75 cm = 86%
3, 75 cm = 84%
4, 75 cm = 90%
5, 75 cm = 91%
6, 75 cm = 86%

SITE 575 HOLE A CORE (HPC) 1 CORED INTERVAL 93.8–98.9 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N8		CN3	*C. costata*	*D. nicobarica* subzone B							

GREEN OOZE (SUBUNIT IIB) (93.8–98.9 m):

Dominantly yellow-white to pale yellow (2.5Y 8/1–5Y 7/3) nanno ooze. Pale yellow to pale yellowish brown (2.5Y 7/4–2.5Y 6/4) siliceous layers in Cores 3 and 4. Foram turbidite with volcanic chips in Section 3. Mottles and burrows evident, especially in relatively darker sediments.

N9–2.5Y 9/2
2.5Y 8/2
N9–2.5Y 9/2
5Y 8/2
5Y 7/3
5Y 9/1–9/2
5Y 9/1–9/2
2.5Y 8/2
2.5Y 7/4
Volcanic chips N9 + foram turbidite
2.5Y 6/4 + 7/4 mottles
2.5Y 8/2
2.5Y 9/2–N9
2.5Y 7/4
2.5Y 9/2–N9
2.5Y 9/2–N9

Void

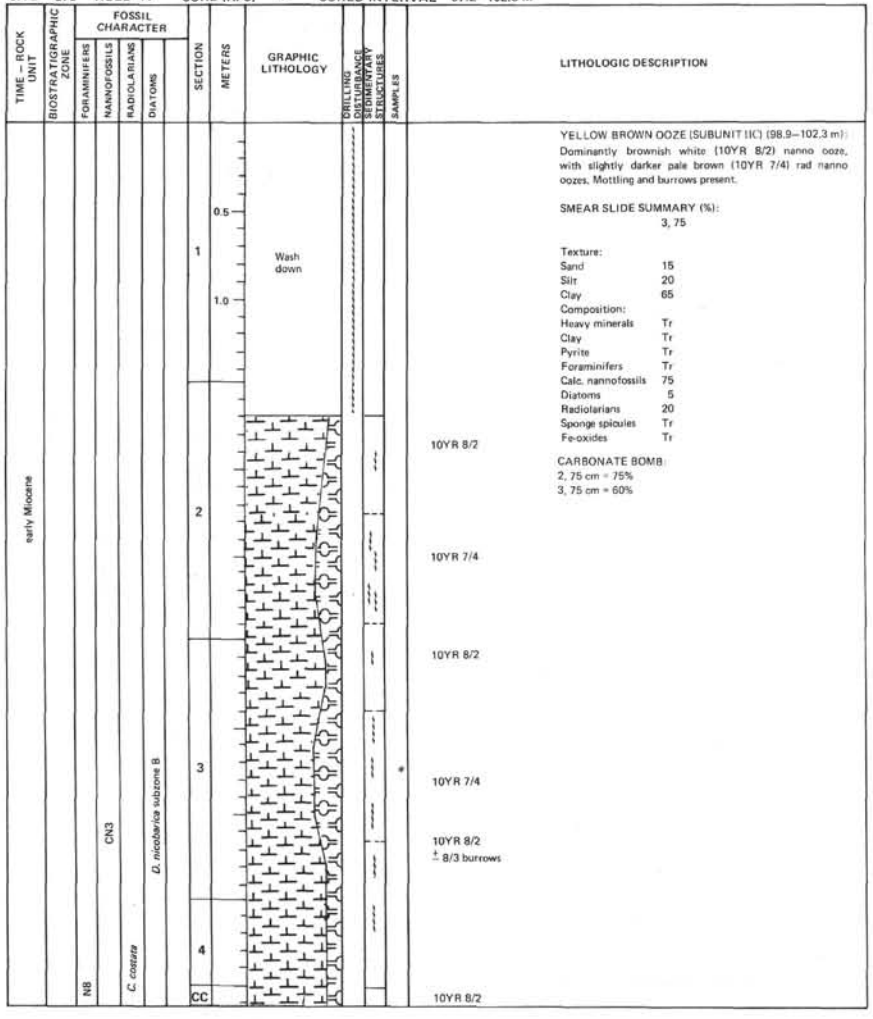
SMEAR SLIDE SUMMARY (%):

	1, 75 D	3, 85 M	3, 120 M
Texture:			
Sand	5	50	10
Silt	25	30	50
Clay	70	20	40
Composition:			
Clay	–	–	5
Micronodules	Tr	–	–
Carbonate unspec.	–	–	10
Foraminifers	1	60	Tr
Calc. nannofossils	90	40	25
Diatoms	3	–	20
Radiolarians	5	Tr	40
Sponge spicules	Tr	–	Tr
Fe-oxides	–	Tr	–

CARBONATE BOMB:

1, 75 cm = 83%
2, 75 cm = 85%
3, 75 cm = 94%

SITE 575 HOLE A CORE (HPC) 2 CORED INTERVAL 97.2–102.3 m



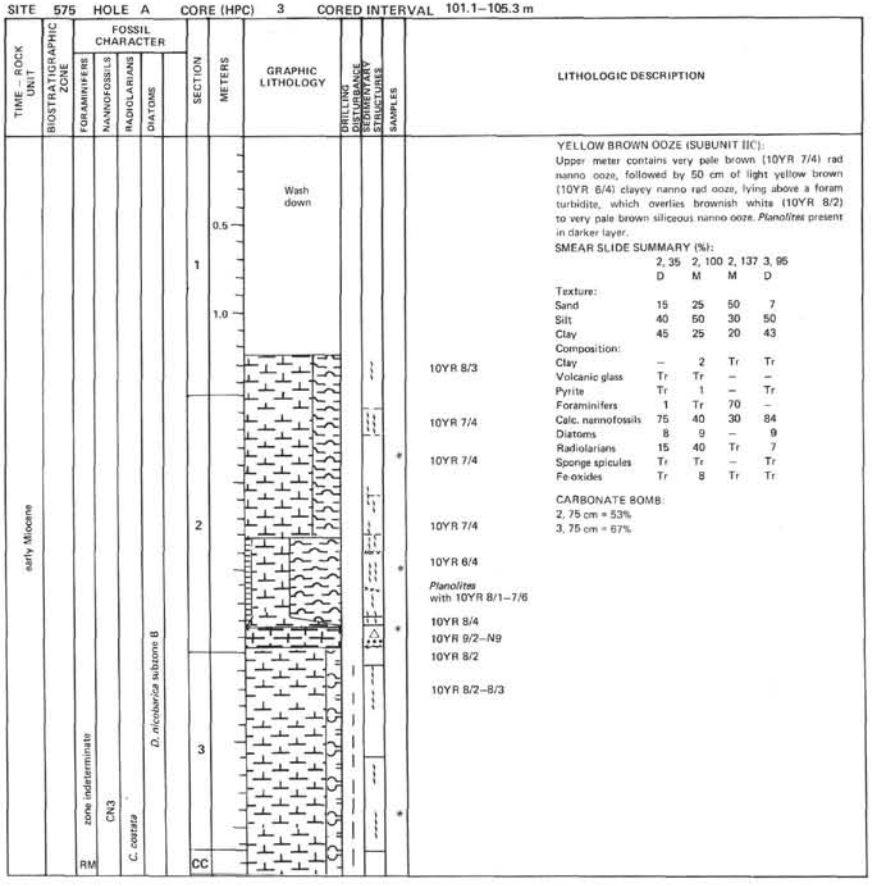
YELLOW BROWN OOZE (SUBUNIT IIC) (98.9–102.3 m):
Dominantly brownish white (10YR 8/2) nanno ooze, with slightly darker pale brown (10YR 7/4) rad nanno oozes. Mottling and burrows present.

SMEAR SLIDE SUMMARY (%):

	3, 75
Texture:	
Sand	15
Silt	20
Clay	65
Composition:	
Heavy minerals	Tr
Clay	Tr
Pyrite	Tr
Foraminifers	Tr
Calc. nannofossils	75
Diatoms	5
Radiolarians	20
Sponge spicules	Tr
Fe-oxides	Tr

CARBONATE BOMB:
2, 75 cm = 75%
3, 75 cm = 60%

SITE 575 HOLE A CORE (HPC) 3 CORED INTERVAL 101.1–105.3 m



YELLOW BROWN OOZE (SUBUNIT IIC):
Upper meter contains very pale brown (10YR 7/4) rad nanno ooze, followed by 50 cm of light yellow brown (10YR 6/4) clayey nanno rad ooze, lying above a foram turbidite, which overlies brownish white (10YR 8/2) to very pale brown siliceous nanno ooze. *Planolites* present in darker layer.

SMEAR SLIDE SUMMARY (%):

	2, 35 D	2, 100 M	2, 137 M	3, 95 D
Texture:				
Sand	15	25	50	7
Silt	40	50	30	50
Clay	45	25	20	43
Composition:				
Clay	–	2	Tr	Tr
Volcanic glass	Tr	Tr	–	–
Pyrite	Tr	1	–	Tr
Foraminifers	1	Tr	70	–
Calc. nannofossils	75	40	30	84
Diatoms	8	9	–	9
Radiolarians	15	40	Tr	7
Sponge spicules	Tr	Tr	–	Tr
Fe-oxides	Tr	8	Tr	Tr

CARBONATE BOMB:
2, 75 cm = 53%
3, 75 cm = 67%

SITE 575 HOLE A CORE (HPC) 4 CORED INTERVAL 105.2–109.9 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	*D. nicobarica* subzone B	N7	CN3	*C. costata*	*D. nicobarica* subzone B	1	0.5	Wash down				10YR 8/3 10YR 9/2 10YR 8/2–8/3
							1.0					10YR 8/3
						2						10YR 8/2 10YR 9/2
											*	10YR 8/2–8/3
						3						10YR 9/1 10YR 8.5/2 10YR 8/2–9/2
						4						
						CC						10YR 8/2–9/2

YELLOW BROWN OOZE (SUBUNIT IIC):

Brownish white to very pale brown (10YR 8/2–8/3) rad nanno ooze. Foram rich layers at 30 cm and 3.3 meters, the latter probably a turbidite.

SMEAR SLIDE SUMMARY (%):

2, 75

Texture:	
Sand	10
Silt	35
Clay	55
Composition:	
Clay	Tr
Pyrite	Tr
Foraminifers	Tr
Calc. nannofossils	80
Diatoms	7
Radiolarians	13
Fe-oxides	Tr

CARBONATE BOMB:

1, 75 cm = 74%
2, 75 cm = 81%
3, 75 cm = 86%

SITE 575 HOLE A CORE (HPC) 5 CORED INTERVAL 109.0–114.1 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N7	CN3	*S. wolffii*	*D. nicobarica* subzone A	*D. nicobarica* subzone B	1	0.5	Wash down				
							1.0					10YR 9/2 with 8/2 May be out of place 10YR 8/2 10YR 8/3
						2						10YR 9/2
											*	10YR 9/2–8/2
						3						10YR 7/3 10YR 8/2 10YR 9/2
								Void			IW	
						4						10YR 9/2 ± 7/3 Foram + volcanics 10YR 9/2 10YR 8/3–9/2
						CC						10YR 8/2–9/2

YELLOW BROWN OOZE (SUBUNIT IIC):

Brownish white to very pale brown siliceous nanno ooze, color 10YR 8/2–8/3, 7/3. Foram turbidite with volcanic glass fragments at 4.75 meters.

SMEAR SLIDE SUMMARY (%):

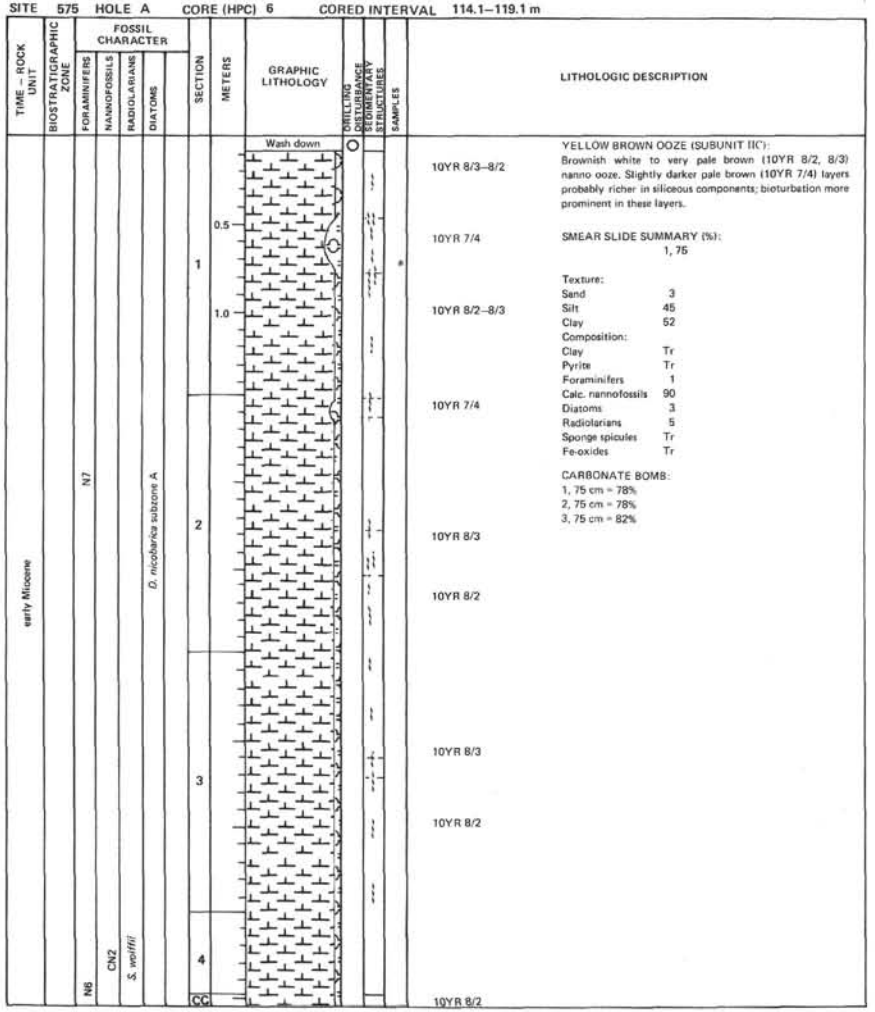
3, 30

Texture:	
Sand	5
Silt	50
Clay	45
Composition:	
Pyrite	Tr
Foraminifers	1
Calc. nannofossils	89
Diatoms	3
Radiolarians	7
Fe-oxides	Tr

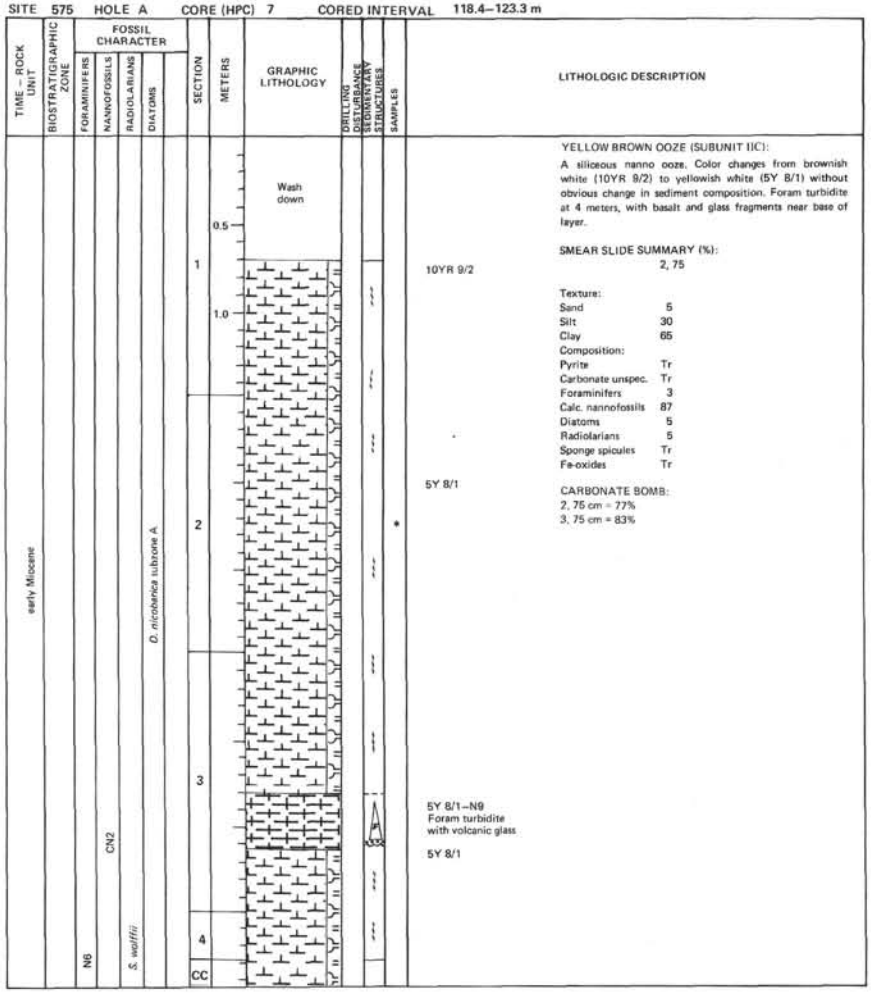
CARBONATE BOMB:

2, 75 cm = 89%
3, 75 cm = 69%

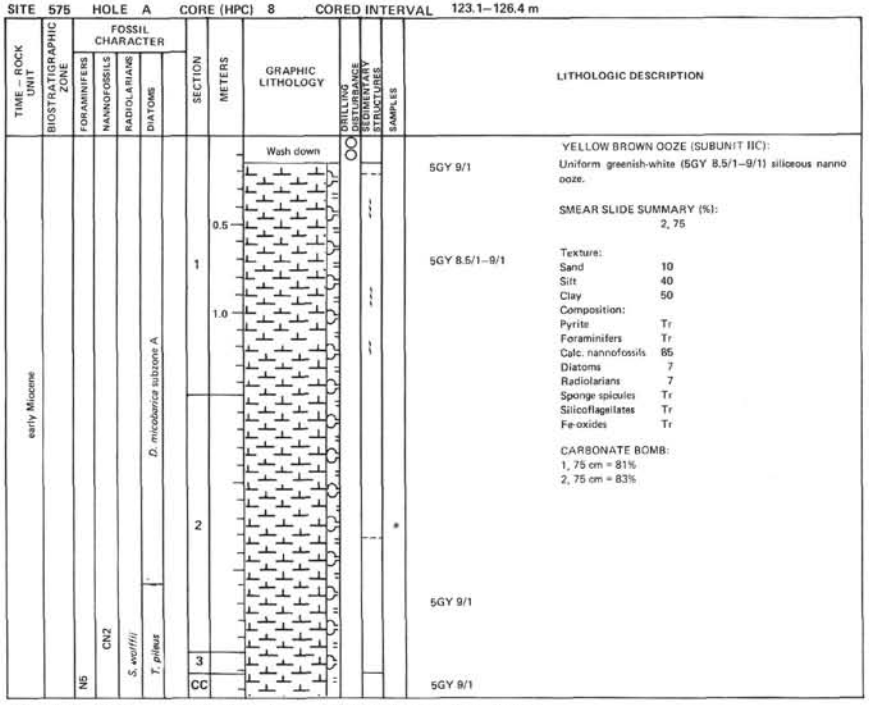
SITE 575 HOLE A CORE (HPC) 6 CORED INTERVAL 114.1–119.1 m



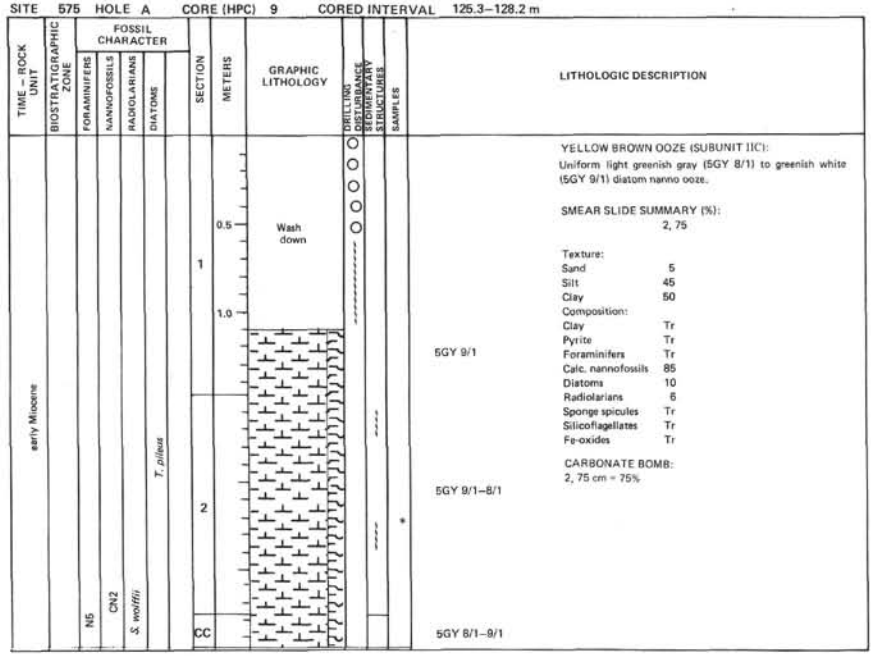
SITE 575 HOLE A CORE (HPC) 7 CORED INTERVAL 118.4–123.3 m



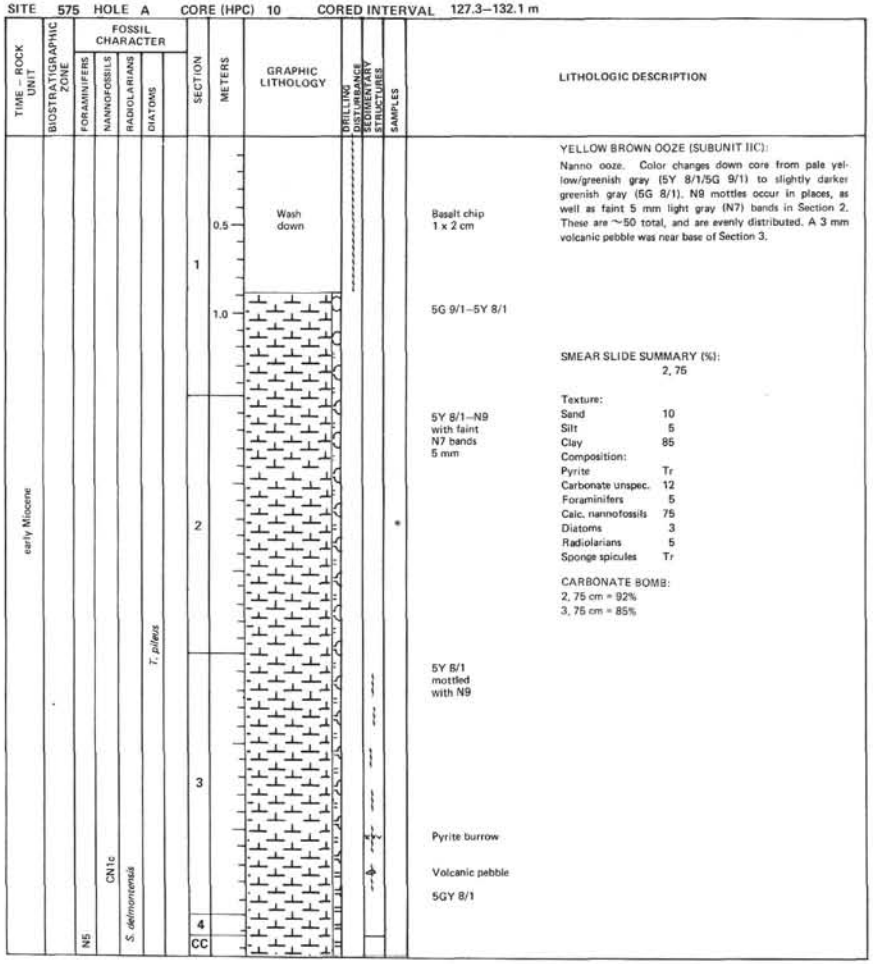
SITE 575 HOLE A CORE (HPC) 8 CORED INTERVAL 123.1–126.4 m



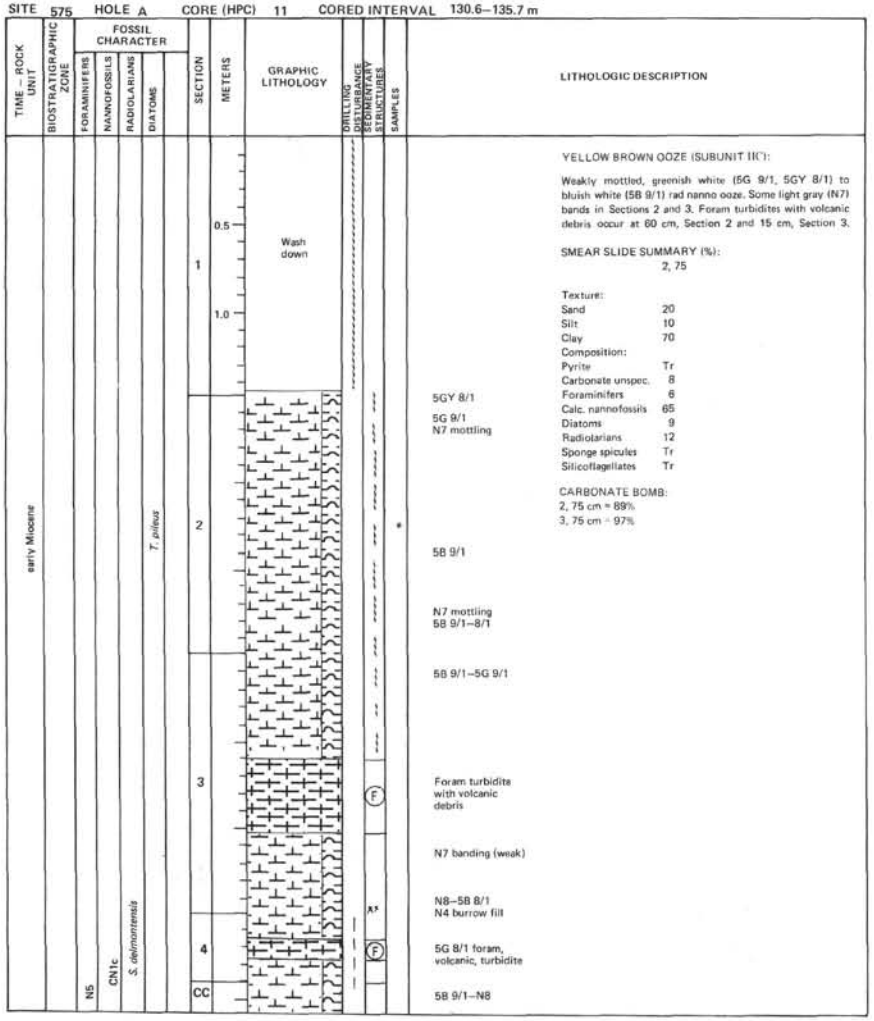
SITE 575 HOLE A CORE (HPC) 9 CORED INTERVAL 125.3–128.2 m



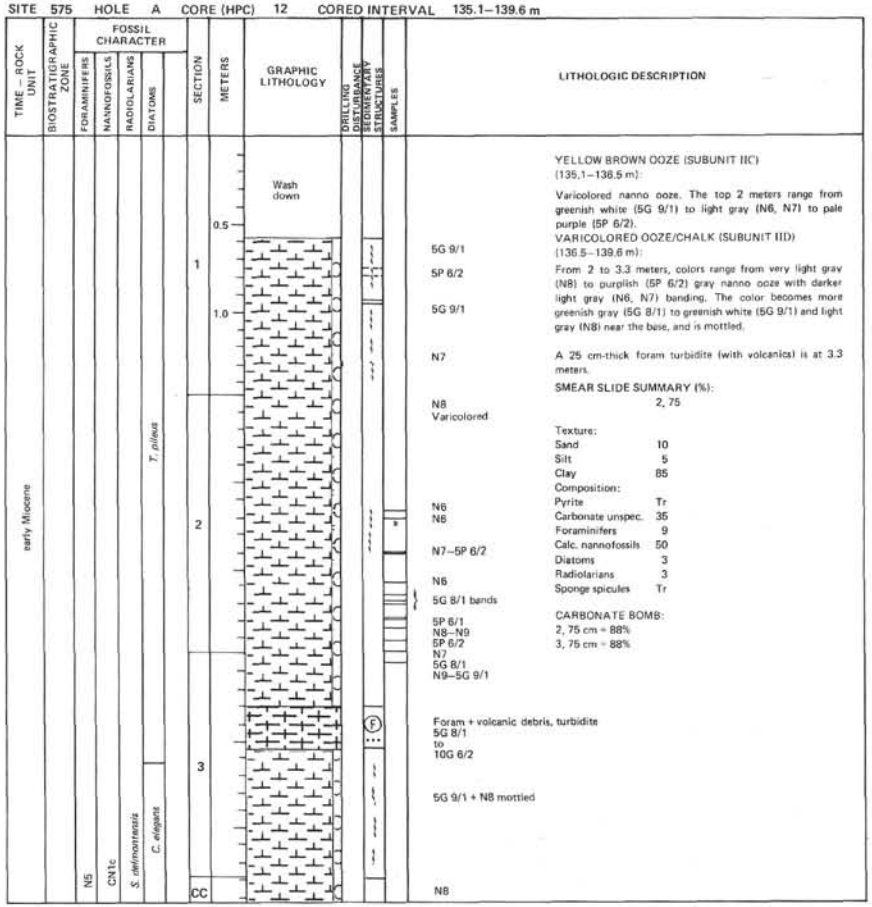
SITE 575 HOLE A CORE (HPC) 10 CORED INTERVAL 127.3–132.1 m



SITE 575 HOLE A CORE (HPC) 11 CORED INTERVAL 130.6–135.7 m



SITE 575 HOLE A CORE (HPC) 12 CORED INTERVAL 135.1–139.6 m



SITE 575 HOLE A CORE (HPC) 13 CORED INTERVAL 138.8–142.9 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N5 / CN1c		*S. delmontensis*		*C. elegans*	1	0.5	Wash down				
							1.0					Varicolored 5P 6/2
												N9–5G 9/1
												5P 6/2
												N8
												5G 8/1–9/1
						2					*	5P 6/2
												5G 8/1–7/1
												5G 8/1–9/1
												5P 6/2
												N8
						3						5G 8/1–9/1
												5G 8/1–7/1
												N8–5P 6/2
												5P 6/2 + 5G 8/1 mottled
												5P 6/2
						CC						5P 7/2–8/2–N8

VARICOLORED OOZE/CHALK (SUBUNIT IID):

Varicolored nanno ooze. Colors include greenish gray (5G 8/1), purple (5P 6/2), purplish gray (5P 7/2, 8/2) and light gray (N8) to whitish (N9, 5G 9/1). Mottling is common.

