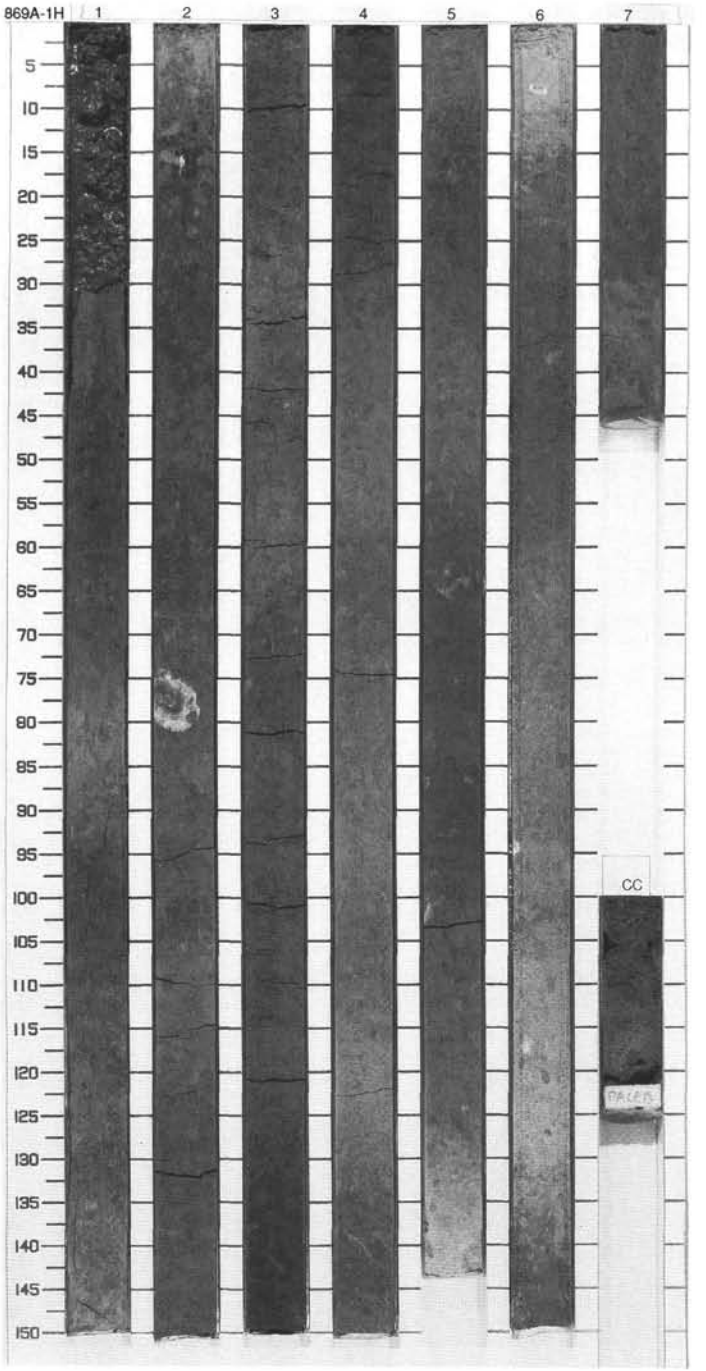
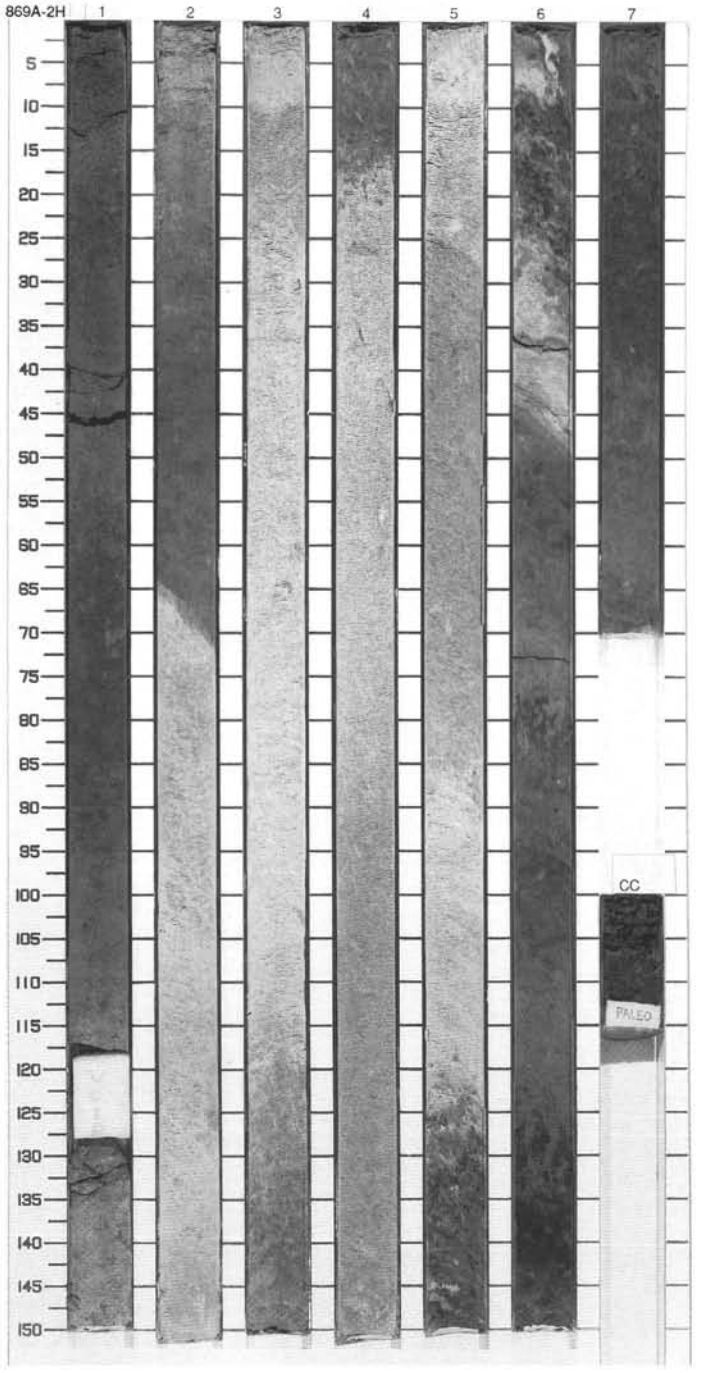
SITE 869 HOLE A CORE 1H CORED 0.0 - 9.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–9		1–7, CC	early Miocene			S, P, P, I, M	10YR 3/2 To 10YR 5/3	CLAYEY NANNOFOSSIL OOZE Major Lithology: CLAYEY NANNOFOSSIL OOZE with radiolarians, very dark grayish brown to brown (10YR 3/2 to 10YR 5/3), slightly bioturbated throughout. Some burrow mottles are infilled with sediments, the color of which is very pale brown (10YR 7/4).



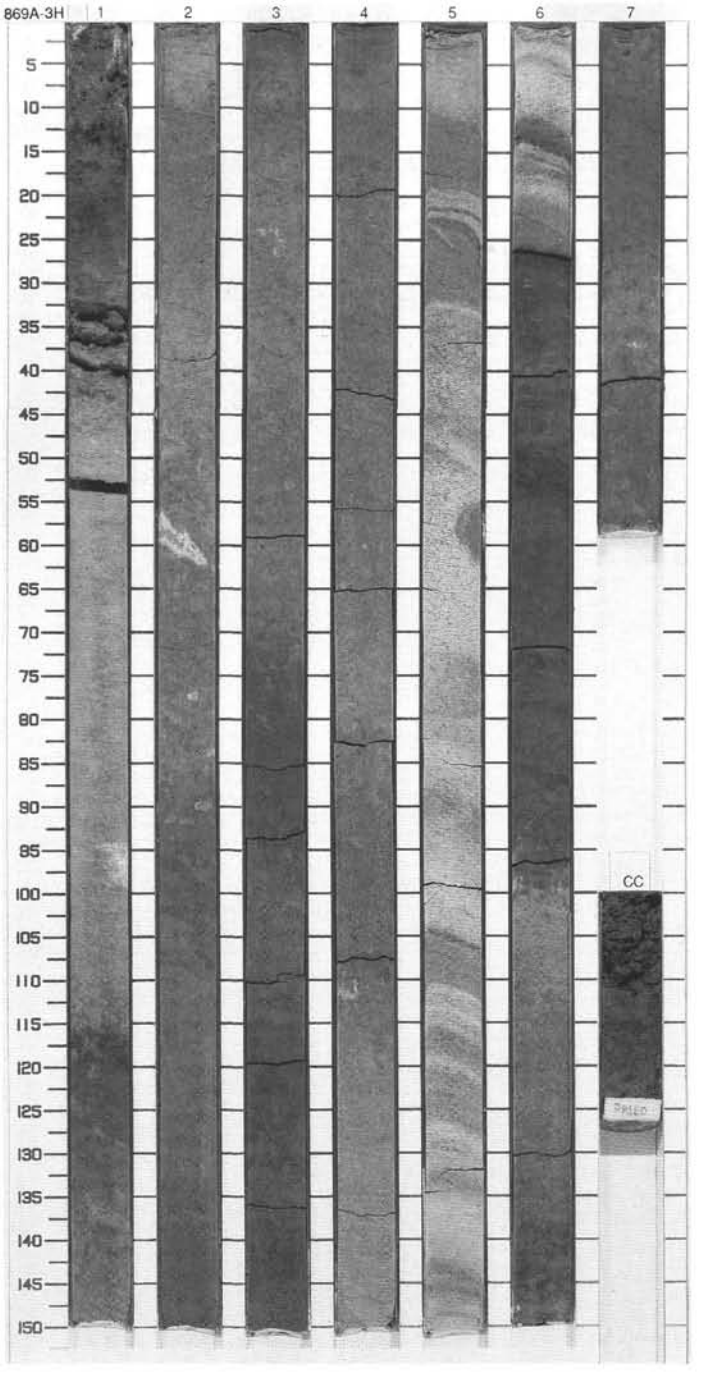
SITE 869 HOLE A CORE 2H CORED 9.7 - 19.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	early Miocene	≀		S S P S	5YR 3/4	RADIOLARIAN NANNOFOSSIL OOZE and NANNOFOSSIL RADIOLARIAN OOZE Major Lithologies: Interbedded RADIOLARIAN NANNOFOSSIL OOZE with clay and sponge spicules and NANNOFOSSIL RADIOLARIAN OOZE with clay and sponge spicules and regular color change from dark reddish brown (5YR 3/4) to very pale brown (10YR 8/3). Some intervals are bioturbated. Many of the contacts between different colored intervals are steeply sloping.
2		2		≀		S	7.5YR 4/4 To 7.5YR 6/4	
3		3		≀		S	7.5YR 6/4	
4						P S	10YR 8/3	
						S	10YR 5/4	
5		4		≀ ≀ ≀ ≀			10YR 8/3	
6		5		≀ ≀			10YR 6/4	
7							10YR 8/3 To 7.5YR 3/4	
8		6		≀ ≀		S	5YR 3/4	
9		7		≀ ≀ ≀		S M		



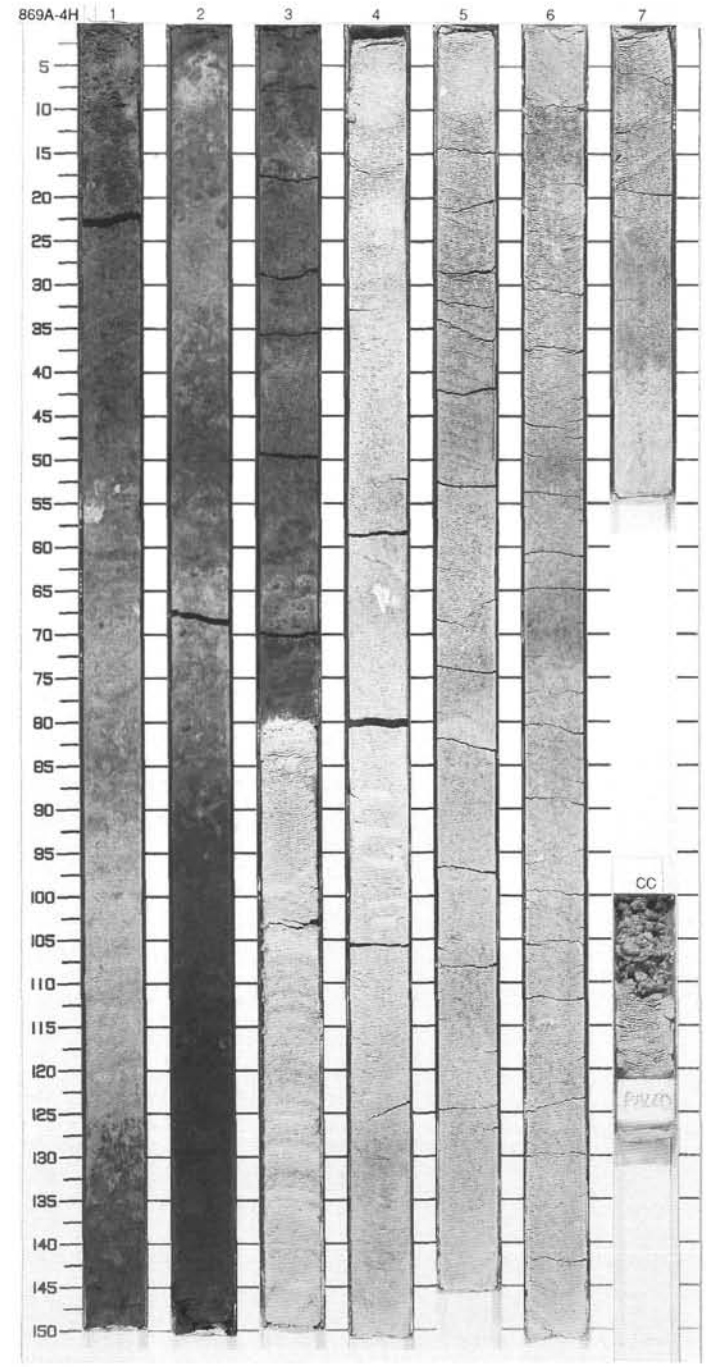
SITE 869 HOLE A CORE 3H CORED 19.2 - 28.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–9		1	early Miocene			S	7.5YR 4/4 To 7.5YR 6/4	NANNOFOSSIL OOZE, RADIOLARIAN NANNOFOSSIL OOZE, NANNOFOSSIL RADIOLARIAN OOZE WITH CLAY, CLAYEY NANNOFOSSIL OOZE WITH RADIOLARIANS Major Lithologies: Section 1, 0–32 cm, is mottled strong brown (7.5YR 4/4) NANNOFOSSIL RADIOLARIAN OOZE WITH CLAY. Section 1, 32–116 cm, is dominated by light brown (7.5YR 6/4) NANNOFOSSIL OOZE. Section 1, 116–150 cm, is mottled strong brown (7.5YR 4/4) RADIOLARIAN NANNOFOSSIL OOZE becoming lighter towards the base of the section. Section 2 is dominantly brown (7.5YR 5/4) RADIOLARIAN NANNOFOSSIL OOZE, becoming somewhat darker between 90–105 cm. An obvious burrow of very pale brown color (10YR 8/4) occurs at 56–61 cm, at an angle of 30 degrees. Section 3, 0–70 cm, is CLAYEY NANNOFOSSIL OOZE WITH RADIOLARIANS of light brown color (7.5YR 6/4), passing down into a darker brown (7.5YR 5/4) zone from 70–98 cm. Section 3, 98–113 cm and 130–150 cm, has again light brown color (7.5YR 6/4). Section 3, 113–130 cm, is dark brown (7.5YR 5/4). All contacts between color bands show mottling by burrows. Section 4 is dominantly brown (7.5YR 5/4) CLAYEY NANNOFOSSIL OOZE WITH RADIOLARIANS, with a slightly darker (7.5YR 4/4) zone between 80 and 115 cm. Mottling by burrows shows some lighter streaks. Section 5 is composed of RADIOLARIAN NANNOFOSSIL OOZE WITH CLAY and illustrates light (10YR8/4) to dark (7.5YR 6/4) banding chiefly on centimeter scale, which is prominent at 0–50 cm and 105–150 cm. All banding is sloping 20 degrees. Sections 6 and 7 are NANNOFOSSIL OOZE WITH RADIOLARIANS to RADIOLARIAN NANNOFOSSIL OOZE with some minor clay. Banding is present in Section 6, 0–27 cm.
						P	7.5YR 4/4	
		2					7.5YR 5/4	
						P		
		3				S	7.5YR 6/4 To 7.5YR 5/4	
		4					7.5YR 5/4 To 7.5YR 4/4	
		5				S	7.5YR 6/4 To 10YR 8/4	
						S		
		6				S		
		7				S		
		CC				M		



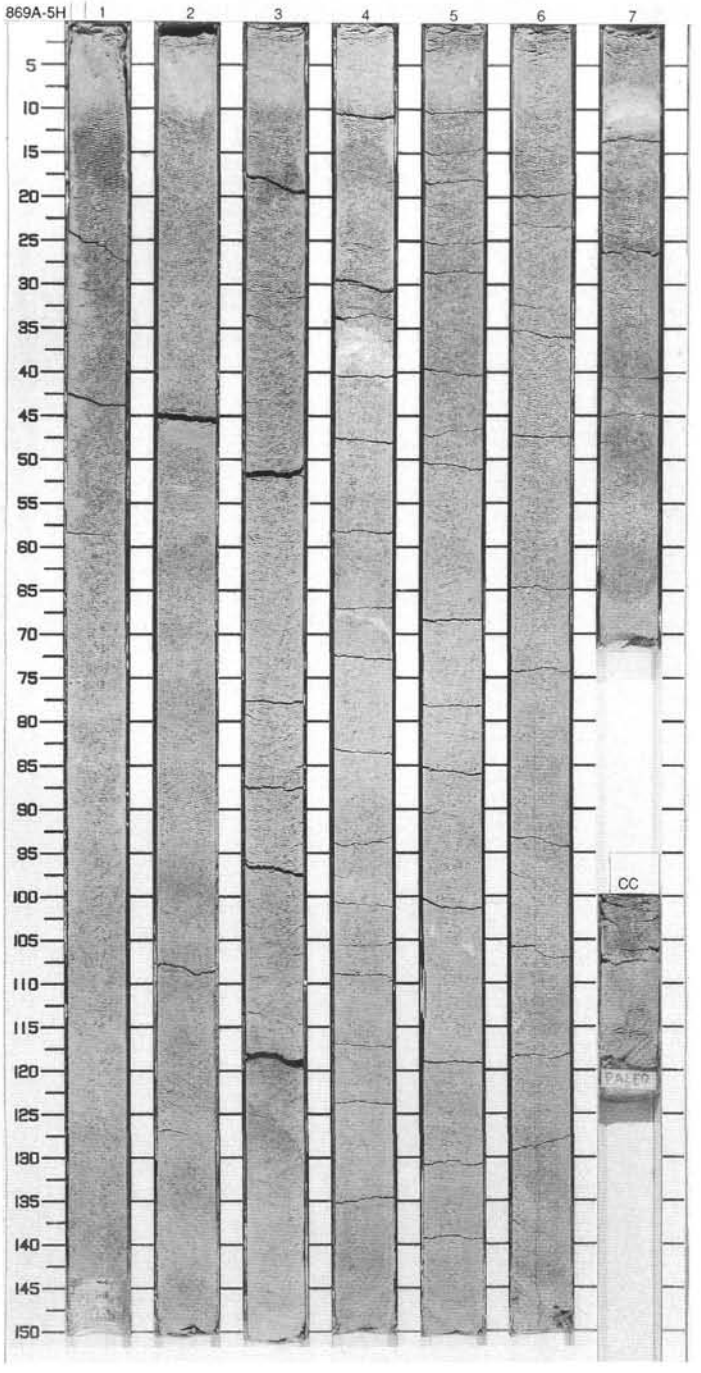
SITE 869 HOLE A CORE 4H CORED 28.7 - 38.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	late Oligocene			P	7.5R 4/4	RADIOLARIAN NANNOFOSSIL OOZE, NANNOFOSSIL OOZE WITH RADIOLARIANS, CLAYEY RADIOLARIAN OOZE WITH NANNOFOSSILS Major Lithologies: Section 1, 0–60 cm, is mottled, dark brown (10YR 4/4) RADIOLARIAN NANNOFOSSIL OOZE. Section 1, 60–130 cm contains very light brown (10YR 8/4) NANNOFOSSIL OOZE WITH RADIOLARIANS. Section 1, 130–150 cm is dark brown (7.5YR 3/4) RADIOLARIAN NANNOFOSSIL OOZE. Section 2, 0–90 cm , is light brown (7.5YR 6/4) to dark brown (7.5YR 4/4) RADIOLARIAN NANNOFOSSIL OOZE with banding on the tens of centimeter scale and abundant mottling due to burrows. Section 2, 90–150 cm is dominantly dark brown (7.5YR 3/2) CLAYEY RADIOLARIAN OOZE WITH NANNOFOSSILS. Section 3, 0–79 cm, is pervasively mottled brown (7.5YR 4/4) CLAYEY NANNOFOSSIL OOZE containing fish scales. Section 3, 79–82 cm contains a white (10YR 8/2) graded layer of coarse-sand sized, unidentified carbonate grains, glauconite and phosphate grains, fragments of planktonic and benthic foraminifers, and nannofossils. From Section 3, 82 cm, to Section 7, 40 cm, the sediment is very pale brown (10YR 8/4) NANNOFOSSIL OOZE with occasional white (10YR 8/2) burrow mottles and some sponge spicules. Section 7, 40–54 cm, and Section CC contain very pale brown (10YR 8/3) NANNOFOSSIL OOZE.
						S	7.5YR 3/4 To 10YR 8/4	
						S		
2		2					7.5YR 6/4 To 7.5YR 4/4	
3						S		
		3				S	7.5YR 4/4	
4						S		
5		4						
6						S		
							10YR 8/4	
7		5				S		
						I		
8		6				P		
						S		
9								
		7						
		CC				M	10YR 8/3	



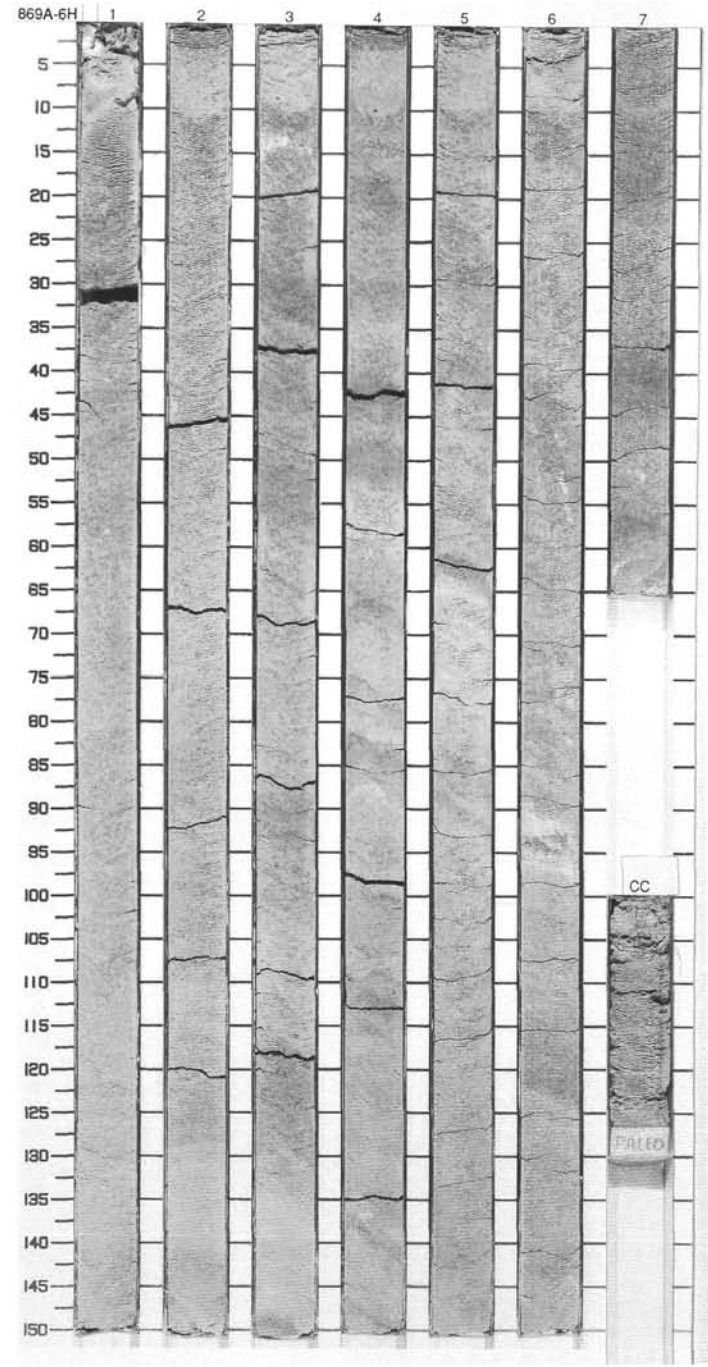
SITE 869 HOLE A CORE 5H CORED 38.2 - 47.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–9		1	early Oligocene			S	10YR 7/2 To 10YR 7/4	NANNOFOSSIL OOZE Major Lithology: NANNOFOSSIL OOZE, pale brown (10YR 7/2 to 7/4), homogeneous with some sponge spicules and radiolarians. White mottles (presumably burrows) occur locally. Distinct white (10YR 8/1 to N9) bands occur at Section 4, 35–40 cm and 68–69 cm, Section 7, 10–11 cm. Slightly darker sections (10YR 5/3) are present in Section 2, 58–63 cm and 97–100 cm, Section 3, 125–130 cm, Section 7, 10–11 cm (around the white band). Contacts are faintly contorted and oblique to core axis.
		2						
		3						
		4				S SP		
		5		≷				
		6		≷		S		
		7		≷		S		
		CC				M		



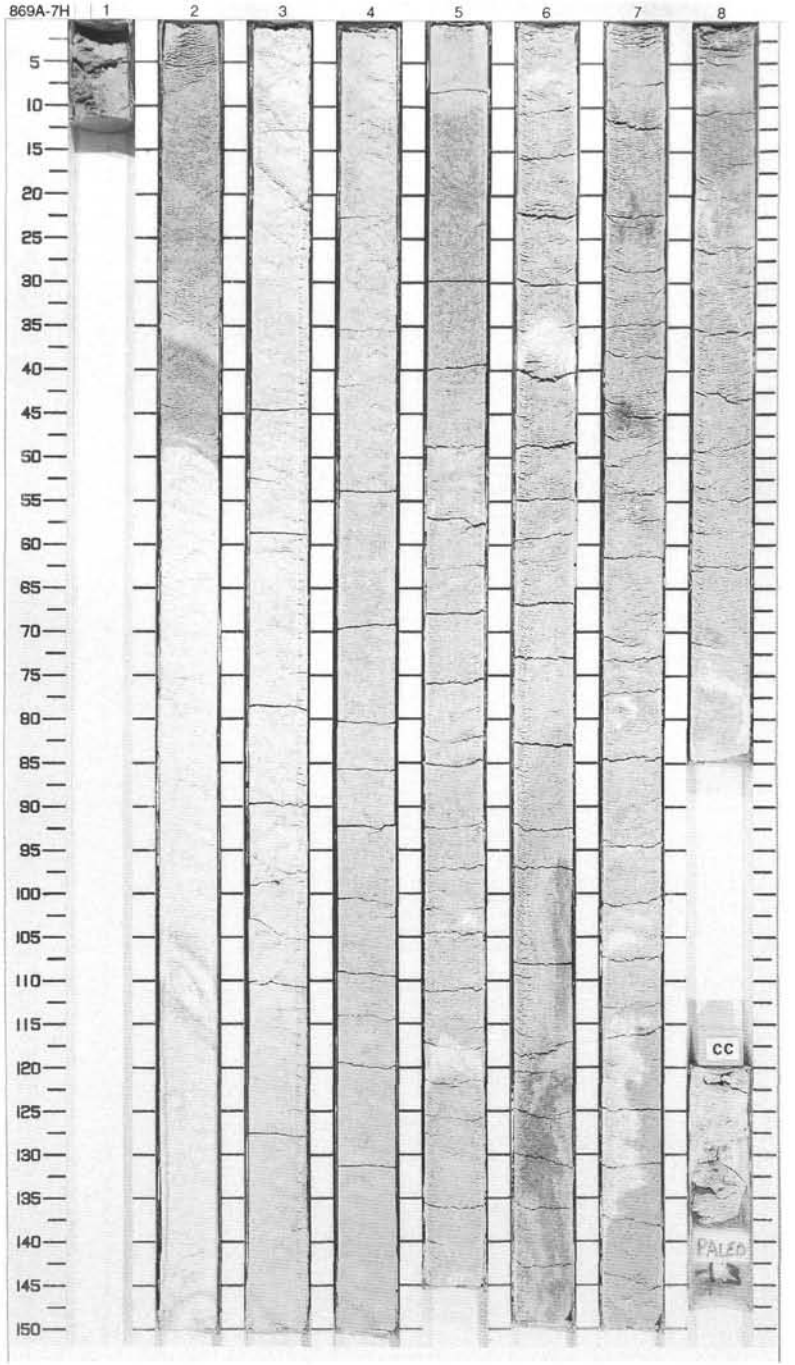
SITE 869 HOLE A CORE 6H CORED 47.7 - 57.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–9		1	early Oligocene			S	10YR 7/3	NANNOFOSSIL OOZE Major Lithology: NANNOFOSSIL OOZE, with sponge spicules, rare radiolarians and minor clay, mostly very pale brown (10YR 7/3-8/3), rarely light gray (10YR 7/2) with some darker intervals (10YR 6/4) and areas of occasional white mottles (presumably burrows). Distinct white (N9) bands are present at Section 3, 13–14 cm. Color banding is at 20 degrees to horizontal in Section 6, 91–95 cm.
		2						
							10YR 8/3	
		3				S		
		4				S P	10YR 7/2 To 10YR 7/3	
		5						
		6					10YR 7/2 To 10YR 6/4	
		7						
		CC				P		



