SITE 872 HOLE A CORE 1H

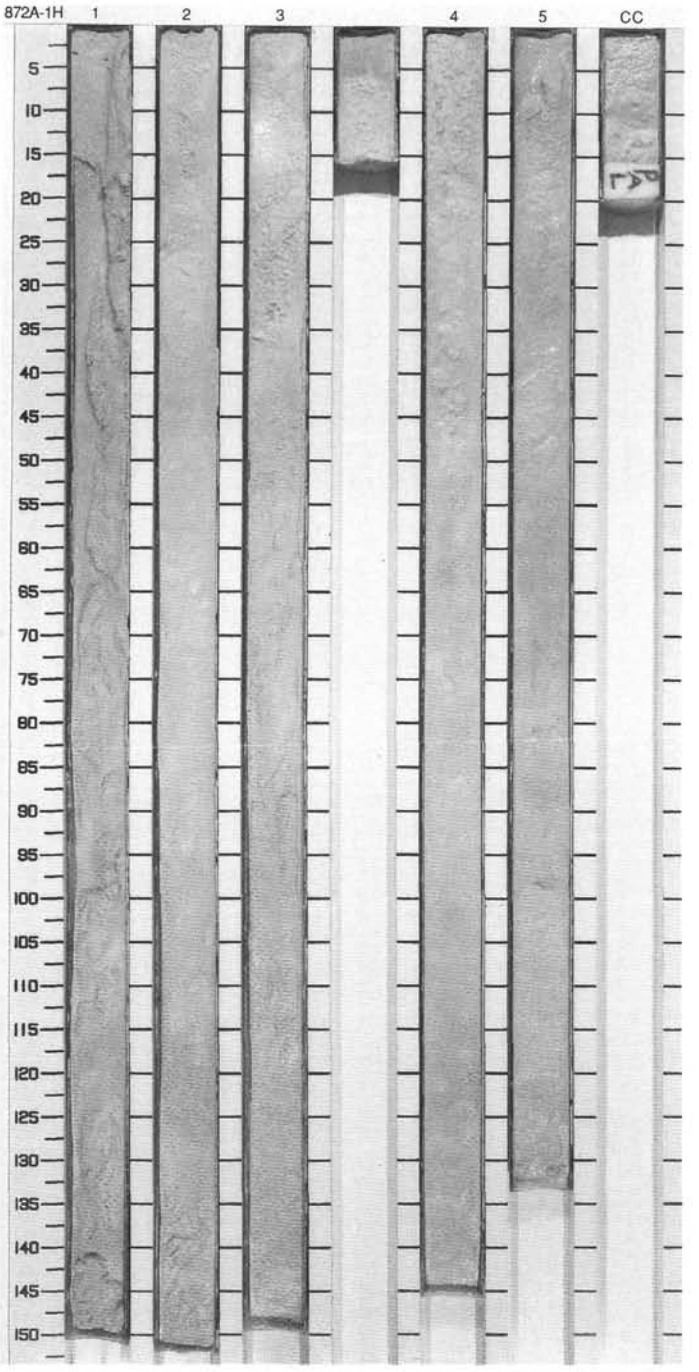
CORED 0.0 – 7.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–7		1	early to late Pleistocene			S	10YR 8/2
		2					10YR 8/2 To 10YR 8/3
		3					10YR 8/2
		4				I	10YR 8/2 To 10YR 8/3
		5				S	
		CC				M	

DESCRIPTION

NANNOFOSSIL FORAMINIFER OOZE

Major Lithology:
Homogeneous NANNOFOSSIL FORAMINIFER OOZE with a fine- to medium-grained sandy texture. The color is white (10YR 8/2) with very pale brown (10YR 8/3) to gray (10YR 6/1) specks and layers. The core is highly disturbed, soupy throughout.



SITE 872 HOLE A CORE 2H CORED 7.5 - 17.0 mbsf

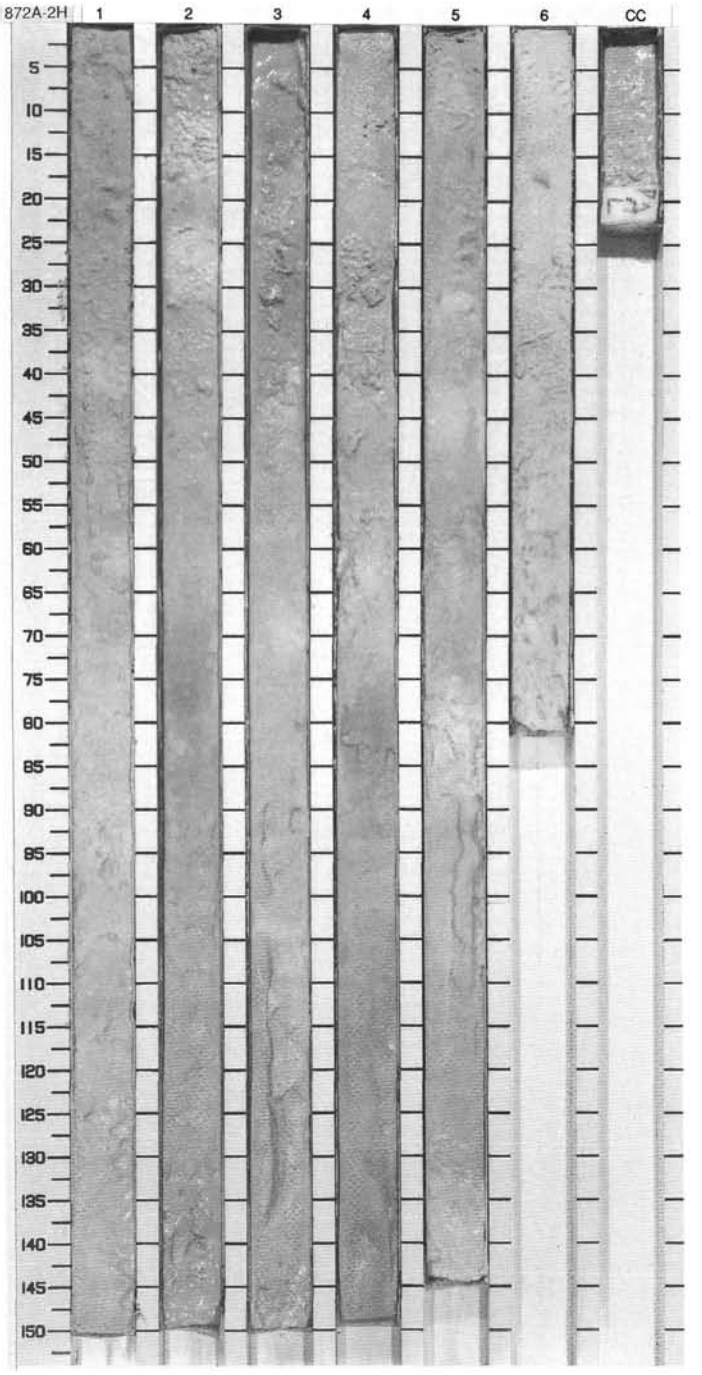
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–8		1–6, CC	early Pleistocene; late Pliocene			S; I; M	10YR 8/2; 10YR 8/2 To 5YR 6/2

DESCRIPTION

NANNOFOSSIL FORAMINIFER OOZE

Major Lithology:
Homogeneous white (10YR 8/2 to 10YR 8/1) NANNOFOSSIL FORAMINIFER OOZE, with vague color banding. Light yellowish brown (10YR 6/4) particles are scattered in Section 1 and correspond to foraminifers stained by Fe-hydroxides?. Some pinkish gray (5YR 6/2) stains occur in Section 6. The core is highly disturbed to soupy throughout.

872A 3H NO RECOVERY



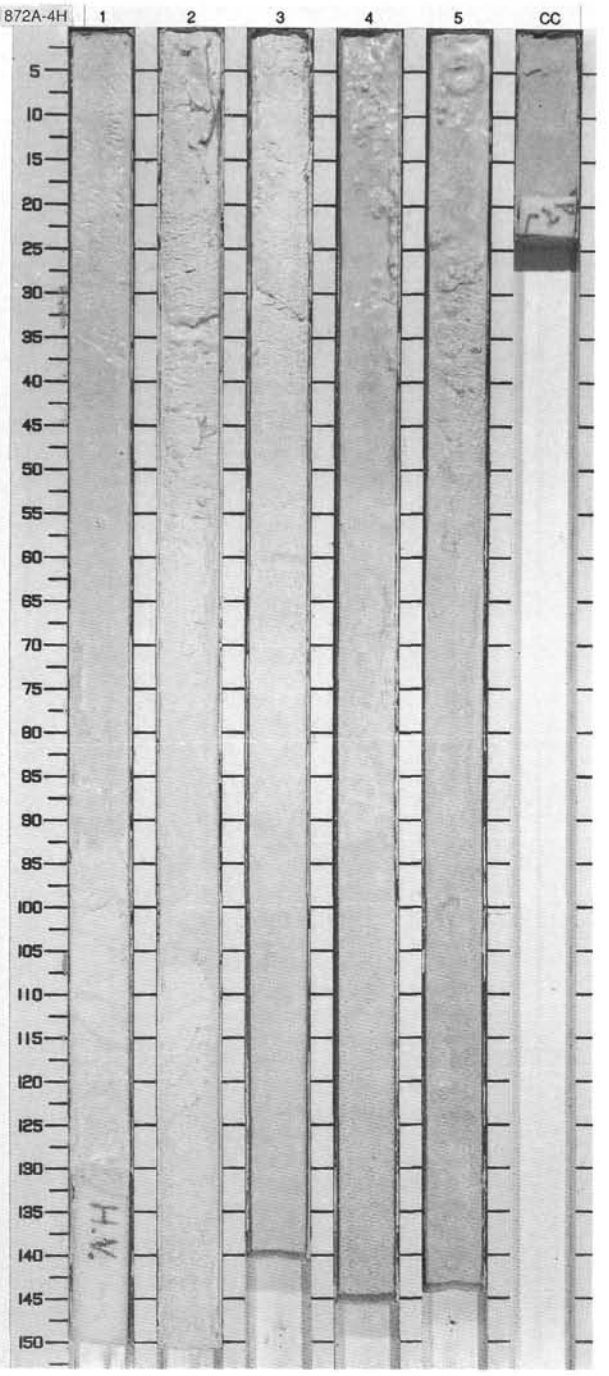
SITE 872 HOLE A CORE 4H CORED 26.5 –36.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1		1	late Miocene			S	10YR 7/3
	Void						
2		2				S	10YR 8/2
							10YR 7/3
3		3					10YR 8/2
4						P	
5		4					10YR 7/3
6		5				I	
7		CC				M	

DESCRIPTION

FORAMINIFER OOZE and NANNOFOSSIL FORAMINIFER OOZE

Major Lithologies:
Homogeneous FORAMINIFER OOZE with NANNOFOSSIL FORAMINIFER OOZE in Section 1, 90–130 cm, Section 2, 65–105 cm, and Section 3 72–140 cm. Sandy texture, white (10YR 8/2) to very pale brown (10YR 7/3). Black specks occur in Sections 1 (45 cm) and 2 (24 cm) and are probably grease from coring. The entire core is soupy.



872A-1H
CORED 0.0 - 7.5 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
CC
A/G
A/G
B
M
S
I
S
early to late Pleistocene
H. sellii
small Gephynocapsa
P. lacunosa
G. oceanica
E. huxley
N22
10YR 8/2 to 10YR 8/3
10YR 8/2
10YR 8/2 to 10YR 8/3
10YR 8/2
872A-2H
CORED 7.5 - 17.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
CC
A/G
A/G
B
M
S
I
early Pleisto-cene
late Pliocene
CN12b-c
CN12d
C. macintyrei
N21
10YR 8/2 to 5YR 6/2
10YR 8/2
872A 3H NO RECOVERY
872A-4H
CORED 26.5 - 36.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
Void
CC
A/M
A/M
B
M
P
I
S
S
S
late Miocene
CN8
CN9b
N17a
N17b
Mixed
Mixed
10YR 7/3
10YR 8/2
10YR 7/3
10YR 8/2
10YR 7/3

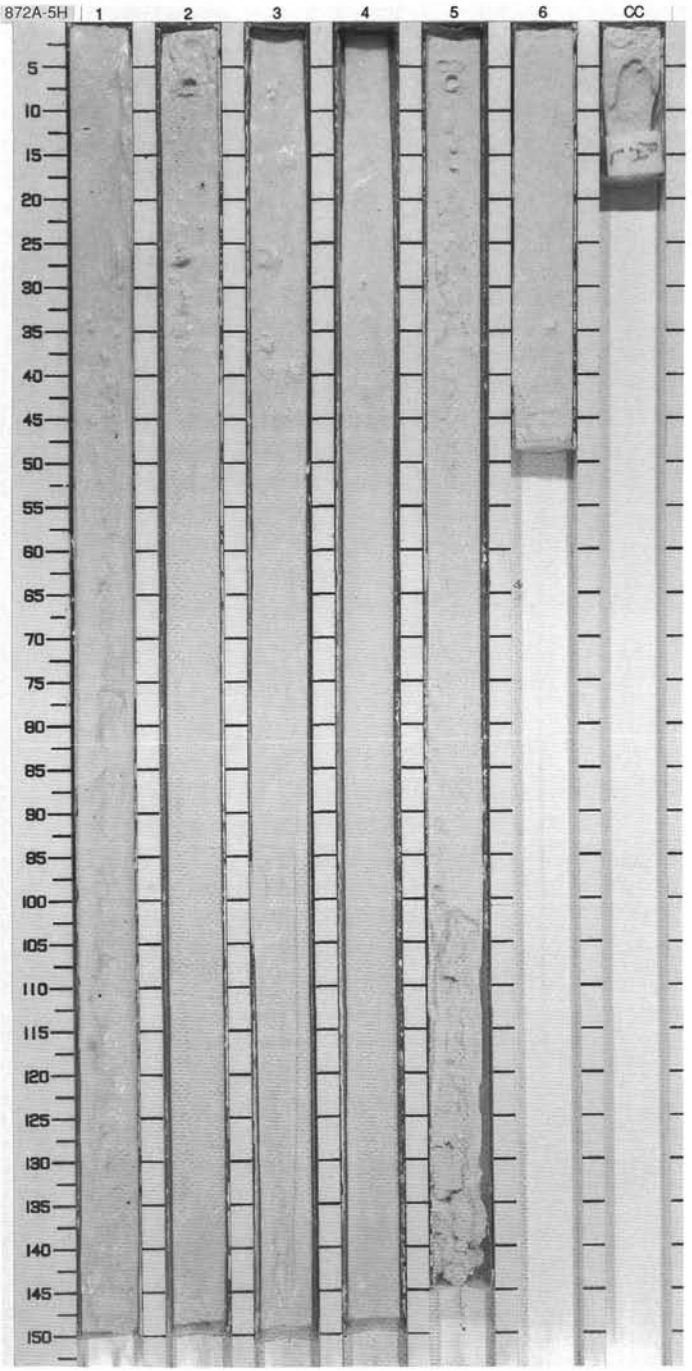
SITE 872 HOLE A CORE 5H CORED 36.0 – 45.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–8		1, 2, 3, 4, 5, 6, CC	middle Miocene			I, M	10YR 7/3

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogeneous, very pale brown (10YR 7/3) FORAMINIFER OOZE. The texture is sandy. Scattered black specks are grease from coring. The entire core is soupy.



SITE 872 HOLE A CORE 6H

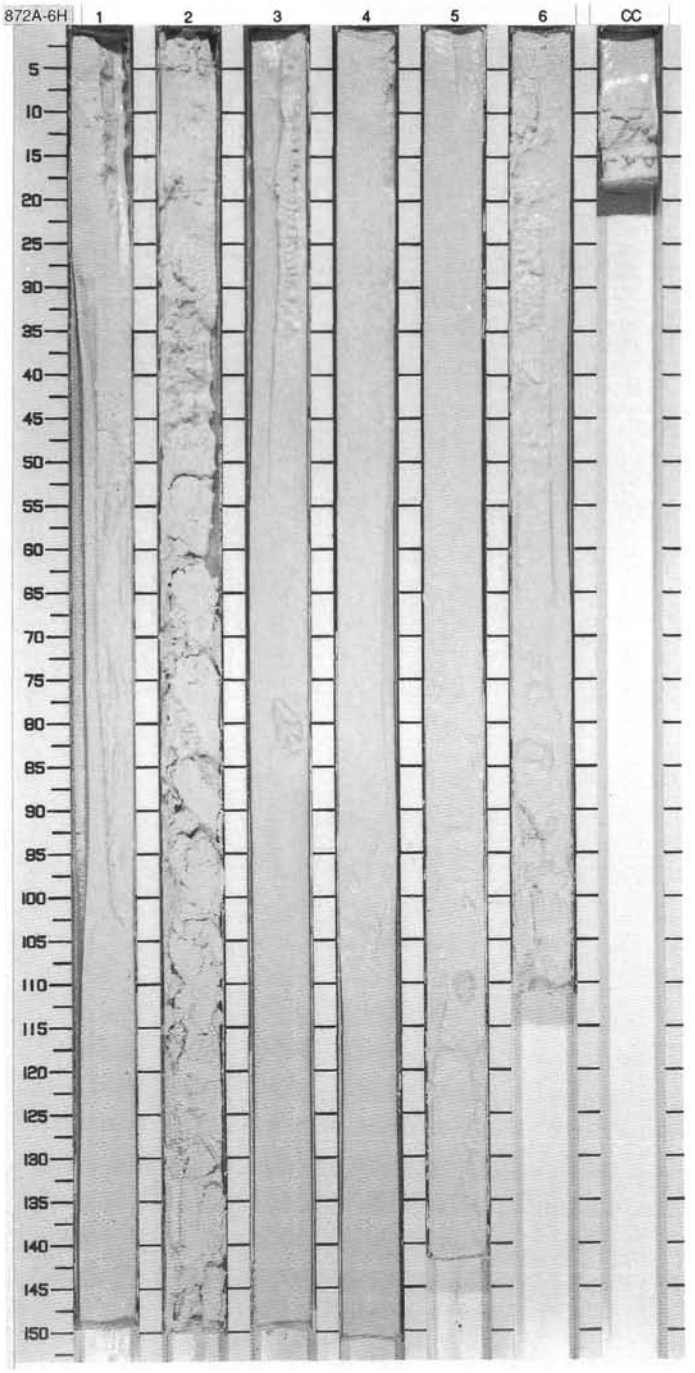
CORED 45.5 — 55.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–8		1, 2, 3, 4, 5, 6, CC	middle Miocene			S, S, I, M	10YR 8/2

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogeneous, white (10YR 8/2), FORAMINIFER OOZE. The texture is sandy, medium to fine grained. Scattered black specks are probably grease from coring. The core is soupy throughout.



SITE 872 HOLE A CORE 7H

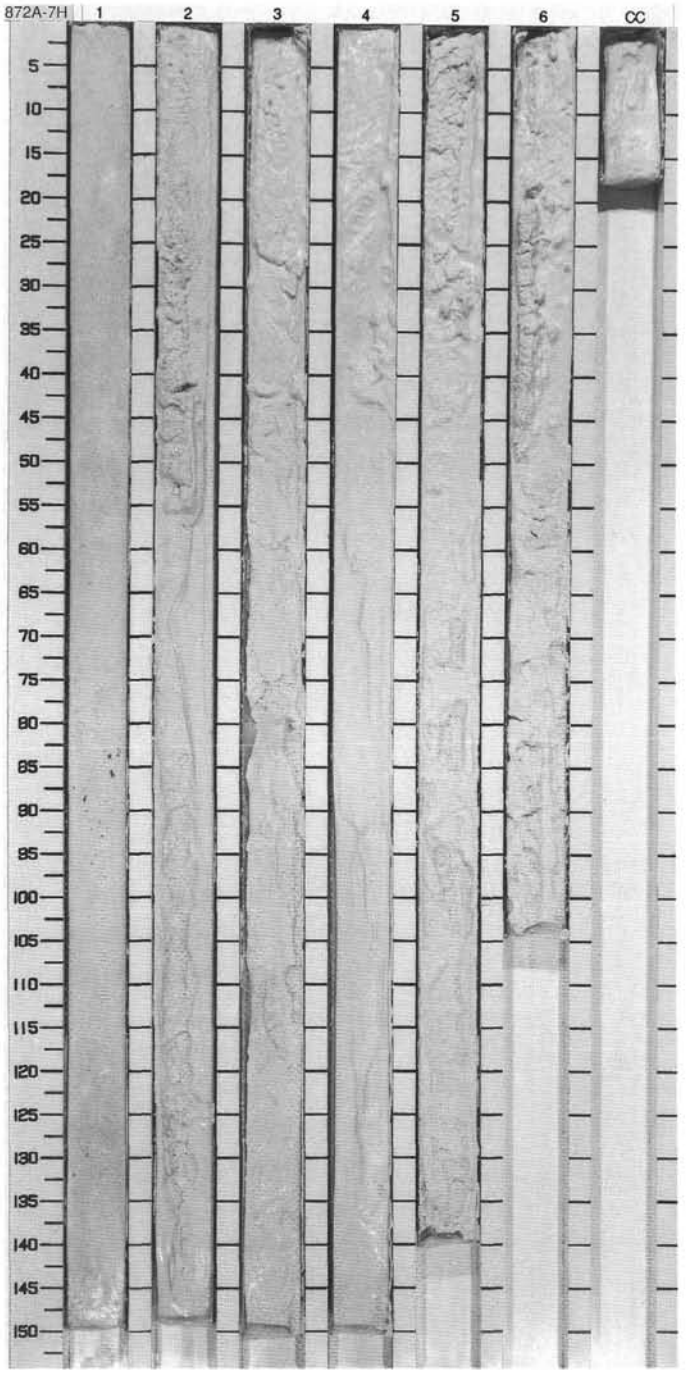
CORED 55.0 – 64.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–8		1	middle Miocene			S	10YR 8/2 To 10YR 8/3
		2				S	
		3					
		4					10YR 8/2
		5				I	
		6				S	
		CC				M	

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogenous, white (10YR 8/2) FORAMINIFER OOZE, soupy throughout core. Vague bands of very pale brown (10YR 8/3) in Section 1 contain many stained foraminifers. These brown planktonic foraminifers are likely to be caving from uphole since they are Pleistocene in age. Specks of probable drilling lubricant scattered throughout. Ooze becomes slightly lumpy in Section 6.



872A-5H CORED 36.0 - 45.5 mbsf

Meter	Graphic Lith.	Section	Age	Calc. nanno.	Plank. foram.	Larger foram.	Structure	Disturb.	Sample	Color
1–8		1	middle Miocene	Mixed	Mixed					
		2								
		3								
		4		CN7b						
		5								
		6							I	10YR 7/3
		CC		A/M	A/G	B			M	

872A- 6H CORED 45.5 - 55.0 mbsf

Meter	Graphic Lith.	Section	Age	Calc. nanno.	Plank. foram.	Larger foram.	Structure	Disturb.	Sample	Color
1–8		1	middle Miocene	CN6					S	
		2								
		3		CN5b	Mixed					
		4								
		5							S	10YR 8/2
		6			N13				I	
		CC		A/G	A/G	B			M	

872A-7H CORED 55.0 - 64.5 mbsf

Meter	Graphic Lith.	Section	Age	Calc. nanno.	Plank. foram.	Larger foram.	Structure	Disturb.	Sample	Color
1–8		1	middle Miocene	CN5b	N13				S	
		2							S	
		3								
		4								
		5			N12				I	10YR 8/2 to 10YR 8/3
		6							S	
		CC		A/M	A/G	B			M	

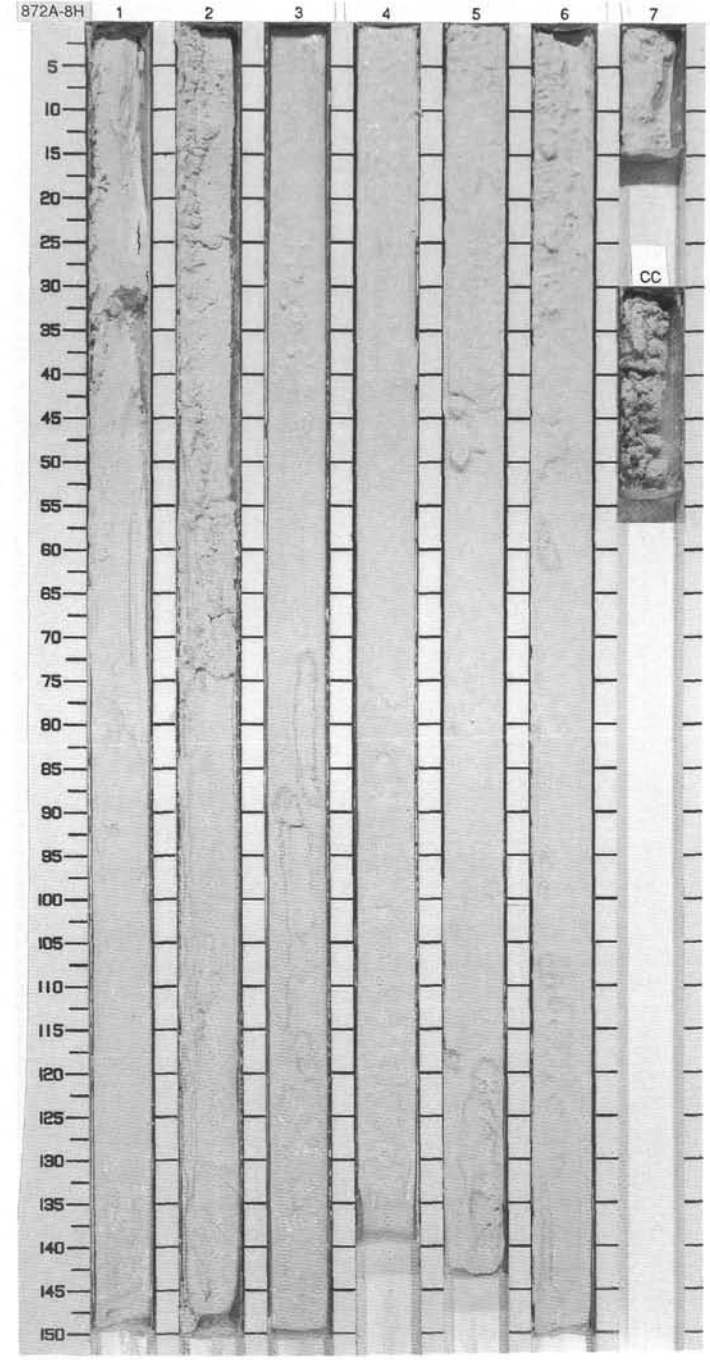
SITE 872 HOLE A CORE 8H CORED 64.5 – 74.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–9		1–6, CC	middle Miocene			S, P, S, I, M	10YR 8/3

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogenous, very pale brown (10YR 8/3) FORAMINIFER OOZE. Core is soupy throughout.



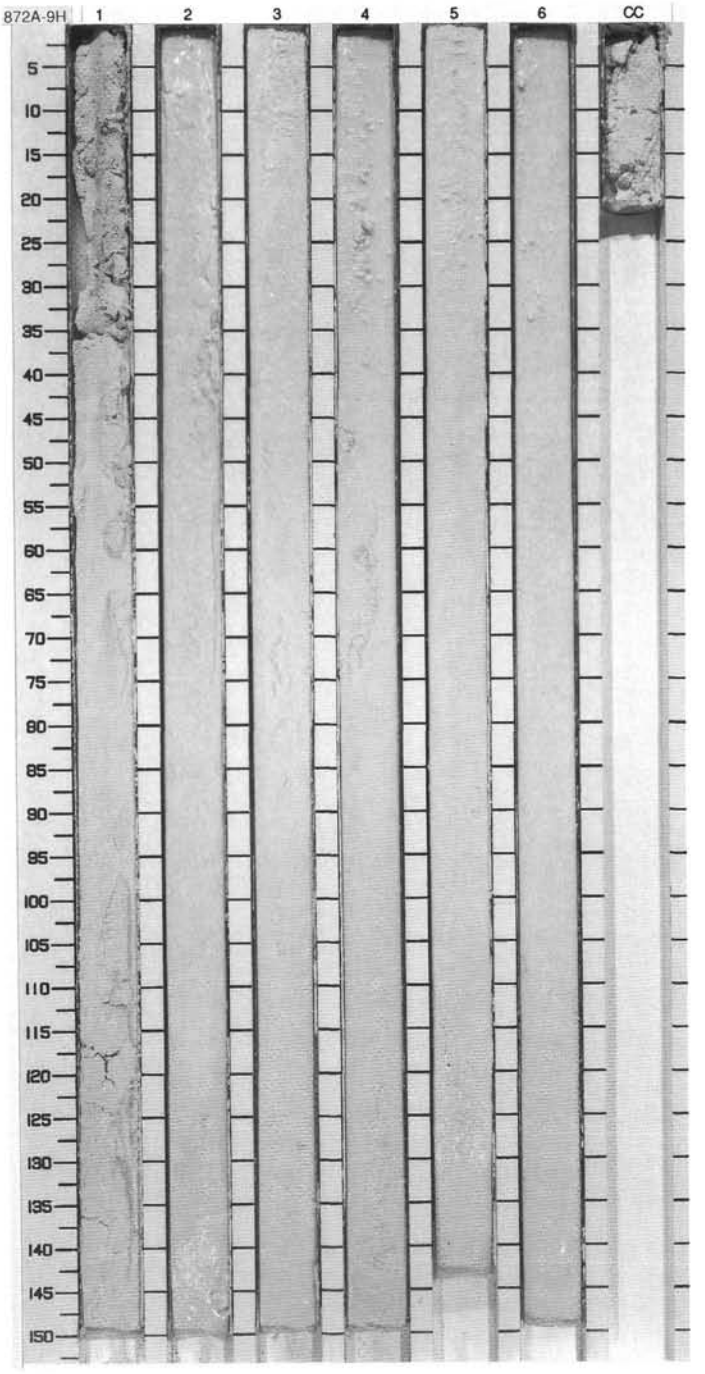
SITE 872 HOLE A CORE 9H CORED 74.0 – 83.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1		1	early Miocene				10YR 8/2
2		2				S	
3		3					
4							
5		4					
6		5				S	
7						I	
8		6					
9		CC				M	

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogenous, white (10YR 8/2) FORAMINIFER OOZE.
Core is soupy throughout.