SMEAR SLIDE SUMMARY (%):

2, 75

Texture:	
Sand	7
Silt	8
Clay	85
Composition:	
Carbonate unspec.	31
Foraminifers	4
Calc. nannofossils	55
Diatoms	7
Radiolarians	2
Sponge spicules	Tr

CARBONATE BOMB:
2, 75 cm = 90%
3, 75 cm = 96%

SITE 575 HOLE A CORE (HPC) 14 CORED INTERVAL 141.9–146.4 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N5 / CN1b		*S. delmontensis*		*C. elegans*	1	0.5	Wash down				
							1.0					5P 6/2
												5G 8/1
												5P 6/2
												Very stiff
												5G 8/2–9/1
												5P 6/2 + 5G 8/1 mottled
						2					*	5G 9/1
												5G 8/1–9/1
												N8 burrow fill
												N8 fine-grained carbonate
						3						5G 9/1
												Pyrite filled
												5P 6/2–N8
						CC						N8–5P 6/2

VARICOLORED OOZE/CHALK (SUBUNIT IID):

Nanno ooze. Contains ~1 m of purple (pale) grayish (5P 6/2) with very pale green/greenish white layers. Below this is 1.5 m of weakly mottled greenish white/very pale green material grading to a lighter green. Pyrite-filled burrows and a fine grained carbonate layer present in Section 3. Purplish gray-white at base.

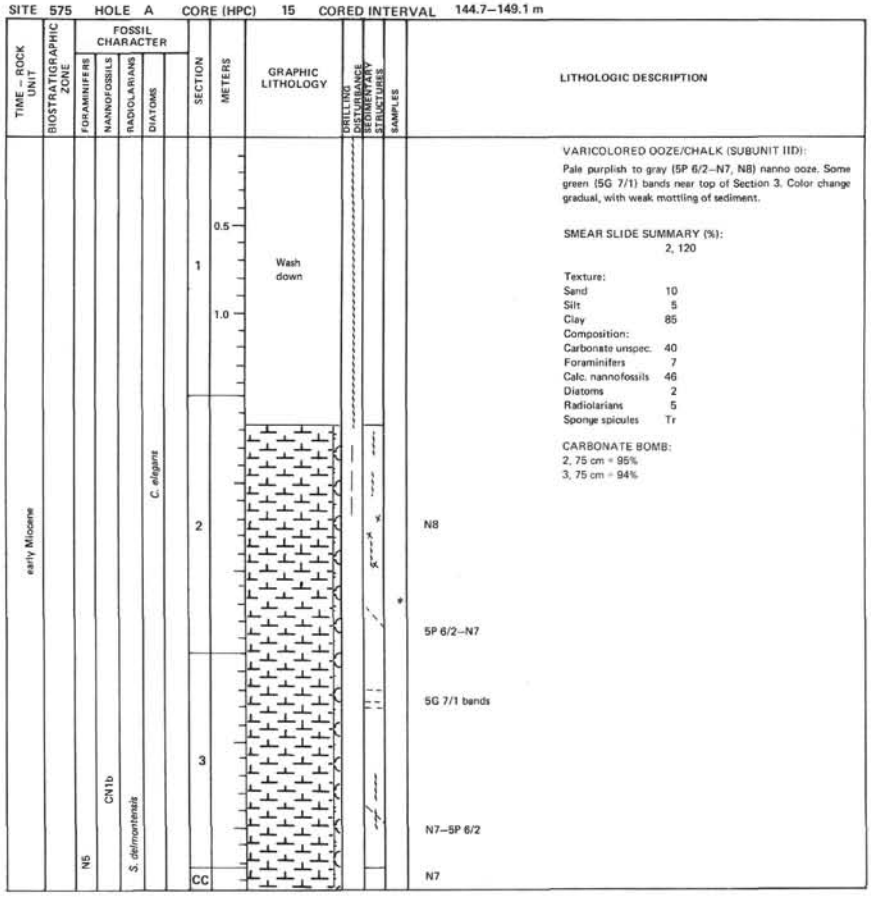
SMEAR SLIDE SUMMARY (%):

2, 75

Texture:	
Sand	10
Silt	5
Clay	85
Composition:	
Carbonate unspec.	6
Foraminifers	7
Calc. nannofossils	80
Diatoms	2
Radiolarians	5
Sponge spicules	Tr
Silicoflagellates	Tr

CARBONATE BOMB:
2, 75 cm = 83%
3, 75 cm = 94%

SITE 575 HOLE A CORE (HPC) 15 CORED INTERVAL 144.7–149.1 m



VARICOLORED OOZE/CHALK (SUBUNIT IID):

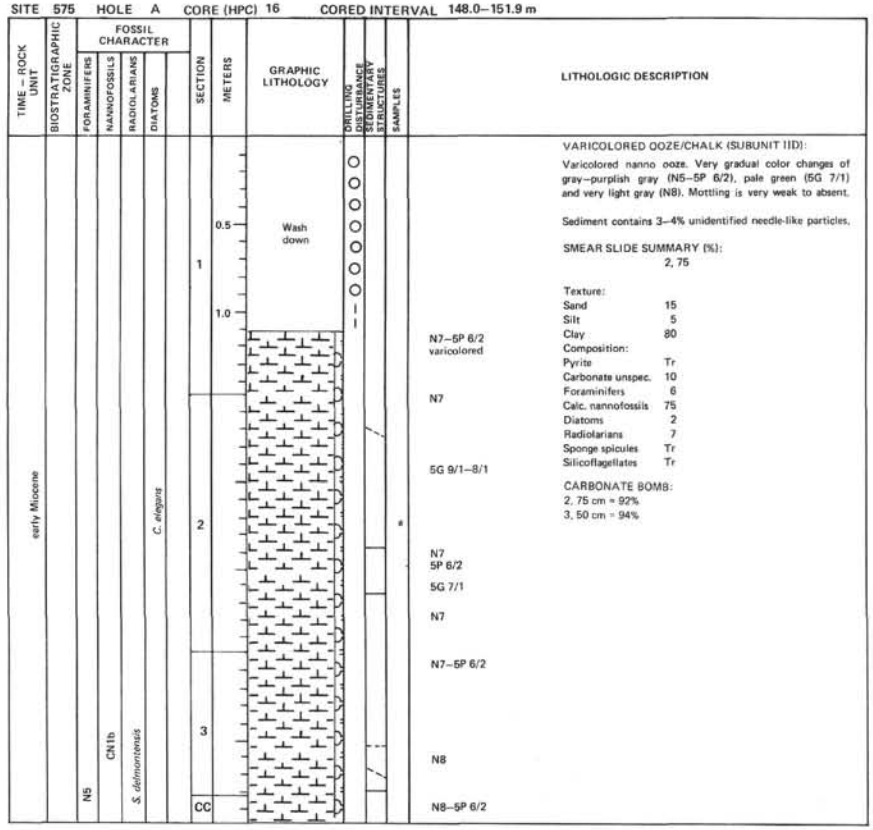
Pale purplish to gray (5P 6/2–N7, N8) nanno ooze. Some green (5G 7/1) bands near top of Section 3. Color change gradual, with weak mottling of sediment.

SMEAR SLIDE SUMMARY (%):

	2, 120
Texture:	
Sand	10
Silt	5
Clay	85
Composition:	
Carbonate unspec.	40
Foraminifers	7
Calc. nannofossils	46
Diatoms	2
Radiolarians	5
Sponge spicules	Tr

CARBONATE BOMB:
2, 75 cm = 95%
3, 75 cm = 94%

SITE 575 HOLE A CORE (HPC) 16 CORED INTERVAL 148.0–151.9 m



VARICOLORED OOZE/CHALK (SUBUNIT IID):

Varicolored nanno ooze. Very gradual color changes of gray–purplish gray (N5–5P 6/2), pale green (5G 7/1) and very light gray (N8). Mottling is very weak to absent.

Sediment contains 3–4% unidentified needle-like particles.

SMEAR SLIDE SUMMARY (%):

	2, 75
Texture:	
Sand	15
Silt	5
Clay	80
Composition:	
Pyrite	Tr
Carbonate unspec.	10
Foraminifers	6
Calc. nannofossils	75
Diatoms	2
Radiolarians	7
Sponge spicules	Tr
Silicoflagellates	Tr

CARBONATE BOMB:
2, 75 cm = 92%
3, 50 cm = 94%

SITE 575 HOLE A CORE (HPC) 17 CORED INTERVAL 150.0–153.7 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N5		CN1b	*S. delmontensis*	*C. elegans*	1	0.5–1.0	Wash down				N8–5P 6/2 5G 7/1 N8–5P 6/2 5G 9/1–N9 N9–5B 9/1 Forams + volcanics 5RP 8/2 5B 9/1
						2					*	
						3						N7 N8 5G 7/1 5RP 8/2 N7–N8 5G 9/1
						CC						

VARICOLORED OOZE/CHALK (SUBUNIT IID):
Varicolored foram nanno ooze, including very light gray to pale purple (N8–5P 6/2), greenish white to white (5G 9/1–N9), bluish white to white (5B 9/1–N9) and light gray (N7, N8). Mottles, lamination and banding are common.

Foram turbidite with volcanics in Section 2.

SMEAR SLIDE SUMMARY (%):

	2, 95
Texture:	
Sand	25
Silt	5
Clay	70
Composition:	
Pyrite	Tr
Carbonate unspec.	30
Foraminifers	21
Calc. nannofossils	40
Diatoms	3
Radiolarians	6
Sponge spicules	Tr
Silicoflagellates	Tr

CARBONATE BOMB:
2, 75 cm = 93%
3, 37 cm = 92%

SITE 575 HOLE A CORE (HPC) 18 CORED INTERVAL 152.5–157.0 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N5		CN1b	*S. delmontensis*	*C. elegans*	1	0.5–1.0	Wash down				N9 with N7 mottles N8 N9 5G 7/1 5G 8/1 5G 7/1 N8 N6 N9 with 5Y 8/1 mottles
						2		Void			*	5G 9/1–8/1
						3					IW	5G 9/1–N9 5Y 8/1 5Y 8/1 5B 8/1
						CC						5G 9/1–8/1

Varicolored

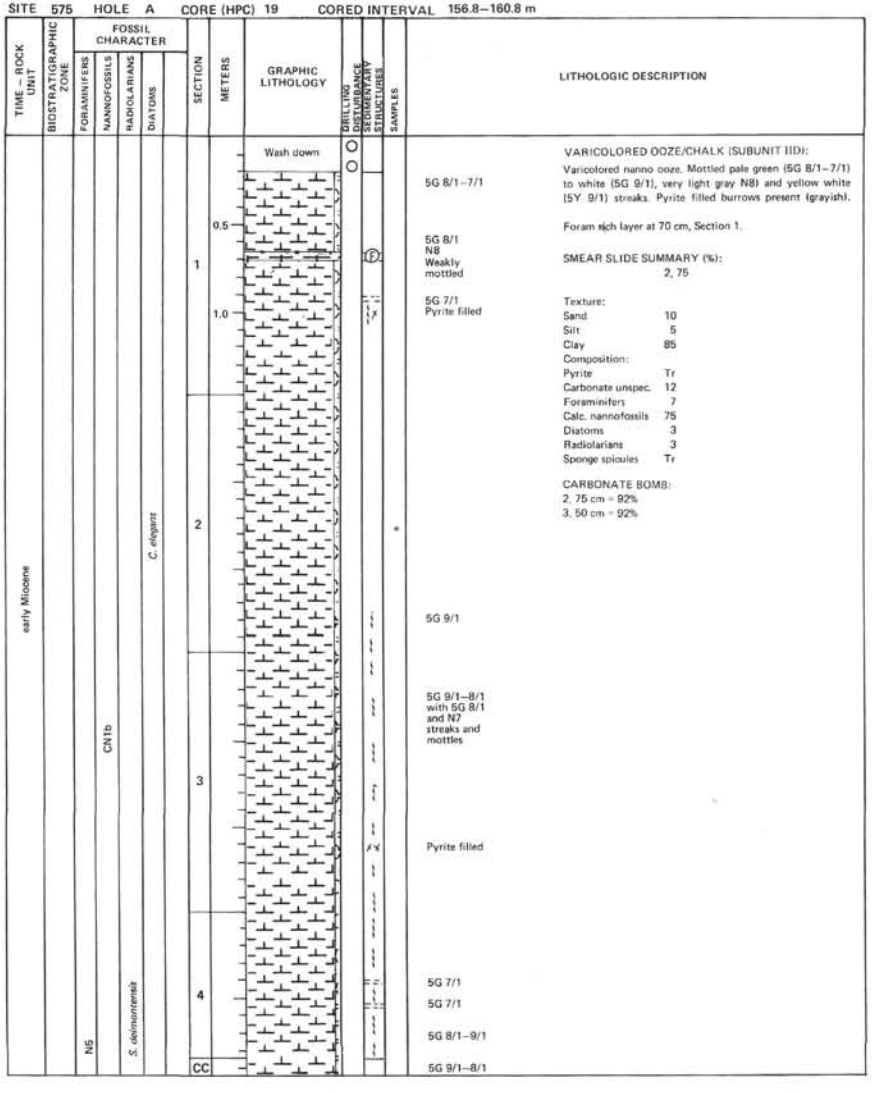
VARICOLORED OOZE/CHALK (SUBUNIT IID):
Varicolored nanno ooze with mottling and banding. Primarily shades of white, including green (5G 9/1) and yellow (5Y 8/1). Bands are greenish white and light greenish gray (5G 7/1), and gray (N8–N6). Lamination occurs.

SMEAR SLIDE SUMMARY (%):

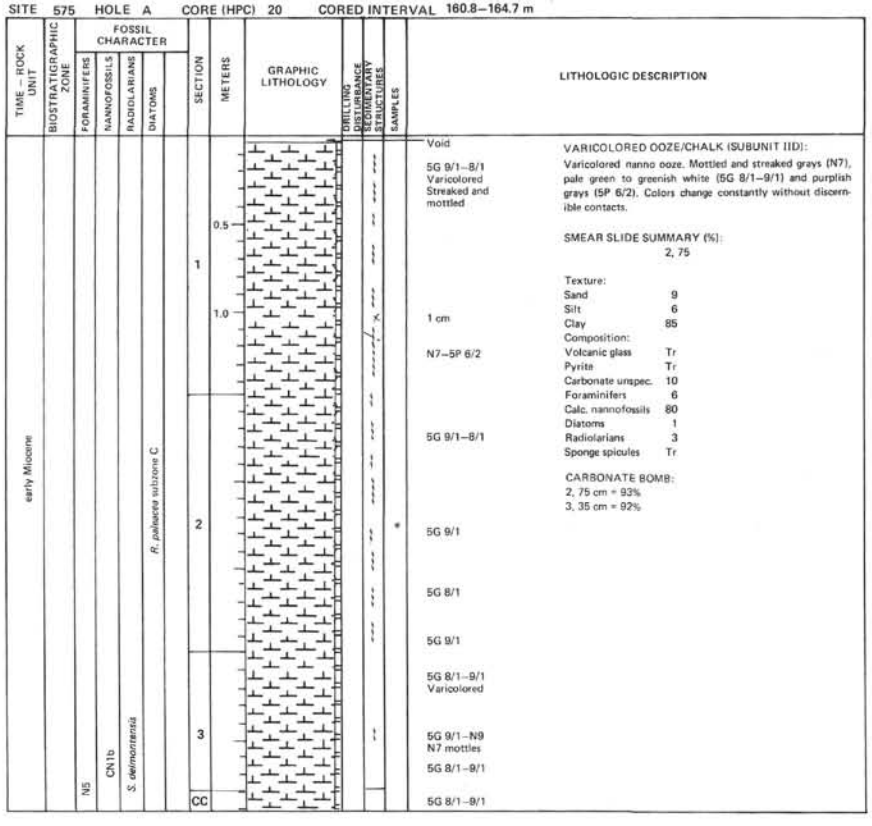
	2, 75
Texture:	
Sand	15
Silt	5
Clay	80
Composition:	
Pyrite	Tr
Carbonate unspec.	17
Foraminifers	9
Calc. nannofossils	65
Diatoms	2
Radiolarians	7
Sponge spicules	Tr
Silicoflagellates	Tr

CARBONATE BOMB:
2, 75 cm = 92%
3, 75 cm = 90%

SITE 575 HOLE A CORE (HPC) 19 CORED INTERVAL 156.8–160.8 m



SITE 575 HOLE A CORE (HPC) 20 CORED INTERVAL 160.8–164.7 m



SITE 575 HOLE A CORE (HPC) 21 CORED INTERVAL 164.7–168.7 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N4	N4	CN1b	*S. delmontensis*	*Rocella gelida* subzone D	1	0.5					5G 8/1
							1.0					5G 8.5/1
						2					*	5G 9/1
												5G 9/1–N9 Weakly mottled
						3						5G 9/1
												5P 6/2 patches
						CC						5G 9/1

VARICOLORED OOZE/CHALK (SUBUNIT IID):

Nanno ooze. Light greenish gray (5G 9/1) to greenish white (5G 8.5/1, 5G 9/1) to white (N9). Mottled weakly with purplish (5P 6/2) patches near base.

SMEAR SLIDE SUMMARY (%):

	2, 75
Texture:	
Sand	2
Silt	20
Clay	78
Composition:	
Pyrite	Tr
Carbonate unspec.	Tr
Foraminifers	2
Calc. nannofossils	90
Diatoms	4
Radiolarians	4
Sponge spicules	Tr
Silicoflagellates	Tr

CARBONATE BOMB:
1, 75 cm = 91%
2, 75 cm = 85%
3, 75 cm = 93%

SITE 575 HOLE A CORE (HPC) 22 CORED INTERVAL 168.1–172.4 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N4	N4	CN1b	*S. delmontensis*	*R. pliocena* subzone C			Wash down				
						1	0.5					5G 9/2 with purple streaks
							1.0					
						2				F	*	N7–5PB 7/2 ± N3 streaks Foram turbidite 5G 9/2 Dusky green (BG 3/3) volcanic glass
												5G 9/2
						3				F		N8–5PB 8/2 very stiff part 5G 9/2 foram turbidite N7–5PB 7/2 1 mm volcanics
												5G 9/2
						CC						Stiff chalkish nodule

VARICOLORED OOZE/CHALK (SUBUNIT IID):

Nanno ooze. Greenish white (5G 9/2) predominantly, with occasional purplish (5PB 7/2) to light gray (N7, N8) colors.

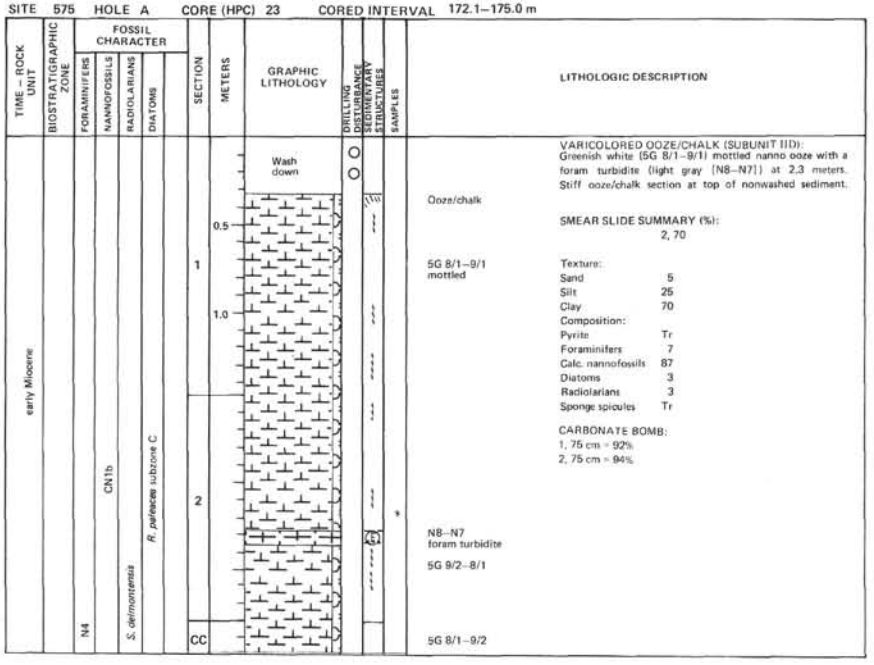
Two 25–30 cm foram turbidites with 1–3 cm fragments of volcanic glass. Glass altered, forams stained, very stiff ooze to chalk nodule at base of Section 3.

SMEAR SLIDE SUMMARY (%):

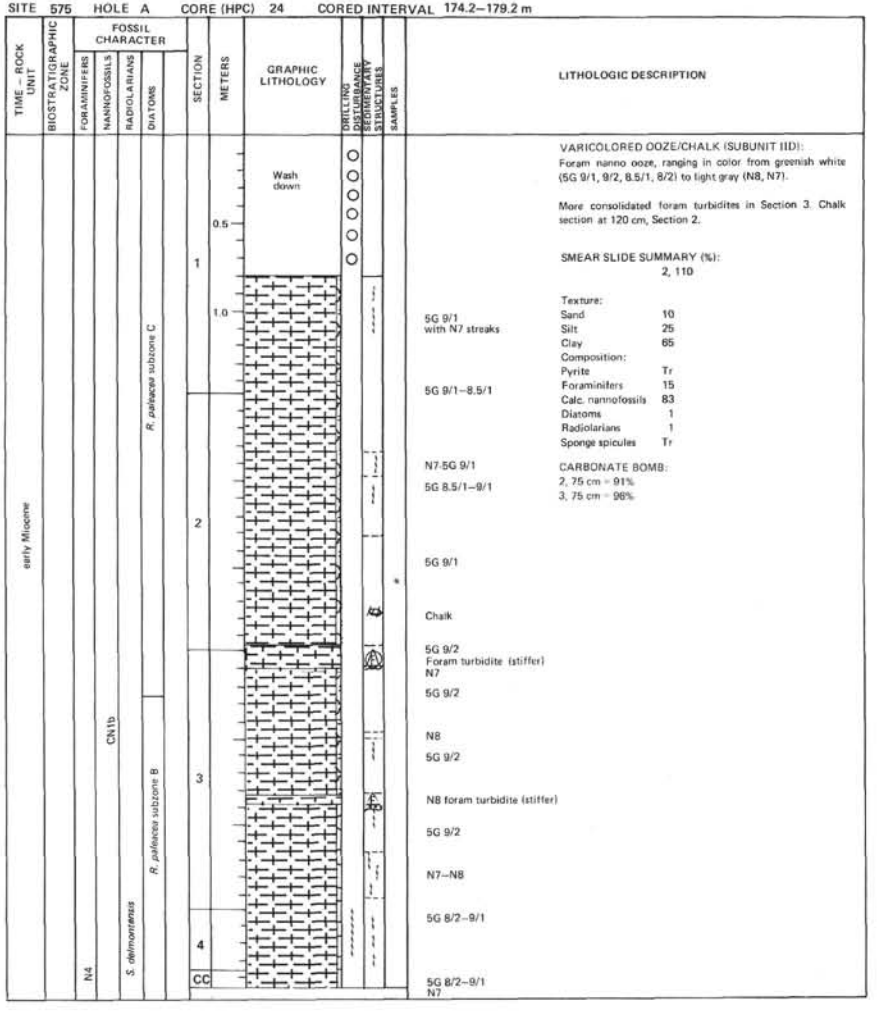
	2, 50 D	2, 93 M
Texture:		
Sand	7	–
Silt	20	–
Clay	73	–
Composition:		
Volcanic glass	–	10
Pyrite	8	Tr
Carbonate unspec.	Tr	–
Foraminifers	3	50
Calc. nannofossils	89	38
Diatoms	2	Tr
Radiolarians	5	Tr
Sponge spicules	1	–
Fe-oxides	–	2

CARBONATE BOMB:
2, 83 cm = 94%
3, 75 cm = 92%

SITE 575 HOLE A CORE (HPC) 23 CORED INTERVAL 172.1–175.0 m



SITE 575 HOLE A CORE (HPC) 24 CORED INTERVAL 174.2–179.2 m



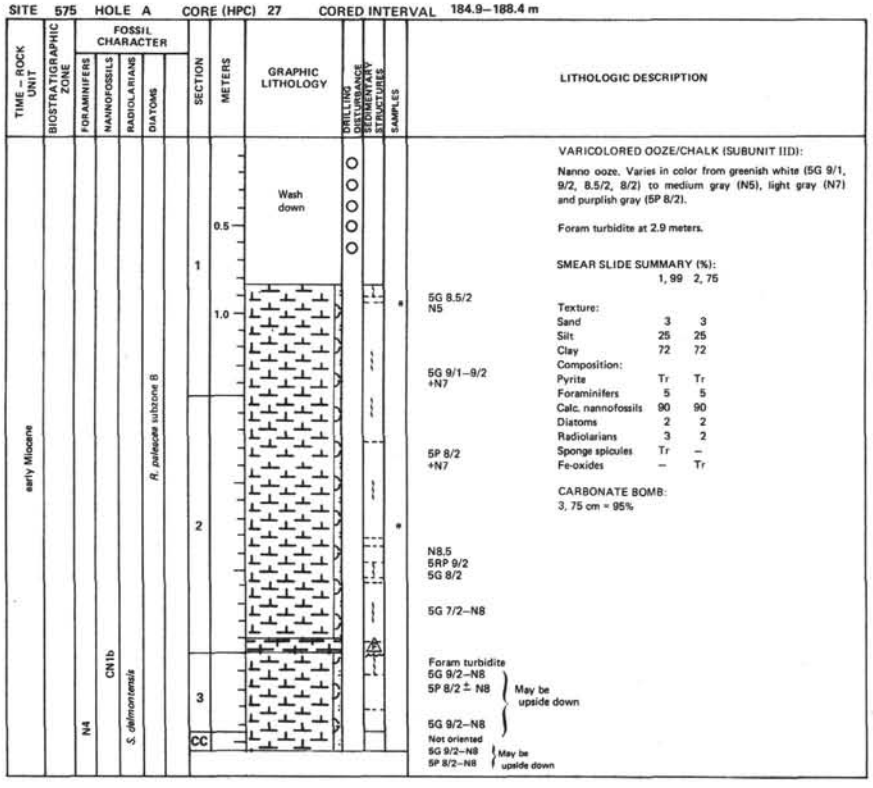
SITE 575 HOLE A CORE (HPC) 25 CORED INTERVAL 177.2–182.0 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N4		CN1b	*S. delmontensis*	*R. pallacea* subzone B	1	0.5	Wash down				VARICOLORED OOZE/CHALK (SUBUNIT IID): Greenish white (5G 9/1, 9/2) nanno ooze with some light gray (N7) streaks. Thin chalk sections at 3.75 and 4.75 meters. SMEAR SLIDE SUMMARY (%): 3, 75 Texture: Sand 1; Silt 35; Clay 64. Composition: Volcanic glass Tr; Foraminifers 5; Calc. nannofossils 93; Diatoms 1; Radiolarians 1. CARBONATE BOMB: *3, 75 cm = 99%
							1.0					
						2						5G 9/2, N7 ± 5Y 8/1 Badly streaked
												Chalk, N8 5G 9/2
						3						5G 8/2–9/2 Very stiff
												5G 9/1 + N7 streaked
												Chalk 5G 9/1
						4						
						CC						5G 9/1

SITE 575 HOLE A CORE (HPC) 26 CORED INTERVAL 180.1–185.7 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N4		CN1b	*S. delmontensis*	*R. pallacea* subzone B	1	0.5	Wash down				VARICOLORED OOZE/CHALK (SUBUNIT IID): Greenish white (5G 9/1–9/2) to white (N9) nanno ooze. Foram turbidites at 1.55 and 4.0 meters. SMEAR SLIDE SUMMARY (%): 2, 75 Texture: Sand 3; Silt 30; Clay 67. Composition: Pyrite Tr; Foraminifers 3; Calc. nannofossils 92; Diatoms 3; Radiolarians 2; Sponge spicules Tr; Fe-oxides Tr. CARBONATE BOMB: 2, 75 cm = 93%; 3, 75 cm = 94%
							1.0					5G 9/2
						2						N8 foram turbidite N6, 1 mm
												5G 9/1
												5G 9/2
						3						5G 9/2–9/1
												5G 9/1–N9
												Foram turbidite 5GY 8/1
												5G 9/2
								Void			IW	
						4						
						CC						5G 9/1–N7

SITE 575 HOLE A CORE (HPC) 27 CORED INTERVAL 184.9–188.4 m



VARICOLORED OOZE/CHALK (SUBUNIT IID):

Nanno ooze. Varies in color from greenish white (5G 9/1, 9/2, 8.5/2, 8/2) to medium gray (N5), light gray (N7) and purplish gray (5P 8/2).