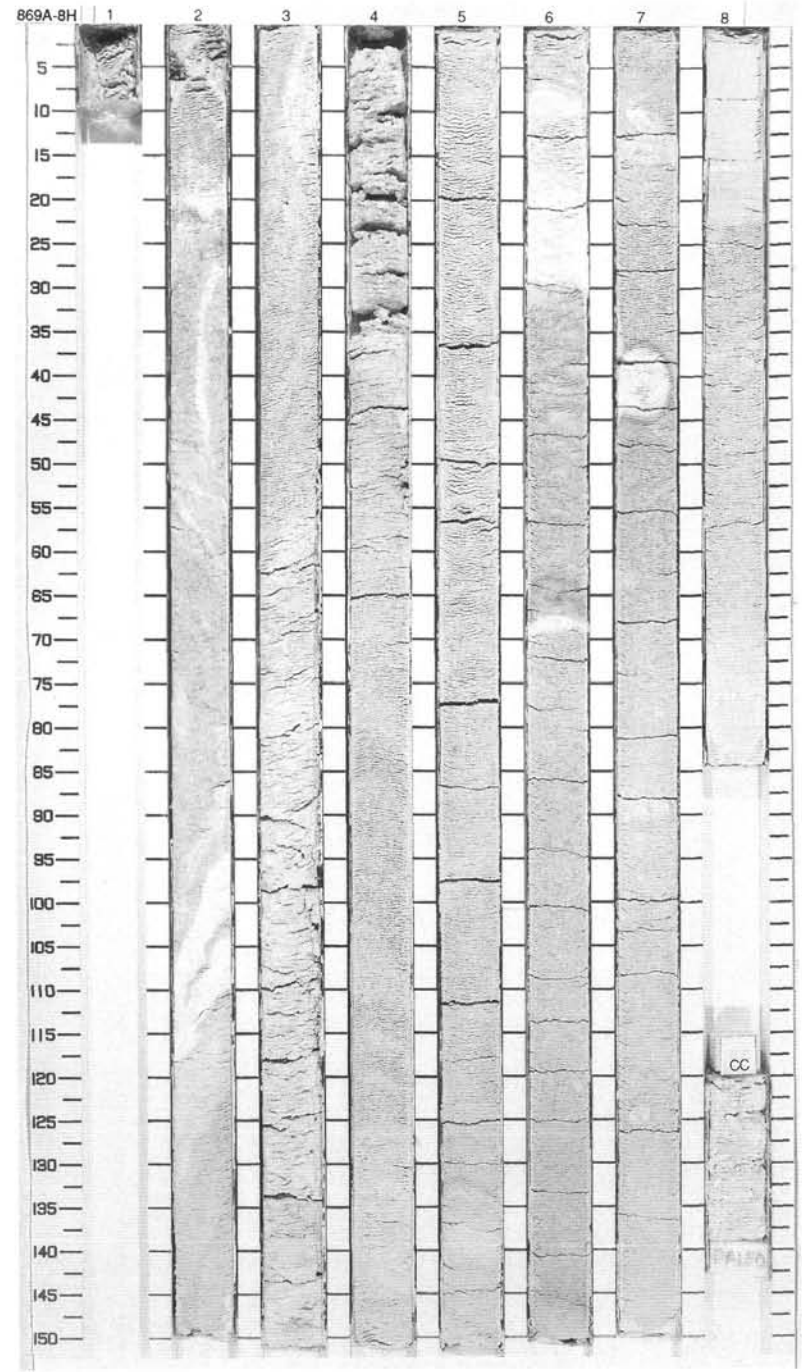
SITE 869 HOLE A CORE 7H CORED 57.2 - 66.7 *mbsf*

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	early Oligocene			P S	10YR 7/4	NANNOFOSSIL OOZE and FORAMINIFERAL NANNOFOSSIL OOZE Major Lithology: Very pale brown (10YR 7/4) NANNOFOSSIL OOZE with occasional mottling due to burrows. Section 2, 28–36 cm, is very pale brown (10YR 7/3) NANNOFOSSIL OOZE. White (10YR 8/2) FORAMINIFERAL NANNOFOSSIL OOZE *occurs from* Section 2, 48 cm to base Section 2. The contacts between the different lithologies are sloping at 30 degrees. Section 6, 35–38 cm, contains white (10YR 8/2) FORAMINIFERAL NANNOFOSSIL OOZE. Darker, disturbed layers appear in Section 6, 96–150 cm.
2		2		≀		P S		
3		3		≀		S	10YR 8/2	
4		4						
5		5				S		
6						I		
7		6				P	10YR 8/3	
8		7		≀		S		
9				≀				
10		8				S		
		CC				M		



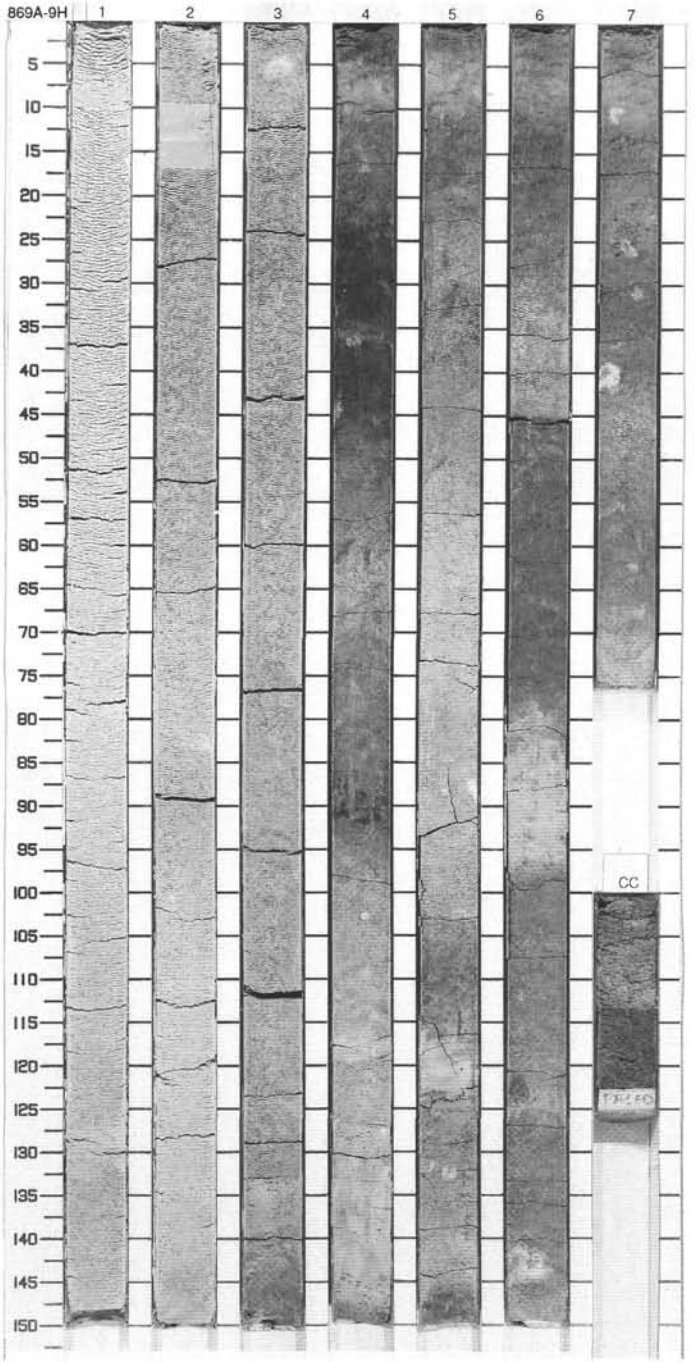
SITE 869 HOLE A CORE 8H CORED 66.7 - 76.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–10		2, 3, 4, 5, 6, 7, 8, CC	early Oligocene			S P (Sec. 3); S P (Sec. 6); P (Sec. 7)	10YR 8/4 To 10YR 8/2	NANNOFOSSIL OOZE Major Lithology: NANNOFOSSIL OOZE, very pale brown to white (10YR 8/4 to 10YR 8/2), some bioturbated intervals. In Section 1, 5–6 cm, smectite occurs. In Section 2, 5–7 cm, a dark yellowish brown (10YR 4/4) subangular pebble of clay (ca. 1 cm in diam.; originally a pumice) occurs. In Section 6, 7–29 cm, a white (10YR 8/2) layer covers the very pale brown (10YR 8/4) ooze, with sharp boundary. In Section 6, 68–69 cm, a thin white layer occurs with black coarse-grained sand-sized grains which are probable altered pumice. Section 2 contains steeply dipping (40°–90°) contacts of very pale brown NANNOFOSSIL OOZE.



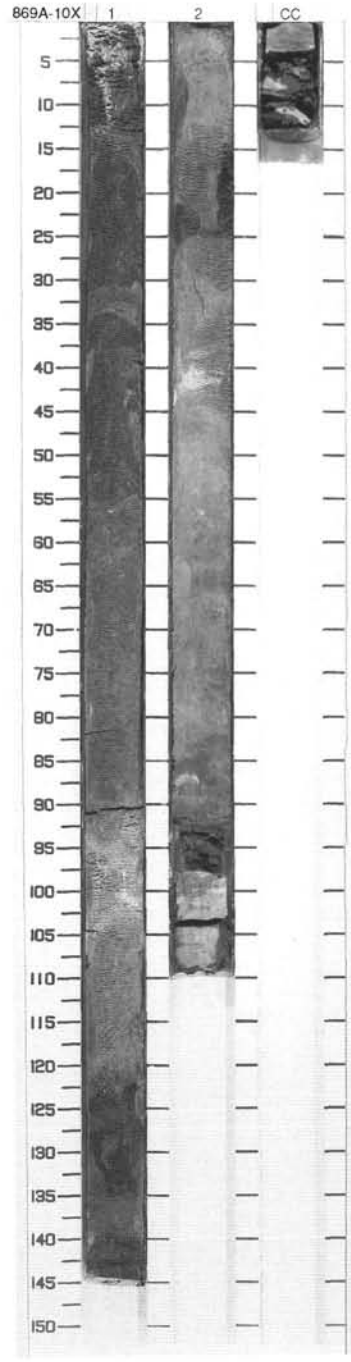
SITE 869 HOLE A CORE 9H CORED 76.2 - 85.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–10		1	late Eocene				10YR 8/2 To 10YR 8/3	CLAYEY NANNOFOSSIL OOZE Major Lithology: CLAYEY NANNOFOSSIL OOZE, variably colored ranging from white (10YR 8/2) to dark brown (10YR 3/3). Sharp contacts between intervals of different color occur in Section 4, 130 cm, Section 5, 124 cm, Section 6, 45 and 96 cm and Section CC, 13 cm. Slight bioturbation occurs throughout. Graded beds, with sand-sized radiolarians at the base occur in Section 6, 39–45 cm, and 87–96 cm.
		2				P		
		3					10YR 7/3	
		4				P	10YR 3/3 To 10YR 8/2	
		5				S	10YR 6/3 To 10YR 8/3	
		6				P	10YR 7/3 To 10YR 4/2	
		7						
		CC						



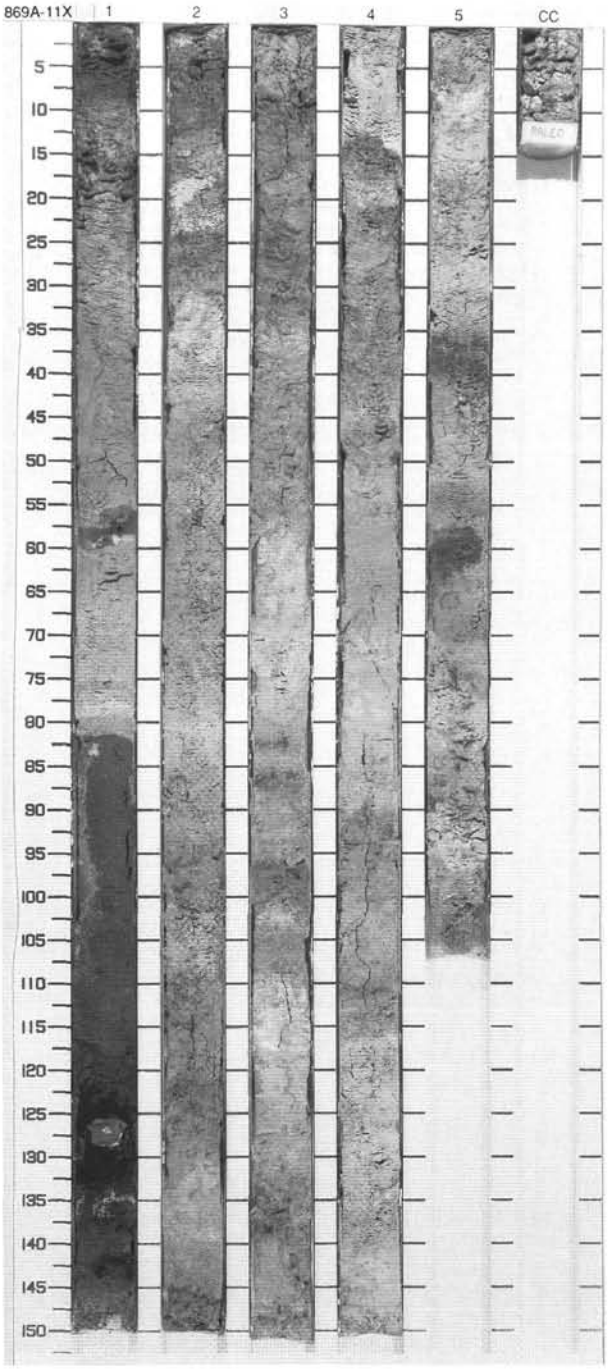
SITE 869 HOLE A CORE 10X CORED 85.7 - 95.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	late Eocene			SP	10YR 4/2	CLAYEY NANNOFOSSIL OOZE and SILICEOUS CLAYSTONE Major Lithology: Section 1, 0 cm to Section 2, 97 cm contains CLAYEY NANNOFOSSIL OOZE. In Section 1, alternation of lighter (pale brown; 10YR 6/3) and darker (dark grayish brown; 10YR 4/2 to 10YR 3/2) intervals is seen. Slight bioturbation occurs throughout. Section 2, 97 cm to Section CC, 13 cm contains SILICEOUS CLAYSTONE, very dark grayish brown (10YR 3/2) and brown (10YR 5/3), laminated.
							10YR 6/3	
2		2				I	10YR 3/2	
						P		
		CC			X	P	10YR 3/2 and 10YR 5/3	



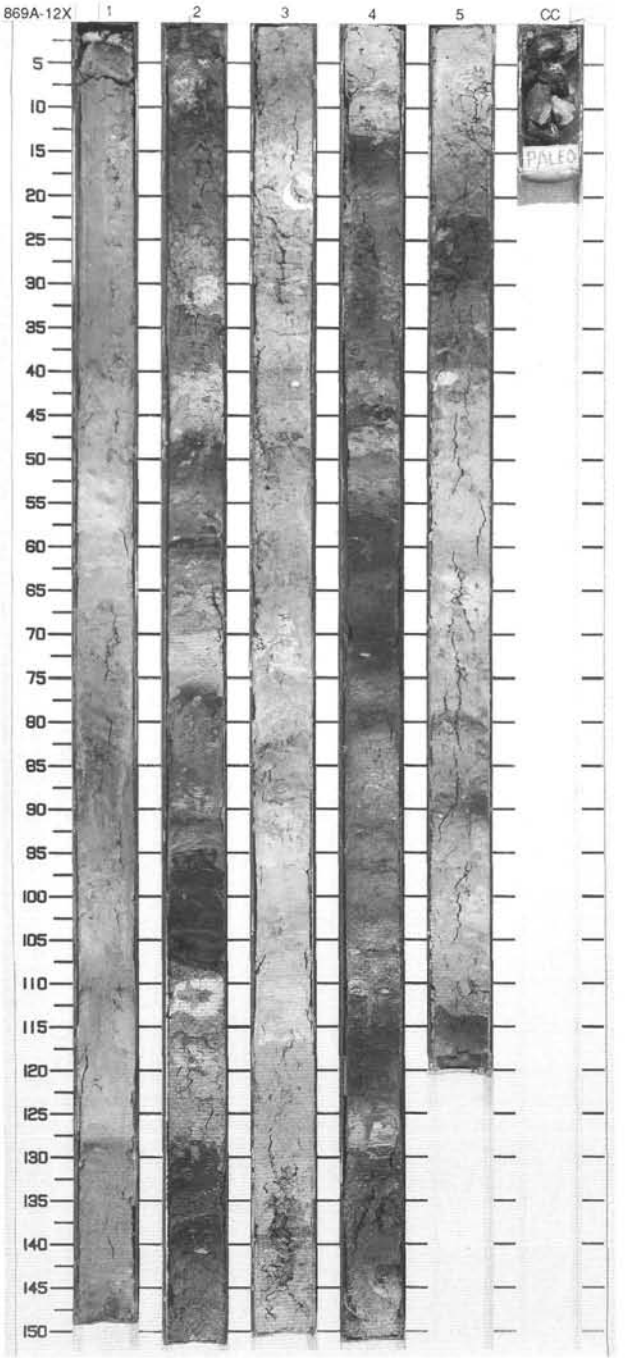
SITE 869 HOLE A CORE 11X CORED 95.5 - 105.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–7		1, 2, 3, 4, 5, CC	late Eocene			P, S, P, S	10YR 3/4 To 10YR 6/4; 10YR 5/6 To 10YR 7/3; 10YR 6/3 To 10YR 8/3	RADIOLARIAN NANNOFOSSIL OOZE Major Lithology: RADIOLARIAN NANNOFOSSIL OOZE with clay, very pale brown (10YR 8/3) to dark yellowish brown (10YR 3/4). Color changes occur as alternating 30–100 cm thick intervals of lighter and darker RADIOLARIAN NANNOFOSSIL OOZE. Radiolarians *appear to be more abundant in the* darker intervals, and in rare 1–3 cm thick brown (10YR 5/3) beds. Thin intervals of white (10YR 8/2) ooze occur in Section 2, 18–24 cm, and as large round burrow-fills in Section 5. Sponge spicules are abundant throughout. Minor Lithologies: Light yellowish-brown (10YR 6/4) FORAMINIFERAL OOZE occurs in Section 1, 65–82 cm. Fragments of CHERT occur in Section 1, 126–129 cm, and Section 2, 55–56 cm.



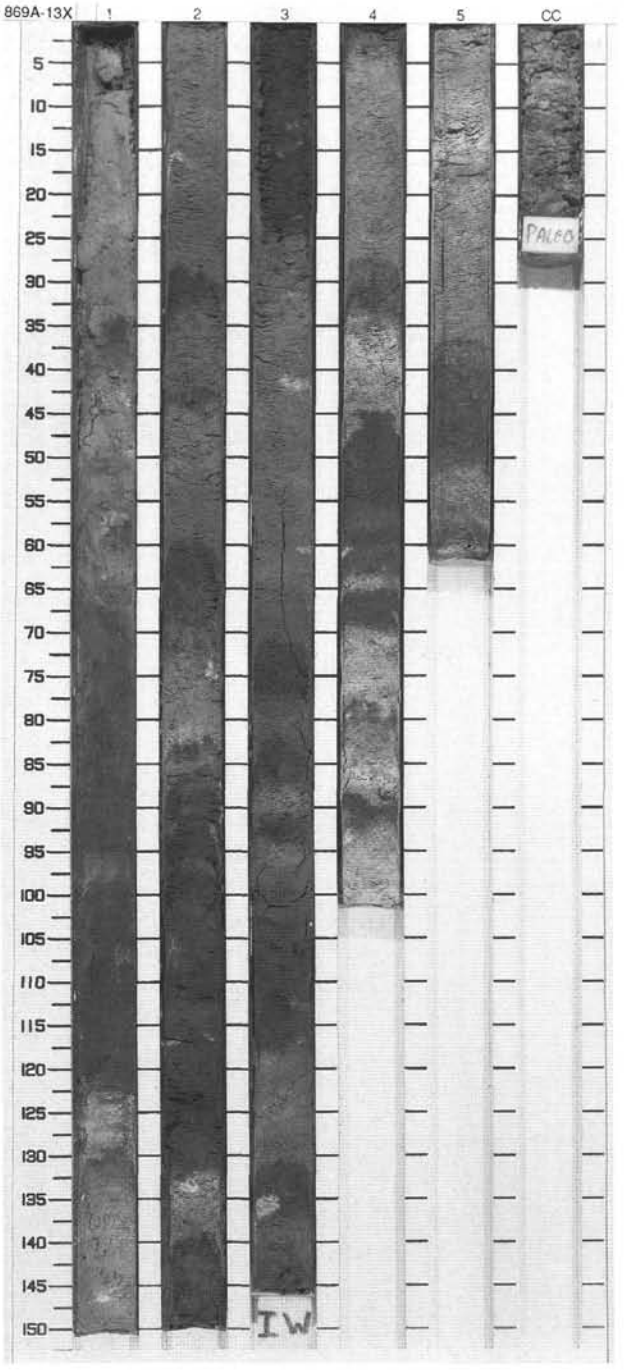
SITE 869 HOLE A CORE 12X CORED 105.5 - 115.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	middle Eocene			P	10YR 6/4	RADIOLARIAN NANNOFOSSIL OOZE, CLAYEY RADIOLARIAN OOZE, RADIOLARIAN OOZE, NANNOFOSSIL RADIOLARIAN OOZE, and PORCELLANITE
							10YR 8/4	
							10YR 4/4	
						S	10YR 8/3	
							10YR 6/3	
2		2				S S S	10YR 2/2 To 10YR 8/1	Major Lithology: Section 1, 0–4 cm, is composed of very dark brown (10YR 2/2) fragments of PORCELLANITE. The rest of Section 1 is RADIOLARIAN NANNOFOSSIL OOZE to CLAYEY RADIOLARIAN OOZE with alternating zones of pale brown (10YR 8/4) to dark yellowish brown (10YR 4/4) color. Bioturbation is common, mixing light and dark sediment. Section 1, 49–53 cm, contains a burrow filled with white (10YR 8/1) sediment. Sections 2 and 3 are composed of white (10YR 8/1) RADIOLARIAN NANNOFOSSIL OOZE and dark brown (10YR 2/2) CLAYEY RADIOLARIAN OOZE, which alternate on a tens of centimeter to centimeter scale and are heavily bioturbated. Well preserved trace fossils include *Chondrites, Planolites, Teichichnus,* and *Zoophycos*, which show complex tiering. SILICIFIED CLAYSTONE of reddish-brown (5YR 3/2) color occurs in Section 2, 105–108 cm. Normally graded sandy layers are found in Section 2, 69–70 cm and 105–106 cm. Sections 4 and 5 vary in composition from white (10YR 8/1) RADIOLARIAN NANNOFOSSIL OOZE to NANNOFOSSIL RADIOLARIAN OOZE and to very dark brown (10YR 2/2) CLAYEY RADIOLARIAN OOZE. Bioturbation is intense, with a number of prominent vertical burrows (possibly *Teichichnus*). Section CC contains dark brown (7.5YR 3/2) (?) PORCELLANITE.
3		3				S	10YR 8/1 To 10YR 5/3	
4						S		
5		4				P	10YR 2/2 To 10YR 8/1	
6								
7		5				S S S	7.5YR 3/2	
		CC				M		



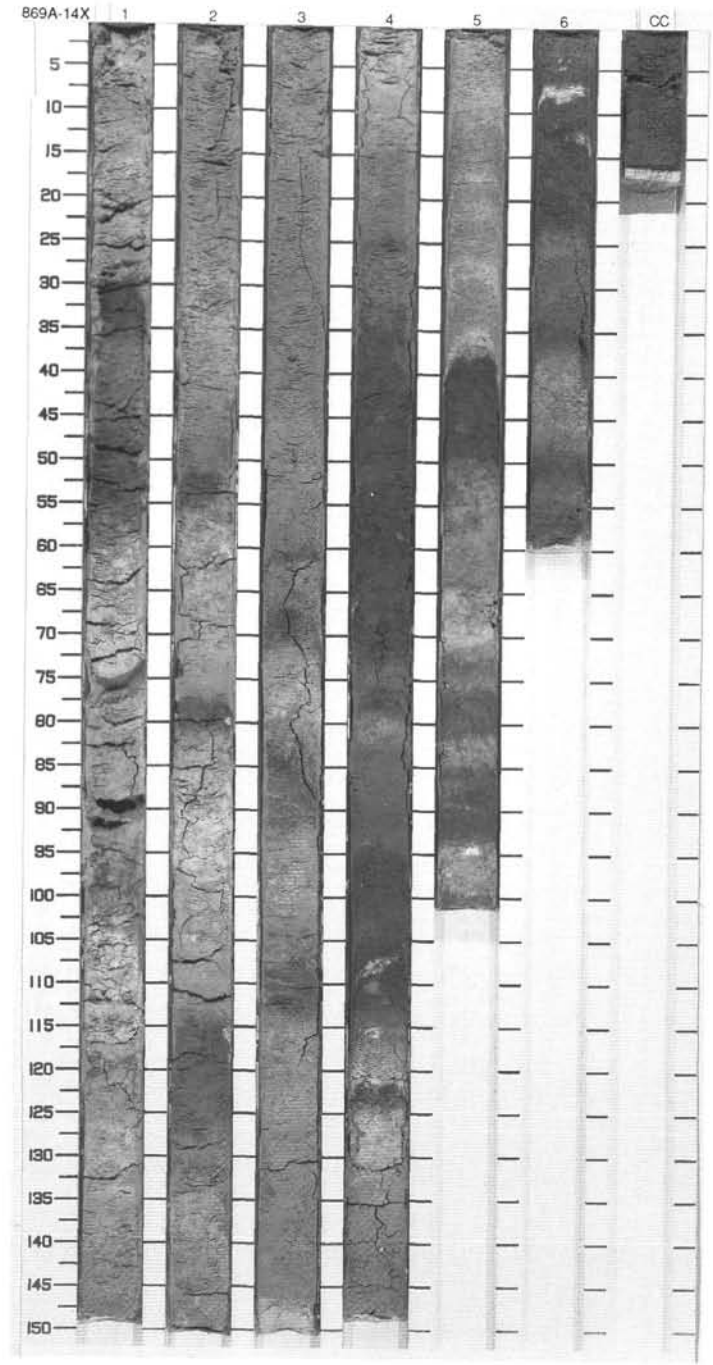
SITE 869 HOLE A CORE 13X CORED 115.5 - 125.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	middle Eocene				10YR 7/4	NANNOFOSSIL RADIOLARIAN OOZE, RADIOLARIAN NANNOFOSSIL OOZE, RADIOLARIAN OOZE, RADIOLARIAN OOZE WITH NANNOFOSSILS, and PORCELLANITE Major Lithology: Section 1, 0–9 cm, contains fragments of dark reddish-brown (10YR 3/3) PORCELLANITE. Section 1, 9–150 cm, is dominantly very pale brown (10YR 7/4) NANNOFOSSIL RADIOLARIAN OOZE with some darker patches, becoming dark brown (7.5YR 3/4) with some lighter intervals between 67 and 123 cm, and again very pale brown (10YR 7/3) with some color banding between 123 and 150 cm. Bioturbation is moderate. *Section 2 is composed of* RADIOLARIAN NANNOFOSSIL OOZE to RADIOLARIAN OOZE with some mottling by burrows. Section 2, 0–85 cm, is dominantly light yellowish-brown (10YR 6/4) in color with some darker (10YR 3/4) layers a few centimeters thick. Section 2, 85–150 cm, is dominantly dark yellowish-brown (10YR 3/4) with some light yellowish-brown (10YR 6/4) layers. Section 3 is RADIOLARIAN OOZE WITH NANNOFOSSILS, showing alternating layers, a few centimeters to a few tens of centimeters thick and in the same color range as in Section 2. Section 4 is dominated by RADIOLARIAN NANNOFOSSIL OOZE of dark yellowish-brown color (10YR 4/4), with very pale brown (10YR 8/4) intervals between 35 and 43 cm, and between 69 and 101 cm. Sections 5 and CC are RADIOLARIAN NANNOFOSSIL OOZE, with a piece of PORCELLANITE in Section CC.
						P S	7.5YR 3/4	
							10YR 7/3	
2		2					10YR 6/4	
							10YR 3/4	
3		3				S		
						S	10YR 3/4 To 10YR 6/4	
4						I		
5		4				P	10YR 4/4 To 10YR 8/4	
						S		
		5					10YR 7/4	
6		CC				M		



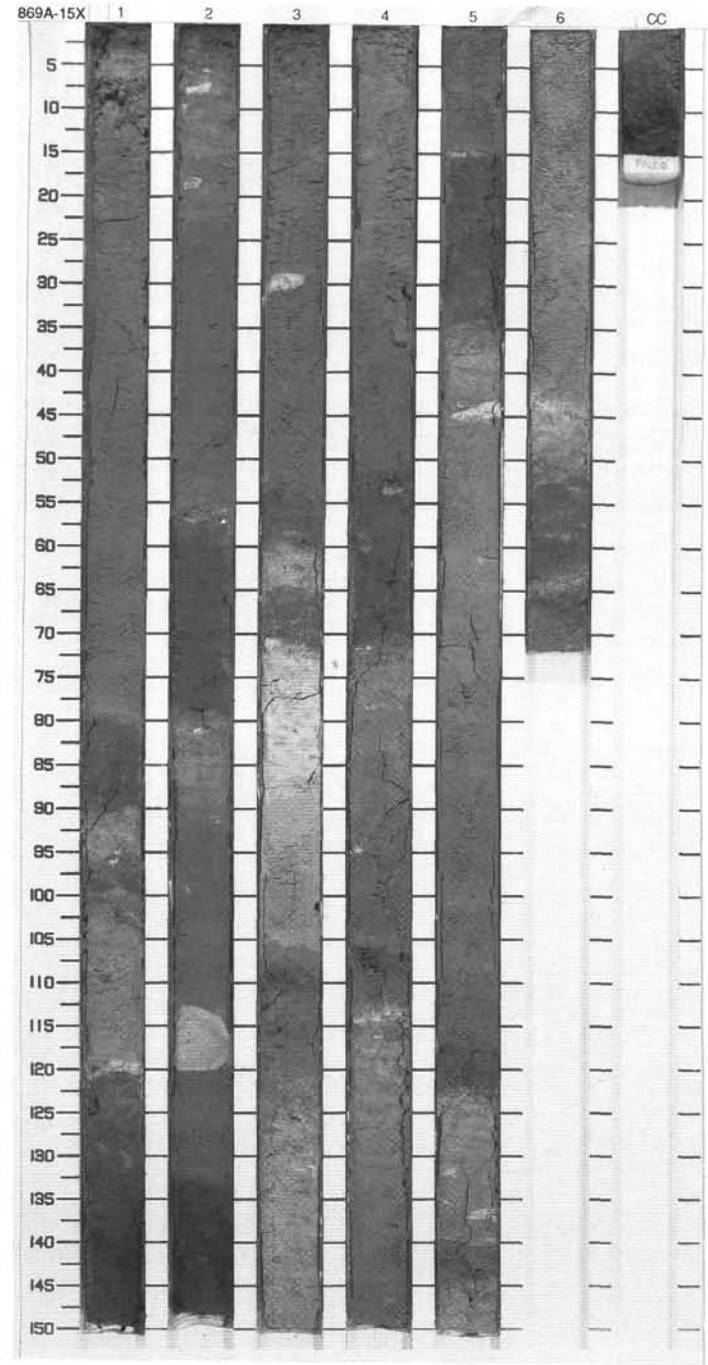
SITE 869 HOLE A CORE 14X CORED 125.5 - 135.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–7		1	middle Eocene			S	10YR 4/3 To 10YR 8/4	RADIOLARIAN OOZE, NANNOFOSSIL RADIOLARIAN OOZE, and RADIOLARIAN NANNOFOSSIL OOZE Major Lithology: Section 1 is an alternation of brown (10YR 4/3) RADIOLARIAN OOZE and very pale brown (10YR 8/4) RADIOLARIAN NANNOFOSSIL OOZE. The darker layers are typically 5–10 cm in thickness, the lighter layers measure 30–50 cm. In Section 1, 103–116 cm, some white (10YR 8/2), more carbonate-rich chalky layers occur. Section 2 has the same composition as Section 1, but is dominantly very pale brown (10YR 8/4), with cm-thick darker layers (10YR 4/3). In Section 2, 84–97 cm, very pale brown (10YR 8/3) layers are slightly chalky. Section 3 is dominated by very pale brown (10YR 7/3) NANNOFOSSIL RADIOLARIAN OOZE with some darker (10YR 5/4) patches containing less nannofossils (Section 3, 60–62 cm, 68–71 cm, 83–86 cm, 108–113 cm). Sections 4, 5, 6, and CC are composed of RADIOLARIAN OOZE. The sediment displays banding with colors ranging from dark brown (10YR 4/3) to pale brown (10YR 6/3). The layers measure between a few centimeters to a few tens of centimeters. White (10YR 8/1) patches and layers appear in Section 4, 107–122 cm, in Section 5, 13–67 cm and 95–96 cm, and in Section 6, 10–11 cm.
		2					10YR 8/4	
		3				P	10YR 7/3	
		4				S	10YR 4/3 To 10YR 6/3	
						S		
		5				S P		
		6						
		CC				M		



SITE 869 HOLE A CORE 15X CORED 135.5 - 145.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–8		1–6, CC	middle Eocene				10YR 6/4; 10YR 4/6; 10YR 6/4; 10YR 3/6; 10YR 6/4; 10YR 4/6; 10YR 5/6; 10YR 8/3; 10YR 5/6; 10YR 3/6; 10YR 6/4; 10YR 8/2; 10YR 6/4; 10YR 5/6; 10YR 6/4; 10YR 4/4; 10YR 5/6; 10YR 6/4; 10YR 7/3; 10YR 4/4; 10YR 7/3; 10YR 6/4; 10YR 7/3; 10YR 6/4; 10YR 5/4	RADIOLARIAN OOZE and RADIOLARIAN NANNOFOSSIL OOZE Major Lithology: The predominant sediment of the core is RADIOLARIAN OOZE, locally with some nannofossils. Color banding occurs in layers of a few tens of centimeters. Colors generally range from 10YR 3/6 to 10YR 6/4. In Section 1, 120–121 cm, a white (10YR 8/2) layer occurs. Section 3, 53–88 cm, shows rapid changes from dark to light colors, including an interval (70–88 cm) of RADIOLARIAN NANNOFOSSIL OOZE which is white (10YR 8/2). Section 3, 105–150 cm, shows centimeter-scale banding and becomes lighter towards the bottom, but generally is yellowish brown (10YR 5/6). Lighter areas are slightly chalky. Section 4, 52–69 cm, and Section 5, 136–137 cm, show some incipient lithification. Sections 4, 5, and 6 locally contain white (N9) burrow mottles.