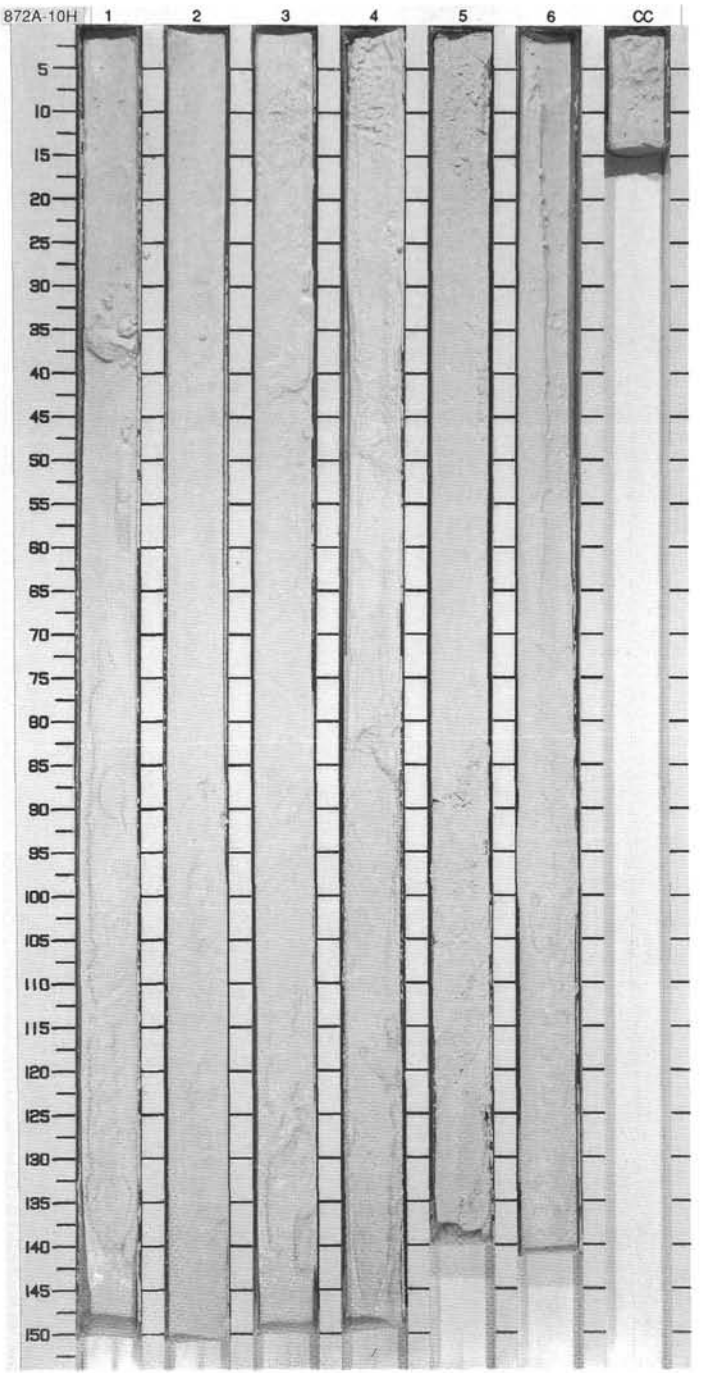
SITE 872 HOLE A CORE 10H CORED 83.5 – 93.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–9		1–6, CC	early Miocene			S, S, I, M	10YR 8/2; 10YR 8/1; 10YR 8/2

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogeneous, white (10YR 8/2), FORAMINIFER OOZE with a texture of medium to fine sand. Sediment at 30–40 cm is slightly consolidated, friable, and highly fractured. There is a thin band of white (10YR 8/1) NANNOFOSSIL FORAMINIFER OOZE in Section 4, 50–60 cm.



872A-8H CORED 64.5 - 74.0 mbsf

Meter	Graphic Lith.	Section	Age	Calc. nanno.	Plank. foram.	Larger foram.	Structure	Disturb.	Sample	Color
1–9		1	middle Miocene	CN5b	N12				S	10YR 8/3
		2								
		3								
		4							P	
		5		CN4					S	
		6			N11				I	
		7		C/M	A/G	B				
		CC			N10				M	

872A- 9H CORED 74.0 - 83.5 mbsf

Meter	Graphic Lith.	Section	Age	Calc. nanno.	Plank. foram.	Larger foram.	Structure	Disturb.	Sample	Color
1–9		1	early Miocene	CN 3/4	Mixed				S	10YR 8/2
		2								
		3								
		4								
		5			N8				S	
		6							I	
		CC		C/M	A/G	B			M	

872A-10H CORED 83.5 - 93.0 mbsf

Meter	Graphic Lith.	Section	Age	Calc. nanno.	Plank. foram.	Larger foram.	Structure	Disturb.	Sample	Color
1–9		1	early Miocene	CN3/4	N8				S	10YR 8/2
		2								
		3								
		4							S	10YR 8/1
		5							I	
		6								
		CC		C/M	A/G	B			M	

SITE 872 HOLE A CORE 11H CORED 93.0 –100.0 mbsf

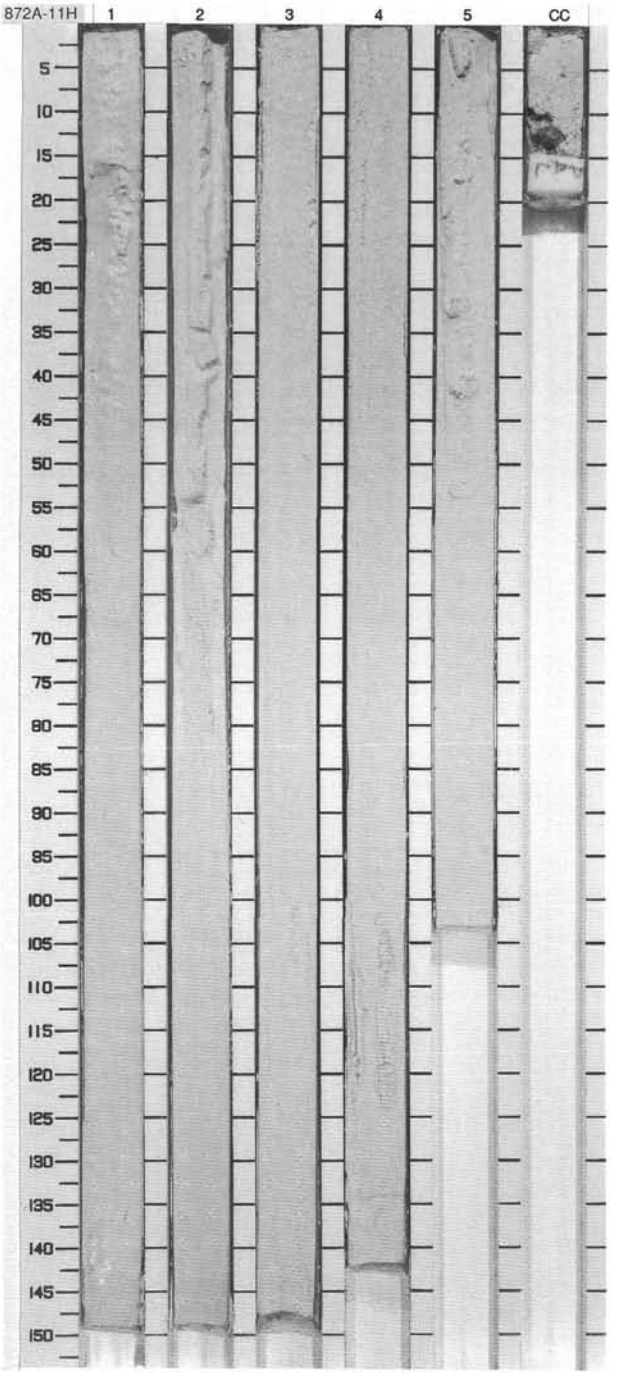
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–7		1, 2, 3, 4, 5, CC	early Miocene			S, I, M	10YR 8/2

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogeneous, white (10YR 8/2), FORAMINIFER OOZE. The entire core is predominantly soupy; however, it contains small (5–10 mm) lumps of FORAMINIFER CHALK that may be the result of selective lithification or may represent poorly lithified layers broken by drilling.

872A 12H NO RECOVERY



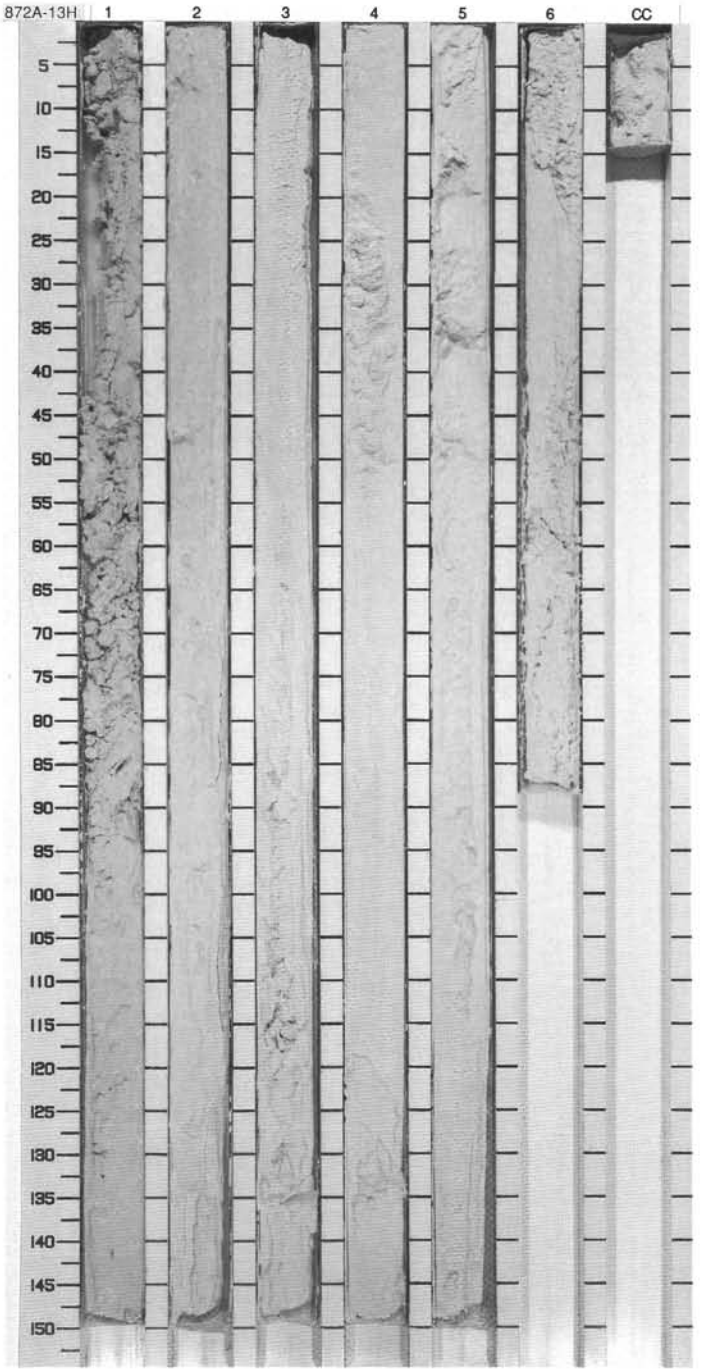
SITE 872 HOLE A CORE 13H CORED 102.0 – 111.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1		1	early Miocene		W W W W W	S	10YR 8/4
2		2				S	10YR 8/3
3		3				S	
4		4					10YR 8/2
5		5					
6		6					
7		CC				S M	
8							

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogeneous, very pale brown (10YR 8/4) to white (10YR 8/2) FORAMINIFER OOZE with medium sandy texture. Section 1, 0–90 cm is not as soupy as the rest of the core. Numerous partly consolidated, friable clasts of FORAMINIFER CHALK, 5–10 mm in diameter, may represent initial patchy lithification. Foraminifers with light yellowish brown (10YR 6/4) film of Fe hydroxide(?) are irregularly disseminated in Sections 1 and 2.



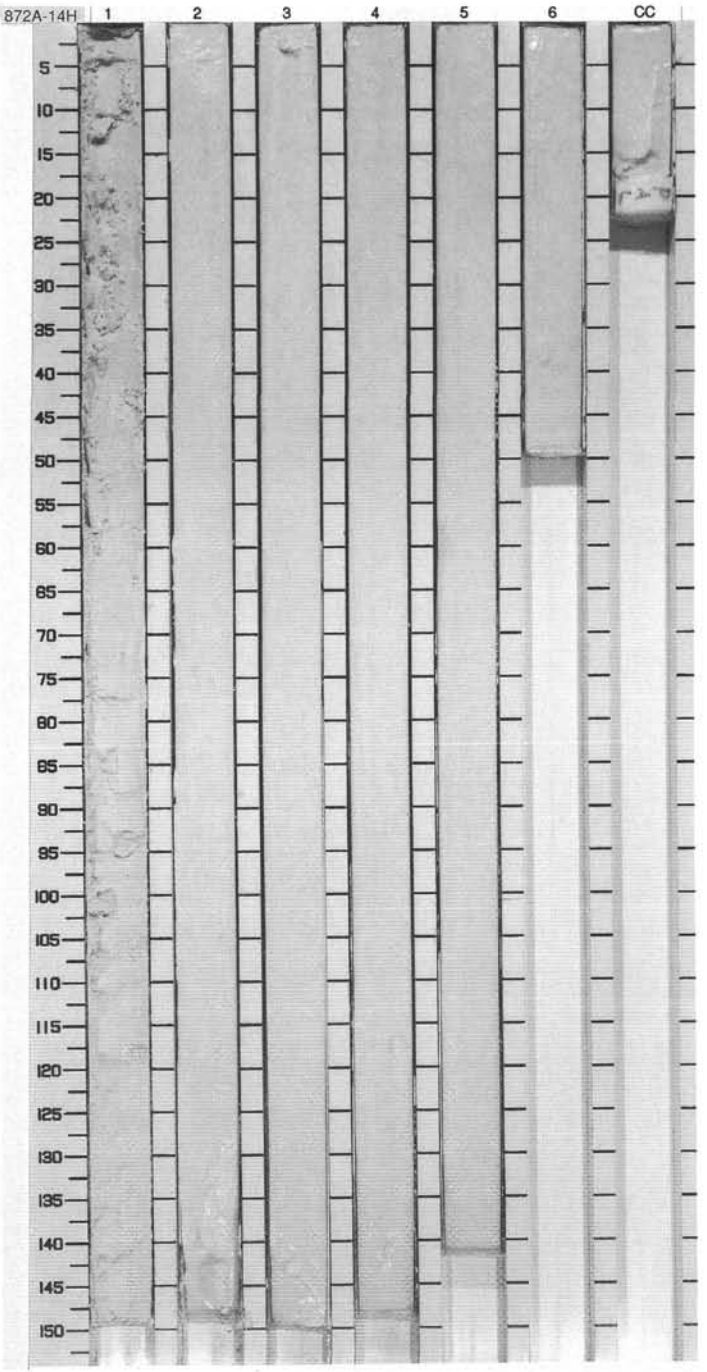
SITE 872 HOLE A CORE 14H CORED 111.5 – 121.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–8		1, 2, 3, 4, 5, 6, CC	early Miocene			S, S, I, M	10YR 8/2

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogeneous, white (10YR 8/2), FORAMINIFER OOZE. The texture consists of fine- to medium-grained sands. Very pale brown (10YR 8/3) specks or layers are Fe-hydroxides(?) stains on foraminifers. The entire core is highly disturbed to soupy.



872A-11H CORED 93.0 - 100.0 mbsf

Meter	Graphic Lith.	Section	Age	Calc. nanno.	Plank. foram.	Larger foram.	Structure	Disturb.	Sample	Color
1–7		1	early Miocene	CN3/4	N8	B		○○○○○○○○○○○○○○○○○○○○	S	10YR 8/2
		2								
		3								
		4							I	
		5								
		CC		C/M	A/G			○	M	

872A 12H NO RECOVERY

872A-13H CORED 102.0 - 111.5 mbsf

Meter	Graphic Lith.	Section	Age	Calc. nanno.	Plank. foram.	Larger foram.	Structure	Disturb.	Sample	Color
1–8		1	early Miocene	CN1c	N4b	B		○○○○○○○○○○○○○○○○○○○○ WWWWW	S	10YR 8/4
		2							S	10YR 8/3
		3							S	
		4								10YR 8/2
		5								
		6								
		CC		C/M	A/G	B		○	S M	

872A-14H CORED 111.5 - 121.0 mbsf

Meter	Graphic Lith.	Section	Age	Calc. nanno.	Plank. foram.	Larger foram.	Structure	Disturb.	Sample	Color
1–8		1	early Miocene	CN1a	N4a	B		○○○○○○○○○○○○○○○○○○○○	S	10YR 8/2
		2								
		3								
		4							S	
		5								
		6							I	
		CC		C/M	A/G	B		○	M	

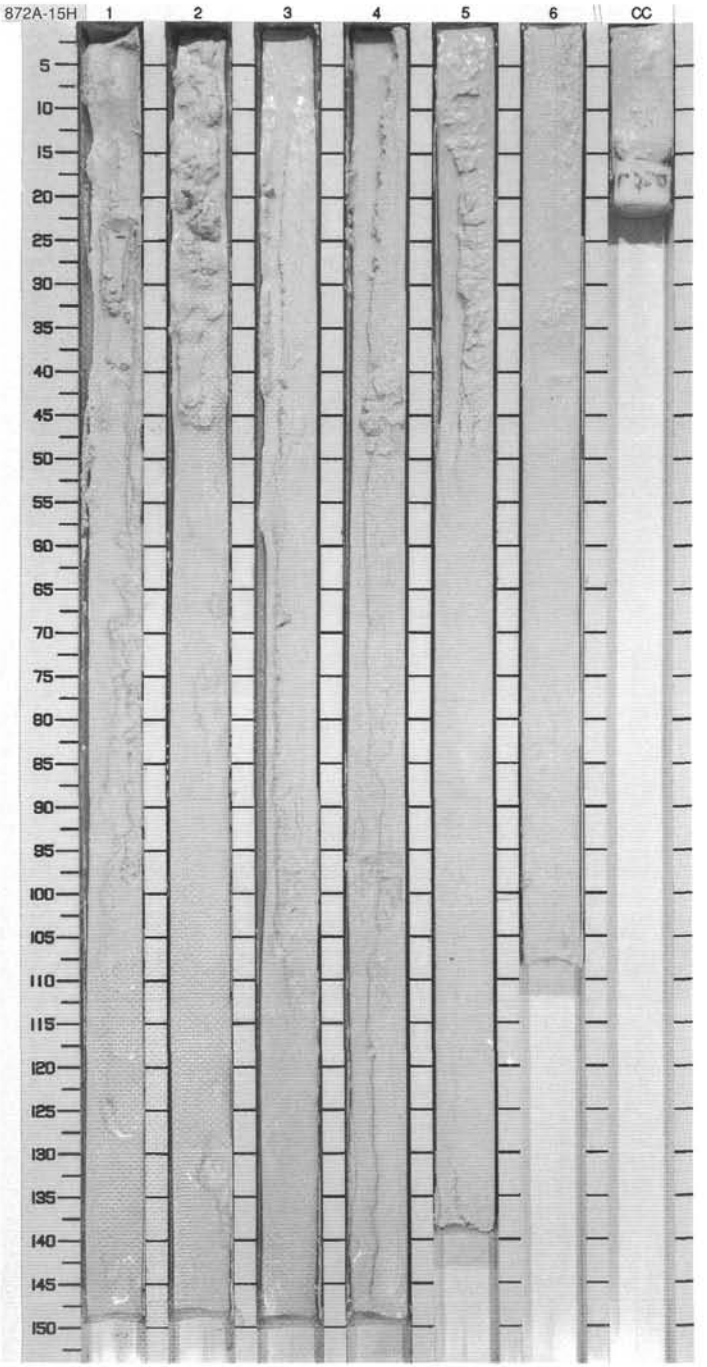
SITE 872 HOLE A CORE 15H CORED 121.0 – 130.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–8		1, 2, 3, 4, 5, 6, CC	late Oligocene			S, S, P, M	10YR 8/2

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
White (10YR 8/2), homogeneous, FORAMINIFER OOZE. The texture consists of fine- to medium-grained sands. Very pale brown (10YR 8/3 to 10YR 7/3) specks are abundant and correspond to Fe-hydroxide(?) stains on foraminifers. The entire core is very disturbed to soupy.



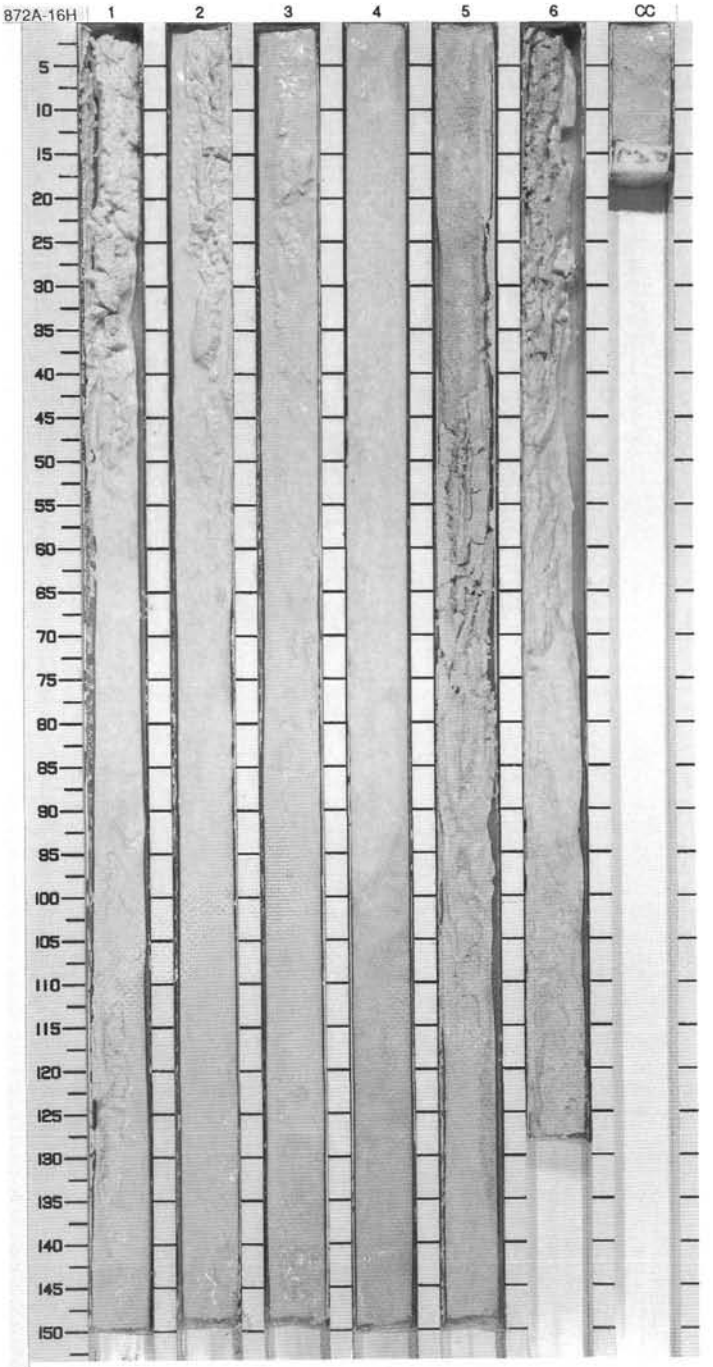
SITE 872 HOLE A CORE 16H CORED 130.5 –140.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–9		1, 2, 3, 4, 5, 6, CC	late Oligocene			S, S, S, M	10YR 8/2; 10YR 8/2 To 10YR 8/3

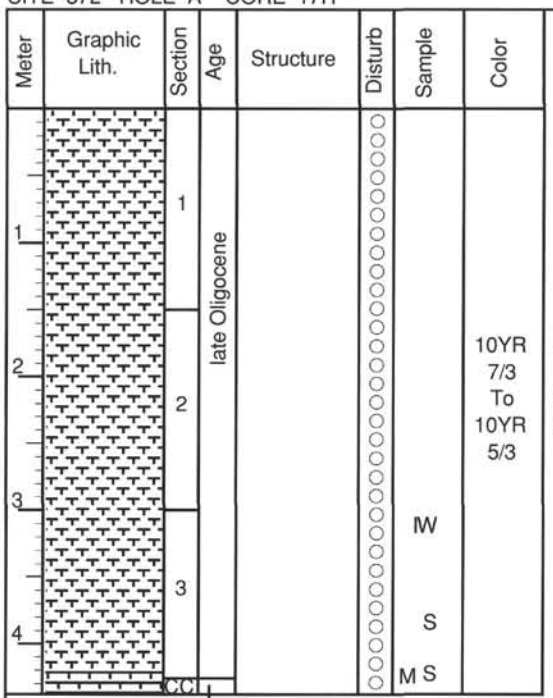
DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
White (10YR 8/2) to very pale brown (10YR 8/3) homogeneous FORAMINIFER OOZE. The texture consists of fine- to medium-grained sands. Abundant very pale brown (10YR 8/3) specks correspond to Fe hydroxides(?) on foraminifers; these are very abundant from Section 4, 90 cm, to the bottom of the core. The entire core is soupy.



SITE 872 HOLE A CORE 17H CORED 140.0 – 143.7 mbsf



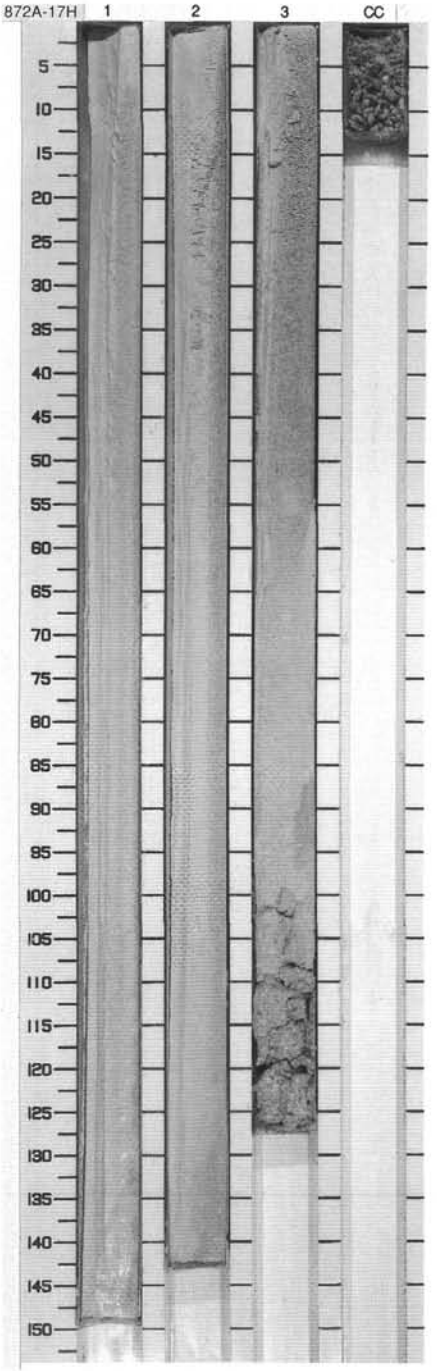
DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Very pale brown (10YR 7/3) to brown (10YR 5/3) FORAMINIFER OOZE with a conspicuous "salt and pepper" appearance. Brown colored grains are phosphate stained foraminifers. There is a gradual increase in white (10YR 8/2) partially consolidated nodules toward the base of Section 3, 90–127 cm. These nodules consist of NANNOFOSSIL FORAMINIFER OOZE. The entire core is highly disturbed to soupy.

Minor Lithology:
The CC section consists of friable fragments, up to 4 cm long, of phosphatized FORAMINIFER CHALK, brownish yellow (10YR 6/6). Very dark brown (10YR 2/2) rounded and "polished" pebbles are highly weathered BASALT fragments that may be coated with a phosphatic crust.

872A 18X HARD ROCK



872A- 15H
CORED 121.0 - 130.5 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
late Oligocene
CP19a
P22
F/M
A/G
B
S
S
P
M
10YR 8/2

872A-16H
CORED 130.5 - 140.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
late Oligocene
CP19a
P22
C/M
A/G
B
S
S
S
M
10YR 8/2
10YR 8/2 to 10YR 8/3

872A-17H
CORED 140.0 - 143.7 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
late Oligocene
CP19b
CP19a
P22
P21
C/M
C/M
B
IW
S
M S
10YR 7/3 to 10YR 5/3
middle Eocene to upper Santonian
CP13b–14
CC15–17
P11
D. asym.
872A 18X HARD ROCK

SITE 872 HOLE B CORE 1R CORED 77.3–87.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
6 cm		1					10YR 8/3

early to middle Miocene

DESCRIPTION

FORAMINIFER CHALK/OOZE

Major Lithology:
Total recovery: 6 cm of friable pebbles of very pale brown (10YR 8/3) FORAMINIFER CHALK. In Hole 872A, a FORAMINIFER OOZE containing CHALK clasts was recovered from similar subbottom depths.

SITE 872 HOLE B CORE 2R CORED 87.0–96.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
5 cm		1					10YR 8/2

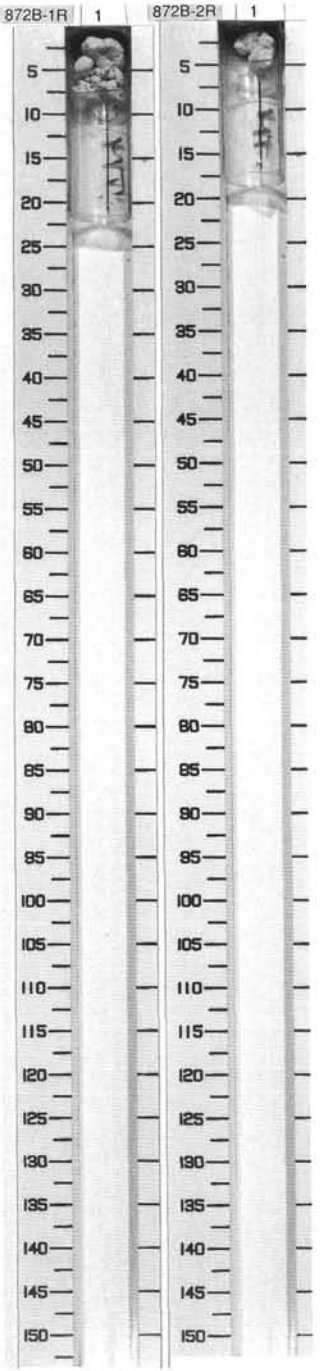
early Miocene

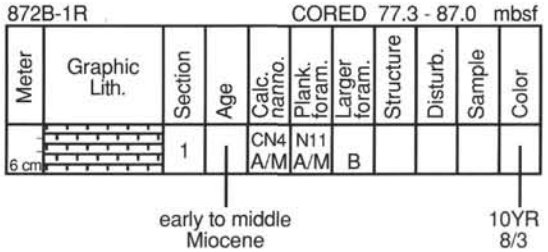
DESCRIPTION

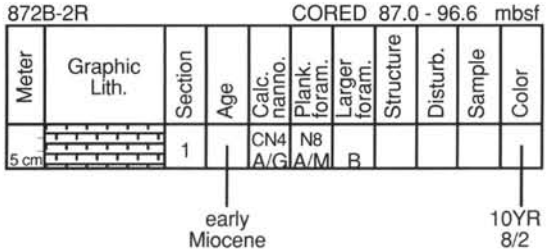
FORAMINIFER CHALK/OOZE

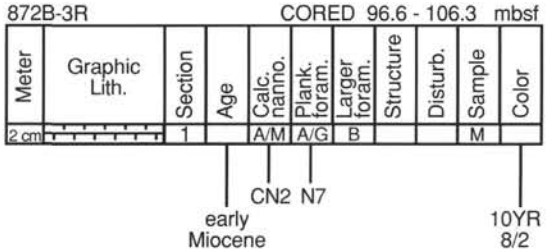
Major Lithology:
Total recovery: 1 cobble, 4 cm in diameter. White (10YR 8/2) FORAMINIFER CHALK, very friable, crumbles when touched. In Hole 872A, a FORAMINIFER OOZE containing semiconsolidated clasts was recovered from similar subbottom depths.

872B 3R Entire core given to paleontologists.