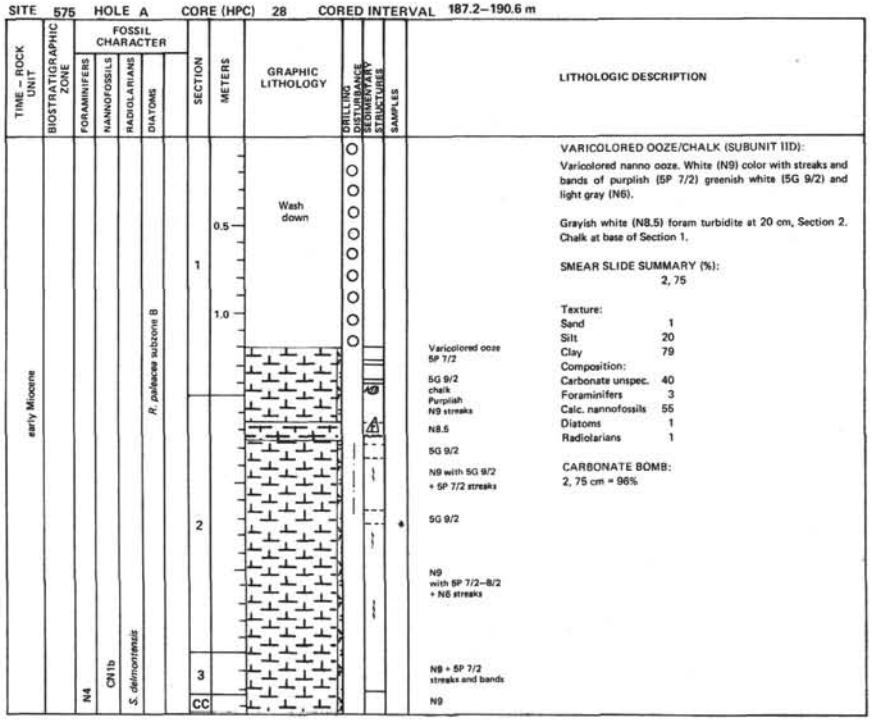
Foram turbidite at 2.9 meters.

SMEAR SLIDE SUMMARY (%):

	1, 99	2, 75
Texture:		
Sand	3	3
Silt	25	25
Clay	72	72
Composition:		
Pyrite	Tr	Tr
Foraminifers	5	5
Calc. nannofossils	90	90
Diatoms	2	2
Radiolarians	3	2
Sponge spicules	Tr	–
Fe-oxides	–	Tr

CARBONATE BOMB:
3, 75 cm = 95%

SITE 575 HOLE A CORE (HPC) 28 CORED INTERVAL 187.2–190.6 m



VARICOLORED OOZE/CHALK (SUBUNIT IID):

Varicolored nanno ooze. White (N9) color with streaks and bands of purplish (5P 7/2) greenish white (5G 9/2) and light gray (N6).

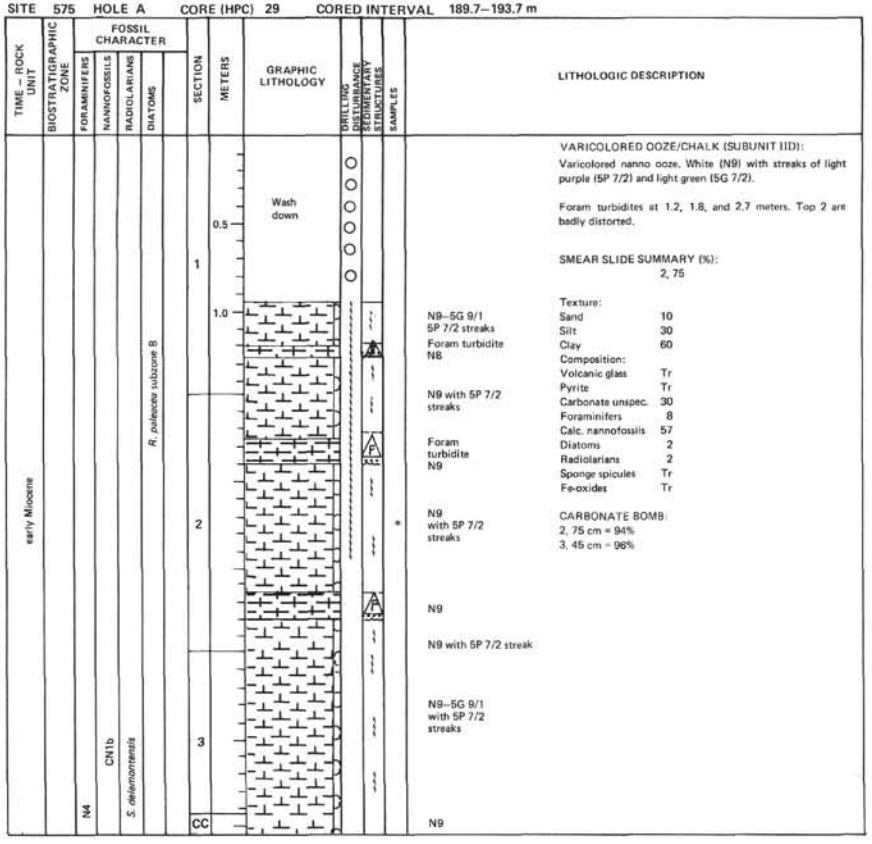
Grayish white (N8.5) foram turbidite at 20 cm, Section 2. Chalk at base of Section 1.

SMEAR SLIDE SUMMARY (%):

	2, 75
Texture:	
Sand	1
Silt	20
Clay	79
Composition:	
Carbonate unspec.	40
Foraminifers	3
Calc. nannofossils	55
Diatoms	1
Radiolarians	1

CARBONATE BOMB:
2, 75 cm = 96%

SITE 575 HOLE A CORE (HPC) 29 CORED INTERVAL 189.7–193.7 m



VARICOLORED OOZE/CHALK (SUBUNIT IID):

Varicolored nanno ooze. White (N9) with streaks of light purple (5P 7/2) and light green (5G 7/2).

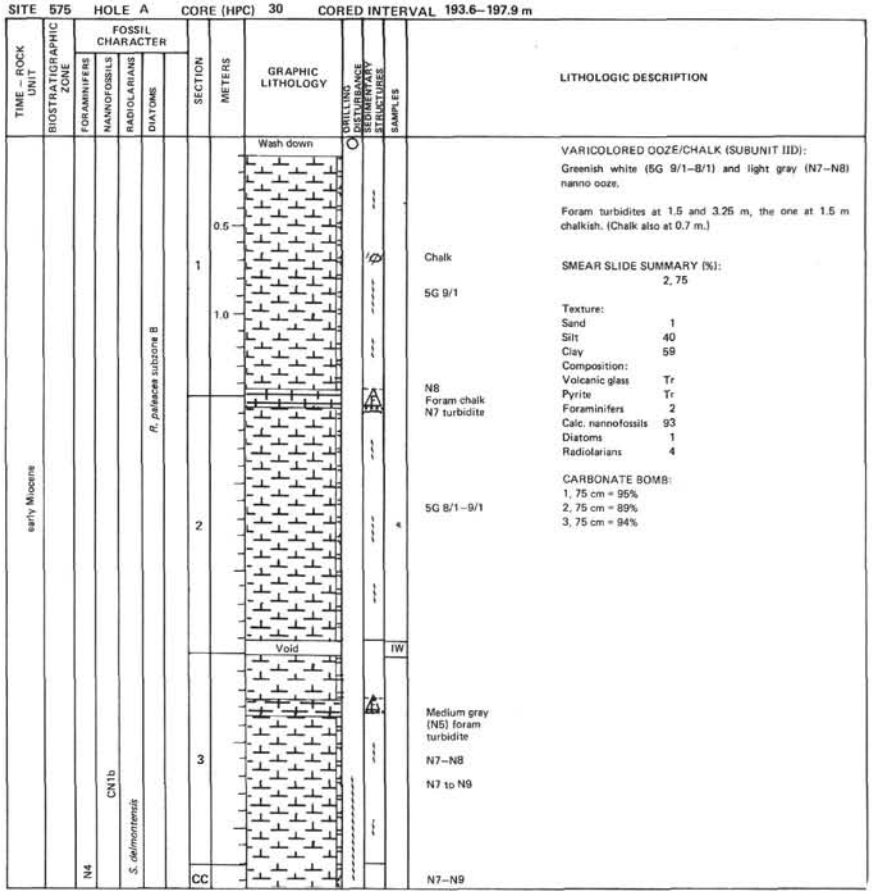
Foram turbidites at 1.2, 1.8, and 2.7 meters. Top 2 are badly distorted.

SMEAR SLIDE SUMMARY (%):

	2, 75
Texture:	
Sand	10
Silt	30
Clay	60
Composition:	
Volcanic glass	Tr
Pyrite	Tr
Carbonate unspec.	30
Foraminifers	8
Calc. nannofossils	57
Diatoms	2
Radiolarians	2
Sponge spicules	Tr
Fe-oxides	Tr

CARBONATE BOMB:
2, 75 cm = 94%
3, 45 cm = 96%

SITE 575 HOLE A CORE (HPC) 30 CORED INTERVAL 193.6–197.9 m



VARICOLORED OOZE/CHALK (SUBUNIT IID):

Greenish white (5G 9/1–8/1) and light gray (N7–N8) nanno ooze.

Foram turbidites at 1.5 and 3.25 m, the one at 1.5 m chalkish. (Chalk also at 0.7 m.)

SMEAR SLIDE SUMMARY (%):

	2, 75
Texture:	
Sand	1
Silt	40
Clay	59
Composition:	
Volcanic glass	Tr
Pyrite	Tr
Foraminifers	2
Calc. nannofossils	93
Diatoms	1
Radiolarians	4

CARBONATE BOMB:
1, 75 cm = 95%
2, 75 cm = 89%
3, 75 cm = 94%

SITE 575 HOLE A CORE (HPC) 31 CORED INTERVAL 197.4–201.8 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N4 / CN1b / *S. delmontensis* / *R. paleacea* subzone B					1	0.5	Wash down				5G 9/1–8/1 Varicolored ooze
							1.0					Open?
						2						5G 7/1 band
												N7 diffuse band
												N7–N8
												5G 7/1
												5G 9/1 with 5G 7/1 bands
												5P 6/2–N7
												5G 7/1, 5P 6/2, 5BP 6/2 } bands
												2.5Y 8/1 varicolored
						3						5G 7/1 very stiff ooze 5P 8/2
												5G 9/1
												5G 8/1–9/1
										A		Foram turbidite
						CC						5P 6/2–N2

VARICOLORED OOZE/CHALK (SUBUNIT IID):

Varicolored nanno ooze. Colors include greenish white (5G 9/1–8/1), pale green (5G 7/1), light gray (N7–N8) purple gray (5P 6/2), yellow white (5Y 8/1) and mottling and banding are common.

Foram turbidite in middle of Section 3.

SMEAR SLIDE SUMMARY (%):

	2, 80
Texture:	
Sand	10
Silt	5
Clay	85
Composition:	
Pyrite	Tr
Carbonate unspec.	14
Foraminifers	7
Calc. nannofossils	75
Diatoms	2
Radiolarians	2
Sponge spicules	Tr
Silicoflagellates	Tr

CARBONATE BOMB:
2, 75 cm = 94%
3, 72 cm = 98%

SITE 575 HOLE A CORE (HPC) 32 CORED INTERVAL 201.3–205.1 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
early Miocene	N4 / CN1b / *S. delmontensis* / *R. paleacea* subzone B					1	0.5	Wash down				5G 9/1
							1.0					5P 6/2–N8
												5G 7/1–8/1
												5G 8/1–9/1
												Varicolored ooze
												5G 8/1
												5P 6/2–N7
						2						5G 9/1–N7
												5G 7/1
												5P 6/2–N7
												N9
												5G 9/1
												5G 8/1
												5G 9/1
						3						Stiff ooze/chalk
												5G 7/1
						CC				X		5G 9/1–8/1 Pyrite filled

VARICOLORED OOZE/CHALK (SUBUNIT IID):

Varicolored nanno ooze. Primarily greenish white with pale purple (5P 6/2), light gray (N7, N8), white (N9) and greenish gray (5G 7/1).

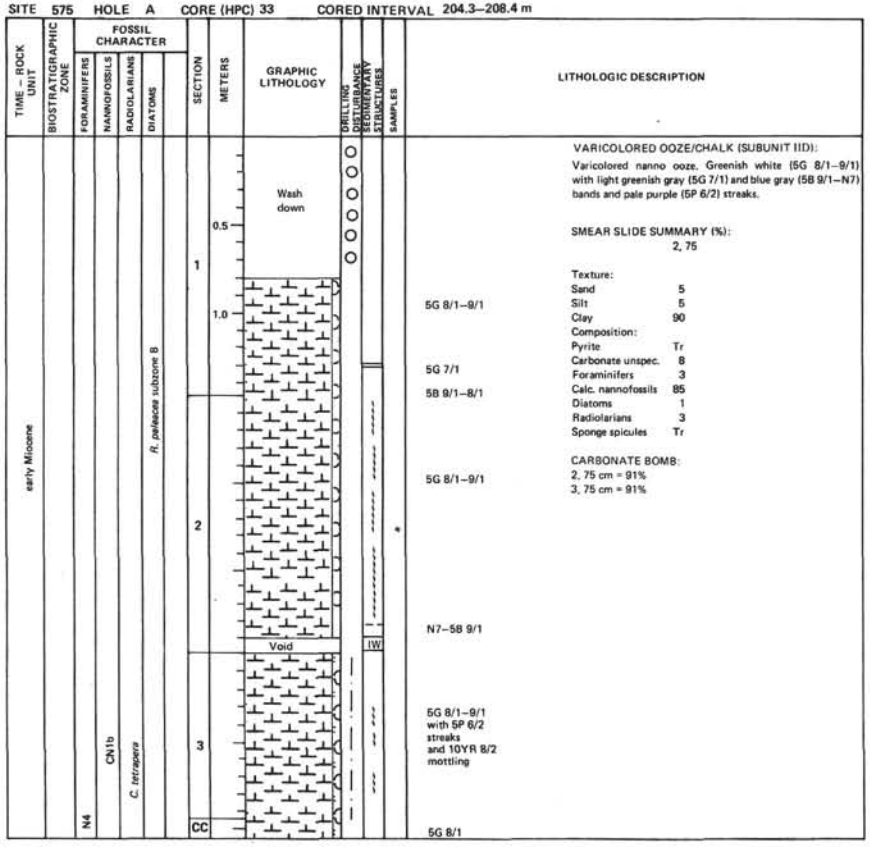
Chalk part at 3.4 m. Pyrite-filled burrow in Core Catcher.

SMEAR SLIDE SUMMARY (%):

	2, 75
Texture:	
Sand	5
Silt	5
Clay	90
Composition:	
Pyrite	Tr
Carbonate unspec.	9
Foraminifers	2
Calc. nannofossils	85
Diatoms	1
Radiolarians	3
Sponge spicules	Tr

CARBONATE BOMB:
2, 75 cm = 94%
3, 57 cm = 97%

SITE 575 HOLE A CORE (HPC) 33 CORED INTERVAL 204.3–208.4 m



VARICOLORED OOZE/CHALK (SUBUNIT IID):

Varicolored nanno ooze. Greenish white (5G 8/1–9/1) with light greenish gray (5G 7/1) and blue gray (5B 9/1–N7) bands and pale purple (5P 6/2) streaks.

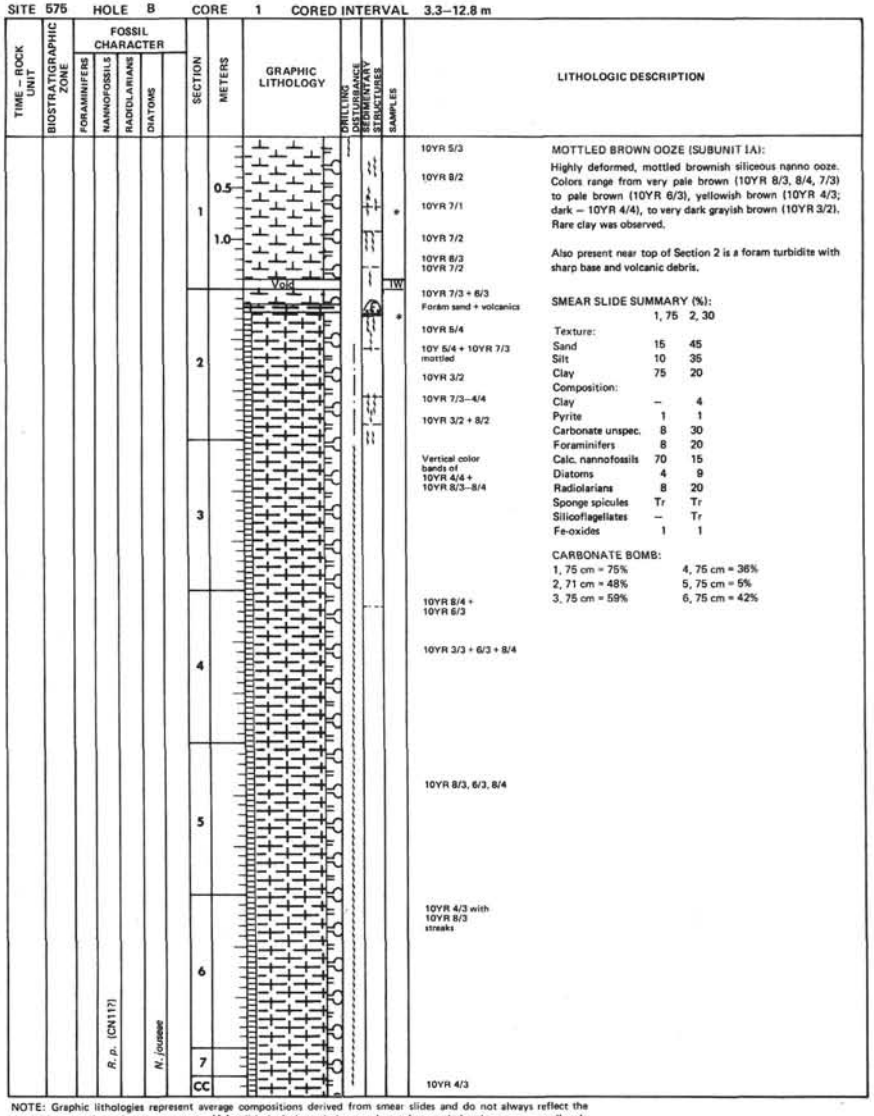
SMEAR SLIDE SUMMARY (%):

	2, 75
Texture:	
Sand	5
Silt	5
Clay	90
Composition:	
Pyrite	Tr
Carbonate unspec.	8
Foraminifers	3
Calc. nannofossils	85
Diatoms	1
Radiolarians	3
Sponge spicules	Tr

CARBONATE BOMB:

2, 75 cm = 91%
3, 75 cm = 91%

SITE 575 HOLE B CORE 1 CORED INTERVAL 3.3–12.8 m



MOTTLED BROWN OOZE (SUBUNIT IA):

Highly deformed, mottled brownish siliceous nanno ooze. Colors range from very pale brown (10YR 8/3, 8/4, 7/3) to pale brown (10YR 6/3), yellowish brown (10YR 4/3; dark – 10YR 4/4), to very dark grayish brown (10YR 3/2). Rare clay was observed.

Also present near top of Section 2 is a foram turbidite with sharp base and volcanic debris.

SMEAR SLIDE SUMMARY (%):

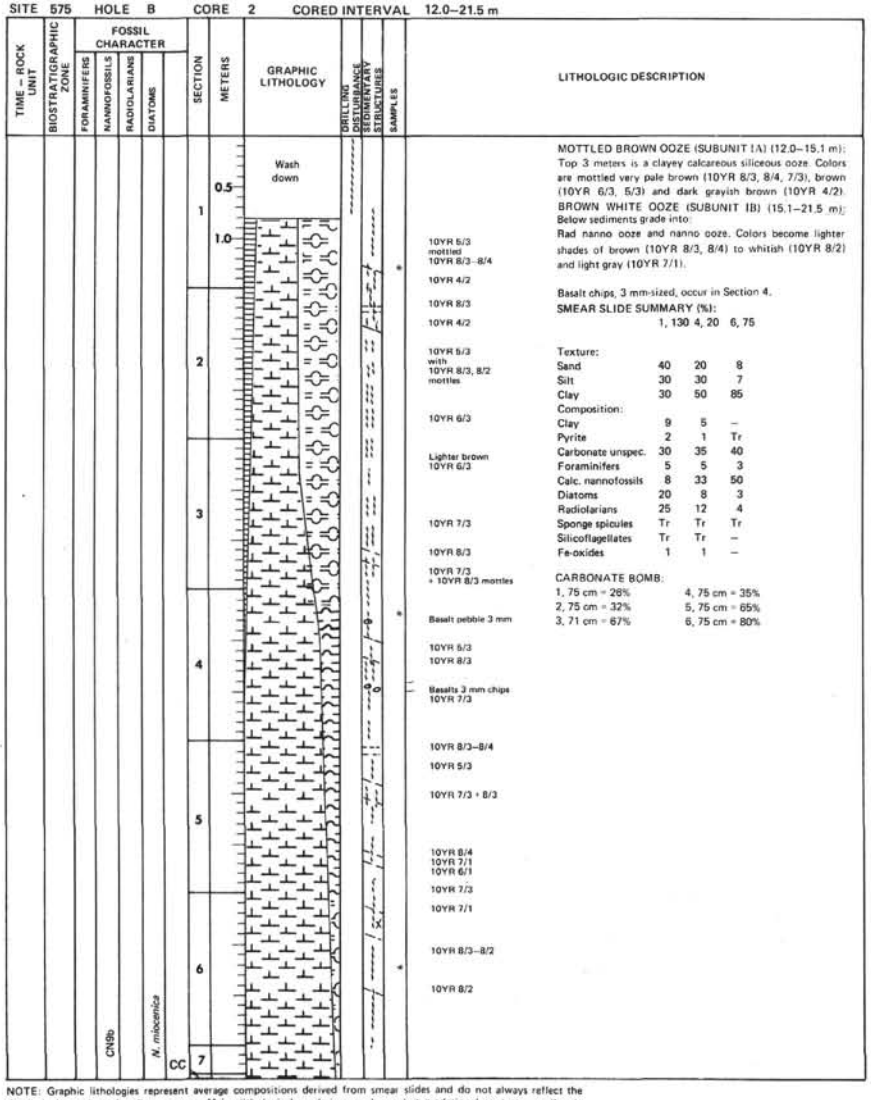
	1, 75	2, 30
Texture:		
Sand	15	45
Silt	10	35
Clay	75	20
Composition:		
Clay	–	4
Pyrite	1	1
Carbonate unspec.	8	30
Foraminifers	8	20
Calc. nannofossils	70	15
Diatoms	4	9
Radiolarians	8	20
Sponge spicules	Tr	Tr
Silicoflagellates	–	Tr
Fe-oxides	1	1

CARBONATE BOMB:

1, 75 cm = 75%	4, 75 cm = 36%
2, 71 cm = 48%	5, 75 cm = 5%
3, 75 cm = 59%	6, 75 cm = 42%

NOTE: Graphic lithologies represent average compositions derived from smear slides and do not always reflect the detailed alternation of sediment types. Major lithologic boundaries are shown but gradational contacts, small-scale cyclicity and ooze-chalk alternations are represented schematically. Color changes approximate to lithologic changes.

SITE 575 HOLE B CORE 2 CORED INTERVAL 12.0–21.5 m



MOTTLED BROWN OOZE (SUBUNIT IA) (12.0–15.1 m):
Top 3 meters is a clayey calcareous siliceous ooze. Colors are mottled very pale brown (10YR 8/3, 8/4, 7/3), brown (10YR 6/3, 5/3) and dark grayish brown (10YR 4/2).

BROWN WHITE OOZE (SUBUNIT IB) (15.1–21.5 m):
Below sediments grade into:
Rad nanno ooze and nanno ooze. Colors become lighter shades of brown (10YR 8/3, 8/4) to whitish (10YR 8/2) and light gray (10YR 7/1).

Basalt chips, 3 mm-sized, occur in Section 4.

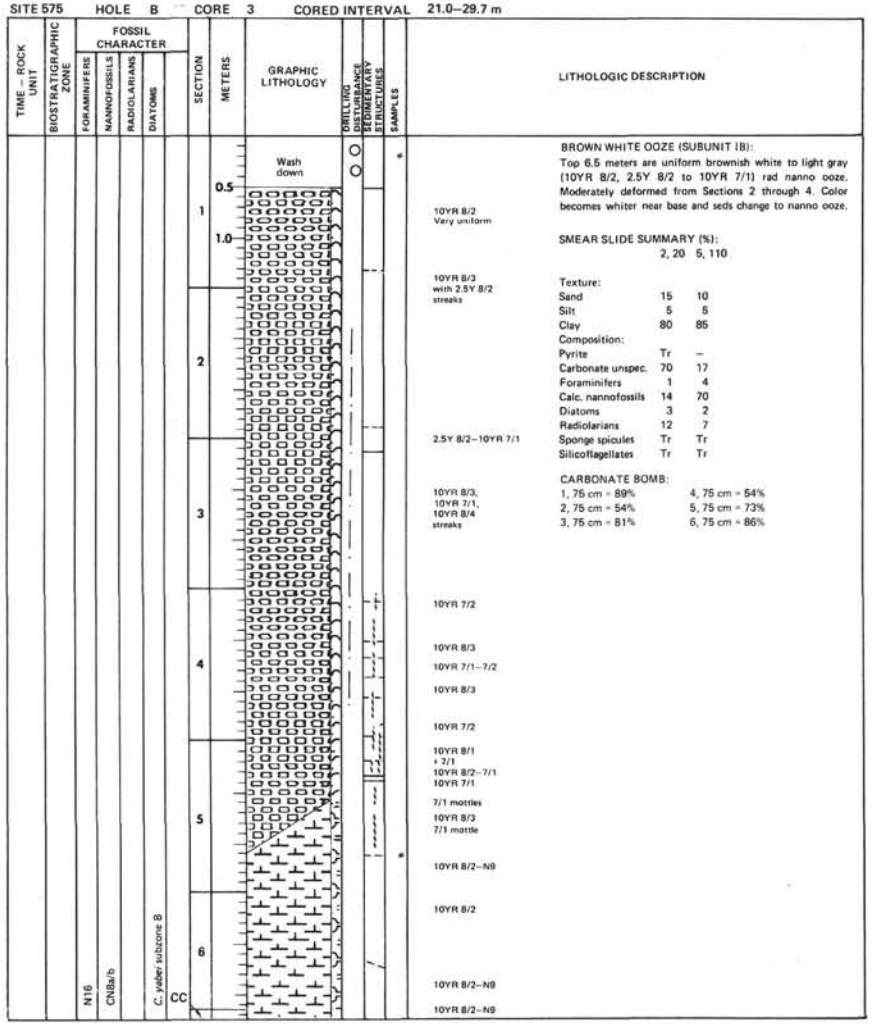
SMEAR SLIDE SUMMARY (%):

	1, 130	4, 20	6, 75
Texture:			
Sand	40	20	8
Silt	30	30	7
Clay	30	50	85
Composition:			
Clay	9	5	–
Pyrite	2	1	Tr
Carbonate unspec.	30	35	40
Foraminifers	5	5	3
Calc. nannofossils	8	33	50
Diatoms	20	8	3
Radiolarians	25	12	4
Sponge spicules	Tr	Tr	Tr
Silicoflagellates	Tr	Tr	–
Fe-oxides	1	1	–

CARBONATE BOMB:
1, 75 cm = 28%
2, 75 cm = 32%
3, 71 cm = 67%
4, 75 cm = 35%
5, 75 cm = 65%
6, 75 cm = 80%

NOTE: Graphic lithologies represent average compositions derived from smear slides and do not always reflect the detailed alternation of sediment types. Major lithologic boundaries are shown but gradational contacts, small-scale cyclicity and ooze-chalk alternations are represented schematically. Color changes approximate to lithologic changes.