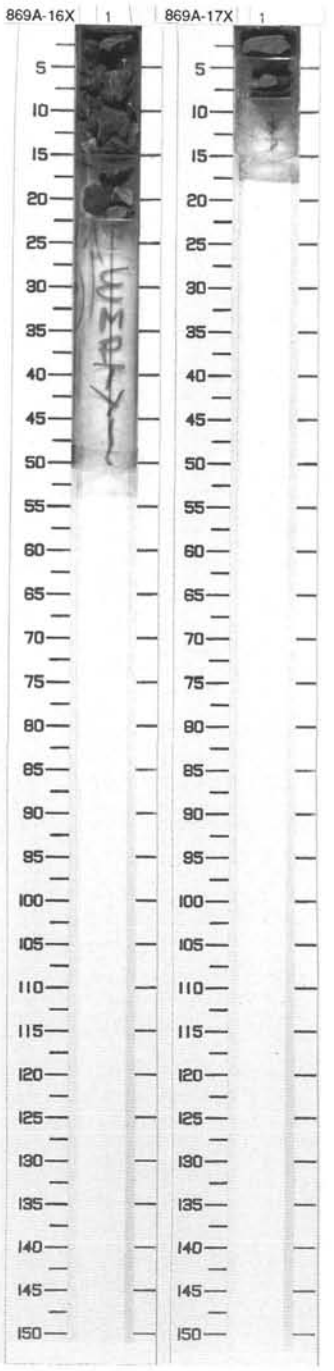
SITE 869 HOLE A CORE 16X CORED 145.5 - 155.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1			X		10YR 2/2	CHERT Major Lithology: Very dark brown (10YR 2/2) CHERT, with distinct conchoidal fracture. Somewhat mottled with pink (7.5YR 7/4) bands and lighter brownish yellow (10YR 6/6) blotches.

SITE 869 HOLE A CORE 17X CORED 155.5 - 165.5 mbsf

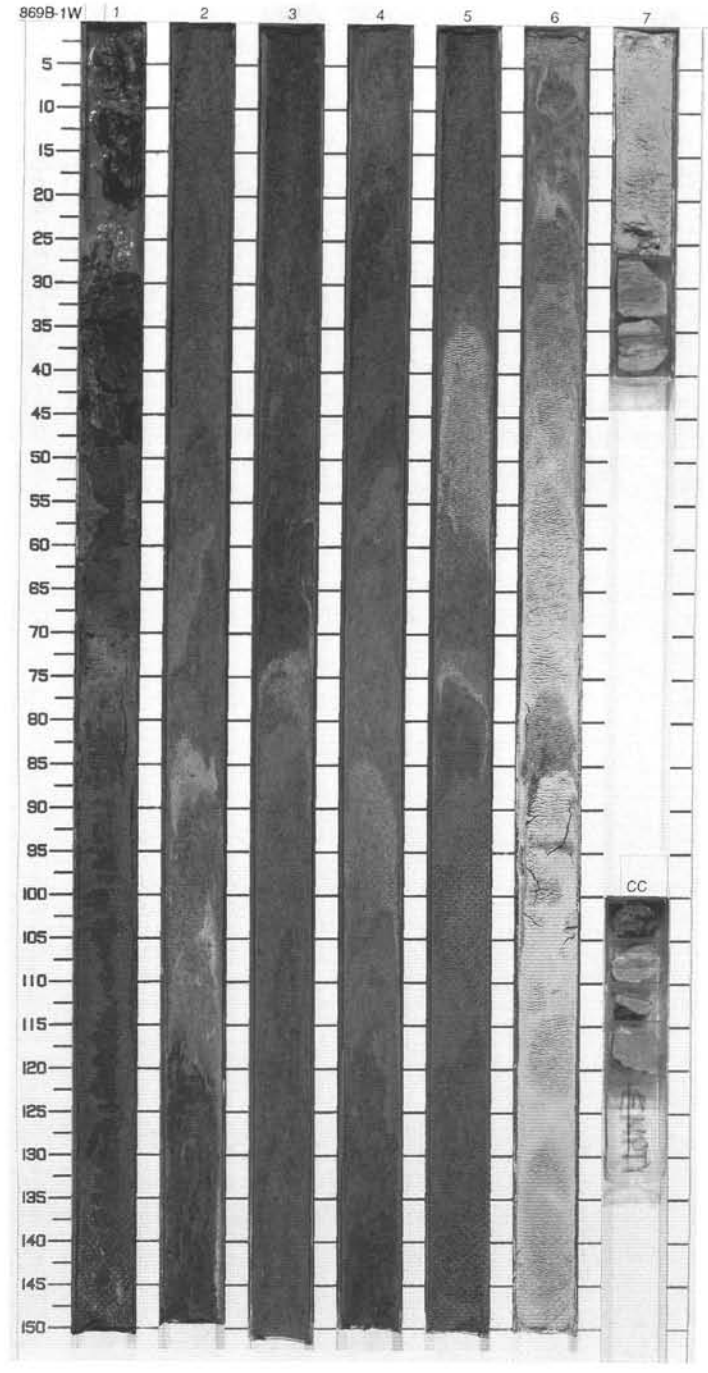
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1			X		10YR 3/1	CHERT Major Lithology: Very dark gray (10YR 3/1) CHERT, with conchoidal fracture. Occasional pink (7.5YR 7/4) bands.

869A-18X NO RECOVERY



SITE 869 HOLE B CORE 1W CORED 0.0 - 140.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1–9		1–7, CC					7.5YR 3/2 To 10YR 6/4; 10YR 8/2 To 10YR 7/3; 10YR 2/1 To 10YR 6/4	RADIOLARIAN NANNOFOSSIL OOZE and CALCAREOUS SILICEOUS CLAYSTONE Major Lithology: Section 1, 0 cm to Section 7, 26 cm contains RADIOLARIAN NANNOFOSSIL OOZE with clay. In Section 1, 0 cm to Section 5, 150 cm, the color of sediments varies, ranging from dark brown (7.5YR 3/2) to light yellowish brown (10YR 6/4), whereas it is lighter (white to very pale brown; 10YR 8/2 to 10YR 7/3) in Section 6, 0 cm to Section 7, 26 cm. CALCAREOUS SILICEOUS CLAYSTONE (Section 7, 26 cm to Section CC, 20 cm), black (10YR 2/1) to light yellowish brown (10YR 6/4), thinly laminated and bioturbated in Section 7, 26-39 cm.



SITE 869 HOLE B CORE 2R CORED 140.0 - 149.6 mbsf

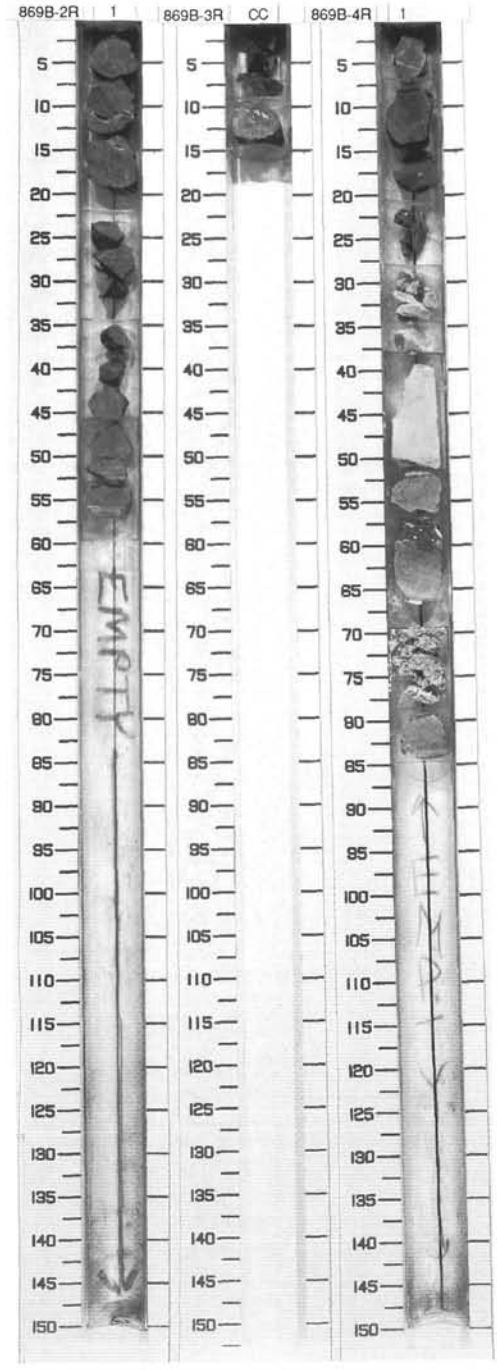
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1				P	10YR 3/1	CHERT Major Lithology: CHERT (probable PORCELLANITE), dark reddish gray (10YR 3/1), thinly laminated (mm-scale), with voids, partly infilled with probable opal, and irregularly orientated opaline veins up to 1 cm in width.

SITE 869 HOLE B CORE 3R CORED 149.6 - 159.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC				P	10YR 3/2	CHERT Major Lithology: Brecciated CHERT (PORCELLANITE ?), very dark grayish brown (10YR 3/2), with pink (7.5YR 7/4) bands beds (up to 8 mm in thickness) and blotches. Randomly-orientated opaline (?) veins (< 3 mm wide) occur.

SITE 869 HOLE B CORE 4R CORED 159.3 - 168.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	early Eocene			P P P	10YR 3/1 To 10YR 4/4 and 10YR 8/3 To 10YR 5/4	CHERT and LIMESTONE Major Lithology: The intervals 0–27, 50–69 and 78–84 cm, contain CHERT, very dark gray to dark yellowish brown (10YR 3/1 to10YR 4/4), laminated, with thin pink (7.5YR 8/4) bands and randomly orientated opaline veins, partly displaying fining-upward grain-size distribution (57–69 cm). LIMESTONE (27–50 cm), very pale brown to brown (10YR 8/3 to 10YR 5/4), thinly bedded, fining-upward in 38–50 cm. Minor Lithology: The interval 69–78 cm, contains NANNOFOSSIL OOZE, very pale brown (10YR 8/3), with some fragments of chert.

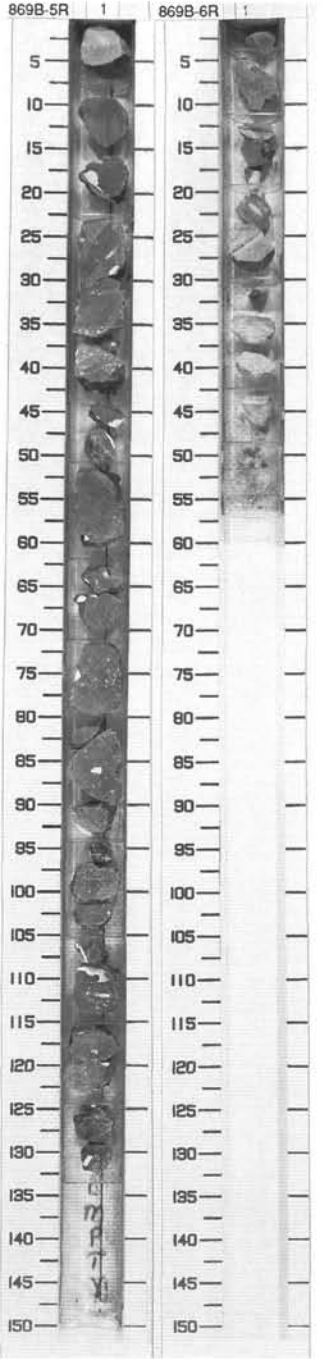


SITE 869 HOLE B CORE 5R CORED 168.9 - 178.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	▲▲▲▲	1	early Eocene		\/\/\/\/\/	P	10YR 4/2 To 10R 6/4	CHERT Major Lithology: CHERT, dark grayish brown (10YR 4/2) to pale red (10R 6/4), partly yellowish brown (10YR 5/4), weakly and thinly laminated, with white (10YR 8/2) silicified blotches (up to 8 mm in diam.), vitreous lustre and well-developed conchoidal fracture. Void and cracks are infilled with white (N9) siliceous sediments. Minor Lithologies: LIMESTONE, white (10YR 8/2), occurs in 93–94 cm (less than 5 mm in thickness).

SITE 869 HOLE B CORE 6R CORED 178.6 - 188.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	▲▲▲▲	1	early Paleocene		XXX	P	10YR 3/2 To 10YR 7/3	CHERT Major Lithology: CHERT, very dark grayish brown (10YR 3/2) to very pale brown (10YR 7/3), mottled appearance, some bioturbation, fracturing now stained with MnO_2 . Some fragments react with HCl, others do not. Piece from interval 25–29 cm shows two mm-thick white limestone laminae within a RADIOLARIAN CHERT showing flattened radiolarians. Some short fragments could be classified as PORCELLANITE.



SITE 869 HOLE B CORE 7R CORED 188.3 - 197.9 mbsf

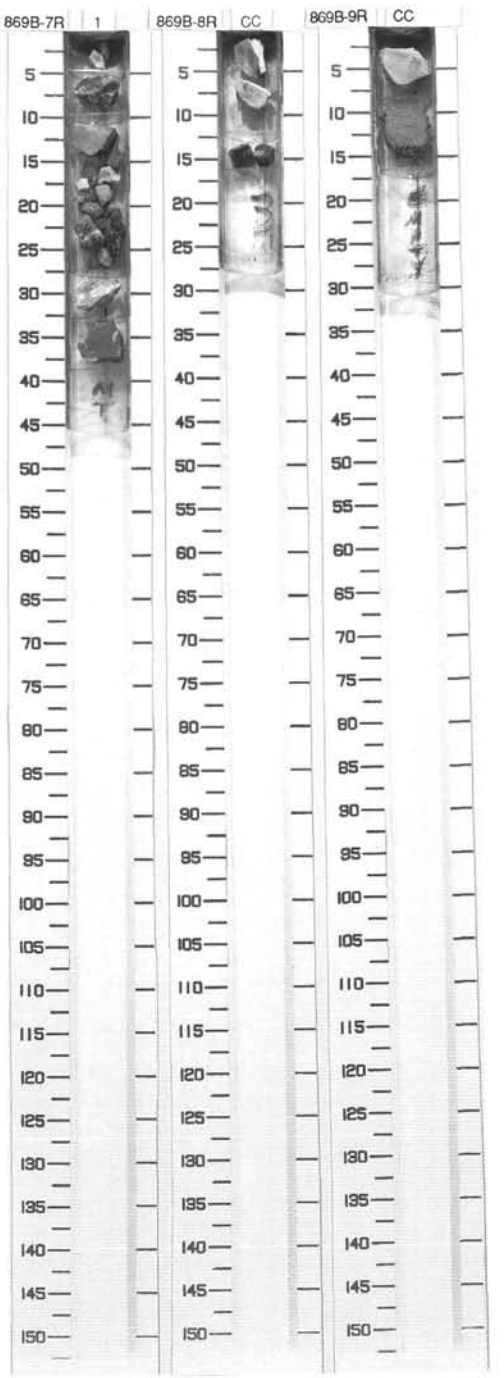
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	early Pal.		X		7.5YR 3/2 To 7.5YR 8/4	CHERT Major Lithology: CHERT, strong brown to dark brown (7.5YR 4/6 to 7.5YR 3/2; 9–27 cm) or pink to reddish brown (7.5YR 8/4 to 7.5YR 6/2; 4–9 and 27–38 cm) with white (10YR 8/1) blotches displaying mottled appearance. The interval 0–4 cm contains laminated PORCELLANITE composed of light brown (7.5YR 6/4) and pink (7.5YR 8/4) layers (mm-scale). Minor Lithologies: Drilling chips of laminated LIMESTONE occur in 9–27 cm.

SITE 869 HOLE B CORE 8R CORED 197.9 - 207.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	l.Cam.-e.Maa.		X		10YR 3/4 And 10YR 4/6	CHERT Major Lithology: CHERT, dark brown (10YR 3/4) and dark yellowish brown (10YR 4/6), with 1–3 cm thick layers of white (N9) PORCELLANITE, which grades into the CHERT. The white material is carbonaceous and chalky.

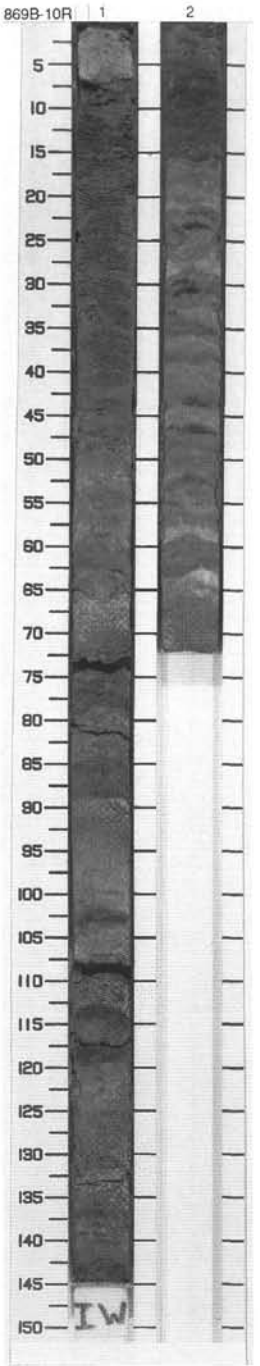
SITE 869 HOLE B CORE 9R CORED 207.6 - 217.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	lCam-eMaa	≀	X	P S	7.5YR 5/6 7.5YR 7/6	PORCELLANITE and SILICEOUS CLAYEY NANNOFOSSIL OOZE Major Lithology: 0–5 cm is PORCELLANITE, strong brown (7.5YR 5/6) in color, with pink (7.5YR 8/3) mottles which probably represent burrows. Some lamination is visible. 5–10 cm is SILICEOUS CLAYEY NANNOFOSSIL OOZE, reddish yellow in color (7.5YR 7/6), containing drilling chips of very dark gray (7.5YR 3/0) CHERT.



SITE 869 HOLE B CORE 10R CORED 217.2 - 226.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1, 2		1, 2	late Camp.-early Maas	F, F, F		S, S S, S S S	10YR 5/1 To 10YR 7/2; 10YR 5/1 To 10YR 7/2; 10YR 6/2; 10YR 8/4 To 10YR 5/4	ZEOLITIC CLAY and VOLCANICLASTIC/CARBONATE SAND Major Lithologies: ZEOLITIC CLAY, yellow to brownish yellow to very pale brown (10YR 7/4-5/4) with opaque altered volcanic minerals. There is some color banding and burrow mottling. Intervals of VOLCANICLASTIC CARBONATE SAND, gray-light gray (10YR 5/1-7/2), with mm-sized clasts of red and green volcanic minerals and some benthic foraminifers embedded in white (N9) crystalline carbonate matrix are interbedded with the clay in Section 1, 7–46 cm, 85–89 cm, 62 cm, 77–78 cm, 102–103 cm, 113–114 cm, 118–119 cm and 137 cm and Section 2, 16–72 cm. In Section 1, 7–46 cm upper 7 cm is slightly finer yellowish-brown (5/4) clay but no other obvious grading. Lower contact is diffuse possibly because of presence of clay clasts. Other layers generally have sharper basal contacts and grade into overlying clay. In Section 2, 56–57 cm and 66–67 cm there is some brighter-colored blue (2.5Y 6/0) VOLCANICLASTIC CLAY with some yellow VOLCANICLASTIC CLAY (10YR 8/6) inside.

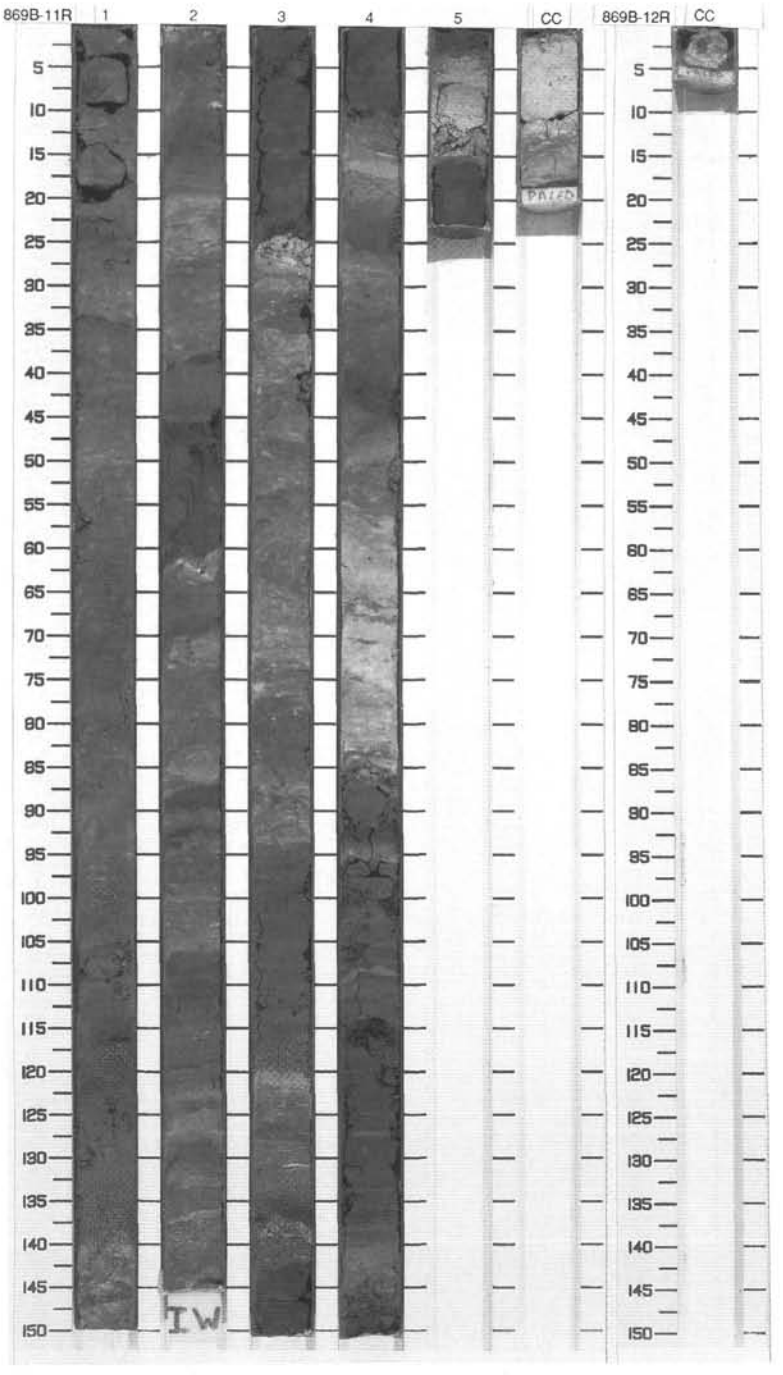


SITE 869 HOLE B CORE 11R CORED 226.9 - 236.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–6		1, 2, 3, 4, 5, CC	late Campanian			T, I, S, T_P, S M	10YR 6/3 To 10YR 3/1; 10YR 7/3 To 10YR 3/1; 10YR 8/3 To 10YR 3/1; 10YR 7/2 To 10YR 3/1	CALCAREOUS CLAYSTONE and VOLCANICLASTIC SANDSTONE TO SILTSTONE Major Lithologies: Interbedded CALCAREOUS CLAYSTONE, very pale brown (10YR 8/3) to yellowish brown (10YR 5/4) and VOLCANICLASTIC SANDSTONE TO SILTSTONE, gray (10YR 5/1) to very dark gray (10YR 3/1). The CALCAREOUS CLAYSTONE intervals are often moderately bioturbated, with abundant lighter colored flattened burrow structures. Unbioturbated laminated intervals occur in Section 3, 102–114 cm, and Section 4, 89–140 cm. The VOLCANICLASTIC SANDSTONE to SILTSTONE intervals are 1 cm to 6 cm thick, and often contain graded or laminated horizons. They consist of angular volcanic fragments, zeolites, and carbonate grains. A coarse, graded interval with ripped-up claystone pebbles at the base occurs in Section 2, 104–110 cm. Section 3, 22–24 cm includes an articulated *Inoceramus* bivalve shell.

SITE 869 HOLE B CORE 12R CORED 236.6 - 246.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	late Cam			M	10YR 5/1 to 10YR 7/1	CALCAREOUS CLAYSTONE Major Lithology: 0–6 cm: CALCAREOUS CLAYSTONE, gray (10YR 5/1) to light gray (10YR 7/1). Flattened burrows filled with lighter colored claystone are common throughout.

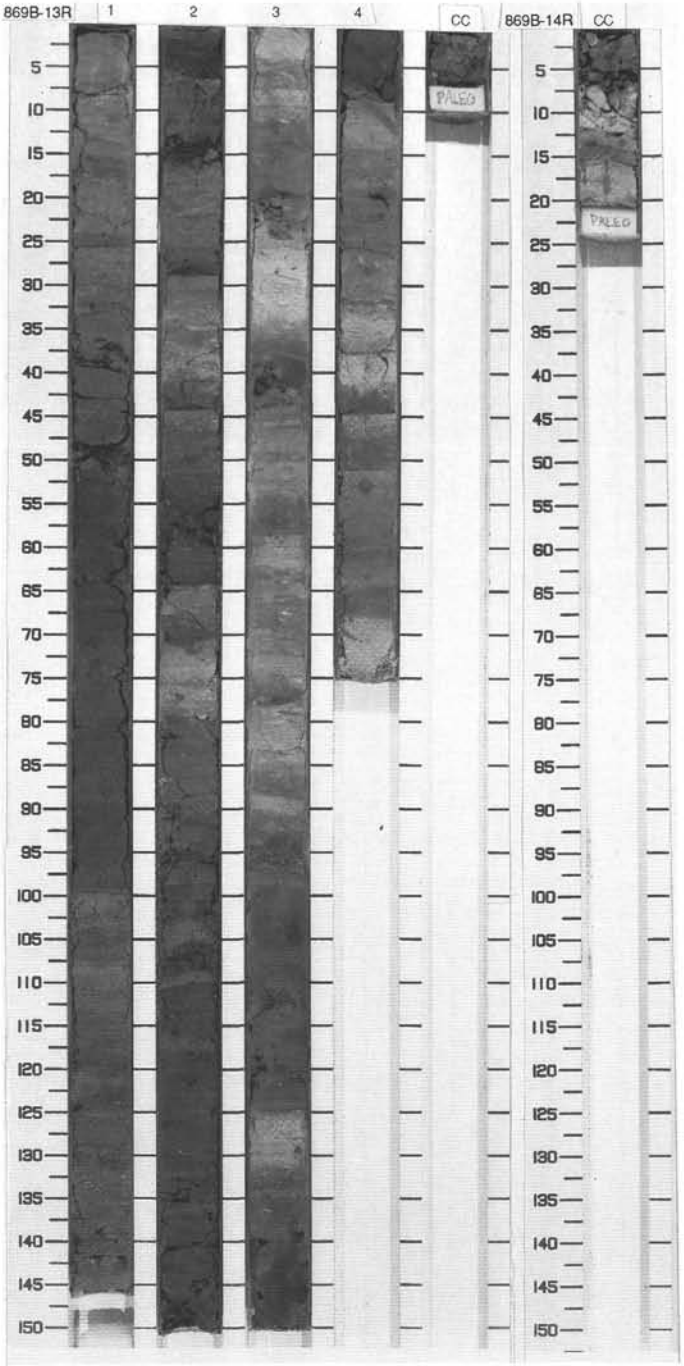


SITE 869 HOLE B CORE 13R CORED 246.2 - 255.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–5		1, 2, 3, 4, CC	late Campanian			I; P; M	10YR 6/4 To 5G 4/2; 10YR 5/3 To 7.5YR 4/2	CALCAREOUS CLAYSTONE and VOLCANICLASTIC SANDSTONE Major Lithologies: Interbedded CALCAREOUS CLAYSTONE, light yellowish brown (10YR 6/4) to dark yellowish brown (10YR 3/4) and thin beds of VOLCANICLASTIC SANDSTONE, grayish green (5G 4/2) to dark brown (7.5YR 4/2). The CALCAREOUS CLAYSTONE intervals are commonly bioturbated, but laminated intervals occur in Section 2 and Section 3. The VOLCANICLASTIC SANDSTONE consists of 1–6 cm thick beds of dark volcanic grains and white calcareous grains. The beds are often laminated, and more rarely graded. In Section 1, 48–100 cm is a much thicker interval of VOLCANICLASTIC SANDSTONE, which has a very sharp contact with the underlying claystone.

