

135 835A-1H
SMEAR SLIDE SUMMARY (%):

	1, 43 D	1, 79 M	2, 57 M	2, 78 D	3, 63 D	3, 120 D	4, 70 D
TEXTURE:							
Sand	---	0	0	---	---	---	0
Silt	---	20	25	20	40	15	5
Clay	---	80	75	80	60	85	95

COMPOSITION:

Accessory minerals	---	Tr	Tr	---	Tr	---	---
Calcite	---	---	---	---	---	Tr	---
Clay	30	30	25	15	10	20	15
Diatoms	1	0	0	---	---	---	---
Dolomite	Tr	0	Tr	Tr	---	---	---
Feldspar	Tr	1	Tr	Tr	Tr	---	Tr
Foraminifers	15	10	20	15	40	15	5
Glass	5	15	5	5	5	Tr	Tr
Nannofossils	47	43	50	59	45	65	80
Oxide	---	---	---	Tr	---	---	---
Palagonite	---	Tr	0	---	---	---	---
Radiolarians	---	---	Tr	1	---	---	---
Silicoflagellates	Tr	0	Tr	Tr	---	---	---
Spicules	2	1	Tr	5	---	Tr	Tr

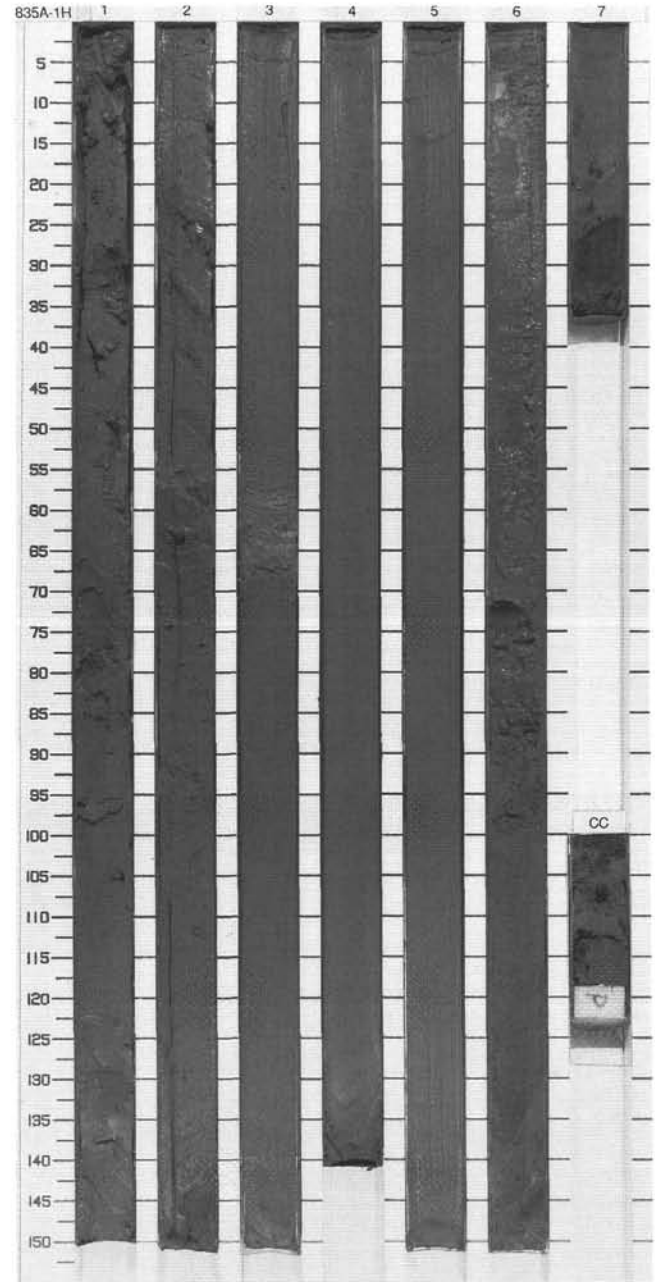
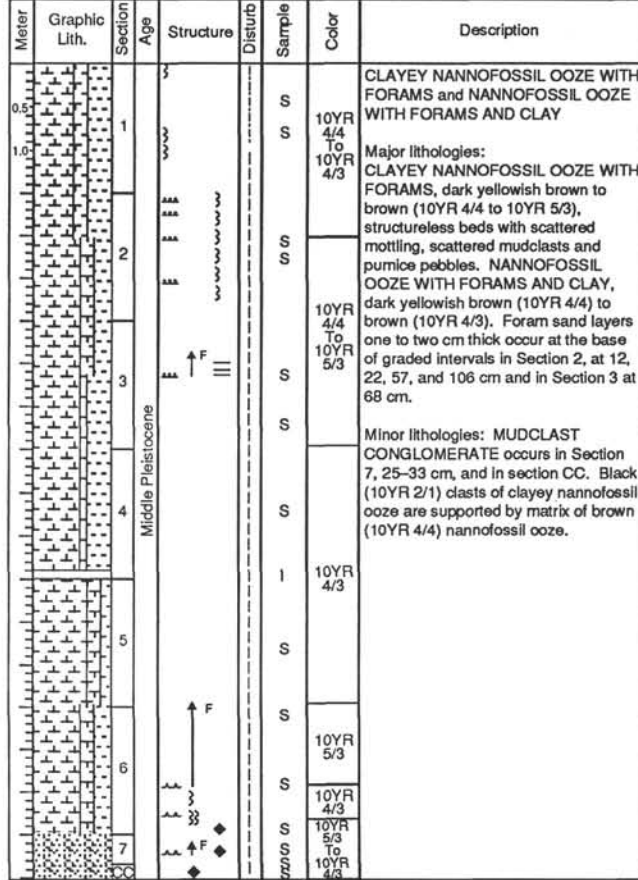
SMEAR SLIDE SUMMARY (%):

	5, 80 D	6, 10 D	6, 90 D	6, 143 M	7, 18 D	7, 29 D	CC, 10 D
TEXTURE:							
Sand	---	15	---	---	---	---	---
Silt	10	20	20	---	10	3	10
Clay	90	65	80	100	90	97	90

COMPOSITION:

Accessory minerals	---	Tr	Tr	---	---	---	Tr
Clay	15	15	20	---	15	40	20
Dolomite	---	Tr	Tr	---	Tr	Tr	---
Feldspar	Tr	---	Tr	---	---	---	---
Foraminifers	10	35	20	---	10	3	10
Glass	5	Tr	Tr	---	Tr	---	Tr
Nannofossils	70	50	60	---	75	57	70
Silicoflagellates	---	---	---	---	---	Tr	---

SITE 835 HOLE A CORE 1H
CORED 0.0 - 9.5 mbsf



135 835A-2H

SMEAR SLIDE SUMMARY (%):

	1, 84	2, 84	3, 18	3, 126	3, 147	4, 31	4, 107
	D	D	D	D	M	D	D
TEXTURE:							
Sand	---	---	---	---	---	---	---
Silt	10	15	10	15	15	---	15
Clay	90	85	90	85	85	---	85

COMPOSITION:

Accessory minerals	Tr	---	Tr	Tr	Tr	---	Tr
Clay	15	25	25	25	20	20	25
Dolomite	---	---	---	---	---	Tr	Tr
Feldspar	Tr	Tr	---	---	Tr	Tr	---
Foraminifers	10	15	10	15	15	10	15
Glass	Tr	Tr	Tr	Tr	---	---	Tr
Nannofossils	75	60	65	60	65	70	60
Spicules	---	---	---	---	---	Tr	---

SMEAR SLIDE SUMMARY (%):

	4, 113	5, 31	5, 100	6, 98
	D	M	D	D

TEXTURE:

Sand	---	---	---	---
Silt	---	---	---	---
Clay	---	---	---	---

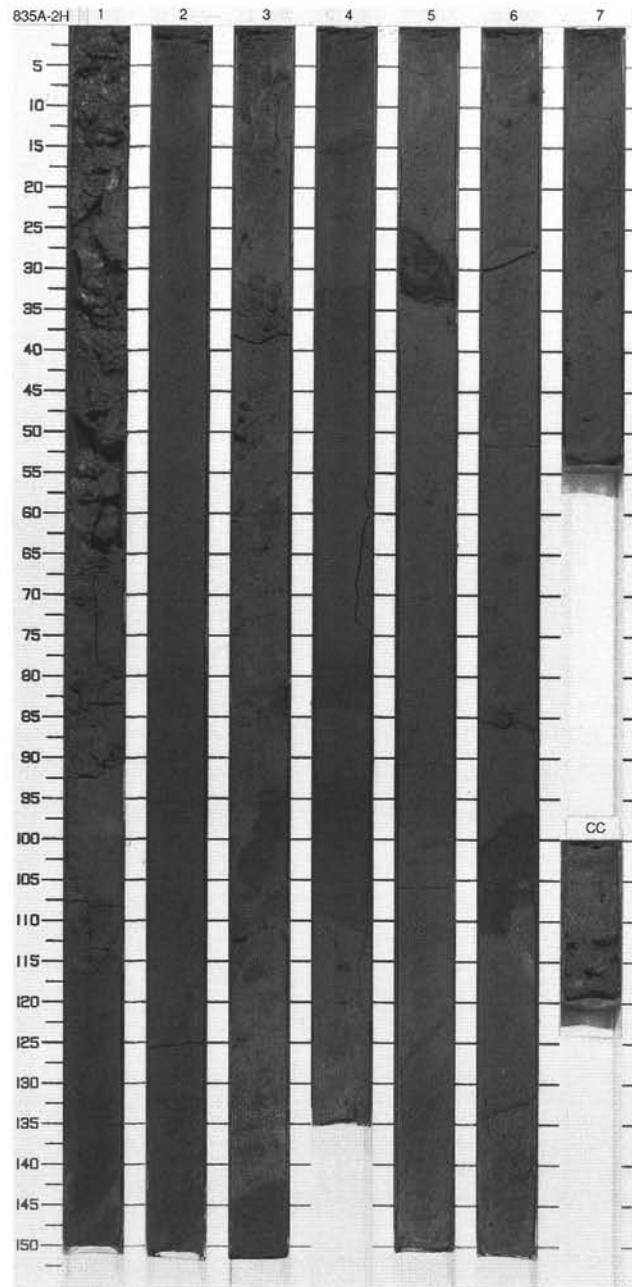
COMPOSITION:

Accessory minerals	Tr	Tr	Tr	Tr
Clay	15	25	20	20
Dolomite	---	Tr	---	---
Feldspar	---	Tr	Tr	---
Foraminifers	15	5	5	15
Glass	Tr	Tr	Tr	Tr
Nannofossils	70	70	75	65

SITE 835 HOLE A CORE 2H

CORED 9.5 - 19.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0.5		1		◆	WWW	S	10YR 5/3 To 10YR 5/4	CLAYEY NANNOFOSSIL OOZE WITH FORAMS, CLAYEY NANNOFOSSIL OOZE and MUD CLAST CONGLOMERATE
1.0		2		◆		S	10YR 3/3 To 10YR 4/3	Major lithologies: CLAYEY NANNOFOSSIL OOZE WITH FORAMS, yellowish brown to dark yellowish brown (10YR 4/4-10YR 3/3) with scattered mm-sized irregular fragments of pumice. CLAYEY NANNOFOSSIL OOZE, dark yellowish brown (10YR 4/4), with scattered pumice fragments. MUDCLAST CONGLOMERATE, dark reddish brown (5YR 3/3) and yellowish brown (10YR 6/4) mottled clasts of clayey nannofossil ooze with forams, up to 15 cm in size, supported by matrix of clayey nannofossil ooze with forams and clayey nannofossil ooze. Common subvertical water escape flame structures occur in Section 3 from 0 to 112 cm.
		3		◆		S		Minor lithology: None.
		4	Middle Pleistocene	◆		S	10YR 4/3	
		5		◆		S		
		6		◆		S	10YR 4/4	
		7		◆		S		
		CC						



135-835A-3H
 SMEAR SLIDE SUMMARY (%):

	1, 100 D	2, 100 D	3, 27 D	3, 37 M	3, 41 M	3, 120 D	4, 89 D
TEXTURE:							
Sand	--	--	--	50	--	--	--
Silt	10	17	20	20	10	18	15
Clay	90	83	80	30	90	82	85

COMPOSITION:

Accessory minerals	Tr	--	Tr	Tr	Tr	Tr	Tr
Calcite	--	Tr	--	--	--	--	--
Clay	25	20	15	15	25	20	25
Diatoms	--	--	Tr	--	--	--	--
Feldspar	--	Tr	--	Tr	--	Tr	--
Foraminifers	10	12	15	70	10	12	10
Glass	Tr	5	15	Tr	Tr	5	5
Nannofossils	85	83	55	15	85	83	80
Spicules	--	--	Tr	--	Tr	Tr	--

SMEAR SLIDE SUMMARY (%):

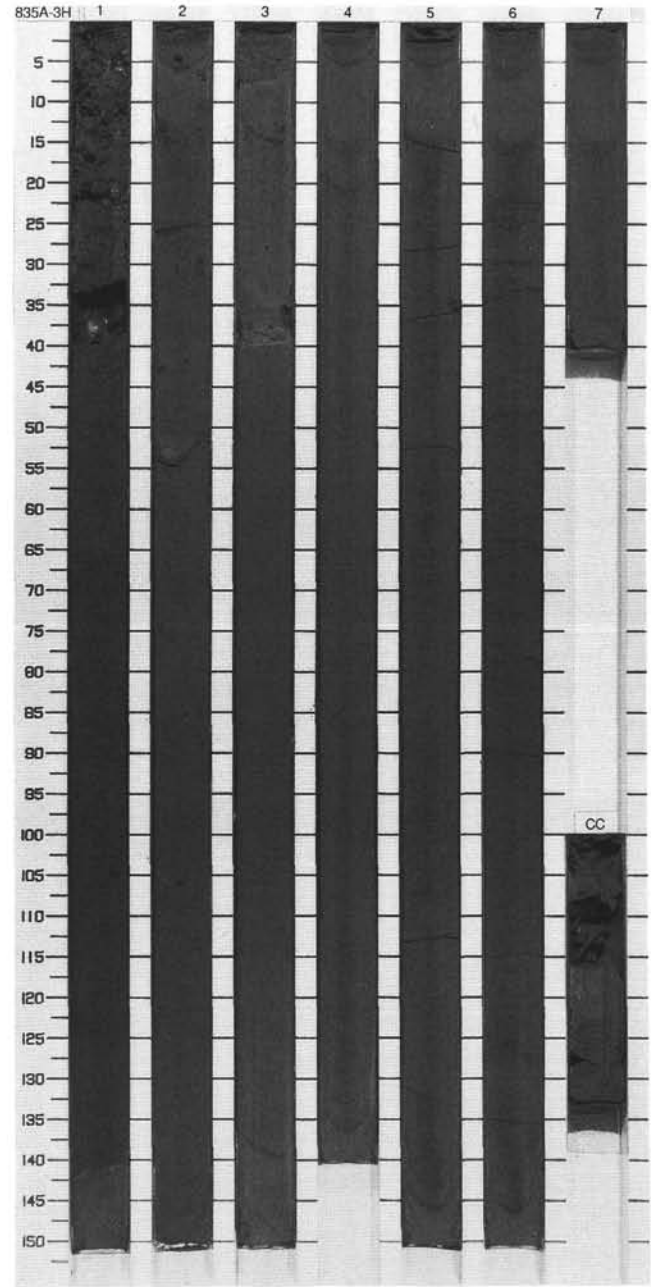
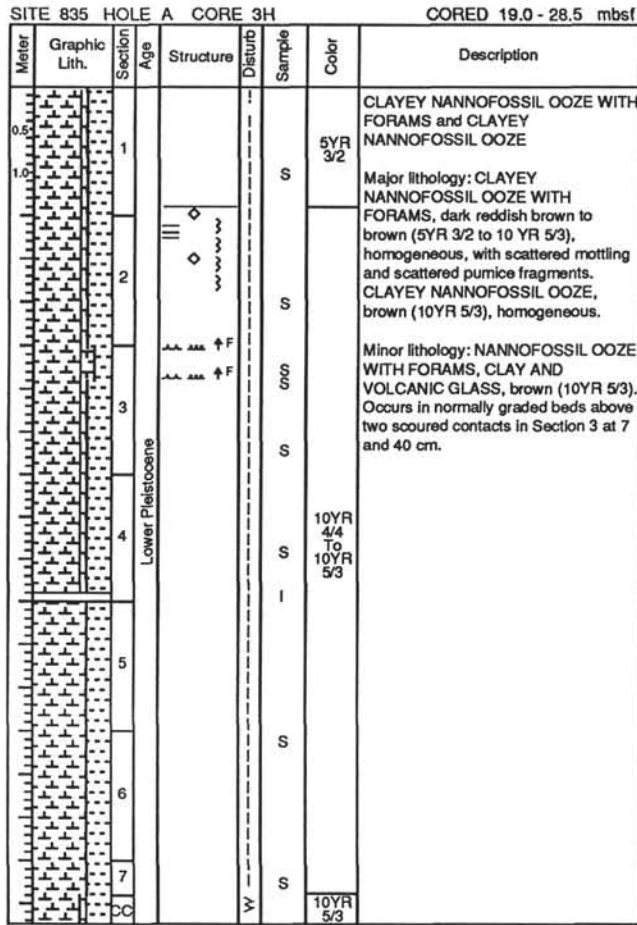
	8, 10 D	7, 25 D
--	------------	------------

TEXTURE:

Sand	--	--
Silt	--	--
Clay	--	--

COMPOSITION:

Accessory minerals	Tr	Tr
Clay	20	25
Foraminifers	5	5
Glass	Tr	Tr
Nannofossils	75	70



135-835A-4H

SMEAR SLIDE SUMMARY (%):