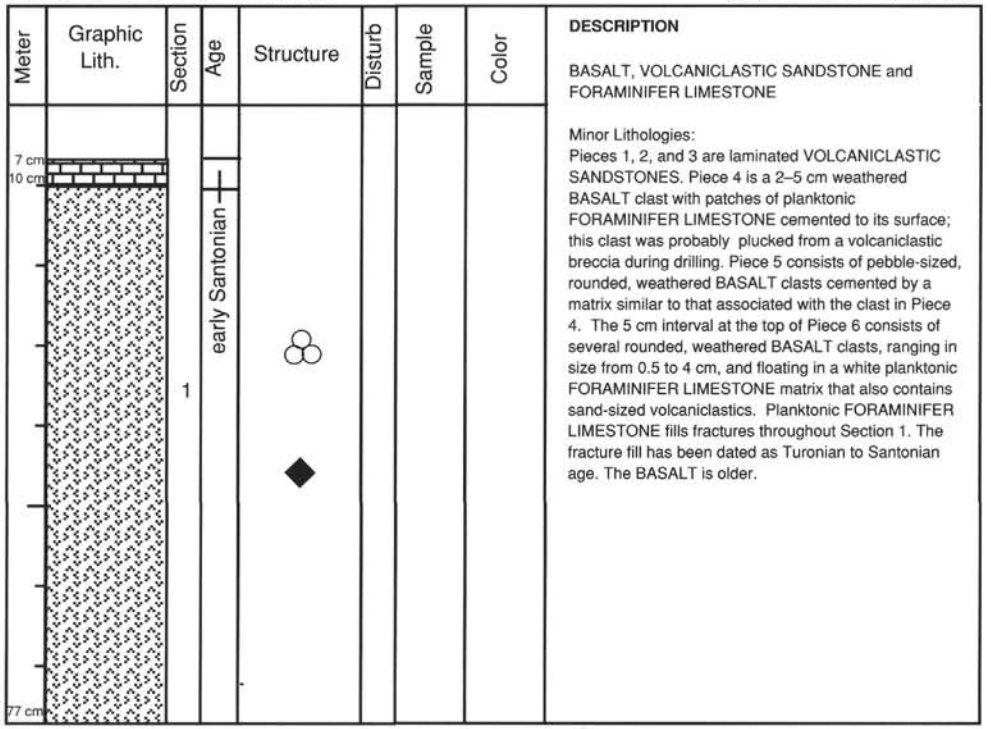



872B-1R
CORED 77.3 - 87.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
6 cm
1
CN4 A/M
N11 A/M
B
early to middle Miocene
10YR 8/3


872B-2R
CORED 87.0 - 96.6 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
5 cm
1
CN4 A/G
N8 A/M
B
early Miocene
10YR 8/2


872B-3R
CORED 96.6 - 106.3 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
2 cm
1
A/M
A/G
B
M
CN2
N7
early Miocene
10YR 8/2

SITE 872 HOLE B CORE 4R CORED 135.2–144.8 mbsf

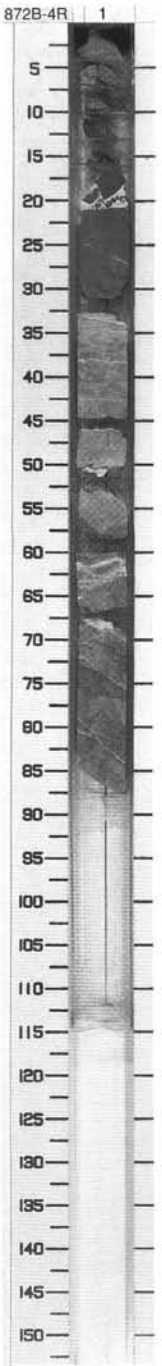


DESCRIPTION

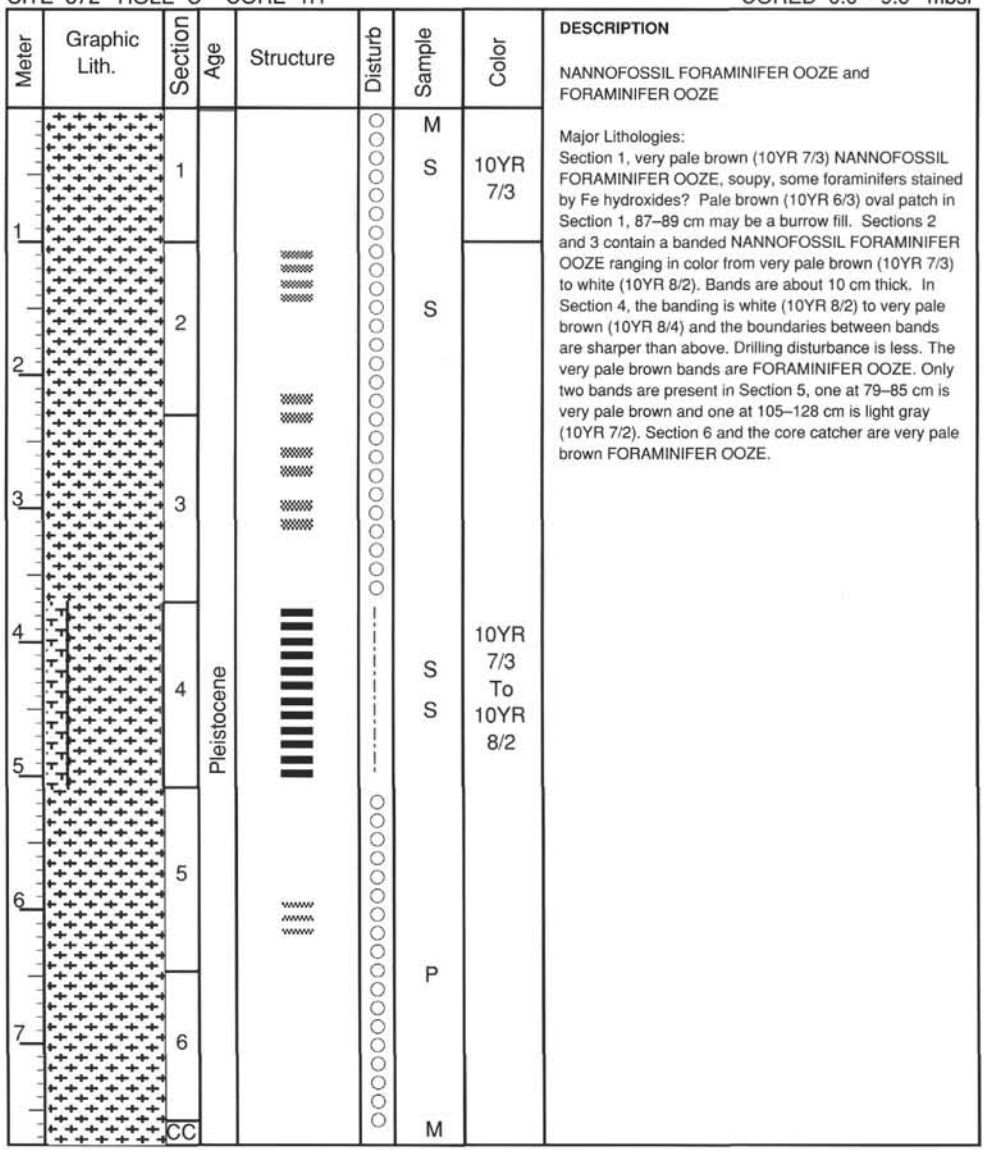
BASALT, VOLCANICLASTIC SANDSTONE and FORAMINIFER LIMESTONE

Minor Lithologies:
Pieces 1, 2, and 3 are laminated VOLCANICLASTIC SANDSTONES. Piece 4 is a 2–5 cm weathered BASALT clast with patches of planktonic FORAMINIFER LIMESTONE cemented to its surface; this clast was probably plucked from a volcaniclastic breccia during drilling. Piece 5 consists of pebble-sized, rounded, weathered BASALT clasts cemented by a matrix similar to that associated with the clast in Piece 4. The 5 cm interval at the top of Piece 6 consists of several rounded, weathered BASALT clasts, ranging in size from 0.5 to 4 cm, and floating in a white planktonic FORAMINIFER LIMESTONE matrix that also contains sand-sized volcaniclastics. Planktonic FORAMINIFER LIMESTONE fills fractures throughout Section 1. The fracture fill has been dated as Turonian to Santonian age. The BASALT is older.

872B 5R THROUGH 9R HARD ROCKS



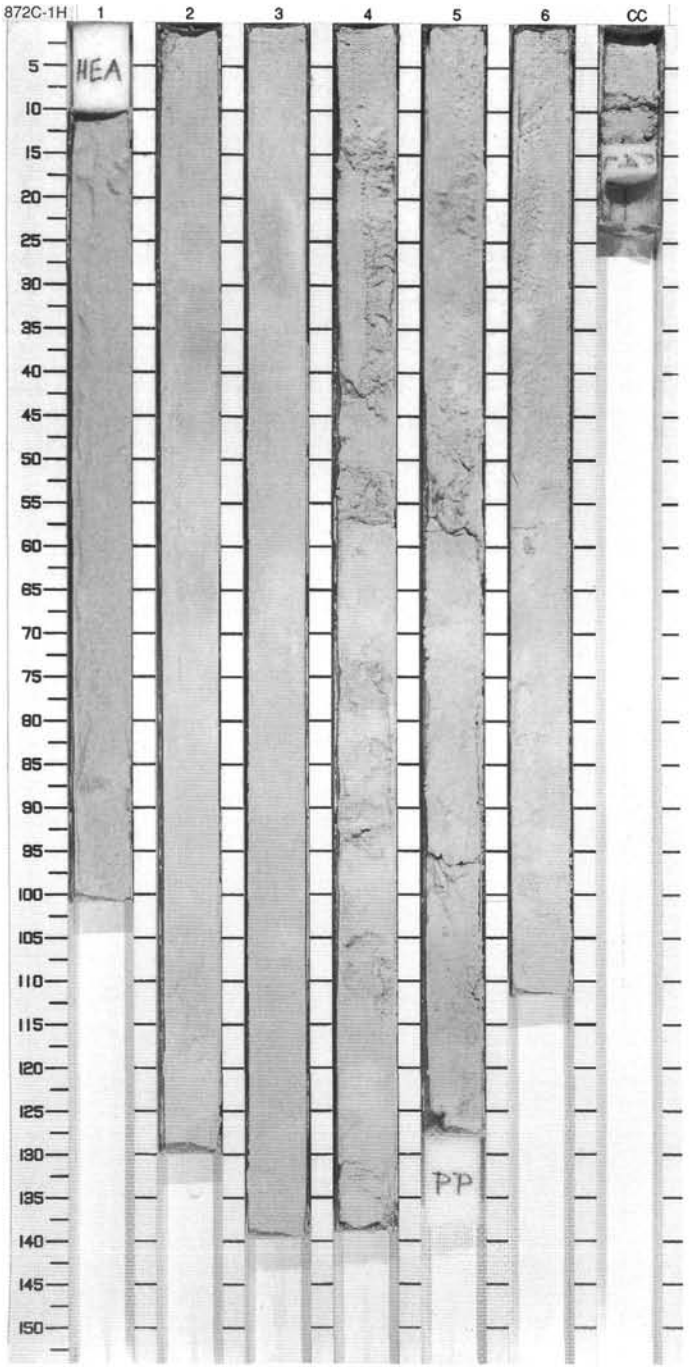
SITE 872 HOLE C CORE 1H CORED 0.0 – 9.0 mbsf



DESCRIPTION

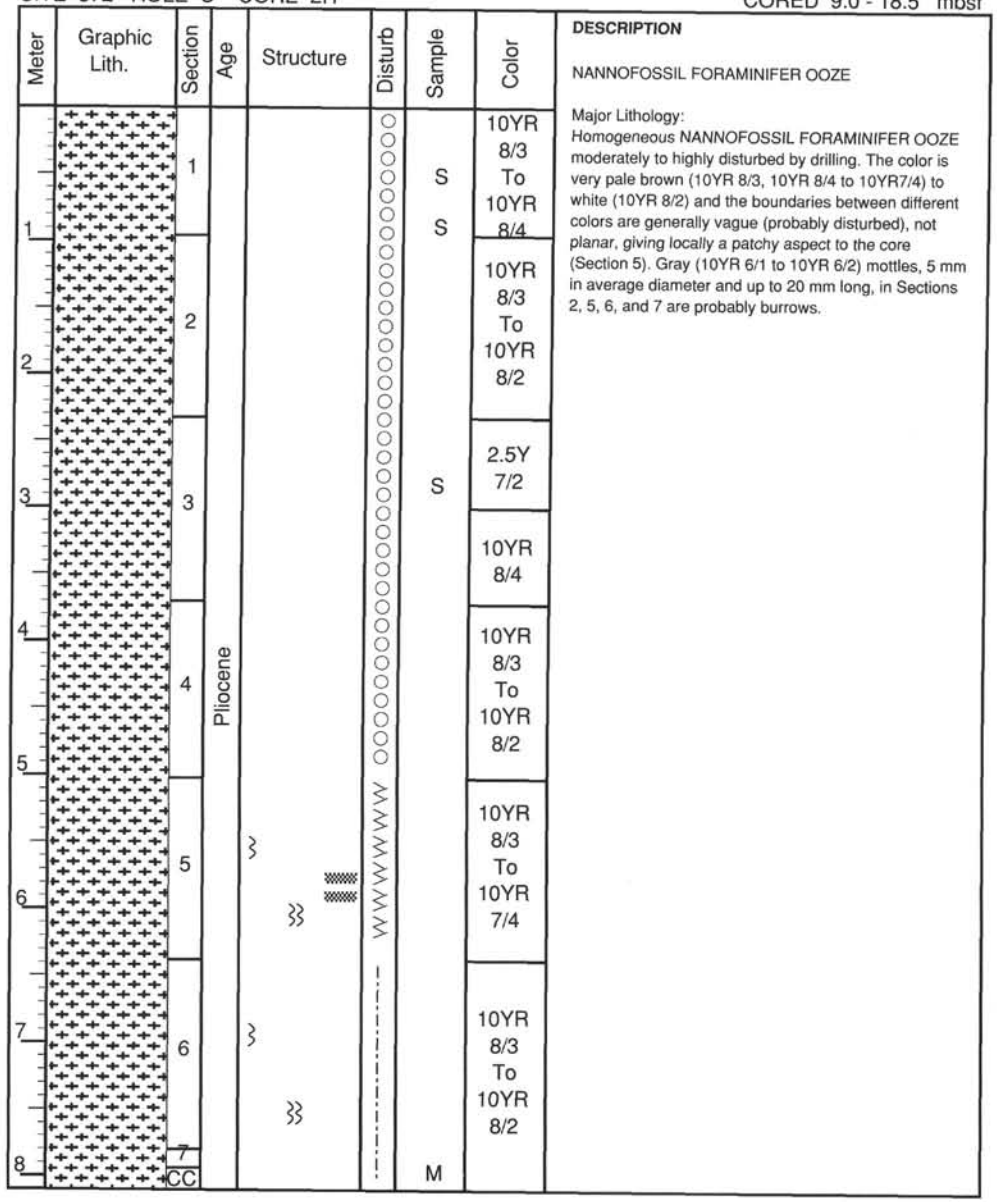
NANNOFOSSIL FORAMINIFER OOZE and FORAMINIFER OOZE

Major Lithologies:
Section 1, very pale brown (10YR 7/3) NANNOFOSSIL FORAMINIFER OOZE, soupy, some foraminifers stained by Fe hydroxides? Pale brown (10YR 6/3) oval patch in Section 1, 87–89 cm may be a burrow fill. Sections 2 and 3 contain a banded NANNOFOSSIL FORAMINIFER OOZE ranging in color from very pale brown (10YR 7/3) to white (10YR 8/2). Bands are about 10 cm thick. In Section 4, the banding is white (10YR 8/2) to very pale brown (10YR 8/4) and the boundaries between bands are sharper than above. Drilling disturbance is less. The very pale brown bands are FORAMINIFER OOZE. Only two bands are present in Section 5, one at 79–85 cm is very pale brown and one at 105–128 cm is light gray (10YR 7/2). Section 6 and the core catcher are very pale brown FORAMINIFER OOZE.



SITE 872 HOLE C CORE 2H

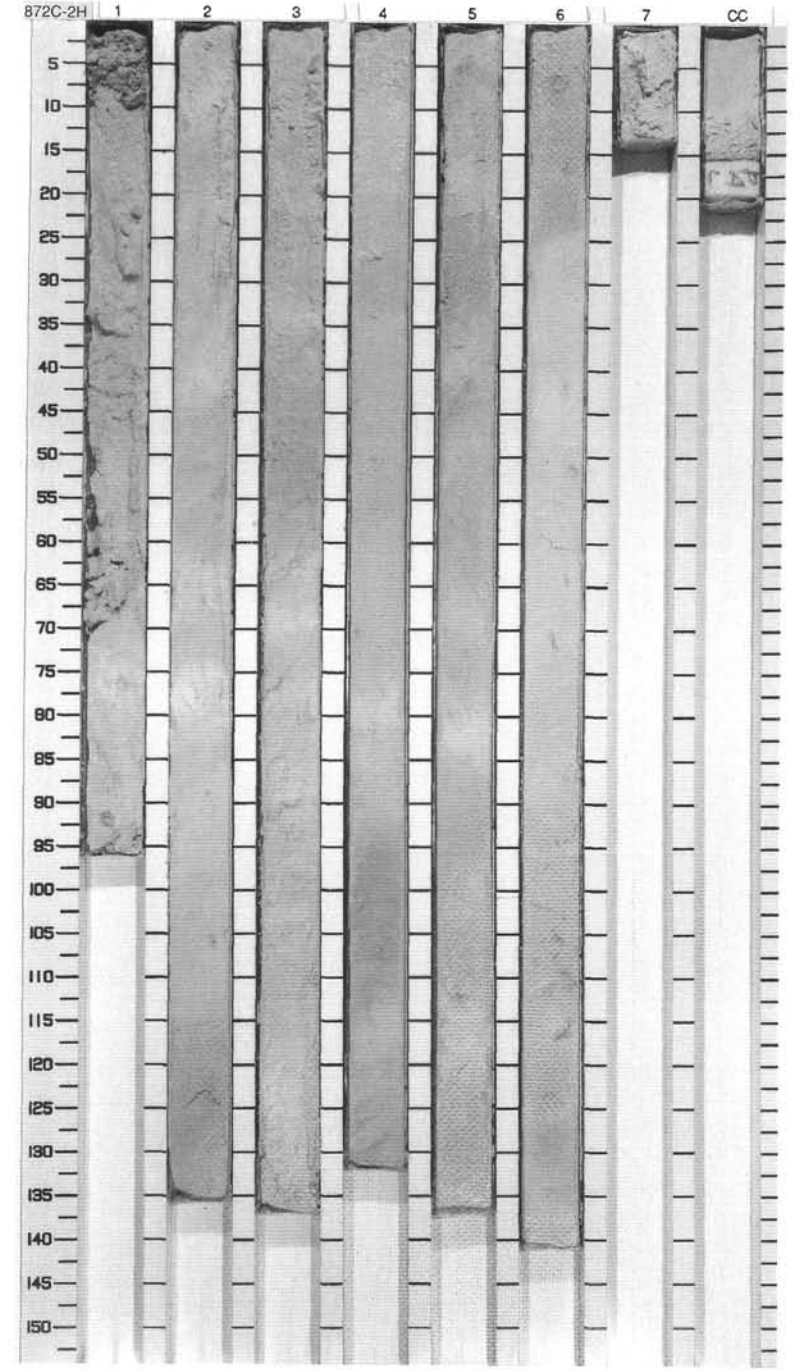
CORED 9.0 - 18.5 mbsf



DESCRIPTION

NANNOFOSSIL FORAMINIFER OOZE

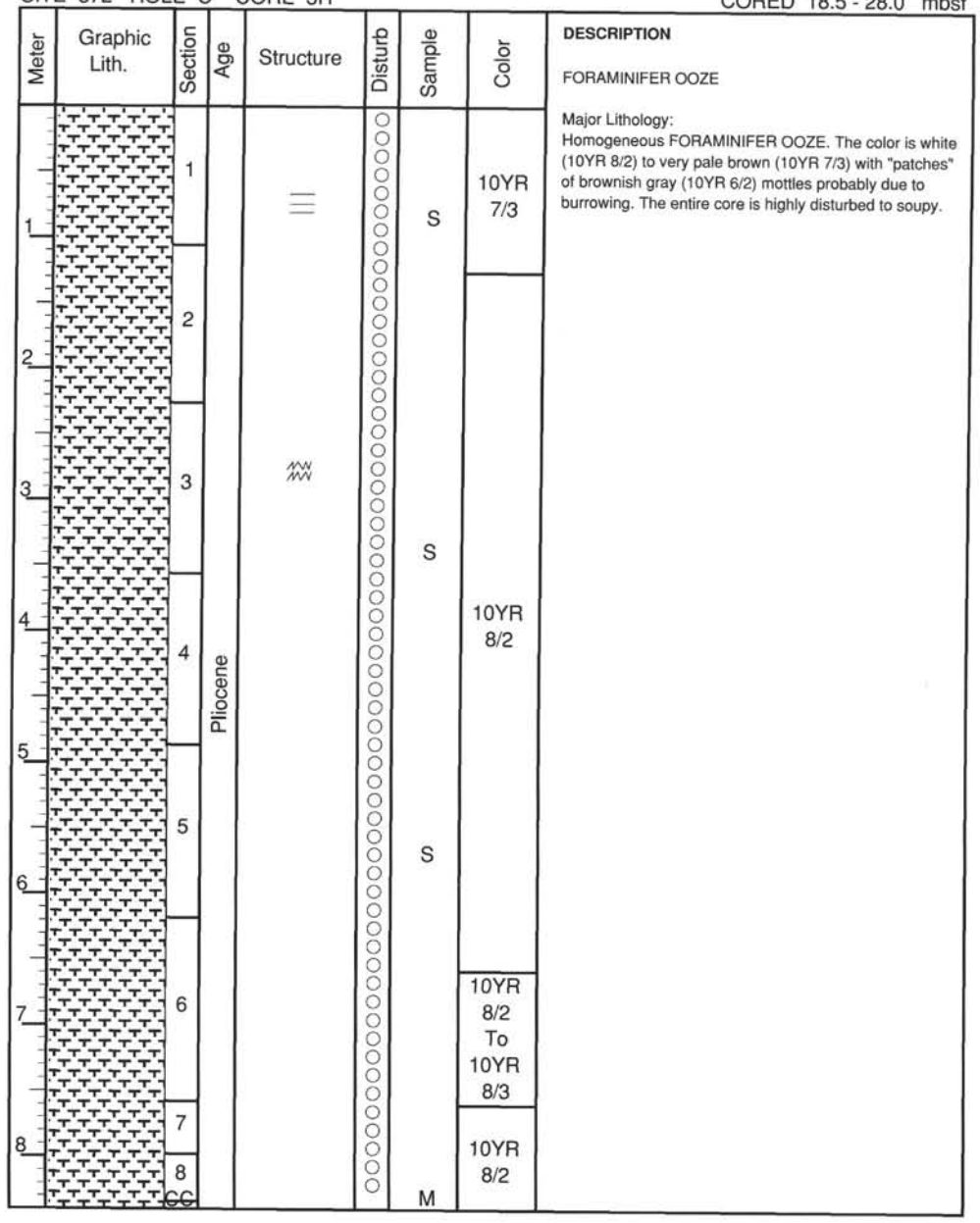
Major Lithology:
Homogeneous NANNOFOSSIL FORAMINIFER OOZE moderately to highly disturbed by drilling. The color is very pale brown (10YR 8/3, 10YR 8/4 to 10YR7/4) to white (10YR 8/2) and the boundaries between different colors are generally vague (probably disturbed), not *planar, giving locally a patchy aspect to the core* (Section 5). Gray (10YR 6/1 to 10YR 6/2) mottles, 5 mm in average diameter and up to 20 mm long, in Sections 2, 5, 6, and 7 are probably burrows.



872B 5R THROUGH 9R HARD ROCKS

SITE 872 HOLE C CORE 3H

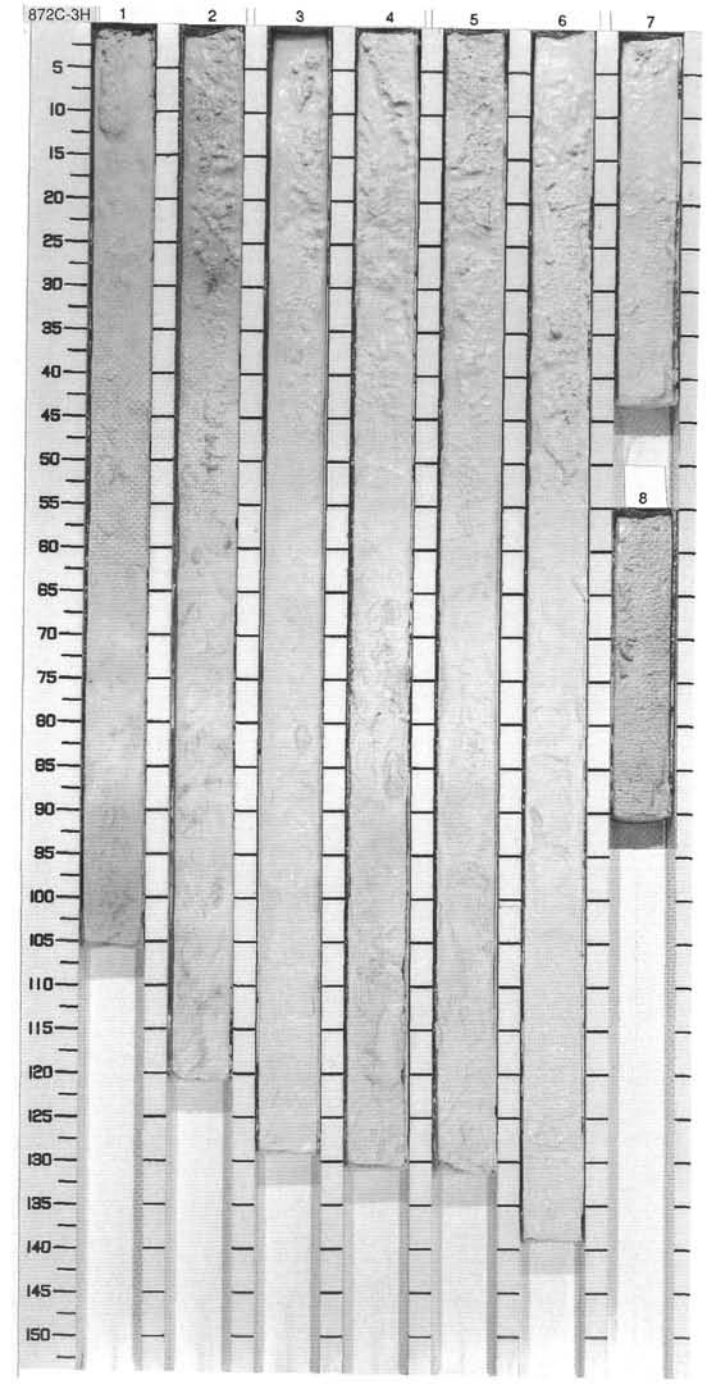
CORED 18.5 - 28.0 mbsf



DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogeneous FORAMINIFER OOZE. The color is white (10YR 8/2) to very pale brown (10YR 7/3) with "patches" of brownish gray (10YR 6/2) mottles probably due to burrowing. The entire core is highly disturbed to soupy.



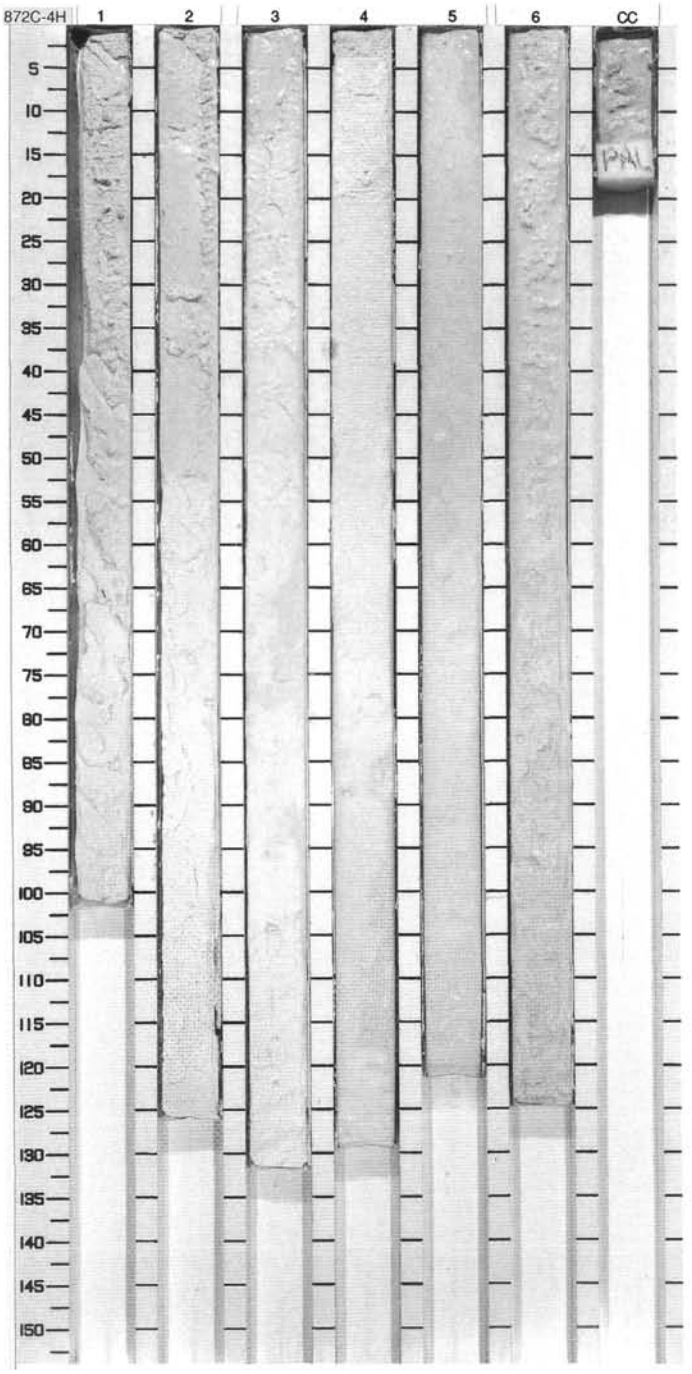
SITE 872 HOLE C CORE 4H CORED 28.0 – 37.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1		1	late Miocene				10YR 8/2
2		2					10YR 8/1
3		3				S	10YR 8/2 To 10YR 8/1
4		4					10YR 8/2 To 10YR 7/3
5		5				S	10YR 7/3
6		6					10YR 8/2 To 10YR 7/3
7		CC				M	

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogeneous white (10YR 8/2, 10YR 8/1) to very pale brown (10YR 7/3) FORAMINIFER OOZE. The texture consists of fine-grained sands. The entire core is highly disturbed by drilling to soupy.