SITE 575 HOLE B CORE 3 CORED INTERVAL 21.0–29.7 m



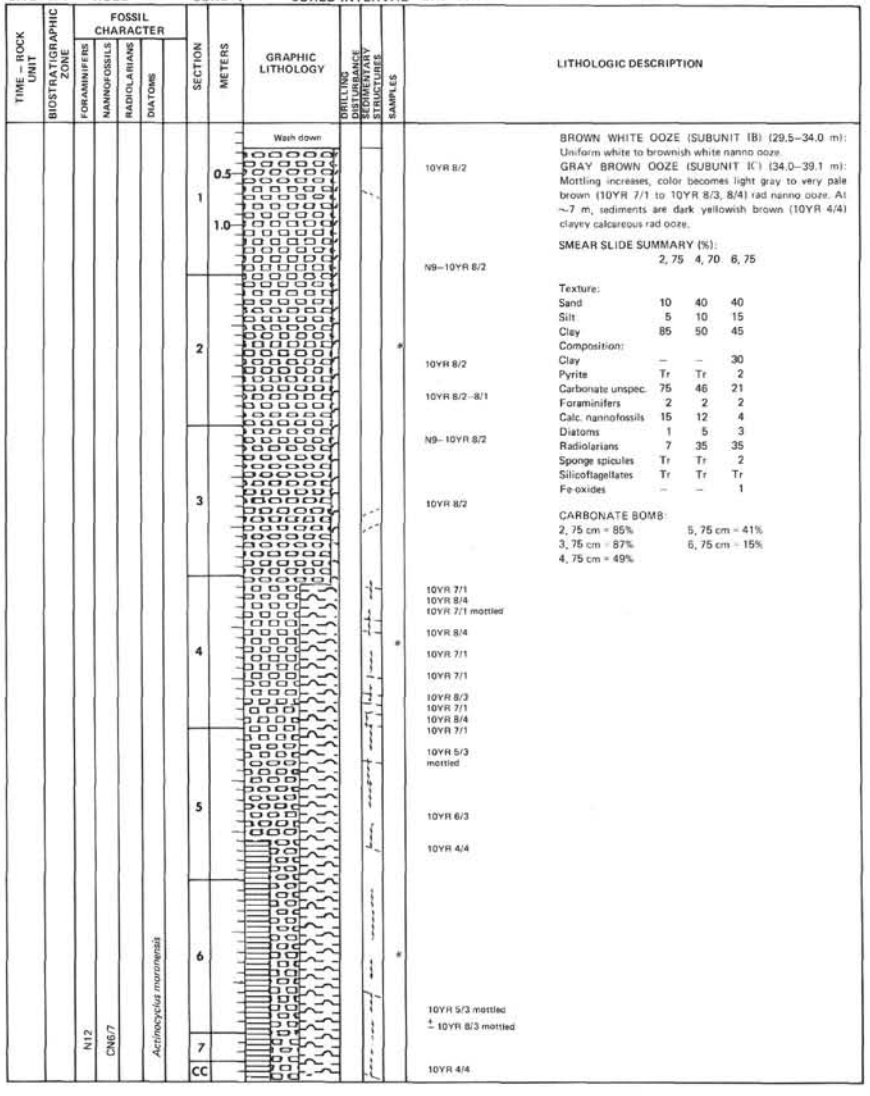
BROWN WHITE OOZE (SUBUNIT IB):
Top 6.5 meters are uniform brownish white to light gray (10YR 8/2, 2.5Y 8/2 to 10YR 7/1) rad nanno ooze. Moderately deformed from Sections 2 through 4. Color becomes whiter near base and seds change to nanno ooze.

SMEAR SLIDE SUMMARY (%):

	2, 20	5, 110
Texture:		
Sand	15	10
Silt	5	5
Clay	80	85
Composition:		
Pyrite	Tr	–
Carbonate unspec.	70	17
Foraminifers	1	4
Calc. nannofossils	14	70
Diatoms	3	2
Radiolarians	12	7
Sponge spicules	Tr	Tr
Silicoflagellates	Tr	Tr

CARBONATE BOMB:
1, 75 cm = 89%
2, 75 cm = 54%
3, 75 cm = 81%
4, 75 cm = 54%
5, 75 cm = 73%
6, 75 cm = 86%

SITE 575 HOLE B CORE 4 CORED INTERVAL 29.5–39.1 m



BROWN WHITE OOZE (SUBUNIT IB) (29.5–34.0 m): Uniform white to brownish white nanno ooze.

GRAY BROWN OOZE (SUBUNIT IC) (34.0–39.1 m): Mottling increases, color becomes light gray to very pale brown (10YR 7/1 to 10YR 8/3, 8/4) rad nanno ooze. At ~7 m, sediments are dark yellowish brown (10YR 4/4) clayey calcareous rad ooze.

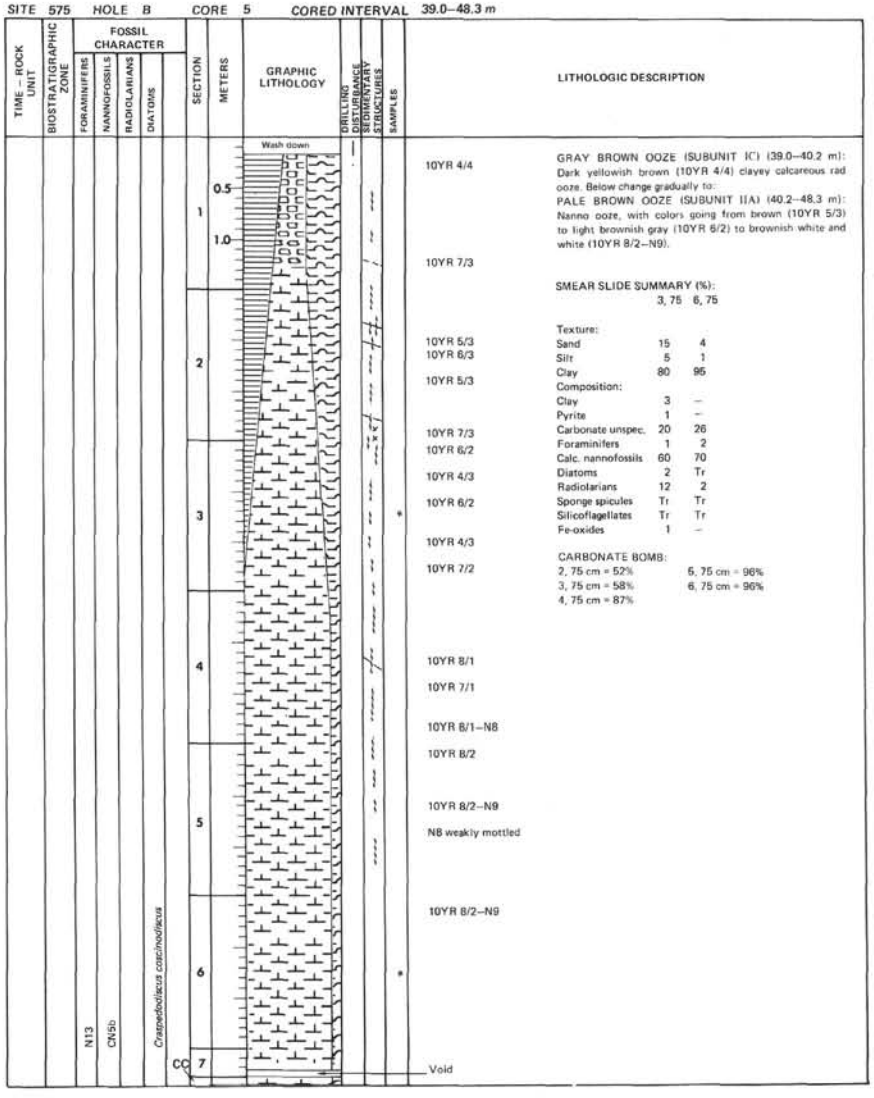
SMEAR SLIDE SUMMARY (%):

	2, 75	4, 70	6, 75
Texture:			
Sand	10	40	40
Silt	5	10	15
Clay	85	50	45
Composition:			
Clay	–	–	30
Pyrite	Tr	Tr	2
Carbonate unspec.	75	46	21
Foraminifers	2	2	2
Calc. nannofossils	15	12	4
Diatoms	1	5	3
Radiolarians	7	35	35
Sponge spicules	Tr	Tr	2
Silicoflagellates	Tr	Tr	Tr
Fe-oxides	–	–	1

CARBONATE BOMB:

2, 75 cm = 85%
3, 75 cm = 87%
4, 75 cm = 49%
5, 75 cm = 41%
6, 75 cm = 15%

SITE 575 HOLE B CORE 5 CORED INTERVAL 39.0–48.3 m



GRAY BROWN OOZE (SUBUNIT IC) (39.0–40.2 m): Dark yellowish brown (10YR 4/4) clayey calcareous rad ooze. Below change gradually to:

PALE BROWN OOZE (SUBUNIT IIA) (40.2–48.3 m): Nanno ooze, with colors going from brown (10YR 5/3) to light brownish gray (10YR 6/2) to brownish white and white (10YR 8/2–N9).

SMEAR SLIDE SUMMARY (%):

	3, 75	6, 75
Texture:		
Sand	15	4
Silt	5	1
Clay	80	95
Composition:		
Clay	3	–
Pyrite	1	–
Carbonate unspec.	20	26
Foraminifers	1	2
Calc. nannofossils	60	70
Diatoms	2	Tr
Radiolarians	12	2
Sponge spicules	Tr	Tr
Silicoflagellates	Tr	Tr
Fe-oxides	1	–

CARBONATE BOMB:

2, 75 cm = 52%
3, 75 cm = 58%
4, 75 cm = 87%
5, 75 cm = 96%
6, 75 cm = 96%

SITE 575 HOLE B CORE 6 CORED INTERVAL 48.0–56.0 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
		N12	CN6a		*Coscinodiscus gigas* var. *diorama*	1	0.5	Wash down				10YR 8/2 10YR 8/4
							1.0					10YR 5/3 burrow 1 cm wide
						2				F		10YR 8/4 10YR 8/4–N9 Foram + volcanic
						3		Void		F	IW	10YR 8/2–N9 Forams + volcanics
						4						10YR 8/2
						5						10YR 8/4 10YR 8/2 2 mm basalt glass chip
						CC	6					10YR 8/2–N9 10YR 8/2–N9

PALE BROWN OOZE (SUBUNIT IIA):
Uniform nanno ooze, colors range from very pale brown (10YR 8/4) to brownish white and white (10YR 8/2–N9).

Vertical burrow 30 cm long and 1 cm wide at 1 m.

Thin foram turbidites at 1.9 and 3.9 m, including volcanic debris.

SMEAR SLIDE SUMMARY (%):
3, 75

Texture:	
Sand	8
Silt	7
Clay	85
Composition:	
Carbonate unspec.	15
Foraminifers	2
Calc. nannofossils	75
Diatoms	1
Radiolarians	7
Sponge spicules	Tr

CARBONATE BOMB:
2, 75 cm = 96%
3, 75 cm = 92%
4, 75 cm = 88%
5, 75 cm = 94%

SITE 575 HOLE B CORE 7 CORED INTERVAL 55.4–64.7 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
						1	0.5	Wash down				0.7 cm vesicular pebble 10YR 8/2–N9
							1.0					
						2						N9 10YR 8/2
						3						
						4						N9–10YR 8/2
						5				A		Foram turbidite 2 mm basalt chip
						6						
		N12	CN6a			7						
						CC						10YR 8/2–N9

PALE BROWN OOZE (SUBUNIT IIA):
Uniform brownish white to white (10YR 8/2–N9) nanno ooze.

Foram turbidite with 2 mm basalt chip at 7.2 m.

Vesicular pebble 0.7 cm at 0.4 m.

SMEAR SLIDE SUMMARY (%):
3, 140

Texture:	
Sand	7
Silt	3
Clay	90
Composition:	
Carbonate unspec.	12
Foraminifers	2
Calc. nannofossils	80
Diatoms	1
Radiolarians	5
Sponge spicules	Tr
Fish remains	Tr

CARBONATE BOMB:
2, 75 cm = 100%
3, 75 cm = 98%
4, 75 cm = 97%
5, 75 cm = 92%
6, 75 cm = 99%

SITE 575 HOLE B CORE 8 CORED INTERVAL 64.7–73.8 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
		N10	CN4			1	0.5					10YR 9/1–9/2 3 mm volcanic glass fragment
							1.0					
						2					*	10YR 9/1–9/2
						3						10YR 9/1 10YR 9/2 10YR 8/3 10YR 9/1 volcanic fragment
						4						10YR 9/2 10YR 8/2 10YR 9/2 10YR 9/1
						5						10YR 9/1–9/2 N9–10YR 9/1 foram turbidite with 0.1–3 mm volcanic glass 10YR 9/1–N9
						6						10YR 9/1–9/2
						CC						10YR 9/1–9/2

PALE BROWN OOZE (SUBUNIT IIA):
Brownish white (10YR 9/1, 9/2) siliceous nanno ooze. Foram turbidite with 0.1–3.0 mm volcanic debris at 7 m.

SMEAR SLIDE SUMMARY (%):

	2, 75
Texture:	
Sand	5
Silt	30
Clay	65
Composition:	
Pyrite	Tr
Foraminifers	3
Calc. nannofossils	86
Diatoms	5
Radiolarians	5
Sponge spicules	Tr
Silicoflagellates	Tr

CARBONATE BOMB:
2, 75 cm = 91%
3, 75 cm = 77%
4, 75 cm = 87%
5, 75 cm = 88%
6, 75 cm = 85%

SITE 575 HOLE B CORE 9 CORED INTERVAL 73.8–81.4 m

TIME – ROCK UNIT	BIOSTRATIGRAPHIC ZONE	FOSSIL CHARACTER: FORAMINIFERS	FOSSIL CHARACTER: NANNOFOSSILS	FOSSIL CHARACTER: RADIOLARIANS	FOSSIL CHARACTER: DIATOMS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURBANCE	SEDIMENTARY STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
						1	0.5					10YR 8/2 10YR 9/2 Foram turbidite N9–10YR 9/2
							1.0					
						2						10YR 9/2
			CN4			3					*	Faint mottles
						4						10YR 9/1–9/2 10YR 8/1–5/2
						5						10YR 9/1–9/2 10YR 8/2 10YR 9/1–9/2
						6		Void				10YR 9/1–N9 10YR 9/1–9/2
		N8				CC						10YR 9/1–9/2

PALE BROWN OOZE (SUBUNIT IIA):
Uniform brownish white (10YR 8/2, 9/2, 9/1) nanno ooze.

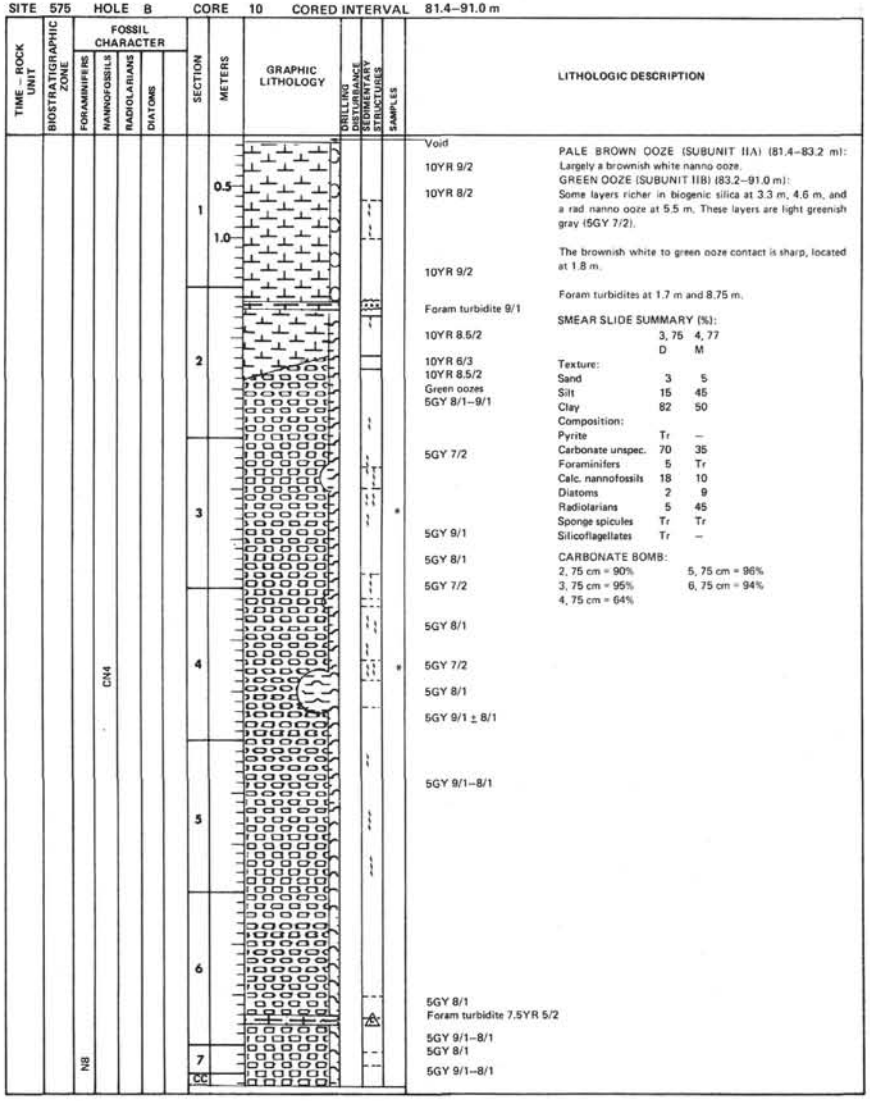
Foram turbidite at 1.3 m.

SMEAR SLIDE SUMMARY (%):

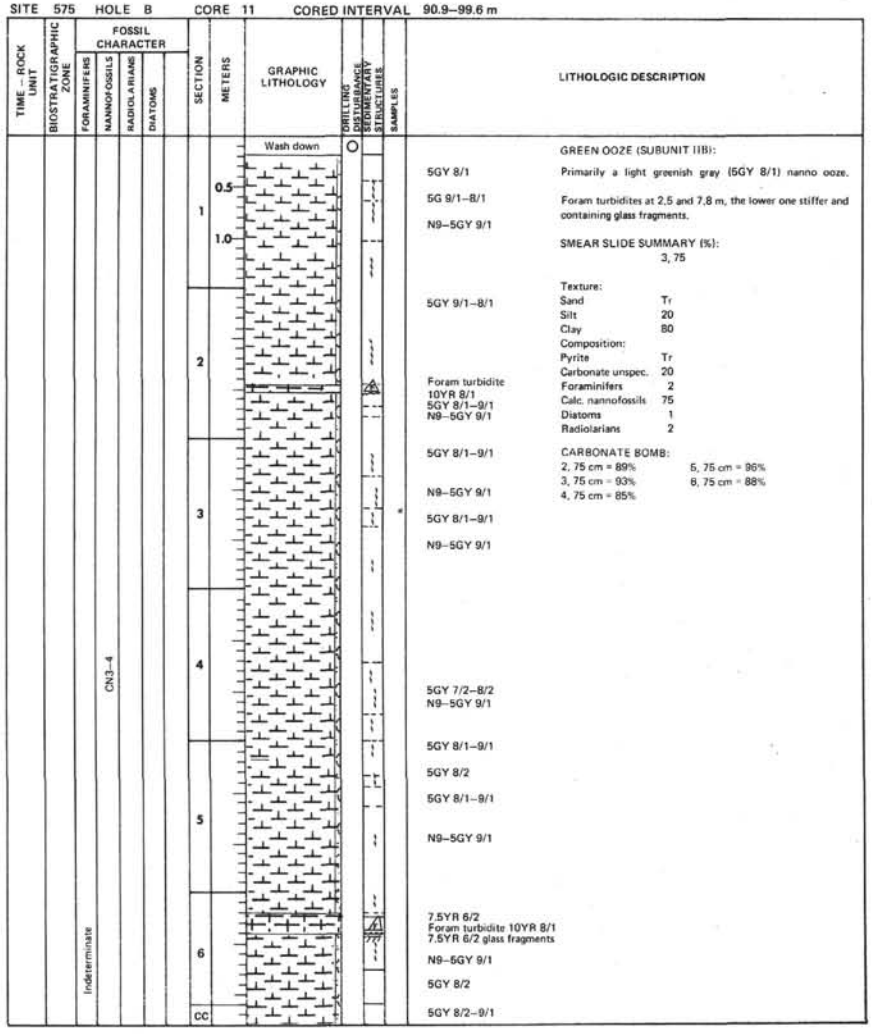
	3, 75
Texture:	
Sand	2
Silt	20
Clay	78
Composition:	
Pyrite	Tr
Foraminifers	5
Calc. nannofossils	86
Diatoms	5
Radiolarians	3
Sponge spicules	Tr
Fe-oxides	Tr

CARBONATE BOMB:
2, 75 cm = 85%
3, 75 cm = 93%
4, 75 cm = 93%
5, 75 cm = 91%

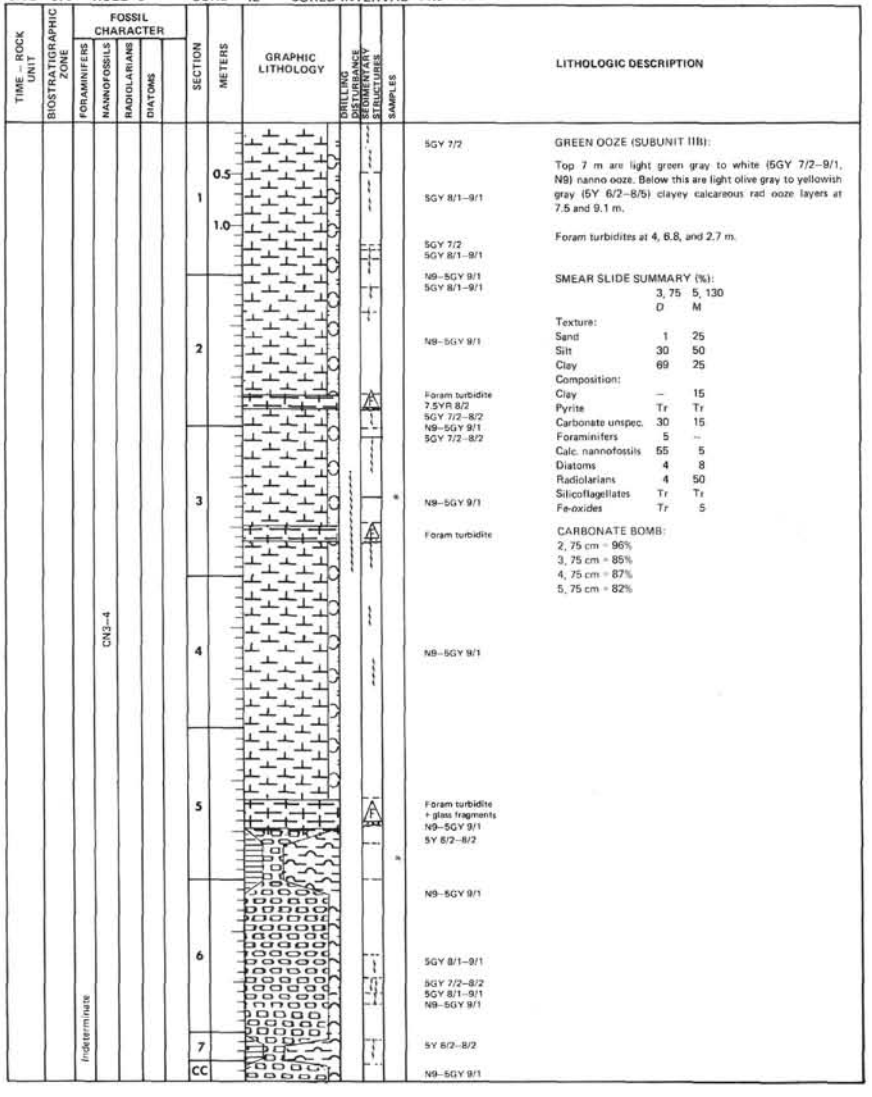
SITE 575 HOLE B CORE 10 CORED INTERVAL 81.4–91.0 m



SITE 575 HOLE B CORE 11 CORED INTERVAL 90.9–99.6 m



SITE 575 HOLE B CORE 12 CORED INTERVAL 99.6–109.2 m



LITHOLOGIC DESCRIPTION

GREEN OOZE (SUBUNIT IIB):

Top 7 m are light green gray to white (5GY 7/2–9/1, N9) nanno ooze. Below this are light olive gray to yellowish gray (5Y 6/2–8/5) clayey calcareous rad ooze layers at 7.5 and 9.1 m.

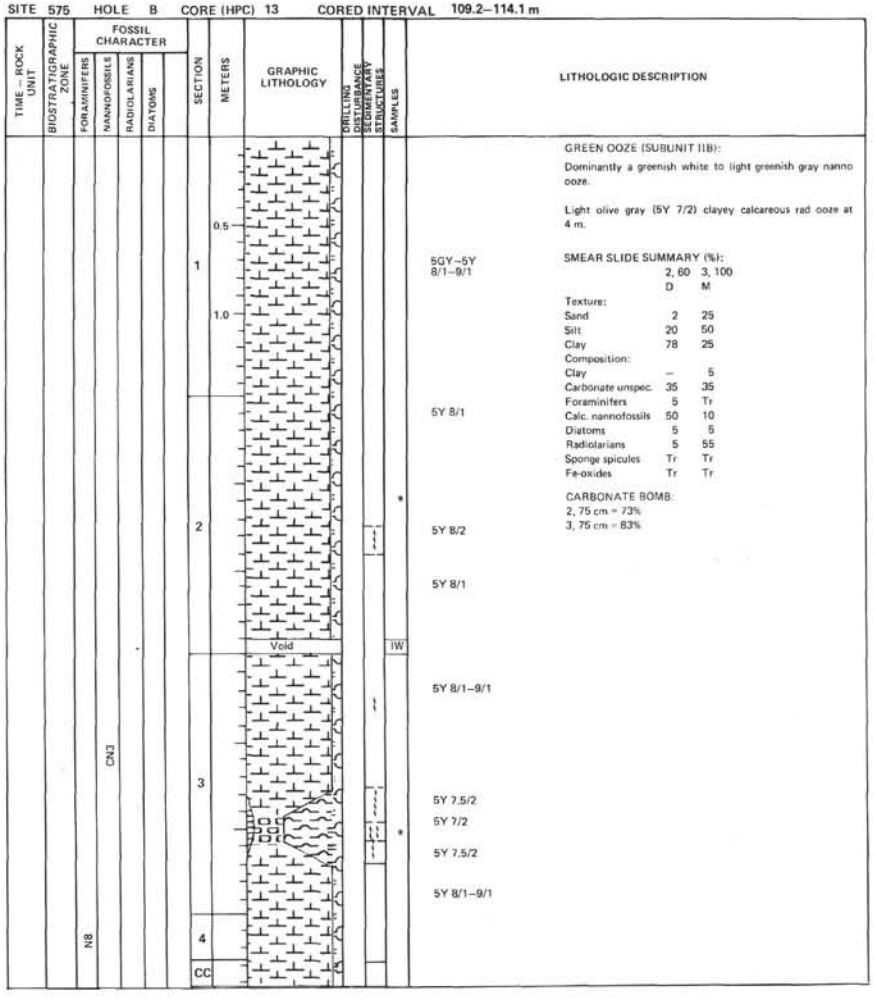
Foram turbidites at 4, 6.8, and 2.7 m.