	1, 28	1, 48	1, 148	2, 70	2, 137	3, 44	3, 130
	M	M	D	D	M	D	D
TEXTURE:							
Sand	--	25	80	20	--	15	--
Silt	--	35	10	5	--	--	10
Clay	--	40	30	75	--	85	90

COMPOSITION:

Accessory minerals	--	Tr	Tr	--	--	2	--
Bioclast	10	--	--	--	5	--	--
Clay	15	15	10	20	15	15	15
Discaster	--	Tr	--	--	--	--	--
Feldspar	--	--	Tr	--	--	--	--
Foraminifers	10	50	35	15	20	15	10
Glass	Tr	Tr	5	Tr	Tr	Tr	--
Intraclasts	--	5	--	--	--	--	--
Nannofossils	65	30	50	65	60	65	75
Silicoflagellates	--	--	--	--	--	--	--
Spicules	--	Tr	--	--	--	--	--

SMEAR SLIDE SUMMARY (%):

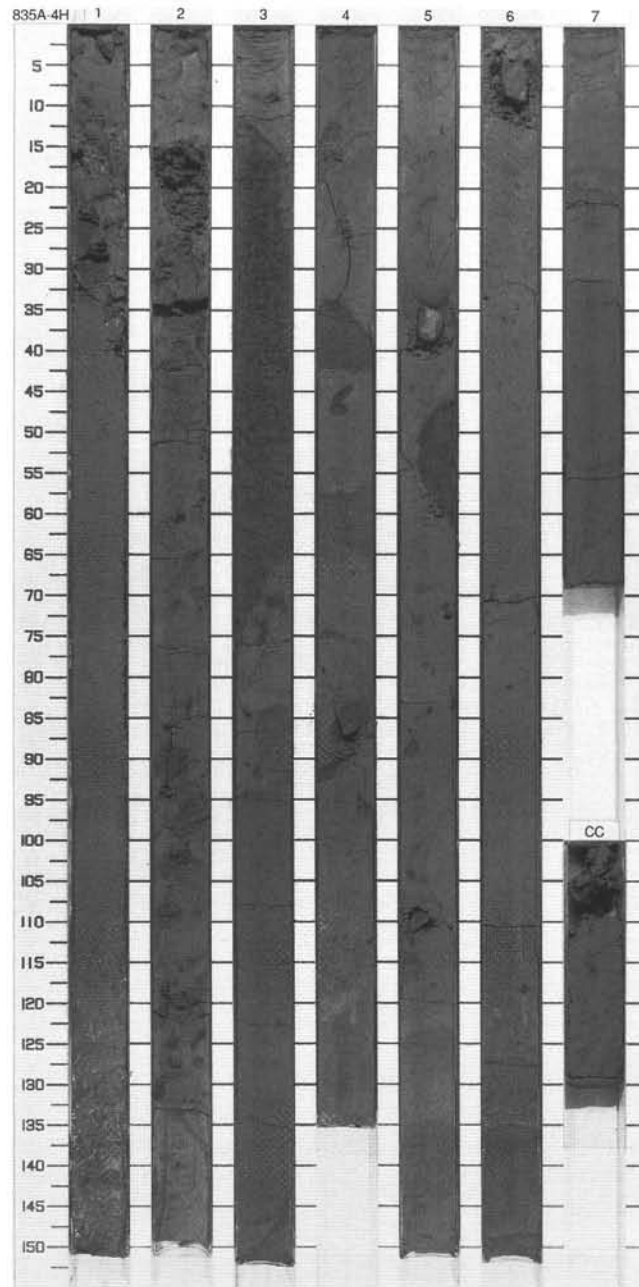
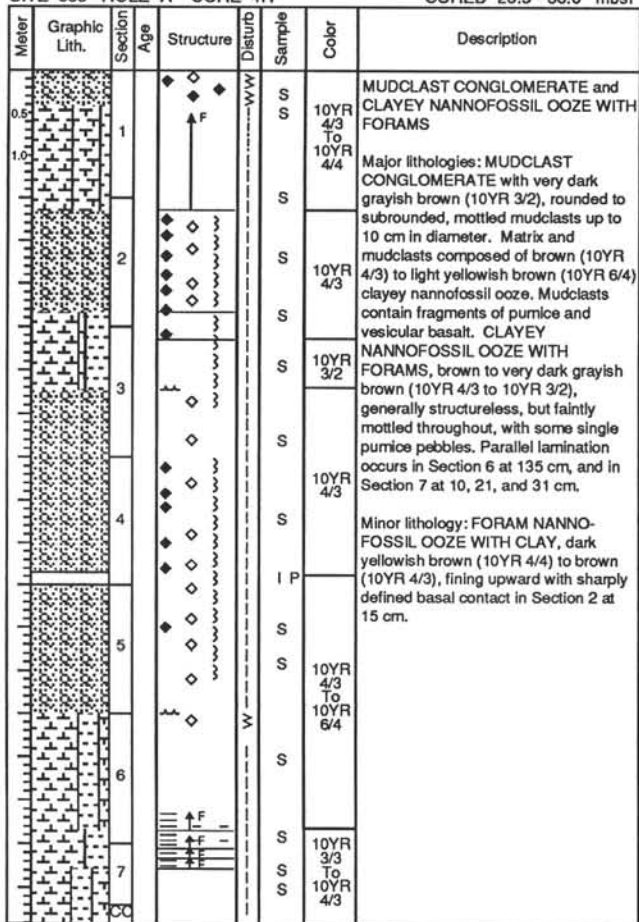
	4, 70	5, 51	5, 91	6, 53	6, 141	7, 31	7, 51
	D	D	D	D	D	D	D
TEXTURE:							
Sand	10	2	--	10	--	--	10
Silt	10	3	--	5	--	--	10
Clay	80	95	--	85	100	--	80

COMPOSITION:

Accessory minerals	--	--	--	Tr	--	5	Tr
Bioclast	Tr	--	Tr	Tr	--	5	--
Clay	10	20	15	20	10	15	25
Foraminifers	10	5	10	10	--	25	15
Glass	10	--	5	5	--	Tr	5
Nannofossils	70	75	70	65	90	50	55

SITE 835 HOLE A CORE 4H

CORED 28.5 - 38.0 mbsf



SMEAR SLIDE SUMMARY (%):

	1, 10	1, 34	1, 38	1, 115	1, 129	1, 132	2, 80
	M	D	D	D	M	M	D
TEXTURE:							
Sand	35	10	15	35	80	60	20
Silt	60	15	60	45	10	30	10
Clay	5	75	25	20	10	10	70

COMPOSITION:

Accessory minerals	--	--	Tr	--	--	--	--
Clay	5	30	25	20	5	15	20
Discoaster	--	Tr	Tr	--	Tr	Tr	Tr
Feldspar	Tr	--	Tr	--	--	--	--
Foraminifers	--	5	5	10	80	60	10
Glass	80	--	--	--	--	--	--
Intraclasts	--	5	10	15	--	--	20
Nannofossils	--	60	60	55	15	25	50
Opaque	15	--	--	--	--	--	--
Spicules	--	Tr	--	--	Tr	Tr	--

SMEAR SLIDE SUMMARY (%):

	2, 80	2, 109	2, 115	2, 140	2, 144	3, 25	3, 27
	D	D	D	M	M	M	M
TEXTURE:							
Sand	--	15	10	60	20	30	10
Silt	8	20	40	20	30	40	20
Clay	92	65	50	20	50	30	70

COMPOSITION:

Accessory minerals	Tr	--	--	--	--	Tr	5
Clay	20	20	30	5	20	20	25
Discoaster	--	Tr	Tr	Tr	Tr	--	--
Feldspar	--	--	--	--	--	Tr	Tr
Foraminifers	8	5	5	80	15	10	10
Glass	Tr	--	--	--	Tr	--	Tr
Intraclasts	--	10	10	--	5	Tr	5
Nannofossils	72	65	55	15	50	60	40
Rock fragment	--	--	--	--	10	10	15
Spicules	--	--	Tr	--	Tr	--	--

SMEAR SLIDE SUMMARY (%):

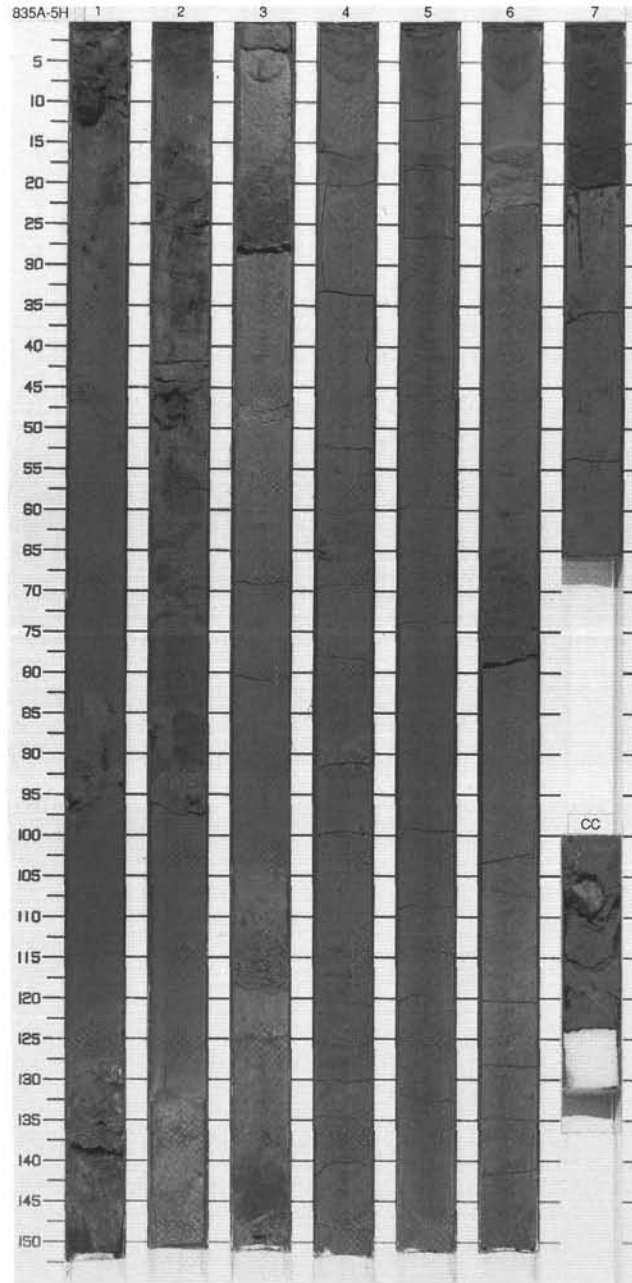
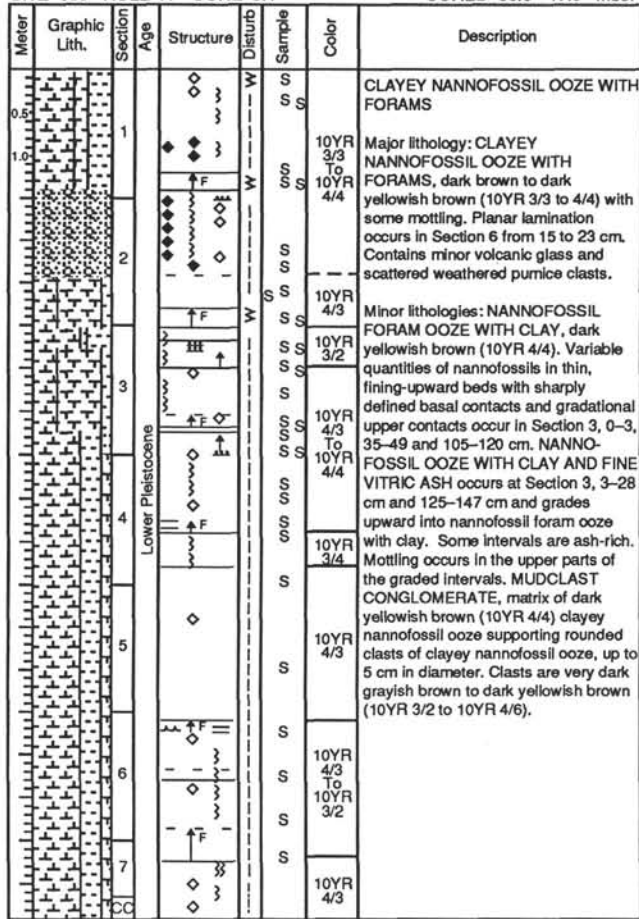
	3, 47	3, 52	3, 79	3, 110	3, 115	3, 124	3, 144
	D	M	D	M	M	D	M
TEXTURE:							
Sand	20	40	15	--	20	--	10
Silt	45	25	15	--	80	8	30
Clay	35	35	70	--	20	92	60

COMPOSITION:

Accessory minerals	Tr	Tr	--	Tr	Tr	--	10
Calcite	--	--	--	Tr	--	Tr	--
Clay	10	15	15	10	10	20	25
Discoaster	--	Tr	Tr	--	--	--	--
Feldspar	Tr	--	Tr	--	--	Tr	5
Foraminifers	65	60	5	60	70	8	5
Glass	Tr	Tr	Tr	Tr	Tr	--	Tr
Intraclasts	--	--	10	--	--	--	--
Nannofossils	25	25	70	30	20	72	35
Rock fragment	--	Tr	--	--	Tr	--	20
Spicules	--	Tr	Tr	--	--	--	Tr

SITE 835 HOLE A CORE 5H

CORED 38.0 - 47.5 mbsf



135-835A-5H

SMEAR SLIDE SUMMARY (%):

	3, 146 D	4, 32 D	4, 43 D	4, 76 D	4, 90 M	4, 145 D	5, 96 D
TEXTURE:							
Sand	---	---	15	---	75	---	20
Silt	10	15	10	8	15	---	20
Clay	90	85	75	92	10	---	60

COMPOSITION:

Accessory minerals	Tr	Tr	---	Tr	---	Tr	Tr
Bivalves	---	---	Tr	---	---	---	---
Calcite	---	---	---	---	---	Tr	---
Clay	20	15	20	15	10	15	25
Diatoms	---	---	Tr	---	Tr	---	---
Discoaster	---	---	---	---	Tr	---	Tr
Feldspar	1	Tr	---	Tr	Tr	---	---
Foraminifers	8	15	5	8	70	8	5
Glass	1	---	Tr	---	Tr	Tr	---
Intraclasts	---	---	10	---	---	---	10
Nannofossils	70	70	65	77	20	77	60
Ostracod	---	---	Tr	---	---	---	---
Spicules	---	Tr	Tr	---	Tr	---	Tr

SMEAR SLIDE SUMMARY (%):

	6, 22 M	6, 75 M	6, 123 D	7, 19 M
TEXTURE:				
Sand	10	---	---	30
Silt	50	68	8	30
Clay	40	32	92	40

COMPOSITION:

Accessory minerals	20	Tr	Tr	---
Clay	20	10	15	30
Discoaster	Tr	---	---	---
Dolomite	---	---	Tr	---
Feldspar	Tr	Tr	Tr	Tr
Foraminifers	40	3	8	15
Glass	---	65	---	5
Intraclasts	---	---	---	15
Nannofossils	20	22	77	10
Quartz	---	---	---	Tr
Rock fragment	---	---	---	25
Spicules	---	---	Tr	---

135-835A-6H

SMEAR SLIDE SUMMARY (%):

	1, 39	1, 139	2, 56	2, 118	3, 47	3, 122	3, 142
	D	D	M	D	D	M	D

TEXTURE:

Sand	--	--	--	--	--	--	--
Silt	3	--	60	15	8	30	8
Clay	97	--	40	85	92	70	92

COMPOSITION:

Accessory minerals	Tr	Tr	--	Tr	Tr	5	Tr
Bioclast	--	--	--	--	--	--	Tr
Calcite	--	--	--	Tr	--	--	Tr
Clay	20	20	20	20	20	25	15
Dolomite	Tr	--	--	--	--	--	--
Feldspar	--	--	--	Tr	Tr	Tr	Tr
Foraminifera	3	10	60	15	8	5	8
Glass	Tr	Tr	--	--	--	20	--
Nannofossils	77	70	20	65	72	45	77
Spicules	--	--	--	--	--	Tr	Tr

SMEAR SLIDE SUMMARY (%):

	4, 72	4, 90	5, 30	5, 118	6, 14	6, 81	6, 149
	M	D	M	M	D	D	D

TEXTURE:

Sand	--	--	--	--	--	--	--
Silt	20	8	20	--	15	5	5
Clay	80	92	80	--	85	95	95

COMPOSITION:

Accessory minerals	Tr	Tr	Tr	Tr	Tr	Tr	Tr
Clay	17	15	20	20	25	20	20
Dolomite	--	--	Tr	--	--	--	--
Feldspar	2	--	--	Tr	Tr	Tr	--
Foraminifera	1	8	10	10	15	5	5
Glass	70	Tr	20	25	--	--	Tr
Nannofossils	10	77	50	45	60	75	75

SMEAR SLIDE SUMMARY (%):

	CC, 17
	D

TEXTURE:

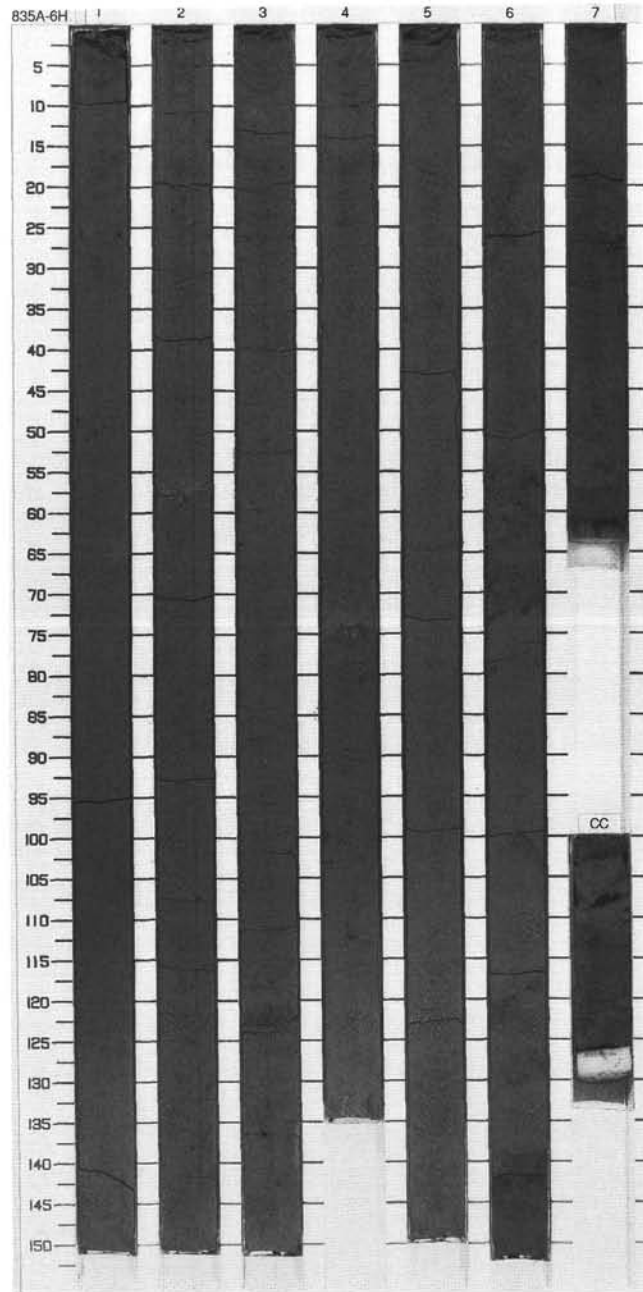
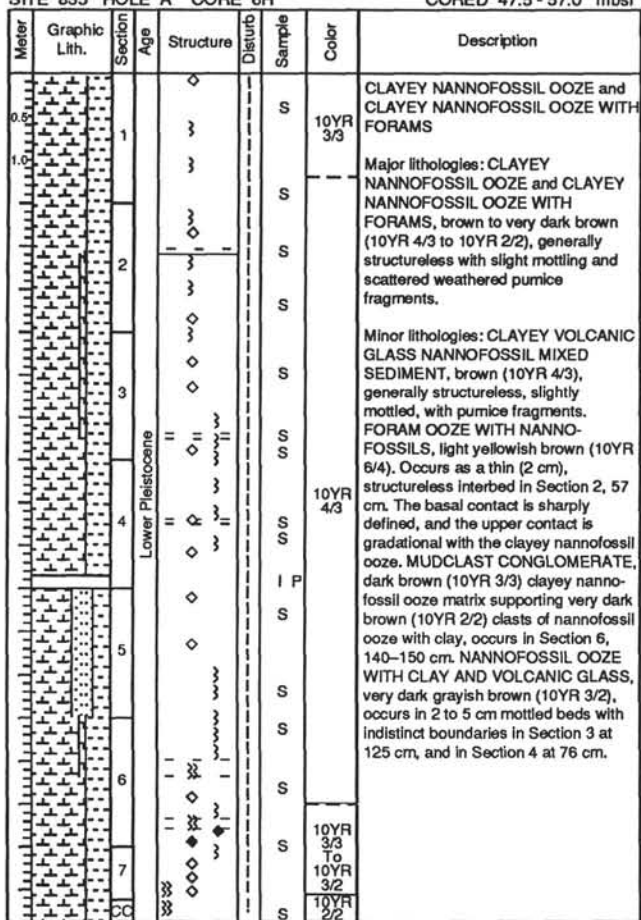
Sand	--
Silt	3
Clay	97

COMPOSITION:

Accessory minerals	Tr
Calcite	Tr
Clay	25
Foraminifera	3
Nannofossils	72

SITE 835 HOLE A CORE 6H

CORED 47.5 - 57.0 mbsf



135-835A-7H
SMEAR SLIDE SUMMARY (%):

	1, 12	1, 94	1, 130	2, 15	2, 88	3, 18	3, 109
	D	D	D	D	D	D	D
TEXTURE:							
Sand	--	--	--	--	--	--	--
Silt	3	8	5	5	8	8	--
Clay	97	92	95	95	92	92	--
COMPOSITION:							
Accessory minerals	Tr	Tr	Tr	--	--	Tr	Tr
Calcite	--	--	Tr	--	--	Tr	--
Clay	20	20	20	20	20	20	20
Dolomite	--	Tr	--	--	--	--	--
Feldspar	--	Tr	--	--	--	Tr	Tr
Foraminifers	3	8	5	5	8	8	10
Glass	--	2	--	--	--	--	--
Mica	--	Tr	--	--	--	--	--
Nannofossils	77	70	75	75	72	72	70
Rock fragment	--	--	--	--	Tr	--	--
Spicules	--	Tr	--	--	--	--	--

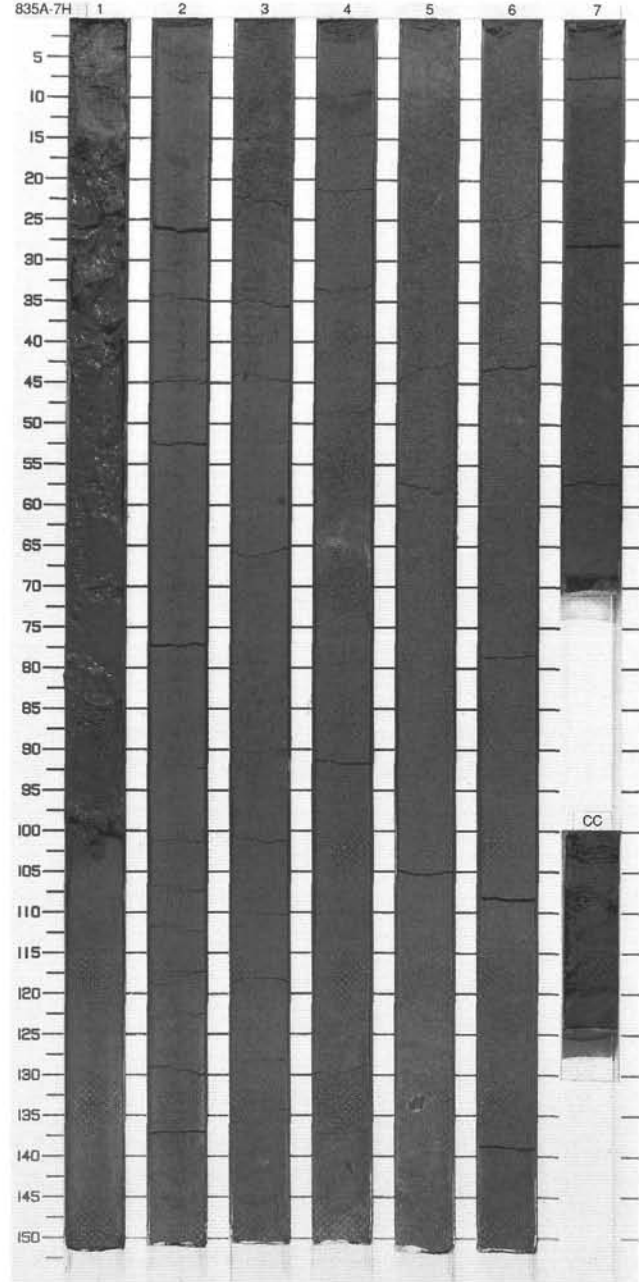
SMEAR SLIDE SUMMARY (%):

	4, 64	4, 112	5, 92	6, 70	7, 25
	D	D	D	D	D
TEXTURE:					
Sand	--	--	--	--	--
Silt	3	3	--	--	--
Clay	97	97	--	--	--
COMPOSITION:					
Accessory minerals	Tr	Tr	Tr	Tr	Tr
Calcite	Tr	--	--	--	--
Clay	15	20	20	20	25
Feldspar	Tr	Tr	Tr	--	--
Foraminifers	3	3	8	8	5
Nannofossils	77	77	72	72	70

SITE 835 HOLE A CORE 7H

CORED 57.0 - 66.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0.5		1				S	10YR 3/3 To 10YR 3/2	CLAYEY NANNOFOSSIL OOZE WITH FORAMS and CLAYEY NANNOFOSSIL OOZE
1.0		2				S	10YR 4/3 To 10YR 4/4	
		3	Upper Pliocene			S	10YR 4/3	Major lithology: CLAYEY NANNOFOSSIL OOZE WITH FORAMS and CLAYEY NANNOFOSSIL OOZE, very dark brown to brown (10YR 2/2 to 10YR 5/3). Slight mottling, although otherwise generally structureless. Contains scattered pumice clasts throughout. In Section CC, there is weak lamination between 7 and 13 cm. Minor lithology: None.
		4				S	10YR 3/3	
		5				S	10YR 5/3	
		6	IPle			S	10YR 4/3	
		7	Upper Pliocene			S	10YR 3/2 To 10YR 2/2	
		CC				S	10YR 2/2	



135-835A-8H
SMEAR SLIDE SUMMARY (%):

	1,119	2,40	3,48	3,115	3,143	4,74	4,79
	D	M	D	M	M	M	D
TEXTURE:							
Sand	--	20	--	30	60	80	10
Silt	5	15	--	10	20	20	10
Clay	95	65	--	60	20	20	80

COMPOSITION:

Accessory minerals	Tr	--	Tr	--	--	--	--
Augite	--	--	--	--	Tr	--	--
Bivalves	--	--	--	--	Tr	--	--
Calcite	--	--	Tr	--	--	--	--
Clay	20	20	20	20	10	10	20
Discoaster	--	Tr	--	Tr	--	--	--
Feldspar	Tr	--	Tr	Tr	Tr	--	--
Foraminifers	5	10	5	30	75	55	5
Glass	--	--	--	--	Tr	Tr	Tr
Intraclasts	--	25	--	10	--	10	10
Nannofossils	75	45	75	40	15	25	65
Spicules	--	Tr	--	Tr	Tr	--	Tr

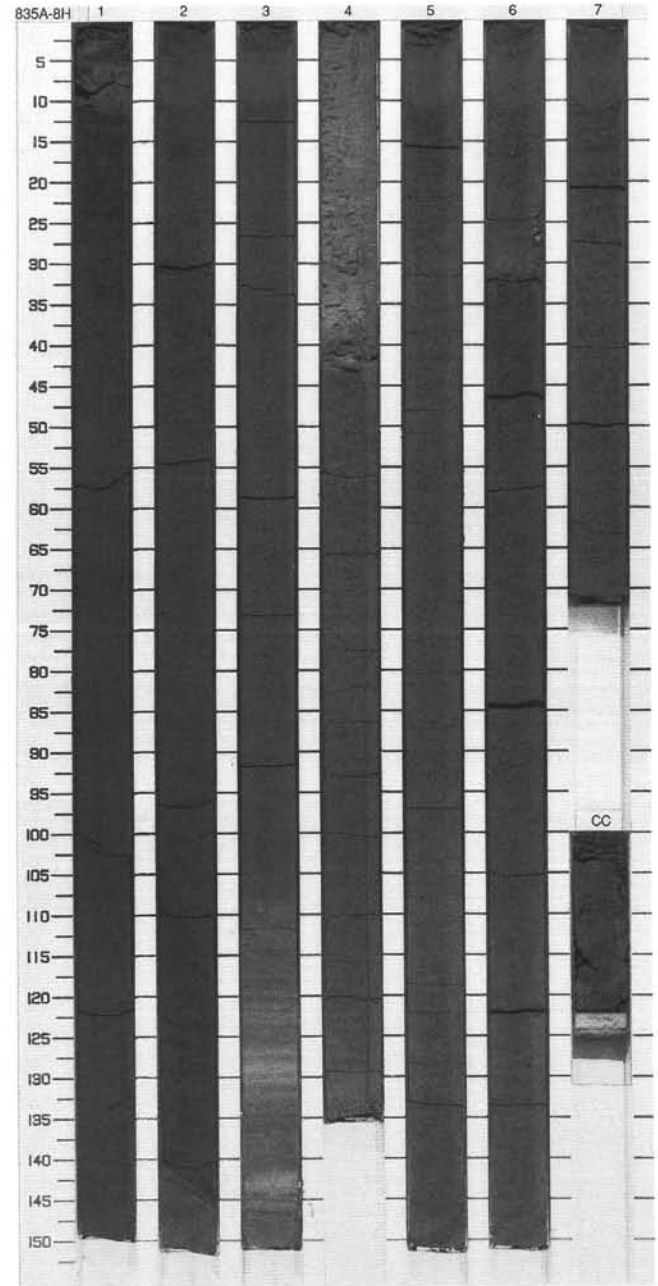
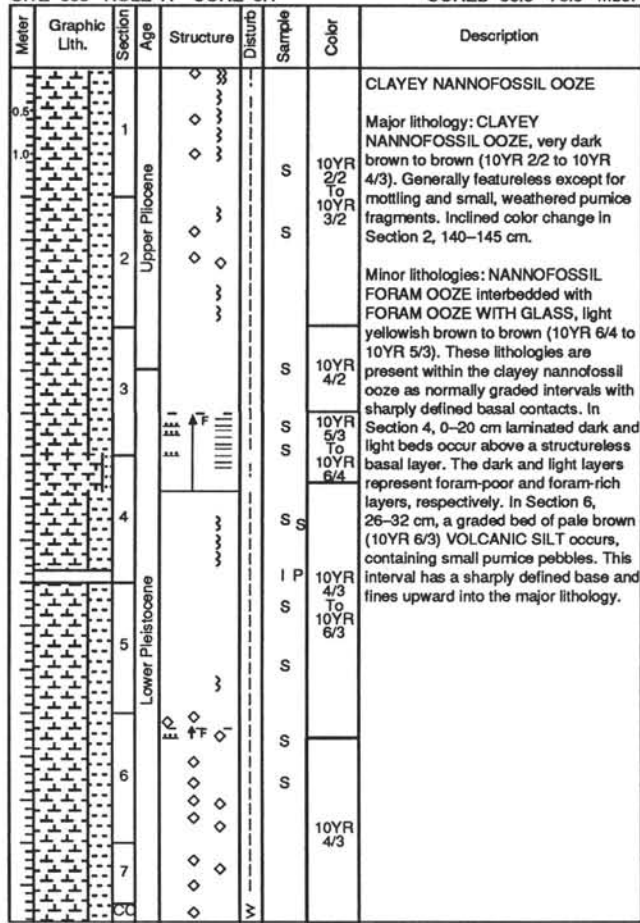
SMEAR SLIDE SUMMARY (%):

	5,28	5,94	6,30	6,32	6,78
	D	M	M	M	D
TEXTURE:					
Sand	--	25	60	30	--
Silt	3	15	30	70	8
Clay	97	60	10	--	92

COMPOSITION:

Accessory minerals	--	--	2	Tr	Tr
Bioclast	--	--	--	Tr	--
Clay	15	20	--	--	15
Foraminifers	3	5	--	--	8
Glass	--	Tr	90	95	--
Intraclasts	--	25	--	--	--
Nannofossils	82	50	Tr	5	77
Rock fragment	--	--	3	--	--
Spicules	--	--	Tr	--	--

SITE 835 HOLE A CORE 8H CORED 66.5 - 76.0 mbsf



135-835A-9H

SMEAR SLIDE SUMMARY (%):

	1, 102	2, 50	2, 118	3, 21	3, 51	4, 106	5, 42
	M	M	D	M	M	D	D
TEXTURE:							
Sand	20	25	—	20	—	—	—
Silt	40	15	5	30	38	8	3
Clay	40	60	95	50	62	92	97

COMPOSITION:

Accessory minerals	Tr	—	Tr	Tr	—	Tr	Tr
Calcite	—	—	—	—	35	—	—
Clay	20	15	20	20	52	20	15
Discosiderite	—	—	—	Tr	—	—	—
Foraminifera	5	40	5	30	3	8	3
Intraclasts	15	—	—	20	—	—	—
Nannofossils	60	45	75	25	10	72	82
Rock fragment	Tr	—	—	—	—	—	—
Spicules	Tr	—	—	—	—	—	—

SMEAR SLIDE SUMMARY (%):

	5, 121	5, 148	6, 63	7, 22	7, 50
	D	M	M	D	M
TEXTURE:					
Sand	—	—	—	—	50
Silt	3	65	—	5	30
Clay	97	35	—	95	20