SITE 872 HOLE C CORE 5H

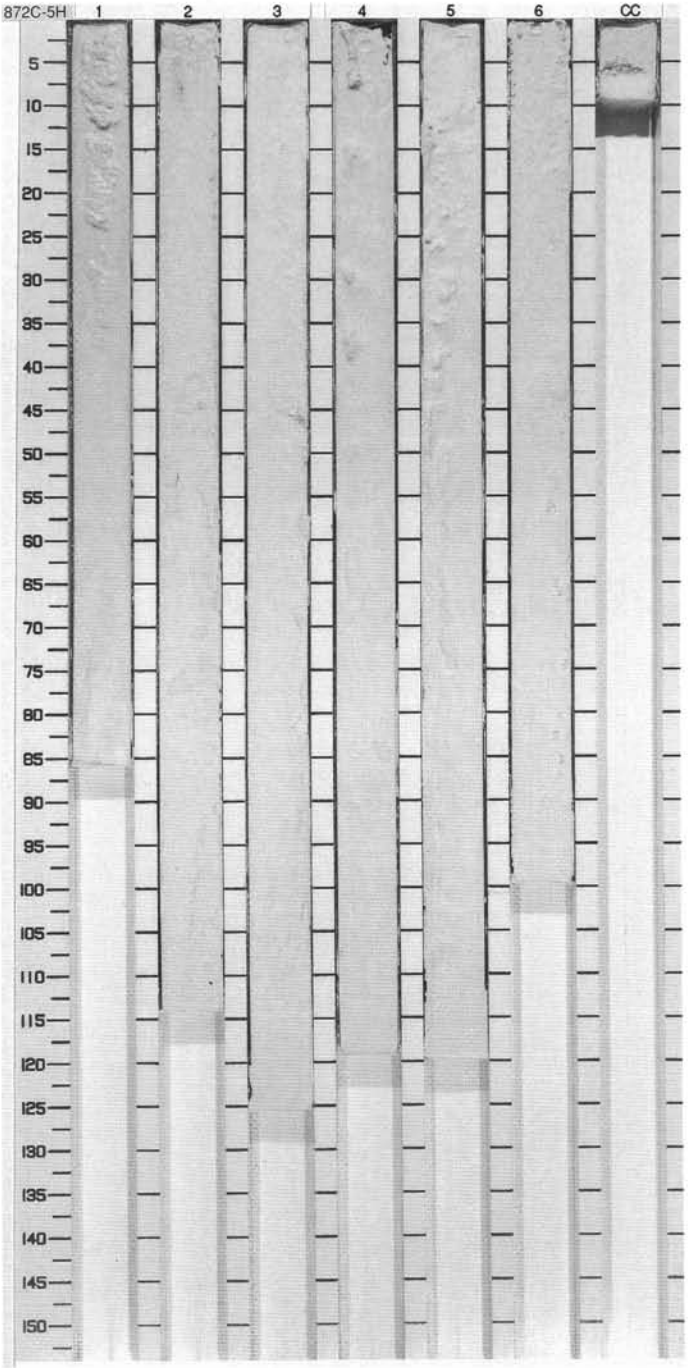
CORED 37.5 – 47.0 mbsf

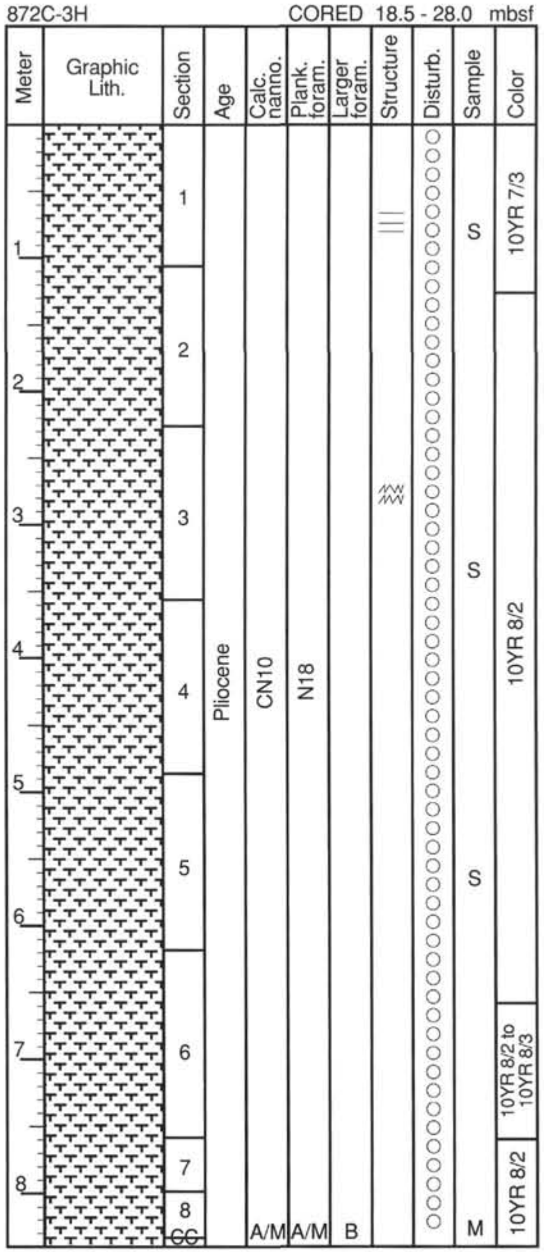
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–6		1	late Miocene			S	10YR 8/2
		2					
		3					
		4				S	10YR 8/2 To 10YR 8/3
		5					
		6					10YR 8/2
		CC				M	

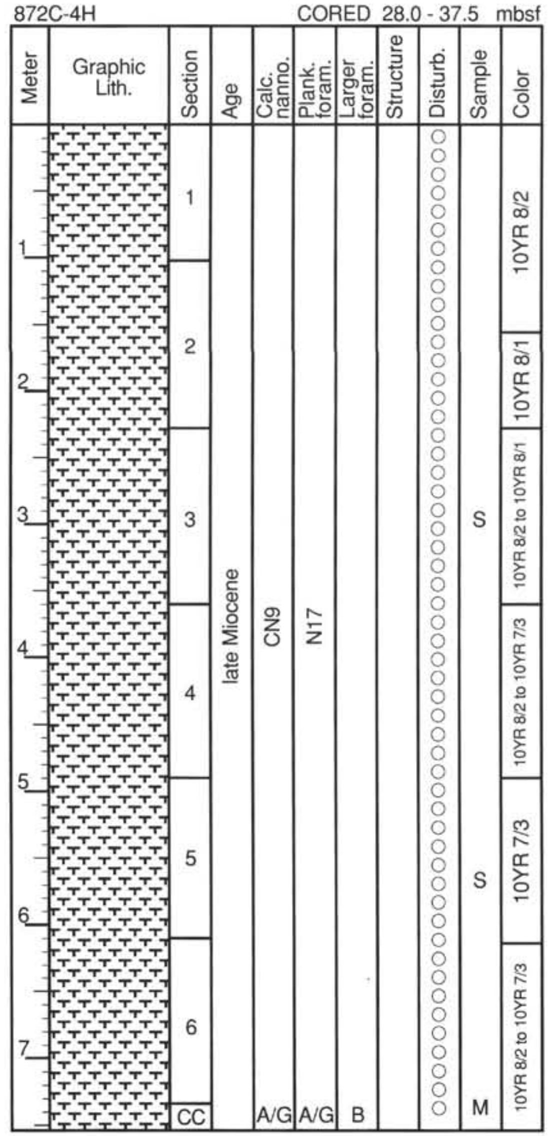
DESCRIPTION

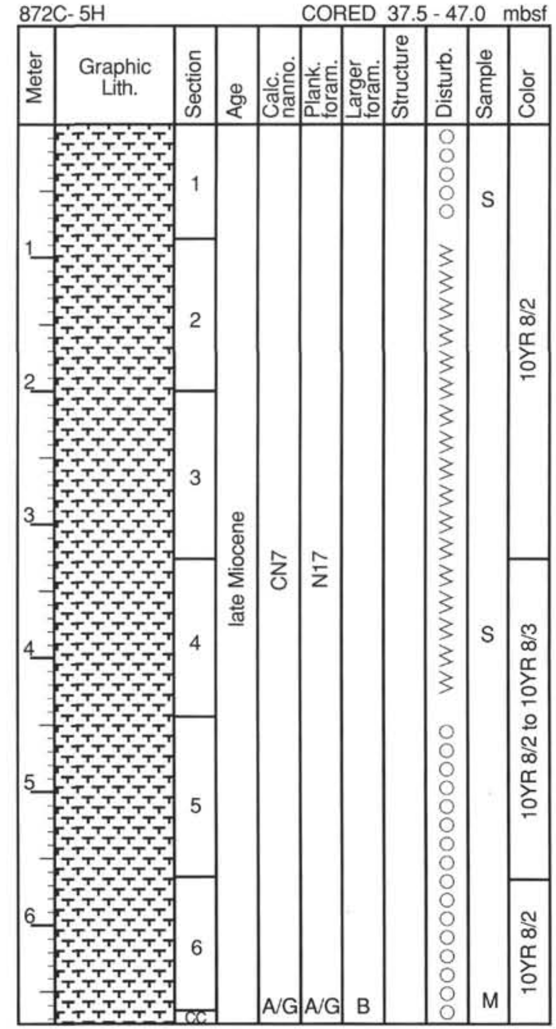
FORAMINIFER OOZE

Major Lithology:
White (10YR 8/2) to very pale brown (10YR 8/3) homogeneous FORAMINIFER OOZE. The texture consists of fine- to medium-grained sands. Echinoid spines in Sections 1 to 3. The entire core is highly disturbed to soupy.




872C-3H
CORED 18.5 - 28.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
1
2
3
4
5
6
7
8
CC
Pliocene
CN10
N18
A/M
A/M
B
S
S
S
M
10YR 7/3
10YR 8/2
10YR 8/2 to 10YR 8/3
10YR 8/2


872C-4H
CORED 28.0 - 37.5 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
1
2
3
4
5
6
CC
late Miocene
CN9
N17
A/G
A/G
B
S
S
M
10YR 8/2
10YR 8/1
10YR 8/2 to 10YR 8/1
10YR 8/2 to 10YR 7/3
10YR 7/3
10YR 8/2 to 10YR 7/3


872C- 5H
CORED 37.5 - 47.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
1
2
3
4
5
6
CC
late Miocene
CN7
N17
A/G
A/G
B
S
S
M
10YR 8/2
10YR 8/2 to 10YR 8/3
10YR 8/2

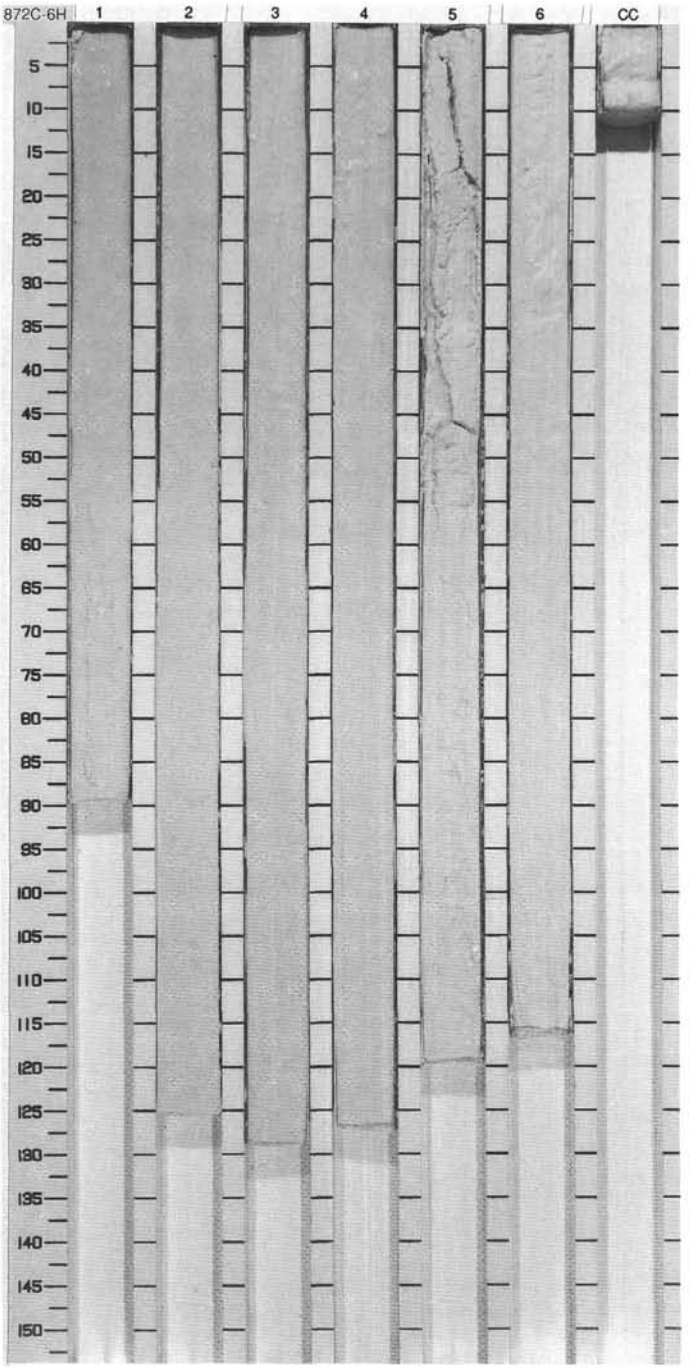
SITE 872 HOLE C CORE 6H CORED 47.0 – 56.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–7		1, 2, 3, 4, 5, 6, CC	middle Miocene			S, M	10YR 8/2

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
White (10YR 8/2), homogeneous FORAMINIFER OOZE.
The entire core is highly disturbed by drilling to soupy.



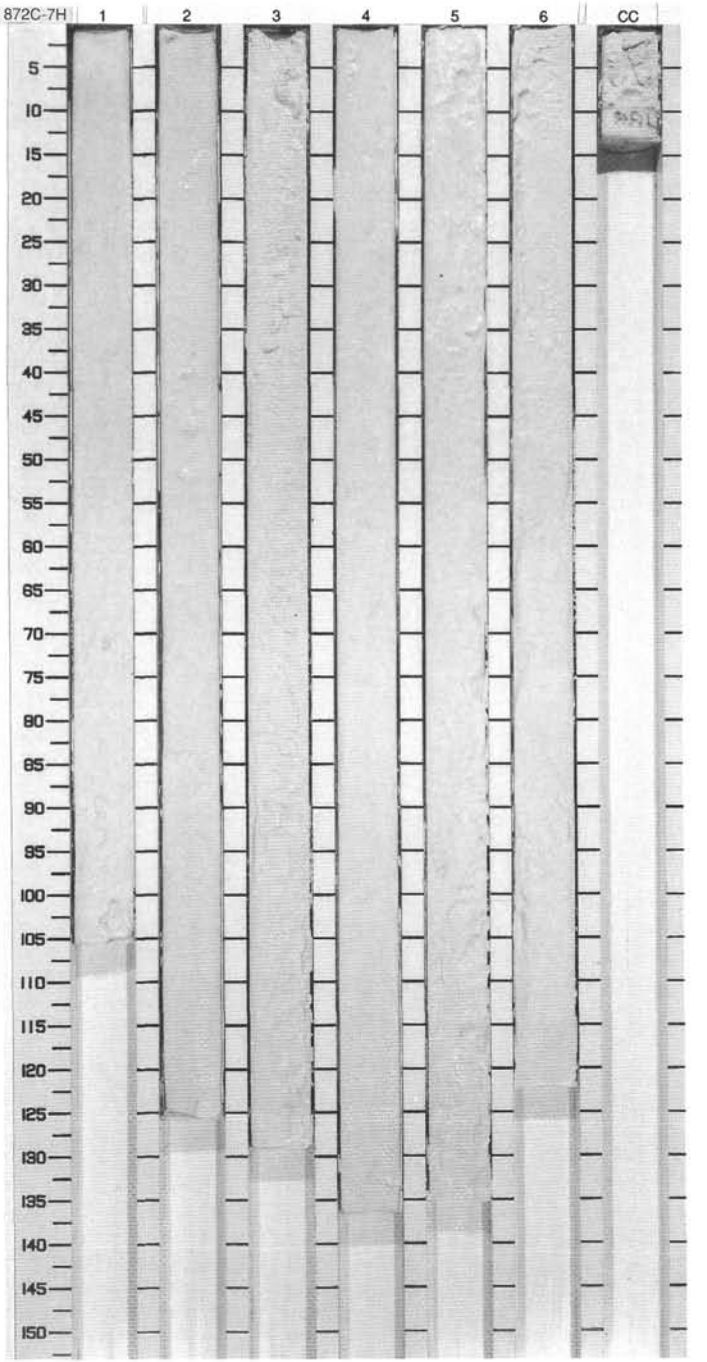
SITE 872 HOLE C CORE 7H CORED 56.5 – 66.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–7		1, 2, 3, 4, 5, 6, CC	middle Miocene			S, M	10YR 8/2

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogeneous, white (10YR 8/2) FORAMINIFER OOZE.
Entire core is soupy.



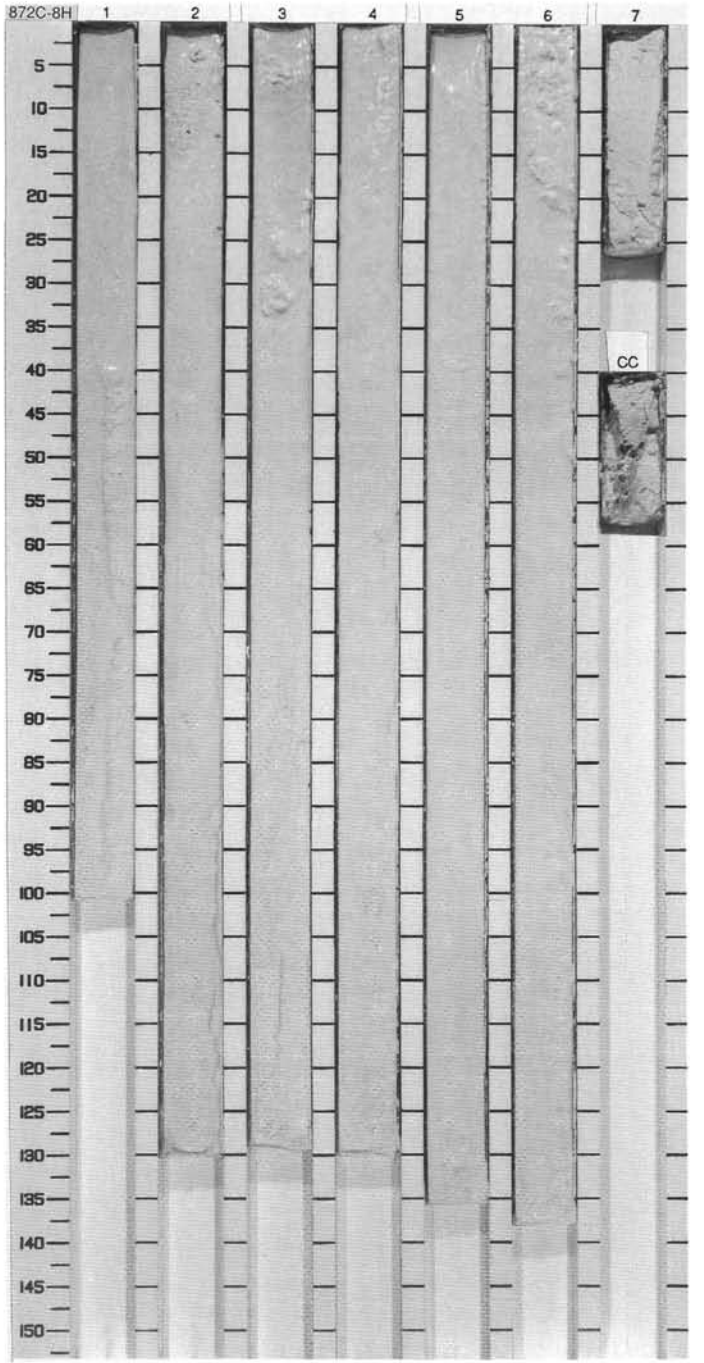
SITE 872 HOLE C CORE 8H CORED 66.0 – 75.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–8		1, 2, 3, 4, 5, 6, 7, CC	middle Miocene			S, M	10YR 8/2

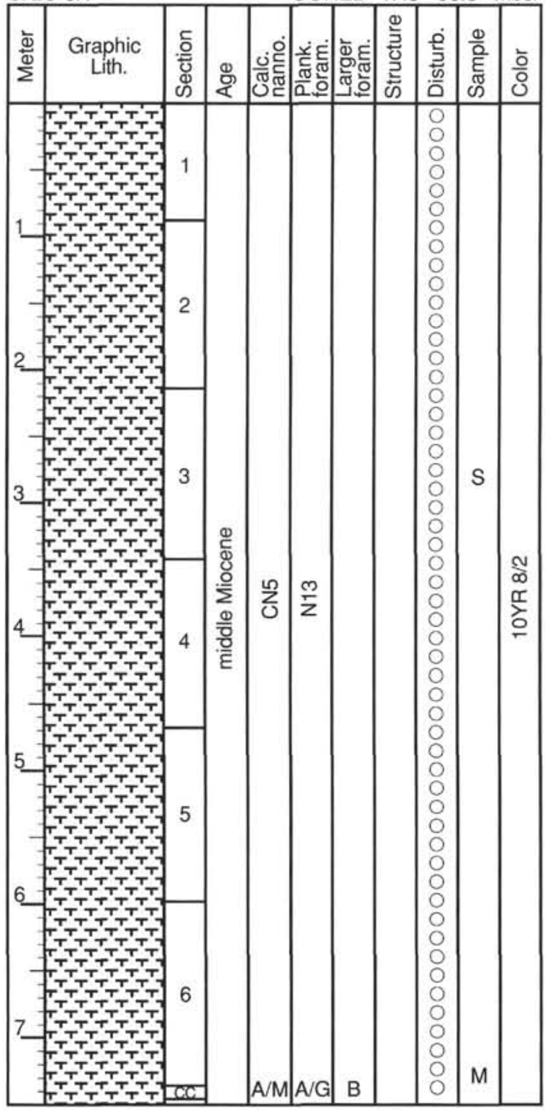
DESCRIPTION

FORAMINIFER OOZE

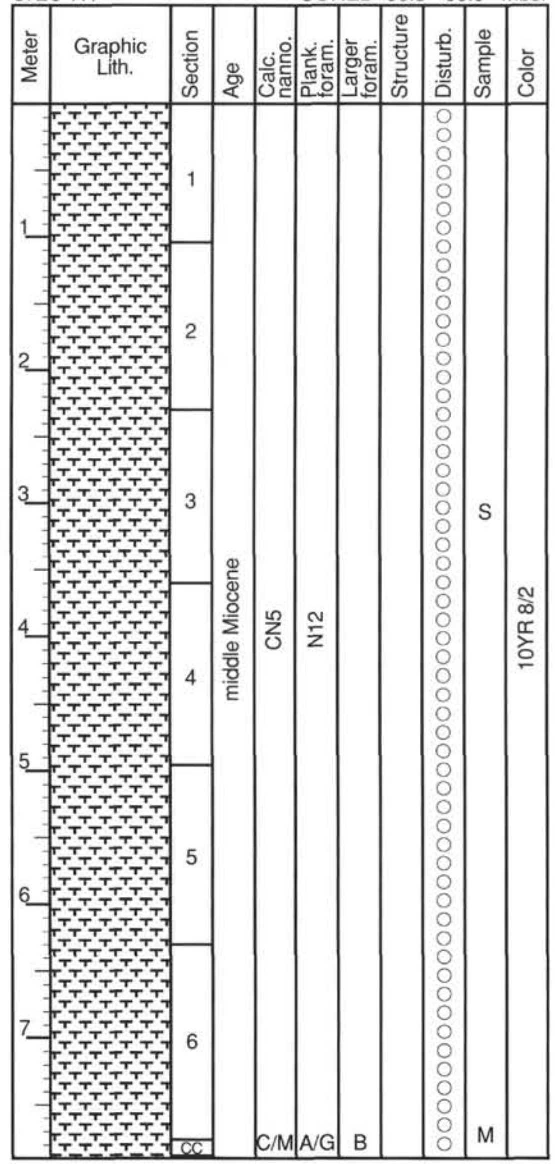
Major Lithology:
Soupy, white (10YR 8/2) FORAMINIFER OOZE. Some clasts (0.5–1 cm) of FORAMINIFER CHALK.



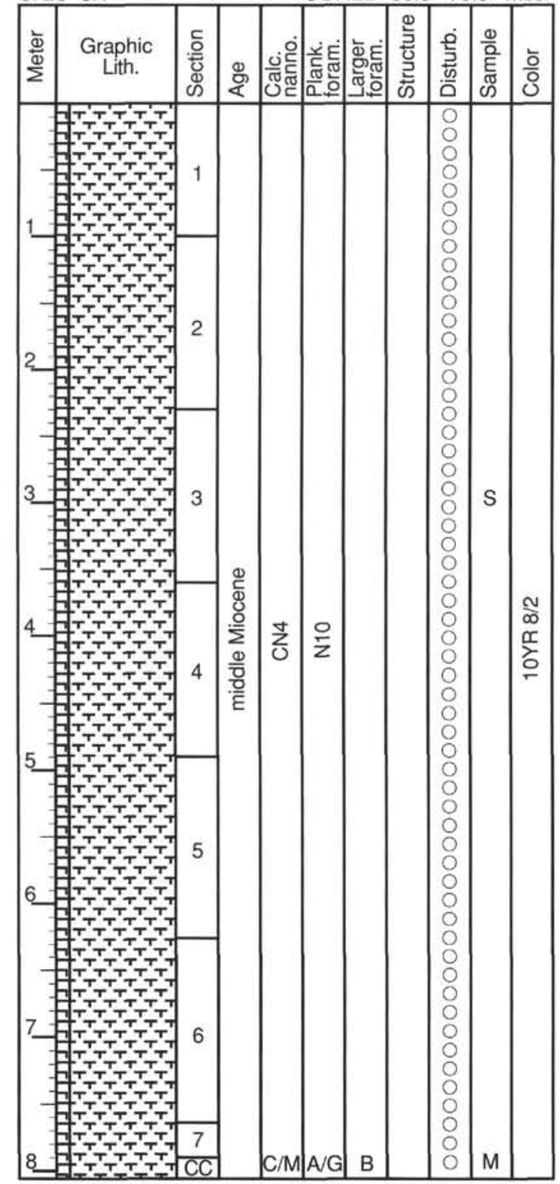
872C-6H CORED 47.0 - 56.5 mbsf



872C-7H CORED 56.5 - 66.0 mbsf



872C- 8H CORED 66.0 - 75.5 mbsf



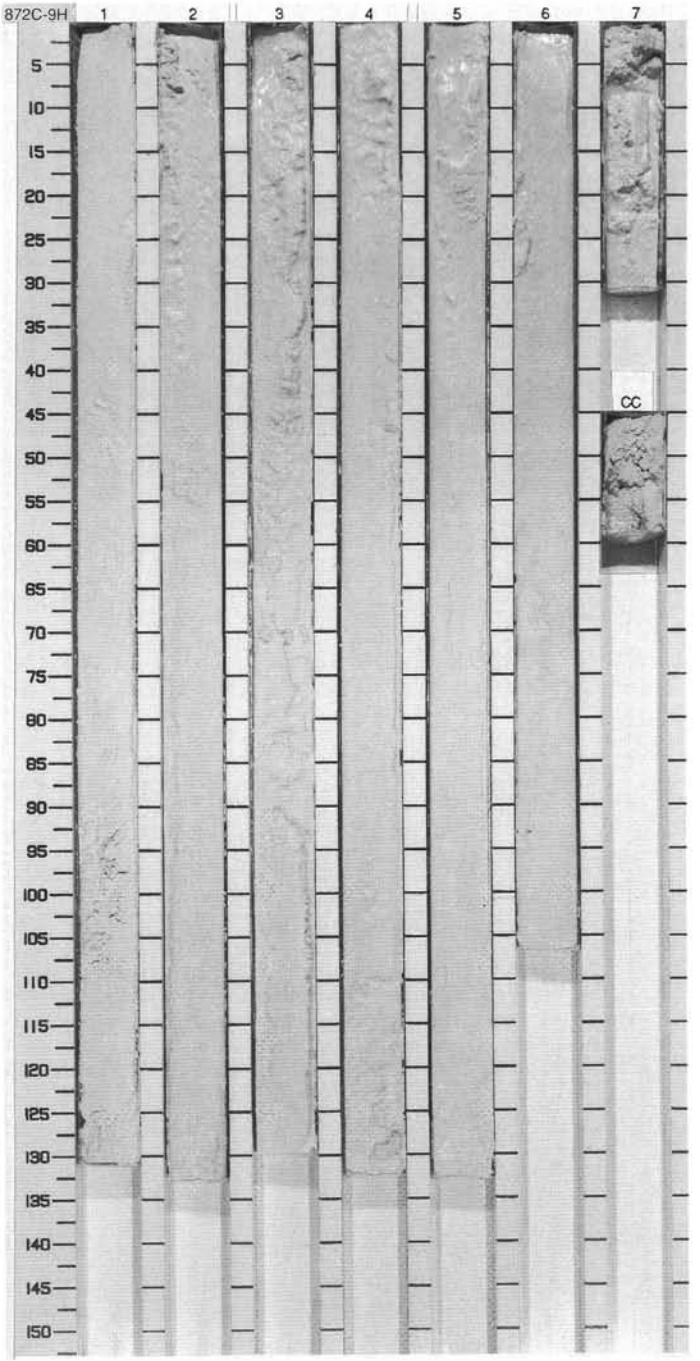
SITE 872 HOLE C CORE 9H CORED 75.5 – 85.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–8		1, 2, 3, 4, 5, 6, 7, CC	early Miocene			S, M	10YR 8/2

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
White (10YR 8/2) FORAMINIFER OOZE, soupy, with 0.5–1 cm clasts of FORAMINIFER CHALK.



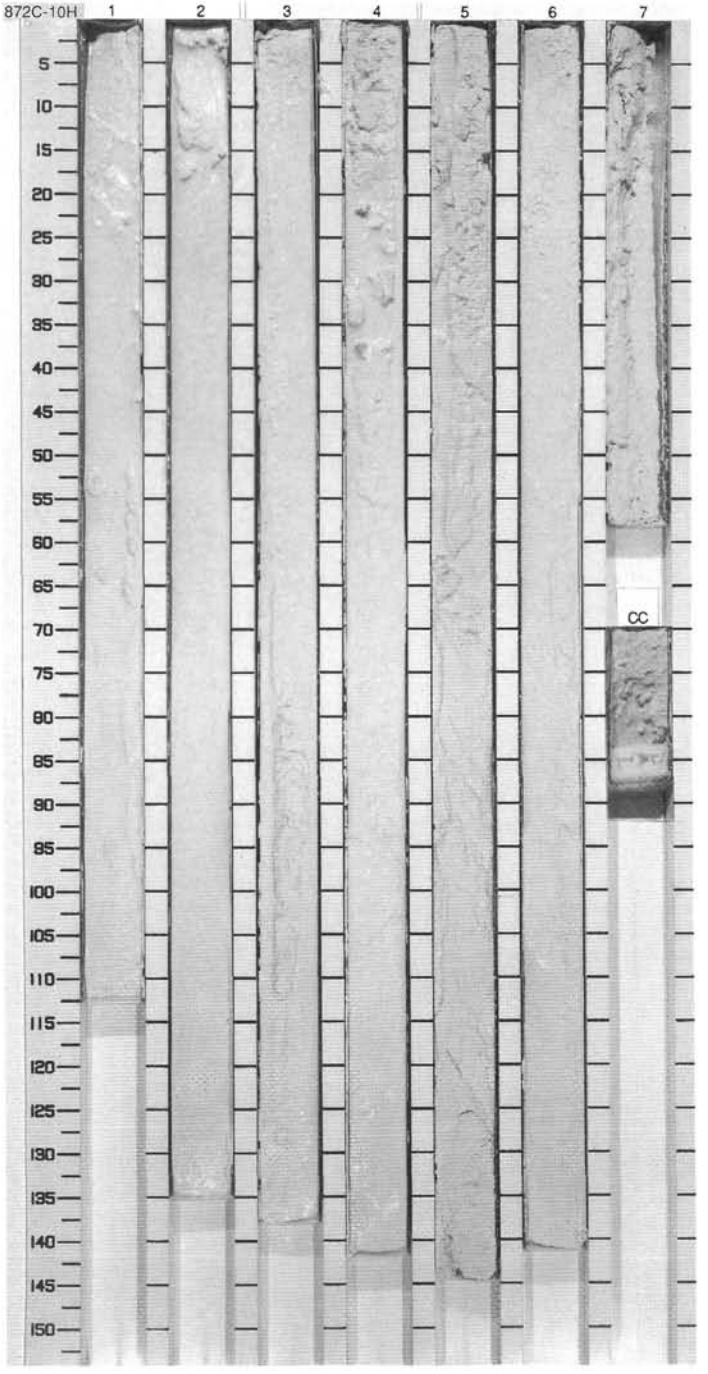
SITE 872 HOLE C CORE 10H CORED 85.0 – 94.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–8		1, 2, 3, 4, 5, 6, 7, CC	early Miocene			S, M	10YR 8/2

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Soupy, white (10YR 8/2) FORAMINIFER OOZE, fine to medium sand texture. Fewer lumps of chalk than in the overlying cores.