SMEAR SLIDE SUMMARY (%):

	3, 75 D	5, 130 M
Texture:		
Sand	1	25
Silt	30	50
Clay	69	25
Composition:		
Clay	–	15
Pyrite	Tr	Tr
Carbonate unspec.	30	15
Foraminifers	5	–
Calc. nannofossils	55	5
Diatoms	4	8
Radiolarians	4	50
Silicoflagellates	Tr	Tr
Fe-oxides	Tr	5

CARBONATE BOMB:
2, 75 cm = 96%
3, 75 cm = 85%
4, 75 cm = 87%
5, 75 cm = 82%

SITE 575 HOLE B CORE (HPC) 13 CORED INTERVAL 109.2–114.1 m



LITHOLOGIC DESCRIPTION

GREEN OOZE (SUBUNIT IIB):

Dominantly a greenish white to light greenish gray nanno ooze.

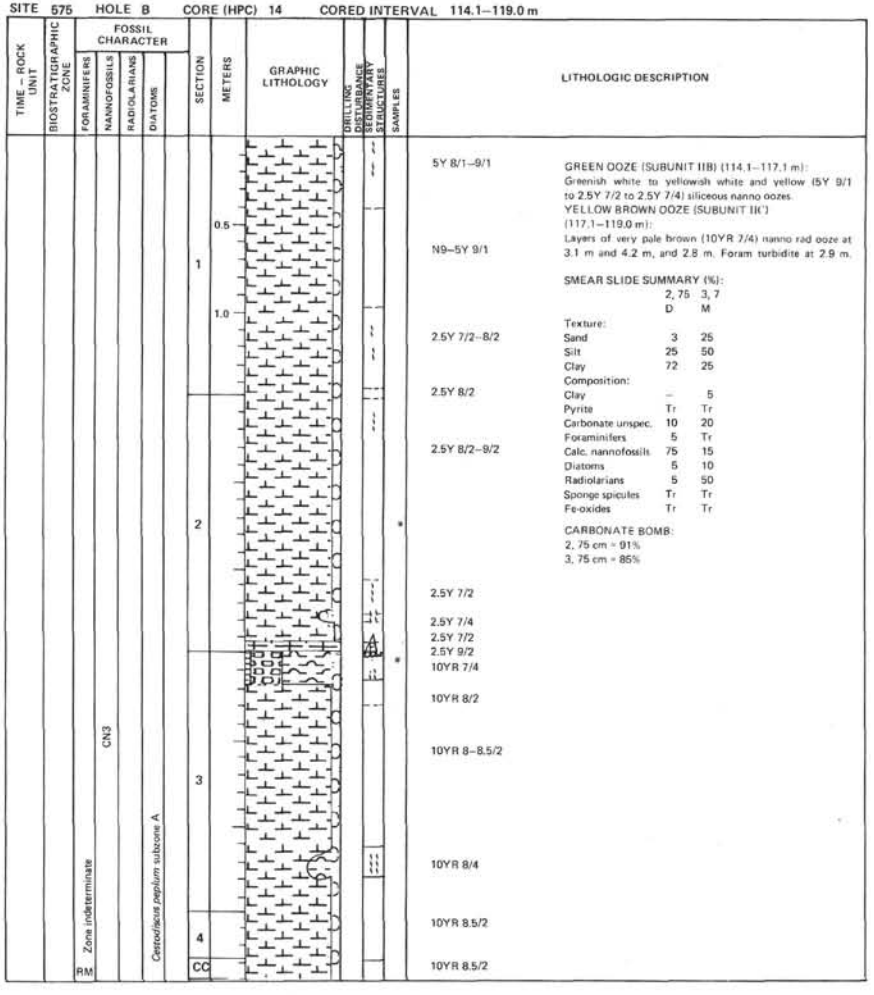
Light olive gray (5Y 7/2) clayey calcareous rad ooze at 4 m.

SMEAR SLIDE SUMMARY (%):

	2, 60 D	3, 100 M
Texture:		
Sand	2	25
Silt	20	50
Clay	78	25
Composition:		
Clay	–	5
Carbonate unspec.	35	35
Foraminifers	5	Tr
Calc. nannofossils	50	10
Diatoms	5	5
Radiolarians	5	55
Sponge spicules	Tr	Tr
Fe-oxides	Tr	Tr

CARBONATE BOMB:
2, 75 cm = 73%
3, 75 cm = 83%

SITE 575 HOLE B CORE (HPC) 14 CORED INTERVAL 114.1–119.0 m



GREEN OOZE (SUBUNIT IIB) (114.1–117.1 m):
Greenish white to yellowish white and yellow (5Y 9/1 to 2.5Y 7/2 to 2.5Y 7/4) siliceous nanno oozes.

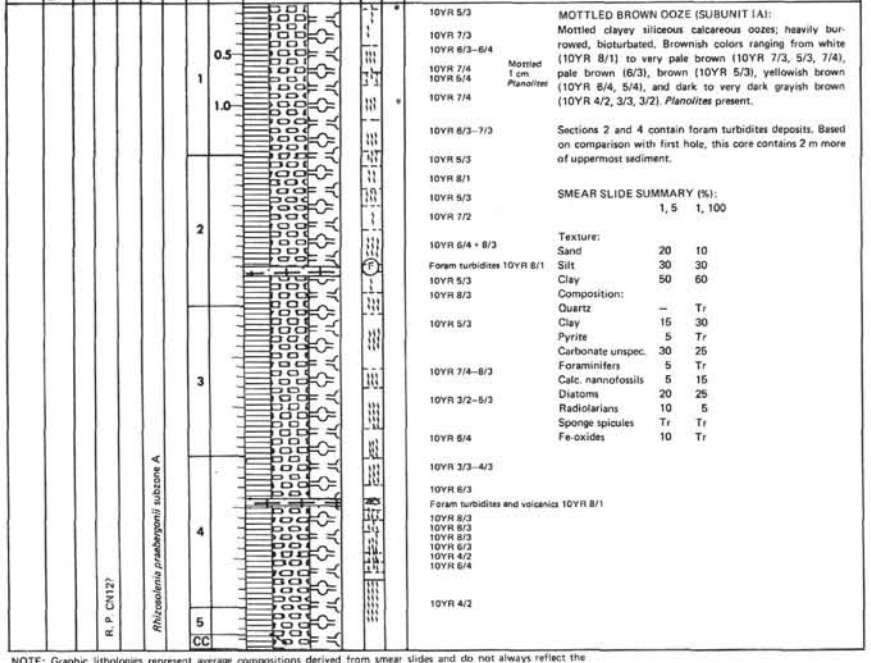
YELLOW BROWN OOZE (SUBUNIT IIC)
(117.1–119.0 m):
Layers of very pale brown (10YR 7/4) nanno rad ooze at 3.1 m and 4.2 m, and 2.8 m. Foram turbidite at 2.9 m.

SMEAR SLIDE SUMMARY (%):

	2, 75 D	3, 7 M
Texture:		
Sand	3	25
Silt	25	50
Clay	72	25
Composition:		
Clay	–	5
Pyrite	Tr	Tr
Carbonate unspec.	10	20
Foraminifers	5	Tr
Calc. nannofossils	75	15
Diatoms	5	10
Radiolarians	5	50
Sponge spicules	Tr	Tr
Fe-oxides	Tr	Tr

CARBONATE BOMB:
2, 75 cm = 91%
3, 75 cm = 85%

SITE 575 HOLE C CORE 1 CORED INTERVAL 0.0–6.3 m



MOTTLED BROWN OOZE (SUBUNIT IA):
Mottled clayey siliceous calcareous oozes; heavily burrowed, bioturbated. Brownish colors ranging from white (10YR 8/1) to very pale brown (10YR 7/3, 5/3, 7/4), pale brown (6/3), brown (10YR 5/3), yellowish brown (10YR 6/4, 5/4), and dark to very dark grayish brown (10YR 4/2, 3/3, 3/2). *Planolites* present.

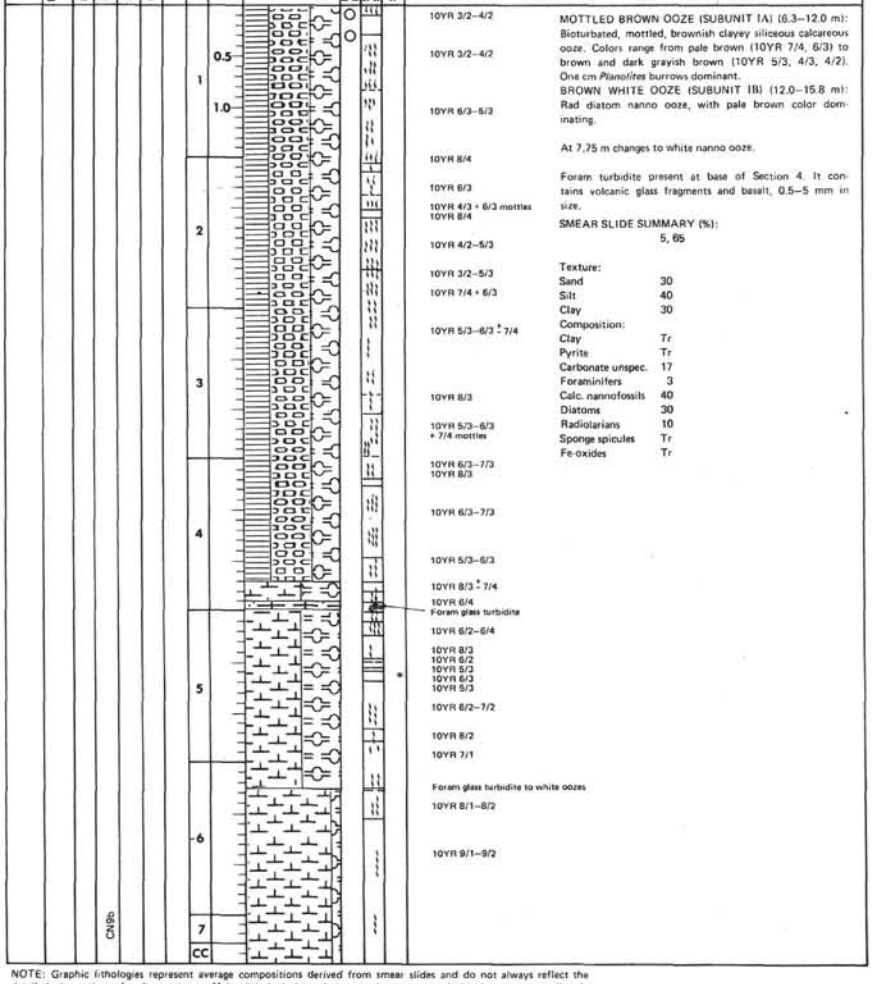
Sections 2 and 4 contain foram turbidites deposits. Based on comparison with first hole, this core contains 2 m more of uppermost sediment.

SMEAR SLIDE SUMMARY (%):

	1, 5	1, 100
Texture:		
Sand	20	10
Silt	30	30
Clay	50	60
Composition:		
Quartz	–	Tr
Clay	15	30
Pyrite	5	*Tr*
Carbonate unspec.	30	25
Foraminifers	5	Tr
Calc. nannofossils	5	15
Diatoms	20	25
Radiolarians	10	5
Sponge spicules	Tr	Tr
Fe-oxides	10	Tr

NOTE: Graphic lithologies represent average compositions derived from smear slides and do not always reflect the detailed alternation of sediment types. Major lithologic boundaries are shown but gradational contacts, small-scale cyclicity and ooze-chalk alternations are represented schematically. Color changes approximate to lithologic changes.

SITE 575 HOLE C CORE 2 CORED INTERVAL 6.3–15.8 m



MOTTLED BROWN OOZE (SUBUNIT IA) (6.3–12.0 m): Bioturbated, mottled, brownish clayey siliceous calcareous ooze. Colors range from pale brown (10YR 7/4, 6/3) to brown and dark grayish brown (10YR 5/3, 4/3, 4/2). One cm *Planolites* burrows dominant.

BROWN WHITE OOZE (SUBUNIT IB) (12.0–15.8 m): Rad diatom nanno ooze, with pale brown color dominating.

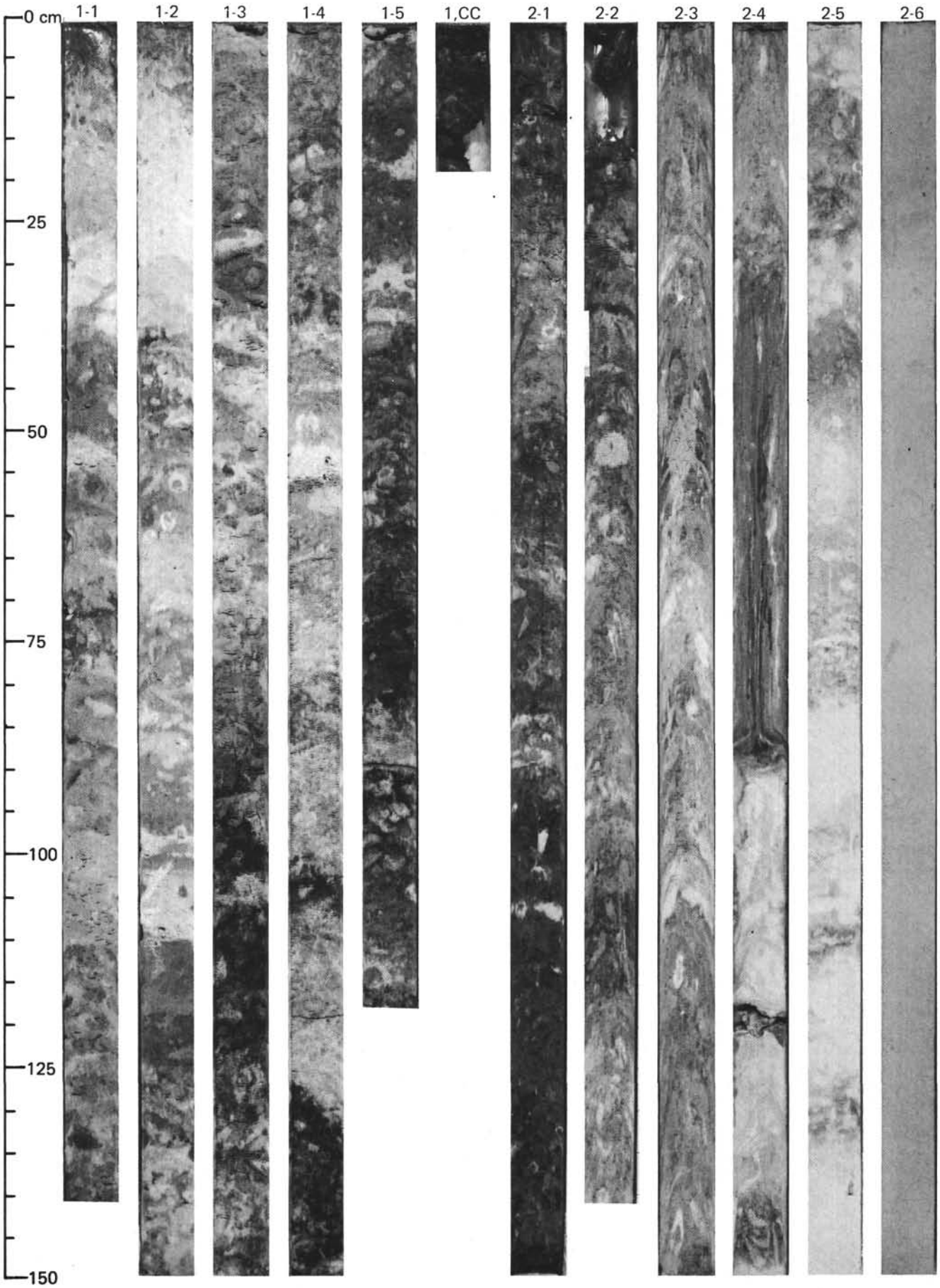
At 7.75 m changes to white nanno ooze.

Foram turbidite present at base of Section 4. It contains volcanic glass fragments and basalt, 0.5–5 mm in size.

SMEAR SLIDE SUMMARY (%):

	5, 65
Texture:	
Sand	30
Silt	40
Clay	30
Composition:	
Clay	*Tr*
Pyrite	Tr
Carbonate unspec.	17
Foraminifers	3
Calc. nannofossils	40
Diatoms	30
Radiolarians	10
Sponge spicules	Tr
Fe-oxides	Tr