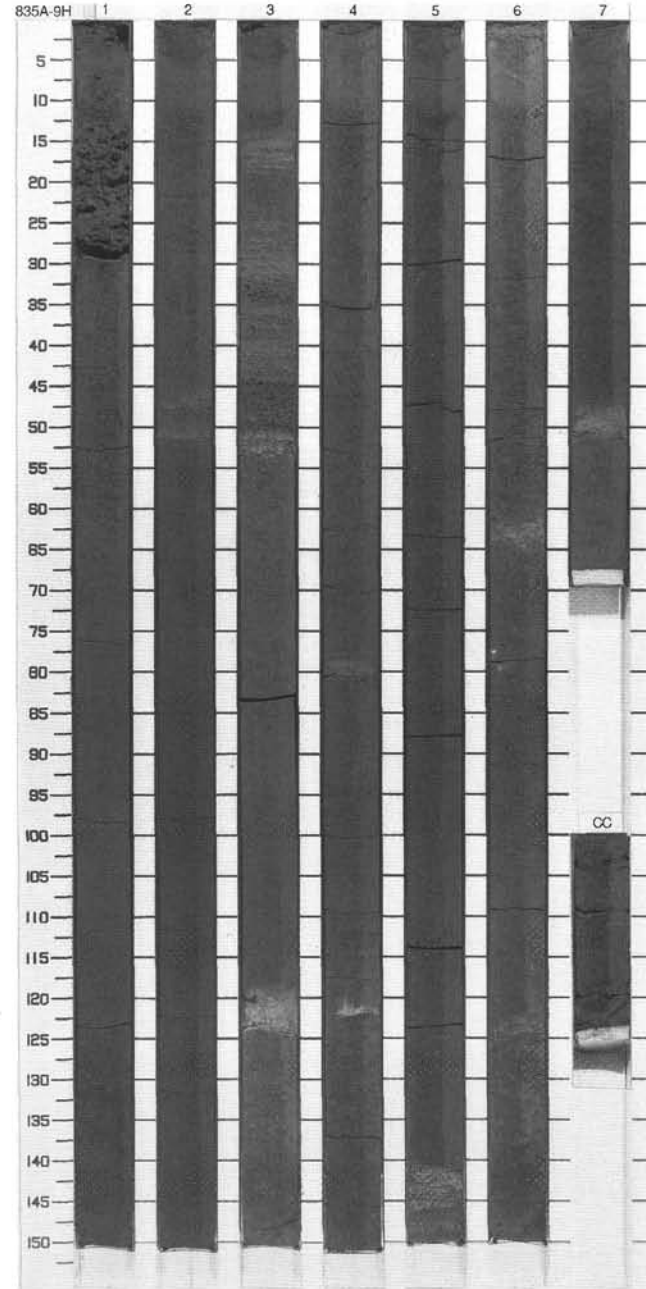
COMPOSITION:

Accessory minerals	Tr	Tr	—	Tr	Tr
Biofossil	—	—	—	—	Tr
Clay	20	20	25	15	10
Feldspar	—	Tr	—	—	—
Foraminifera	3	65	15	5	70
Intraclasts	—	—	30	—	—
Nannofossils	77	15	30	80	20

SITE 835 HOLE A CORE 9H

CORED 76.0 - 85.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description						
0.5	[Graphic Lithology: Dark grayish brown ooze with faint mottling and scattered pumice fragments]	1	Lower Pleistocene	[Structure: wavy lines]	[Disturb: none]	S	10YR 4/3 To 10YR 3/3	<p>CLAYEY NANNOFOSSIL OOZE</p> <p>Major lithology: CLAYEY NANNOFOSSIL OOZE, dark grayish brown (10YR 4/2) to dark brown (10YR 3/3). Generally structureless, but with faint mottling throughout and scattered pumice fragments.</p> <p>Minor lithology: NANNOFOSSIL FORAM OOZE WITH CLAY, occurring as interbedded layers, alternating between pale brown (10YR 6/3) and brown (10YR 5/3) layers of foram-rich and nannofossil-rich lithologies respectively. Thin interbeds of FORAM NANNOFOSSIL OOZE WITH CLAY or NANNOFOSSIL FORAM OOZE WITH CLAY, varying in color between very pale brown (10YR 7/4) and brown (10YR 5/3), occur within the major lithology in Section 2, 46-51 cm, Section 3, 119-124 cm, Section 4, 78-81 and 121-123 cm, Section 5, 141 cm through Section 6, 2 cm, Section 6, 122-125 cm, and Section 7, 47-51 cm. These interbeds normally show sharp eroded bases and fine upward into the overlying major lithology. These beds are generally structureless, but in Section 5, parallel laminations occur.</p>						
1.0									2	Lower Pleistocene	[Structure: wavy lines]	[Disturb: none]	S	10YR 6/3
1.5														
2.0		4	Upper Pleistocene	[Structure: wavy lines]	[Disturb: none]	S	10YR 3/3 To 10YR 4/2							
2.5									5	Upper Pleistocene	[Structure: wavy lines]	[Disturb: none]	S	10YR 4/3
3.0														
3.5		7	Upper Pleistocene	[Structure: wavy lines]	[Disturb: none]	S	10YR 4/2							

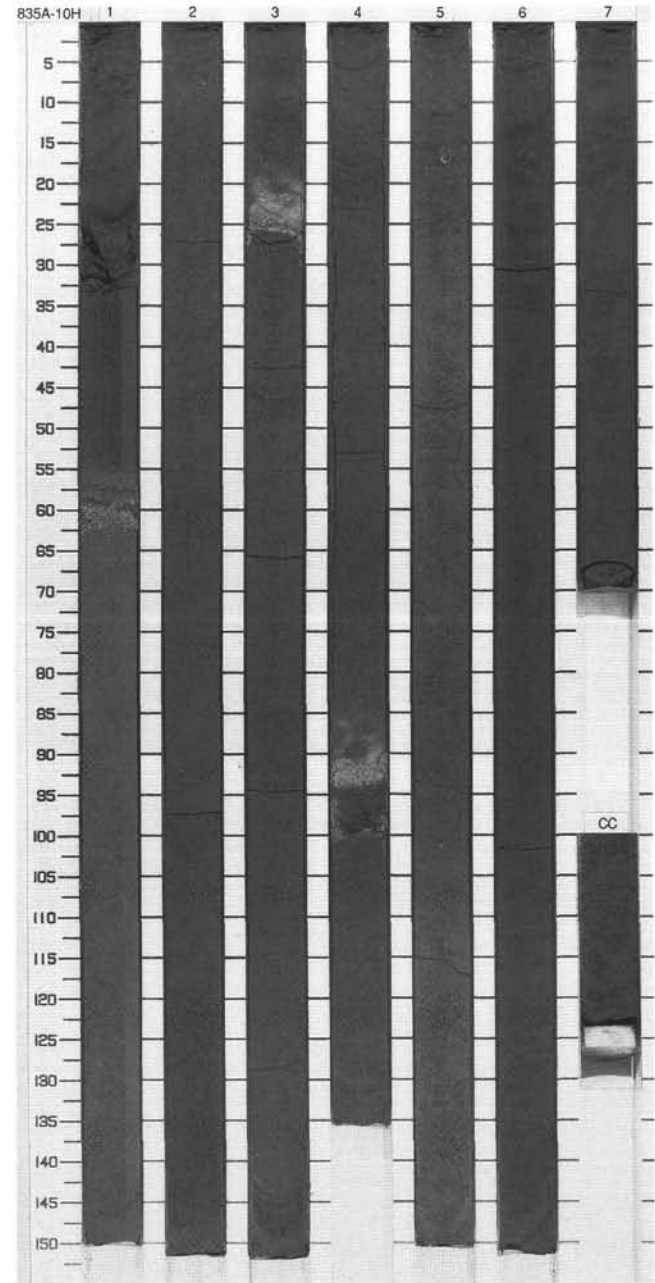
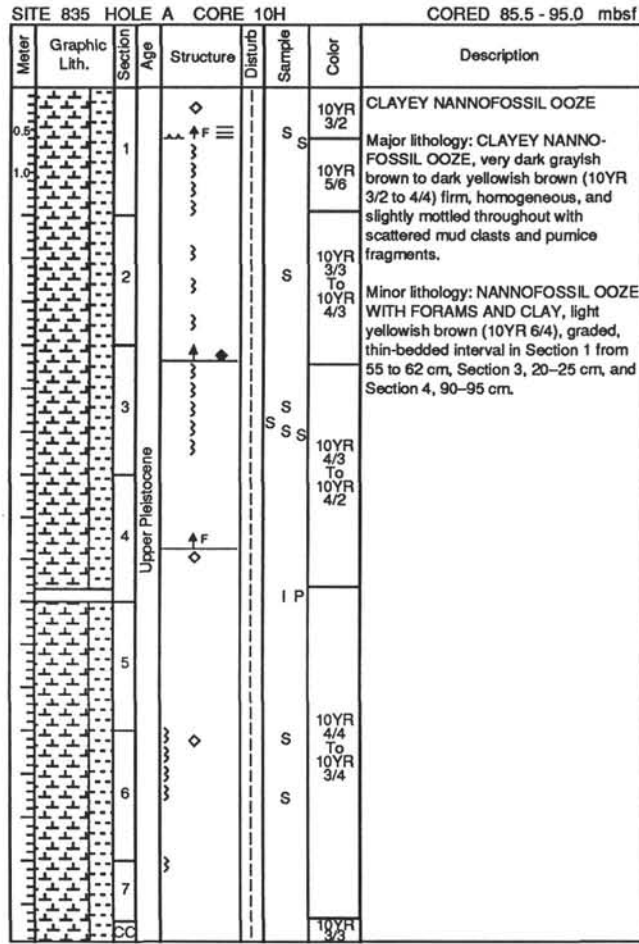


135-835A-10H
SMEAR SLIDE SUMMARY (%):

	1, 53 D	1, 63 D	2, 69 D	3, 70 D	4, 89 M	4, 98 M	4, 102 D
TEXTURE:							
Sand	--	--	--	--	--	5	--
Silt	5	10	8	5	--	45	5
Clay	95	90	92	95	--	50	95
COMPOSITION:							
Accessory minerals	Tr	--	--	--	Tr	3	--
Clay	15	15	15	15	20	2	20
Diocoster	--	--	--	--	--	Tr	--
Feldspar	Tr	--	--	Tr	Tr	Tr	--
Foraminifers	5	10	8	5	5	Tr	5
Glass	--	--	--	--	--	95	--
Nannofossils	80	75	77	80	75	--	75

SMEAR SLIDE SUMMARY (%):

	6, 9 D	6, 77 D
TEXTURE:		
Sand	--	--
Silt	5	3
Clay	95	97
COMPOSITION:		
Accessory minerals	Tr	Tr
Clay	15	15
Feldspar	Tr	Tr
Foraminifers	5	3
Nannofossils	80	82



135-835A-11H
SMEAR SLIDE SUMMARY (%):

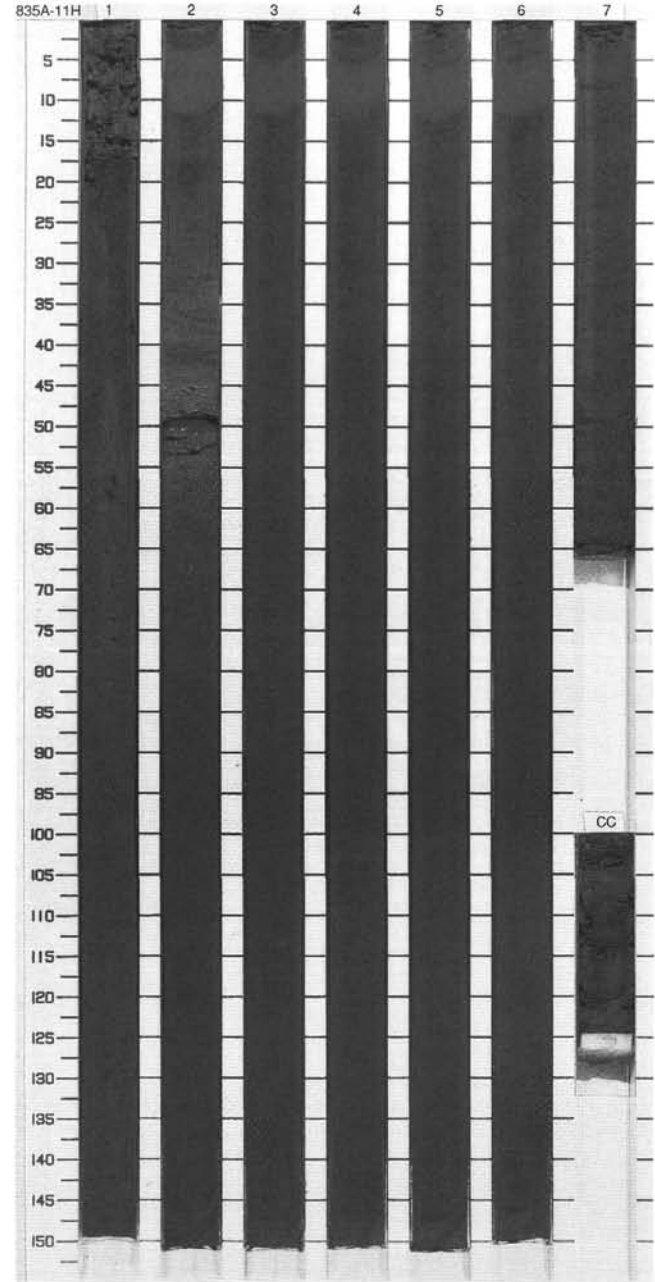
	1, 90 D	2, 46 M	2, 50 M	5, 80 D	CC, 17 D
TEXTURE:					
Sand	---	20	---	---	---
Silt	5	20	3	---	3
Clay	95	60	97	---	97

COMPOSITION:

Accessory minerals	---	---	Tr	---	Tr
Clay	20	20	15	15	15
Dolomite	---	---	---	Tr	---
Foraminifers	5	40	3	5	3
Nannofossils	75	40	82	80	82

SITE 835 HOLE A CORE 11H CORED 95.0 - 104.5 mbsf

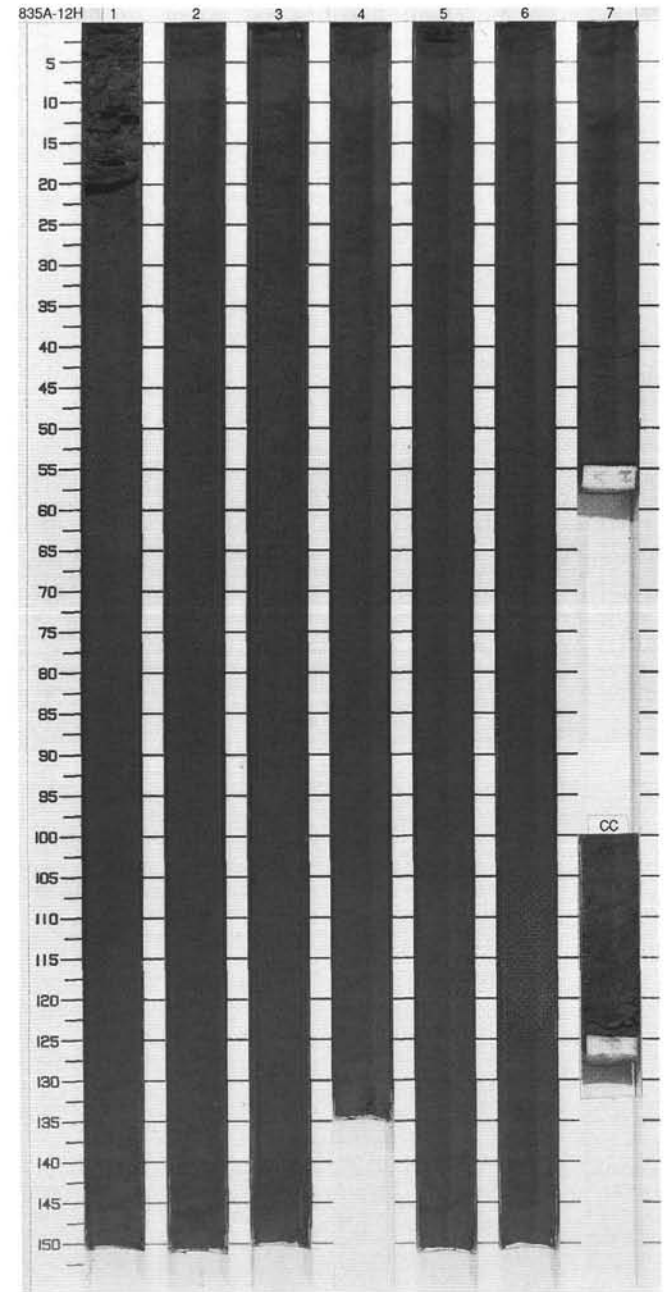
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0.0		1	Upper Pliocene		---	S	10YR 3/3	<p>CLAYEY NANNOFOSSIL OOZE</p> <p>Major lithology: CLAYEY NANNOFOSSIL OOZE, dark brown (10YR 3/3). Firm with occasional mottling but otherwise few sedimentary structures. One mud clast 5 cm in diameter occurs in Section 1 at 53 cm. Millimeter-thick lenses of foram oozes with silt- and sand-sized grains occurring throughout the core.</p> <p>Minor lithology: FORAM NANNOFOSSIL OOZE WITH CLAY, brown to dark brown (10YR 5/3 to 10YR 3/3), very thin-bedded layers of sand-sized forams in Section 2, 48-52 cm.</p>
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								
7.0	CC							



135-835A-12H
SMEAR SLIDE SUMMARY (%):

	1, 100 D	3, 73 D	5, 147 D
TEXTURE:			
Sand	---	---	---
Silt	3	3	2
Clay	97	97	96
COMPOSITION:			
Accessory minerals	Tr	Tr	---
Clay	15	15	15
Foraminifers	3	3	2
Nannofossils	82	82	83

SITE 835 HOLE A CORE 12H				CORED 104.5 - 114.0 mbsf				
Meter	Graphic Lith.	Section Age	Structure	Disturb	Sample	Color	Description	
0.5		1			W		<p>NANNOFOSSIL OOZE WITH CLAY</p> <p>Major lithology: NANNOFOSSIL OOZE WITH CLAY, dark brown (10YR 3/3). Firm, uniformly structureless sediment. Millimeter-sized lenses of lighter colored foram oozes with sand- to silt-sized grains occur in Section 5, 10-20 cm.</p> <p>Minor lithology: None.</p>	
1.0		2			S			
		3				S		
		4	Upper Pliocene					10YR 3/3
		5				I P		
		6				S		
		7						
	CC							



135-835A-13H
SMEAR SLIDE SUMMARY (%):

	3,29 D	3,36 D	3,105 D	4,85 D	5,43 D	5,49 D	5,89 D
TEXTURE:							
Sand	--	--	10	10	--	20	--
Silt	--	--	30	35	--	40	--
Clay	--	--	60	55	--	40	--

COMPOSITION:

Accessory minerals	Tr	Tr	Tr	Tr	Tr	Tr	Tr
Calcite	Tr	--	--	--	Tr	10	Tr
Clay	25	30	35	20	35	30	30
Feldspar	--	Tr	Tr	--	Tr	Tr	Tr
Foraminifers	10	40	40	45	20	50	45
Glass	--	Tr	Tr	Tr	--	Tr	--
Nannofossils	65	30	25	35	45	10	25
Quartz	--	--	--	Tr	--	--	--
Spicules	--	Tr	--	--	--	--	--

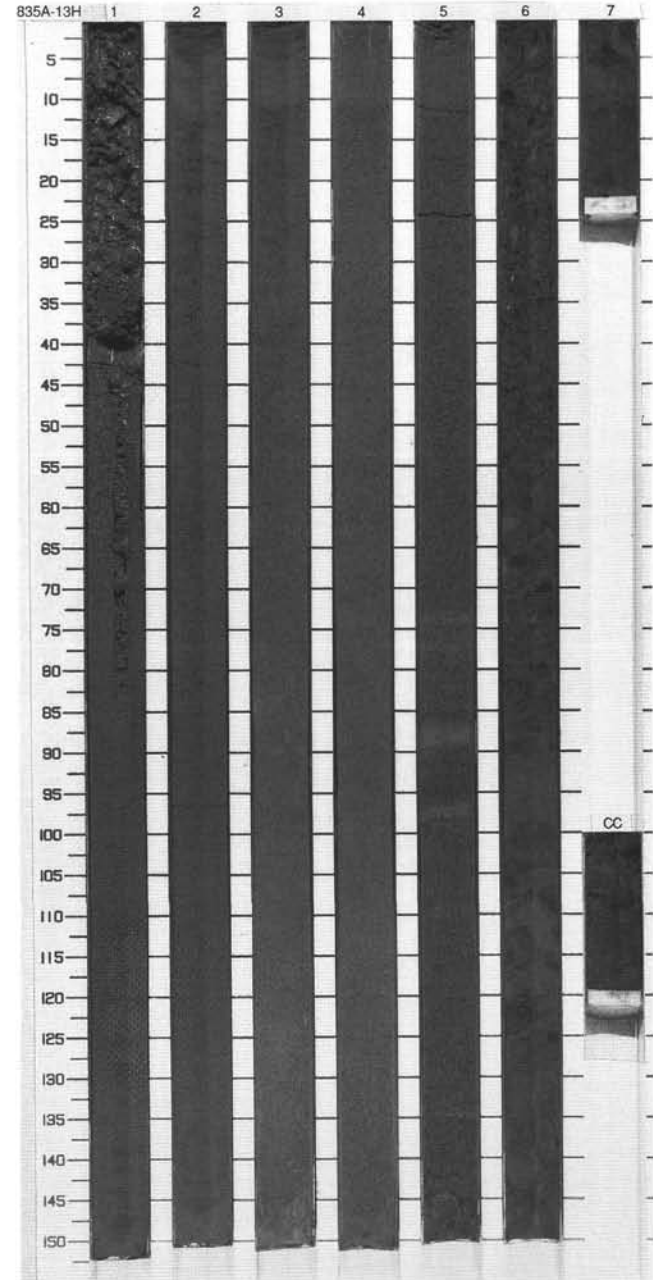
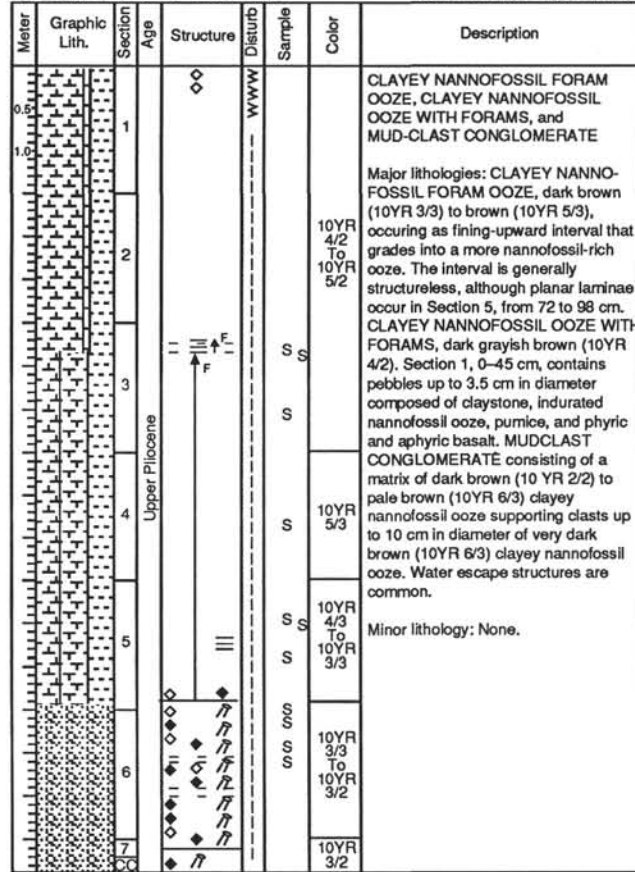
SMEAR SLIDE SUMMARY (%):

	5,147 D	6,13 D	6,43 M	6,61 D
TEXTURE:				
Sand	--	--	--	--
Silt	--	--	--	--
Clay	--	100	--	--

COMPOSITION:

Accessory minerals	Tr	--	--	Tr
Calcite	Tr	--	--	--
Clay	30	60	10	47
Feldspar	--	Tr	--	--
Foraminifers	8	--	--	8
Glass	--	--	90	--
Nannofossils	62	40	--	45

SITE 835 HOLE A CORE 13H CORED 114.0 - 123.5 mbsf



135-835A-14H
SMEAR SLIDE SUMMARY (%):

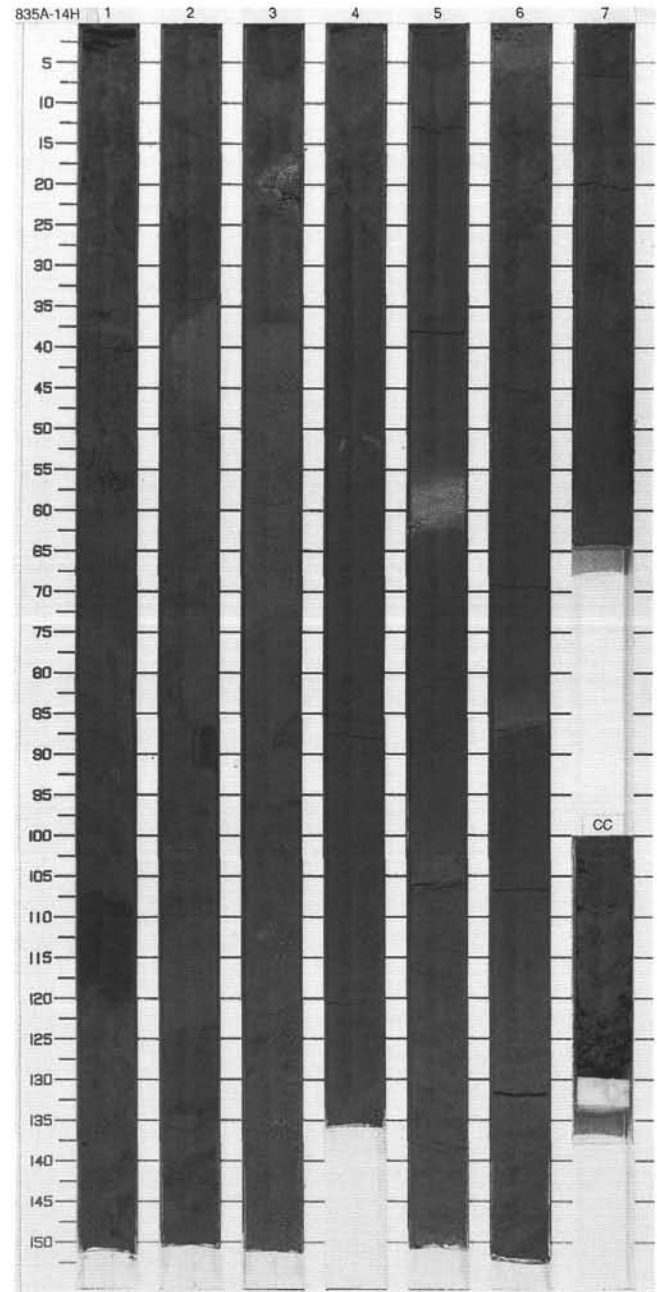
	1,70 D	1,114 M	2,117 D	3,55 D	4,30 D	5,59 M	5,102 D
TEXTURE:							
Sand	--	--	--	--	--	--	--
Silt	--	--	--	--	--	--	--
Clay	--	--	--	--	--	--	--
COMPOSITION:							
Accessory minerals	Tr	Tr	Tr	Tr	Tr	Tr	Tr
Calcite	--	Tr	--	--	--	Tr	Tr
Clay	20	20	20	15	20	20	20
Dolomite	Tr	--	--	Tr	Tr	--	--
Feldspar	--	Tr	Tr	Tr	--	Tr	Tr
Foraminifers	10	1	3	5	3	40	2
Glass	--	--	--	--	--	--	68
Nannofossils	70	79	77	80	77	40	10

SMEAR SLIDE SUMMARY (%):

	5,112 D	6,3 M	6,29 D	6,85 M	7,45 D
TEXTURE:					
Sand	--	--	--	--	--
Silt	--	--	--	--	--
Clay	--	--	--	--	--
COMPOSITION:					
Accessory minerals	Tr	Tr	Tr	Tr	Tr
Calcite	Tr	--	--	--	Tr
Clay	20	15	20	10	20
Dolomite	--	Tr	--	--	--
Feldspar	Tr	Tr	Tr	Tr	--
Foraminifers	6	3	2	3	15
Glass	--	72	Tr	77	--
Nannofossils	72	10	78	10	65

SITE 835 HOLE A CORE 14H CORED 123.5 - 133.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0.0	[Pattern]	1	Pliocene	[Structure]		S	5YR 3/2	MUDCLAST CONGLOMERATE and CLAYEY NANNOFOSSIL OOZE
1.0						S	5YR 2.5/2 To 10YR 4/4	Major lithologies: MUDCLAST CONGLOMERATE. Large mudclasts (up to 10 cm in diameter) of dark yellowish brown to dark reddish brown (10YR 4/4 to 5YR 2.5/2) clayey nannofossil ooze supported by matrix of dark brown (10YR 3/3) clayey nannofossil ooze. This lithology is generally structureless except for water escape structures. CLAYEY NANNOFOSSIL OOZE, black (10YR 2/1) to dark yellowish brown (10 YR 3/4). Generally homogeneous but with slight mottling and scattered mudclasts.
	[Pattern]	2	Pliocene	[Structure]		S	10YR 3/3	Minor lithology: VITRIC VOLCANIC SILT WITH CLAY AND NANNOFOSSILS, grayish brown (5Y 5/2), occurs in Section 5 at 106 cm and in Section 6 at 6 and 87 cm. Feldspar-rich sediment occurs at the base of the interval in Section 6 at 87 cm. The deposits are normally graded, with sharply defined bases, and fine upward into clayey nannofossil ooze. Mottling is common at the tops of these intervals. NANNOFOSSIL FORAM OOZE WITH CLAY, very pale brown (10YR 7/4), occurs in Section 5 at 62 cm as a fining-upward interval, grading into clayey nannofossil ooze.
						S	10YR 2/1 To 10YR 3/2	
	[Pattern]	3	Pliocene	[Structure]		S	10YR 3/1	NANNOFOSSIL FORAM OOZE WITH CLAY, very pale brown (10YR 7/4), occurs in Section 5 at 62 cm as a fining-upward interval, grading into clayey nannofossil ooze.
						S	10YR 3/3	
	[Pattern]	4	Pliocene	[Structure]		S	10YR 3/4 To 5YR 5/2	
						S	5YR 3/2 To 10YR 3/3	
	[Pattern]	5	Pliocene	[Structure]		S	10YR 3/2	
						S	10YR 3/3	
	[Pattern]	6	Pliocene	[Structure]		S	10YR 3/3	
						S	10YR 3/3	
	[Pattern]	7	Pliocene	[Structure]		S	10YR 3/2	
						S	10YR 3/3	
		CC						



135-835A-15H

SMEAR SLIDE SUMMARY (%):

	2, 16 D	2, 122 D	2, 130 D	4, 131 D	5, 2 D	5, 59 M	5, 98 M
TEXTURE:							
Sand	30	35	—	2	30	5	80
Silt	40	55	5	3	45	35	15
Clay	30	10	95	95	25	60	5

COMPOSITION:

Accessory minerals	—	Tr	Tr	—	5	—	Tr
Bioclast	—	—	—	—	—	Tr	—
Clay	10	5	30	15	5	15	—
Feldspar	Tr	Tr	—	—	Tr	5	—
Foraminifers	5	—	5	—	Tr	5	15
Glass	65	85	Tr	5	70	35	65
Nannofossils	20	5	65	80	20	40	5
Quartz	—	—	—	Tr	—	—	10

SMEAR SLIDE SUMMARY (%):

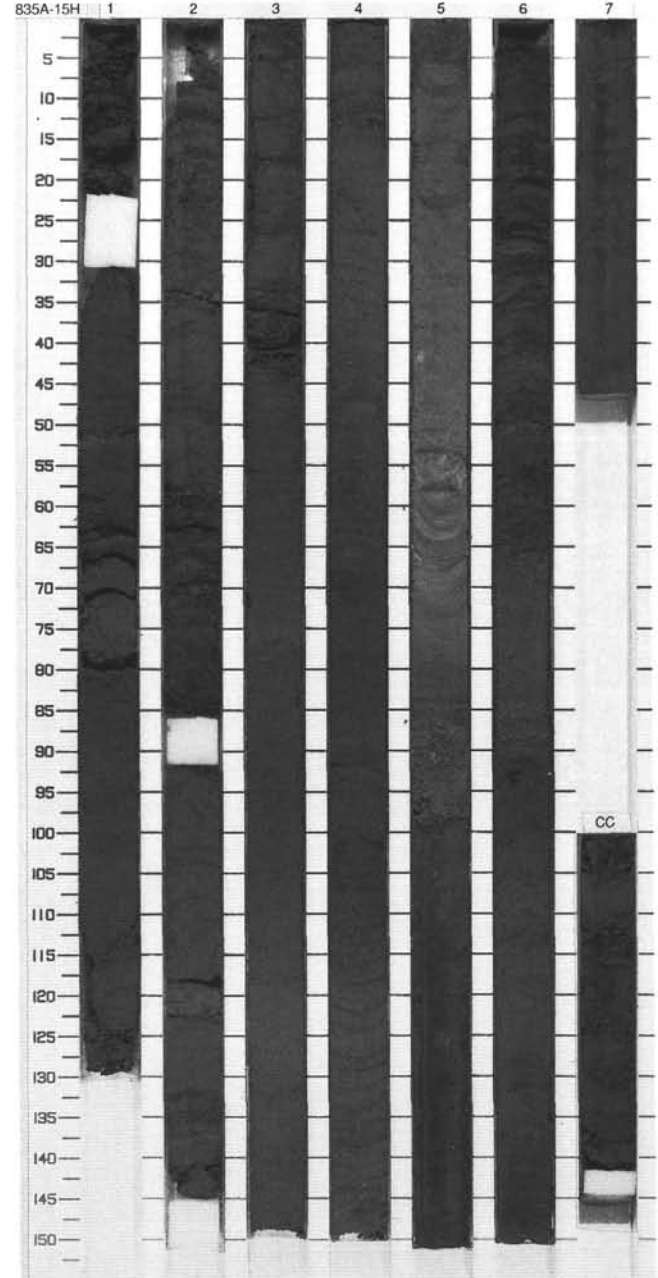
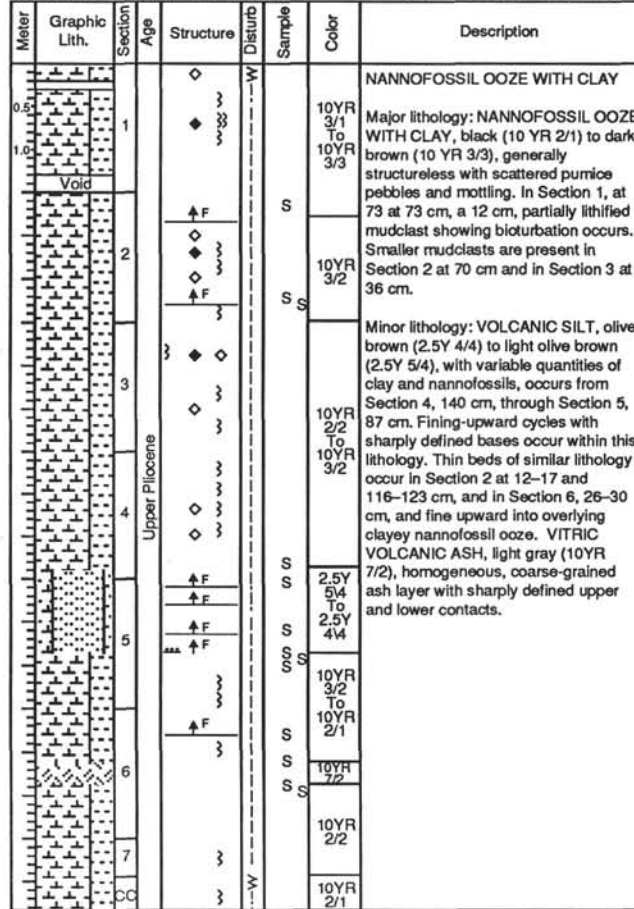
	5, 93 M	5, 100 D	6, 28 M	6, 59 D	6, 88 M	6, 95 D
TEXTURE:						
Sand	10	—	—	—	100	5
Silt	60	15	80	30	—	10
Clay	30	85	20	70	—	85