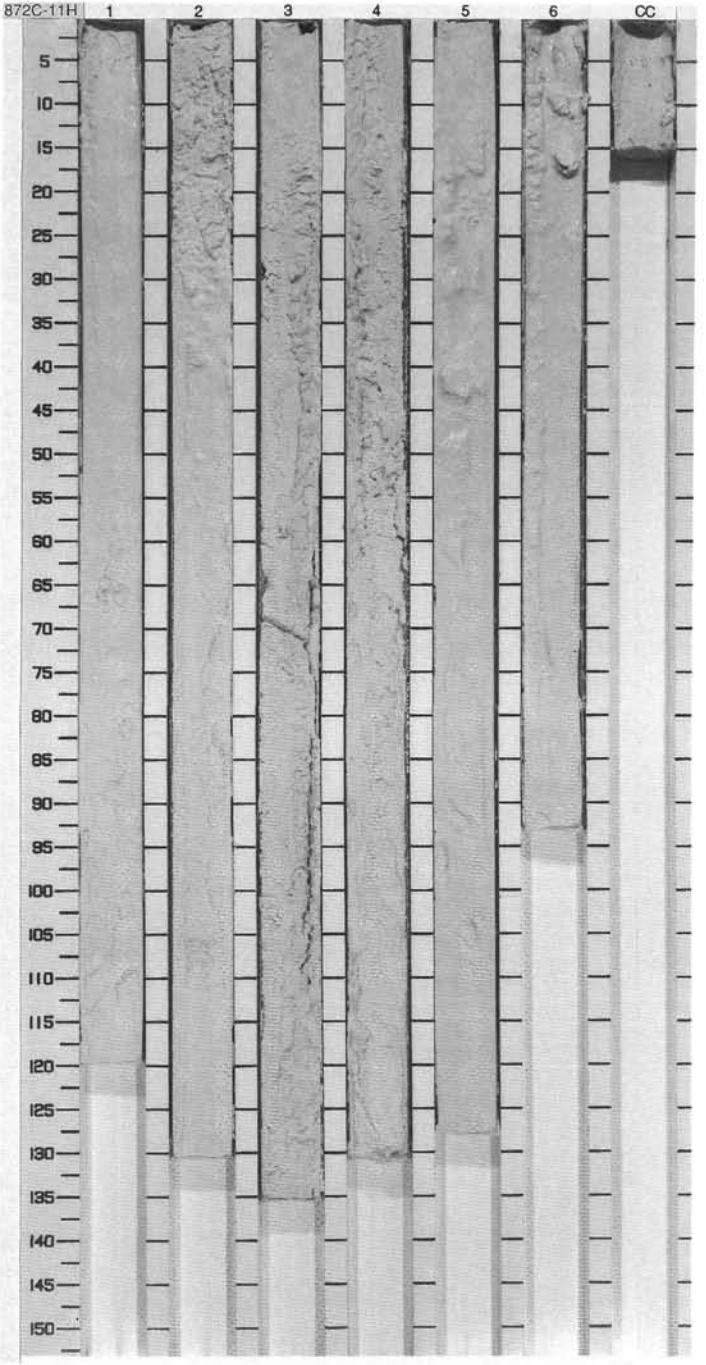
SITE 872 HOLE C CORE 11H CORED 94.5 – 104.0 mbsf

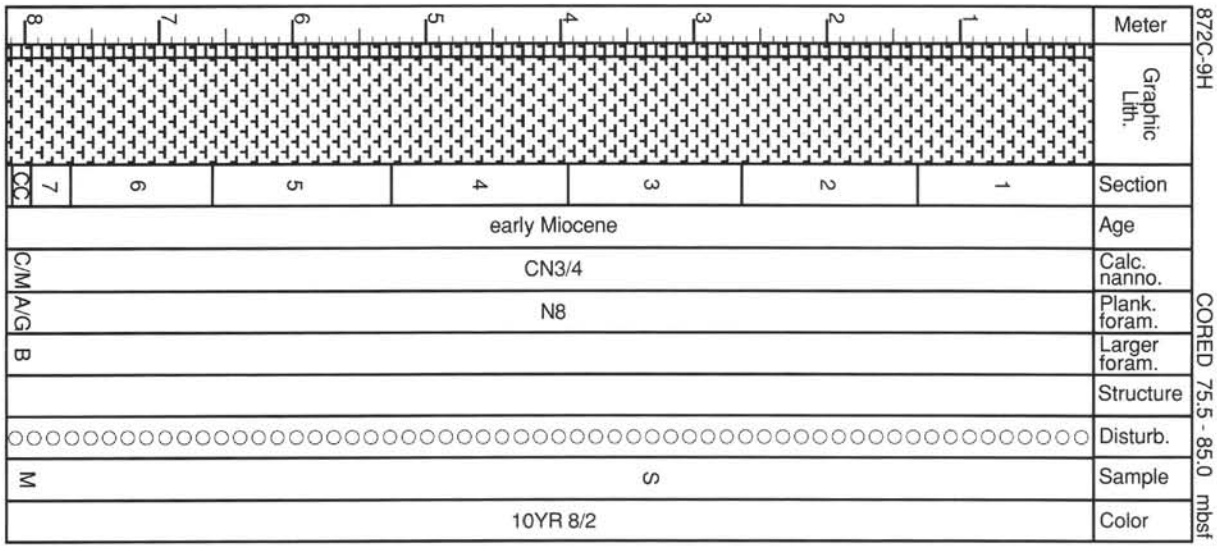
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–7		1, 2, 3, 4, 5, 6, CC	early Miocene			S (3), M (CC)	10YR 8/2

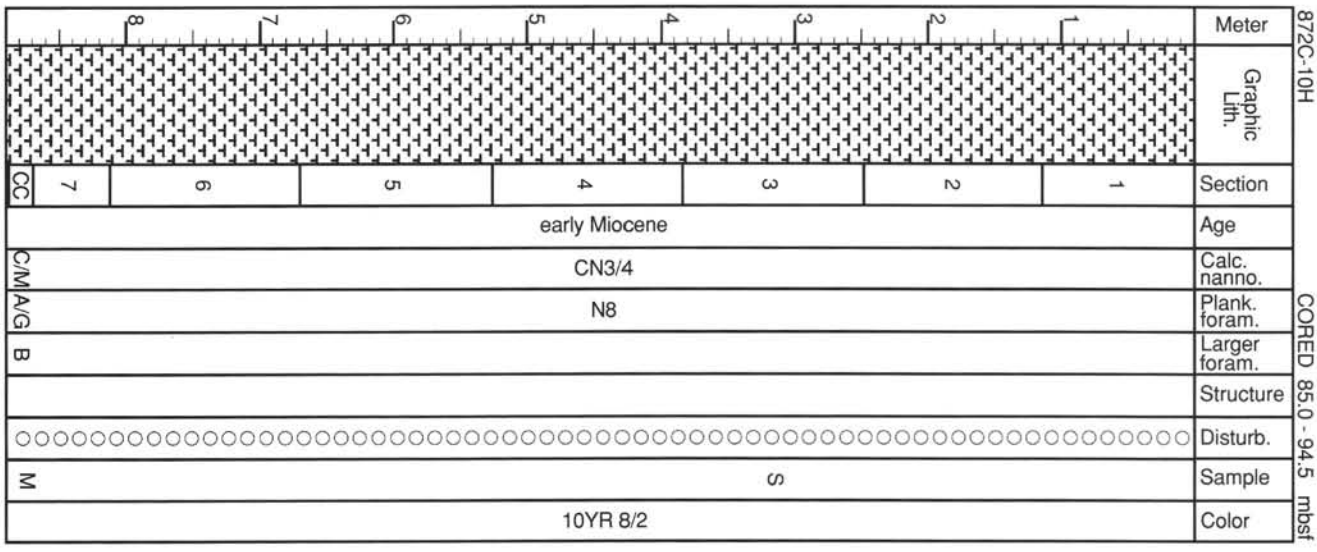
DESCRIPTION

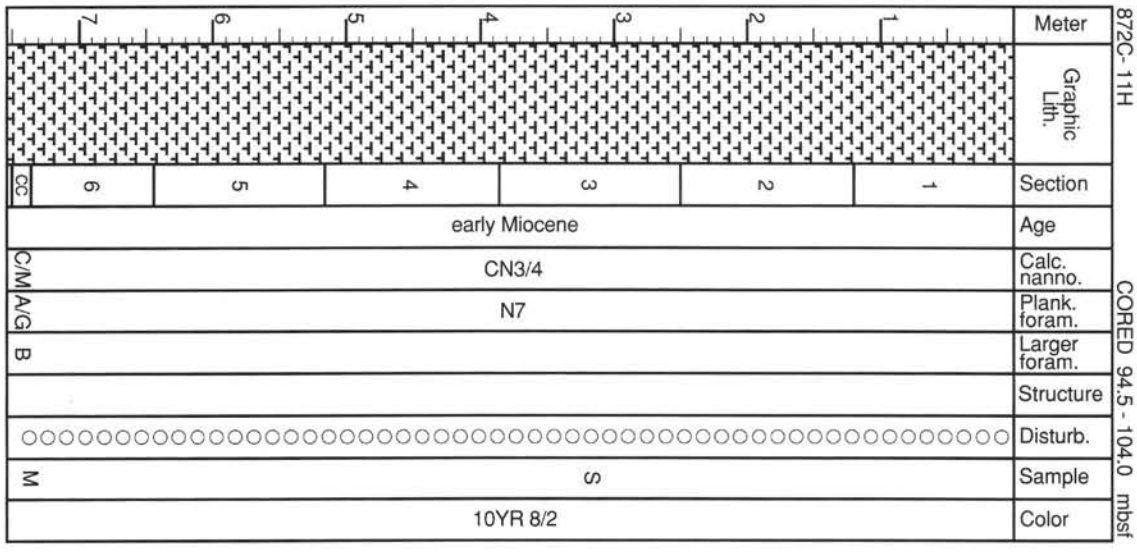
FORAMINIFER OOZE

Major Lithology:
Soupy, white (10YR 8/2) FORAMINIFER OOZE, fine to medium sand texture, fewer lumps of chalk than in Cores 8H and 9H.




872C-9H
CORED 75.5 - 85.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
CC 7 6 5 4 3 2 1
early Miocene
C/M
CN3/4
A/G
N8
B
M
S
10YR 8/2


872C-10H
CORED 85.0 - 94.5 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
CC 7 6 5 4 3 2 1
early Miocene
C/M
CN3/4
A/G
N8
B
M
S
10YR 8/2


872C- 11H
CORED 94.5 - 104.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
CC 6 5 4 3 2 1
early Miocene
C/M
CN3/4
A/G
N7
B
M
S
10YR 8/2

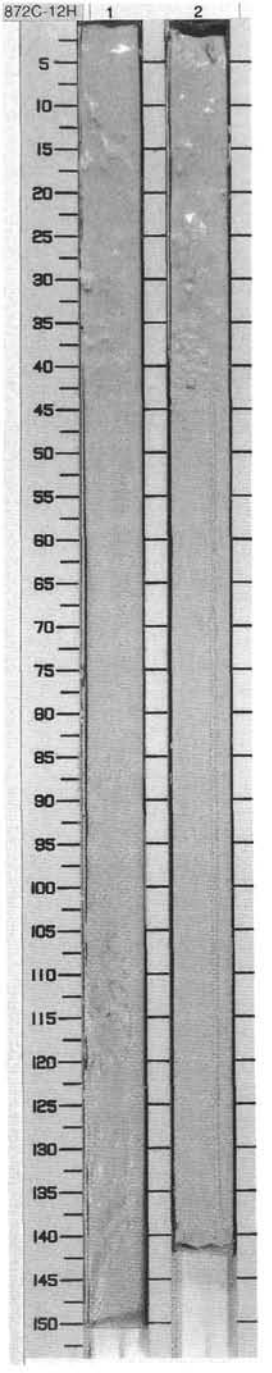
SITE 872 HOLE C CORE 12H CORED 104.0 – 106.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1		1	early Miocene			S	10YR 8/2
2		2				M	

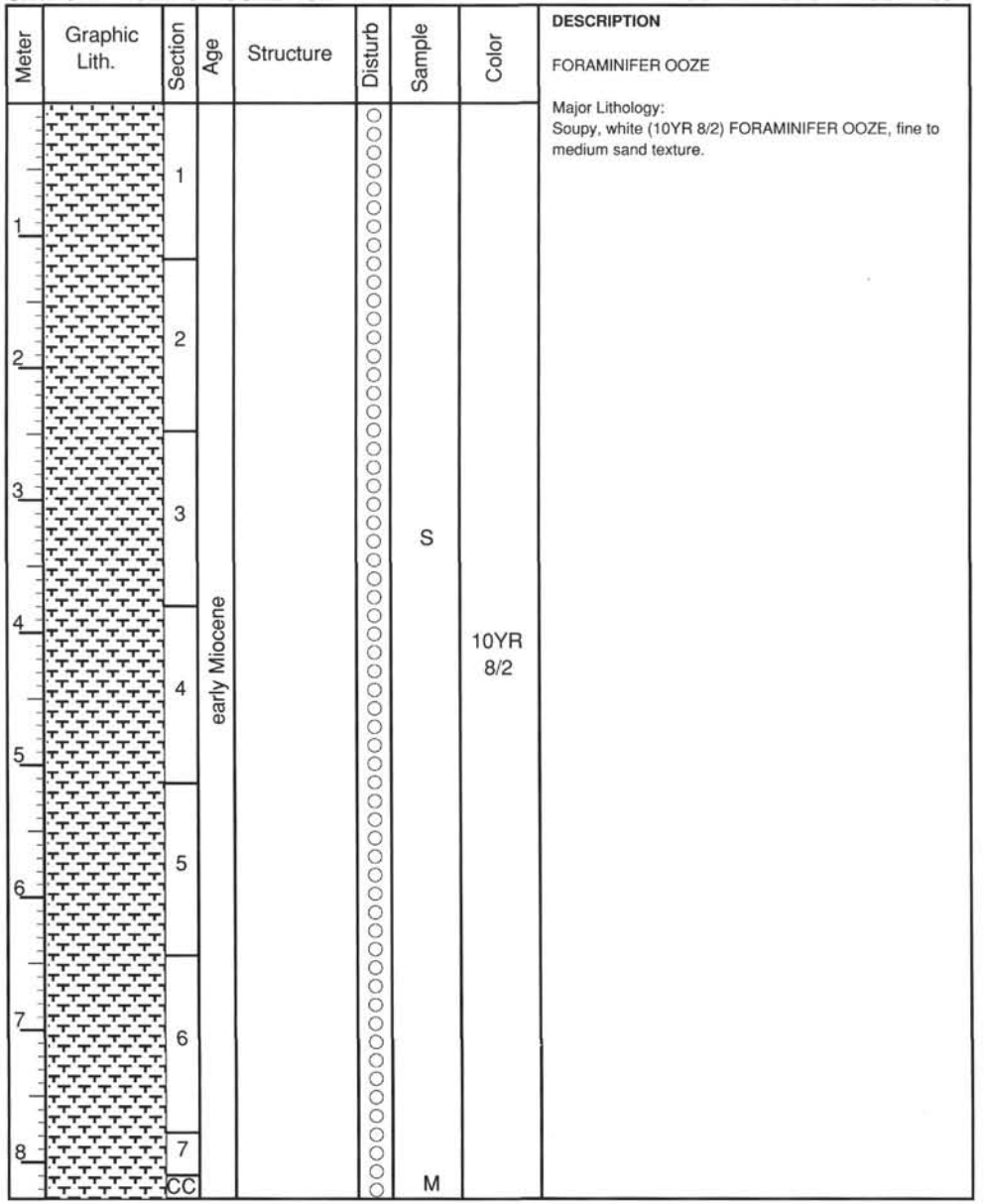
DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Soupy, white (10YR 8/2) FORAMINIFER OOZE, fine to medium sand texture. Some foraminifers are stained by Fe hydroxides(?); they are scattered throughout Section 1.



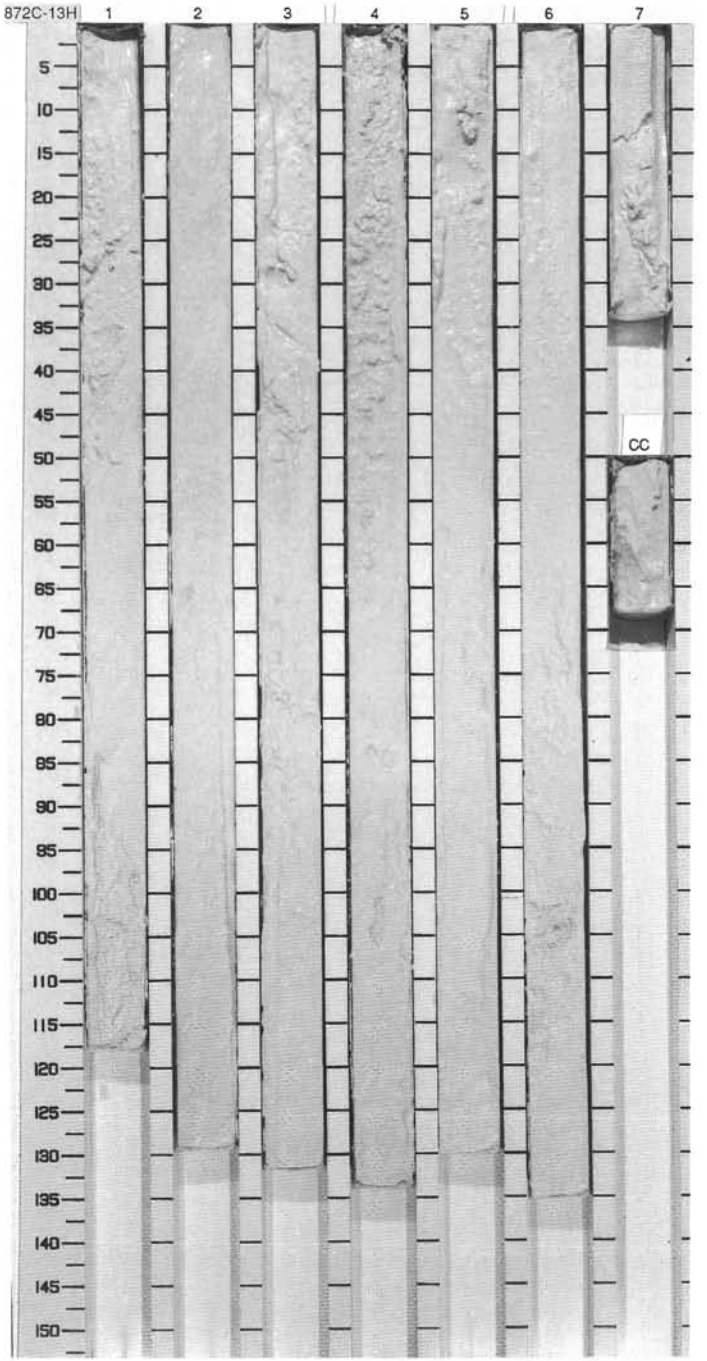
SITE 872 HOLE C CORE 13H CORED 106.0 – 115.5 mbsf



DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Soupy, white (10YR 8/2) FORAMINIFER OOZE, fine to medium sand texture.



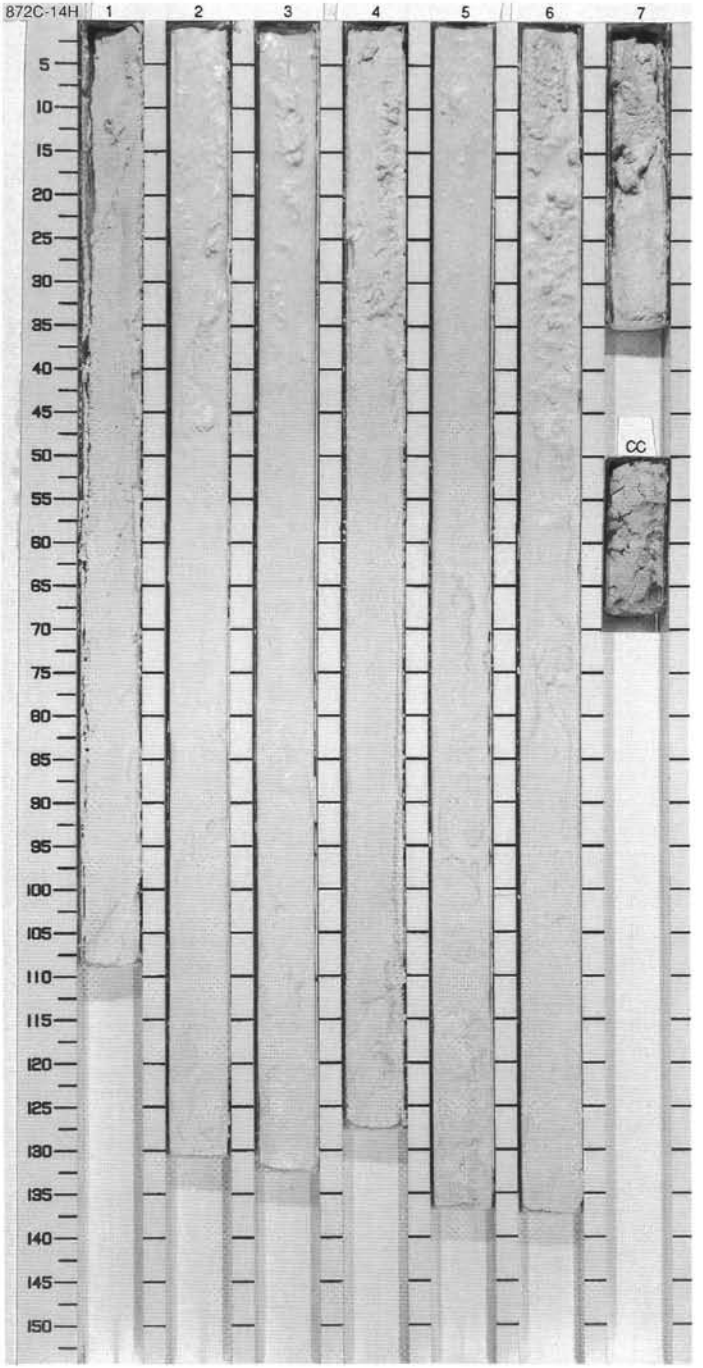
SITE 872 HOLE C CORE 14H CORED 115.5 – 125.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–8		1, 2, 3, 4, 5, 6, 7, CC	early Miocene			S, M	10YR 8/2

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Soupy, white (10YR 8/2) FORAMINIFER OOZE, fine to medium sand texture.



872C-12H
CORED 104.0 - 106.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
1
2
1
2
early Miocene
CN1
N4
C/M
A/G
B
S
M
10YR 8/2

872C-13H
CORED 106.0 - 115.5 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
1
2
3
4
5
6
7
8
1
2
3
4
5
6
7
CC
early Miocene
CN1
N4
C/M
A/G
B
S
M
10YR 8/2

872C- 14H
CORED 115.5 - 125.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
1
2
3
4
5
6
7
8
1
2
3
4
5
6
7
CC
early Miocene
CN1
P22
C/M
A/G
B
S
M
10YR 8/2

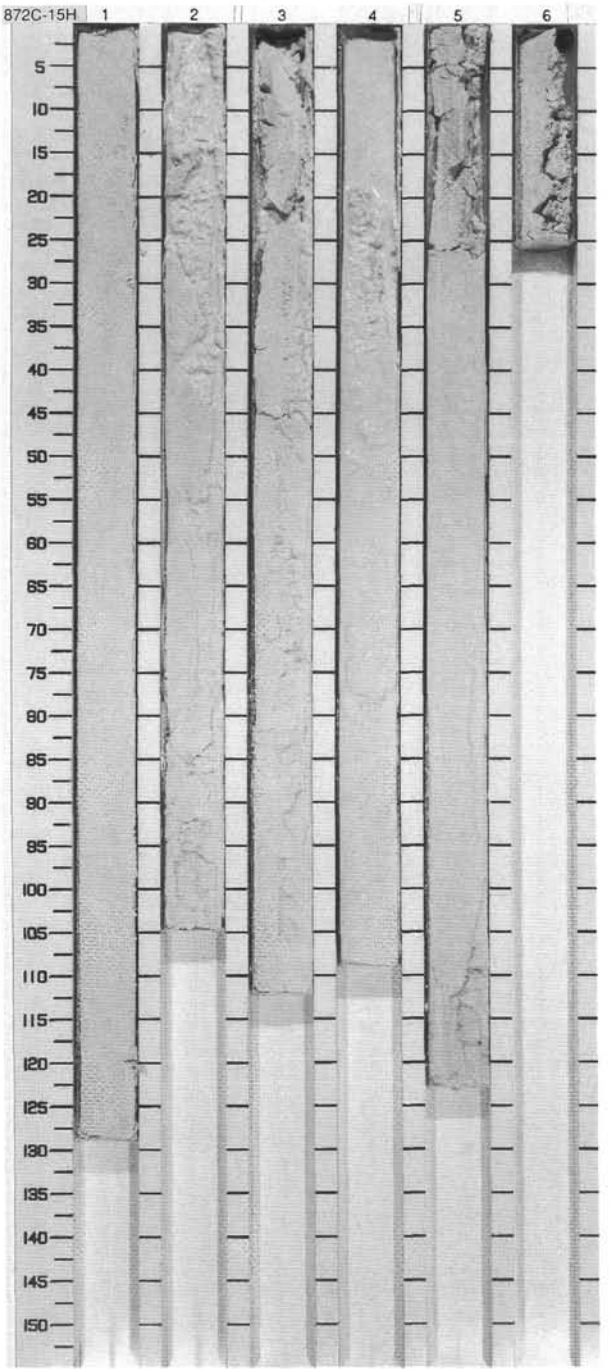
SITE 872 HOLE C CORE 15H CORED 125.0 – 130.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1–6		1–6, CC	late Oligocene		WWWWWWW	S, M	10YR 8/3

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Homogeneous, very pale brown (10YR 8/3) FORAMINIFER OOZE. The texture consists of fine- to medium-grained sands. Some foraminifers are stained by iron hydroxydes. The entire core is highly disturbed to soupy.



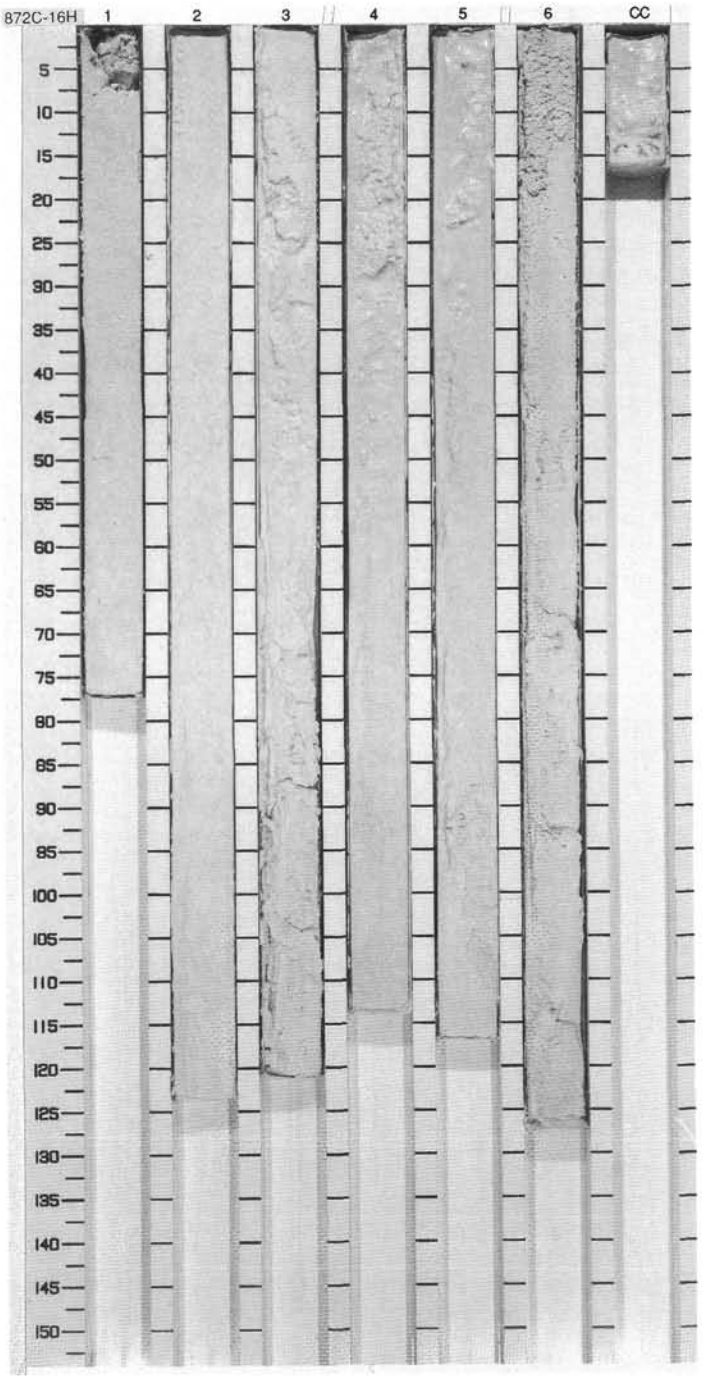
SITE 872 HOLE C CORE 16H CORED 130.0 – 139.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1		1	late Oligocene			S	10YR 8/2
		2					10YR 8/3
2		3				S	
3		4					10YR 8/3 To 10YR 6/4
4		5				S	10YR 8/2 To 10YR 6/4
5		6					
6		CC				M	

DESCRIPTION

FORAMINIFER OOZE

Major Lithology:
Very homogeneous FORAMINIFER OOZE, fine-grained sand texture. The color ranges from white (10YR 8/2) to very pale brown (10YR 7/4) and light yellowish brown (10YR 6/4) depending on the abundance of stained foraminifers. The core is highly disturbed by drilling, except Section 1, which is moderately disturbed.