NOTE: Graphic lithologies represent average compositions derived from smear slides and do not always reflect the detailed alternation of sediment types. Major lithologic boundaries are shown but gradational contacts, small-scale cyclicity and ooze-chalk alternations are represented schematically. Color changes approximate to lithologic changes.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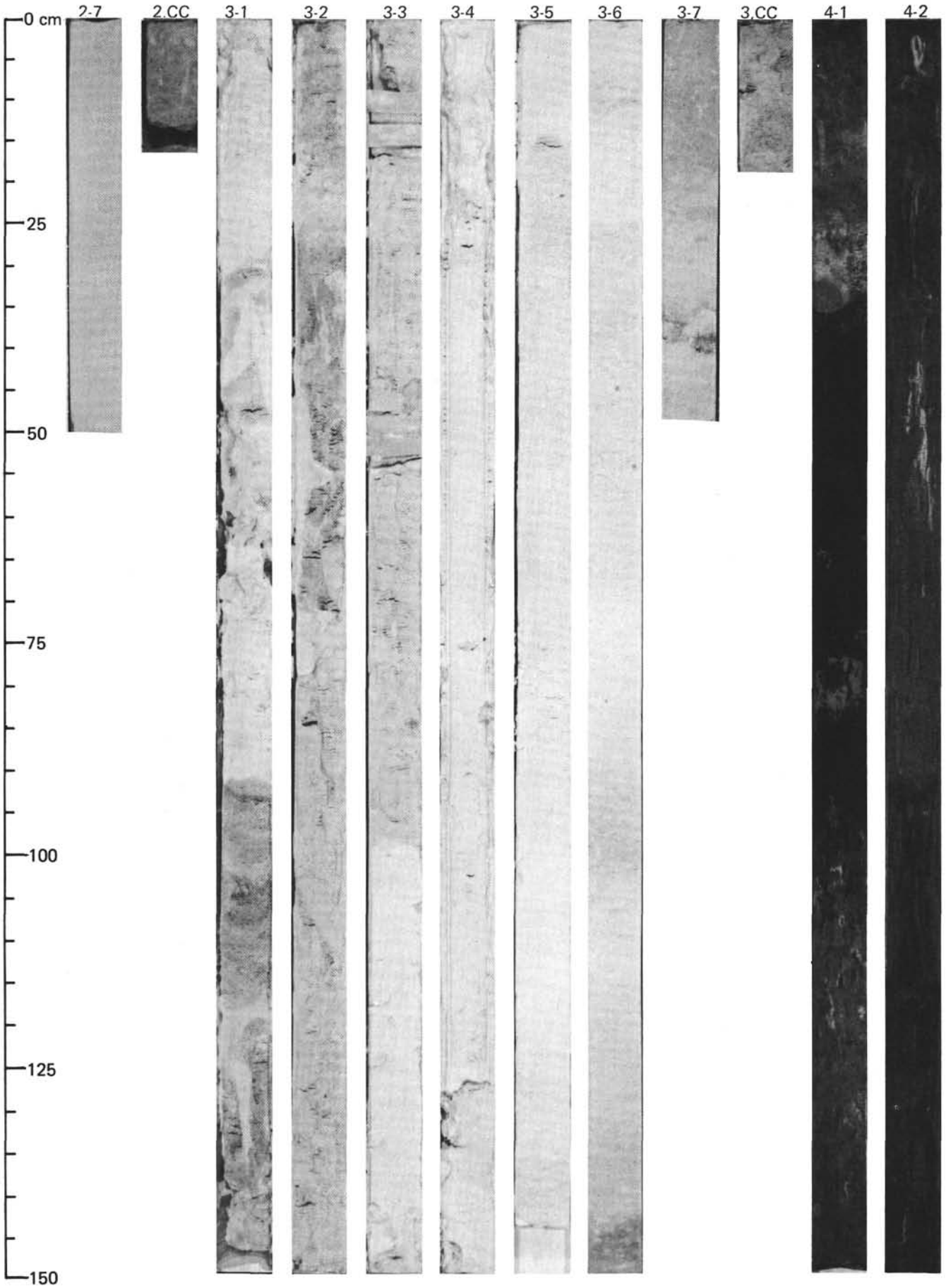
2-6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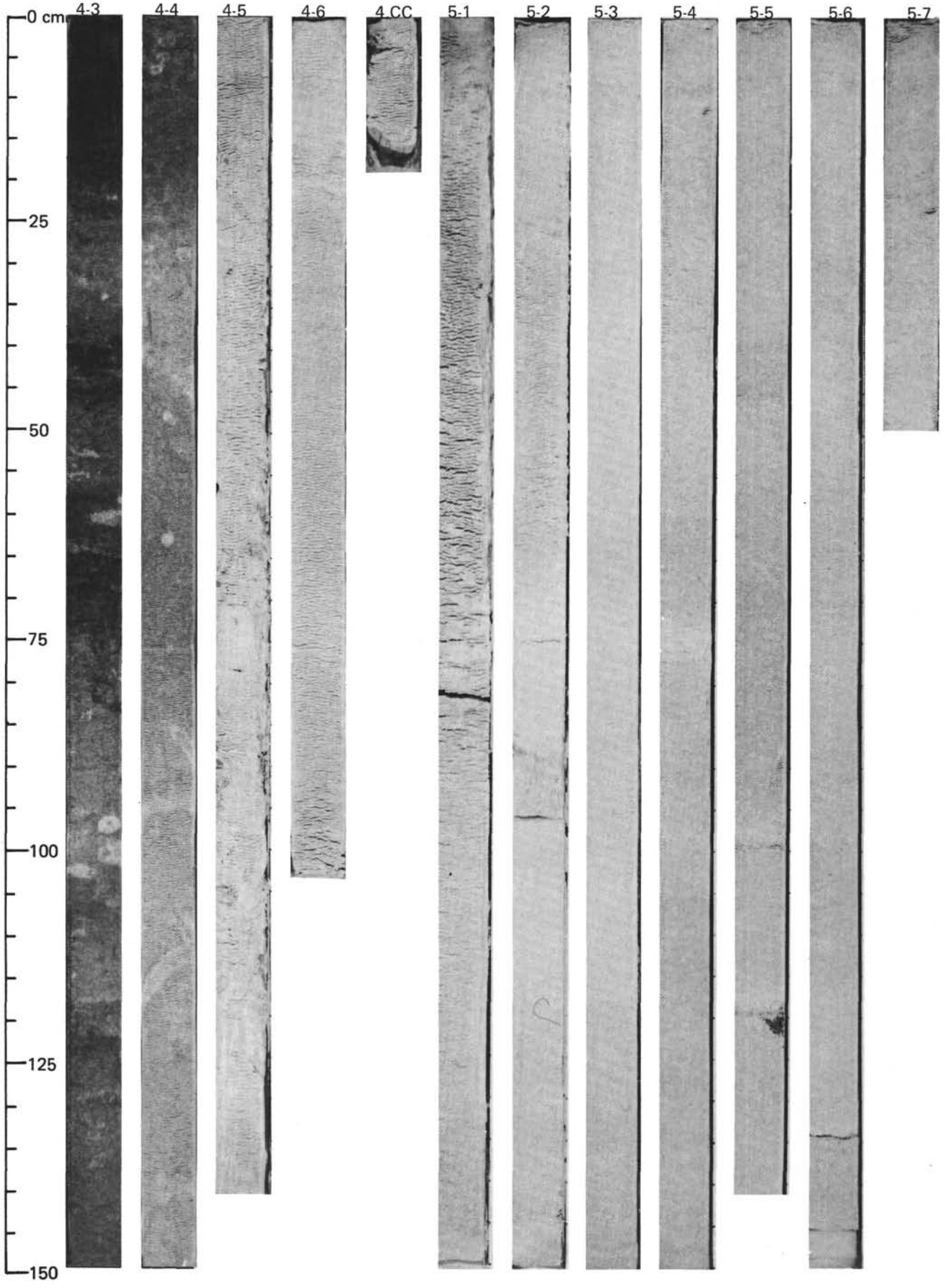
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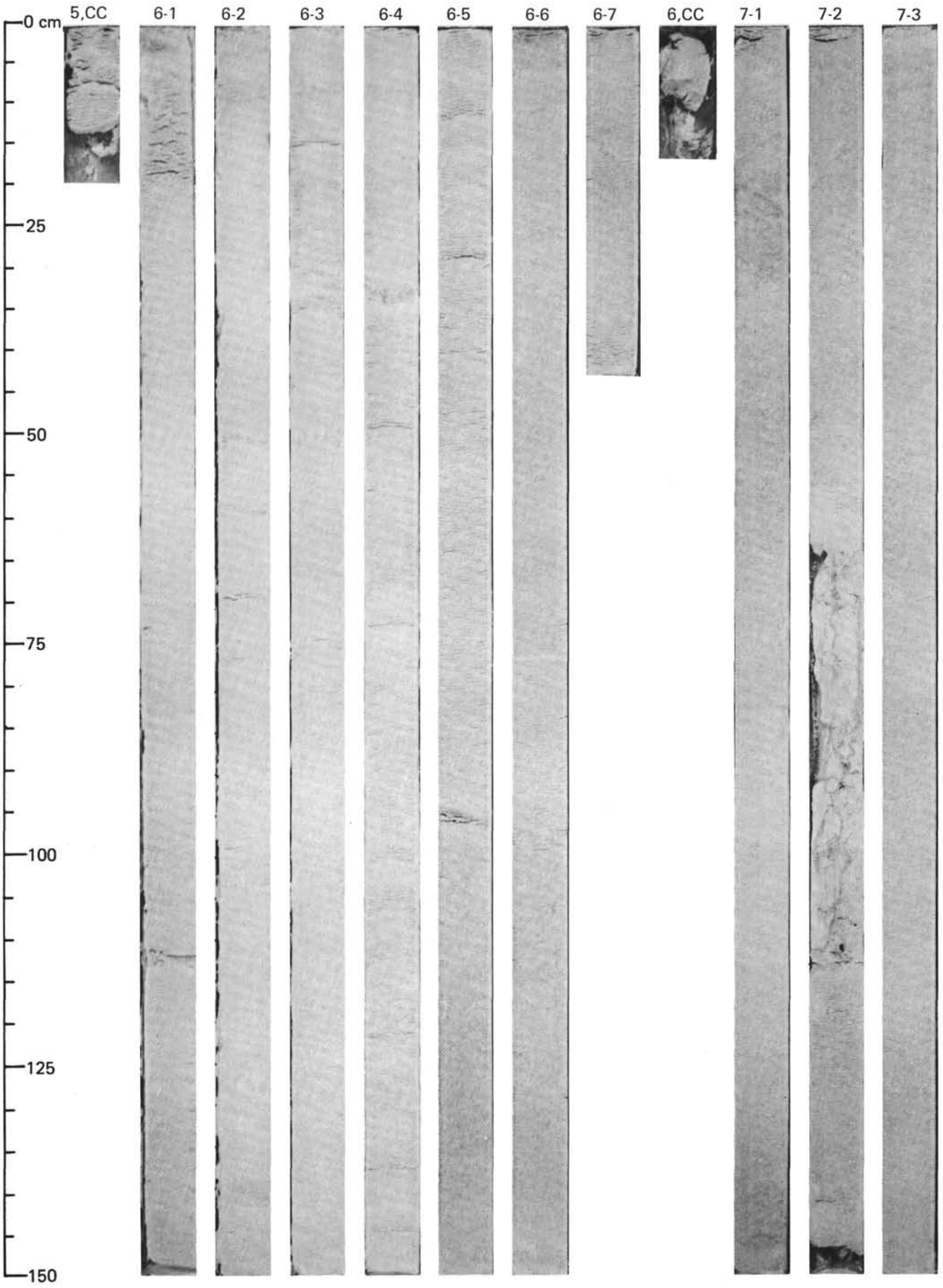
5-7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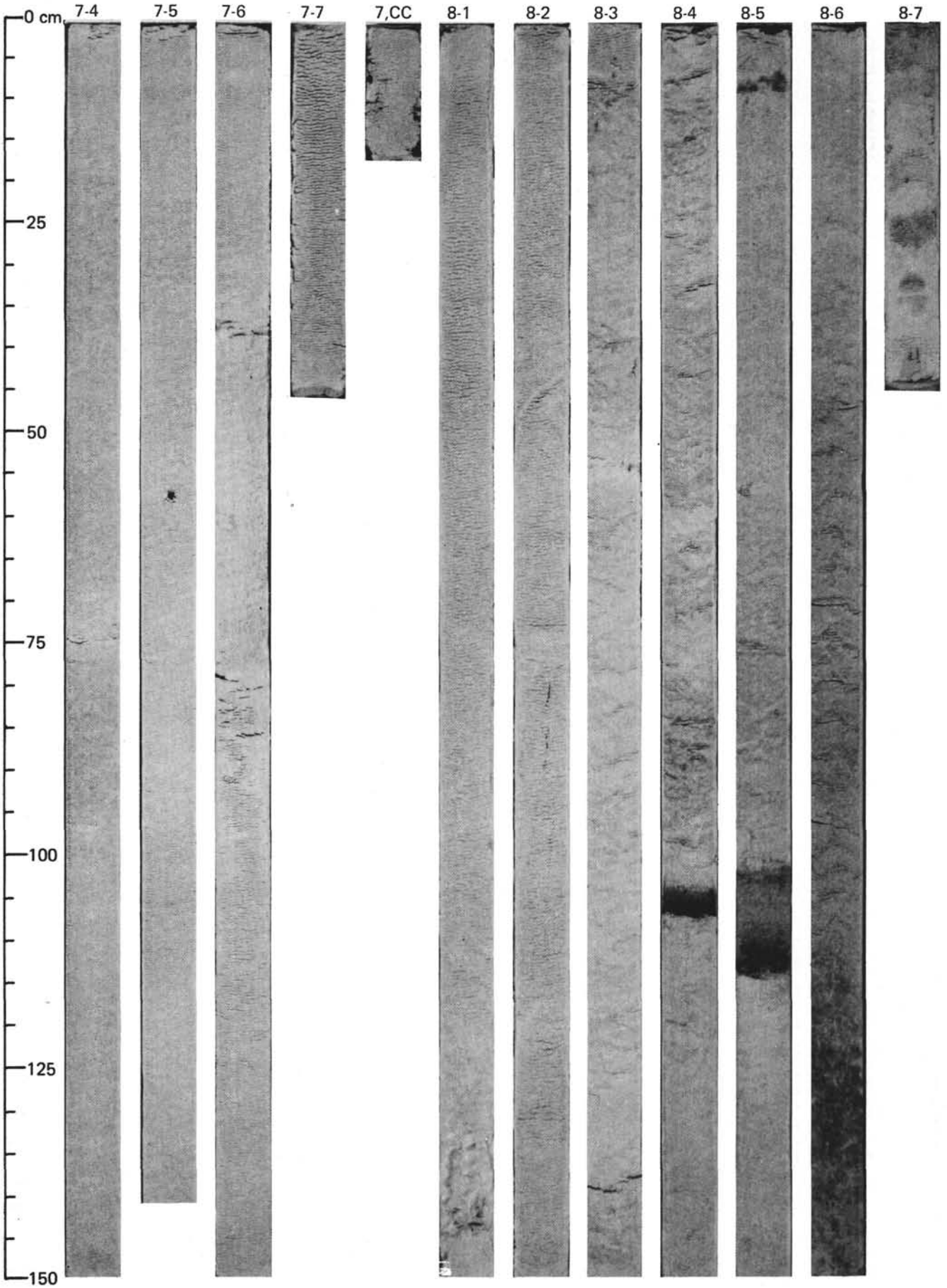
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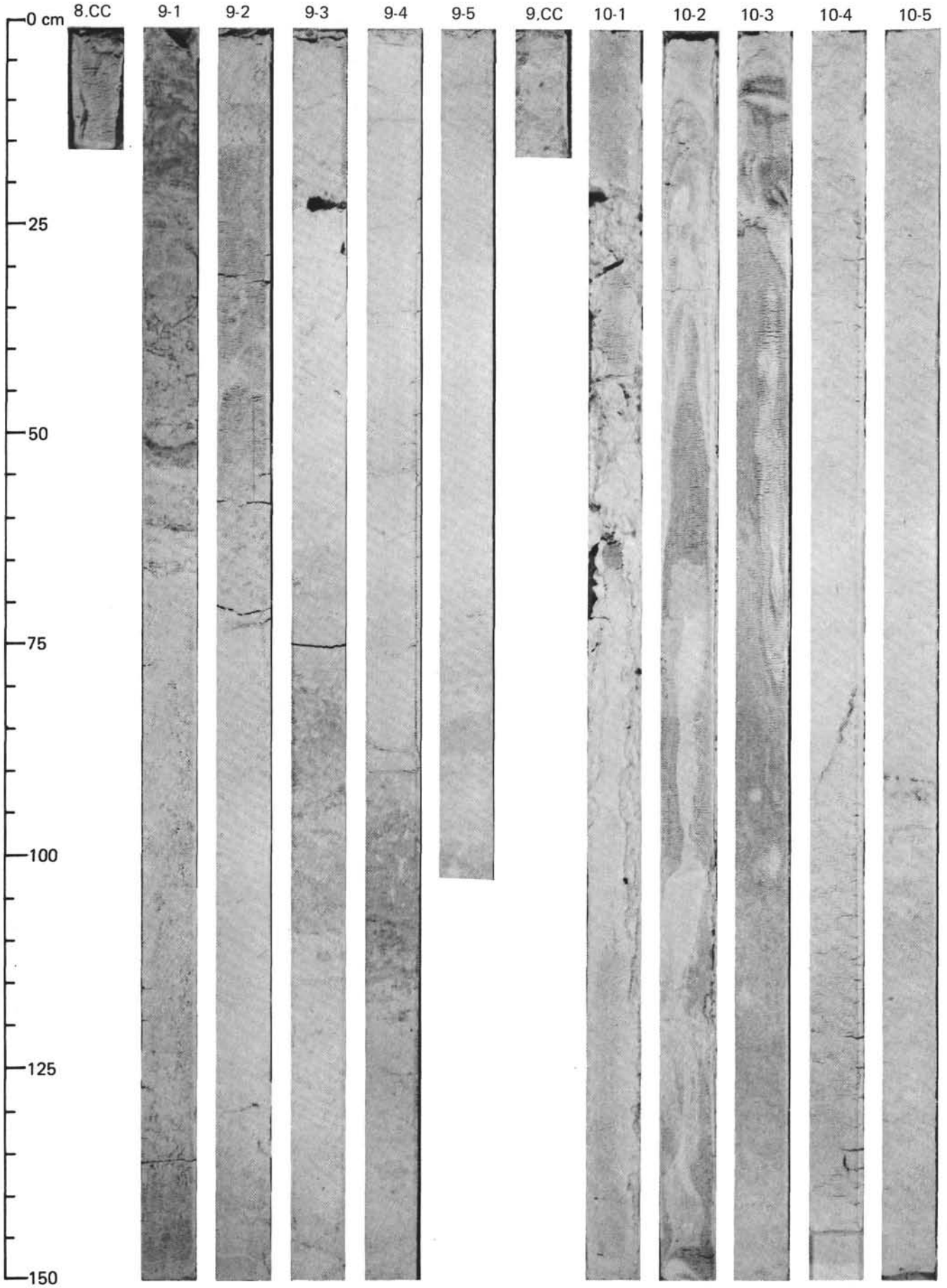
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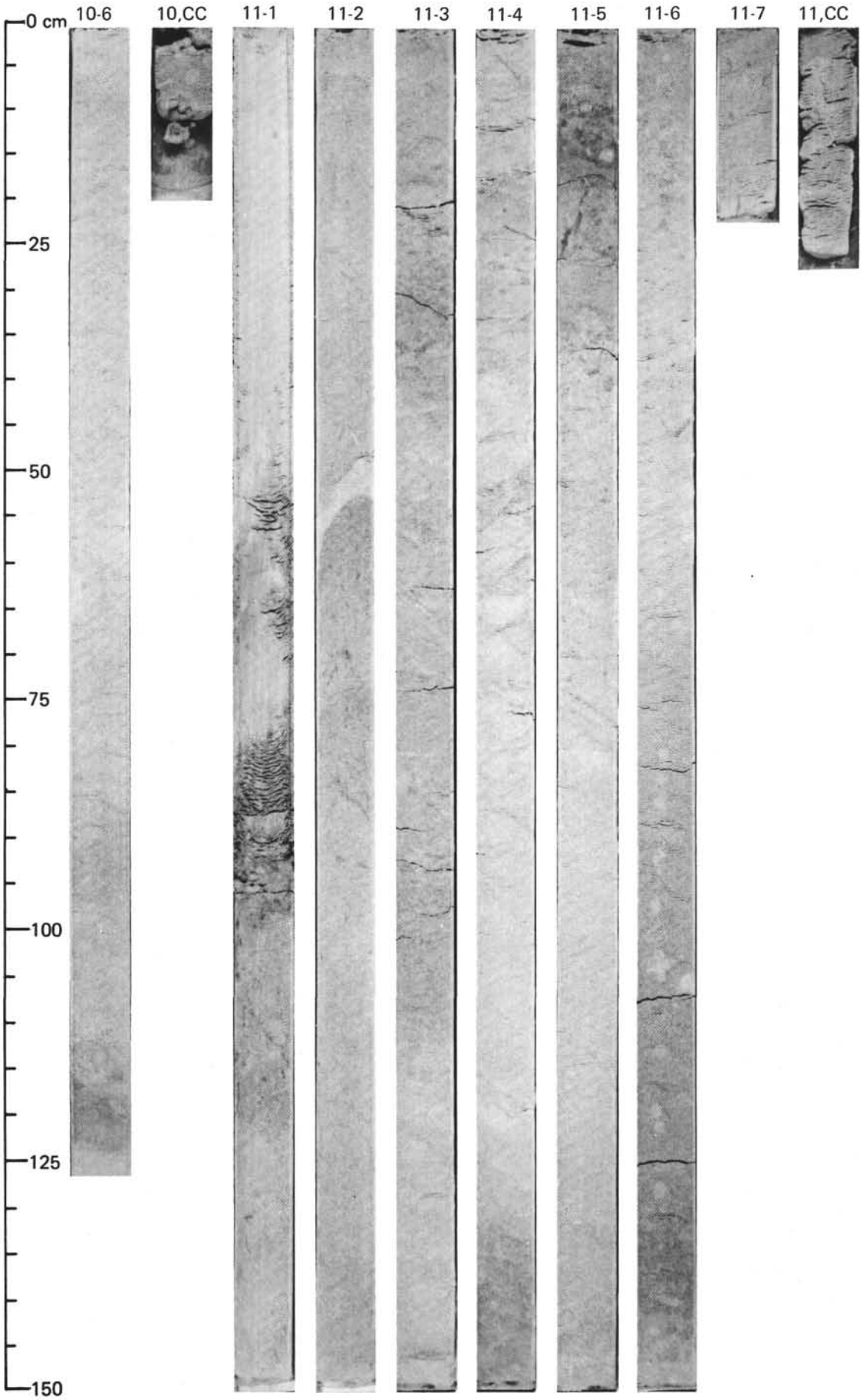
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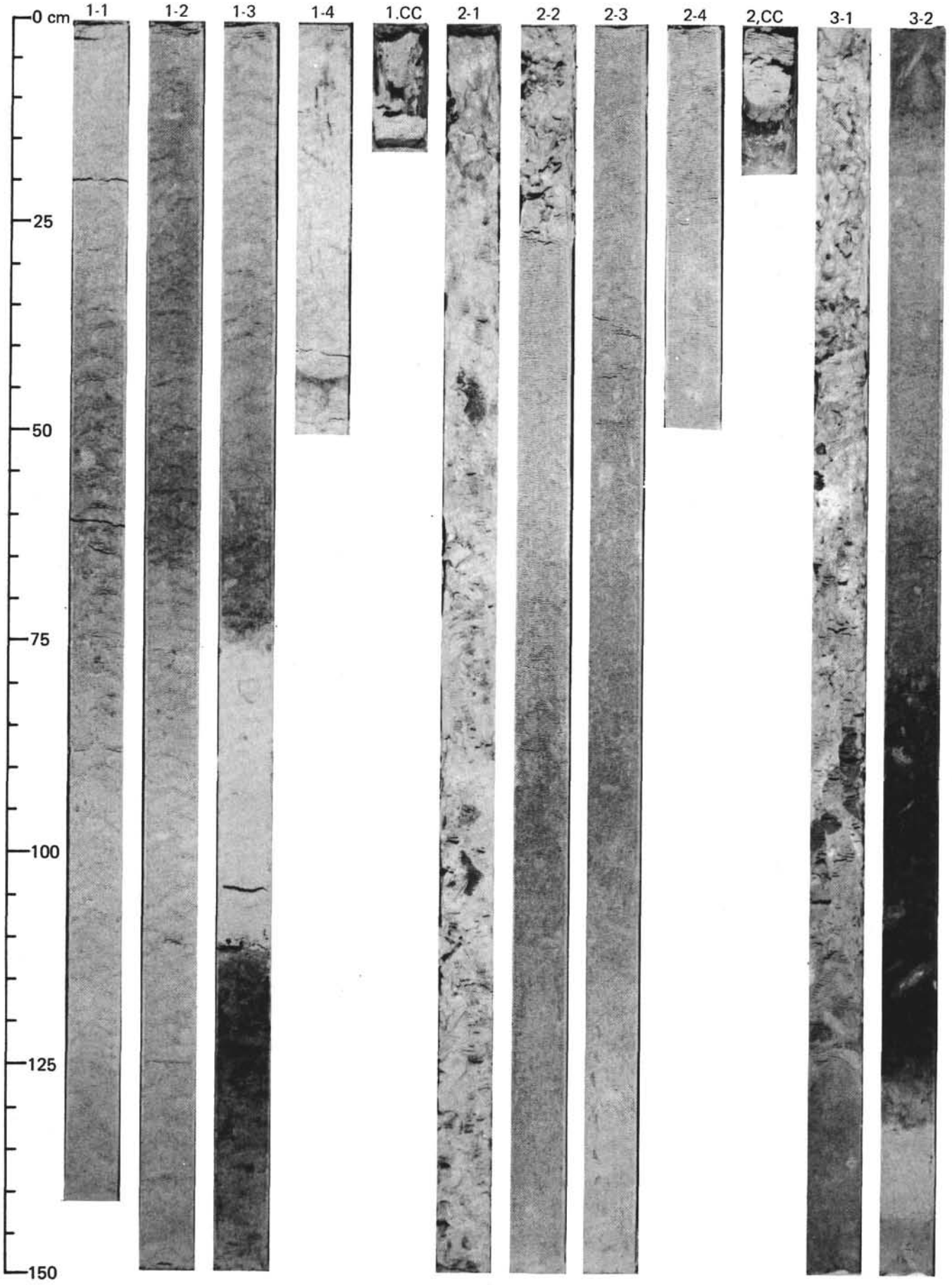
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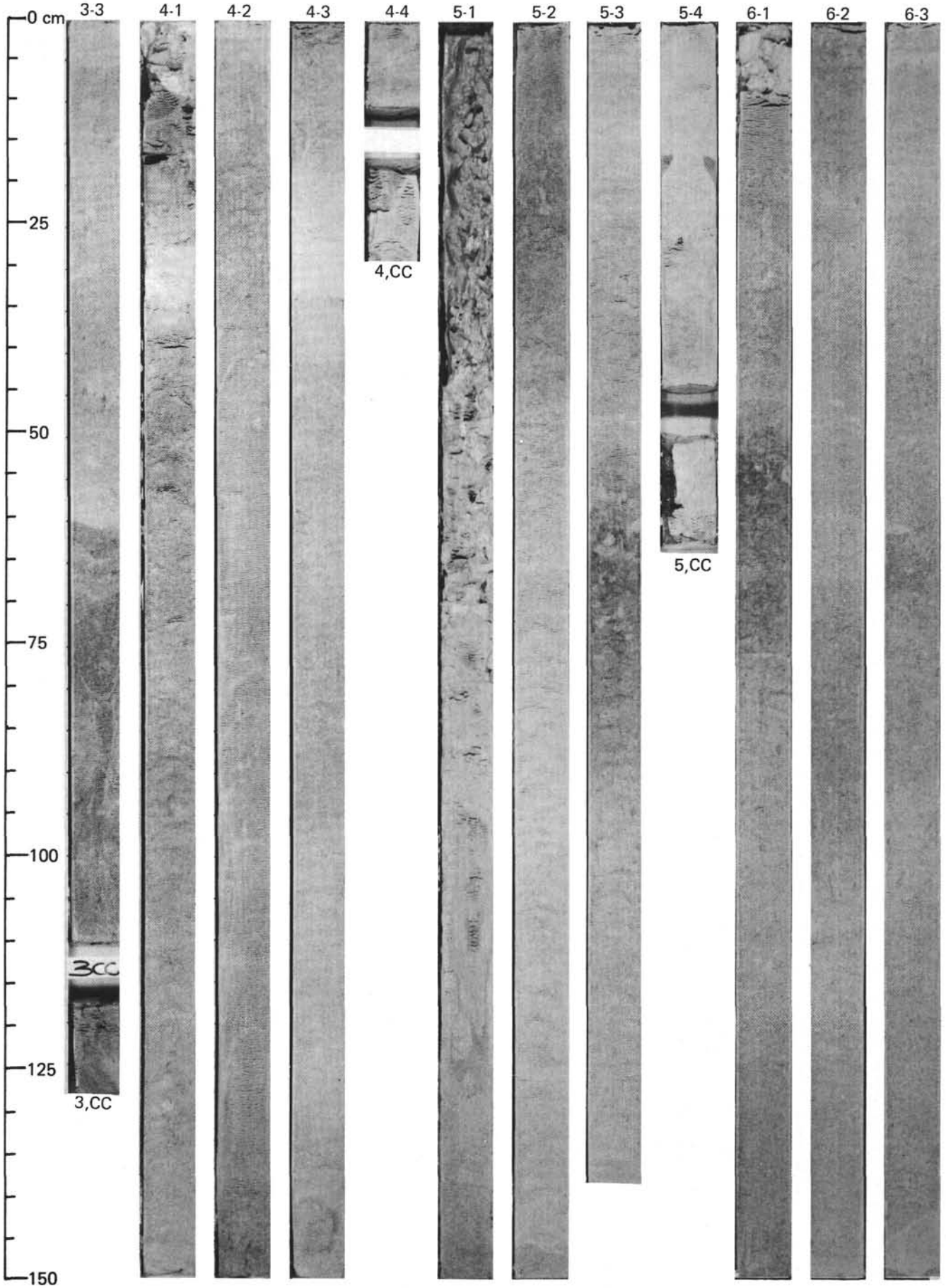
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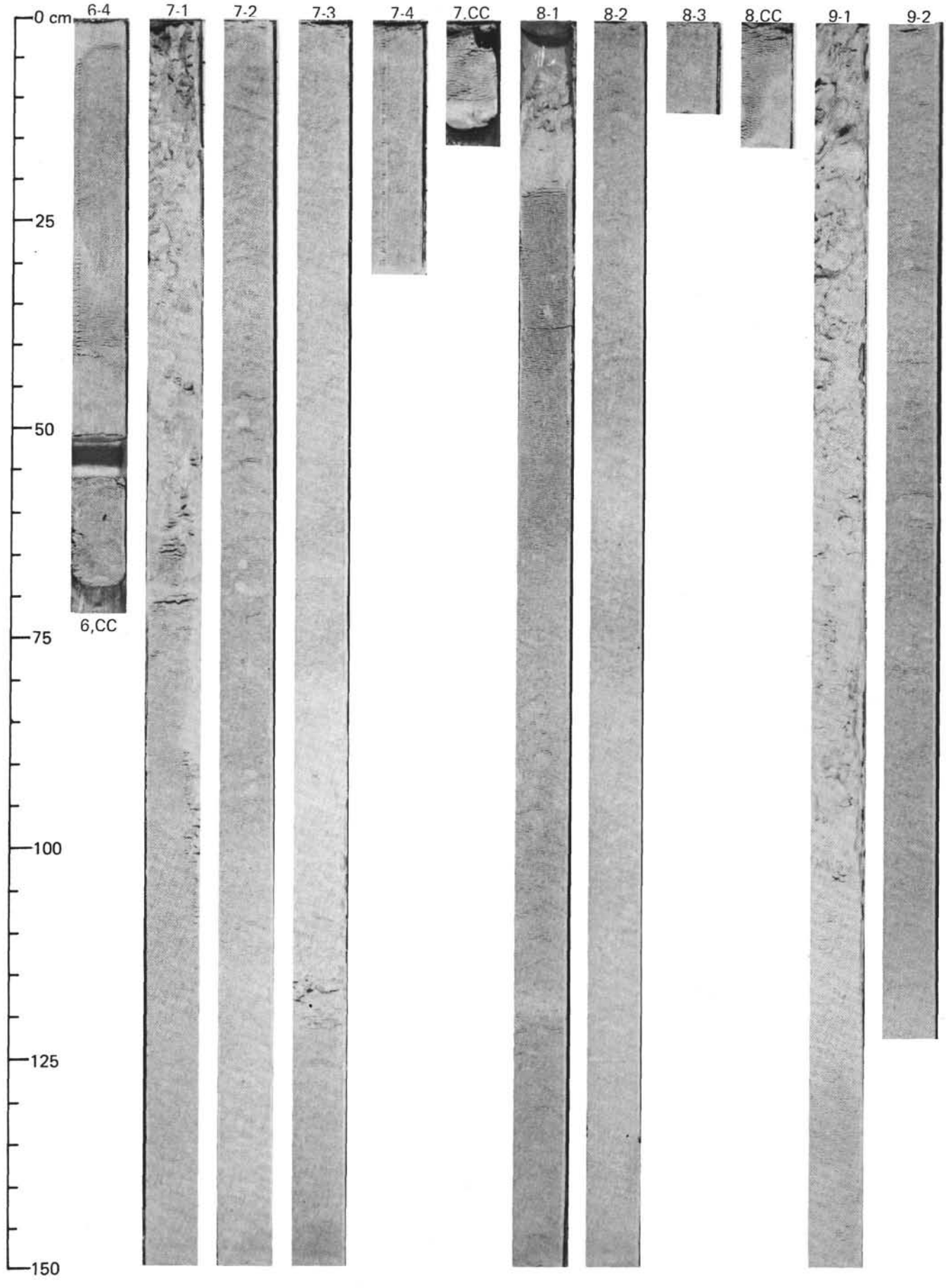
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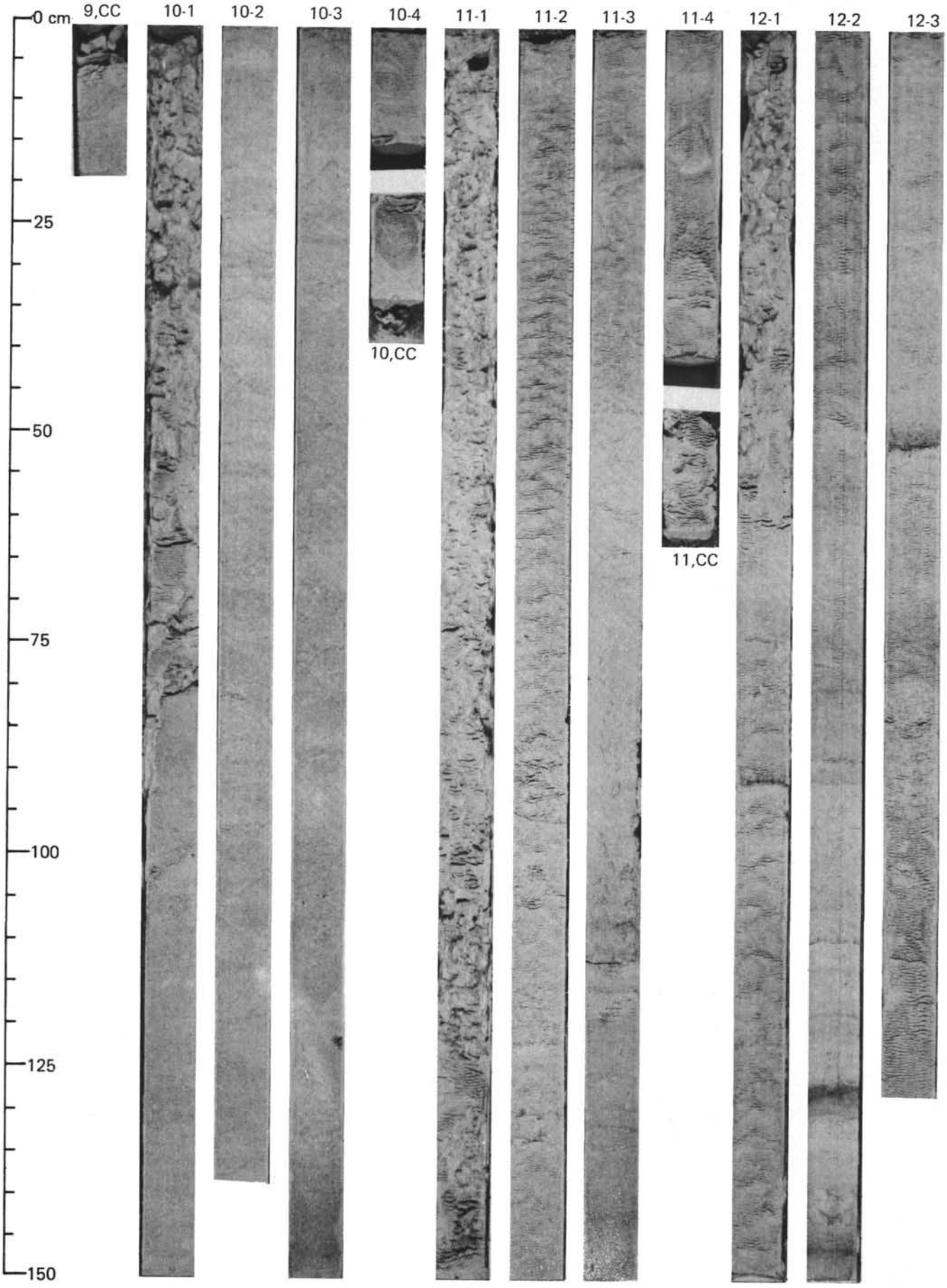
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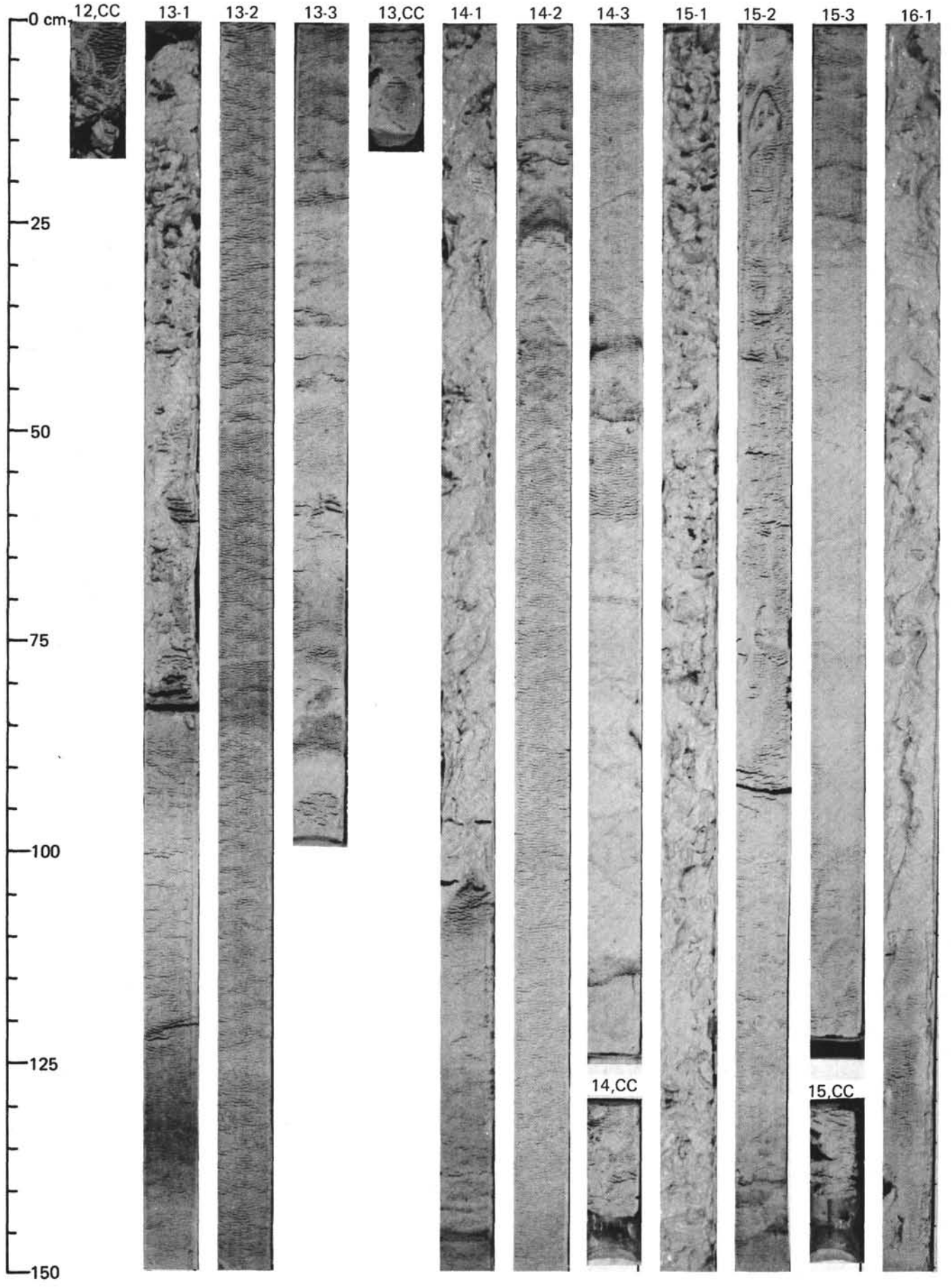
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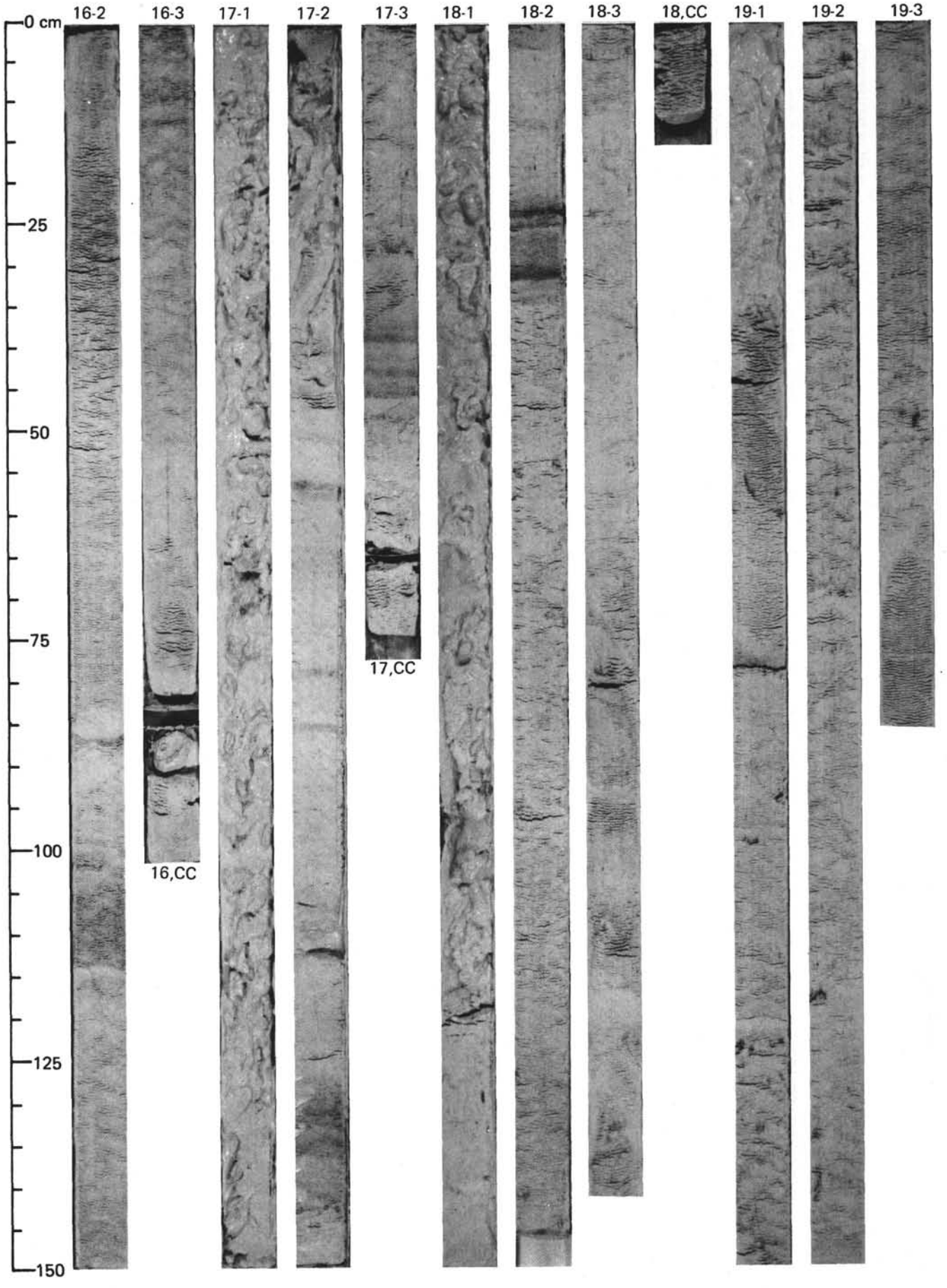
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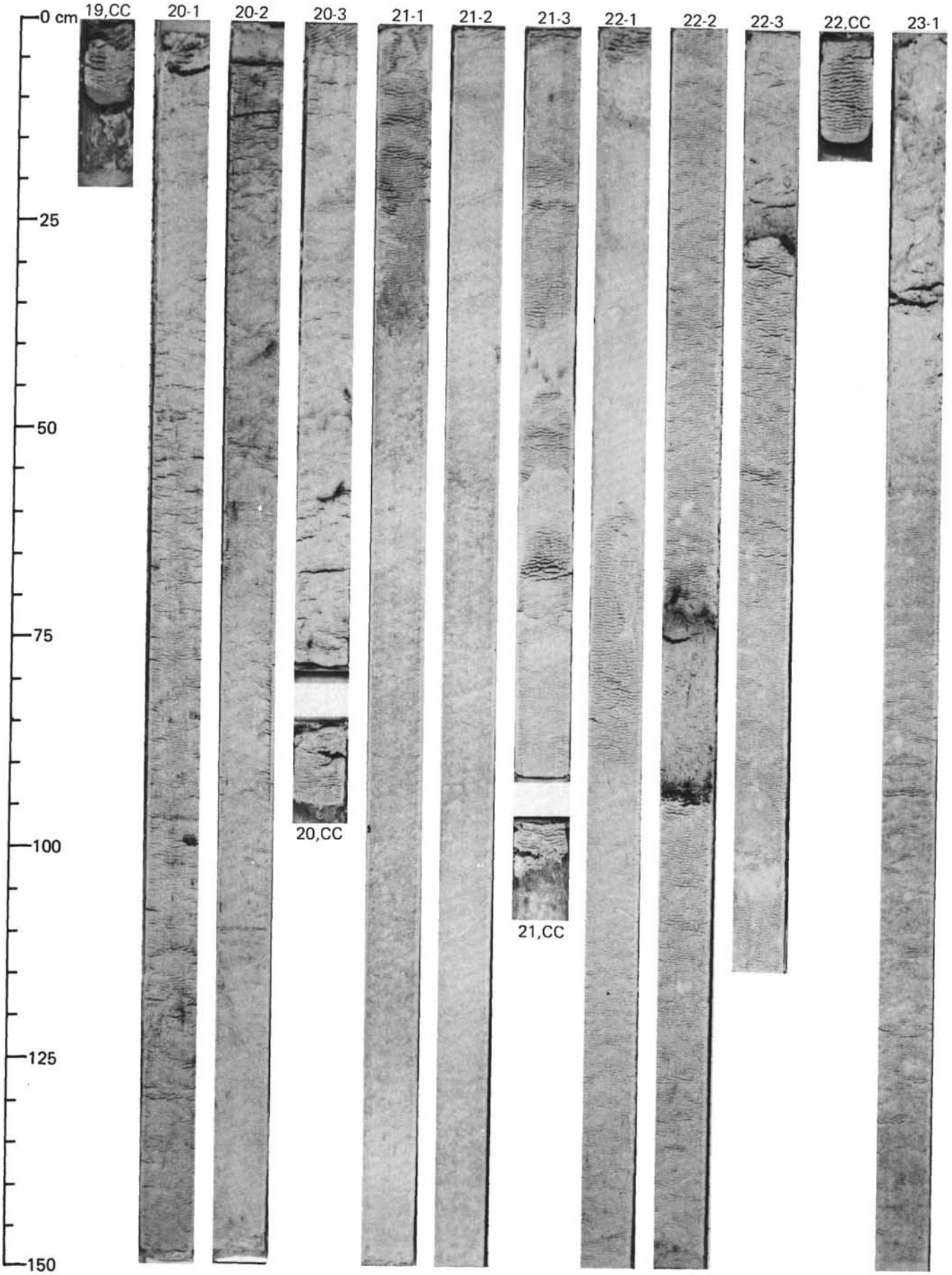
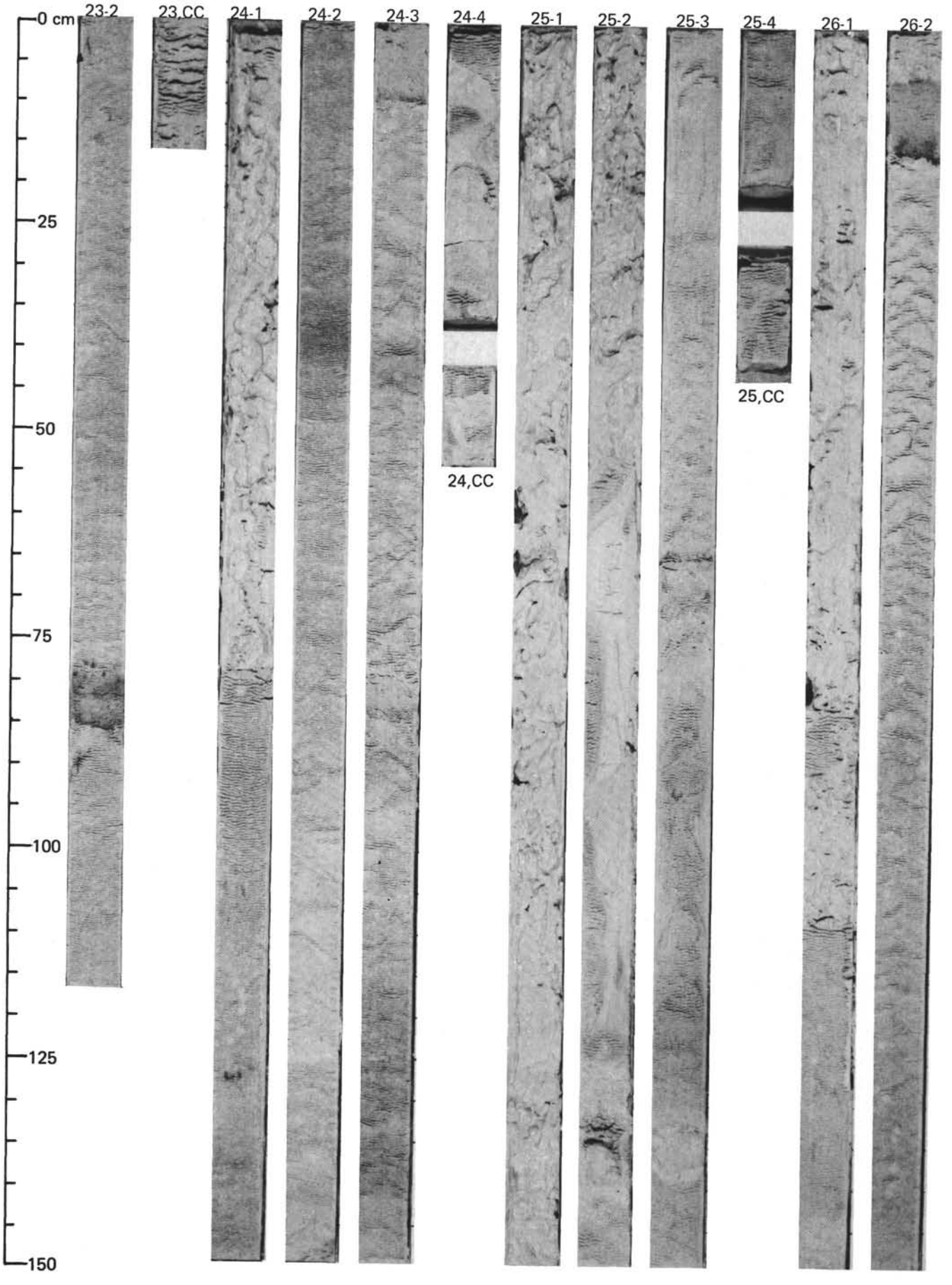
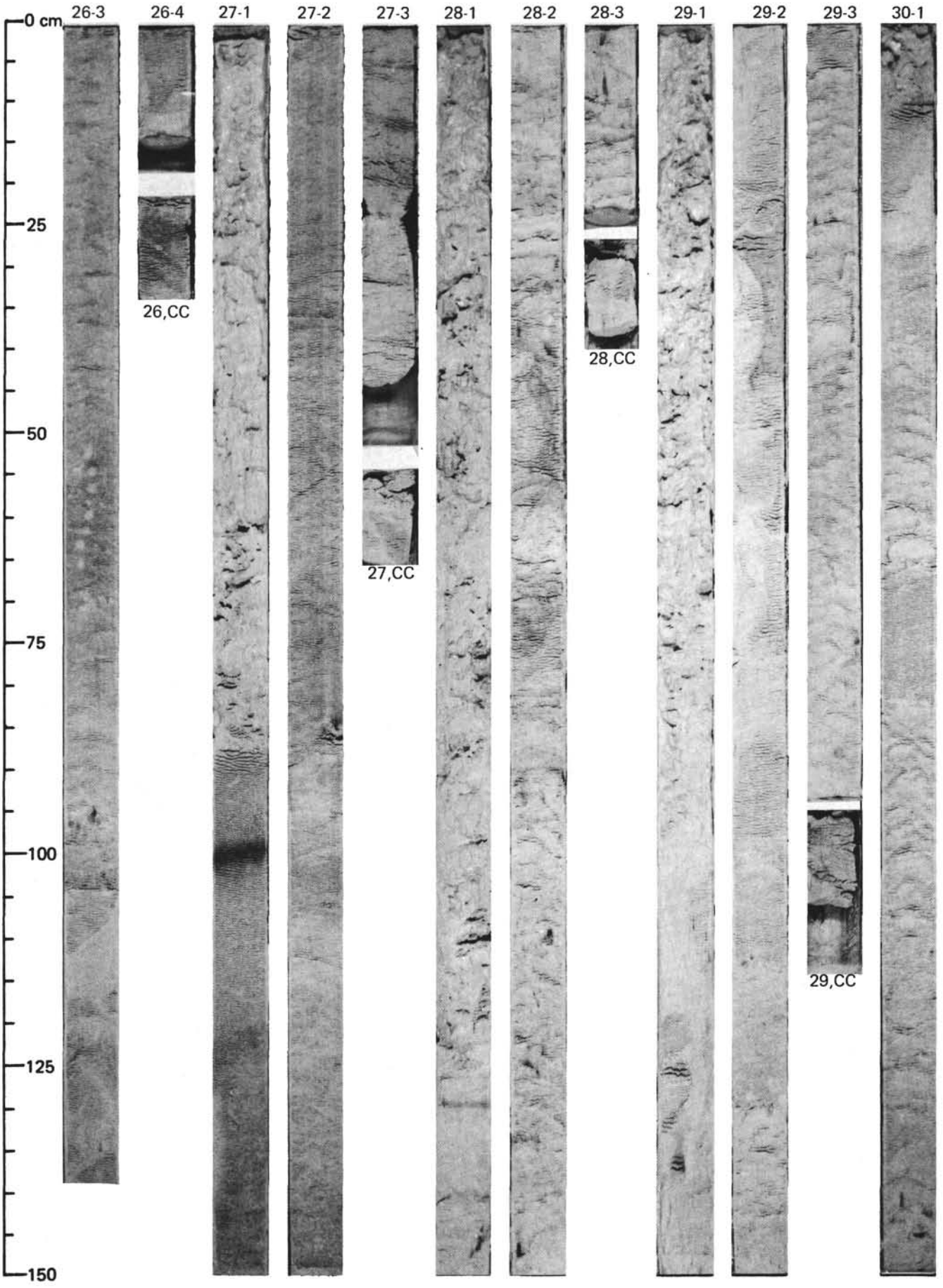
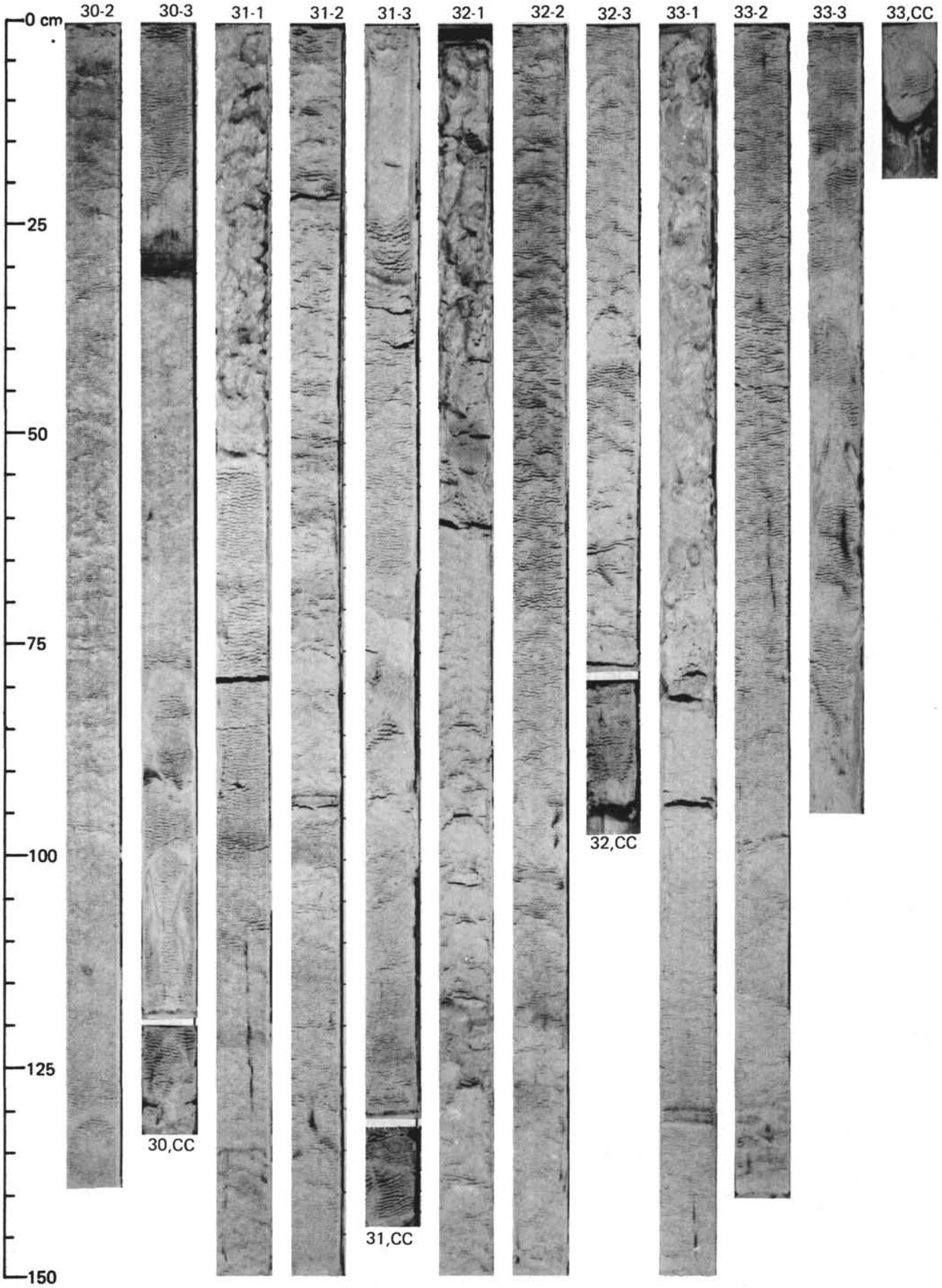
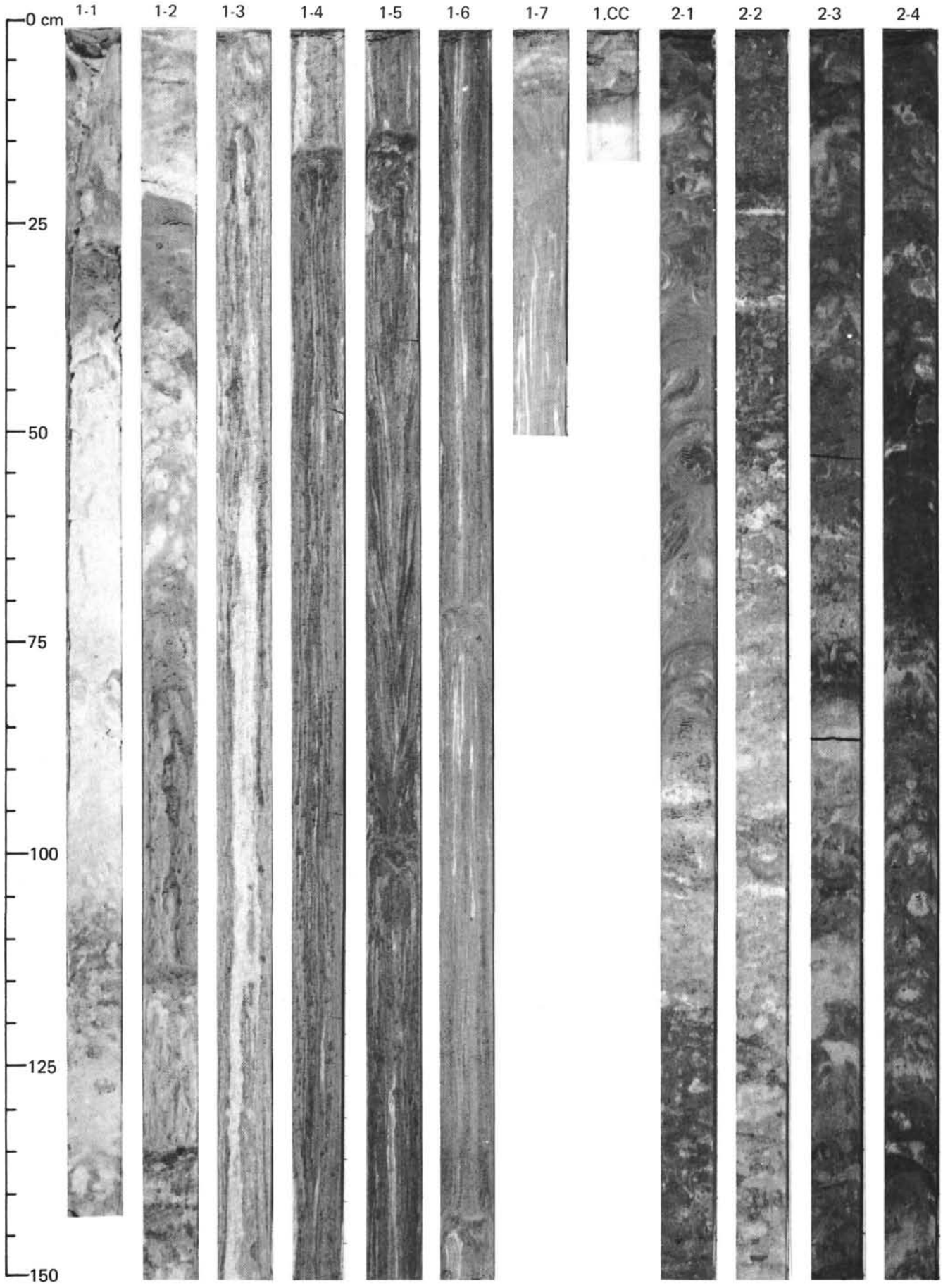
19-2
19-3