COMPOSITION:

Accessory minerals	10	5	5	5	5	5
Clay	—	20	20	20	—	20
Discoaster	Tr	—	—	—	—	—
Feldspar	—	—	Tr	—	—	Tr
Foraminifers	15	Tr	—	—	—	Tr
Glass	—	10	75	30	95	5
Intraclasts	30	—	—	—	—	—
Nannofossils	20	65	Tr	45	—	65
Rock fragment	25	—	—	—	—	—

SITE 835 HOLE A CORE 15H

CORED 133.0 - 142.5 mbsf



135-835A-16H

SMEAR SLIDE SUMMARY (%):

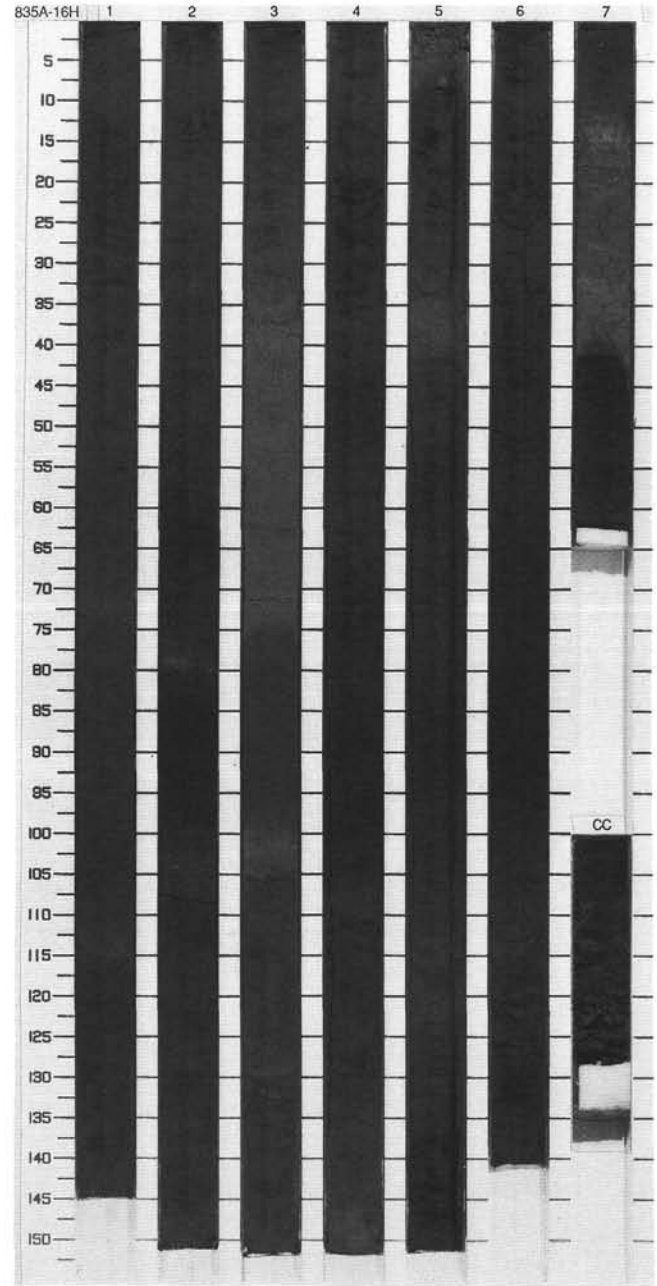
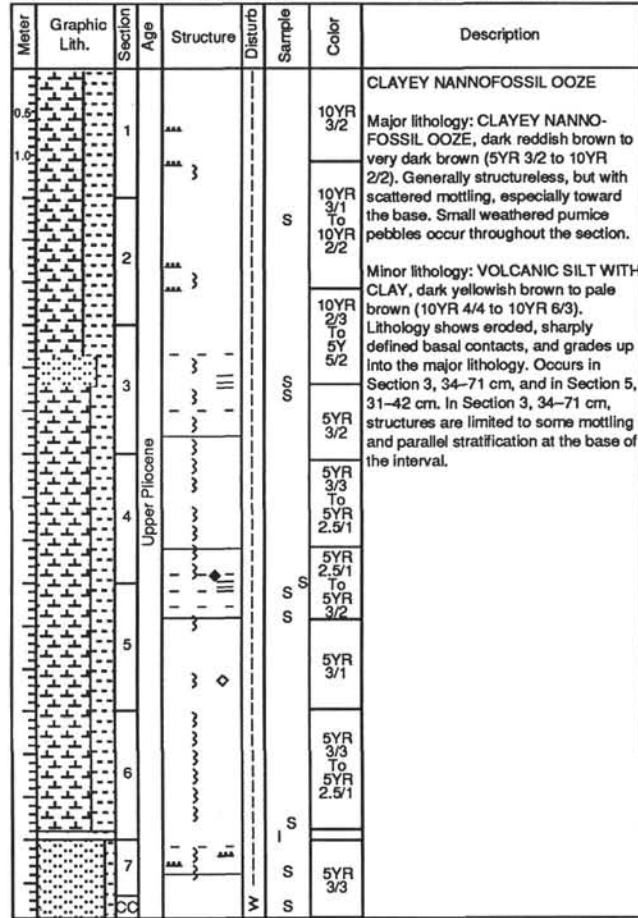
	2, 25 D	3, 67 D	3, 79 D	4, 149 M	5, 10 D	5, 38 M	6, 130 D
TEXTURE:							
Sand	--	--	--	--	--	--	--
Silt	--	--	--	--	--	--	--
Clay	--	--	--	--	--	--	--
COMPOSITION:							
Accessory minerals	--	Tr	Tr	Tr	--	Tr	--
Clay	20	15	20	10	25	15	15
Dolomite	--	--	Tr	--	Tr	--	--
Feldspar	Tr	Tr	Tr	Tr	--	Tr	Tr
Foraminifers	2	1	Tr	--	Tr	Tr	Tr
Glass	Tr	78	--	85	--	75	Tr
Mica	--	--	--	--	Tr	--	--
Nannofossils	78	8	80	5	75	10	85
Opaques	--	--	--	--	Tr	--	--
Spicules	--	--	--	--	Tr	--	--

SMEAR SLIDE SUMMARY (%):

	7, 38 M	CC, 11 M
TEXTURE:		
Sand	--	--
Silt	--	--
Clay	--	--
COMPOSITION:		
Accessory minerals	Tr	2
Calcite	Tr	--
Clay	10	5
Feldspar	1	2
Foraminifers	Tr	Tr
Glass	85	87
Nannofossils	4	4
Opaques	Tr	--
Spicules	Tr	--

SITE 835 HOLE A CORE 16H

CORED 142.5 - 152.0 mbsf



135-835A-17H
SMEAR SLIDE SUMMARY (%):

	1, 16 M	1, 30 M	1, 82 D	1, 126 D	1, 143 D	CC, 14 D
TEXTURE:						
Sand	25	65	2	20	—	5
Silt	30	15	3	15	10	—
Clay	45	—	95	65	90	95
COMPOSITION:						
Accessory minerals	5	5	—	—	—	Tr
Clay	25	—	35	15	25	30
Discoaster	Tr	—	—	—	—	—
Feldspar	Tr	10	—	Tr	—	Tr
Glass	5	80	5	30	10	5
Intraclasts	20	—	—	—	—	—
Nannofossils	40	—	60	55	65	60
Quartz	—	5	Tr	Tr	—	—
Spicules	Tr	—	—	—	—	—

135-835A-18H
SMEAR SLIDE SUMMARY (%):

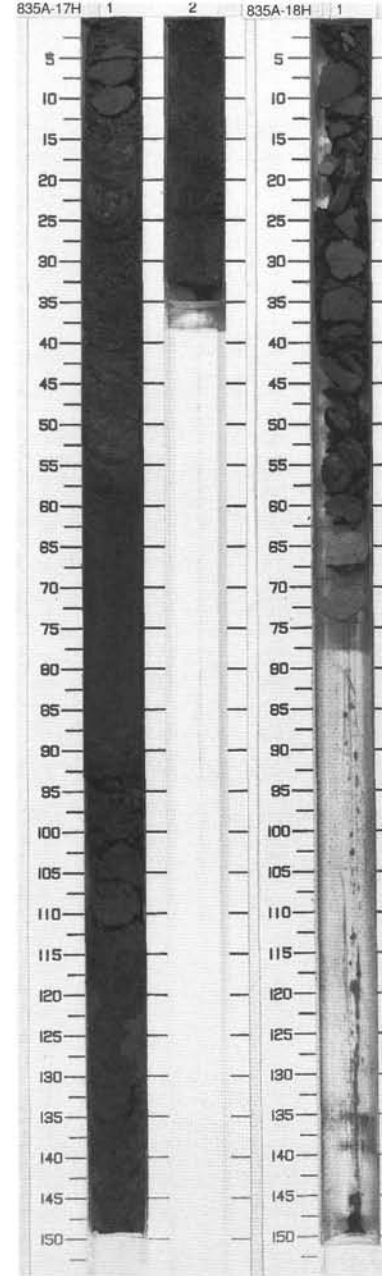
	1, 8 D	1, 51 M	1, 54 M	1, 58 M
TEXTURE:				
Sand	—	—	—	40
Silt	10	20	30	30
Clay	90	80	70	30
COMPOSITION:				
Clay	35	65	72	30
Foraminifers	—	—	—	5
Glass	5	—	—	Tr
Goethite	—	15	8	—
Intraclasts	—	—	—	20
Nannofossils	60	—	—	10
Palagonite	—	20	20	—
Plagioclase	—	Tr	—	—
Pyroxene	—	Tr	—	—
Rock fragment	—	—	—	35

SITE 835 HOLE A CORE 17H CORED 152.0 - 154.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0.0	[Graphic Lith. symbols]	1	Upper Pliocene	}	}	S	10YR 2/2	CLAYEY NANNOFOSSIL OOZE
1.0							10YR 2/2 To 2.5Y 4/2	
							10YR 2/1	
Major lithology: CLAYEY NANNOFOSSIL OOZE, very dark brown (10 YR 2/2) and black (10YR 2/1), with slight mottling. Otherwise structureless, with minor amounts of glass. Small manganese oxide fragments occur in Section 1 between 93 and 150 cm.								
Minor lithology: VOLCANIC SAND WITH FELDSPAR and VOLCANIC SILT WITH NANNOFOSSILS, dark to very dark grayish brown (2.5Y 4/2 to 2.5Y 3/2), in two thin, fining-upward sequences between 30 and 56 cm. VITRIC VOLCANIC SILT WITH NANNOFOSSILS AND CLAYEY NANNOFOSSIL OOZE WITH GLASS, very dark brown (10YR 2/2) and dark grayish brown (2.5Y 4/2), extensively mottled. Occurs from 95–110 cm and from 140–150 cm.								

SITE 835 HOLE A CORE 18H CORED 154.5 - 159.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0.5	[Graphic Lith. symbols]	1		}	}	S	10YR 2/2	CLAYEY NANNOFOSSIL CHALK
Major lithology: CLAYEY NANNOFOSSIL CHALK, very dark brown (10 YR 2/2), generally featureless except for black dendritic mottling. Contains a vesicular basalt pebble at 17–18 cm and a siltstone fragment at 20–23 cm. Highly fractured by drilling.								
Minor lithology: VOLCANIC SILTSTONE, yellowish brown (10YR 5/4), indurated pebbles of volcanic siltstone occur at 60 cm. These show parallel laminae and burrows that are infilled by black (10 YR 2/1) nannofossil chalk with clay.								

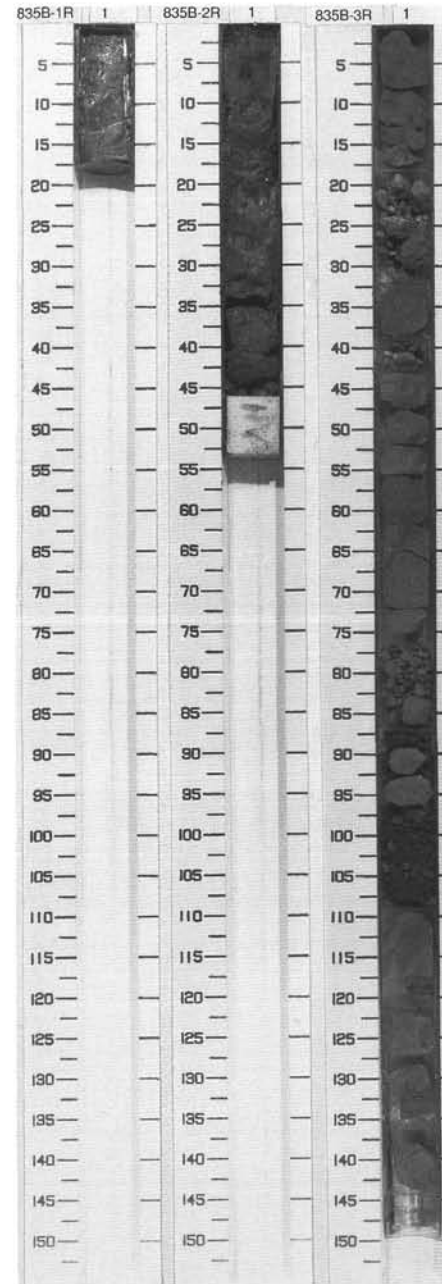


SITE 835 HOLE B CORE 1R							CORED 0.0 - 11.5 mbsf	
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0-11.5	[Symbol]	1						CLAYEY NANNOFOSSIL OOZE WITH FORAMS Major lithology: CLAYEY NANNOFOSSIL OOZE WITH FORAMS, brown (10YR 4/3), homogeneous. Minor lithology: None.

WASHED 11.5-144.7 mbsf

SITE 835 HOLE B CORE 2R							CORED 144.7 - 154.3 mbsf	
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
11.5-154.3	[Symbol]	1					5YR 2.5/2	CLAYEY NANNOFOSSIL OOZE Major lithology: CLAYEY NANNOFOSSIL OOZE, dark reddish brown (5YR 2.5/2), generally homogeneous, but with some mottling. Vertical burrows occur from 20-25 cm. Minor lithology: VITRIC VOLCANIC SILT WITH NANNOFOSSILS, grayish brown (10YR 5/2). Planar-laminations occur from 35-46 cm.

SITE 835 HOLE B CORE 3R							CORED 154.3 - 164.0 mbsf	
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
154.3-164.0	[Symbol]	1					5YR 3/2 to 7.5YR 3/2	VITRIC to CRYSTAL-RICH SILTSTONE, CLAYEY VITRIC to CRYSTAL-RICH SILTSTONE and CLAYSTONE WITH VOLCANIC GLASS Major lithologies: VITRIC to CRYSTAL-RICH SILTSTONE, from 0-15 cm, dark olive gray (5Y 3/2), in thin, planar-laminated bands with cm-sized, dark reddish brown (5YR 3/2), well-rounded, indurated mudclasts. Dark laminae contain pyroxene crystals; light-colored laminae contain varying proportions of plagioclase and slightly brown glass shards. CLAYEY VITRIC to CRYSTAL-RICH SILTSTONE, from 15-38 cm, dark olive gray (5Y 3/2), structureless interval with elongate, dark reddish brown (5YR 3/2), indurated mudclasts. CLAYSTONE WITH VOLCANIC GLASS, from 38-121 cm, dark brown (7.5YR 3/2), structureless, with some mottling.



135-835B-3R
SMEAR SLIDE SUMMARY (%):

	1, 8 D	1, 33 D	1, 56 D	1, 72 D	1, 100 D	1, 115 D
TEXTURE:						
Sand	10	---	---	---	---	---
Silt	80	40	23	90	10	15
Clay	10	60	77	10	90	85
COMPOSITION:						
Accessory minerals	2	1	2	10	3	5
Clay	5	30	77	5	90	84
Feldspar	2	2	1	10	2	1
Foraminifers	Tr	---	---	---	---	---
Glass	91	67	20	75	5	10
Nannofossils	---	---	---	---	---	Tr

135-835A-18X-1

**UNIT 1: MODERATELY PHYRIC OLIVINE
CLINOPYROXENE PLAGIOCLASE BASALT**

Pieces 1-2

CONTACTS: None.

PHENOCRYSTS:

Plagioclase: 1%-2%; 1- 1.5 mm; euhedral, glomerocrysts.

Olivine: Tr 1%; <1 mm; euhedral, both as single and 2-3 crystal glomerocrysts.

Clinopyroxene: 2%-3%; <1 mm; hard to differentiate from olivine in hand sample; both quite green.

GROUNDMASS: Microcrystalline.

VESICLES: 20%; <0.5 and >0.6 mm; round to irregular; throughout; bimodal: 1%- 2% round to irregular >0.6 mm (rare cavities to 3 mm), 15%- 18% small irregular vesicles.

Miaroles: Trace.