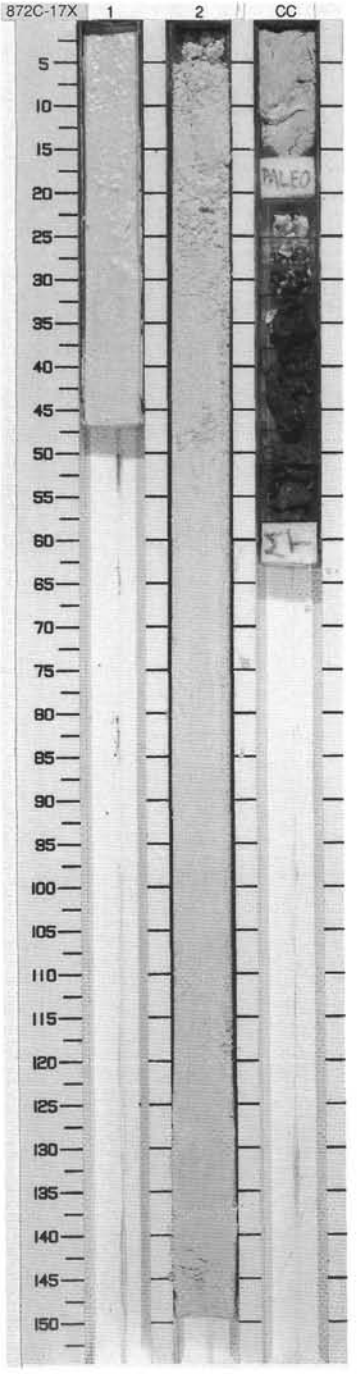
SITE 872 HOLE C CORE 17X CORED 139.5 – 146.0 mbsf

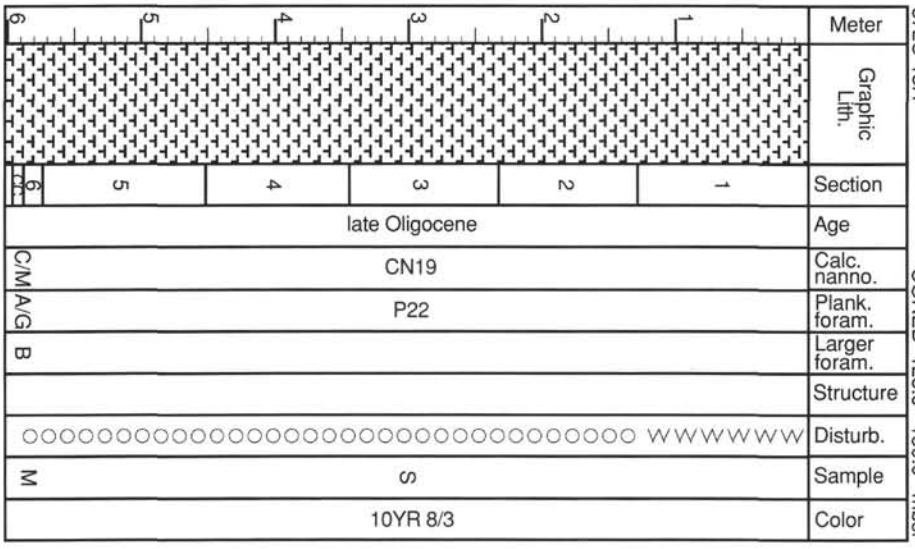
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color
1		1	late Oligocene		WWW	D M	10YR 8/2
2		2					10YR 8/3
		CC					5GY 3/2

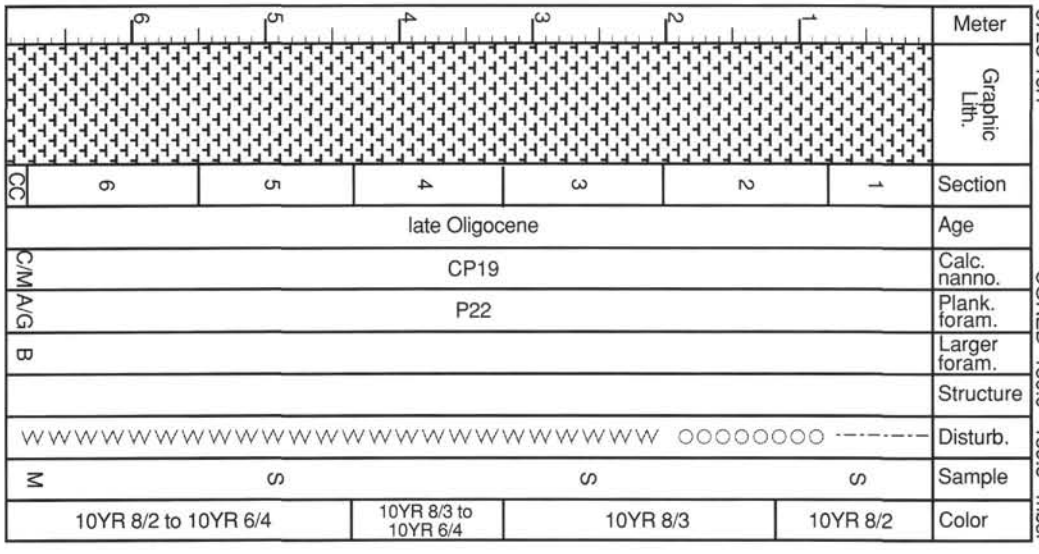
DESCRIPTION

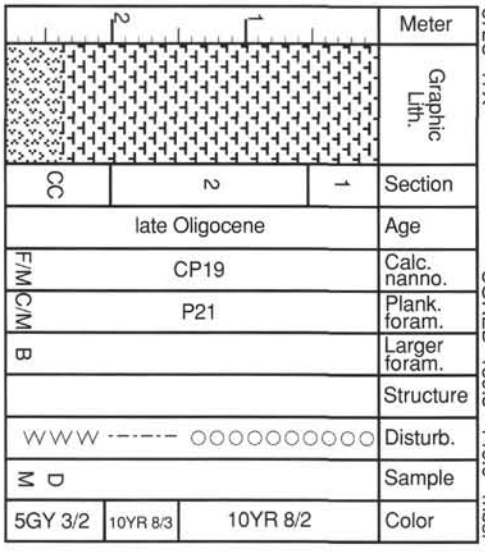
FORAMINIFER OOZE and ALTERED BASALT

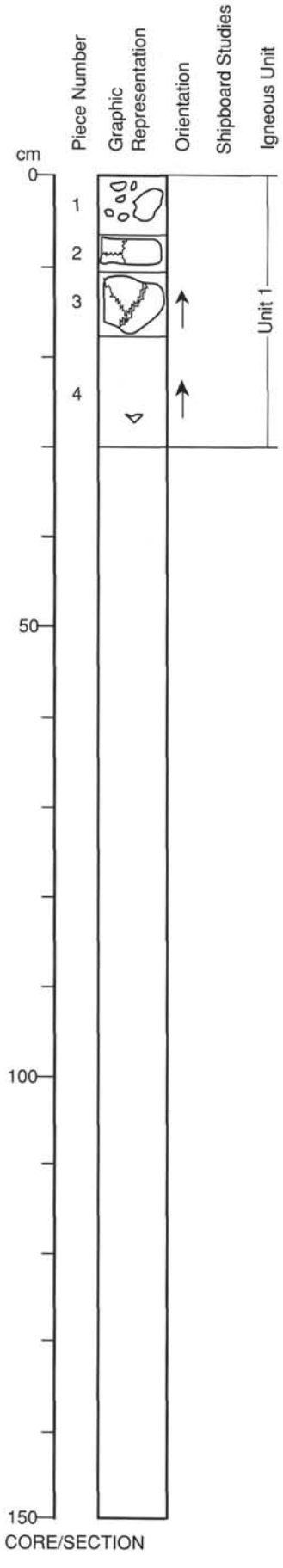
Major Lithologies:
Sections 1 and 2, and interval CC, 0–20 cm; Homogeneous, white (10YR 8/2), FORAMINIFER OOZE, fine sand texture. Interval CC, 20–32 cm; numerous partly lithified fragments of white FORAMINIFER OOZE and grayish olive green (5GY 3/2) CLAY and ALTERED BASALT. Size of fragments decreases with depth as does the percentage of FORAMINIFER OOZE fragments. Interval CC, 32–48 cm; Grayish olive green (5GY 3/2), altered BASALT. Interval CC, 48–62 cm; dark reddish gray (10YR 3/1), friable, altered BASALT.




872C-15H
CORED 125.0 - 130.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
CC
late Oligocene
CN19
C/M
P22
A/G
B
M
S
10YR 8/3


872C-16H
CORED 130.0 - 139.5 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
CC
late Oligocene
CP19
C/M
P22
A/G
B
M
S
S
S
10YR 8/2 to 10YR 6/4
10YR 8/3 to 10YR 6/4
10YR 8/3
10YR 8/2


872C- 17X
CORED 139.5 - 146.0 mbsf
Meter
Graphic Lith.
Section
Age
Calc. nanno.
Plank. foram.
Larger foram.
Structure
Disturb.
Sample
Color
CC
late Oligocene
CP19
F/M
C/M
P21
B
M
D
5GY 3/2
10YR 8/3
10YR 8/2

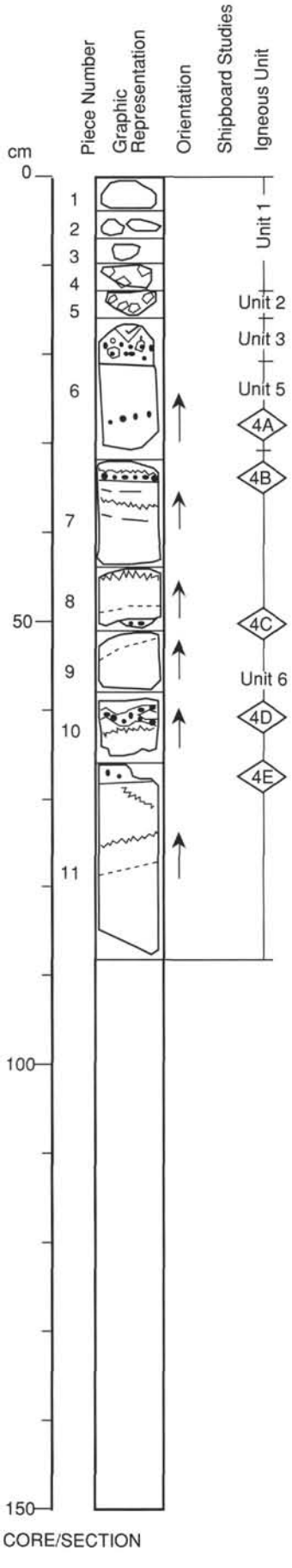


144-872A-18X-1

UNIT 1: CLINOPYROXENE BASALT

Pieces 1–4

CONTACTS: None.
PHENOCRYSTS:
Clinopyroxene - 5%; 1–2 mm; Dusky green (5G 3/2), altered prisms.
GROUNDMASS: Microcrystalline. Numerous small (<<1 mm) dark reddish brown (10R 3/4) patches (after olivine?).
VESICLES: None.
COLOR: Light brownish gray (5YR 3/1).
STRUCTURE: None.
ALTERATION: Matrix color suggests that much clay development has occurred. Calcite addition.
VEINS/FRACTURES: 2%; 1–2 mm; Calcite-filled. Also, irregular patches of calcite sparsely distributed between 19–29 cm.
ADDITIONAL COMMENTS: A surprising recovery of basalt at the base of the pelagic section. We were expecting limestone.



144-872B-4R-1

UNIT 1: VOLCANOGENIC SANDSTONE

Pieces 1–4

CONTACTS: None.
PHENOCRYSTS: None.
GROUNDMASS: Sand and silt-sized grains of volcanic origin.
VESICLES: None.
COLOR: Pale yellow to light yellowish brown (2.5Y 7/6–6/4) with strong brown bands (7.5YR 5/6–4/6) 1 cm thick reflecting a more iron rich matrix.
STRUCTURE: Banded with more matrix rich zones.
ALTERATION: Very oxidized with much clay development.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: None.

UNIT 2: PHOSPHATIC PEBBLE CONGLOMERATE

Piece 5

CONTACTS: None.
PHENOCRYSTS: None.
GROUNDMASS: Friable, poorly preserved foraminifer sand matrix.
VESICLES: None.
COLOR: Pale yellow (7.5YR 5/6).
STRUCTURE: Clast-supported.
ADDITIONAL COMMENTS: Rounded strong brown (7.5YR 5/6–4/6) phosphatic pebbles, 1–2 cm. Occasional, angular, vesicular basalt clasts, 1–2 cm.

UNIT 3: PEBBLE CONGLOMERATE

Piece 6 (top)

CONTACTS: Sharp contact at 21 cm with basalt of Unit 5.
PHENOCRYSTS: None.
GROUNDMASS: Foraminifer sand matrix.
VESICLES: None.
COLOR: White.
STRUCTURE: Clast-supported.
ADDITIONAL COMMENTS: Angular basalt clasts, 0.5–5 cm. Santonian foraminifers. Probably filling a large crack.

•••• Foraminiferal ooze
Calcite veins (sparry in this section)

144-872B-4R-1

UNIT 4: PELAGIC FORAMINIFER LIMESTONE

Pieces 6–11, infillings

CONTACTS: Fills fractures in Units 5 and 6.
PHENOCRYSTS: None.
GROUNDMASS: Foraminifer sand.
VESICLES: None.
COLOR: White (N9) to grayish pink (5R 8/2).
VEINS/FRACTURES: Locations and thicknesses: A) 28 cm, 1–2 mm; B) 34 cm, 2 mm; C) 50–51 cm, <1 cm; D) 60–62 cm, 5 cm; E) 67–68 cm, 1 cm.
ADDITIONAL COMMENTS: Unit 4 is identified as a separate unit because of the importance of these foraminifers in defining minimum basement age.

UNIT 5: OLIVINE BASALT

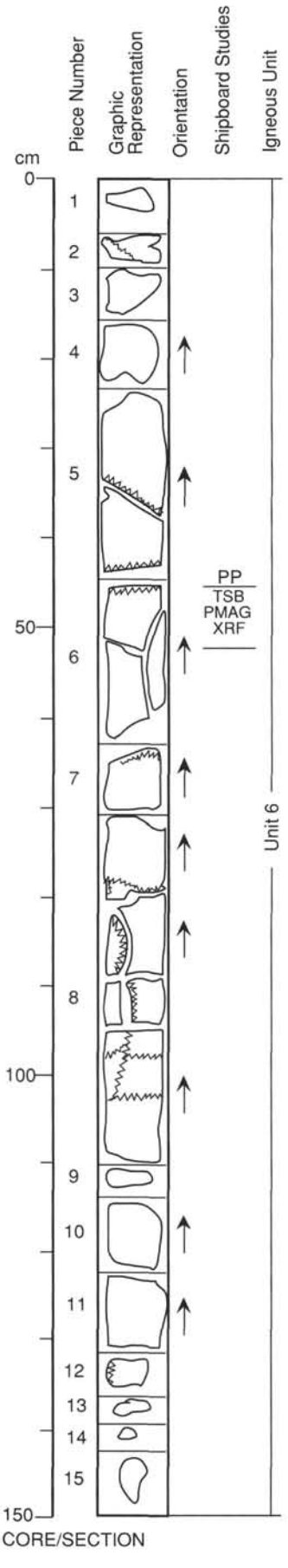
Piece 6 (lower 10 cm)

CONTACTS: Sharp contact at 21 cm with Unit 3 and with fracture infillings of Unit 4.
PHENOCRYSTS:
Olivine - 2%–3%; 1–2 mm.
GROUNDMASS: Microcrystalline. 10%, <0.5 mm dark reddish brown (10R3/4) patches (after olivine?).
VESICLES: None.
COLOR: Dark brownish gray (5G 4/1), dusky brown (5YR 2/2) along fractures.
STRUCTURE: None.
ALTERATION: Color and softness of the sample suggest extensive clay development.
VEINS/FRACTURES: Sparse microfractures whose edges are weathered dusky brown (5YR 2/2).
ADDITIONAL COMMENTS: None.

UNIT 6: CLINOPYROXENE BASALT

Pieces 7–11

CONTACTS: Continues into the next core. Sharp contacts with fracture infillings of Unit 4.
PHENOCRYSTS:
Clinopyroxene - 2%–3%; <1 mm; Black (N1), elongate prisms.
GROUNDMASS: Microcrystalline.
VESICLES: None.
COLOR: Dark gray (N3). Weathered moderate yellowish brown (10YR 5/4) above 77 cm, especially adjacent to fractures.
STRUCTURE: None.
ALTERATION: Light color suggests that much clay development has occurred.
VEINS/FRACTURES: 32–52 cm, subhorizontal fractures with a 0.5–2 cm spacing. 52–87 cm, dipping (30 degrees) fractures, spacing increases from 2 cm to 5 cm downhole.
ADDITIONAL COMMENTS: None.

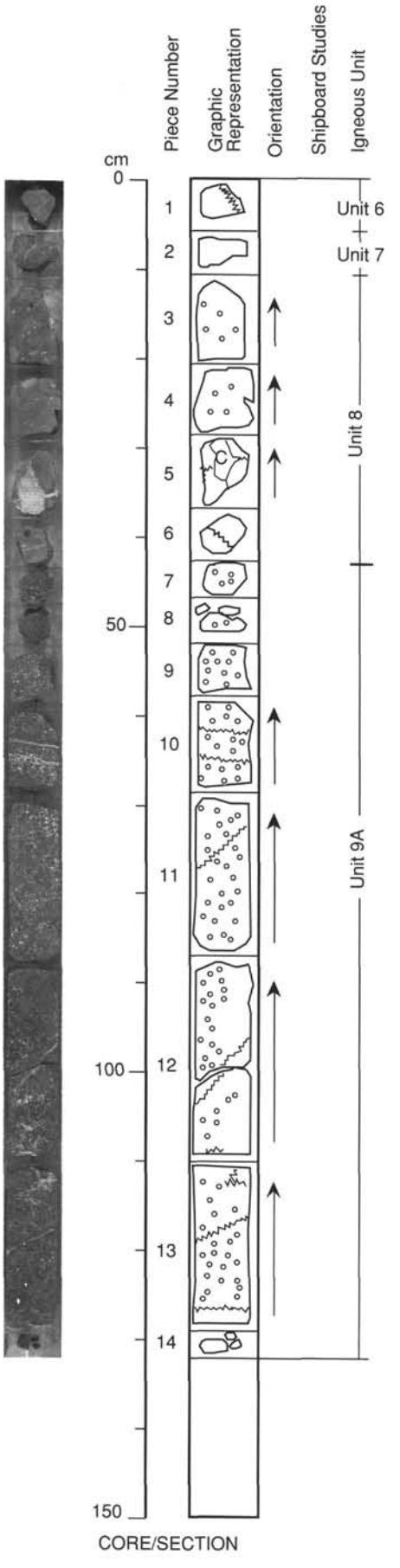


144-872B-5R-1

UNIT 6: CLINOPYROXENE BASALT (continued)

Pieces 1–15

CONTACTS: Continues from 4R-1 and into 5R-2.
PHENOCRYSTS:
Clinopyroxene - 2%–3%; <1 mm; Black (N1), elongate prisms.
GROUNDMASS: Microcrystalline.
VESICLES: None.
COLOR: Dark gray (N3). Weathered to a brownish gray (5Y 4/1) from 110–149 cm.
STRUCTURE: None.
ALTERATION: Brownish-gray (5Y 4/1) color suggests alteration to clay minerals. Dark gray (N3) portions look quite fresh.
VEINS/FRACTURES: <1%; 14 mm; Occasional, calcite-filled veins.
ADDITIONAL COMMENTS: None.



144-872B-5R-2

C Large calcite blob
∘∘ Vesicles

UNIT 6: CLINOPYROXENE BASALT (continued)

Piece 1

CONTACTS: Continues from 5R-1.
PHENOCRYSTS:
Clinopyroxene - 2%–3%; <1 mm; Black (N1), elongate prisms.
GROUNDMASS: Microcrystalline.
VESICLES: None.
COLOR: Weathered to a brownish gray (5Y 4/1).
STRUCTURE: None.
ALTERATION: Brownish gray (5Y 4/1) color suggests alteration to clay minerals.
VEINS/FRACTURES: <1%; 1–4 mm; Occasional, calcite-filled veins.
ADDITIONAL COMMENTS: None.

UNIT 7: BASALT

Piece 2

CONTACTS: None.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Microcrystalline.
VESICLES: None.
COLOR: Dusky red (5R 3/4).
STRUCTURE: None.
ALTERATION: 5%, 0.25–3 mm blotches of calcite and chabazite (zeolite identified by X-ray diffraction).
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: None.

UNIT 8: BASALT

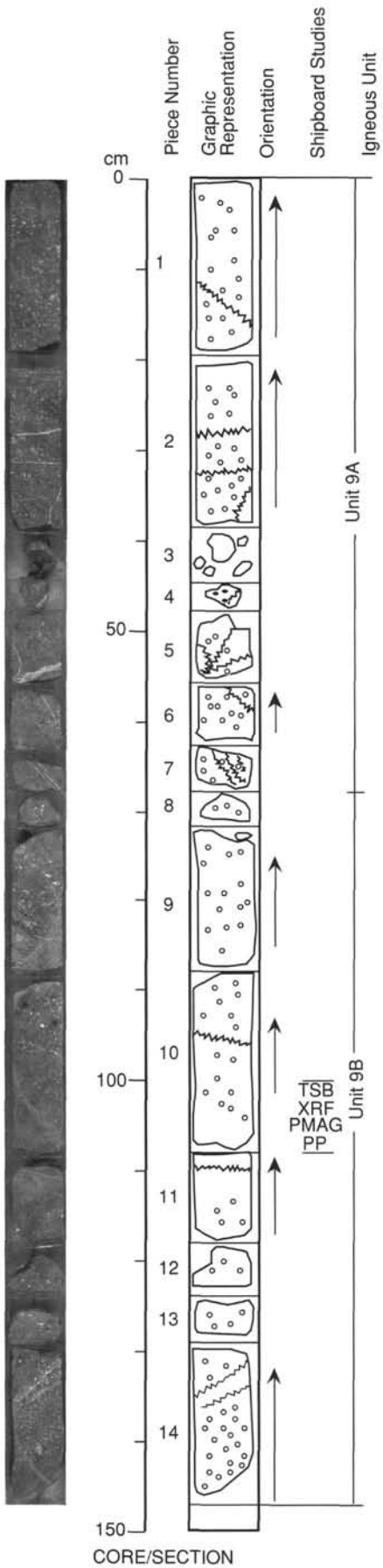
Pieces 3–6

CONTACTS: None.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Microcrystalline.
VESICLES: 5%–20%; 1–15 mm; Irregular to round; Filled with a grayish orange pink (5YR 7/2) zeolite, and occasionally with clay.
COLOR: Moderate brown (5YR 4/4).
STRUCTURE: None.
ALTERATION: Moderate brown (5Y 4/1) color suggests extensive clay development.
VEINS/FRACTURES: <1%; 1–3 mm; Filled with pinkish-orange zeolite and calcite.
ADDITIONAL COMMENTS: At 29–35 cm there is a 3X6 cm crack filled with calcite (some parts are clear) plus a dusky green (5G 3/2) clay. The entire piece is rimmed with 2 mm of grayish orange pink (5YR 7/2) zeolite.

UNIT 9A: CLINOPYROXENE BASALT

Pieces 7–14

CONTACTS: Continues into 5R-3.
PHENOCRYSTS: Below 100 cm the clinopyroxenes are altered to dusky green (5G 3/2) phyllosilicates.
Clinopyroxene - 2%; 3–6 mm; Dusky green (5G 3/2), prisms and subrounded shapes.
GROUNDMASS: Microcrystalline.
VESICLES: 30%–50%; 0.5–5 mm; Subround; Rimmed (1 mm thick) with a grayish orange pink (5YR 7/2) zeolite, and then filled with calcite, and occasionally with dusky green (5G 3/2) clay.
COLOR: See Additional Comments. Insufficient space in this data field.
STRUCTURE: None.
ALTERATION: Colors suggest oxidation and clay development.
VEINS/FRACTURES: <1%; 0.5–2 mm; Filled with grayish orange pink (5YR 7/2) zeolite, sparry calcite, and dusky green (5G 3/2) clay. Zone 102–113 cm there are 40% irregular blotches of alteration to 1 cm.
ADDITIONAL COMMENTS: To 84 cm mottled medium gray (N5) and dusky red (5R 3/4) on a millimeter scale; 84–108 cm there are large (15 cm) areas of very dark red (5R 2/6) and moderate brown (5YR 4/4); 108–129 cm medium (7 cm) areas of very dusky red purple (5RP 2/2) and very dark red (5R 2/6).



144-872B-5R-3

UNIT 9A: CLINOPYROXENE BASALT (continued)

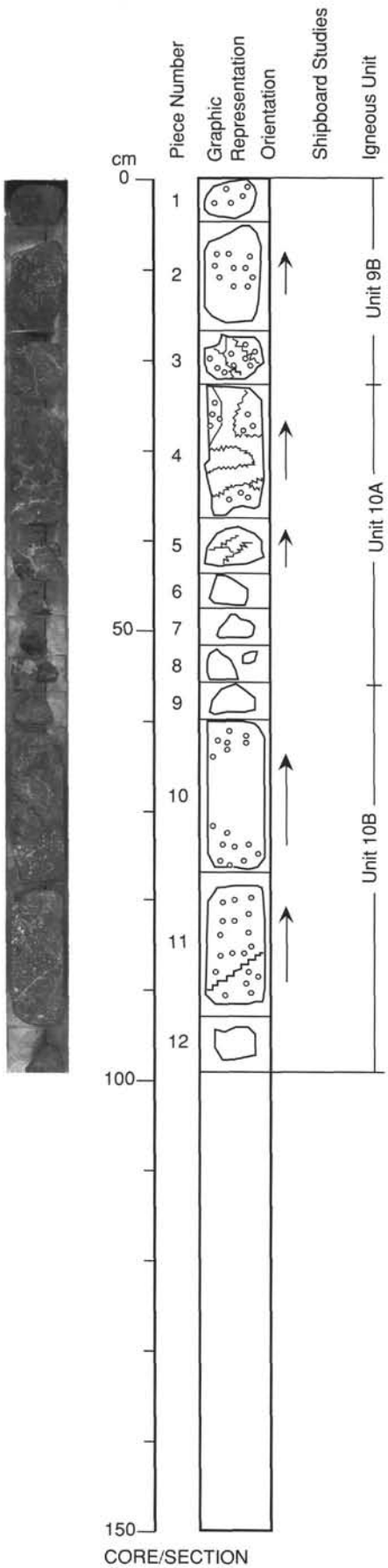
Pieces 1–7

CONTACTS: Continues from 5R-2. Grades into Subunit 9B.
PHENOCRYSTS:
Clinopyroxene - 2%; 3–6 mm; Dusky green (5G 3/2), prisms and subrounded shapes.
GROUNDMASS: Microcrystalline.
VESICLES: 30%–50%; 0.5–5 mm; Subround; Rimmed (1 mm thick) with a grayish orange pink (5YR 7/2) zeolite, and then filled with calcite, and occasionally with dusky green (5G 3/2) clay.
COLOR: 0–4 cm medium (7 cm) areas of very dusky red purple (5RP 2/2) and dusky red (5R 3/4); 4–68 cm mottled medium gray (N5) and dusky red (5R 3/4) on a millimeter scale.
STRUCTURE: None.
ALTERATION: Colors suggest oxidation and some clay development.
VEINS/FRACTURES: <1%; 0.5–2 mm; Filled with grayish orange pink (5YR 7/2) zeolite, sparry calcite, and dusky green (5G 3/2) clay.
ADDITIONAL COMMENTS: Subunit 9A is the more altered portion of Unit 9.

UNIT 9B: CLINOPYROXENE BASALT

Pieces 8–14

CONTACTS: Continues into 5R-4. Grades from Subunit 9A.
PHENOCRYSTS:
Clinopyroxene - 2%; 3–6 mm; Dusky green (5G 3/2), prisms and subrounded shapes.
GROUNDMASS: Microcrystalline.
VESICLES: 70–97 cm, 20%, irregular to round, 2–6 mm, mostly filled with grayish-orange pink (5YR 7/2) zeolite, but a few are filled with moderate brown (5YR 3/4) clay and a few are empty, rimmed with a 0.1 mm pale blue (5B 7/6) material; 97–130 cm, 10%, 1–3 mm, round, rimmed with 0.1 mm pale green (10G 6/2) material and a few are filled with calcite; 130–143 cm, 40%, 1–4 mm, round, filled with grayish orange pink (5YR 7/2) zeolite; 143–147 cm, 2%, 0.5–2 mm, subround, filled with grayish orange zeolite.
COLOR: Matrix grades from medium gray (N5) to grayish red (5R 4/2) downsection.
STRUCTURE: None.
ALTERATION: Less clay in the matrix, but most vesicles are filled.
VEINS/FRACTURES: <1%; 0.5–2 mm; Filled with grayish orange pink (5YR 7/2) zeolite, sparry calcite, and dusky green (5G 3/2) clay.
ADDITIONAL COMMENTS: Subunit 9B is the less altered portion of Unit 9.



144-872B-5R-4

UNIT 9B: CLINOPYROXENE BASALT (continued)

Pieces 1–3

CONTACTS: Continues from 5R-3.
PHENOCRYSTS:
Clinopyroxene - 2%; 3–6 mm; Dusky green (5G 3/2), prisms and subrounded shapes.
GROUNDMASS: Microcrystalline.
VESICLES: 0–5 cm, 2%, 0.5–2 mm, subround, filled with grayish orange pink (5YR 7/2) zeolite. 5–23 cm, 40%, 1–4 mm, subround, filled with grayish orange pink (5YR 7/2) zeolite.
COLOR: Grayish-red (5R 4/2).
STRUCTURE: None.
ALTERATION: Less clay in the matrix, but most vesicles are filled.
VEINS/FRACTURES: <1%; 0.2–1 mm; Filled with calcite.
ADDITIONAL COMMENTS: Subunit 9B is the less altered portion of Unit 9.

UNIT 10A: BASALT BRECCIA

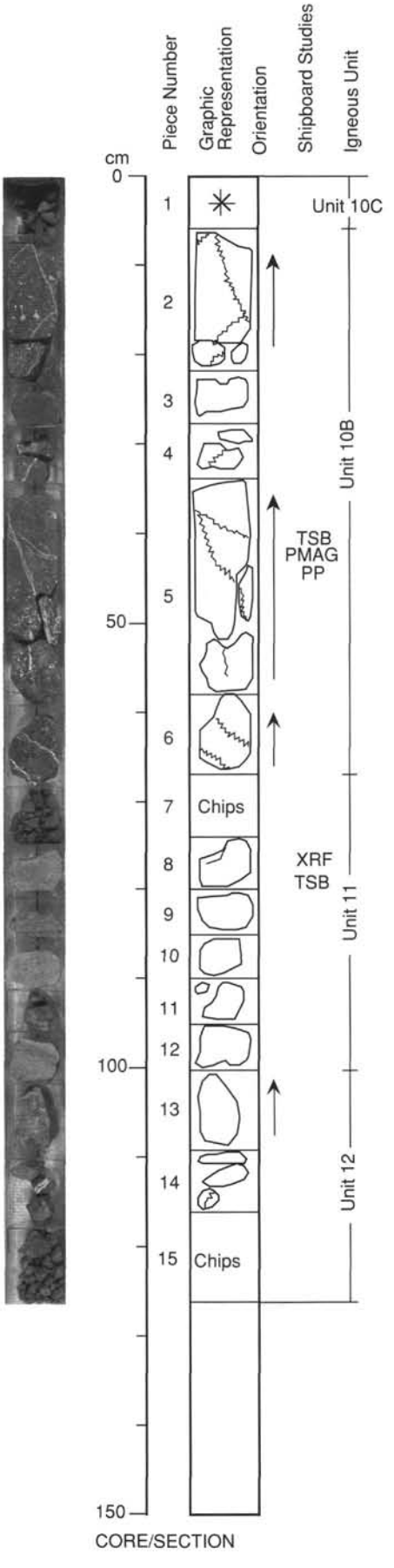
Pieces 4–8

CONTACTS: Continues into 6R-1.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Aphanitic.
VESICLES: Concentrations up to 30%, 1–2 mm, in about 40% of the clasts. Calcite-filled.
COLOR: Black (N1), blackish red (5R 2/2), and dusky red (5R 3/4) clasts. Breccia matrix is predominantly dusky red (5R 3/4).
STRUCTURE: Flow-top breccia.
ALTERATION: Oxidized and moderately altered.
VEINS/FRACTURES: <1%; <1 mm; Fine calcite veins, mostly in the matrix.
ADDITIONAL COMMENTS: Clasts are irregular and subrounded, 2–5 cm. Subunit is the flow-top rubble.

UNIT 10B: BASALT

Pieces 9–12

CONTACTS: Continues into 6R-1.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Aphanitic.
VESICLES: 5%–30%; 1–10 mm; Round; Filled with calcite and grayish orange pink (5YR 7/2) zeolite. Vesicularity is highly variable, changing on about a 10 cm interval.
COLOR: Grayish red (5R 4/2).
STRUCTURE: Massive.
ALTERATION: Oxidized and moderately altered.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: Lower massive part of Unit 10.



144-872B-6R-1

✳ Rounded pebbles

UNIT 10B: BASALT (continued)

Pieces 2–6

CONTACTS: Continues from 5R-4.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Aphanitic.
VESICLES: 3%–30%; 1–10 mm; Round; Filled with calcite and grayish orange pink (5YR 7/2) zeolite. Vesicularity is highly variable, changing on about a 10 cm interval. Interval 25–39 cm has few vesicles so it is best for sampling.
COLOR: Grayish red (5R 4/2).
STRUCTURE: Massive.
ALTERATION: Oxidized and moderately altered.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: Lower, massive part of Unit 10. Piece 1 consists of numerous, rounded to subangular basalt pebbles, 3–20 mm. On VCD this is called Subunit 10C.

UNIT 11: CLINOPYROXENE BASALT

Pieces 8–12

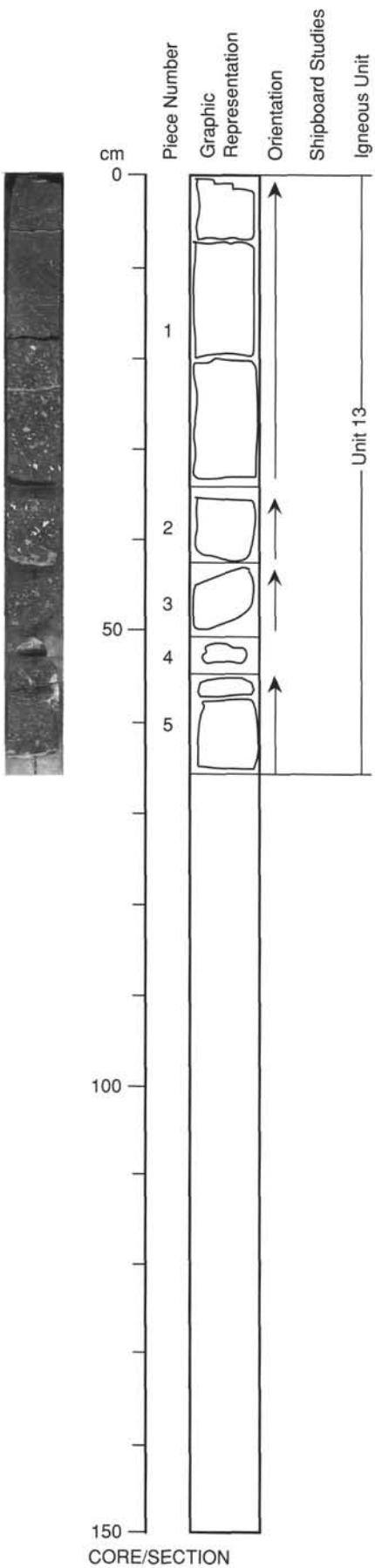
CONTACTS: None.
PHENOCRYSTS:
Clinopyroxene - 2%–3%; 1–2 mm; Microphenocrysts.
GROUNDMASS: Microcrystalline.
VESICLES: None.
COLOR: Dark gray (N3).
ALTERATION: Slight except 95–100 cm where the groundmass is weathered a light brownish-gray (5YR 3/1).
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: None.