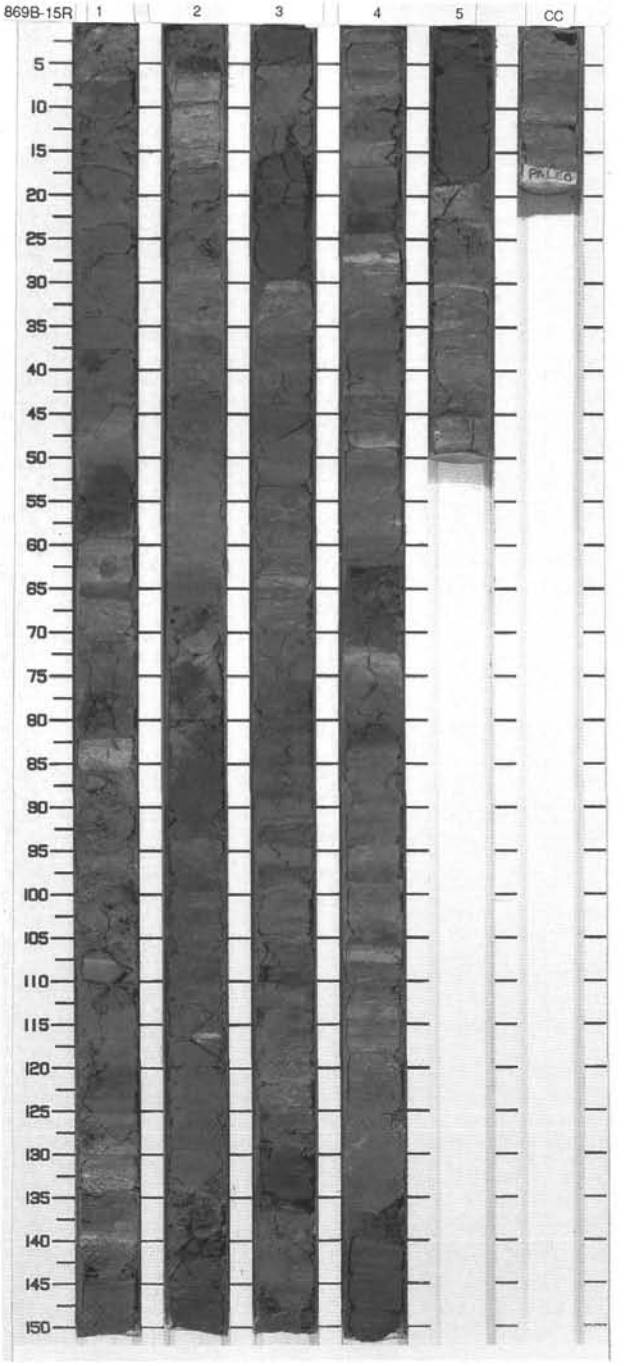
SITE 869 HOLE B CORE 14R CORED 255.8 - 265.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		CC	lateCam			M	10YR 7/2 to 10YR 4/2	CALCAREOUS CLAYSTONE Major Lithology: 0–24 cm: CALCAREOUS CLAYSTONE, light gray (10YR 7/2) to dark grayish brown (10YR 4/2), slightly bioturbated. Minor Lithology: Irregular mm-scale interbeds of VOLCANICLASTIC SANDSTONE occur throughout.



SITE 869 HOLE B CORE 15R CORED 265.4 - 275.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–6		1, 2, 3, 4, 5, CC	late Campanian			P, P, P, P M	10YR 6/2 To 7.5YR N2/0; 10YR 4/3 To 5G 4/2; 10YR 7/2 To 7.5YR 4/2	CALCAREOUS CLAYSTONE and VOLCANICLASTIC SANDSTONE Major Lithologies: Interbedded CALCAREOUS CLAYSTONE, light brownish gray (10YR 6/2) to dark brown (10YR 3/3), and VOLCANICLASTIC SANDSTONE, grayish-green (5G 4/2) to black (7.5 YR N2/0). The CALCAREOUS CLAYSTONE intervals are 1–30 cm thick, moderately bioturbated, with lighter-colored flattened burrow structures. Some laminated claystone intervals occur. The VOLCANICLASTIC SANDSTONE intervals are 1–12 cm thick, and can be graded or laminated. Occasional cross-laminated horizons occur. Section 2, 64–93 is a particularly thick sandstone interval. Sharp contacts between CALCAREOUS CLAYSTONE and overlying VOLCANICLASTIC SANDSTONE are common, in some places with small rip-up clasts of claystone in the lower part of graded sandstone intervals, and with burrows in claystone filled with sandstone. Minor Lithology: A thin bed of white (10YR 8/2) CALCAREOUS SILTSTONE occurs in Section 4, 26–27 cm.

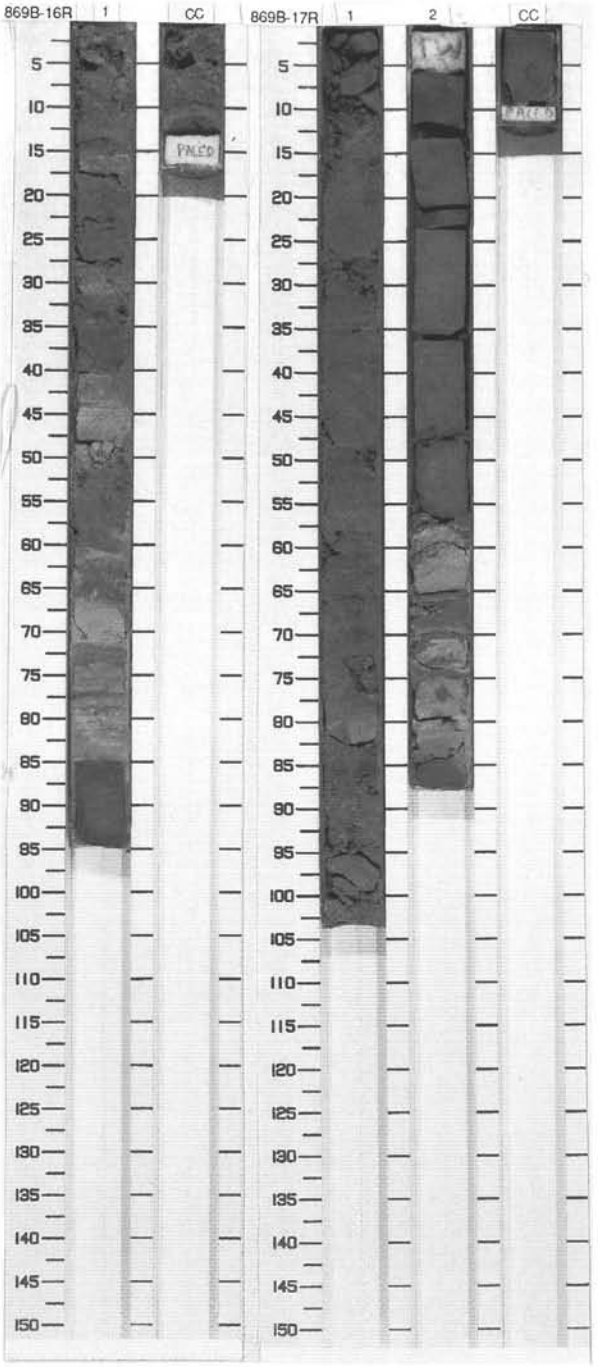


SITE 869 HOLE B CORE 16R CORED 275.1 - 284.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1 CC	late Cam			P P Mp	10YR 7/2 To 10YR 3/3	CALCAREOUS CLAYSTONE and VOLCANICLASTIC SANDSTONE Major Lithologies: CALCAREOUS CLAYSTONE, light gray (10YR 7/2) to dark brown (10YR 3/3) with thin (1–5 cm) interbeds of VOLCANICLASTIC SANDSTONE, grayish-green (5G 4/2) to black (2.5YR N2.5/0). The claystone is moderately bioturbated. The sandstone beds are often laminated. A thicker interval of VOLCANICLASTIC SANDSTONE with graded bedding below planar lamination occurs in Section 1, 86–93 cm.

SITE 869 HOLE B CORE 17R CORED 284.8 - 294.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2		1 2 CC	early Campanian			P M P	10YR 7/2 To 10YR 5/2 5G 4/2 10YR 6/1	CALCAREOUS CLAYSTONE and VOLCANICLASTIC SANDSTONE Major Lithology: Section 1, 0–103 cm contains CALCAREOUS CLAYSTONE, light gray to grayish brown (10YR 5/2), burrowed and bioturbated, with interbeds of black (2.5YR 0) VOLCANICLASTIC SANDSTONE (Section 1, 0–13, 20–26, 33–35, 38–39, 40–41, 52–53, 71–73 and 84–87 cm). Section 2, 0–56 cm and Section 2, 85 to Section CC, 12 cm contains VOLCANICLASTIC SANDSTONE, grayish green (5G 4/2). In Section 2, 0–56 cm, the interval of lamination becomes wider downwards. In Section 2, 56–85 cm, CALCAREOUS CLAYSTONE, gray (10YR 6/1), more or less laminated, with white (10YR 8/1), horizontally-elongated, compressed burrow mottles, containing thin dark gray (10YR 4/1) layer in Section 2, 69–70 cm.

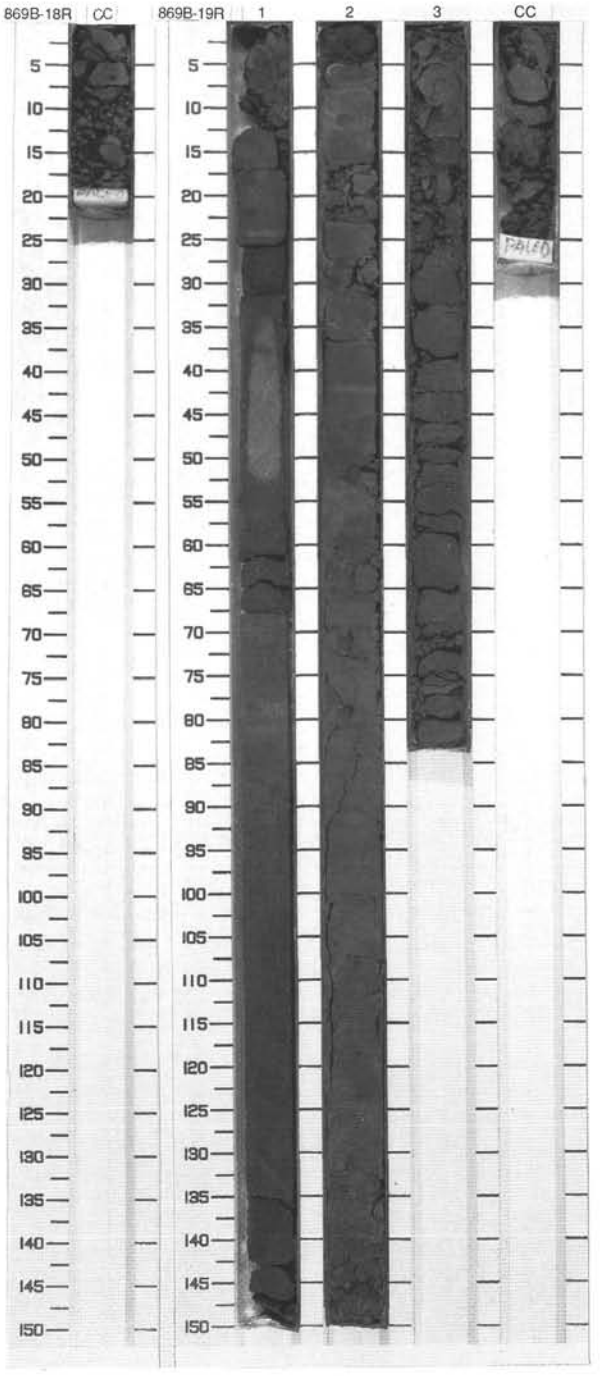


SITE 869 HOLE B CORE 18R CORED 294.4 - 304.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	e. Camp.		X	M	10YR 3/2	CLAYSTONE Major Lithology: Massive CLAYSTONE, dark brown (10YR 3/2), slightly bioturbated, highly fractured.

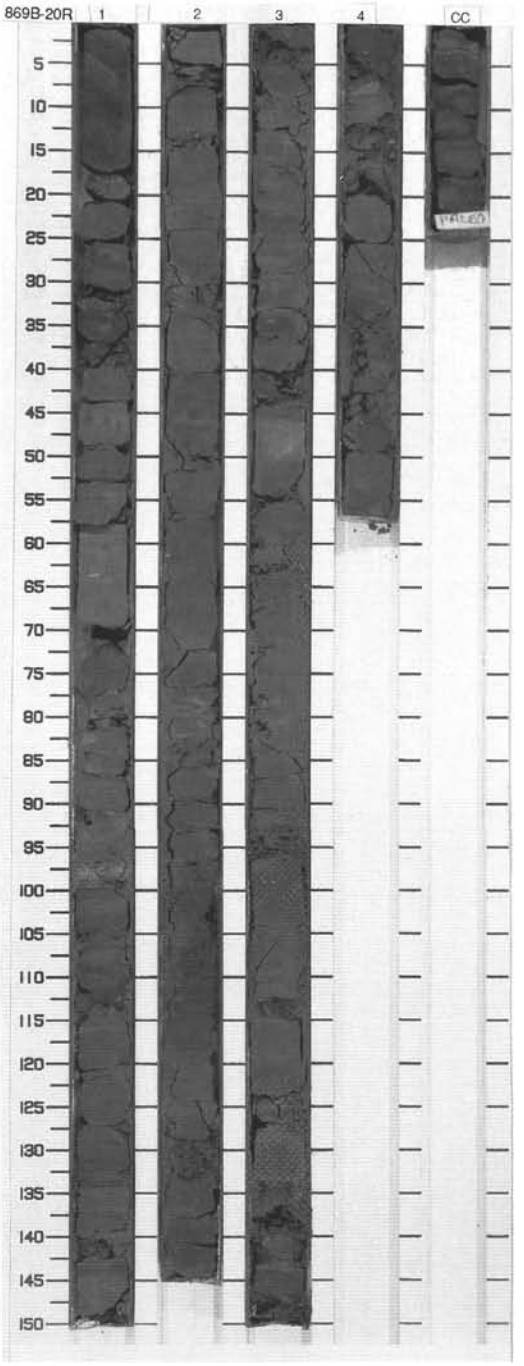
SITE 869 HOLE B CORE 19R CORED 304.1 - 313.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2 3 4		1 2 3 CC	early Campanian	F		P P P M	2.5Y N2/0 10YR 2/2 7.5YR N4/0 To 5G 4/2	VOLCANICLASTIC SANDSTONE and CLAYSTONE Major Lithology: Section 1, 0 cm to Section 2, 5 cm contains granule- to coarse sand-grained VOLCANICLASTIC SANDSTONE, black (2.5Y N2/0), laminated, with very coarse intervals in Section 1, 26–54, 57–72, 79–80 and 87–92 cm. Numerous white calcareous grains are included. CLAYSTONE, brown (10YR 2/2), burrowed, punctuated by cm-thick VOLCANICLASTIC SANDSTONE occurs in Section 2, 5–80 cm. Section 2, 80 to Section CC, 25 cm contains VOLCANICLASTIC SANDSTONE coarse sand-sized (finer than Section 1, 0 cm to Section 2, 5 cm), dark gray to grayish green (7.5YR N4/0 to 5G 4/2), partly displaying fining-upward grain-size distribution in Section 2, 80–150 cm. The top of this unit shows parallel laminations.



SITE 869 HOLE B CORE 20R CORED 313.8 - 323.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–5		1, 2, 3, 4, CC	early Campanian			P, P, P, MP	10YR 4/1 To 5YR 3/2 And 7.5YR N3/0; 10YR 4/2 To 5Y 6/2; 5GY 2/1	CALCAREOUS CLAYSTONE and VOLCANICLASTIC SANDSTONE Major Lithology: Section 1, 0 cm to Section 2, 150 cm contains alternation of CALCAREOUS CLAYSTONE and VOLCANICLASTIC SANDSTONE. CALCAREOUS CLAYSTONE, dark olive gray (5Y 3/2) to dark reddish brown (5YR 3/2) to dark gray (10YR 4/1), displays cm-scale laminations, burrowed, with *Skolithos* and *Planolites* trace fossils. VOLCANICLASTIC SANDSTONE, is very dark gray (7.5YR N3) with white carbonate grains, partly fining-upward from granule to sand-size clasts. Section 3, 0–150 cm contains CALCAREOUS CLAYSTONE (very dark grayish brown to olive gray; 10YR 4/2 to 5Y 6/2) with interbeds of medium- to fine- grained VOLCANICLASTIC SANDSTONE (7.5YR N3). CALCAREOUS CLAYSTONE shows cm-scale bedding with some mm-scale laminations and limited occurrence of burrows. Section 4, 0 cm to Section CC, 24 cm contains VOLCANICLASTIC SANDSTONE, greenish black (5GY 4/1), with granule- to pebble sized angular breccia of dark brown (10YR 3/3) and greenish gray (5G 6/1) CLAYSTONE in Section 4, 5–42 cm. Ooid and bryozoan fragments are found in Section CC, 21–24 cm.

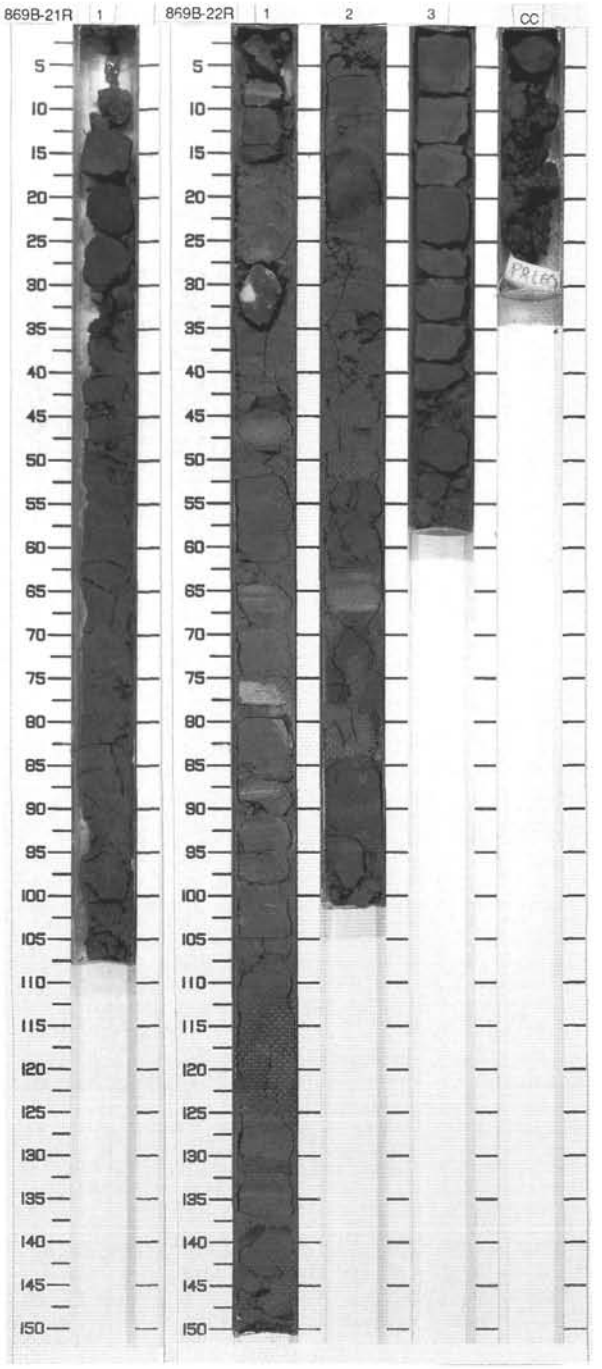


SITE 869 HOLE B CORE 21R CORED 323.5 - 333.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	early Campanian			P	5G 4/1	CLAYSTONE and VOLCANICLASTIC SANDSTONE Major Lithology: CLAYSTONE (0–13 cm), dark brown (10YR 3/3), with irregular laminations. VOLCANICLASTIC SANDSTONE (13–108 cm), dark greenish gray (5G 4/1), mostly medium- to coarse-grained sand-sized, contains granules in 100–108 cm, some of which are ooids.

SITE 869 HOLE B CORE 22R CORED 331.1 - 342.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2 3		1 2 3 CC	early Campanian	F		S S S P P P	10YR 4/1 To 2.5Y 4/0 and 10YR 5/2 To 10YR 7/2	CLAYSTONE, VOLCANICLASTIC SANDSTONE, and VOLCANICLASTIC NANNOFOSSIL CHALK Major Lithologies: Major intervals of VOLCANICLASTIC SANDSTONE, highly zeolitic, in Section 1, 5–17 cm, 35–39 cm, 52–61 cm, 108–123 cm with smaller thinner beds throughout. This lithology is dark gray (10YR 4/1 to 2.5Y 4/0), mostly planar laminated with one cross-laminated interval. Rare scoured bases. This is interlayered with CLAYSTONE, in places calcareous and VOLCANICLASTIC NANNOFOSSIL CHALK, dark grayish brown to grayish brown (10YR 4/1–10YR 5/2) and some light gray (10YR 7/2), with planar color banding and bioturbation. The core is patchily lithified throughout. Minor Lithology: A large nodule of CALCAREOUS PORCELLANITE, brown (10YR 4/3) and white (N9) occurs in Section 1, 28–33 cm, and flakes of this in Section 1, 16–19 cm.

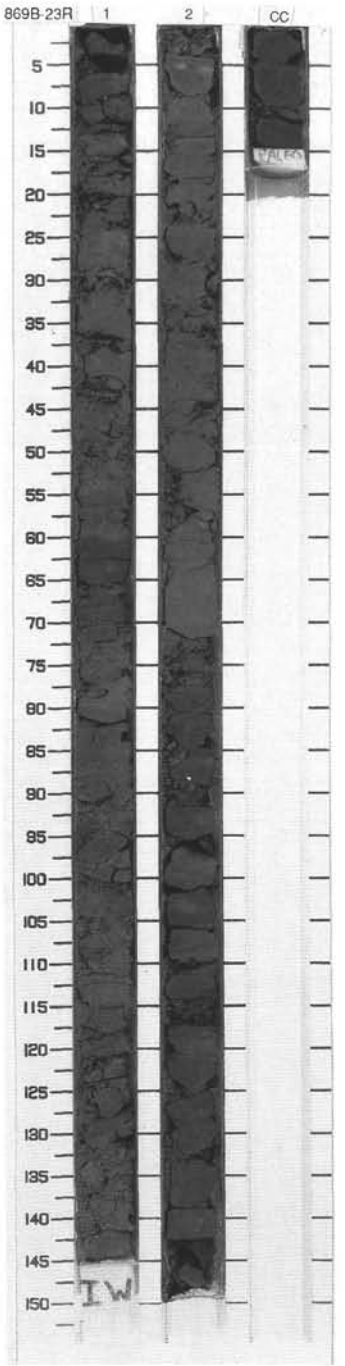


SITE 869 HOLE B CORE 23R CORED 342.8 - 352.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–3		1, 2, CC	early Campanian	Z, F		S, P, S, S, S, P, M	2.5G 5/0 To 2.5G 6/2 and 10YR 5/1 to 5/3	ZEOLITIC CLAYSTONE and VOLCANICLASTIC SANDSTONE Major Lithologies: Major intervals of VOLCANICLASTIC SANDSTONE, highly zeolitic in Section 1, 0–14 cm, 46–80 cm, and 118–146 cm, mostly planar laminated but with some short cross-laminated intervals. This is also present as thin interbeds in ZEOLITIC CLAYSTONE, gray-light gray (2.5G 5/0 –2.5Y 7/0) and in places greenish gray, locally with nannofossils.

SITE 869 HOLE B CORE 24R CORED 352.5 - 362.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		CC	e. Campanian		X	M	2.5G 5/0 To 2.5G 5/2	CLAYSTONE Major Lithology: CLAYSTONE, greenish gray (2.5G 5/0 to 2.5G 5/2) with some small brown fragments of porcellanite. No photo available.

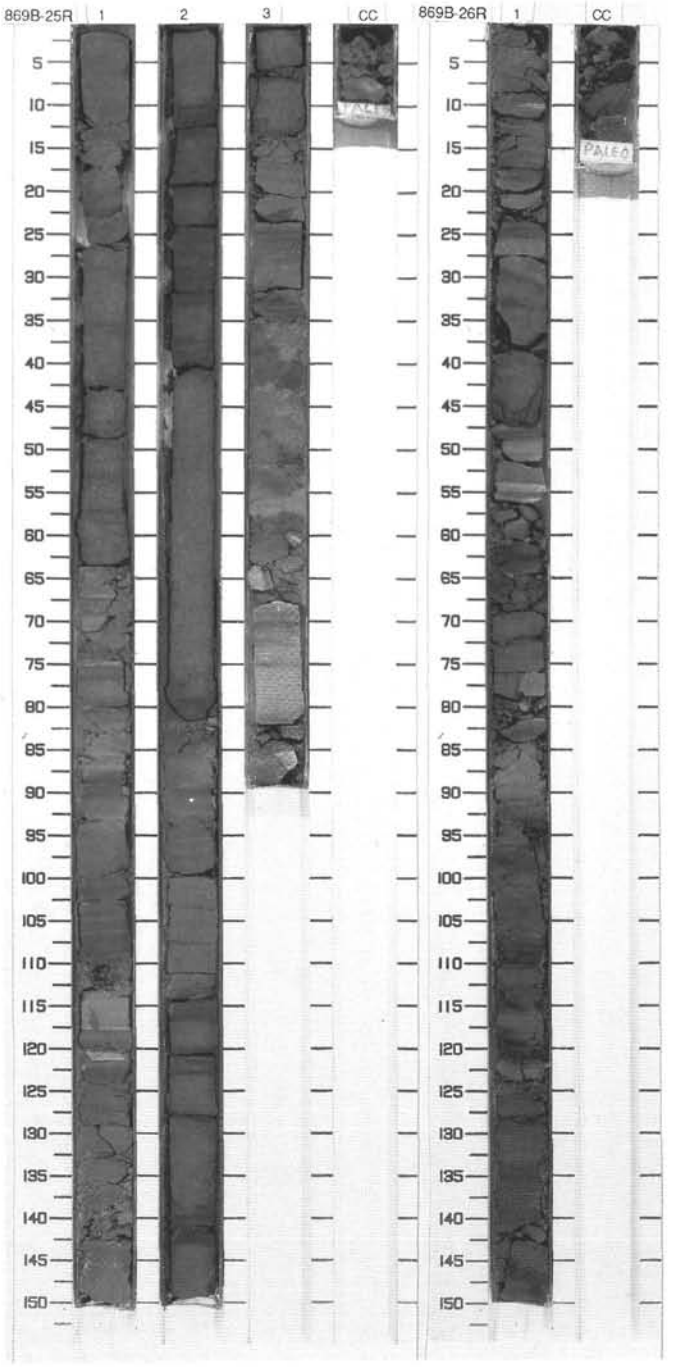


SITE 869 HOLE B CORE 25R CORED 362.2 - 371.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–4		1, 2, 3, CC	early Campanian	F, Z		T, P S, P P S, P M	2.5G 3/4; 2.5G 5/2; 2.5G 3/4; 2.5G 5/2; 2.5G 3/4; 2.5G 3/4 To 2.5G 5/2	VOLCANICLASTIC SANDSTONE, VOLCANICLASTIC SILTSTONE, and ZEOLITIC CLAYSTONE Major Lithology: Major intervals of VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE, greenish black (2.5G 3/4), locally distinctly graded, with parallel lamination, and with cross-lamination. Grains of shallow-water carbonates are present especially in the coarser levels. Section 1, 14–20 cm, contains rounded green clay clasts. Intervals of ZEOLITIC CLAYSTONE, dominantly greenish gray (2.5G 5/2), alternate with the sandstone and siltstone layers. Commonly, they show mm-thick parallel laminations and contain some flattened burrows. The claystones contain some nannofossils and glauconite-impregnated planktonic foraminifers.

SITE 869 HOLE B CORE 26R CORED 371.8 - 381.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1, CC	early Campanian	Z		S, P T, P, M	2.5G 4/2; 2.5G 3/2; 2.5G 3/2 To 4/2	ZEOLITIC CLAYSTONE and VOLCANICLASTIC SILTSTONE Major Lithologies: ZEOLITIC CLAYSTONE, dominantly greenish-gray (2.5G 4/2) in Section 1 0–27 cm and 47–150 cm and Section CC 0–12 cm with laminations at various scales and some coarser volcaniclastic silt layers. Section 1, 27–47 cm is a major interval of VOLCANICLASTIC SILTSTONE, very dark greenish-black (2.5G 3/2), fine-grained.



SITE 869 HOLE B CORE 27R CORED 381.5 - 391.1 mbsf

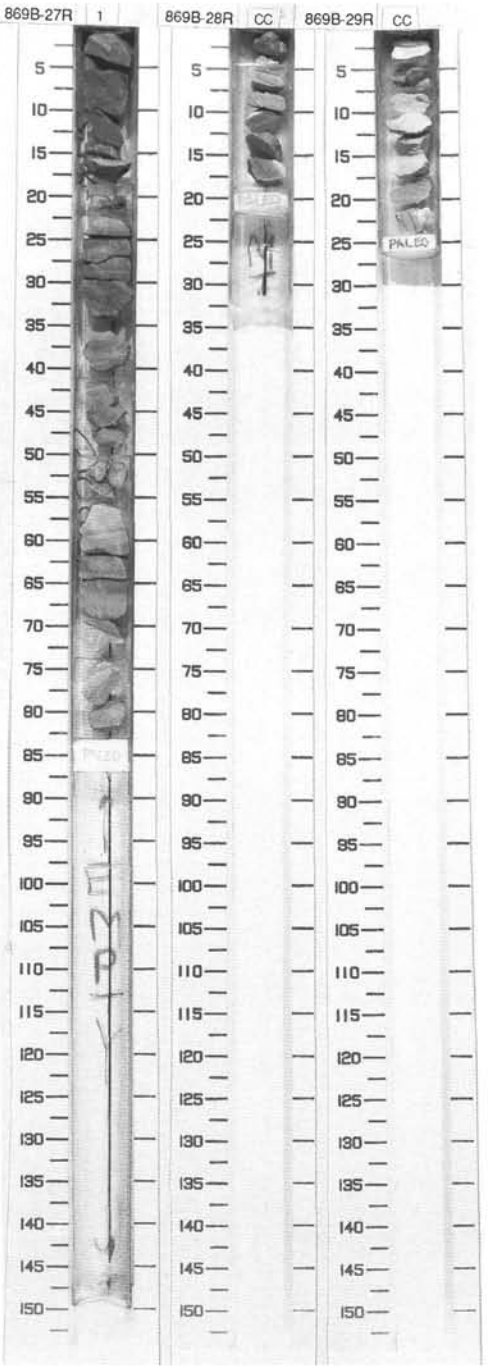
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	early Campanian			P PP M	10YR 3/2 To 2.5Y 3/2	CLAYSTONE Major Lithology: CLAYSTONE, very dark grayish brown (10YR 3/2 to 2.5Y 3/2), thinly laminated, slightly calcareous in 70–75 cm where the color is lighter dark brown (10YR 4/3). Minor Lithologies: Thin VOLCANICLASTIC SILTSTONE in 75.5–76 cm.

SITE 869 HOLE B CORE 28R CORED 391.1 - 400.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	early Campanian			MP	10YR 5/2 To 10YR 4/2	RADIOLARIAN SILTSTONE Major Lithology: RADIOLARIAN SILTSTONE, grayish brown to dark grayish brown (10YR 5/2 to 10YR 4/2), prominent radiolarians in mm-scale beds.

SITE 869 HOLE B CORE 29R CORED 400.8 - 410.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	late Santonian			MP	10YR 8/2 To 10YR 7/3	CALCAREOUS RADIOLARIAN SILTSTONE Major Lithology: CALCAREOUS RADIOLARIAN SILTSTONE, white to very pale brown (10YR 8/2 to10YR 7/3), with thin mm-scale lamination of calcareous and siliceous layers and occasional 2 mm-thick layers of dark yellowish brown (10YR 4/3) noncalcareous mudstone. Radiolarians are dominant and dispersed throughout groundmass.