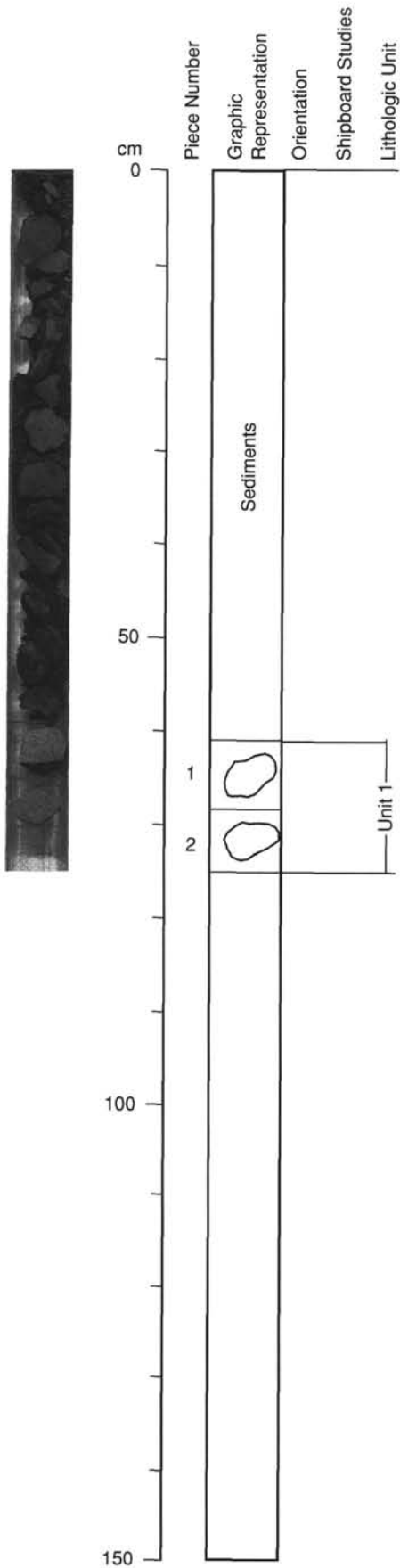
COLOR: 10YR 6/1, light gray.

STRUCTURE: Massive.

ALTERATION: Slight; brownish alteration halo on one side of Piece 1 with alteration of olivine to reddish brown aggregates.

VEINS/FRACTURES: None.

ADDITIONAL COMMENTS: Orange-brown and brown surface coatings:
Fe-oxy-hydroxides and Mn-oxides.

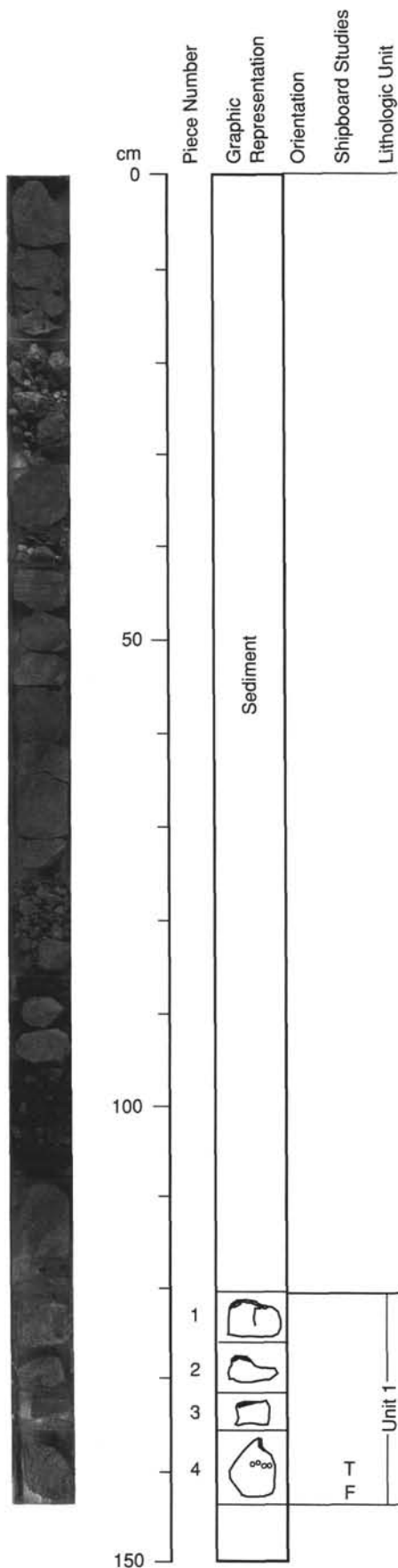


135-835B-3R-1

UNIT 1: MODERATELY TO HIGHLY PHYRIC OLIVINE CLINOPYROXENE PLAGIOCLASE BASALT

Pieces 1-4

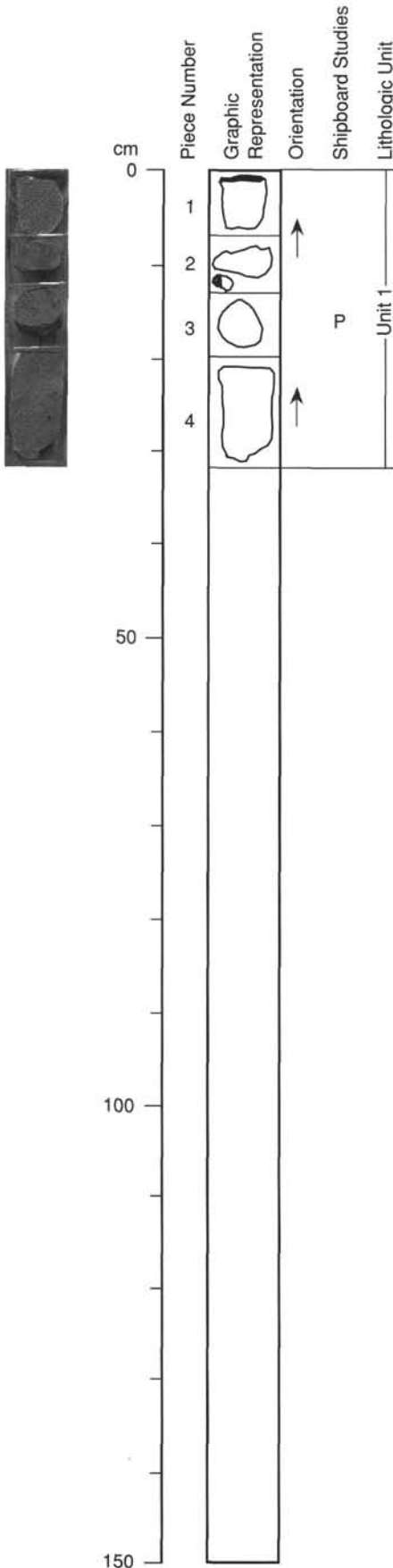
CONTACTS: Glassy margins on Pieces 1 and 2; Pieces 1 and 3 are all fine-grained .
PHENOCRYSTS: Seriate porphyritic; Pieces 2 and 3 are significantly more porphyritic compared with Pieces 1 and 4.
 Plagioclase: 7%–15%; 0.5– 1 mm; euhedral, glomerocrysts common.
 Olivine: 1%–3%; 0.5– 1.2 mm; both singly, and in 2–3 crystal clumps, plagioclase and olivine glomerocrysts also occur.
 Clinopyroxene: 3%– 5%; 0.5– 1.2 mm; difficult to separate from olivine in hand sample, both green.
GROUNDMASS: Cryptocrystalline to microlitic (Pieces 1–3), microcrystalline in Piece 4.
VESICLES: 5%–20%; <0.4 and >0.6 mm; irregular; throughout; bimodal: 1%–3% large population (principally in Piece 4) and fine porous vesicularity from <5% near glassy margins to 20% in Piece 4; vesicularity develops rapidly within 2.5 cm of rim.
 Miaroles: Vesicles strung together in 3x9 mm cavity, minor yellow-green coating in Piece 4.
COLOR: 7.5YR 5/0 to 4/0, gray to dark gray.
STRUCTURE: Thin flows or pillows.
ALTERATION: Slight; minor green brown discoloration in groundmass.
VEINS/FRACTURES: <1%; 0.3–0.5 mm wide; perpendicular to glass margin; filled with dark red-brown clay
ADDITIONAL COMMENTS: Larger vesicles and cavities have thin rims and frothy linings of black, fine-grained material; orange palagonite alteration on glass; some red-brown surface coatings.



135-835B-3R-2

UNIT 1: MODERATELY TO HIGHLY PHYRIC OLIVINE CLINOPYROXENE PLAGIOCLASE BASALT

Pieces 1-4



CONTACTS: Glassy margin on Piece 1, small piece in Piece 2 has a glassy margin.

PHENOCRYSTS: Plagioclase is generally more abundant compared with olivine and clinopyroxene, however, bottom pieces have olivine and clinopyroxene slightly greater than plagioclase; seriate porphyritic.
 Plagioclase: 4%–7%; 0.4–1 mm; euhedral, glomerocrysts appear common.
 Olivine: 1%–3%; 0.4–0.7 mm; euhedral, most commonly as single crystals, some in glomerocrysts.
 Clinopyroxene: 1%–3%; 0.4–0.7 mm; hard to separate from olivine in hand sample, both light green.

GROUNDMASS: Cryptocrystalline to microcytic to very finely microcrystalline in Piece 1; microcrystalline in Pieces 2 and 3.

VESICLES: 25%; <0.6 or >0.8 mm; round to irregular; throughout; bimodal: 1%–2% large population (particularly in Pieces 2–4); also some cavities in Pieces 2–4 up to 4x2 mm, small population is 20%–25% throughout, less common near glassy rims.
 Miroleles: Minor yellow to red brown clay(?) linings.

COLOR: 7.5YR 4/0, dark gray, to 10YR 6/0, gray.

STRUCTURE: Thin flows or pillows.

ALTERATION: Slight; olivine alteration and green-brown cast to matrix in some of Pieces 3 and 4.

VEINS/FRACTURES: None.

ADDITIONAL COMMENTS: Some surface coatings of brown sediments, red-brown clays, orange-brown clays and/or palagonite alteration; 4–9 mm circular, dark frothy, aphyric patches in Pieces 2–4.

135-835B-4R-1

UNIT 1: MODERATELY TO HIGHLY PHYRIC OLIVINE CLINOPYROXENE PLAGIOCLASE BASALT

Pieces 1–22

CONTACTS: Glassy margins in Pieces 8–10, 12–15, 19, 21, and 22. Fine-grained margins in Pieces 2, 4, and 18.

PHENOCRYSTS: Phenocryst percent seems to vary, for example, phenocrysts are sparser in Pieces 5, 6, and 17. This may in part be that the seriate porphyritic plagioclase becomes less obvious in more crystalline pieces.

Plagioclase: 3%–12%; 0.4–1.4 mm; euhedral, glomerocrysts common
 Olivine: 1%–3%; 0.5–1.3 mm; single euhedral, or in glomerocrysts with plagioclase.
 Clinopyroxene: 2%–7%; 0.5–1.3 mm; hard to differentiate from olivine, both a similar light green in hand sample.

GROUNDMASS: Cryptocrystalline to microcrystalline within 2.5 cm of glassy margins, microcrystalline interiors.

VESICLES: 5%–20%; <0.5 or >1 mm; round (large) to irregular (small); various; bimodal: large population fairly rare (about 1%) in all but Piece 17 where it is 5%. Other pieces have 15%–20% of fine vesicles, sometimes strung together in porous cavities (ie. Pieces 9 and 11). Rims near the glass show only 2%–5% vesicles, but vesicularity is fully developed within 2.5 cm of the margin.
 Miaroles: Large cavities occur in Pieces 2, 6, 13, and 18; not uncommon in more interior pieces, yellow to orange brown linings common in Piece 16 and 17.

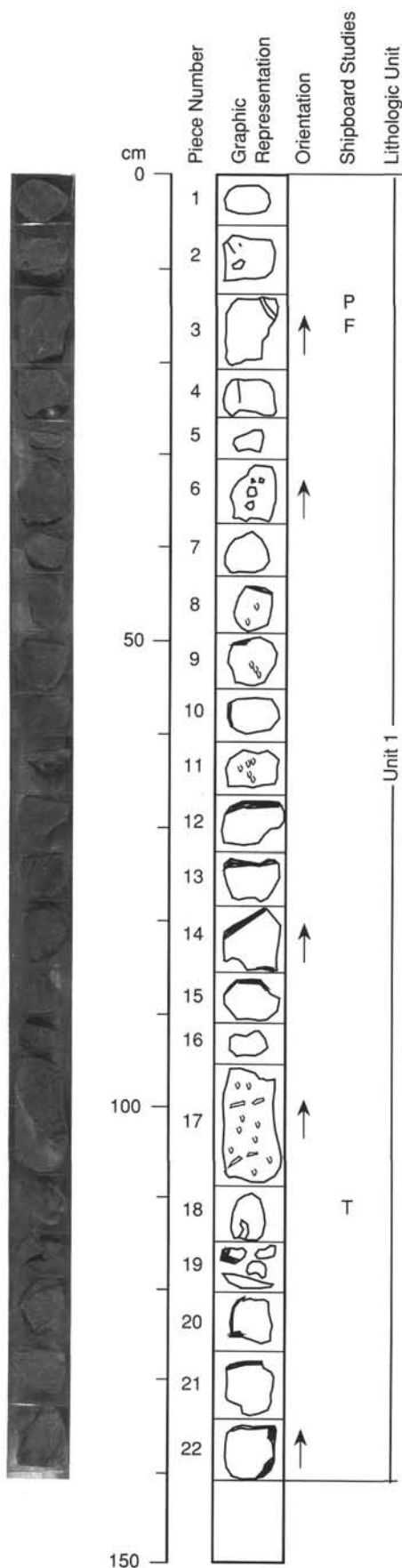
COLOR: 7.5YR 5/0, gray (fresh), to 2.5YR 5/4, reddish brown when altered.

STRUCTURE: Thin flows or pillows.

ALTERATION: Slight in most but moderate in Piece 17 and high in Piece 16 (groundmass altered to green-brown), with common yellow to orange-brown vesicle linings (clay?); greenish brown cast to groundmass in Piece 7).

VEINS/FRACTURES: Trace; <0.5 mm wide; strikes up-core, dips 35° right; in Piece 4, similar fracture in Piece 2.

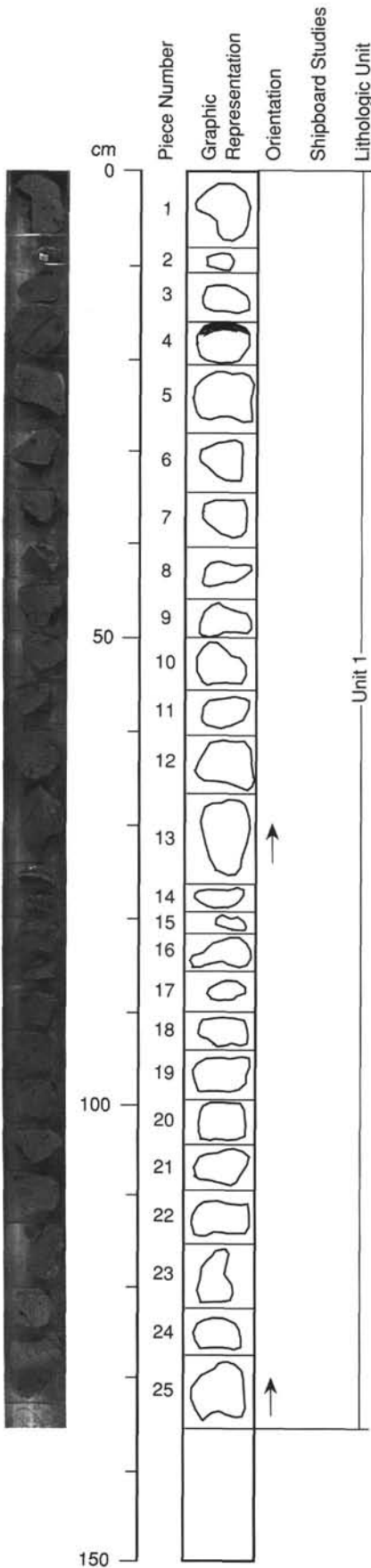
ADDITIONAL COMMENTS: Various surface coatings common mostly clays in brown-red, yellow-brown, yellow-orange. Palagonitic alteration on many of the glasses. Aphyric dark patches (4x13 mm, 9x9 mm) in Piece 6.



135-835B-5R-1

**UNIT 1: MODERATELY PHYRIC OLIVINE
CLINOPYROXENE PLAGIOCLASE BASALT**

Pieces 1–25



CONTACTS: Thin glass crust on Piece 4.
PHENOCRYSTS: Olivine is highly altered; this apparent alteration may in part be clays/Fe-oxyhydroxides filling fine vesicles.
 Plagioclase: 3%–5%; 0.3 mm; euhedral.
 Olivine: Tr-1%; 0.7 mm; euhedral.
 Clinopyroxene: 1%–2%; 0.7 mm; hard to tell from olivine in hand sample
GROUNDMASS: Fine-grained, holocrystalline, microlitic beneath glass crust.
VESICLES: 1%–5%; up to 5 mm; rounded; variable; most vesicles are around 1 mm or less in diameter. Larger ones are sometimes refilled with very dark gray lava.
COLOR: 2.5Y 5/0, gray.
STRUCTURE: Massive
ALTERATION: Slight
VEINS/FRACTURES: Orange-brown vein filling (0.3 mm wide) occurs in Piece 8 associated with zeolite (phillipsite) and Mn-oxide(?).
ADDITIONAL COMMENTS: Oxidized sulfide lining in vesicles of several pieces. Mn-oxides(?) in vesicle of Piece 3. This fragment exhibits a distinctly different color (5GY 4/4, deep greenish gray). A former glass crust on Piece 12 is indicated by palagonitization/zeolitization, a microlitic texture and a brownish gray alteration zone. Fe-oxide staining is common.

135-835B-6R-1

UNIT 1: SPARSELY TO MODERATELY PHYRIC OLIVINE CLINOPYROXENE PLAGIOCLASE BASALT

Pieces 1-16

CONTACTS: Glass in Piece 3.

PHENOCRYSTS: Very variable phenocryst distribution; phenocrysts grade downwards in size to the groundmass; Pieces 11 to 16 are more coarsely microcrystalline and it is difficult to identify phenocryst phases in them.

Plagioclase: Trace-2%; 1-2 mm; subhedral, glomerocrysts with clinopyroxene.

Olivine: 0%-1%; <1 mm; euhedral, single crystals.

Clinopyroxene: 0-1%; <1 mm; most of the mafics here may be clinopyroxene; hard to tell olivine from clinopyroxene, both are a similar green in hand sample.