UNIT 12: BASALT

Pieces 13–15

CONTACTS: None.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Aphanitic.
VESICLES: None.
COLOR: Dusky red (5R 3/4).
STRUCTURE: None.
ALTERATION: Color suggests some oxidation and clay development.
VEINS/FRACTURES: 5%–10%; 1–7 mm; Calcite-filled.
ADDITIONAL COMMENTS: None.

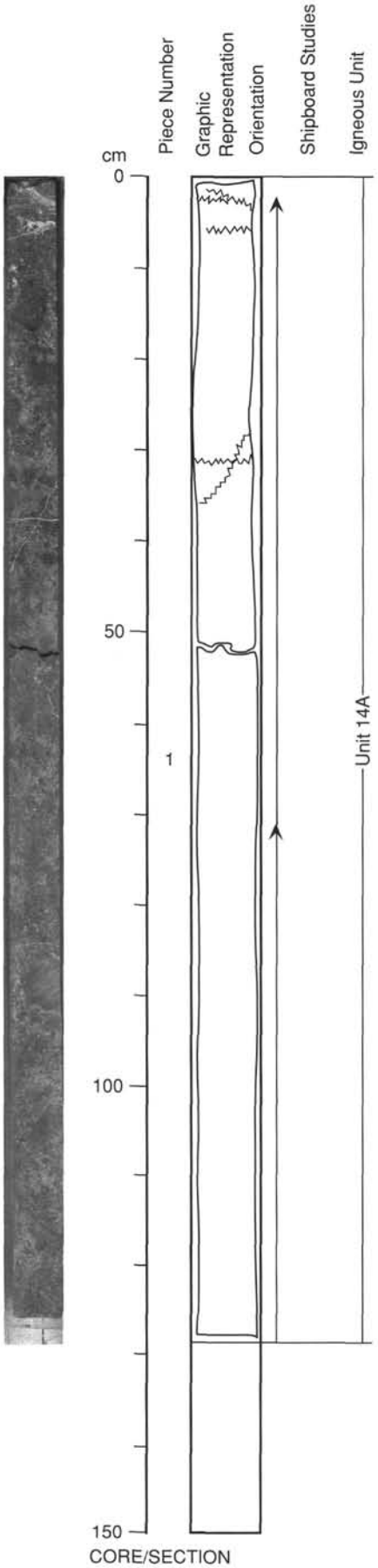
144-872B-7R-1



UNIT 13: CLINOPYROXENE BASALT

Pieces 1–5

CONTACTS: None.
PHENOCRYSTS:
Clinopyroxene - 3%; 1–3 mm; Subhedral; Slightly altered to dusky red (5R 3/4).
GROUNDMASS: Aphanitic.
VESICLES: 20%; 0.5–7 mm; Irregular; 15% filled with chert; 10% filled with calcite; 73% filled with a grayish orange pink (5YR 7/2) zeolite; 2% filled with a dusky green (5G 3/2) clay.
COLOR: Mottled grayish red (5R 4/2) to very dark red (5R 2/6).
STRUCTURE: None.
ALTERATION: Color suggests some oxidation and development of clay minerals.
VEINS/FRACTURES: 4%; 0.25–5 mm; Horizontal; Filled with calcite and dusky green (5G 3/2) clay.
ADDITIONAL COMMENTS: None.



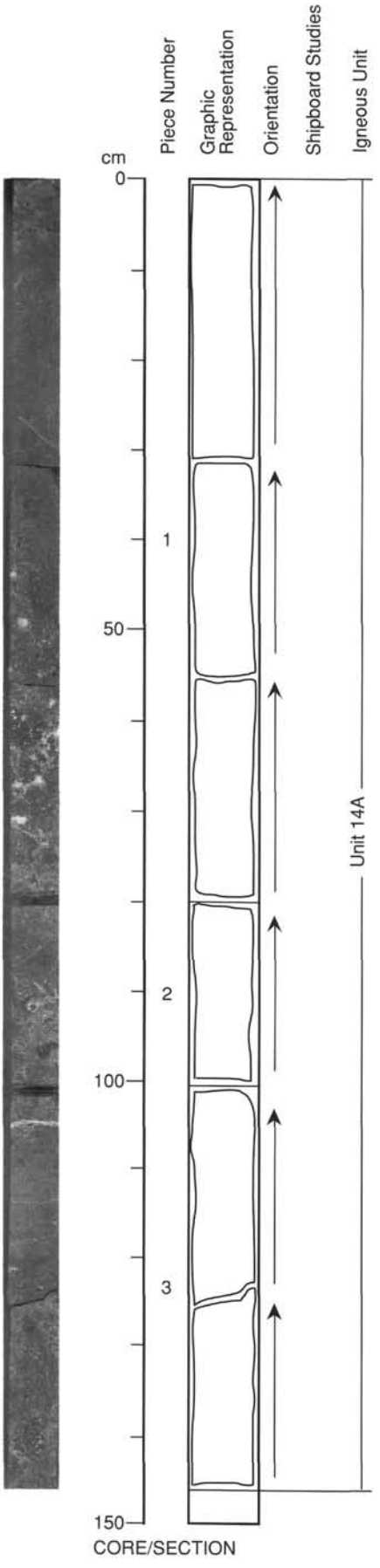
144-872B-7R-2

UNIT 14A: CLINOPYROXENE-OLIVINE BASALT BRECCIA

Piece 1

CONTACTS: Continues into 7R-3.
PHENOCRYSTS: Only present in the larger clasts.
Clinopyroxene - 3%; 1–3 mm; Prisms.
Olivine - 1%; 1 mm; Iddingsitized.
GROUNDMASS: Aphanitic.
VESICLES: 0–30%; 1–4 mm; Subround to irregular; Filled with calcite and a grayish orange pink (5YR 7/2) zeolite. A few are empty. Vesicularity varies greatly from clast to clast.
COLOR: Clasts vary from very dark red (5R 2/6) to medium gray (N5).
STRUCTURE: Rubbly flow-top.
ALTERATION: Color suggest oxidation and some development of clay minerals.
VEINS/FRACTURES: <2%; 1–7 mm; Filled with calcite, grayish orange pink (5YR 7/2) zeolite and dusky green (5G 3/2) clay.
ADDITIONAL COMMENTS: Matrix around clasts is volcanogenic sand, cemented with calcite and grayish orange pink (5YR 7/2) zeolite. Unit is clearly subaerial.

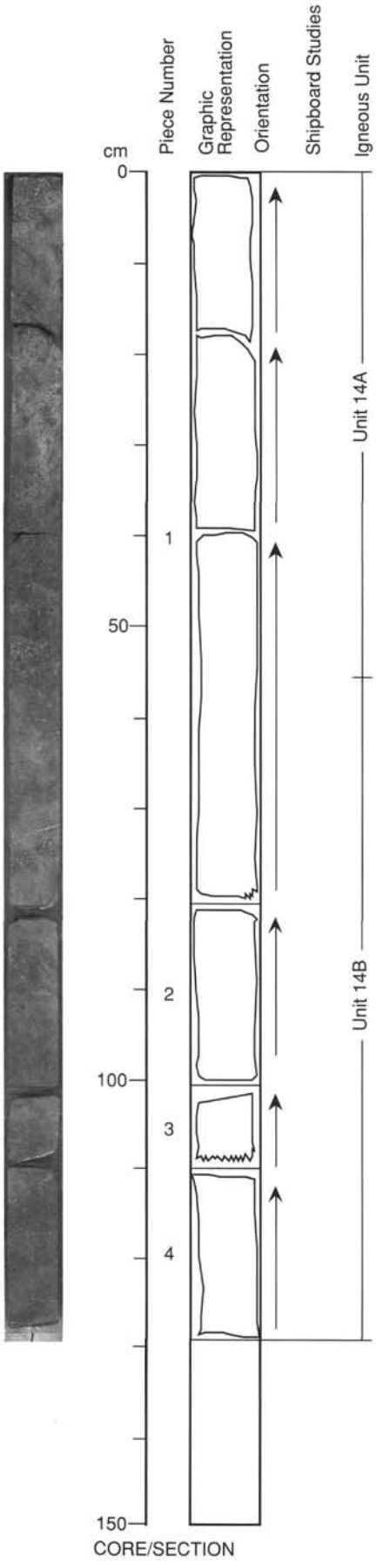
144-872B-7R-3



UNIT 14A: CLINOPYROXENE-OLIVINE BASALT BRECCIA (continued)

Pieces 1–3

CONTACTS: Continues from 7R-2 and into 7R-4.
PHENOCRYSTS: Only present in the larger clasts.
Clinopyroxene - 3%; 1–3 mm; Prisms.
Olivine - 1%; 1 mm; Iddingsitized.
GROUNDMASS: Aphanitic.
VESICLES: 0–30%; 1–4 mm; Subround to irregular; Filled with calcite and a grayish orange pink (5YR 7/2) zeolite. A few are empty. Vesicularity varies greatly from clast to clast.
COLOR: Clasts vary from very dark red (5R 2/6) to medium gray (N5).
STRUCTURE: Rubbly flow-top.
ALTERATION: Color suggests oxidation and some development of clay minerals.
VEINS/FRACTURES: <2%; 1–7 mm; Filled with calcite, grayish orange pink (5YR 7/2) zeolite and dusky green (5G 3/2) clay.
ADDITIONAL COMMENTS: Matrix around clasts is volcanogenic sand cemented with calcite and grayish orange pink (5YR 7/2) zeolite. Unit is clearly subaerial. A large clast, 107–121 cm, has a medium gray (N5) matrix, very fresh clinopyroxene, and is a good geochemical choice.



144-872B-7R-4

UNIT 14A: CLINOPYROXENE-OLIVINE BASALT BRECCIA (continued)

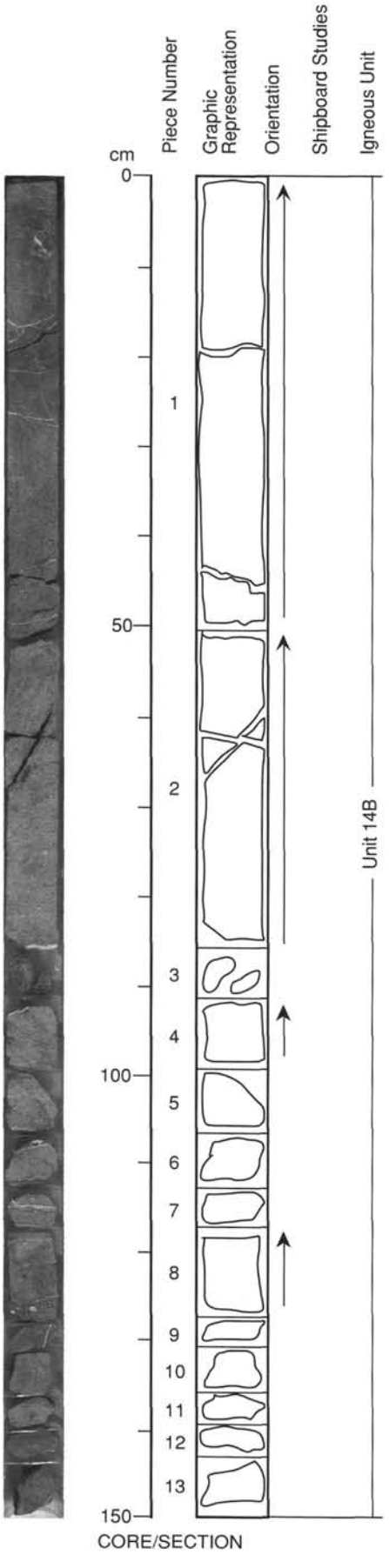
Piece 1 (top)

CONTACTS: Continues from 7R-3 and sharply contacts Subunit 14B at 55 cm.
PHENOCRYSTS: Only present in the larger clasts.
Clinopyroxene - 3%; 1–3 mm; Prisms.
Olivine - 1%; 1 mm; Iddingsitized.
GROUNDMASS: Aphanitic.
VESICLES: 0–30%; 1–4 mm; Subround to irregular; Filled with calcite and a grayish orange pink (5YR 7/2) zeolite. A few are empty. Vesicularity varies greatly from clast to clast.
COLOR: Clasts vary from very dark red (5R 2/6) to medium gray (N5).
STRUCTURE: Rubbly flow-top.
ALTERATION: Color suggests oxidation and some development of clay minerals.
VEINS/FRACTURES: <2%; 1–7 mm; Filled with calcite, grayish orange pink (5YR 7/2) zeolite and dusky green (5G 3/2) clay.
ADDITIONAL COMMENTS: Matrix around clasts is volcanogenic sand cemented with calcite and grayish orange pink (5YR 7/2) zeolite. Unit is clearly subaerial.

UNIT 14B: CLINOPYROXENE-OLIVINE BASALT

Pieces 1, (bottom), and 2–4

CONTACTS: Continues into 7R-5. Sharply contacts Subunit 14A at 55 cm.
PHENOCRYSTS:
Clinopyroxene - 3%; 1–3 mm; Prisms.
Olivine - 1%; 1 mm; Iddingsitized.
GROUNDMASS: Microcrystalline.
VESICLES: 0–15%; 1–7 mm; Subround to irregular; Filled with calcite and a grayish orange pink (5YR 7/2) zeolite.
COLOR: Medium gray (N5).
STRUCTURE: Massive.
ALTERATION: Lightness of matrix color suggests some development of clay minerals.
VEINS/FRACTURES: <2%; 1–3 mm; Filled with calcite, grayish orange pink (5YR 7/2) zeolite and dusky green (5G 3/2) clay.
ADDITIONAL COMMENTS: With Subunit 14A this forms a typical subaerially a'a flow.

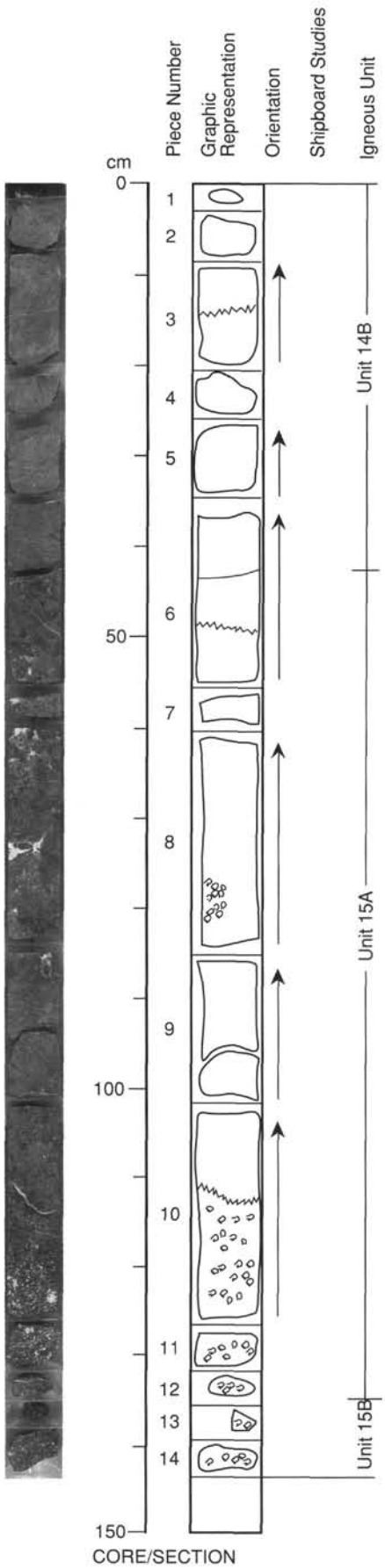


144-872B-7R-5

UNIT 14B: CLINOPYROXENE-OLIVINE BASALT (continued)

Pieces 1–13

CONTACTS: Continues from 7R-4 and into 7R-6.
PHENOCRYSTS:
Clinopyroxene - 3%; 1–3 mm; Prisms.
Olivine - 1%; 1 mm; Iddingsitized.
GROUNDMASS: Microcrystalline.
VESICLES: 0–15%; 1–7 mm; Subround to irregular; Filled with calcite and a grayish orange pink (5YR 7/2) zeolite.
COLOR: 0–35 cm matrix is medium gray (N5); 35–58 cm matrix is greenish gray (5G 6/1); 58–150 cm matrix is grayish olive green (5GY 3/2).
STRUCTURE: Massive.
ALTERATION: Lower two-thirds of the section is more oxidized and altered. The change is gradational. There are isolated areas of iron staining. Clinopyroxene is still fresh.
VEINS/FRACTURES: <2%; 1–3 mm; Filled with calcite, grayish orange pink (5YR 7/2) zeolite and dusky green (5G 3/2) clay.
ADDITIONAL COMMENTS: With Subunit 14B this forms a typical subaerial a'a flow.



144-872B-7R-6

UNIT 14B: CLINOPYROXENE-OLIVINE BASALT (continued)

Pieces 1–5, 6 (top)

CONTACTS: Continues from 7R-5. Sharp contact with Unit 15 at 43 cm.
PHENOCRYSTS:
Clinopyroxene - 3%; 1–3 mm; Prisms.
Olivine - 1%; 1 mm; Iddingsitized.
GROUNDMASS: Microcrystalline.
VESICLES: 0–15%; 1–7 mm; Subround to irregular; Filled with calcite and a grayish orange pink (5YR 7/2) zeolite.
COLOR: 0–10 cm matrix is grayish olive green (5GY 3/2); 10–43 cm matrix is medium gray (N5).
STRUCTURE: Massive.
ALTERATION: 10–43 cm the matrix is less altered, with occasional iron staining. There are horizontally elongated, dusky green (5G 3/2), soft areas (chlorite?) replacing matrix.
VEINS/FRACTURES: <2%; 1–3 mm; Filled with calcite, grayish orange pink (5YR 7/2) zeolite and dusky green (5G 3/2) clay.
ADDITIONAL COMMENTS: With Subunit 14A this is a typical subaerial a'a flow.

UNIT 15A: CLINOPYROXENE BASALT BRECCIA

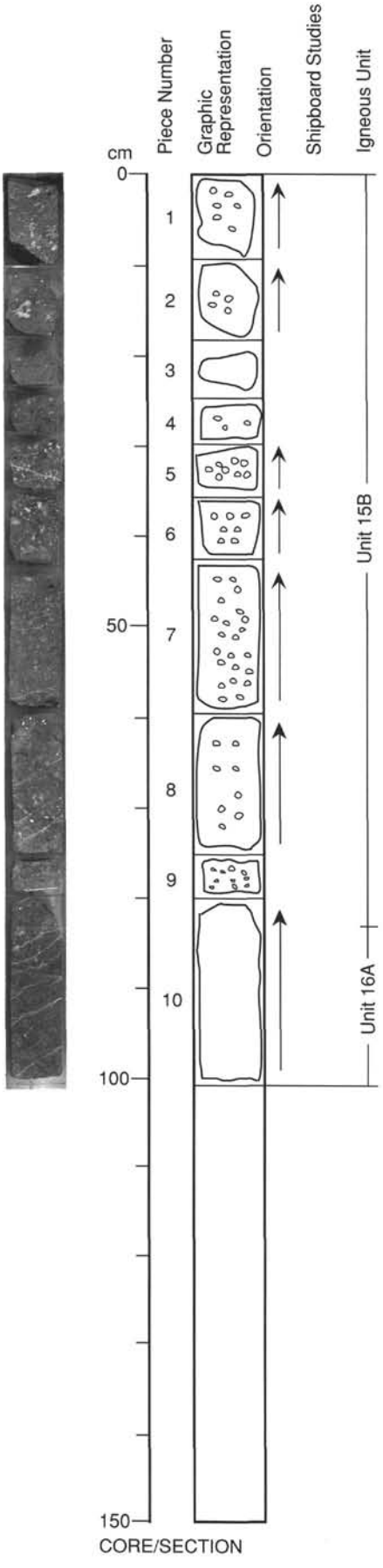
Pieces 6, (bottom), and 7–12

CONTACTS: Sharp contact with Unit 14 at 43 cm; Grades into Subunit 15B about 135 cm.
PHENOCRYSTS:
Clinopyroxene - 3%; 1–6 mm; Dusky green (5G 3/2) prisms; Some are soft, (altered to chlorite?).
GROUNDMASS: Aphanitic.
VESICLES: 10%; 1–4 mm; Subround to irregular; 70% are filled with a grayish orange pink (5YR 7/2) zeolite; 30% are lined with a pale blue (5B 6/2) clay and empty.
COLOR: Clasts are 0.5–10 cm, subangular, and dark gray (N3) to very dark red (5R 2/6).
STRUCTURE: Rubbly flow-top.
ALTERATION: Color suggests that oxidation and some development has occurred.
VEINS/FRACTURES: 1%–4%; 1–4 mm; Subhorizontal; Filled with calcite.
ADDITIONAL COMMENTS: Matrix around clasts is made of sand and granule-sized volcanogenic subangular grains cemented with grayish orange pink (5YR 7/2) zeolite. 57–75 cm there are 10%, to 2 cm, grayish orange pink (5YR 7/2) zeolite rimmed, calcite-filled blotches. With Subunit 15B this forms a typical subaerial a'a flow.

UNIT 15B: CLINOPYROXENE BASALT

Pieces 13–14

CONTACTS: Grades from Subunit 15A at 135 cm; Continues into 7R-7.
PHENOCRYSTS:
Clinopyroxene - 3%; 1–6 mm; Dusky green (5G 3/2) prisms; Some are soft (H2), (altered to chlorite?).
GROUNDMASS: Microcrystalline.
VESICLES: 5%–30%; 1–20 mm; Irregular; Filled or rimmed with grayish orange pink (5YR 7/2) zeolite. The larger vesicles are filled with calcite and in places with a fibrous zeolite (natrolite?). A few are empty, lined with a pale blue (5B 6/2) clay.
COLOR: Medium gray (N5).
STRUCTURE: Massive.
ALTERATION: Color suggests moderate clay development.
VEINS/FRACTURES: 1%–4%; 1–4 mm; Subhorizontal; Filled with calcite.
ADDITIONAL COMMENTS: With Subunit 15A this is a typical subaerial a'a flow.



144-872B-7R-7

UNIT 15B: CLINOPYROXENE BASALT (continued)

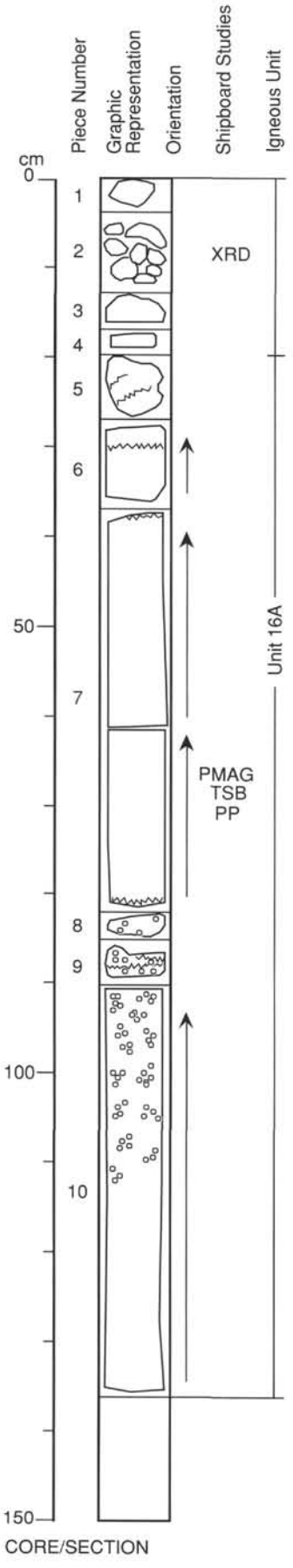
Pieces 1–9, 10 (top)

CONTACTS: Continues from 7R-6. Sharp contact with Unit 16 at 83 cm.
PHENOCRYSTS:
Clinopyroxene - 3%; 1–6 mm; Dusky green (5G 3/2) prisms; Some are soft (H2), (altered to chlorite?).
GROUNDMASS: Microcrystalline.
VESICLES: 5%–30%; 1–20 mm; Irregular; Filled or rimmed with grayish orange pink (5YR 7/2) zeolite. The larger vesicles are filled with calcite and in places with a fibrous zeolite (natrolite?). A few are empty, lined with a pale blue (5B 6/2) clay.
COLOR: Medium gray (N5).
STRUCTURE: Massive.
ALTERATION: Color suggests moderate clay development.
VEINS/FRACTURES: 1%–4%; 1–4 mm; Subhorizontal; Filled with calcite.
ADDITIONAL COMMENTS: With Subunit 15A this is a typical subaerial a'a flow.

UNIT 16A: CLINOPYROXENE BASALT BRECCIA

Piece 10 (bottom)

CONTACTS: Contacts sharply with Unit 15 at 83 cm. Continues into 8R-1.
PHENOCRYSTS: Only present in the larger clasts.
Clinopyroxene - 1%–3%; 0.5–3 mm; Prisms to subround shapes; Variable distribution.
GROUNDMASS: Aphanitic.
VESICLES: To 50%; 0.25–3 mm; Irregular; Filled with grayish orange pink (5YR 7/2) zeolites. Very variable abundances from clast to clast.
COLOR: 1–10 cm clasts are very dusky red purple (5RP 2/2), dark gray (N3), and medium gray (N5) and have indistinct boundaries.
STRUCTURE: Rubbly flow-top.
ALTERATION: Color suggests oxidation and some clay development.
VEINS/FRACTURES: <1%; 0.25–6 mm; Filled with calcite.
ADDITIONAL COMMENTS: The matrix around the clasts is comprised of sand-sized, subangular volcanogenic grains. With Subunit 16B this forms a typical subaerial a'a flow.

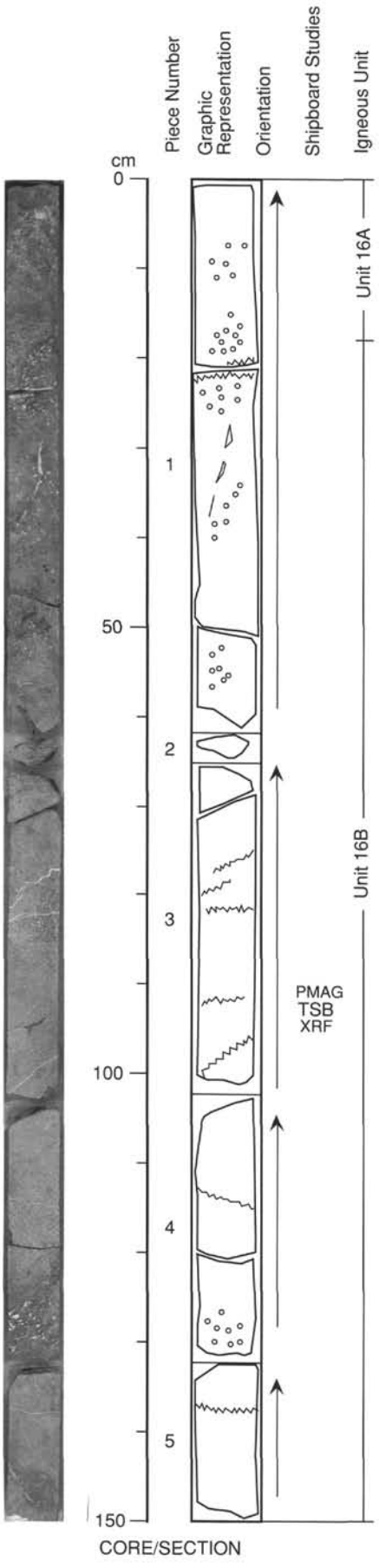


144-872B-8R-1

UNIT 16A: CLINOPYROXENE BASALT BRECCIA (continued)

Pieces 5–10

CONTACTS: Continues from 7R-7 and into 8R-2.
PHENOCRYSTS: Only present in the larger clasts.
Clinopyroxene - 1%–3%; 0.5–3 mm; Prisms to subround shapes; Variable distribution.
GROUNDMASS: Aphanitic.
VESICLES: To 50%; 0.25–3 mm; Irregular; Filled with grayish orange pink (5YR 7/2) zeolite. Very variable abundances from clast to clast.
COLOR: 1–10 cm sized clasts are very dusky red purple (5RP 2/2), dark gray (N3), and medium gray (N5) and have indistinct boundaries.
STRUCTURE: Rubbly flow-top.
ALTERATION: Color suggests that oxidation and some clay development has occurred.
VEINS/FRACTURES: <1%; 0.25–6 mm; Filled with calcite.
ADDITIONAL COMMENTS: The matrix around the clasts is comprised of sand-sized, subangular volcanogenic grains. 1–20 cm of this section, Pieces 1–4, are small pieces of previous units which have fallen down the hole. With Subunit 16B this forms a typical subaerial a'a flow.



144-872B-8R-2

UNIT 16A: CLINOPYROXENE BASALT BRECCIA (continued)

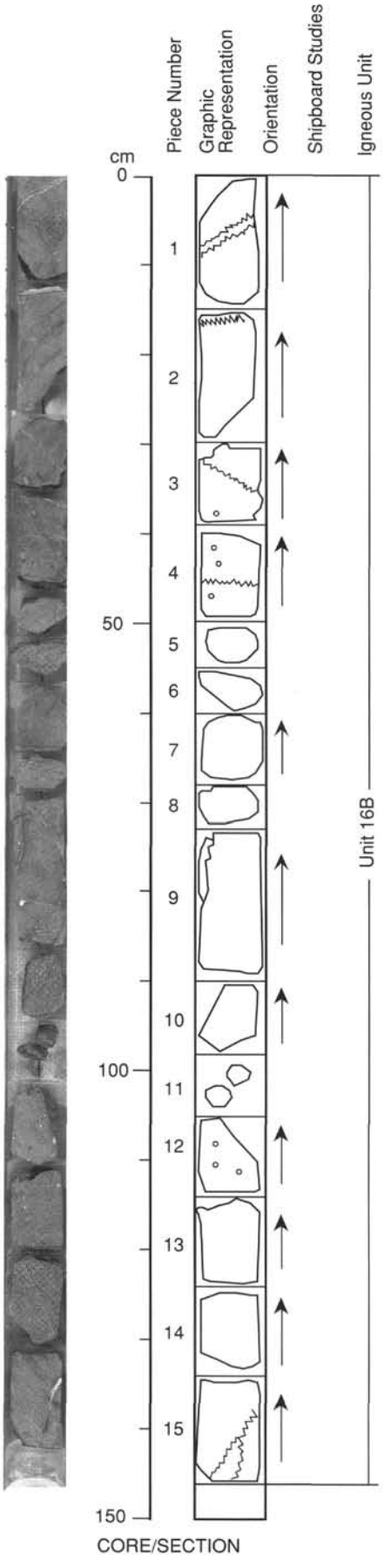
Piece 1 (top)

CONTACTS: Continues from 8R-1. Sharp contact with 16A at 18 cm.
PHENOCRYSTS: Only present in the larger clasts.
Clinopyroxene - 1%–3%; 0.5–3 mm; Prisms to subround shapes; Variable distribution.
GROUNDMASS: Aphanitic.
VESICLES: To 50%; 0.25–3 mm; Irregular; Filled with grayish orange pink (5YR 7/2) zeolite. Very variable abundances from clast to clast.
COLOR: 1–10 cm clasts are very dusky red purple (5RP 2/2), dark gray (N3), and medium gray (N5) and have indistinct boundaries.
STRUCTURE: Rubbly flow-top.
ALTERATION: Color suggests oxidation and some clay development.
VEINS/FRACTURES: <1%; 0.25–6 mm; Filled with calcite.
ADDITIONAL COMMENTS: The matrix around the clasts is comprised of sand-sized, subangular volcanogenic grains. With Subunit 16B this forms a typical subaerial a'a flow.