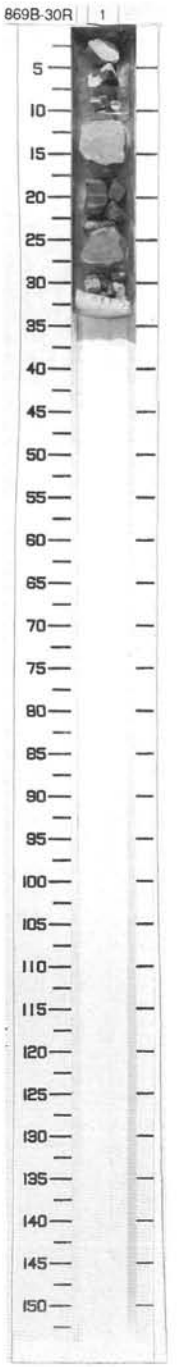


SITE 869 HOLE B CORE 30R CORED 410.4 - 420.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	late Santonian			P M	10YR 7/2 To 10YR 3/3	RADIOLARIAN SILTSTONE, RADIOLARIAN LIMESTONE, CLAYSTONE, and CALCAREOUS SILTSTONE

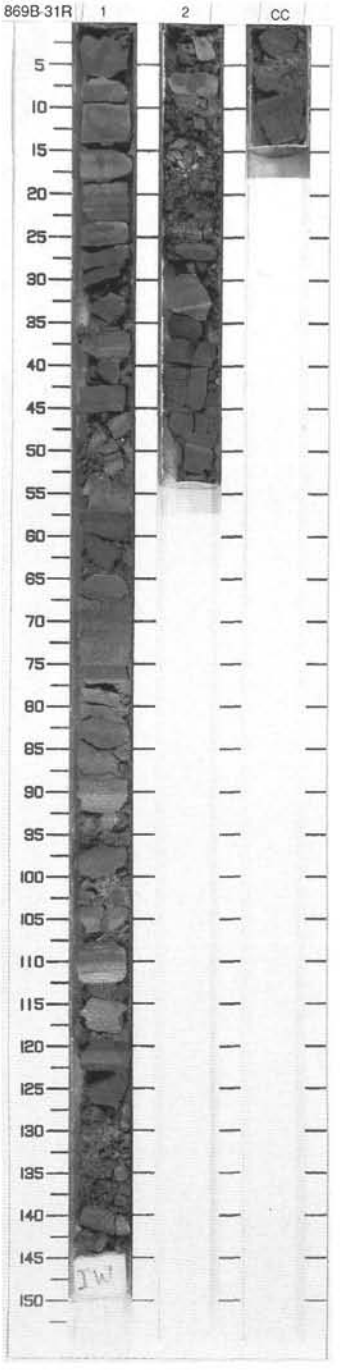
Major Lithology:
RADIOLARIAN SILTSTONE and RADIOLARIAN LIMESTONE (0–10 cm), light gray (10YR 7/2) , laminated and bioturbated. The interval 10–17 cm and 17–22 cm contains brown (10YR 5/3), laminated, CALCAREOUS SILTSTONE of granular calcite with foraminifers, radiolarians, and dark volcanic grains with alternating laminae of more or less clay. Fine volcanic debris is dispersed in 22–27 cm. Dark brown (10YR 3/3) laminated CLAYSTONE with fine silt-sized volcanic particles, which are concentrated along thin laminae and microturbidites, occurs in 17–22 cm.

Minor Lithologies:
A dark reddish brown (5Y 3/3) band of CHERT (1.5 cm in thickness) occurs in the RADIOLARIAN SILTSTONE (4–7 cm).



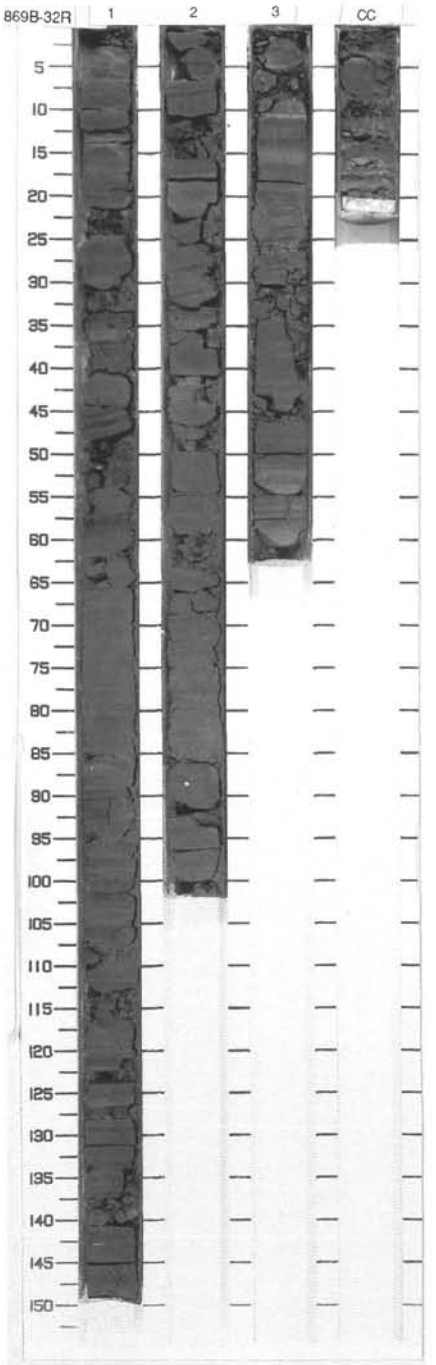
SITE 869 HOLE B CORE 31R CORED 420.1 - 429.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2		1 2 CC	Coniacian	↑F ↑F		P P_P I	2.5YR 3/2, 7.5YR 6/3 And 5Y 4/2 To 5Y 3/1	RADIOLARIAN SILTSTONE, CALCAREOUS RADIOLARIAN SILTSTONE, and VOLCANICLASTIC SANDSTONE Major Lithology: Section 1, 1 cm to Section CC, 14 cm contains RADIOLARIAN SILTSTONE, CALCAREOUS RADIOLARIAN SILTSTONE and VOLCANICLASTIC SANDSTONE. RADIOLARIAN SILTSTONE is dusky red (2.5YR 3/2) and burrowed. CALCAREOUS RADIOLARIAN SILTSTONE is light brown (7.5YR 6/3), laminated (mm-scale), interbedded with VOLCANICLASTIC SANDSTONE and sandy in Sections 2 and CC. VOLCANICLASTIC SANDSTONE is olive gray to very dark gray (5Y 4/2 to 5Y 3/1), graded, fining-upward, and displaying wavy and parallel lamination, with sharp lower bedding contact and gradational upper contact.



SITE 869 HOLE B CORE 32R CORED 429.8 - 439.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2 3		1 2 3 CC	Coniacian	≈ = = ≈ Ⓩ ≈ = = ≈ ≈	⊥	S S P S P S S S P M	7.5YR 3/4 to 4/4 and 10Y 5/2 to 4/2	ZEOLITIC CLAYSTONE and VOLCANICLASTIC SANDSTONE Major Lithologies: ZEOLITIC CLAYSTONE, dark brown (7.5YR 3/4–4/4), bioturbated and finely interlaminated with olive gray (10Y 5/2-4/2) VOLCANICLASTIC SANDSTONE. VOLCANICLASTIC SANDSTONE with abundant zeolite and hornblende is the predominant lithology in Section 1, 37–44 cm, 66–85 cm, 146–150 cm, Section 2, 18–23 cm, 49–57 cm, 76–86 cm, and minor lithology in 85–146 cm at base of smaller scale units which are a few cm in thickness. The units frequently have sharp bases but are interlaminated with a progressively increasing component of ZEOLITIC CLAYSTONE near the top. Mud clasts occur at the base of one of these units in Section 2 at 85 cm. Minor Lithology: VOLCANICLASTIC LIMESTONE with nannofossils, light brown (7.5YR 6/3) is present in burrows and interlaminated with ZEOLITIC CLAYSTONE. This lithology is most abundant in Section CC.

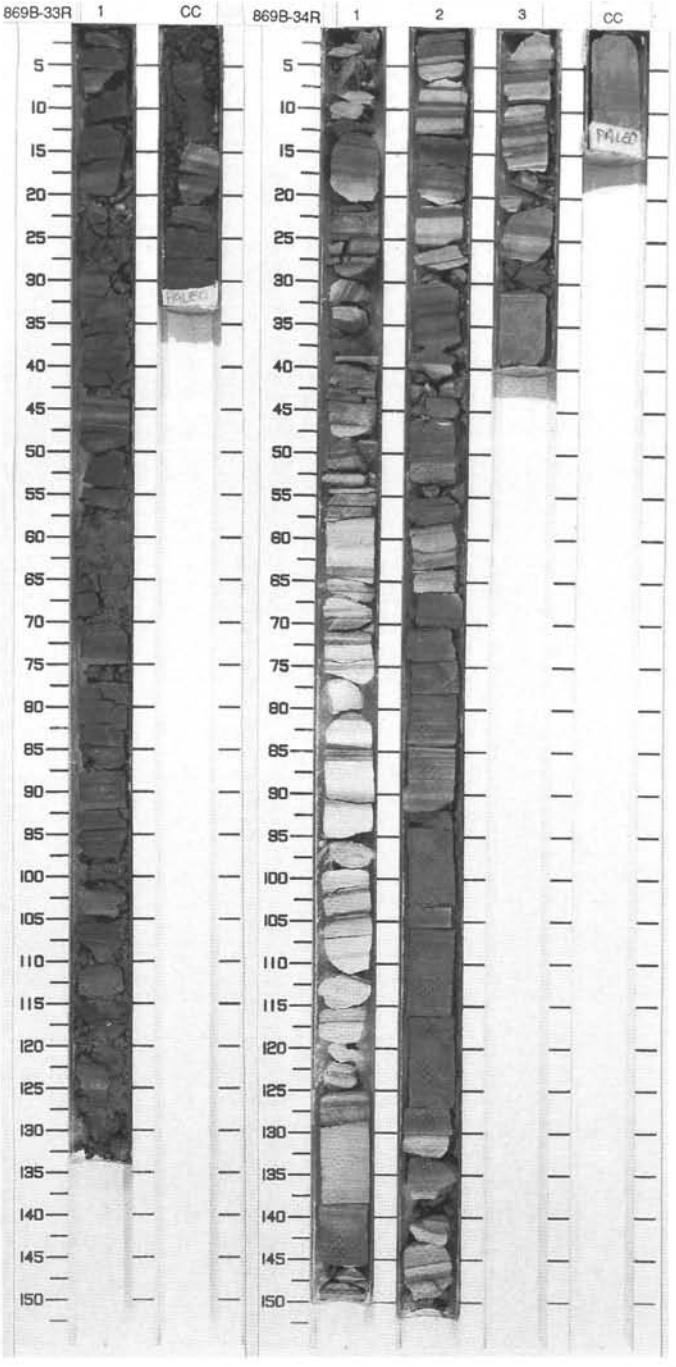


SITE 869 HOLE B CORE 33R CORED 439.4 - 449.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1 CC	Tur.-Con.			P S S S MP	7.5YR 3/2 To 7.5R 3/4, 2.5YR 6/0 To 2.5YR 5/0 And 10YR 4/1	ZEOLITIC CLAYSTONE, CALCAREOUS CLAYSTONE, and CALCAREOUS VOLCANICLASTIC SILTSTONE Major Lithologies: ZEOLITIC CLAYSTONE, dark brown (7.5YR 3/2-3/4) finely interlaminated with gray (2.5YR 6/0–5/0) CALCAREOUS CLAYSTONE and CALCAREOUS VOLCANICLASTIC SILTSTONE with slight bioturbation. Major intervals of CALCAREOUS VOLCANICLASTIC SILTSTONE, dark gray (10YR 4/1) with some white (10YR 8/1) laminae occur in Section 1, 31–38 cm and Section 2, 14–31 cm.

SITE 869 HOLE B CORE 34R CORED 449.1 - 458.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2 3		1 2 3 CC	late Turonian-Coniacian			S S P P P SP M	10YR 3/1 To 7.5YR N7/0	CALCAREOUS CLAYSTONE, CLAYEY CHALK, and VOLCANICLASTIC SANDSTONE Major Lithologies: CALCAREOUS CLAYSTONE, light gray (7.5YR 7/0), CLAYEY CHALK dark gray (10YR 3/1), and VOLCANICLASTIC SANDSTONE, brown-gray (2.5Y 5/2–5/0) with zeolite and abundant carbonate grains. These lithologies make up cycles on average 5 cm thick with VOLCANICLASTIC SANDSTONE at base fining upwards from sharp lower boundary, overlain by CLAYEY CHALK and then by CALCAREOUS CLAYSTONE. Thickest intervals of VOLCANICLASTIC SANDSTONE are Section 1, 13–17 cm and 138–144 cm, Section 2, 74–140, Section 3, 31–39 cm, and Section CC.



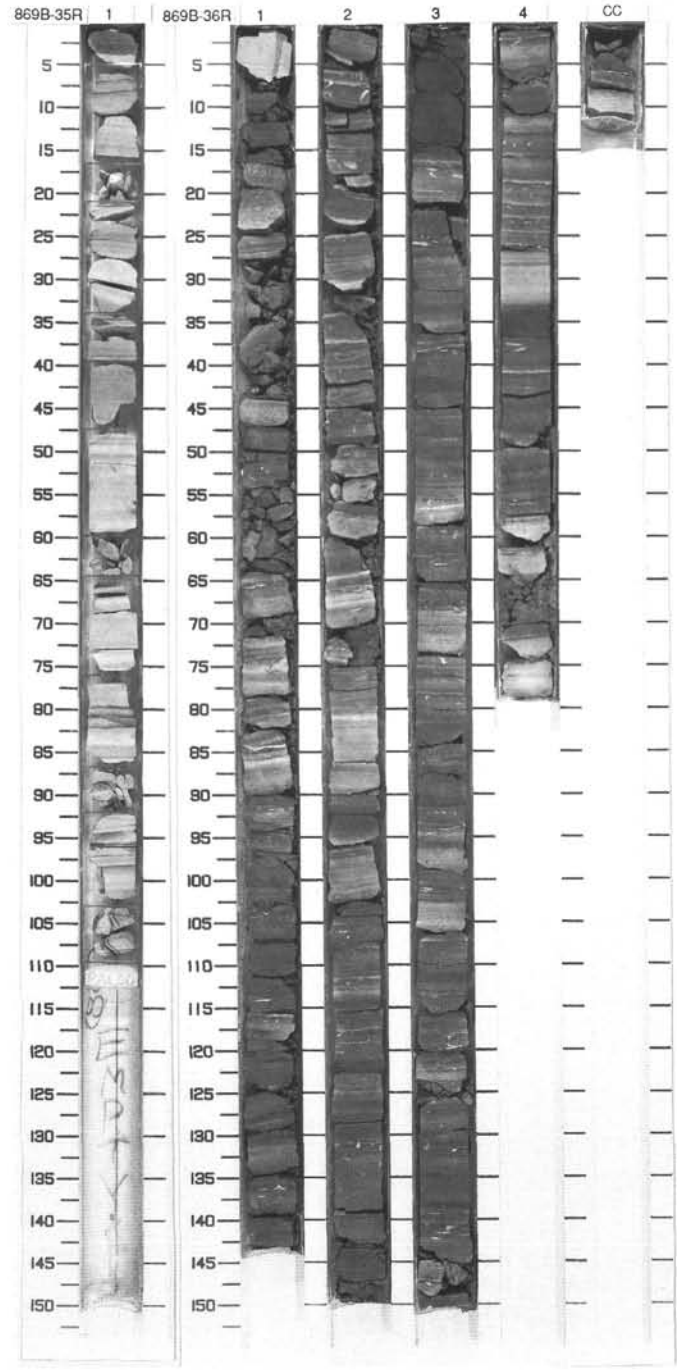
SITE 869 HOLE B CORE 35R CORED 458.8 - 468.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	late Tur-Con	F		P P P M	2.5G 5/2	VOLCANICLASTIC SANDSTONE, LIMESTONE, and CHERT Major Lithologies: VOLCANICLASTIC SANDSTONE, greenish-gray (2.5G 5/2), typically parallel laminated and locally graded and containing altered igneous minerals, including zeolites and some carbonate grains. The volcaniclastic layers may be as thin as a few centimeters, but one covers the interval 40–60 cm. Interbedded between the layers is a light gray (2.5G N7/0) LIMESTONE containing little volcaniclastic material. A dark reddish brown CHERT occurs in the interval 0–4 cm; and greenish gray limestone is partly silicified in the intervals 14–20 cm and 59–64 cm.

SITE 869 HOLE B CORE 36R CORED 468.4 - 478.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	late Cenomanian	F C F F		P	5Y 2/1 To 5Y 6/1 And 5Y 7/1 To 5G 4/1	VOLCANICLASTIC SILTSTONE and VOLCANICLASTIC SANDSTONE Major Lithology: Section 1, 0 cm to Section CC, 10 cm contains VOLCANICLASTIC SANDSTONE with interbeds of VOLCANICLASTIC SILTSTONE. VOLCANICLASTIC SILTSTONE is black to gray (5Y 2/1 to 5Y6/1), displaying mm-scale laminations, burrowed in part and slightly calcareous throughout. VOLCANICLASTIC SANDSTONE is light gray (5Y 7/1) to dark gray (5Y 4/1) to dark greenish gray (5G 4/1), coarse- to medium-grained, occurs as mm-thick interbeds or as discrete layers (up to 15 cm in thickness), shows sharp lower contact and gradation to upper unit and contains radiolarians, larger foraminifers (orbitolinids) and ooids.
2		2				I P		
3		3		F		P		
4				F		P		
5		4		F				
		CC						

Minor Lithology:
Dark reddish (5YR 3/2) SILTSTONE chips in Section 1, 28–29 cm.

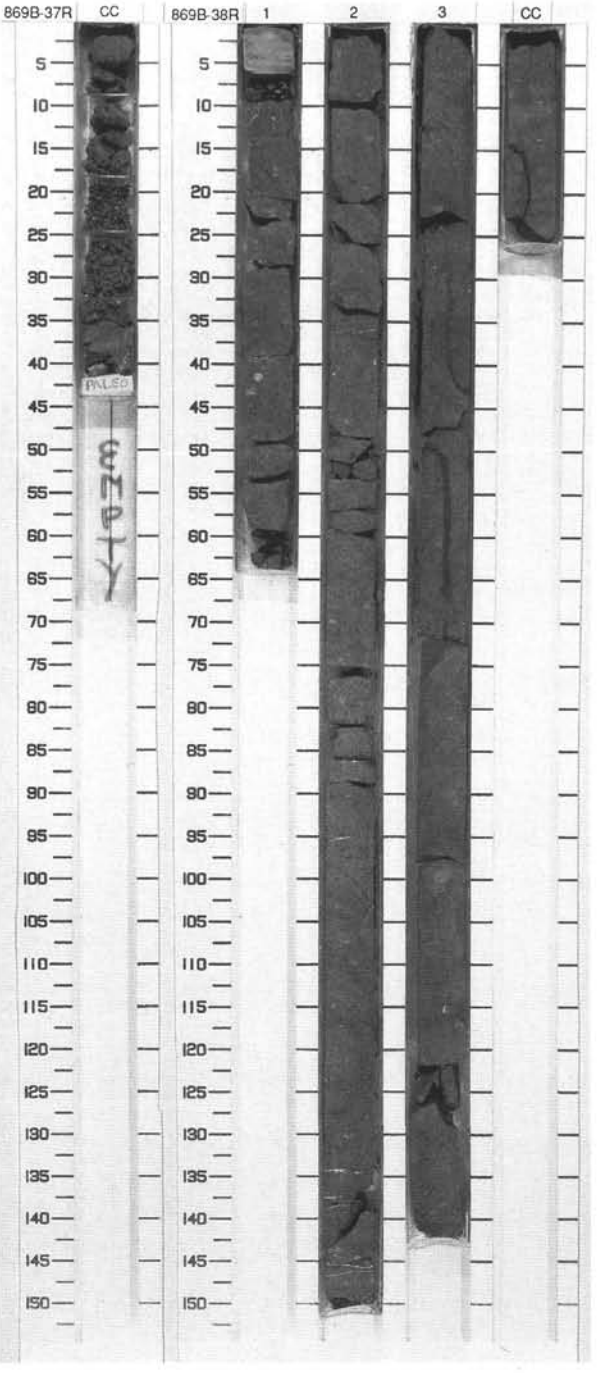


SITE 869 HOLE B CORE 37R CORED 478.1 - 487.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	late Cenomanian			M	5Y 4/1 To 5Y 2/1	SILTSTONE and GRANULES Major Lithology: SILTSTONE (0–8 and 34–43 cm), olive gray to olive black (5Y 4/1 to 5Y 2/1), slightly calcareous and showing mm-scale bedding. The interval 8–43 cm contains GRANULES, probably wash from drilling consisting of volcaniclastics, limestone, chert with quartz veins, pyroxenes, volcanic glass, and radiolarian limestone.

SITE 869 HOLE B CORE 38R CORED 487.7 - 497.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2 3		1 2 3 CC	late Cenomanian			P P P M P	5G 3/2	VOLCANICLASTIC BRECCIA Major Lithology: VOLCANICLASTIC BRECCIA, dusky green (5G 3/2), with dusky yellow green (5GY 5/2), and weak red (10R 4/3) clasts up to 2 cm in size. Horizontal veins, 5 mm thick, of calcite or very fine-grained black (2.5 YR 2/0) and dark green material occur throughout. Section 1, 30–31 cm contains large, clear crystals, which are probably analcime. Minor Lithology: Section 1, 0–6 cm consists of pale grayish-green (10G 5/1) graded, laminated and cross laminated VOLCANICLASTIC SANDSTONE.

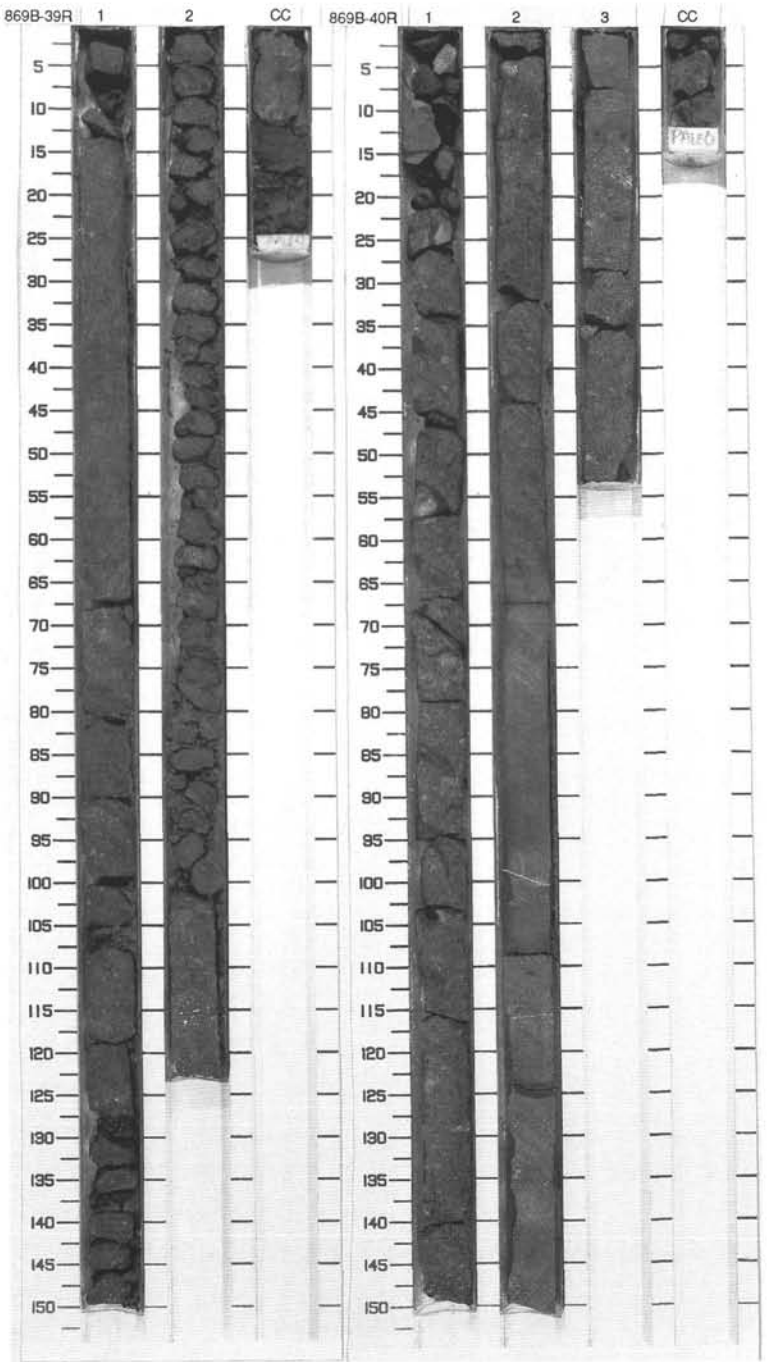


SITE 869 HOLE B CORE 39R CORED 497.4 - 507.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2		1 2 CC	late Cenomanian		wwwwww	P MP	5G 3/2	VOLCANICLASTIC BRECCIA Major Lithology: VOLCANICLASTIC BRECCIA, granule- to pebble-sized clasts in dusky green (5G 3/2) matrix with weak red (10YR 4/3) and dusky yellow green (5GY 5/2) clasts, strongly zeolitized. Maximum diameter of clasts exceeds 2 cm and most range from 3 to 8 mm. Clasts are of submarine lava, possibly basalt, containing large phenocrysts of pyroxene in altered groundmass. The rock contains numerous white vesicular fragments surrounded by light greenish gray (10YR 6/3) groundmass. In Section 2, 115–122 cm, a very large clast occurs, the width of which exceeds the core diameter.

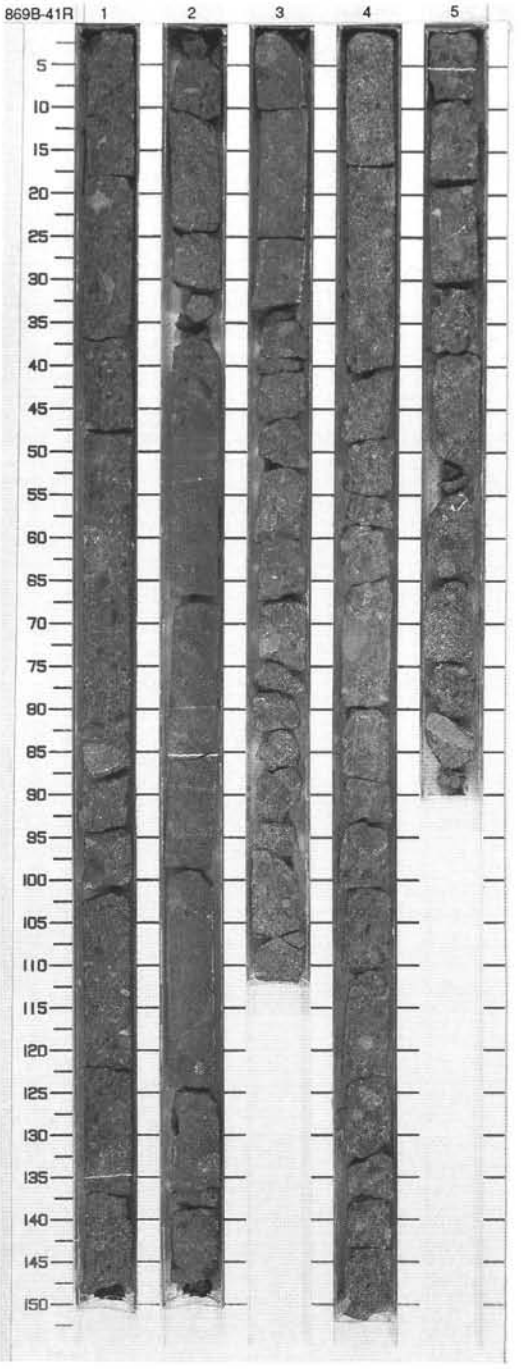
SITE 869 HOLE B CORE 40R CORED 507.1 - 516.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2 3		1 2 3 CC	late Cenomanian	↑C ↑C		P PP P M	5G 3/2	VOLCANICLASTIC BRECCIA and VOLCANICLASTIC SANDSTONE Major Lithologies: VOLCANICLASTIC BRECCIA, dusky green (5G 3/2), with dark reddish brown to red (2.5 YR 3/4–4/8), dark greenish gray (5GY 4/1) and very dark gray (2.5YR N3/0), granule to pebble-sized clasts (probably altered basalt). A few clasts of VOLCANICLASTIC SANDSTONE occur as clasts in the breccia. Breccia coarsens upwards above sharp boundary in Section 2, 65 cm from maximum clast size of 1–2 mm. Clast size in base of Section 1 is around 5 mm and reaches 30 mm in upper part of Section 1. Section 2, 65–150 cm and Section 3, 1–10 cm contains VOLCANICLASTIC SANDSTONE, dusky green (5G 3/2), coarse sand-sized with granule-sized clasts of basalt. Occasional weak bedding (Section 2, 103 cm). Section 2, 99–101 cm, 102 cm and 116 cm contain white veins (non-carbonate).



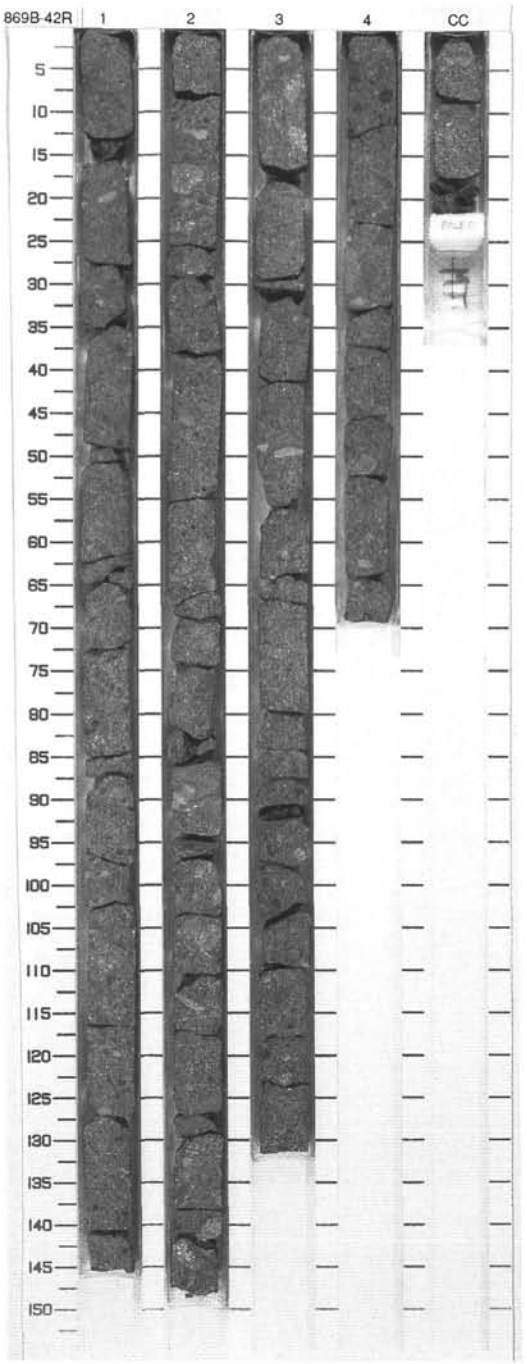
SITE 869 HOLE B CORE 41R CORED 516.8 - 526.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–6		1–5	late Cenomanian	F, C, C, F, F, F, F, F, F, F, F, C		P P, T, P P P	5GY 2/1 To 5GY 3/1	VOLCANICLASTIC BRECCIA and VOLCANICLASTIC SANDSTONE Major Lithologies: VOLCANICLASTIC BRECCIA, greenish black (5GY 2/1) with white streaks (cement between the clasts, possibly zeolitic). Clasts are mostly angular and rarely subangular, generally equant and more rarely elongate with the long axis randomly orientated. Clasts are altered basalt, greenish black (5GY 2/1) with white (N9) amygdules. Maximum clast size in Section 1, 0–20 cm is 5–6 mm; 20–48 cm is 20 mm; 48–100 cm is 50–60 mm; 100–125 cm is 10–12 mm; 125–150 cm is 20–30 mm. Section 2, 48–57 cm is fine-grained VOLCANICLASTIC SANDSTONE, faintly laminated. In Section 2, 1–48 cm the largest clast diameter is 40 mm; from 123–150 cm it is 30 mm. In Section 3, 30–113 cm the breccia has a coarse VOLCANICLASTIC SANDSTONE matrix which becomes less abundant downwards until the breccia is clast supported at the base of this interval. In Section 4, 0–100 cm the clast size increases downwards from maximum 5–7 mm in 0–17 cm; 6–10 mm in 17–37 cm; 10–20 mm in 37–66 cm and up to 70 mm in 66–100 cm. Above 66 cm in Section 4 the clasts are supported in a matrix of VOLCANICLASTIC SANDSTONE, whereas from 66–100 cm the clasts are self-supporting. Section 4, 100–150 cm the clast size decreases down core. Section 5, 0–50 cm clast size increases down core from maximum of 10–20 mm to 100 mm or more. Clasts in Section 4 are cemented by white crystalline material, probably zeolite.