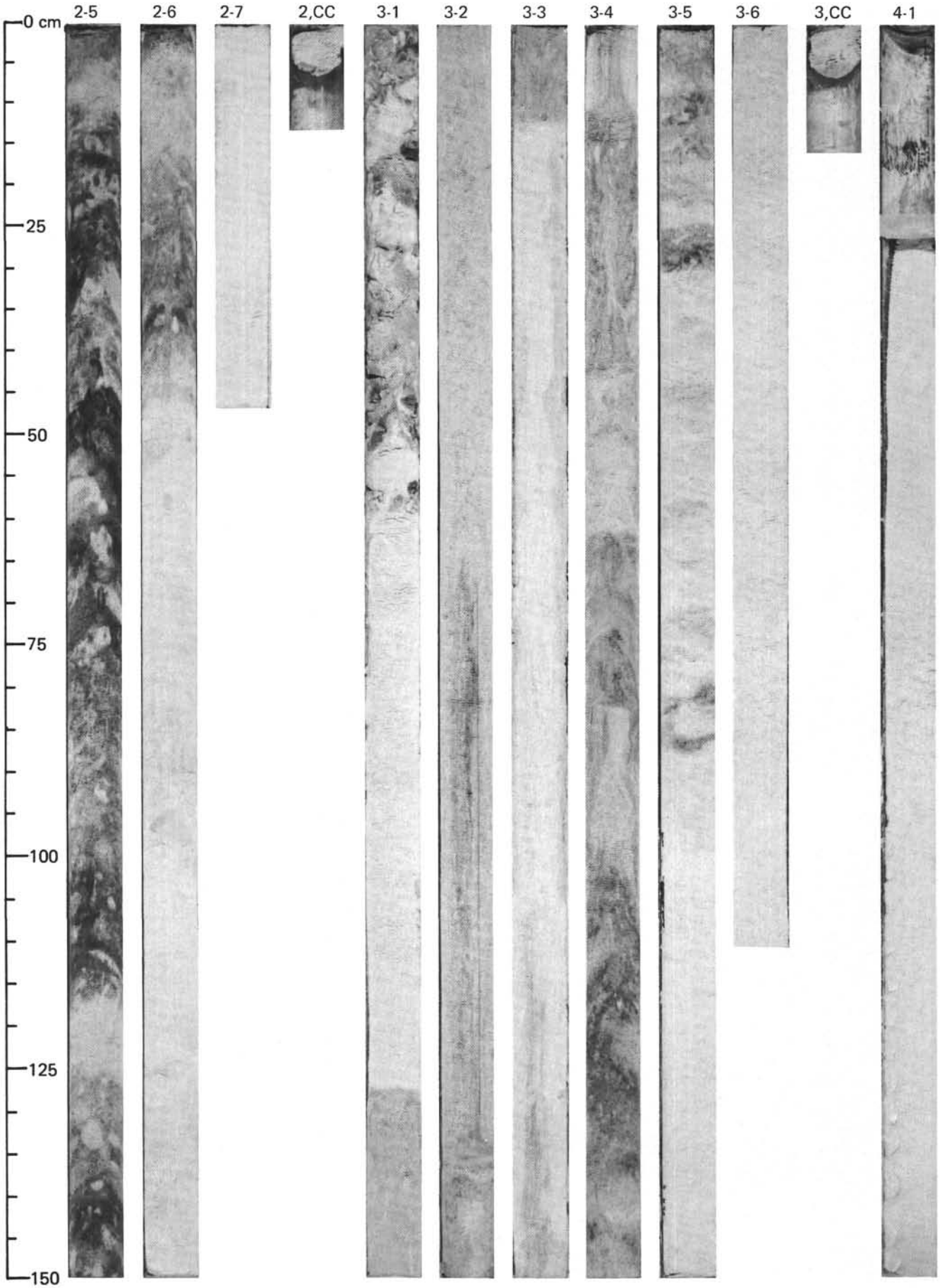

0 cm
25
50
75
100
125
150
19,CC
20-1
20-2
20-3
20,CC
21-1
21-2
21-3
21,CC
22-1
22-2
22-3
22,CC
23-1