UNIT 16B: CLINOPYROXENE BASALT

Pieces 1 (Bottom), 2–5

CONTACTS: Continues into 8R-3. Sharp contact with 16A at 18 cm.
PHENOCRYSTS:
Clinopyroxene - 1%–3%; 0.5–3 mm; Prisms to subround shapes; Variable distribution.
GROUNDMASS: Microcrystalline.
VESICLES: 2%; 1–10 mm; Irregular; Filled with grayish orange pink (5YR 7/2) zeolite; some with calcite centers. 18–27 cm has 30%, 2–6 mm, round vesicles; 124–132 cm has 50%, horizontally elongate, irregular vesicles. Vesicles of both zones are filled with the grayish orange pink (5YR 7/2) zeolites
COLOR: Dark greenish gray (5G 4/1).
STRUCTURE: Massive.
ALTERATION: Color suggests extensive dusky green (5G 3/2) clay development.
VEINS/FRACTURES: <1%; 0.25–6 mm; Filled with calcite.
ADDITIONAL COMMENTS: With Subunit 16A this forms a typical subaerial a'a flow.

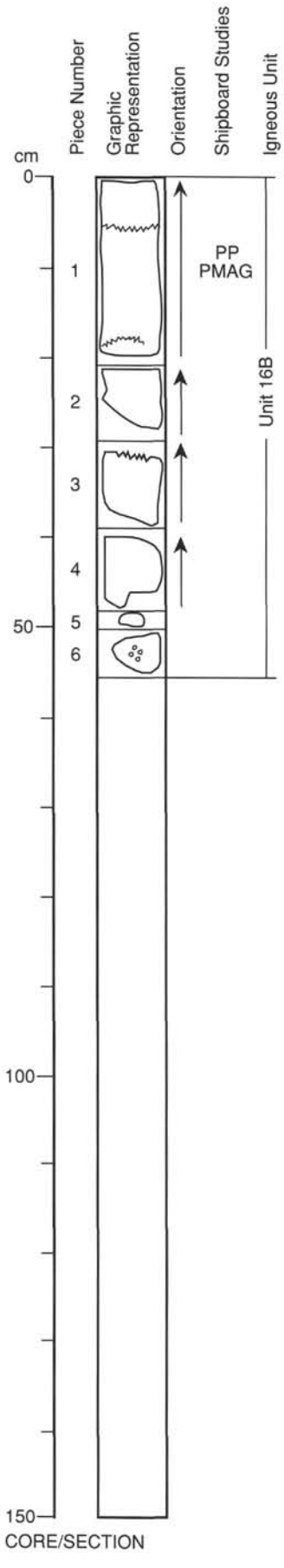


144-872B-8R-3

UNIT 16B: CLINOPYROXENE BASALT (continued)

Pieces 1–15

CONTACTS: Continues from 8R-2 and into 8R-4.
PHENOCRYSTS:
Clinopyroxene - 1%–3%; 0.5–3 mm; Prisms to subround shapes; Variable distribution.
GROUNDMASS: Microcrystalline.
VESICLES: 2%; 1–10 mm; Irregular; Filled with grayish orange pink (5YR 7/2) zeolite.
COLOR: Dark greenish gray (5G 4/1).
STRUCTURE: Massive.
ALTERATION: Color suggests significant dusky green (5G3/2) clay development.
VEINS/FRACTURES: <1%; 0.25–6 mm; Filled with calcite.
ADDITIONAL COMMENTS: 68–72, 85–90, 129–146 cm are zones of more severe oxidation. The matrix is light olive gray (5Y 5/2), iron staining is prevalent, and vesicles are filled with a dusky yellow (5Y 6/4) clay. With Subunit 16A this forms a typical subaerial a'a flow.

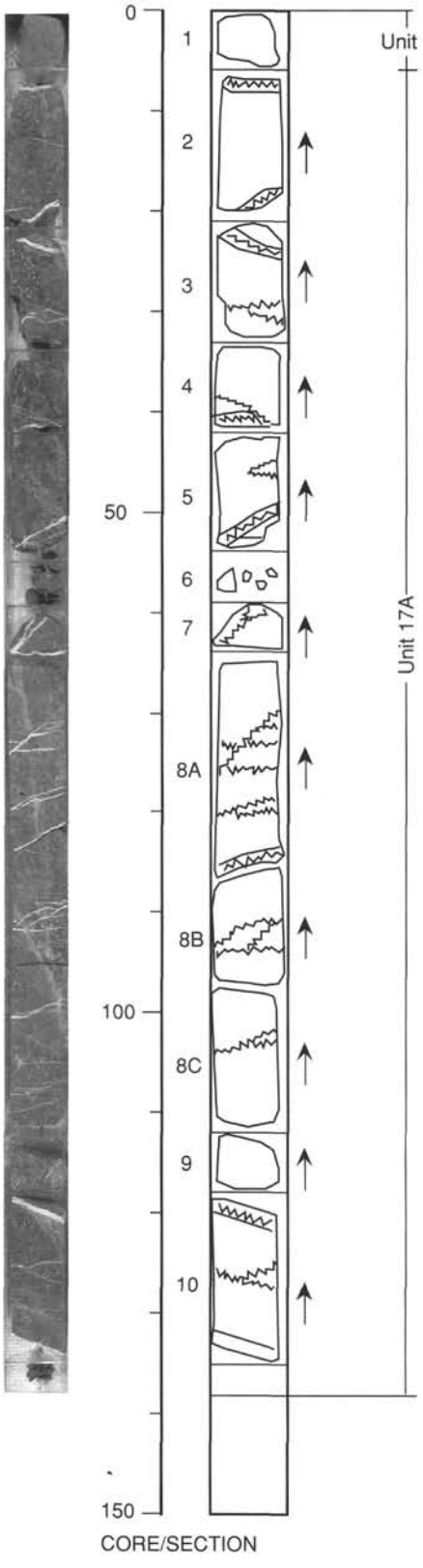


144-872B-8R-4

UNIT 16B: CLINOPYROXENE BASALT (continued)

Pieces 1–6

CONTACTS: Continues from 8R-3 and into 9R-1.
PHENOCRYSTS:
Clinopyroxene - 1%–3%; 0.5–3 mm; Prisms to subround shapes; Variable distribution.
GROUNDMASS: Microcrystalline.
VESICLES: 2%; 1–10 mm; Irregular; Filled with grayish orange pink (5YR 7/2) zeolites.
COLOR: Dark greenish gray (5G 4/1).
STRUCTURE: Massive.
ALTERATION: Color suggests significant development of dusky green (5G 3/2) clay.
VEINS/FRACTURES: <1%; 0.25–6 mm; Filled with calcite.
ADDITIONAL COMMENTS: 14–21 cm is a zone of more severe oxidation. The matrix is light olive gray (5Y 5/2), iron staining is prevalent, and vesicles are filled with a dusky yellow (5Y 6/4) clay. With Subunit 16B this is a typical subaerial a'a flow.



144-872B-9R-1

UNIT 16B: CLINOPYROXENE BASALT (continued)

Piece 1

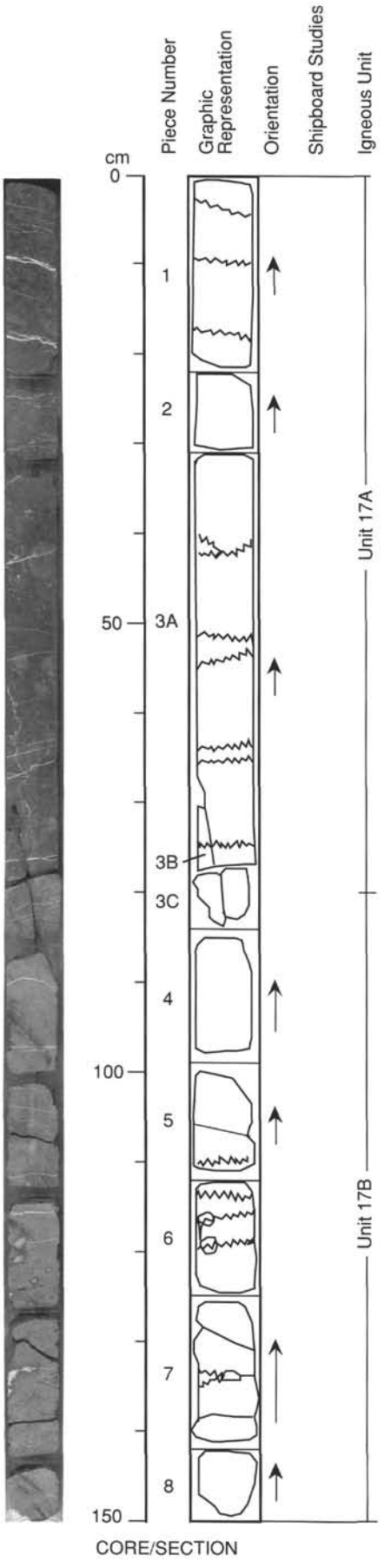
CONTACTS: Continues from 8R-4.
PHENOCRYSTS:
Clinopyroxene - 1%–3%; 0.5–3 mm; Prisms to subround shapes; Variable distribution.
GROUNDMASS: Microcrystalline.
VESICLES: 2%; 1–10 mm; Irregular; Filled with grayish orange pink (5YR 7/2) zeolite.
COLOR: Dark greenish gray (5G 4/1).
STRUCTURE: Massive.
ALTERATION: Color suggests significant dusky green (5G 3/2) clay development.
VEINS/FRACTURES: <1%; 0.25–6 mm; Filled with calcite.
ADDITIONAL COMMENTS: With Subunit 16A this forms a typical subaerial a'a flow.

UNIT 17A: BASALT BRECCIA

Pieces 2–10

CONTACTS: Continues into the next section.
PHENOCRYSTS: Found only in the larger clasts.
Clinopyroxene - <1%; 1–2 mm; Dusky green (5G 3/2), altered to chlorite.
GROUNDMASS: The clasts are angular, 2–10 cm, and aphanitic.
VESICLES: <5%; 1–3 mm; Round; Filled with grayish orange pink (5YR 7/2) zeolite and calcite.
COLOR: Medium gray (N5) to black (N1).
STRUCTURE: Flow-top breccia.
ALTERATION: Matrix is altered and oxidized to very dusky red purple (5R 2/6).
VEINS/FRACTURES: 2%–3%; 0.25–3 mm; Most dip at 15 degrees; Filled with calcite.
ADDITIONAL COMMENTS: With Subunit 17B this forms a typical subaerial a'a flow.

144-872B-9R-2



UNIT 17A: BASALT BRECCIA (continued)

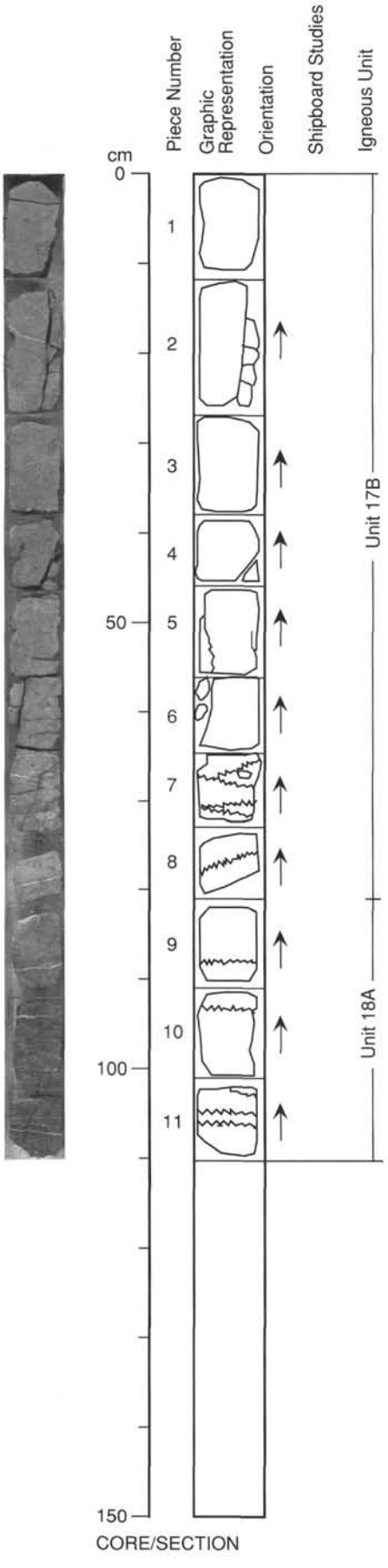
Pieces 1–2, most of 3

CONTACTS: Continues from 9R-2. Sharp contact at 80 cm with the lower massive portion of the flow.
PHENOCRYSTS: Found only in the larger clasts.
Clinopyroxene - <1%; 1–2 mm; Dusky green (5G 3/2), altered to chlorite.
GROUNDMASS: The clasts are angular, 2–10 cm, and aphanitic.
VESICLES: <5%; 1–3 mm; Round; Filled with grayish orange pink (5YR 7/2) zeolite and calcite.
COLOR: Medium gray (N5) to black (N1).
STRUCTURE: Flow-top breccia.
ALTERATION: Alteration and oxidation has changed the matrix to very dusky red purple (5RP 2/6).
VEINS/FRACTURES: 2%–3%; 0.25–3 mm; Most dip at 15 degrees; Filled with calcite.
ADDITIONAL COMMENTS: Single clast of medium gray (N5), aphyric basalt at 18–35 cm. Subunit is upper, rubbly part of a single flow.

UNIT 17B: BASALT

Pieces 3 (bottom), 4–8

CONTACTS: Continues into 9R-3. Sharp contact at 80 cm with the flow-top breccia.
PHENOCRYSTS:
Clinopyroxene - <1%; 1–2 mm; Dusky green (5G 3/2), altered to chlorite.
GROUNDMASS: Aphanitic.
VESICLES: None.
COLOR: Medium gray (N5).
STRUCTURE: Massive.
ALTERATION: Phenocrysts to dusky green (5G 3/2) clays; Matrix appears fresh.
VEINS/FRACTURES: <1%; 0.25–2 mm; Subhorizontal; Filled with calcite.
ADDITIONAL COMMENTS: Lower part of a single flow.



144-872B-9R-3

UNIT 17B: BASALT (continued)

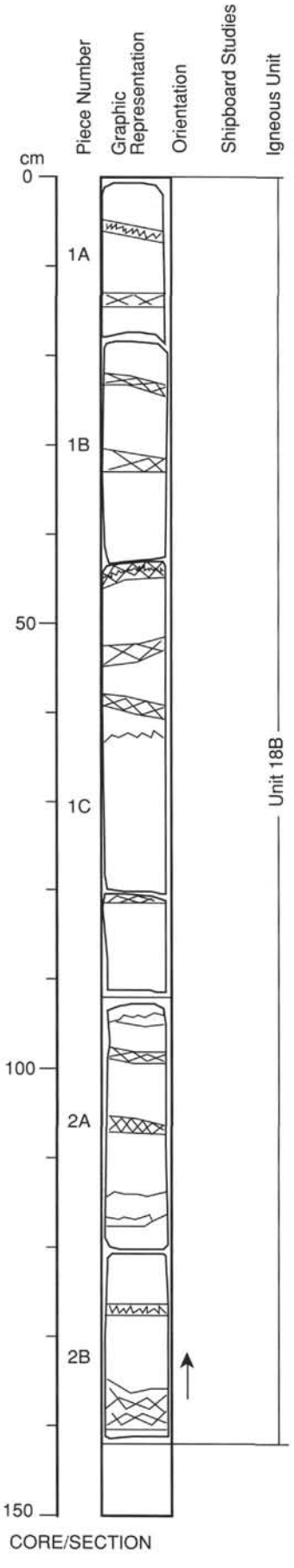
Pieces 1–9

CONTACTS: Continues from 9R-2.
PHENOCRYSTS:
Clinopyroxene - <1%; 1–2 mm; Dusky green (5G 3/2), altered to chlorite.
GROUNDMASS: Aphanitic.
VESICLES: None.
COLOR: Medium gray (N5).
STRUCTURE: Massive.
ALTERATION: Horizontally elongated dusky green (5G 3/2) areas form 2%–3% of the sample in this section. They are on fine fractures, typically 1–3 mm, and soft (H2) (chlorite?).
VEINS/FRACTURES: <1%; 0.25–2 mm; Subhorizontal; Filled with calcite.
ADDITIONAL COMMENTS: Lower part of a single flow.

UNIT 18A: OLIVINE-CLINOPYROXENE BASALT BRECCIA

Pieces 10–11

CONTACTS: Continues into 9R-4.
PHENOCRYSTS: Clasts in this flow-top breccia are aphyric.
GROUNDMASS: Clasts are aphanitic, subrounded, and <5 cm.
VESICLES: None.
COLOR: Dark gray (N3).
STRUCTURE: Flow-top breccia.
ALTERATION: Calcite addition and minor alteration to clays.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: Matrix is volcanogenic sand, mottled very dusky red purple (5P 2/2) and dusky green (5G 3/2).



144-872B-9R-4

UNIT 18B: OLIVINE-CLINOPYROXENE BASALT

Pieces 1A–2B

CONTACTS: Continues into 9R-4. Flow-top breccia was in the previous section, but no contact was recovered.

PHENOCRYSTS:
Clinopyroxene - <3%; 2 mm; Dusky green (5G 3/2), altered to (?)chlorite. Some are fresh.
Olivine - 10%; 2–5 mm; Moderate yellow green (5GY 7/4) altered to clays and calcite.

GROUNDMASS: Microcrystalline.

VESICLES: 0–43 cm, 20%, 1–3 mm, round, filled with a white (N9) zeolite and a dusky green (5G 3/2) mineral (chlorite?); 43–70 cm, 10%–15%, to 5 mm, round, filled with calcite; 70–85 cm, no vesicles; 85–125 cm, 20%–25%, 3–5 mm, round, filled with calcite; 125–141 cm, 5%–10%, 5–10 mm, round, filled with calcite.

COLOR: 0–70 cm very dusky red purple (5P 2/2); 70–85 cm very dark red (5R 2/6); 85–125 cm dark gray (N3); 125–141 cm dark greenish gray (5G 4/1).

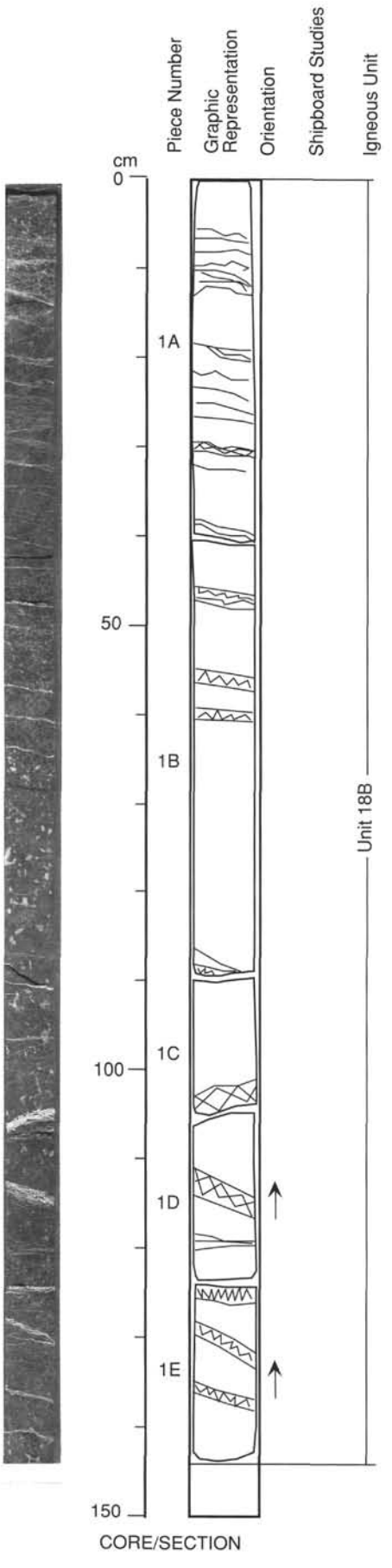
STRUCTURE: Massive.

ALTERATION: Calcite addition and minor alteration to clays.

VEINS/FRACTURES: 5%–10%; 5–20 mm; Subhorizontal; Anastomosing clusters of fine veins, spaced roughly 5 cm apart.

ADDITIONAL COMMENTS: Phenocrysts are likely to be xenocrysts.

Fine anastomozins calcite
Solid sparry calcite



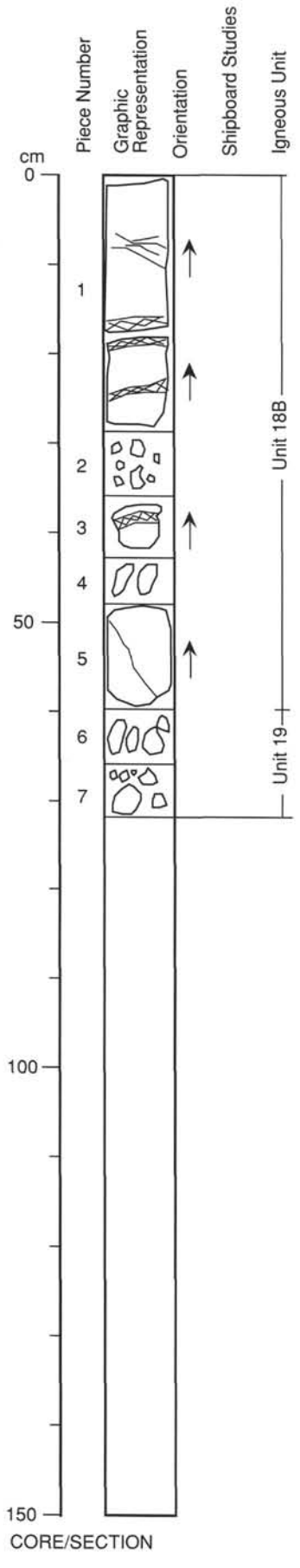
144-872B-9R-5

UNIT 18B: OLIVINE-CLINOPYROXENE BASALT (continued)

Piece 1

CONTACTS: Continues from 9R-4 and into 9R-6.
PHENOCRYSTS:
Clinopyroxene - 3%; 2 mm; Dusky green (5G 3/2), altered to (?) chlorite. Some are fresh.
Olivine - 10%; 2–5 mm; Moderate yellow green (5GY 7/4) altered to clays and calcite.
GROUNDMASS: Microcrystalline.
VESICLES: 0–12 cm, 25%, 1–3 mm, round, filled with a white (N9) zeolite; 42–61 cm, 10%, 1–2 mm, irregular, filled with a white (N9) zeolite; 63–102 cm, 10%, 1–2 cm, irregular, filled with calcite; 120–130 cm, 10%, 2–3 mm, round, filled with a white (N9) zeolite. Intervals not covered have sparse vesicles.
COLOR: Light greenish-gray (5G 8/1).
STRUCTURE: Massive.
ALTERATION: Calcite addition and the matrix color suggests alteration to dusky green (5G 3/2) clays.
VEINS/FRACTURES: 5%–10%; 5–20 mm; Subhorizontal; Anastomosing clusters of fine veins, spaced roughly 5 cm apart.
ADDITIONAL COMMENTS: Lower portion of a single flow.

Anastomozins calcite veinlets
Calcite veins



144-872B-9R-6

UNIT 18B: OLIVINE-CLINOPYROXENE BASALT (continued)

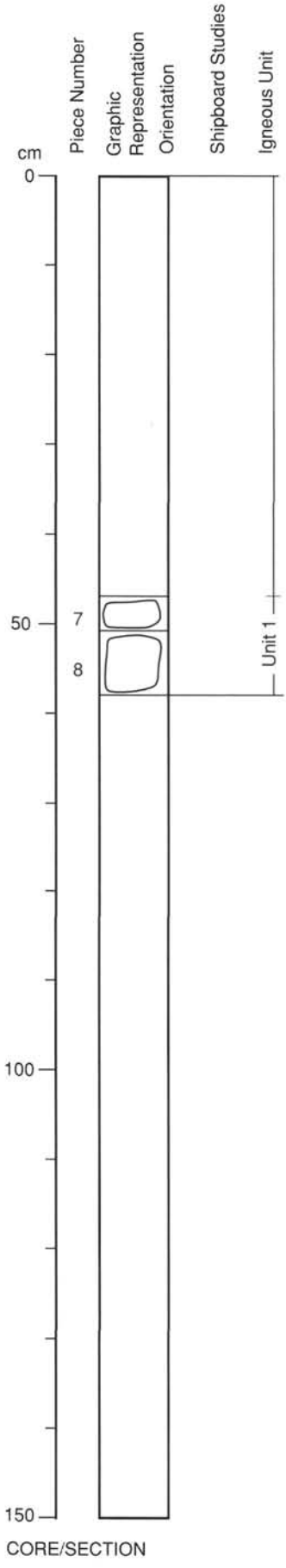
Pieces 1–5

CONTACTS: Continues from 9R-5.
PHENOCRYSTS:
Clinopyroxene - 3%; 2 mm; Dusky green (5G 3/2), altered (to chlorite?). Some are fresh.
Olivine - 10%; 2–5 mm; Moderate yellow green (5GY 7/4) altered to clays and calcite.
GROUNDMASS: Microcrystalline.
VESICLES: 0–7 cm, 5%, 3–5 mm, round, filled with a white (N9) zeolite; 50–58 cm, 15%, <1 mm, irregular, filled with a white (N9) zeolite; Sparse elsewhere.
COLOR: Light greenish gray (5G 8/1).
STRUCTURE: Massive.
ALTERATION: Calcite addition and matrix color suggests alteration to dusky green (5G 3/2) clays.
VEINS/FRACTURES: <5%; 5–20 mm; Subhorizontal; Anastomosing clusters of fine veins, spaced roughly 5 cm apart. Less abundant below Piece 1.
ADDITIONAL COMMENTS: Lower portion of a single flow.

UNIT 19: BASALT

Pieces 6–7

CONTACTS: None.
PHENOCRYSTS: No primary features are visible.
GROUNDMASS: Unknown.
VESICLES: None.
COLOR: Dark greenish gray (5G 4/1).
STRUCTURE: None.
ALTERATION: Extreme.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: None.



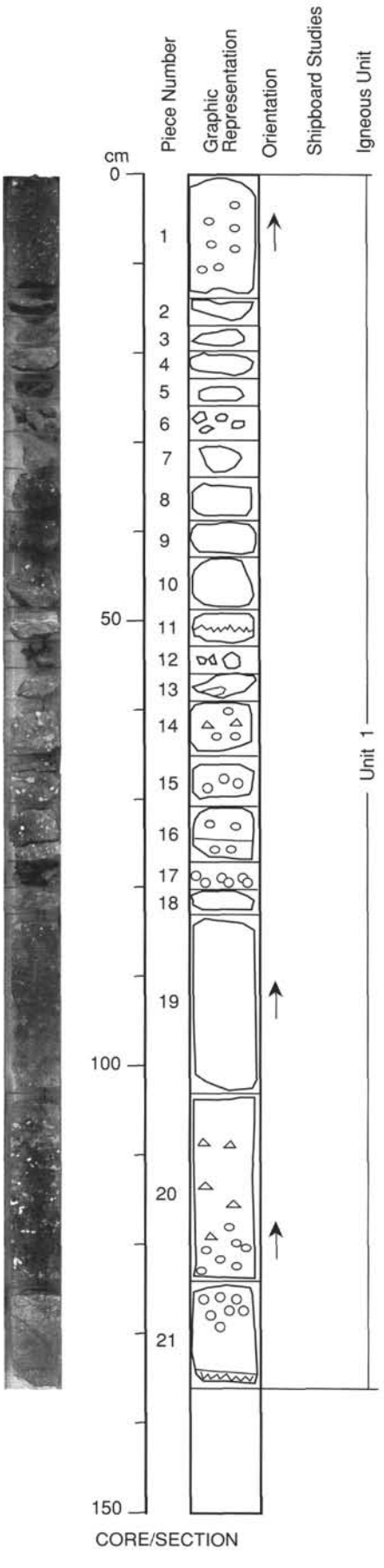
144-872C-17X-CC

UNIT 1: OLIVINE BASALT

Pieces 7–8

CONTACTS: Continues into 18X-1.
PHENOCRYSTS:
Olivine - 1%–2%; 1–3 mm; Altered to dusky green (5G 3/2) and not identifiable except in thin section.
GROUNDMASS: Microcrystalline.
VESICLES: 0–15%; Filled with white (N9) and grayish orange pink (5YR 7/2) zeolites and a dusky green (5G 3/2) clay (celadonite?).
COLOR: Grayish red (5R 4/2).
STRUCTURE: None.
ALTERATION: Vein and vesicle-fillings; groundmass color suggests some clay development.
VEINS/FRACTURES: <1%; 1–3 mm; Filled with calcite.
ADDITIONAL COMMENTS: More weathered portion of the basalt recovered in 18X-1 and 18X-2.

144-872C-18X-1

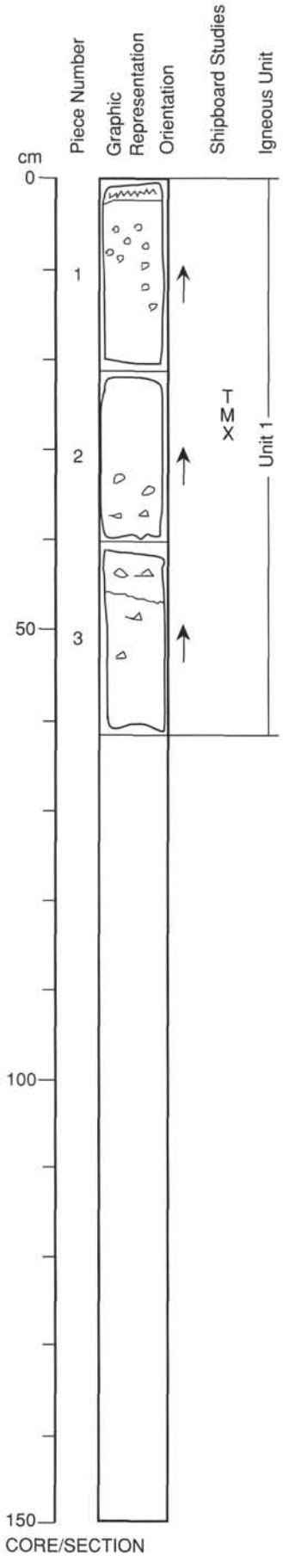


UNIT 1: OLIVINE BASALT (continued)

Pieces 1–21

CONTACTS: Continues from 17X-CC and into 18X-2.
PHENOCRYSTS:
Olivine - 1%–2%; 1–3 mm; Altered to a dusky green (5G 3/2) clay; Only identifiable as olivine in thin section.
GROUNDMASS: Microcrystalline.
VESICLES: 0–15%; Filled with white (N9) and grayish orange pink (5YR 1/2) zeolites and a dusky green (5G 3/2) clay (celadonite?).
COLOR: Medium gray (N3).
STRUCTURE: None.
ALTERATION: Vein and vesicle-fillings; Groundmass color suggests some alteration to clays.
VEINS/FRACTURES: <1%; 1–3 mm; Filled with calcite.
ADDITIONAL COMMENTS: Less altered portion of the basalt in 17X-CC.

~~~ Calcite veins
△ Irregular large vesicles
○ Vesicles
~~~



144-872C-18X-2

UNIT 1: OLIVINE BASALT (continued)

Pieces 1–3

CONTACTS: Continues from 18X-1.
PHENOCRYSTS:
Olivine - 1%–2%; 1–3 mm; *Altered to a dusky green* (5G 3/) *clay*; *Only identifiable as olivine in thin* section.
GROUNDMASS: Microcrystalline.
VESICLES: 0-15%; Filled with white (N9) and grayish orange pink (5YR 7/2) zeolites and a dusky green (5G 3/2) clay (celadonite?).
COLOR: Medium gray (N5).
STRUCTURE: None.
ALTERATION: Vein and vesicle-fillings; Groundmass color suggests some alteration to clays.
VEINS/FRACTURES: <1%; 1–3 mm; Filled with calcite.
ADDITIONAL COMMENTS: Less altered portion of the basalt in 17X-CC.