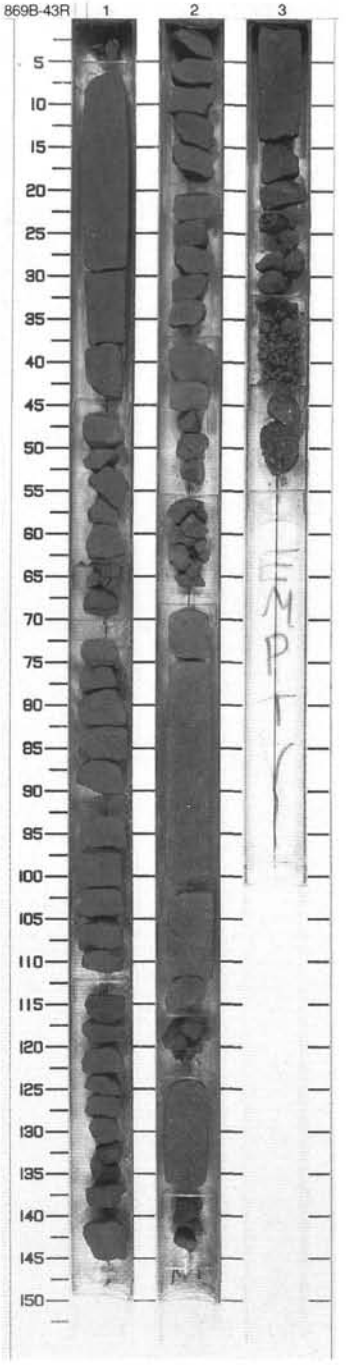
SITE 869 HOLE B CORE 42R CORED 526.4 - 536.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–5		1, 2, 3, 4, CC	late Cenomanian			P P P, T, P	5GY 2/1 To 5GY 2/3	VOLCANICLASTIC BRECCIA Major Lithology: VOLCANICLASTIC BRECCIA, greenish-black (5GY 2/1-2/3) with angular or subangular clasts and rarely subrounded. In Section 1 maximum clast size increases downwards from 20–25 mm in 0–30 cm and 10–15 mm in 30–100 cm and below 120 cm. Most of Section 1 is matrix supported. Relatively finer intervals in Section 2 are 0–14 cm, 40–57 cm and 135–150 cm, whereas the largest clasts, which are also the most densely distributed, occur in 14–25 cm. A fragment of basalt >70 mm occurs at 87–93 cm. In Section 3, average clast size is 5–10 mm, the largest is 20–30 mm, and the coarsest interval is between 107–114 cm. Section 4 is coarsest between 23–53 cm (up to 30 mm) and is predominantly matrix-supported.



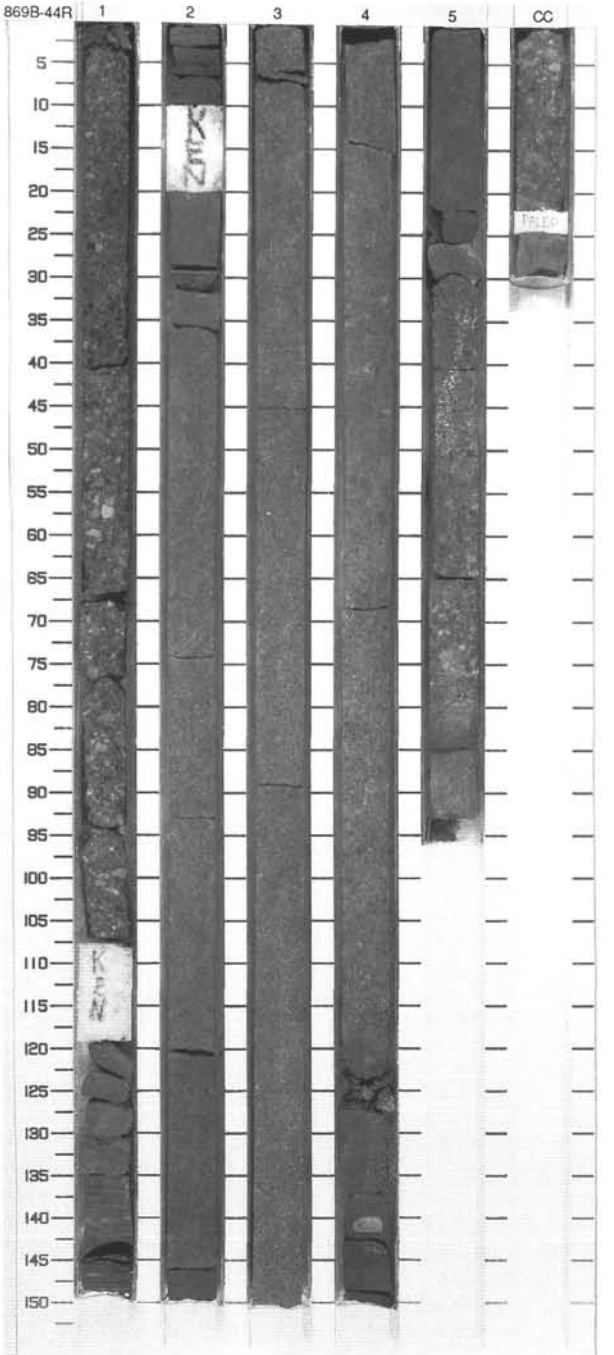
SITE 869 HOLE B CORE 43R CORED 536.1 - 545.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2 3		1 2 3	late Cenomanian	F C F F		P P	5G 3/2	VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC BRECCIA Major Lithologies: Section 1, 0 cm to Section 3, 20 cm contains VOLCANICLASTIC SANDSTONE, dusky green (5G 3/2), mostly massive. It is weakly laminated in Section 2, 35–50 cm, shows fining-upward grain-size distribution in Section 1, 0 to 150 cm and Section 2, 35 to Section 3, 55 cm, and displays inverse grading in Section 2, 25–35 cm, with granule- to partly pebble-sized clasts of altered basalt. Section 3, 20–55 cm includes VOLCANICLASTIC BRECCIA, dusky green, with dark gray to olive gray (N3 to 5Y4/1) and dark reddish brown (2.5YR 3/4) angular, granule- to pebble-sized clasts of altered basalt, some of which have amygdules.



SITE 869 HOLE B CORE 44R CORED 545.6 - 555.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–7		1	late Cenomanian			P W	5G 3/2	VOLCANICLASTIC BRECCIA and VOLCANICLASTIC SANDSTONE Major Lithologies: VOLCANICLASTIC BRECCIA (Section 1, 3–120 cm, Section 4, 0–123, Section 5, 26–83 cm, and Section CC, 0–20 cm), dusky green (5G 3/2) matrix with dusky yellow green (5GY 5/2) and weak red (10YR 4/3) clasts of altered basalt (< 1 cm), fining upward in Section 5, 26–36 cm and coarsening upward in Section 5, 70–83 cm. It is strongly zeolitized, with disseminated pyrite. VOLCANICLASTIC SANDSTONE (Section 1, 148 cm to Section 3, 150 cm, Section 4, 126 cm to Section 5, 26 cm, Section 5, 83–96 cm and Section CC, 20-30 cm), dark greenish gray to dusky green (5GY 4/1 to 5G 3/2), medium to very coarse sand-sized with abundant granule sized clasts of altered basalt. Laminated intervals occur in Section 2, 0–30 cm Section 4, 126–150 cm and Section 5, 83–96 cm. Minor Lithologies: Section 1, 120–148 cm contains VOLCANICLASTIC SANDSTONE, light gray to dark gray to grayish green (5Y 7/1 to 2.5Y N4 to 10GY 5/2), bioturbated, burrowed, laminated (cm-scale), with alternating light and dark gray sediments, slightly calcareous. Section 1, 0–3 cm includes drilling breccia of pinkish gray (7.5YR 6/2) calcareous SILTSTONE.
		2				W P		
		3					5GY 4/1 To 5G 3/2	
		4		F				
		5		F C				
		CC				MP		

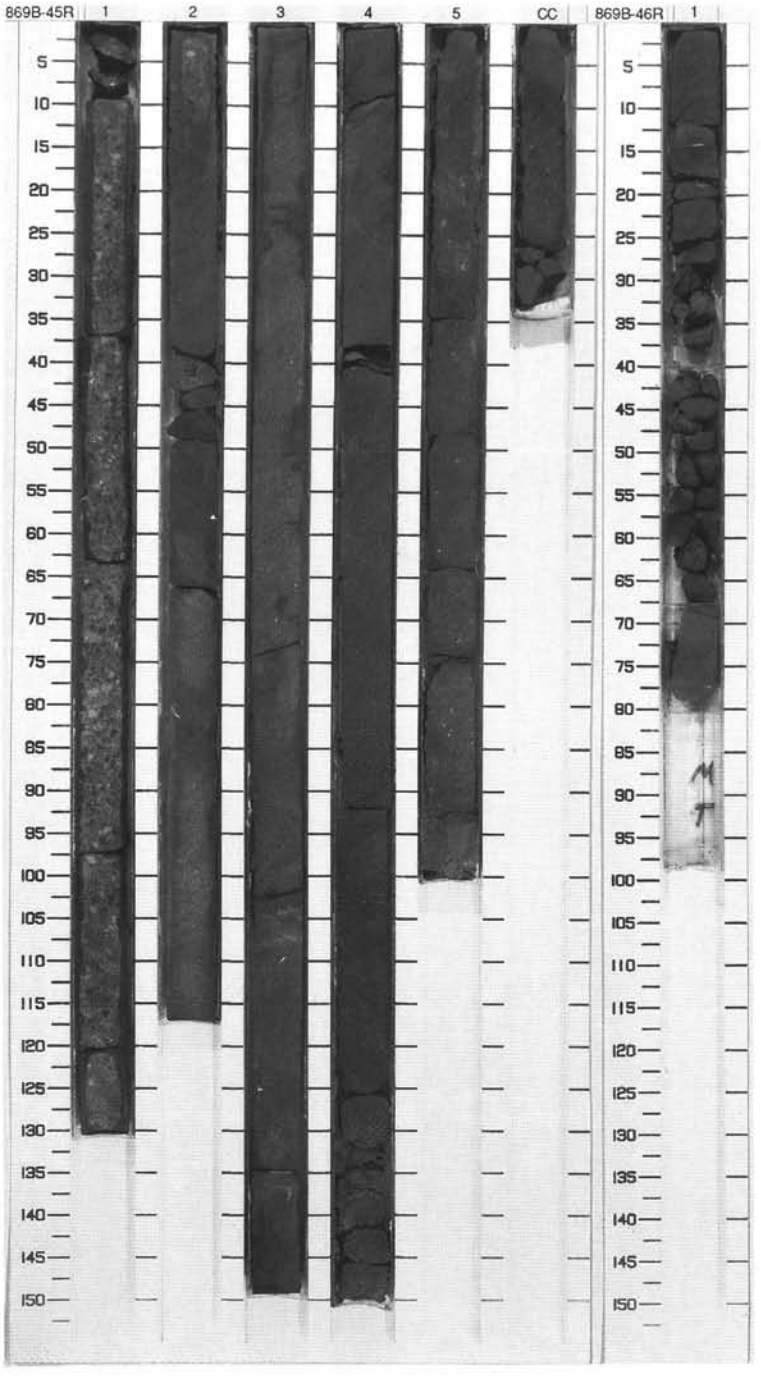


SITE 869 HOLE B CORE 45R CORED 555.3 - 564.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–6		1–5, CC	late Cenomanian	C, F		P, P, P, P	5G 3/2 To 5BG 3/2	VOLCANICLASTIC BRECCIA and VOLCANICLASTIC SANDSTONE Major Lithologies: VOLCANICLASTIC BRECCIA (Section 1, 0 cm to Section 2, 12 cm and Section 5, 0 cm to Section CC, 34 cm) of dusky green to dusky blue green (5G 3/2 to 5BG 3/2) matrix with grayish green (5G 4/2), dark gray to very dark gray (N4 to N3) and dark red to dark reddish brown (2.5YR 3/6 to 2.5YR 3/4) and olive (5Y 5/6) clasts, displaying fining-upward grain-size distribution in Section 1, 0–12 cm. VOLCANICLASTIC SANDSTONE (Section 2, 12 cm to Section 4, 150 cm), dusky green (5G 3/2), medium sand- to granule-sized, mostly massive, laminated in Section 3, 70–103 cm, Section 4, 0–13 and 60–70 cm. Prominent sharp contacts in Section 3, 72 cm and Section 4, 6 cm and 70 cm, where the dip ranges from 10 degrees to 45 degrees. Echinoid fragment occurs in Section 4, 103 cm.

SITE 869 HOLE B CORE 46R CORED 564.6 - 574.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	l. Cenomanian			MP	5G 3/2	VOLCANICLASTIC SANDSTONE Major Lithology: VOLCANICLASTIC SANDSTONE, dusky green (5G 3/2), fine to medium grain size, correlative to "Bouma C" and cross-bedded in 0–31 and 40–45 cm; coarse to very coarse sand-sized with occasional radiolarians in 45–80 cm. Minor Lithologies: The interval 0–1, 11–14 and 20–21 cm contains reddish brown (2.5YR 4/4) RADIOLARIAN SILTSTONE, slightly calcareous. The interval 31–39 cm includes thin mm- to cm-scale bedded, grayish green (10GY 5/2) SILTSTONE.



SITE 869 HOLE B CORE 47R CORED 574.3 - 583.9 mbsf

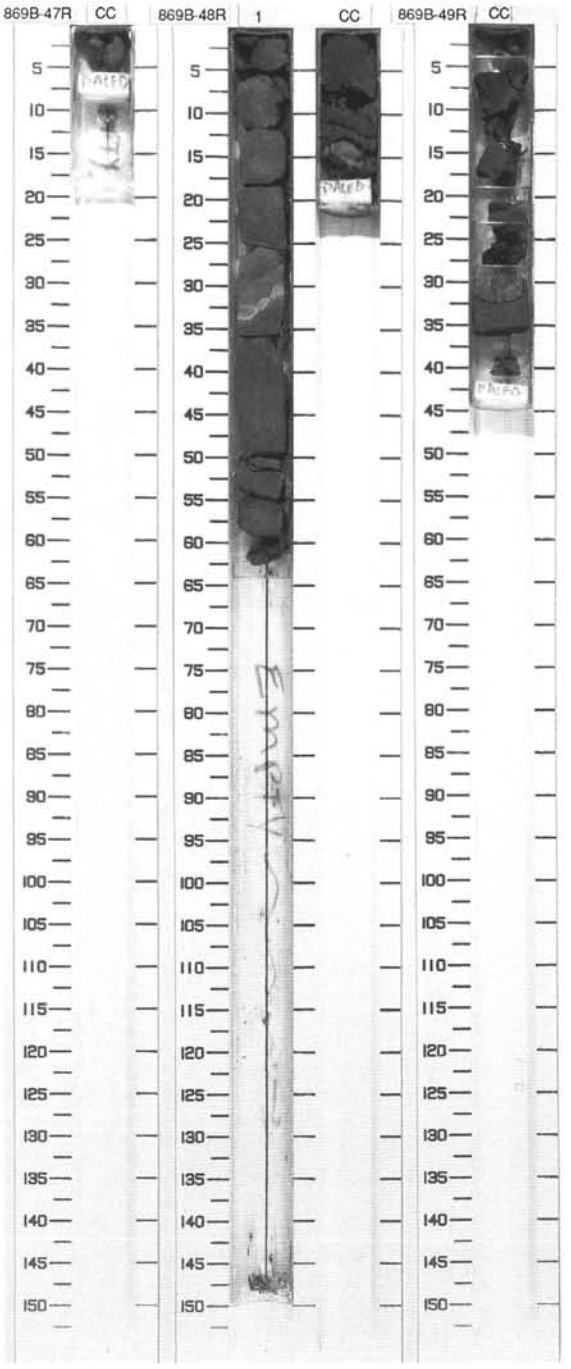
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	l. Cenomanian				5G 2/2	VOLCANICLASTIC SANDSTONE Major Lithology: VOLCANICLASTIC SANDSTONE, dark greenish gray, coarse-grained.

SITE 869 HOLE B CORE 48R CORED 583.9 - 593.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1 CC	l. Cenomanian			P P S SM	2.5G 5/0 To 2.5G 5/2	VOLCANICLASTIC SANDSTONE Major Lithology: VOLCANICLASTIC SANDSTONE, greenish gray (2.5G 5/0-5/2) with some larger fragments, notable in interval 12–18 cm. Clasts are dark green-black (2.5G 3/2) and lighter greenish gray (2.5G 6/0–6/2). Traces of bedding inclined at 40° to horizontal. Minor Lithologies: Section 1, 30–33 cm brecciated layer around 1 cm thick of light greenish-gray (2.5G 6/0–6/2) CLAYEY NANNOFOSSIL CHALK. Section CC, 8–9 cm and 13–16 cm lighter beige-gray (2.5G 8/0) CLAYEY CHALK.

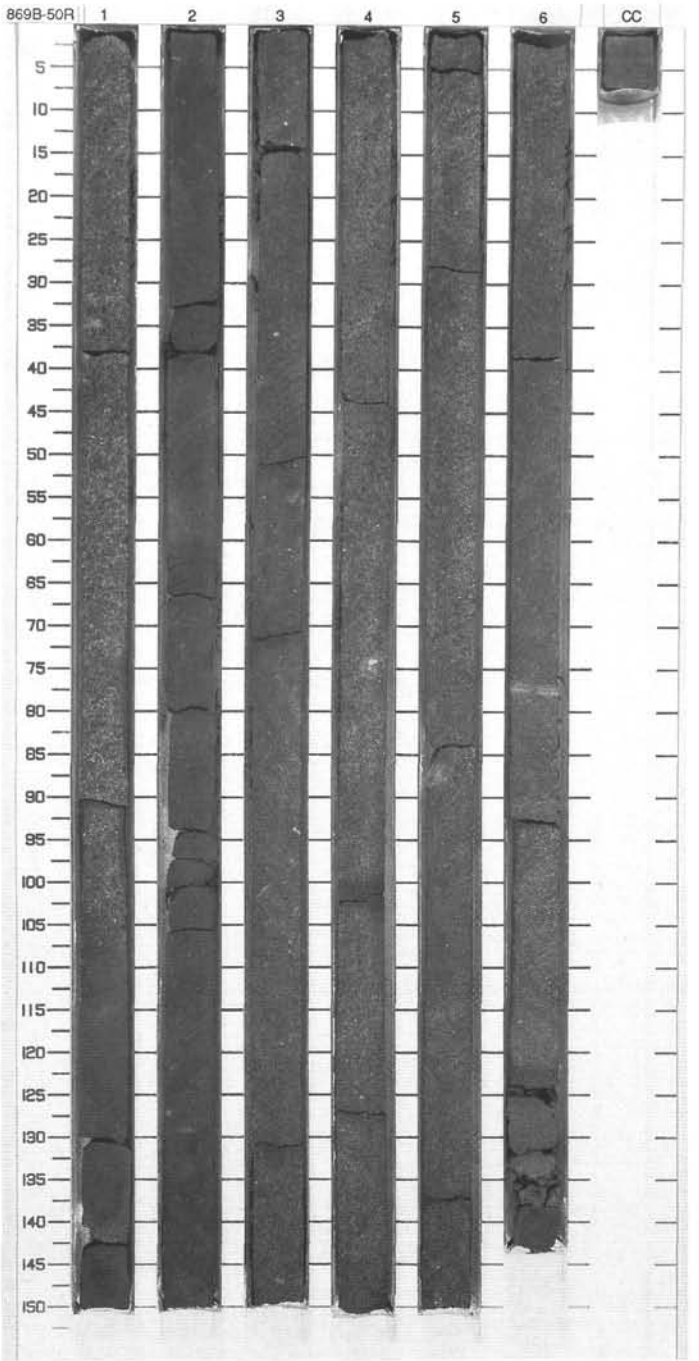
SITE 869 HOLE B CORE 49R CORED 593.5 - 603.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	l. Cenomanian			S S	2.5G 5/2	VOLCANICLASTIC SANDSTONE and CALCAREOUS CLAY Major Lithologies: VOLCANICLASTIC SANDSTONE, greenish gray (2.5G 5/2) with gray (2.5G 4/0) in greenish gray (2.5G 7/2) matrix and some gray brown (2.5G 6/2–10YR 5/3) CALCAREOUS CLAY. Minor Lithologies: At 1–3 cm there are 2 isolated pebbles of NANNOFOSSIL CLAYSTONE, light brown (7.5YR 6/4), and SILICIFIED CLAYSTONE, dark brown (7.5YR 3/2).

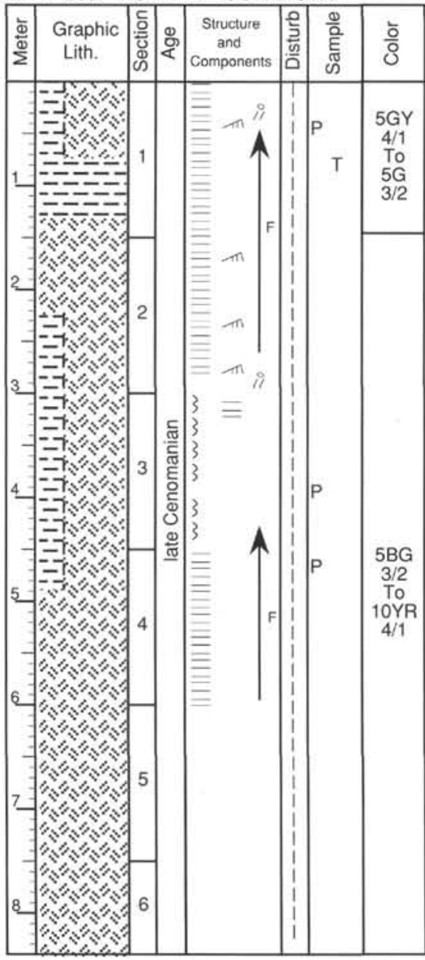


SITE 869 HOLE B CORE 50R CORED 603.2 - 612.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–8		1–6	late Cenomanian	↑ F; R; =		P; P P; P; M S P	5G 3/2	VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC BRECCIA Major Lithologies: VOLCANICLASTIC BRECCIA (Section 1, 0–111 cm) of dusky green (2.5G 3/2) matrix with dusky blue green to dusky green (5BG 3/2 to 5G 3/2) and dark red (2.5YR 3/0), subangular, granule- to small pebble-sized clasts, zeolitized, covering the underlying VOLCANICLASTIC SANDSTONE with a sharp contact which dips 35 degrees. VOLCANICLASTIC SANDSTONE (Section 1, 107 cm to Section CC, 7 cm), dusky green (5G 3/2), of coarse sand- to granule-sized dark gray to very dark gray (N3-N4) and dark red to dark reddish brown (2.5YR 3/6 to 2.5YR 3/4) volcaniclastic clasts. Contains white (N9) calcareous (biogenic) grains. The unit is mostly massive, with laminations in Section 6, 130 cm to Section CC, 7 cm and displays slightly fining-upward grain-size distribution from Section 6, 130 cm to Section 1, 107 cm. Minor Lithologies: Laminated SILTY CLAYSTONE, dark gray (N4), in Section 6, 131–137 cm. SILTSTONE, gray (N5), rounded (5 cm in diameter) and irregular-shaped clasts in Section 5, 83–87 cm and Section 6, 76–78 cm, respectively.



SITE 869 HOLE B CORE 51R CORED 612.7 - 622.4 mbsf

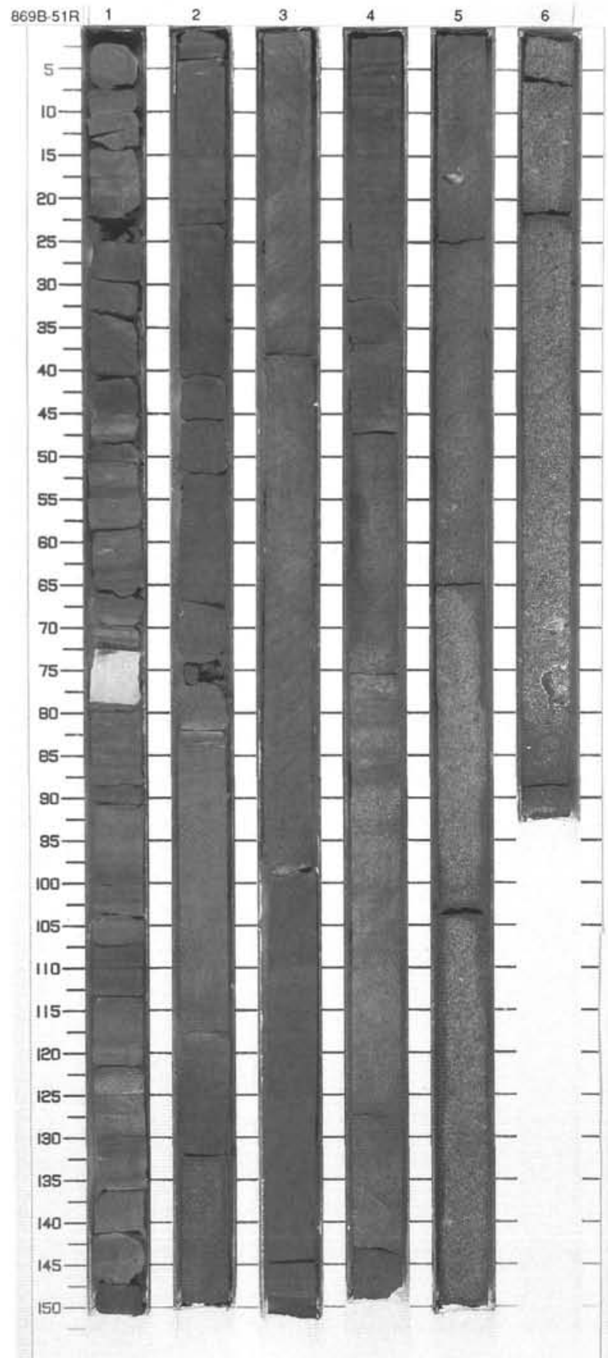


Description

VOLCANICLASTIC SILTY CLAYSTONE and VOLCANICLASTIC SANDSTONE

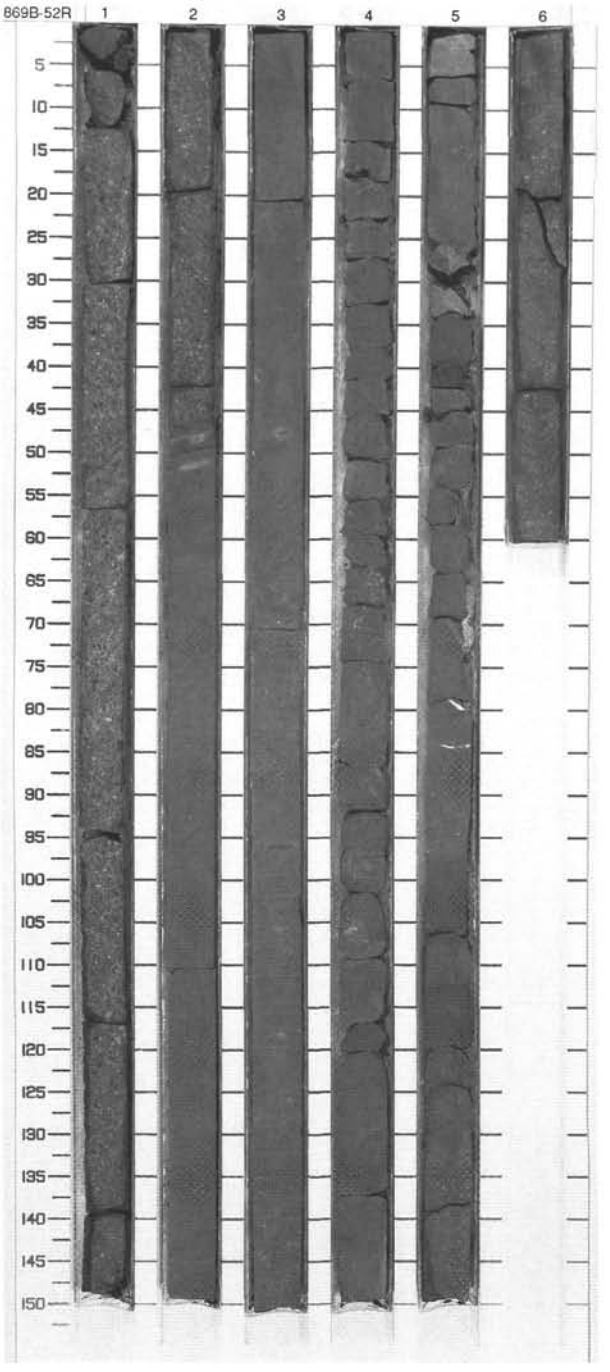
Major Lithologies:
VOLCANICLASTIC SILTY CLAYSTONE, dark gray (5GY 4/1) to dark greenish gray (10G 4/1), interbedded with VOLCANICLASTIC SANDSTONE, dusky green (5G 3/2 and 5BG 3/2) to dark greenish gray (10YR 4/1). The VOLCANICLASTIC SILTY CLAYSTONE intervals are mostly laminated, but can be massive or slightly bioturbated. The VOLCANICLASTIC SANDSTONE intervals consist of granule to fine-sand sized altered glass and rock-fragments. They are mostly laminated, or massive. Some cross-laminated intervals occur. The sediments are arranged in fining-upward sequences which comprise both VOLCANICLASTIC SILTY CLAYSTONE and VOLCANICLASTIC SANDSTONE. Water-escape structures occur in Section 1, 20–25 cm, and in Section 2, 118–119 cm. Section 4, 25–40 cm contains small coalified woody fragments within the sandstone.

Minor Lithology:
An interval of white (10YR 8/1) fine-grained LIMESTONE occurs in Section 1, 73–80 cm, which consists of silt-sized crystalline calcite.