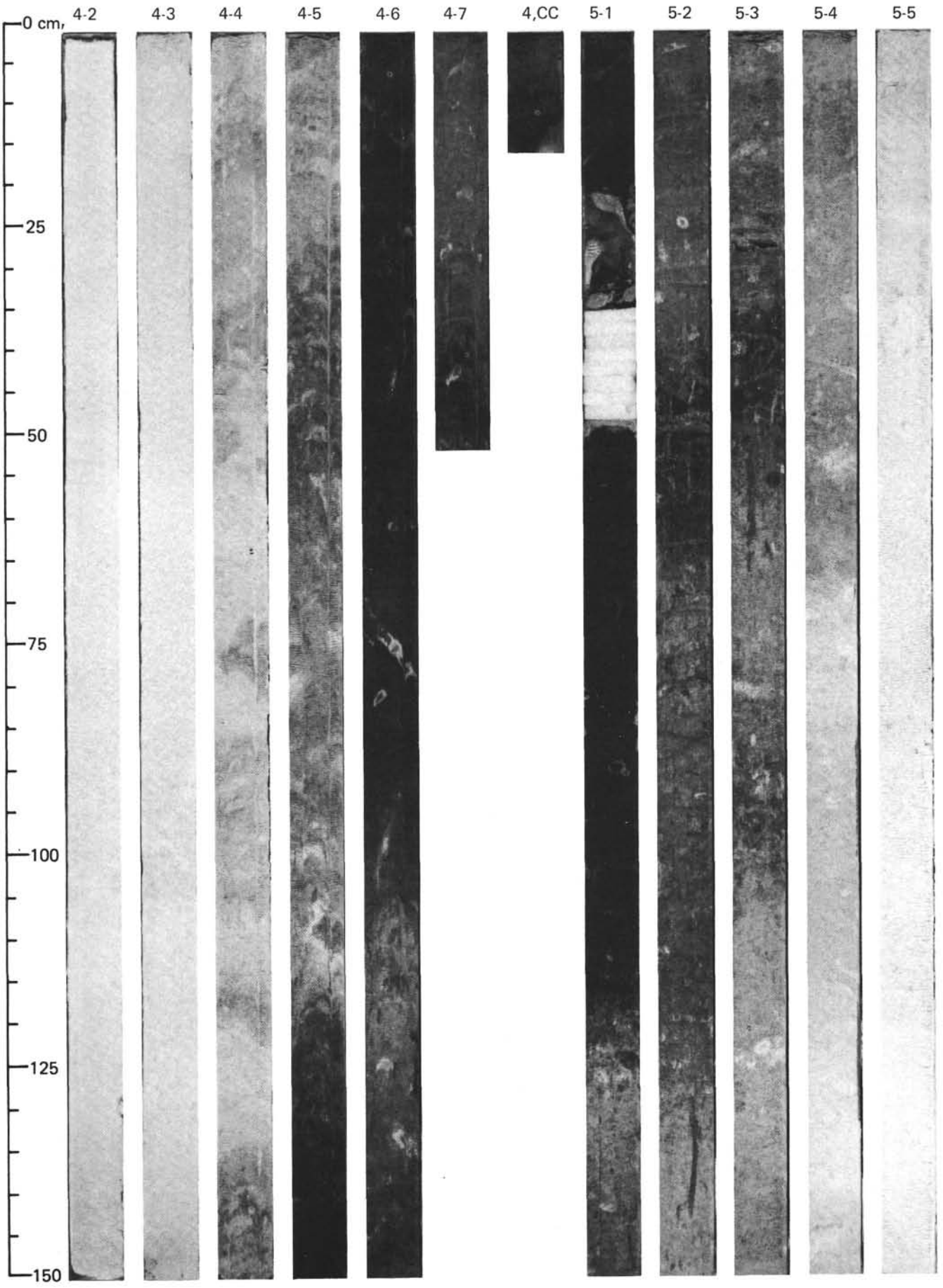

0 cm
25
50
75
100
125
150
23-2
23,CC
24-1
24-2
24-3
24-4
24,CC
25-1
25-2
25-3
25-4
25,CC
26-1
26-2

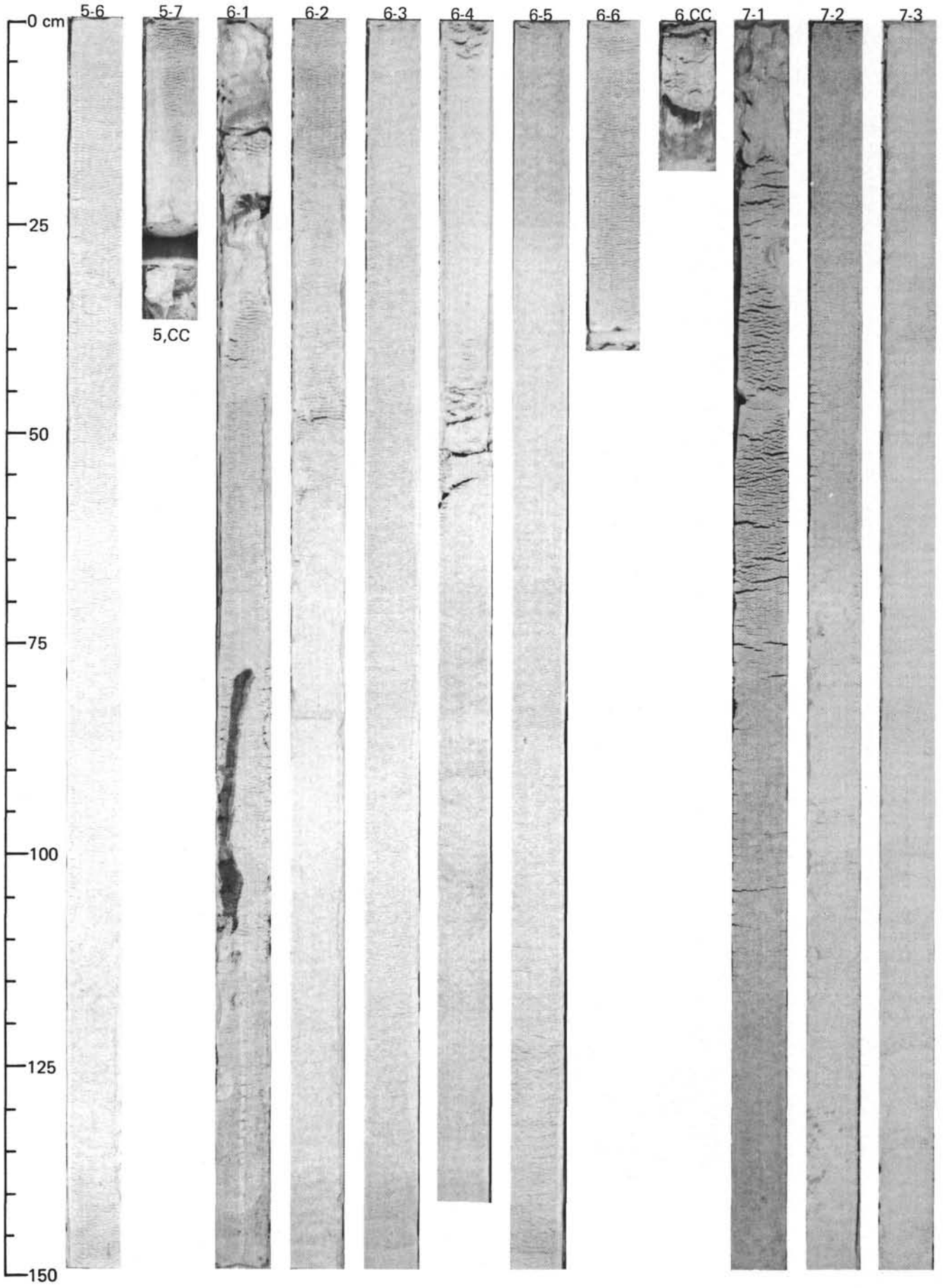

0 cm
25
50
75
100
125
150
26-3
26-4
26,CC
27-1
27-2
27-3
27,CC
28-1
28-2
28-3
28,CC
29-1
29-2
29-3
29,CC
30-1

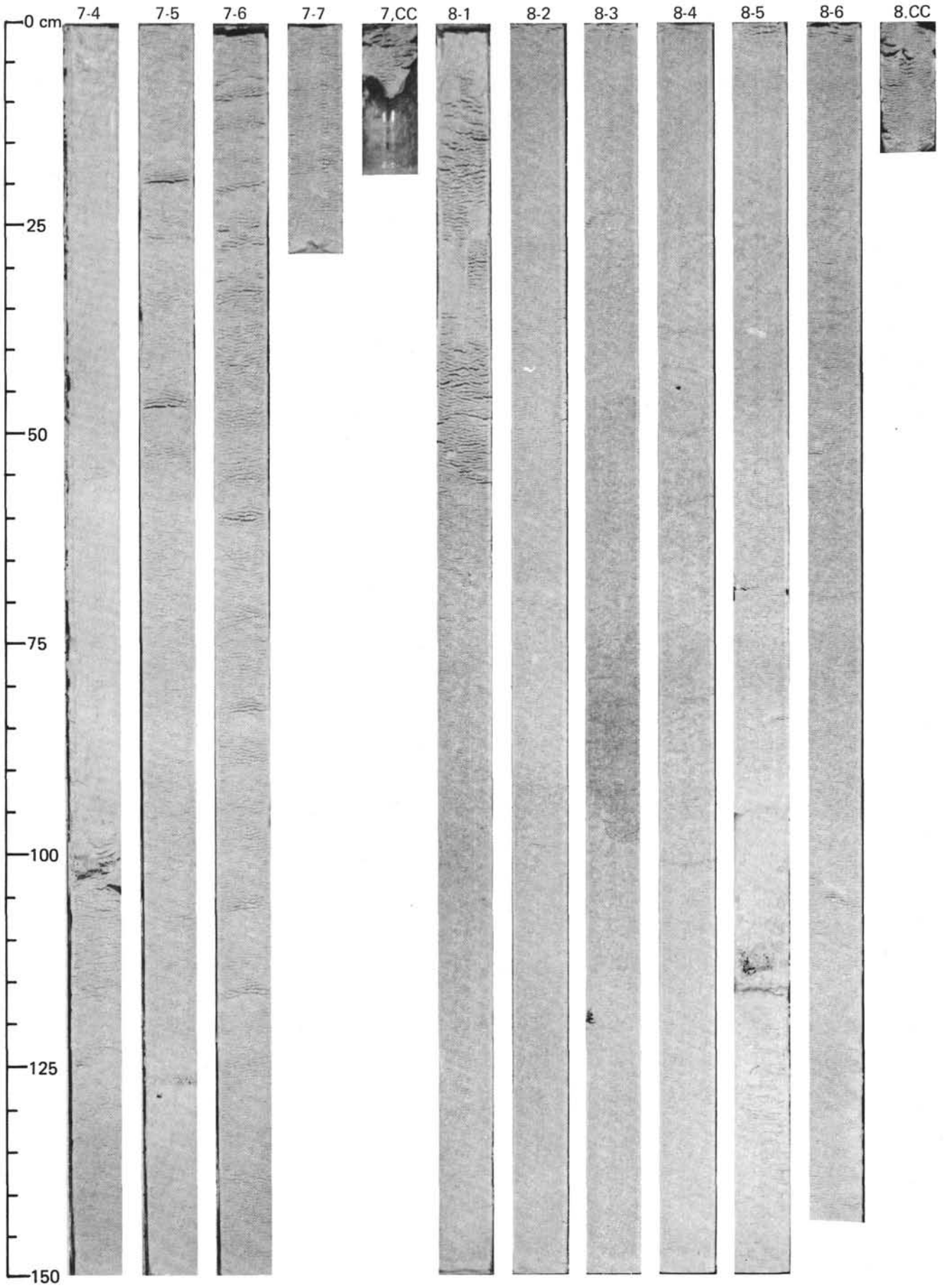

0 cm
25
50
75
100
125
150
30-2
30-3
30,CC
31-1
31-2
31-3
31,CC
32-1
32-2
32-3
32,CC
33-1
33-2
33-3
33,CC

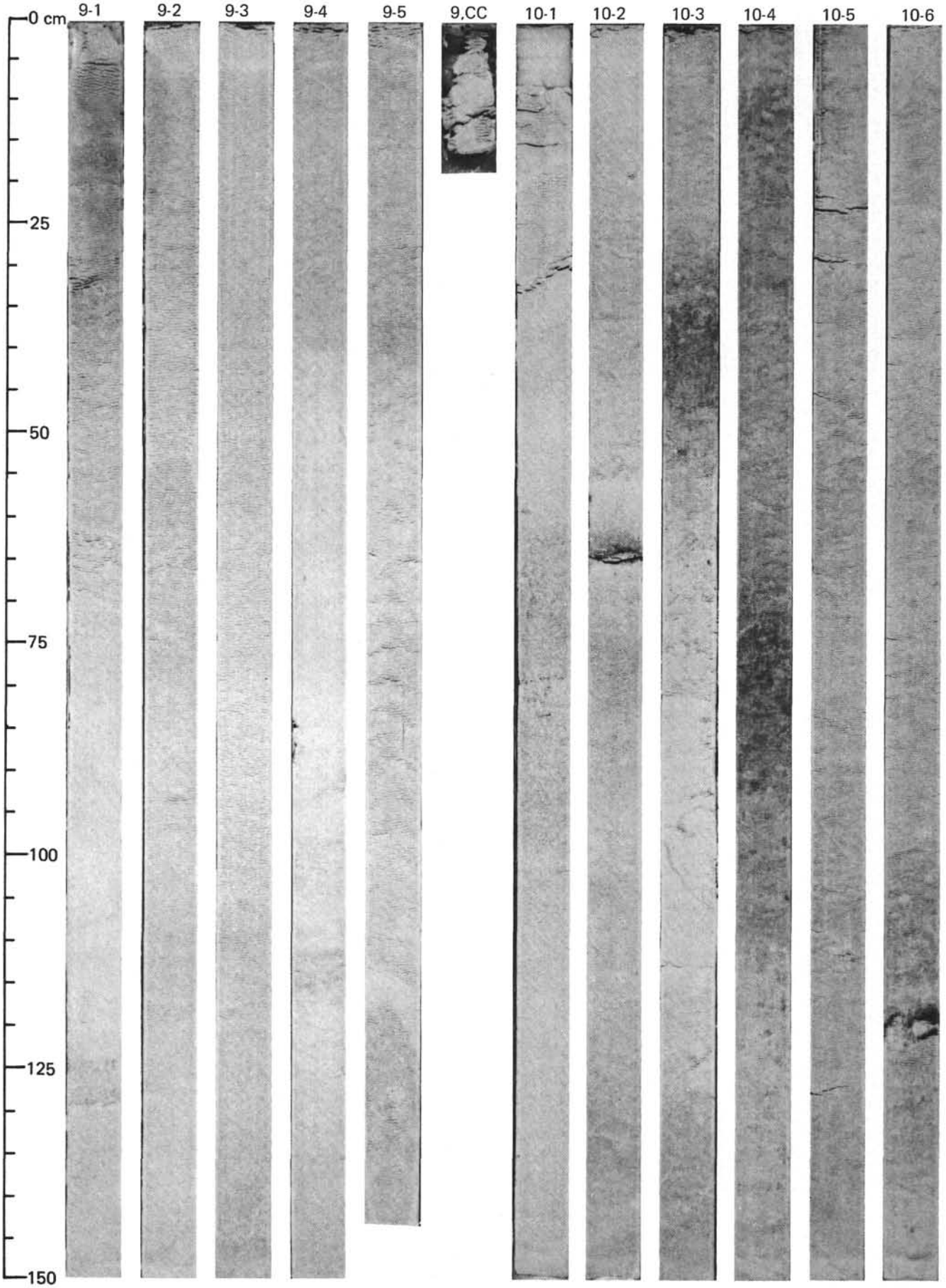

0 cm
25
50
75
100
125
150
1-1
1-2
1-3
1-4
1-5
1-6
1-7
1,CC
2-1
2-2
2-3
2-4

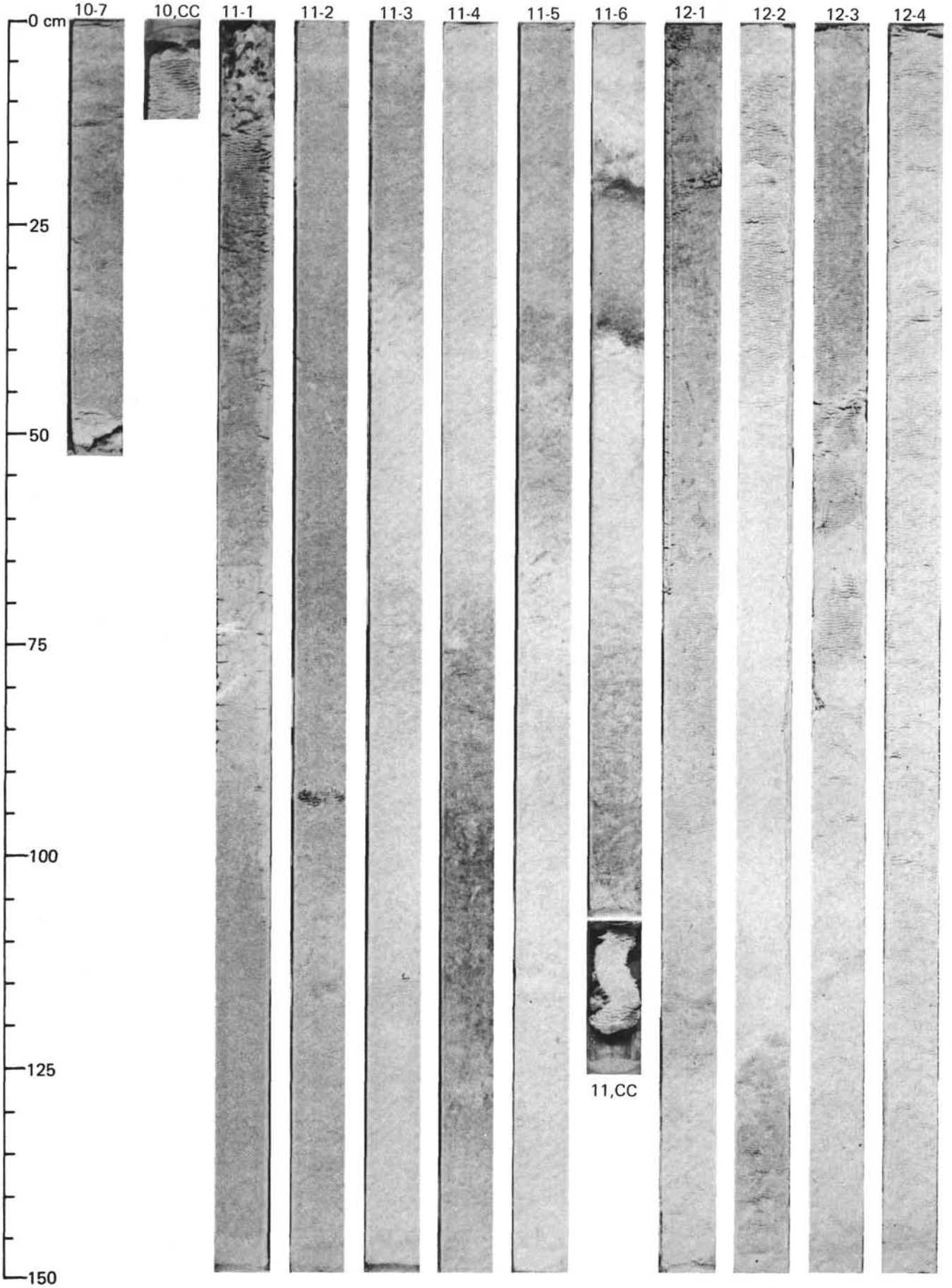

2-5
2-6
2-7
2,CC
3-1
3-2
3-3
3-4
3-5
3-6
3,CC
4-1
0 cm
25
50
75
100
125
150

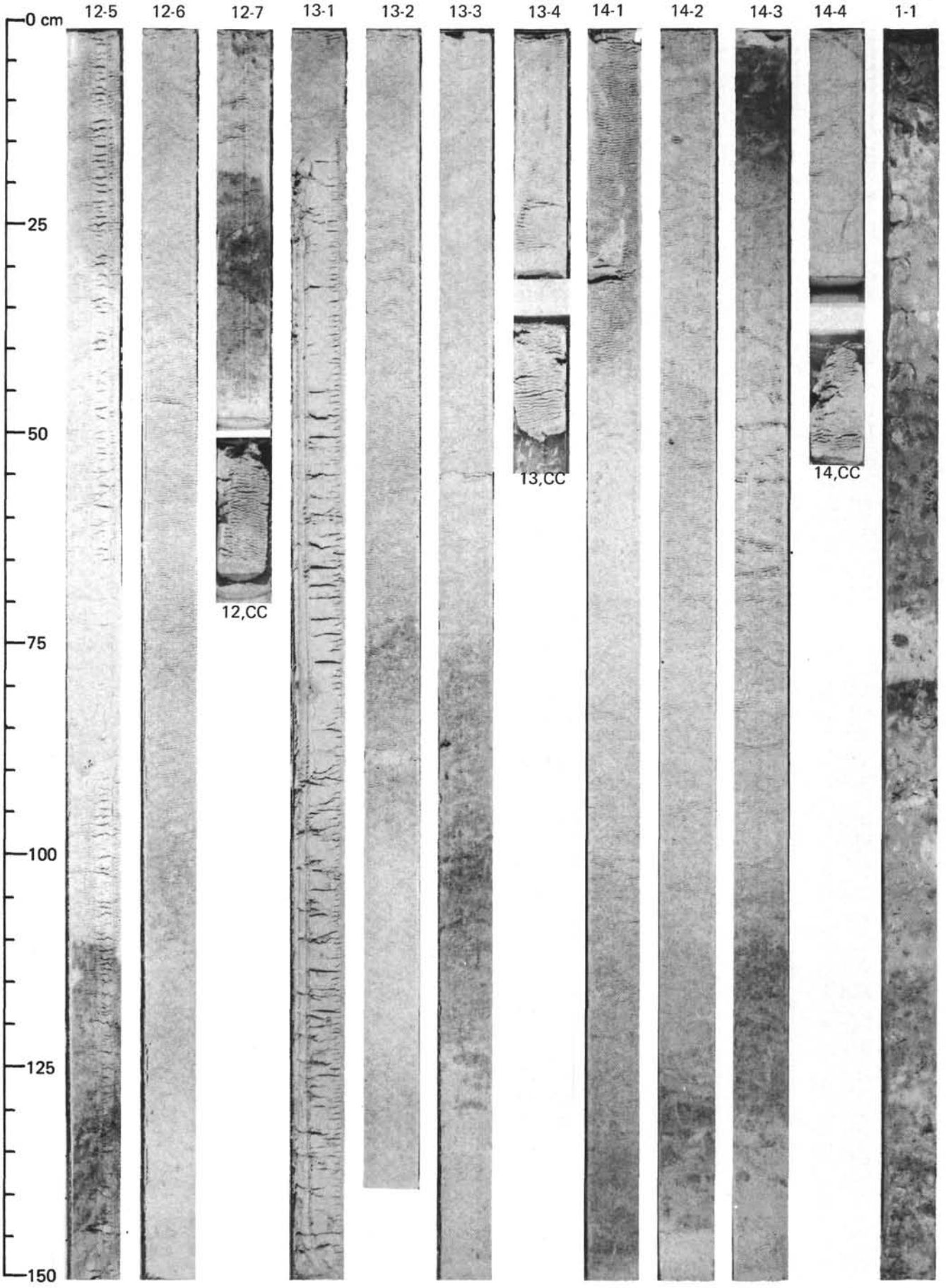

0 cm
25
50
75
100
125
150
4-2
4-3
4-4
4-5
4-6
4-7
4,CC
5-1
5-2
5-3
5-4
5-5

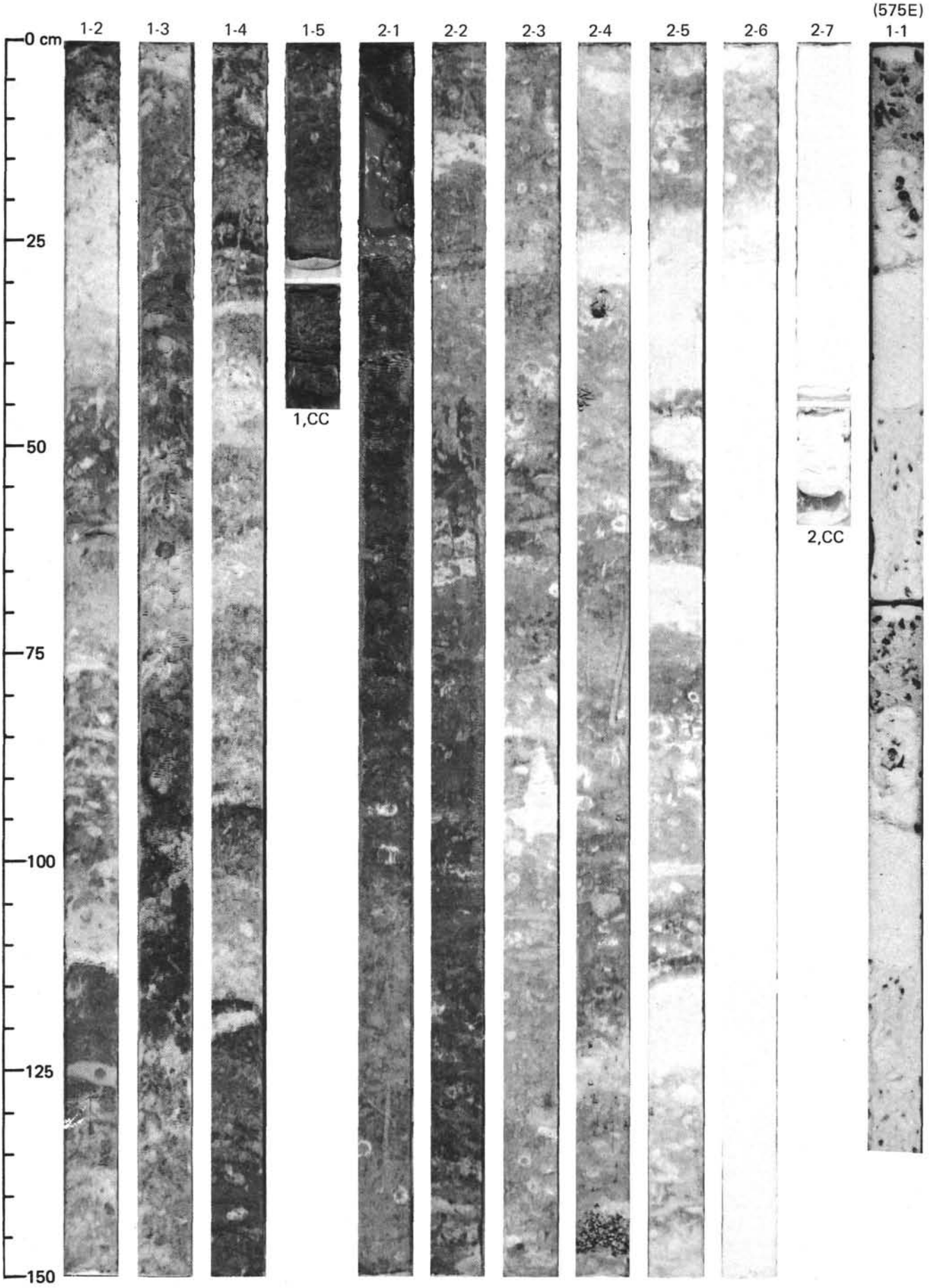

5-6
5-7
6-1
6-2
6-3
6-4
6-5
6-6
6,CC
7-1
7-2
7-3
0 cm
25
50
75
100
125
150
5,CC


7-4
7-5
7-6
7-7
7,CC
8-1
8-2
8-3
8-4
8-5
8-6
8,CC
0 cm
25
50
75
100
125
150


0 cm
25
50
75
100
125
150
9-1
9-2
9-3
9-4
9-5
9,CC
10-1
10-2
10-3
10-4
10-5
10-6


10-7
10,CC
11-1
11-2
11-3
11-4
11-5
11-6
11,CC
12-1
12-2
12-3
12-4
0 cm
25
50
75
100
125
150


0 cm
25
50
75
100
125
150
12-5
12-6
12-7
13-1
13-2
13-3
13-4
14-1
14-2
14-3
14-4
1-1
12,CC
13,CC
14,CC


1-2
1-3
1-4
1-5
2-1
2-2
2-3
2-4
2-5
2-6
2-7
(575E)
1-1
0 cm
25
50
75
100
125
150
1,CC
2,CC