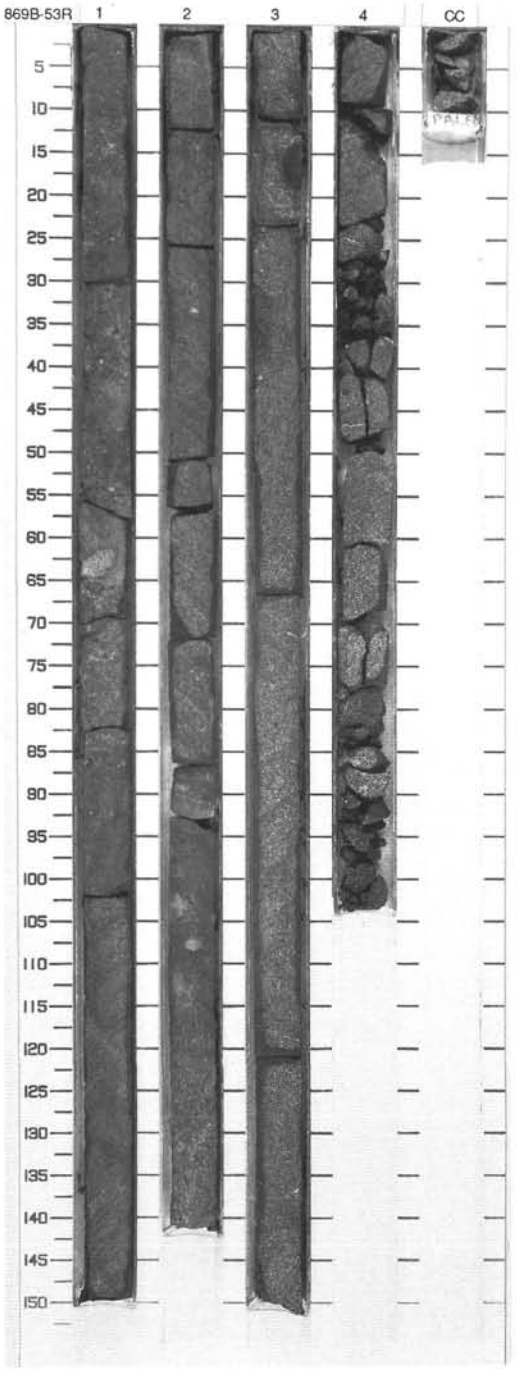
SITE 869 HOLE B CORE 52R CORED 622.4 - 632.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–8		1–6	late Cenomanian			P P P P P	5G 3/2; 5G 5/2 To 5G 4/1; 5G 5/2	VOLCANICLASTIC BRECCIA, VOLCANICLASTIC SILTSTONE, and VOLCANICLASTIC SANDSTONE Major Lithologies: VOLCANICLASTIC BRECCIA, dusky green (5G 3/2) in Section 1 and Section 2, 0–48 cm. The clasts are granule sized, and may be weak red (10YR 4/3) to dusky green (5G 3/2) in color. Section 2, 48 cm to Section 3, 120 cm comprises VOLCANICLASTIC SILTSTONE, grayish green (5G 5/2) to dark greenish gray (5G 4/1), mostly massive, with some laminated and some bioturbated horizons. Below Section 3, 101 cm, flattened lenticular-shaped mudstone intraclasts become more common, and increase downward into a VOLCANICLASTIC BRECCIA of sharp-edged, granule sized clasts in a silty matrix. At Section 4, 145 cm, there is a sharp contact with VOLCANICLASTIC SILTSTONE to VOLCANICLASTIC SANDSTONE, which becomes increasingly coarse-grained towards the bottom of the core. The contact at Section 4, 145 cm is inclined at an angle of 27°.



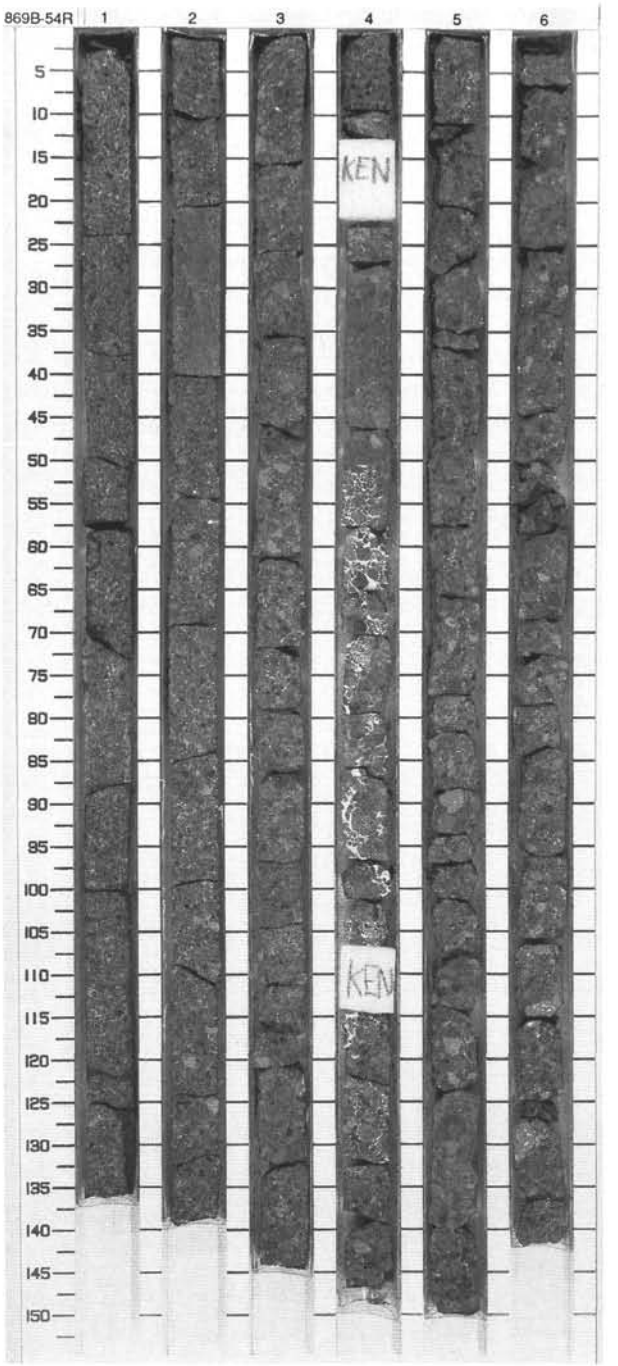
SITE 869 HOLE B CORE 53R CORED 632.0 - 641.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–5		1, 2, 3, 4, CC	late Cenomanian			P	5G 3/2	VOLCANICLASTIC SANDSTONE Major Lithology: VOLCANICLASTIC SANDSTONE, dusky green (5G 3/2), very coarse sand to granule size with occasional large pebble sized-clasts (< 2 cm in diameter). Clasts are white (N9), very dark gray (7.5YR N3), dusky green (5G 3/2) gray (10YR 5/1) and weak red (10YR 4/3) in color, both angular and subrounded in shape, of basaltic composition and have shadow zeolitic fringe cements. Imbrication in large clasts are recognized in part. Large, dark grayish brown (10YR 3/2) calcareous SILTSTONE clasts occurs in Section 3, 14–18 cm.



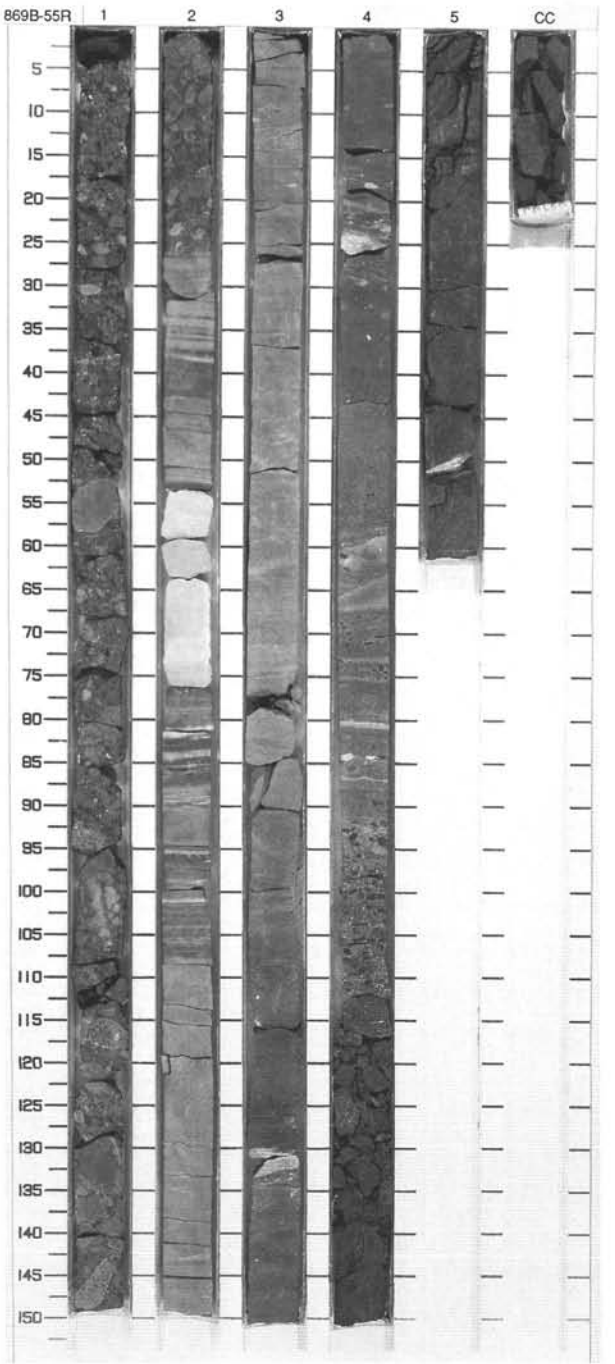
SITE 869 HOLE B CORE 54R CORED 641.8 - 651.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–8		1–6	late Cenomanian	F, C		P P P, P P P, P	5GY 2/1 To 5GY 3/1	VOLCANICLASTIC BRECCIA Major Lithology: VOLCANICLASTIC BRECCIA, dark greenish to greenish black (5GY 2/1 to 3/1). The clasts are angular to subangular, green and black but rarely reddish brown (5R 4/3). Coarsening downwards trend is present in Section 1, 80 cm to Section 4, 120 cm with transition from matrix to grain supported fabric. Clast size in Section 1 is 3–5 mm, maximum is 10mm; in Section 2 it is 5–10 mm, maximum is 15 mm; Section 3 it is 10–15 mm, maximum is 20 mm, Section 4 the maximum is 80 mm. Coarsening upwards trend is visible below Section 4, 120 cm and at the top of this pebbles are subrounded. Section 5 lacks noticeable grading. Subrounded and rounded pebbles occur throughout but angular and subangular pebbles dominate. Clast size is about 10–15 mm, maximum is 25–30 mm. White zeolitic rims are generally unevenly distributed, although in Section 5 they tend to be mainly below the clasts. They are also particularly abundant in Section 1, 0–15 cm and are present as thick pore filling cement in Section 4, 52–102 cm and as rims up to 1mm thick in Section 6 below 90 cm. Piece of bivalve shell present in Section 3, 25 cm.



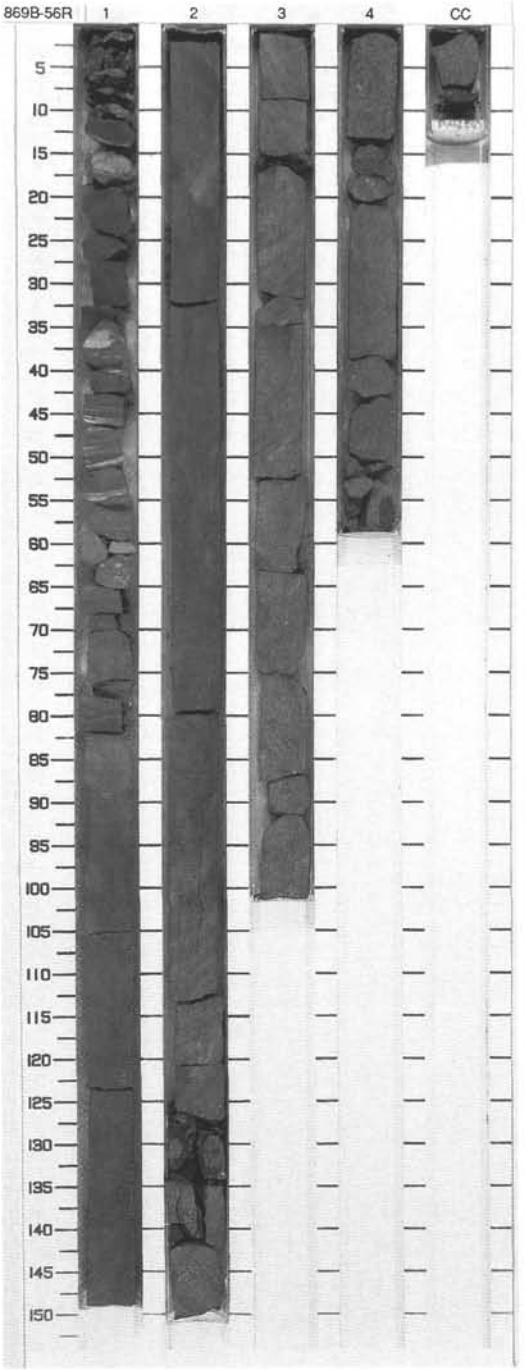
SITE 869 HOLE B CORE 55R CORED 651.5 - 661.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–6		1–5, CC	late Cenomanian	F		S T P P P P	5GY 2/1 To 5GY 3/2; 5BG 4/1; 5GY 7/1; 5GY 4/1; 5G 5/1; 5G 4/1; 5GY 2/1	VOLCANICLASTIC SANDSTONE, VOLCANICLASTIC BRECCIA, SILTY CLAYSTONE, and CLAYEY SILTSTONE Major Lithologies: Section 1, 0 cm to Section 2, 26 cm contains VOLCANICLASTIC BRECCIA, greenish black to grayish olive green (5GY 2/1 to 5GY 3/2), of fine-grained matrix with densely distributed, angular to subrounded clasts (mostly 10–30 mm in diameter; up to 65 mm in diam.) with matrix supported texture. Section 2, 26–51 cm contains 2 sedimentary cycles (26–42, 42–51 cm) of VOLCANICLASTIC SILTY CLAYSTONE, dark greenish gray (5BG 4/1), with interbeds of very dark gray to black (N2 to N4) VOLCANICLASTIC SANDSTONE which thins upwards in each cycle. Section 2, 51–76 cm contains CLAYEY LIMESTONE, light bluish gray (5GY 7/1), massive in the upper part and laminated (cm-scale) in the lower part, with abundant nannofossils. Section 2, 51 cm to Section 3, 85 cm contains VOLCANICLASTIC SILTSTONE, dark greenish gray (5GY 4/1), with parallel laminated intervals in Section 2, 76–88 cm and 95–107 cm and Section 3, 26–85 cm, cross- laminated in Section 3, 88–90 cm. Section 3, 85 cm to Section 4, 30 cm contains VOLCANICLASTIC SANDSTONE, dark greenish gray, fine- to medium-grained displaying cross- and convolute-laminations and fining upward grain-size distribution. Section 4, 30–132 cm contains VOLCANICLASTIC SANDSTONE to BRECCIA of fine-grained, dark greenish gray matrix with subangular to subrounded, granule- to pebble-sized clasts of volcaniclastic siltstone, mostly showing parallel laminations, partly cross-laminated (Section 4, 59–68 cm), with white (10Y 8/1) zeolitic layers. Section 4, 132 cm to Section CC, 22 cm contains VOLCANICLASTIC SANDSTONE, greenish black (5GY 2/1), coarse-grained, fining upwards.



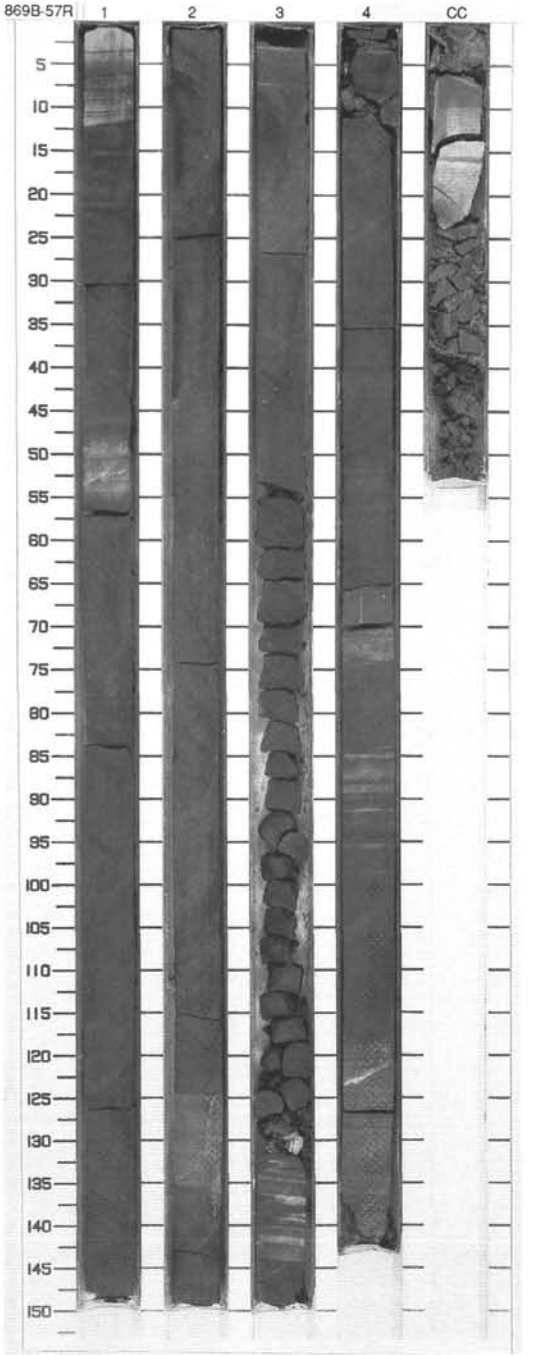
SITE 869 HOLE B CORE 56R CORED 661.2 - 670.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–4		1, 2, 3, 4, CC	late Cenomanian	F		P, P P, P P, M	5G 3/2; 5GY 2/1	VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE Major Lithologies: VOLCANICLASTIC BRECCIA (Section 1, 0–10 cm), dusky green (5G 3/2) of coarse-grained volcaniclastic matrix with dark gray (N4) clasts, zeolitized. Cross-laminated VOLCANICLASTIC SANDSTONE (Section 1, 10–20 cm), dusky green (5G 3/2), locally with brecciated , pale green (5G 3/2) clasts. Massive, fine-grained VOLCANICLASTIC SANDSTONE (Section 1, 20–35 cm), dusky green (5G 3/2). Alternation of dusky green (5G 3/2) VOLCANICLASTIC SANDSTONE and weak red (2.5YR 4/2) VOLCANICLASTIC SILTSTONE (Section 1, 35–59 cm), with white (10Y 8/2), mm-thick zeolitic layers, cross-laminated. SILTSTONE (Section 1, 59–70 cm), gray (N5) to very dark gray (N3), partly thinly-laminated (mm-scale). VOLCANICLASTIC SANDSTONE (Section 1, 70–92 cm), dusky green (5G 3/2) to pale green (5G 6/2), displaying cross-lamination in 70–81 cm and parallel lamination in 81–92 cm. Section 1, 92 cm to Section CC, 11 cm contains VOLCANICLASTIC SANDSTONE, greenish black (5GY 2/1), fining upward, massive, with white zeolite cements.



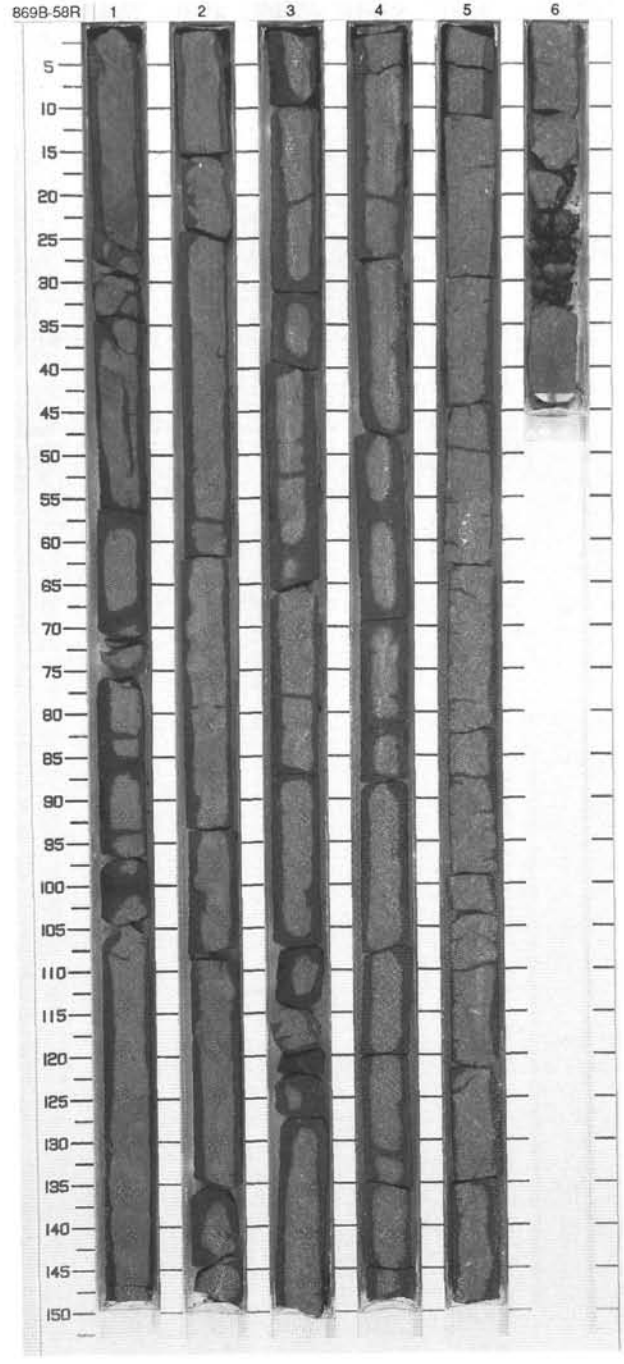
SITE 869 HOLE B CORE 57R CORED 670.7 - 680.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–6		1, 2, 3, 4, CC	late Cenomanian	F		P	5GY 2/1 To 5GY 4/1; 10G 3/2 To 10G 4/2	VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE Major Lithologies: VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE, greenish black (5GY 2/1) to dark greenish gray (5GY 4/1) and dusky green (10G 3/2) to grayish green (10G 4/2). Cm-scale bedding occurs in Section 1, 10–80 cm, and from Section 3, 132 cm to Section CC, 45 cm. Mm-scale bedding and cross-bedding occurs in Section 2, 135–150 cm, and in several places throughout Section 4. Everywhere else, it is massive. A scoured contact of VOLCANICLASTIC SILTSTONE overlain by VOLCANICLASTIC SANDSTONE occurs at Section 4, 121 cm. Minor Lithology: Thin intervals of CALCAREOUS SILTSTONE occur in Section 1, 0–10 cm, and Section 2, 125–135 cm. The sediments in these intervals contain abundant nannofossils. The VOLCANICLASTIC SILTSTONE in Section 3, 132–150 cm and in Section CC is also slightly calcareous.



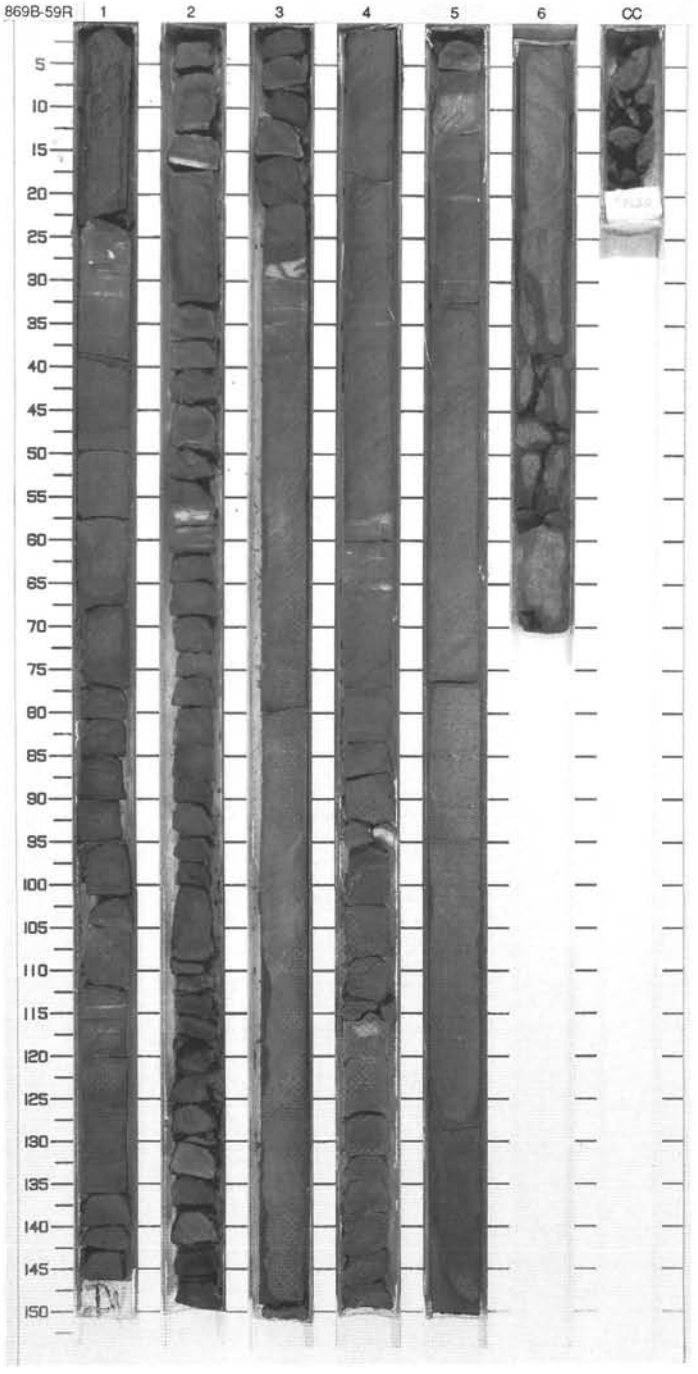
SITE 869 HOLE B CORE 58R CORED 680.4 - 690.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–7		1–6	late Cenomanian	F; C; F; F		P; P	5GY 2/1	VOLCANICLASTIC SANDSTONE Major Lithology: VOLCANICLASTIC SANDSTONE, greenish black (5GY 2/1). Several fining upward intervals occur, which range from granule- and pebble-sized in Section 1, 2, and 3 to silt-sized in Section 6. Large vertical fractures filled with white zeolites occur in Section 2, 136–150 cm, Section 3, 0–50 cm, and in Section 4, 30–100 cm. Rare sand-size carbonate fragments occur in Section 2.



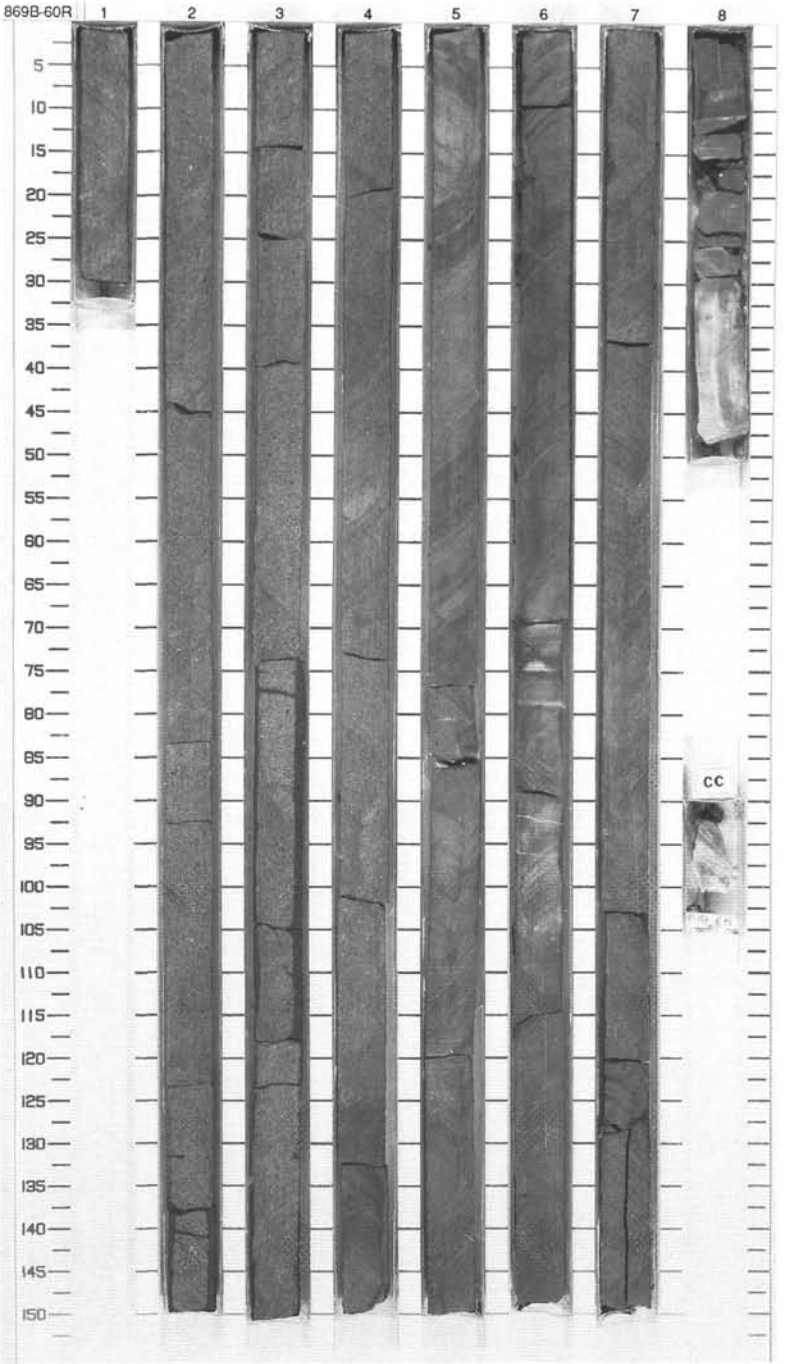
SITE 869 HOLE B CORE 59R CORED 690.0 - 699.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–8		1–6, CC	late Cenomanian	F		P, I, P, P, P, P	5GY 4/1; 5GY 6/1	VOLCANICLASTIC SANDSTONE Major Lithology: VOLCANICLASTIC SANDSTONE, dusky green (5G 3/2) to dark gray (5GY 4/1) and greenish gray (5GY 6/1). Grain size ranges from very fine to very coarse-grained, commonly arranged in fining-upward intervals up to 100 cm thick. Some massive intervals occur. Lamination and cross-lamination are common, particularly in Section 4 and Section 5. Section 2, 17–20 cm contains radiolarians. Minor Lithology: Thin beds of VOLCANICLASTIC SILTSTONE, greenish-gray (5GY 6/1) to gray (5GY 5/1) occur in Section 1, 23–59 cm, Section 2, 12–16 cm, and Section 4, 56–64 cm and 117–124 cm. These beds are slightly calcareous.



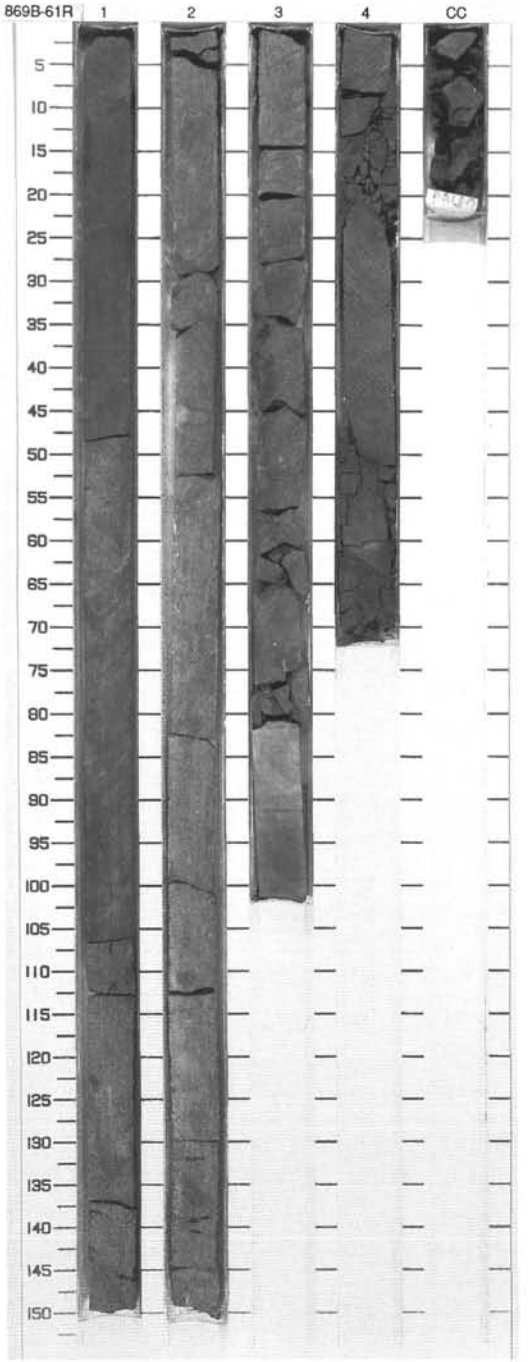
SITE 869 HOLE B CORE 60R CORED 699.7 - 709.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–9		1–8, CC	late Cenomanian	F, C, F		P, P, P, P, M	5GY 4/1 To 5BG 4/1; 5Y 6/1	VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE Major Lithologies: Section 1, 0 cm to Section 4, 125 cm contains VOLCANICLASTIC SANDSTONE, dark greenish gray (5GY 4/1 to 5BG 4/1), of coarse grained matrix with granule- to small pebble-sized, very dark gray to black (N3 to N2) and dark red (2.5YR 3/6) clasts, matrix-supported, massive, zeolitized, covering the underlying, finer VOLCANICLASTIC SANDSTONE with sharp contact in Section 4, 125 cm. Section 4, 125 cm to Section 6, 65 cm includes VOLCANICLASTIC SANDSTONE, dark greenish gray (5GY 4/1 to 5BG 4/1), of medium- to fine grained-matrix, with black (N2), granule-sized clasts, zeolitized, fining upward from Section 4, 125 cm to Section 6, 30 cm and coarsening-upward in Section 6, 30–65 cm. The clasts are more sparsely distributed than the upper interval of Section 1, 0 cm to Section 4, 125 cm. Section 6, 65 cm to Section 8, 10 cm contains VOLCANICLASTIC SANDSTONE, dark greenish gray (5GY 4/1), very coarse- to very fine-grained, displaying fining-upward grain-size distribution throughout, laminated in Section 6, 65–83 cm, zeolitized. Section 8, 10 cm to Section CC, 24 cm contains VOLCANICLASTIC SILTSTONE and VOLCANICLASTIC SANDSTONE. VOLCANICLASTIC SILTSTONE is greenish gray to gray (5G 6/1 to 5Y 6/1) with mm-thick very fine sand layers (Section 8, 10–30 cm), or gray (5Y 6/1), massive. VOLCANICLASTIC SANDSTONE is pale green (10YR 6/2) in color, fine- to very fine-grained with white zeolite cement, containing radiolarians replaced with zeolite.



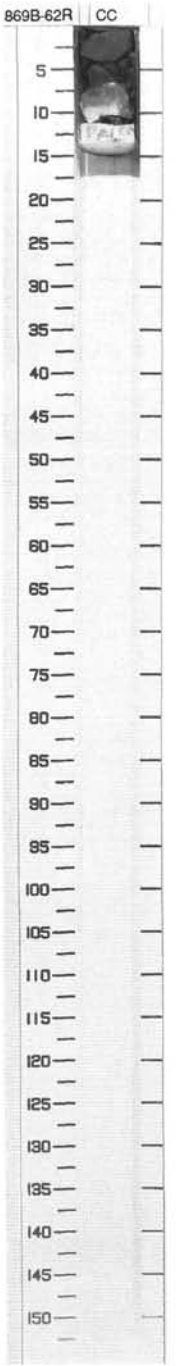
SITE 869 HOLE B CORE 61R CORED 709.4 - 719.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2 3 4		1 2 3 4 CC	late Cenomanian	F F		P P P P P P	5G 4/1 To 5Y 3/2	VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC CONGLOMERATE Major Lithologies: VOLCANICLASTIC SANDSTONE, dark green-gray (5G 4/1–5Y 3/2). Clasts in Section 1 are black (5Y 2.5/1), smaller red (2.5Y 4/4) fragments. In Section 2 there is also a larger vesiculate, brown (2.5YR 4/2) lithology, one vesiculate green (5Y 5/2) clast and the black clasts are rimmed by green. A major fining upwards trend extends from top of Section 3 to Section 1, 28 cm, below which there is a break in lithology. Section 1 is a medium to coarse sand with some granules up to 3 mm. Section 2 to Section 3, 25 cm is a VOLCANICLASTIC BRECCIA with average clast size of 1–3 mm, (max. of 8 mm) floating in a VOLCANICLASTIC SANDSTONE matrix. Section 3, 25–82 cm is VOLCANICLASTIC SANDSTONE with numerous larger dispersed granules (mode 1–2 mm, max. 3 mm). A second major fining upwards trend occurs from Section CC to end of Section 3, 82 cm. This consists of VOLCANICLASTIC SANDSTONE with some larger mm-sized black clasts. Planar laminated intervals are found at the base of Section 3 and the top of Section 4. Clasts are generally angular and subangular and notably irregular in Section 3, 25–82 cm. In Section 2, 50–87 cm white veins run obliquely through the core. There is apparently no calcareous component in this lithology.



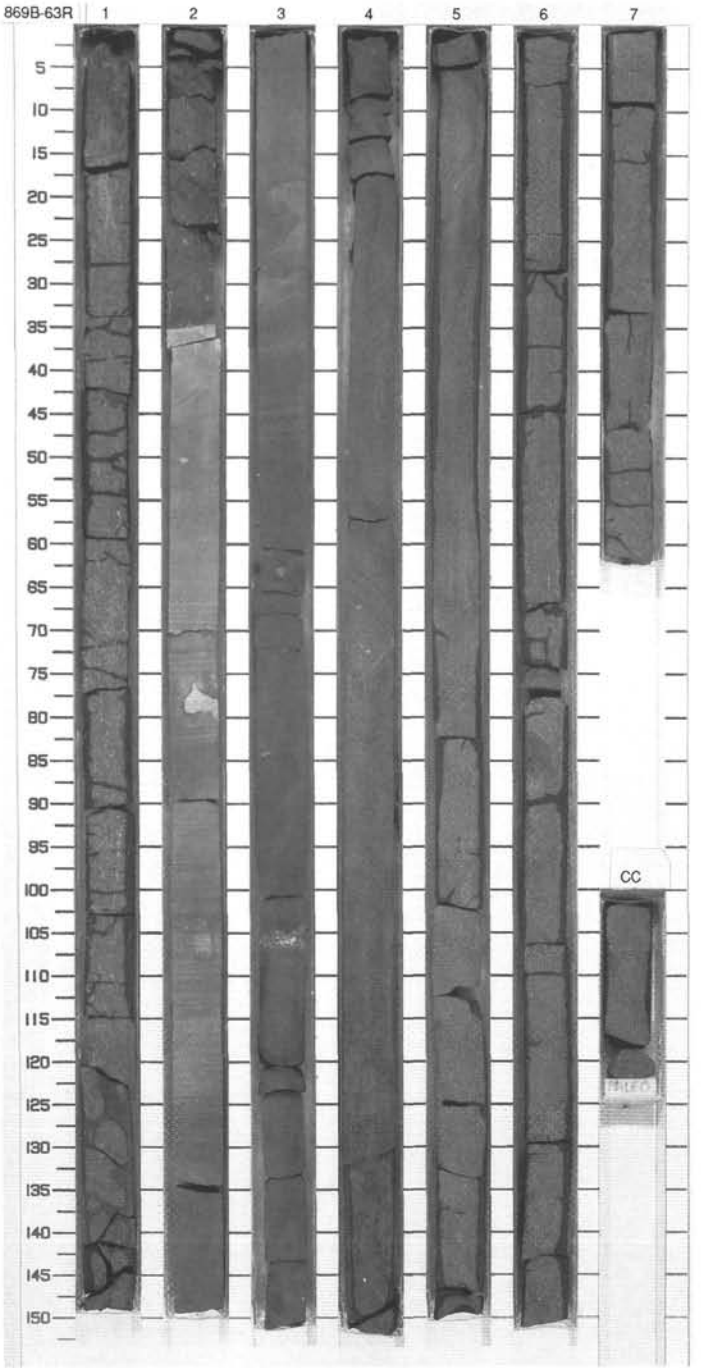
SITE 869 HOLE B CORE 62R CORED 719.1 - 728.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	l. Cenoman.			S	5G 4/1	VOLCANICLASTIC SANDSTONE and CALCAREOUS CLAYSTONE Major Lithologies: VOLCANICLASTIC SANDSTONE, dark green (5G 4/1), coarse with some mm-sized dark green to black clasts and CALCAREOUS CLAYSTONE (at 10–14 cm), light gray-green (5G 6/1) with some darker inclusions (5BG 5/1).



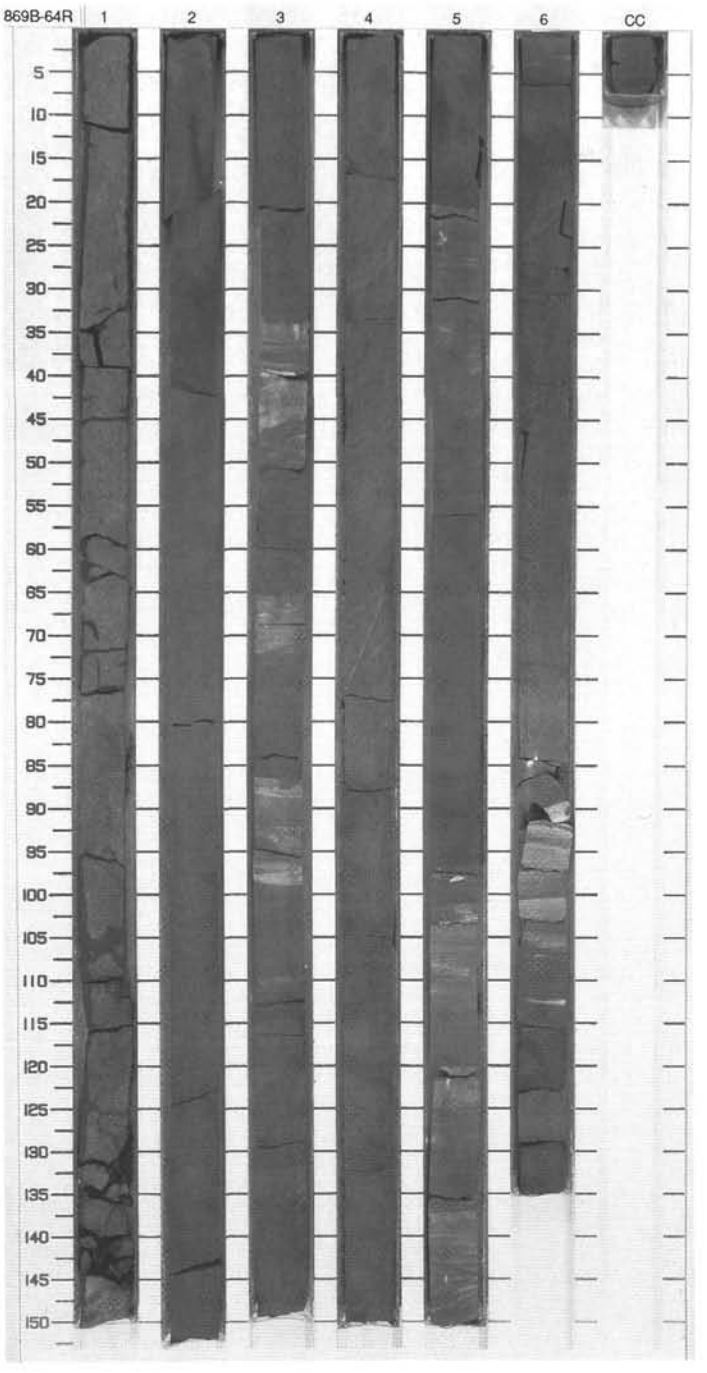
SITE 869 HOLE B CORE 63R CORED 728.7 - 738.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–9		1–7, CC	late Cenomanian	F		P, P, P, P, P, MP	5G 3/2; 10GY 5/2 To 5G 4/2; 5GY 6/1 To 5G 3/2	VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE Major Lithologies: Section 1, 0 cm to Section 2, 35 cm contains VOLCANICLASTIC SANDSTONE, of fine-grained matrix with sparse clasts (Section 1, 0–15 and Section 1, 117 cm to Section 2, 35 cm) or medium-grained matrix with dense clasts (Section 1, 15–17 cm), massive, matrix-supported, zeolitized. The clasts are granule- to small pebble-sized, dark gray to black (N4 to N2), grayish green (5G 5/2) and red (2.5YR 4/6) and angular. VOLCANICLASTIC SILTSTONE (Section 2, 35 to Section 3, 107 cm), grayish green (10GY 5/2 to 5G 4/2), with occasional pebble-sized clasts massive in Section 2, 35–68 cm and 128 cm to Section 3, 17 cm and Section 3, 60–107 cm; laminated in Section 2, 68–128 cm and Section 3, 34–60 cm; slumping in Section 3, 17–34 cm. Small, pebble-sized, subangular to subrounded clasts of VOLCANICLASTIC SILTSTONE occur at the bottom (Section 3, 101–102 and 107–150 cm). Section 3, 107 cm to Section CC, 22 cm contains VOLCANICLASTIC SANDSTONE, grayish green to grayish olive green (5GY 6/1 to 5GY 3/2) fine- to very coarse-grained, displaying fining- upward grain-size distribution, with black (N2), speck-like grains (clasts) in Section 4, 0–150 cm and granule- to small pebble-sized, angular clasts in Section 5, 0 cm to Section CC, 22 cm, massive, zeolitized.



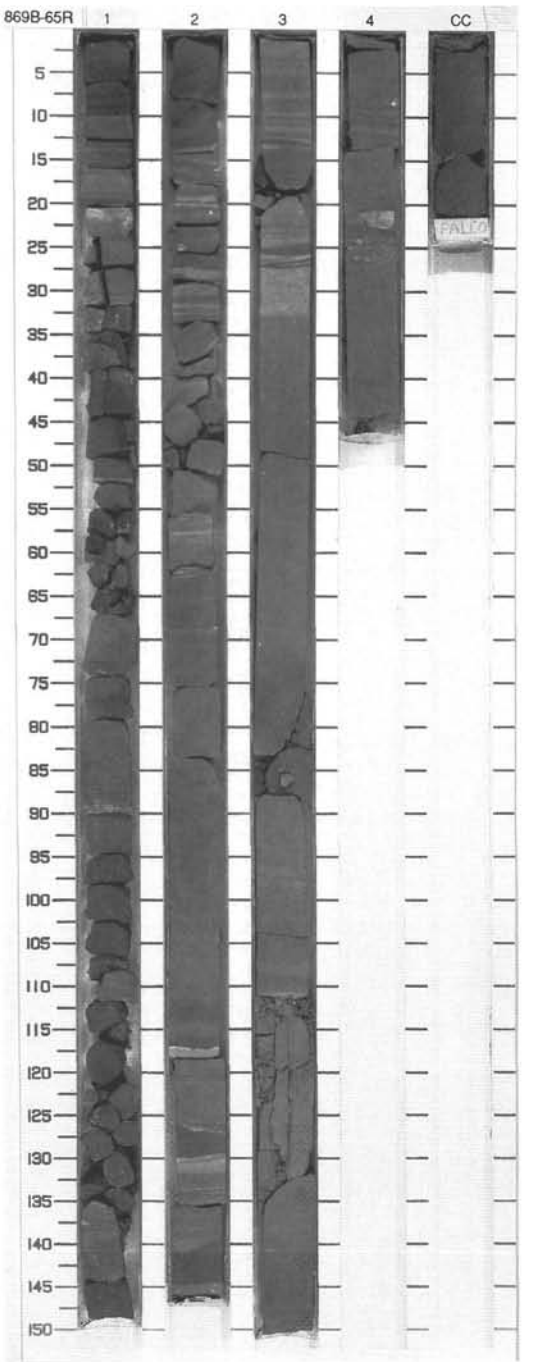
SITE 869 HOLE B CORE 64R CORED 738.4 - 747.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–8		1–6	late Cenomanian	F		P, M P	5G 3/2; 5G 4/2 To 5G 4/1; 5G 4/1 To 5G 5/1	VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE Major Lithologies: VOLCANICLASTIC SANDSTONE (Section 1, 0–146 cm), dusky green (5G 3/2), of coarse grained matrix with densely distributed, black to dark gray (N2 to N4) and greenish gray (10GY 5/2), granule-sized, angular clasts (Section 1, 0–78 cm) and of medium-grained matrix with sparsely scattered clasts (Section 1, 78–146 cm). The contact between these intervals dips 35 degrees. Section 1, 146 cm to Section 3, 33 cm contains VOLCANICLASTIC SANDSTONE, grayish green to dark greenish gray (5G 4/2 to 5G 4/1), fine-to medium-grained, mostly massive, laminated in Section 2, 20–40 cm. Section 3, 33–65 cm, Section 3, 65–86 cm, Section 3, 86 cm to Section 4, 104 cm, Section 4, 104 cm to Section 5, 20 cm, Section 5, 20–96 cm, Section 5, 96–120 cm, Section 5, 120–136 cm, Section 5, 136 cm to Section 6, 90 cm and Section 6, 90 cm to Section CC, 7 cm are composed of repeated intervals of VOLCANICLASTIC SILTSTONE to VOLCANICLASTIC SANDSTONE, dark greenish gray (5G 4/1 to 5G 5/1), displaying fining-upward grain-size distribution. Each unit covers the underlying one with sharp erosive contact.



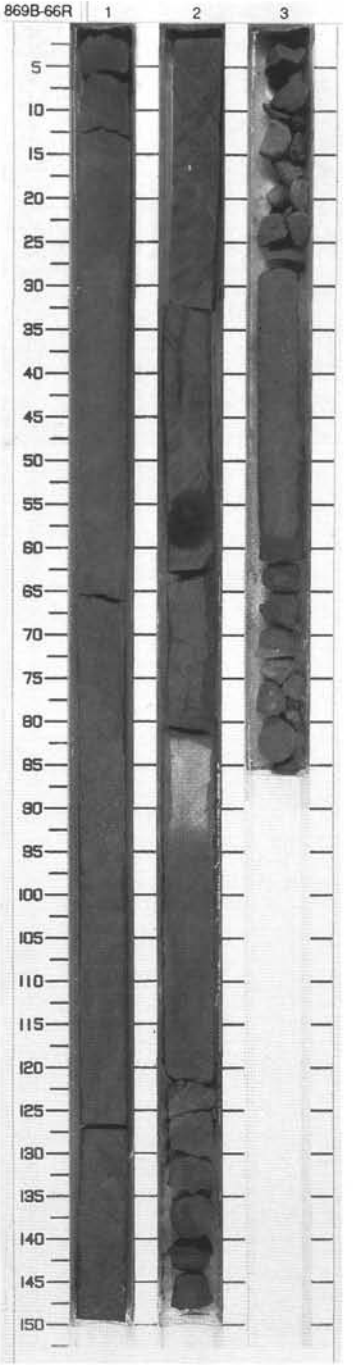
SITE 869 HOLE B CORE 65R CORED 747.9 - 757.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2 3 4 5		1 2 3 4 CC	late Cenomanian	F F F F F F F		P P P P P P MP	5G 5/1 To 5G 4/1	VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE Major Lithologies: Section1, 9–51 cm, Section 1, 51–89 cm, Section 1, 89 cm to Section 2, 12 cm, Section 2, 12–118 cm, Section 2, 118 cm to Section 3, 18 cm, Section 3, 88–110 cm and Section 3, 110 cm to Section CC, 24 cm consists of repeated intervals of VOLCANICLASTIC SILTSTONE (greenish gray; 5G 5/1) to VOLCANICLASTIC SANDSTONE (dark greenish gray; 5G 4/1) displaying fining-upward grain-size distribution with parallel lamination in most parts. Minor Lithology: Organic-rich (?) layer in Section 2, 19 cm.



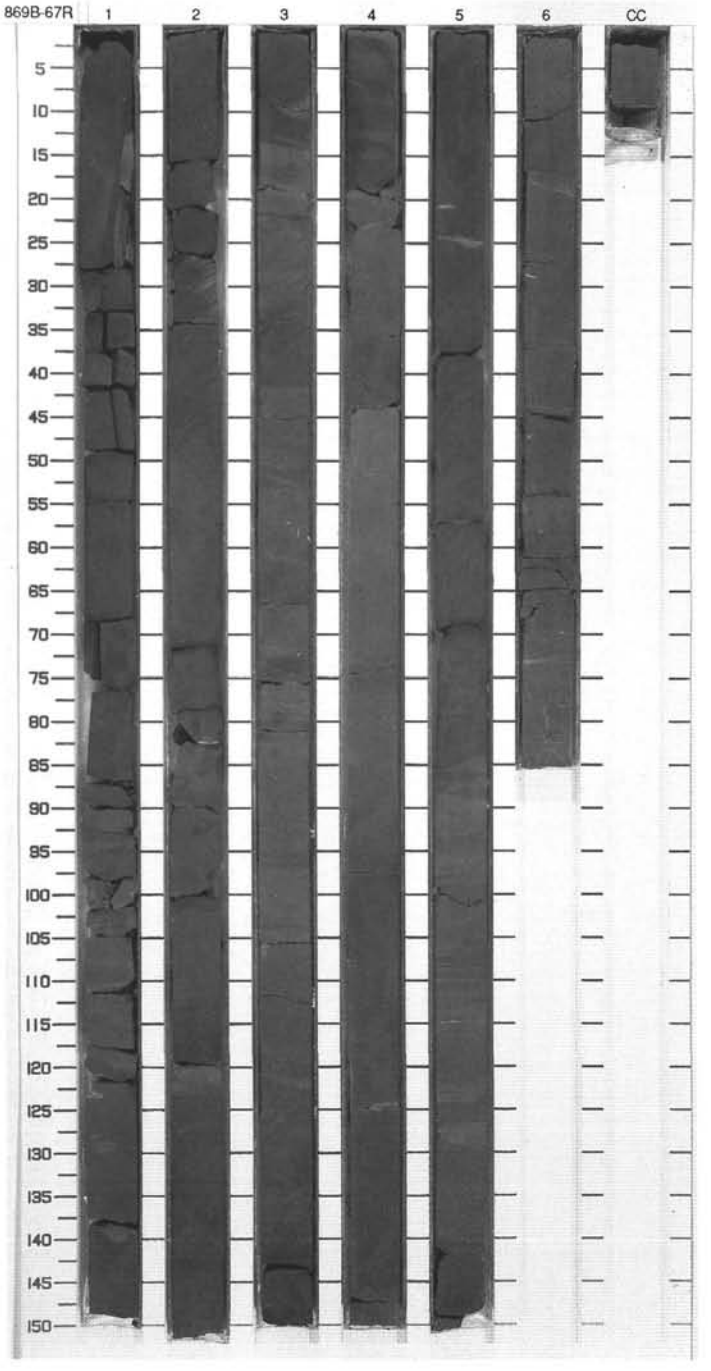
SITE 869 HOLE B CORE 66R CORED 757.6 - 767.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–3		1, 2, 3	late Cenomanian	F		P, P, P	5G 4/1; 5G 5/1; 5G 4/1	VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE Major Lithologies: Section 1, 0 cm to Section 2, 83 cm contains VOCANICLASTIC SANDSTONE, dark greenish gray (5G 4/1), medium-grained, massive, covering underlying interval with sharp, erosive contact. Section 2, 83 cm to Section 3, 28 cm includes greenish gray (5Y 5/1), laminated VOLCANICLASTIC SILTSTONE (Section 2, 83–94 cm) and dark greenish gray (5G 4/1) VOLCANICLASTIC SANDSTONE (Section 2, 94 cm to Section 3, 28 cm). Section 3, 28–72 cm contains VOLCANICLASTIC SANDSTONE, dark greenish gray (5G 4/1), medium grained, massive. Drilling breccia (Section 3, 72–86 cm) includes VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE.

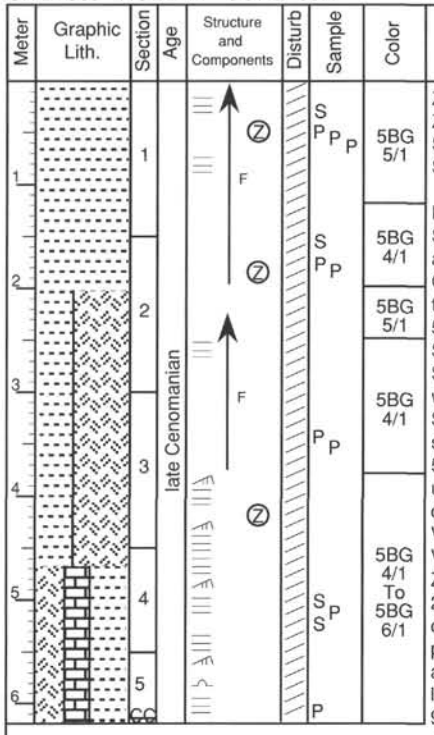


SITE 869 HOLE B CORE 67R CORED 767.3 - 776.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1–8		1–6	late Cenomanian	F		P	5G 4/1 To 5G 5/1	VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE Major Lithologies: Section 1, 0 cm to Section CC, 7 cm includes repeated intervals of VOLCANICLASTIC SANDSTONE and VOLCANICLASTIC SILTSTONE, with erosional bases, displaying fining-upward grain-size distribution. The broader intervals include "Ta to Td" in the sense of Bouma sequence, whereas the shorter intervals consists of "Tc to Te".
							5G 5/1	
							5G 4/1	
							5G 6/1 To 5G 4/1	



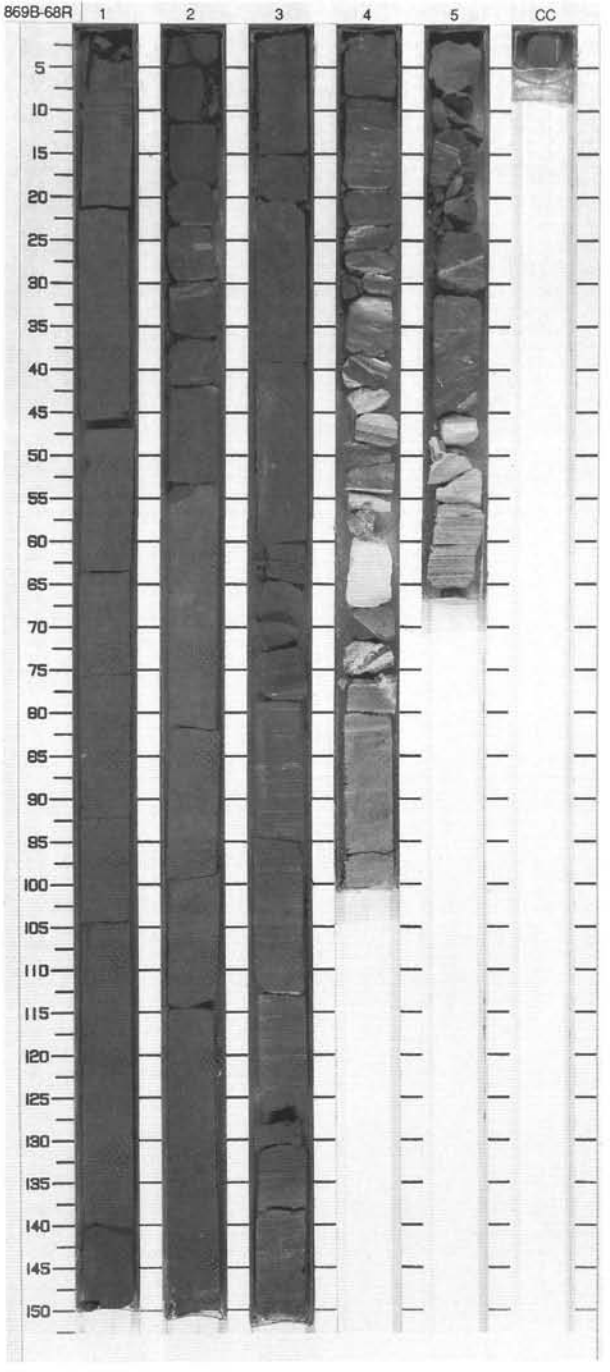
SITE 869 HOLE B CORE 68R CORED 776.9 - 786.6 mbsf



Description

ZEOLITIC CLAYSTONE, CLAYEY ZEOLITITE, VOLCANICLASTIC SILTSTONE, and VOLCANICLASTIC SANDSTONE

Major Lithologies:
Section 1–3 and Section 4, 1–25 cm are ZEOLITIC CLAYSTONE and CLAYEY ZEOLITITE, greenish gray to darker greenish gray (5BG 5/1–4/1). This interval fines upwards. Section 1, 0–10 cm is laminated and Section 1, at 25 cm and 75–85 cm are weakly laminated. Burrows occur at Section 1, 14–19 cm. There is a sharp erosional contact at Section 2, 55 cm and below this is another fining upwards interval from Section 3, 80 cm to Section 2, 55 cm grading from VOLCANICLASTIC SANDSTONE to VOLCANICLASTIC SILTSTONE to ZEOLITIC CLAYSTONE. At Section 2, 100 cm there are mm-sized black clasts and at 145 cm there is a 10 mm probable basalt clast surrounded by a light colored zeolitic rim. Faint lamination occurs in Section 2, 90–107 cm. A sharp erosional contact occurs at Section 3, 80 cm. Section 3, 79–150 cm and Section 4, 0–25 cm are VOLCANICLASTIC SILTSTONE and ZEOLITIC CLAYSTONE, dark greenish gray (5BG 4/1–5/1) with intervals of parallel and cross lamination. At Section 3, 122 cm is a 1 cm thick interbed with submillimetric gray intraclasts. Section 4, 25–76 cm consists of interbedded NANNOFOSSIL CHALK, faintly laminated (60–68 cm), CALCAREOUS VOLCANICLASTIC CLAYSTONE, cross laminated and in places slumped, CLAYSTONE and CHERT. Section 4, 75–100 cm has some inclined laminations. Section 5, 0–45 cm is ZEOLITIC CLAYSTONE with cross lamination and slumps. Section 5, 45–67 cm is CLAYEY CHALK and CALCAREOUS CLAYSTONE with some inclined laminations.



SITE 869 HOLE B CORE 69R CORED 786.6 - 796.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1 2		1 2	late Cenomanian	F		I P P	5BG 4/1 To 5BG 6/1	VOLCANICLASTIC SANDSTONE, VOLCANICLASTIC SILTSTONE, VOLCANICLASTIC CLAYSTONE, and CLAYEY LIMESTONE Major Lithologies: Interbedded VOLCANICLASTIC SANDSTONE, VOLCANICLASTIC SILTSTONE, VOLCANICLASTIC CLAYSTONE, and CLAYEY LIMESTONE light greenish gray to dark greenish gray (5BG 4/1-6/1). Intervals of parallel lamination at Section 1, 20–30 cm (where it is inclined), 40–50 cm, and 125–150 cm and most of Section 2.