GROUNDMASS: Microcrystalline becoming microlitic (and probably cryptocrystalline) towards the glass rim on Piece 3. More coarsely microcrystalline in Pieces 11 to 16.

VESICLES: 2%-15%; <0.5 or >1 mm; round to irregular; variable; many of the larger irregularly shaped vesicles (1%-2%) owe their shape to smaller vesicles which have coalesced. In Piece 5 several of these are strung out across the rock. The frothy edges of these vesicles make this zone look slightly darker compared with the surrounding rock. Frothy basalt linings occur in some of these larger vesicles in general.

Miaroles: Some vesicles are thinly lined with white acicular zeolites(?), while others have black (Mn-oxide?) and/or reddish brown coatings.

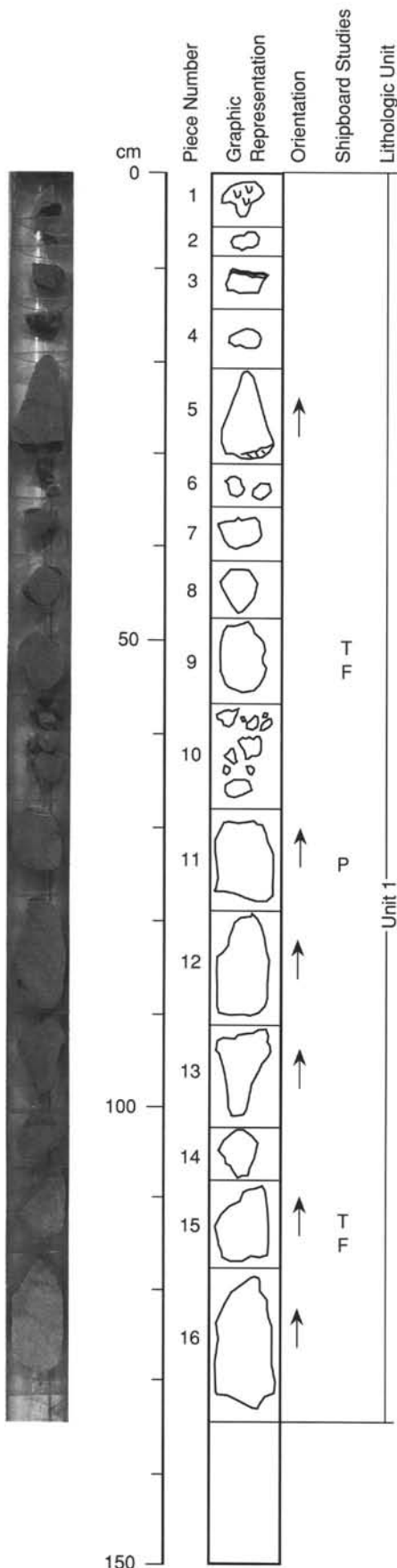
COLOR: 7.5YR 6/0, gray.

STRUCTURE: Massive.

ALTERATION: Slightly to highly altered.

VEINS/FRACTURES: None.

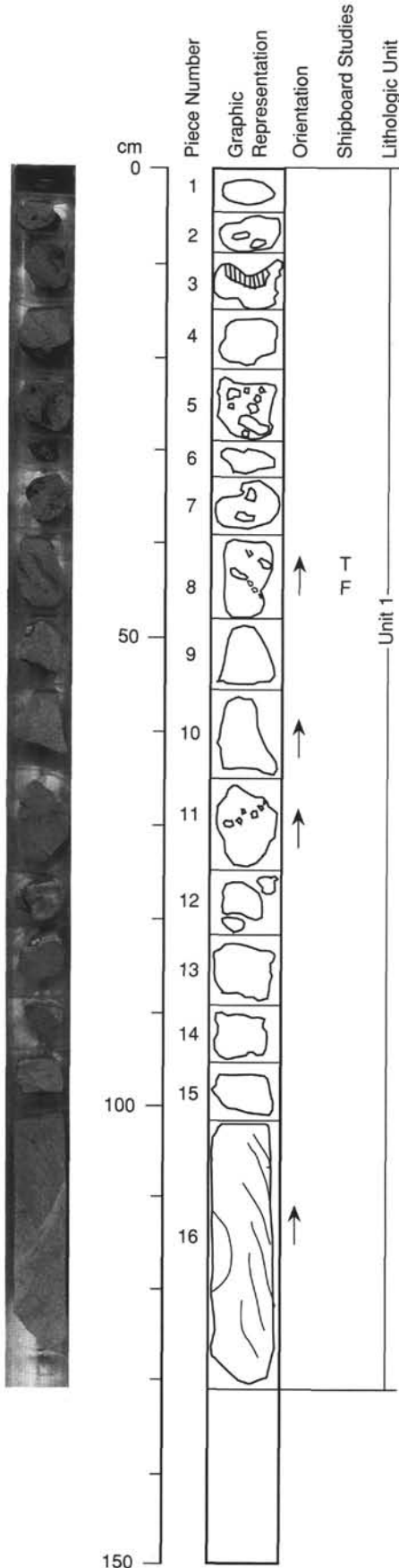
ADDITIONAL COMMENTS: Although the phenocryst assemblages and proportions vary through these cores they fluctuate back and forth and no clear unit boundaries are evident.



135-835B-7R-1

UNIT 1: MODERATELY TO HIGHLY PHYRIC OLIVINE CLINOPYROXENE PLAGIOCLASE BASALT

Pieces 1-16



CONTACTS: None.

PHENOCRYSTS: Olivine concentrated in dark frothy segregations in Pieces 5 and 8.

Plagioclase is most common as phenocrysts in Pieces 1 to 8.

Plagioclase: 3%-8%; 1-2 mm; euhedral, bladed laths.

Olivine: 1%-5%; 0.2-0.5 mm; rounded grains.

Clinopyroxene: 1%-5%; 0.2-0.5 mm; hard to distinguish from olivine in hand sample.

GROUNDMASS: Microlitic plagioclase with interstitial olivine and clinopyroxene. The phenocrysts grade downwards in size to the groundmass.

VESICLES: 5%-25%; 5-15; irregular; variable; two populations, one coarse (including filled pipe vesicles) and one fine, grading into microlites in massive basalt.

Microlites: 10%-15%, may be lined with carbonate or zeolite.

COLOR: 7.5YR 5/0, gray (fresh) to 10YR 6/1, yellow-gray (altered).

STRUCTURE: Massive, Pieces 1-8 may represent frothy flow top.

ALTERATION: Pieces 9-16 show yellow-brown oxidation; slightly to moderately altered.

VEINS/FRACTURES: None.

ADDITIONAL COMMENTS: Pieces 1-8 vuggy, relatively fresh. Pieces 9-16 mostly altered; sharp alteration boundary in Piece 16 with fresh gray rock. Pieces 9-16 approach a fine-grained diabase in texture.

135-835B-7R-2

UNIT 1: MODERATELY TO HIGHLY PHYRIC OLIVINE CLINOPYROXENE PLAGIOCLASE BASALT

Pieces 1-10

CONTACTS: None.

PHENOCRYSTS: The drop in phenocrysts could signify either a new unit, or an aphyric-sparsely phyric phase of Unit 1.

Plagioclase: 3%-10%; 1-2 mm; glomerocrystic.

Olivine: 1%-2%; 1 mm; single subhedral crystals.

Clinopyroxene: 1%-2%; 1-3 mm; granular crystals in groundmass; hard to tell olivine from the clinopyroxene.

GROUNDMASS: Microcrystalline, approaching diabasic

VESICLES: 5%; <0.1 to 1 mm; round-irregular; uniform; appear to be rare, but many are infilled with blue-white chalky material (in the fresher zones) or yellow-orange crystalline and chalky material (in the altered zones).

Microlites: Deep blue-green linings and infilling.

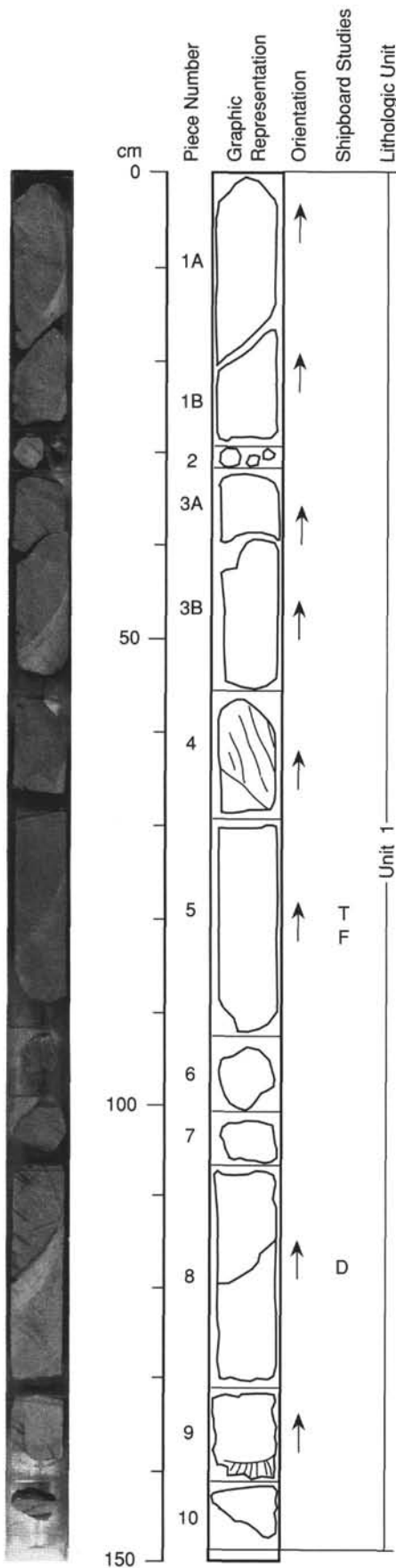
COLOR: From 7.5YR 5/0, gray (fresh) to 7.5YR 5/2, brown (altered).

STRUCTURE: Massive.

ALTERATION: Slight to highly altered (generally becomes less altered towards the base of the section).

VEINS/FRACTURES: <1%; 1 mm wide; about 60° from core direction; 3 fractures occur in this Section, 2 have divided the core (ie. Pieces 1 and 3), while Piece 8 has a deep blue-green vein filling. No significant alteration halo occurs around the fractures.

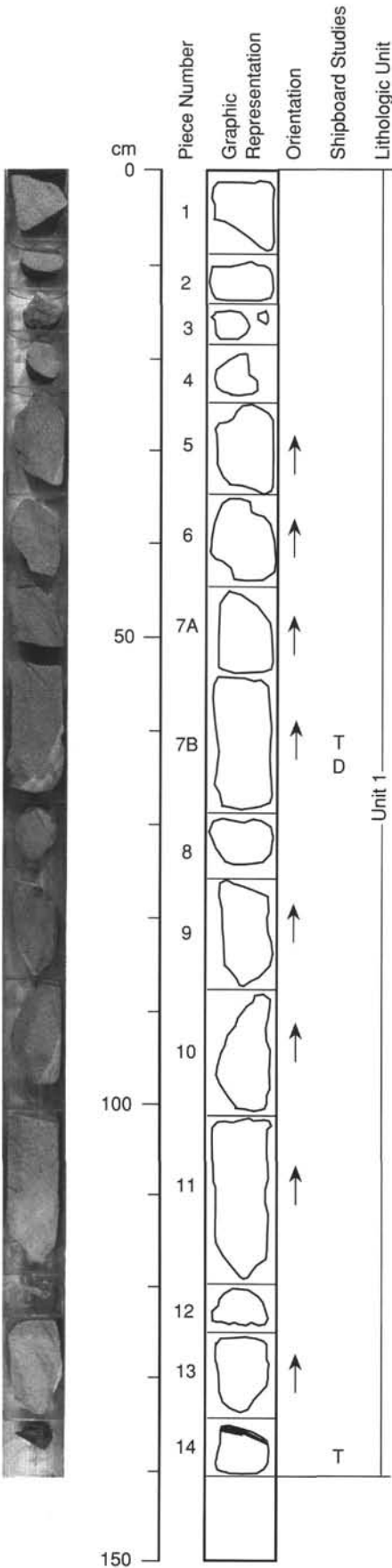
ADDITIONAL COMMENTS: Most of the core is diabasic-texture. It is hard to clearly identify the percentage of seriate textured phenocrysts from the microcrystalline groundmass of the basalt. This section all looks like variably altered versions of the same rock-type. If future analysis indicates any unit or subunit divisions, they should not be placed in this section.



135-835B-7R-3

UNIT 1: MODERATELY TO HIGHLY PHYRIC OLIVINE CLINOPYROXENE PLAGIOCLASE BASALT

Pieces 1-14



CONTACTS: None.

PHENOCRYSTS: Proportions of the phenocryst types vary throughout the core. Pieces 1-13 are dominantly plagioclase-phyric (though the pieces are diabasic textured and it is hard to clearly distinguish phenocrysts and coarse groundmass plagioclases), Piece 14 has plagioclase far in excess of olivine but a unit boundary probably is not warranted.

Plagioclase: 5%-10%; <1 mm; euhedral, isolated and glomeroporphyritic clusters.

Olivine: 1%-2%; 0.5-1.5 mm; euhedral, isolated and clusters with plagioclase.

Clinopyroxene: 2%-3%; 0.5-1.5 mm; intergrown with plagioclase; hard to differentiate olivine from the clinopyroxene.

GROUNDMASS: Microcytic plagioclase intergrown with interstitial clinopyroxene.

VESICLES: 2%-10%; <1 mm; subrounded; patchy; extensive infilling by globular and wormy green-white zeolites(?). Piece 14 is non-vesicular.

Miaroles: Extensive infilling see vesicle comments

COLOR: 10YR 6/1-2, gray or light brownish gray, to 7.5YR 4/0, dark gray.

STRUCTURE: Massive.

ALTERATION: Pieces 1-13: moderately highly altered, yellow-brown oxidation; Piece 14: fresh.

VEINS/FRACTURES: None.

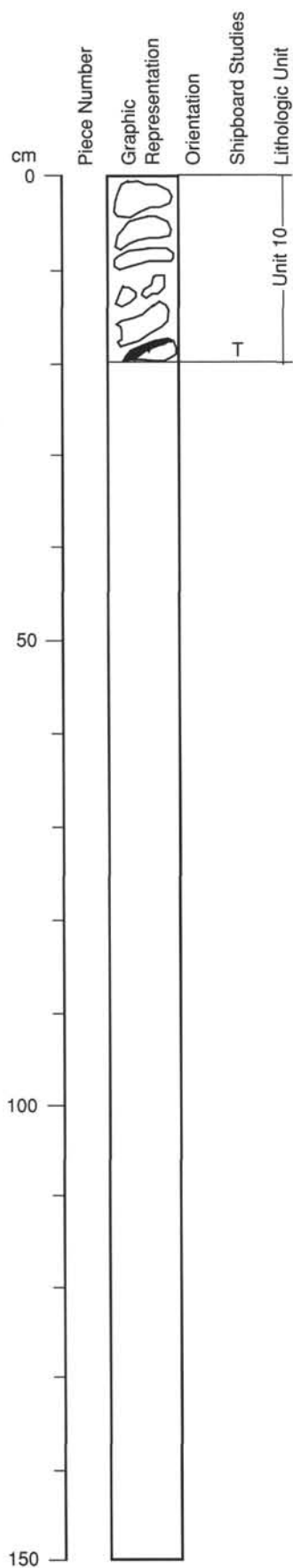
ADDITIONAL COMMENTS: Glassy rind on Piece 14. Any future boundaries should be placed between Pieces 13 and 14. Most of core is diabasic textured and grades downwards in size from the phenocrysts to the groundmass. It is difficult to make a precise estimate of phenocryst percentage as the seriate phenocrysts grade in size into the microcrystalline groundmass.

135-835B-8M-1

UNIT X: OLIVINE PLAGIOCLASE BASALT PEBBLES AND SEDIMENTARY CLASTS

Pieces Drilling rubble (no unit)

CONTACTS: None.
PHENOCRYSTS:
 Plagioclase: 5%–10%; <1.5; euhedral.
 Olivine: 5%; <2; euhedral.
GROUNDMASS: Microcrystalline.
VESICLES: 10%–30%; to 4 mm; irregular; variable; generally unfilled
COLOR: Variable.
STRUCTURE: None.
ALTERATION: Slight to moderate.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: Drilling rubble from base of core was split and described because of glassy margins on one piece. Stratigraphic position of samples is unknown.



SITE 835

135-835B-3R-01 (Piece 4,137-140 cm)

OBSERVER: KRI

WHERE SAMPLED: Unit 1

ROCK NAME: Highly phyrlic olivine-clinopyroxene-plagioclase basalt

GRAIN SIZE: Fine grained

TEXTURE: Porphyritic, seriate, vesicular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	7-10	7-10	0.5-1.5		euohedral	very strongly zoned with sodic rims; glomerocrysts with clinopyroxene; cryptocrystalline inclusions in interiors; some resorbed cores
Clinopyroxene	4-6	4-6	<0.8		euohedral to subhedral	narrow zoned rims on many; sector zoning and twinning
Olivine	1-2	1-2	<1		euohedral to subhedral	minor iddingsitization along fractures and rims; skeletal grains
GROUNDMASS						
Plagioclase	10	10	<1.2		euohedral	elongate microlites, random orientation
Clinopyroxene	10	10	<0.6		euohedral to anhedral	feathery quench textures intergrown with plagioclase; rare equant grains
Olivine	<1	<1	<0.4		skeletal	rare as skeletal and quench forms
Magnetite	1-2	1-2	0.005		various	forms a dusting in groundmass interstitial to the cryptocrystalline material
Sulfide	tr	tr	0.002		globules	
SECONDARY MINERALOGY						
Mixed clays	10	REPLACING/ FILLING mesostasis, vesicles				COMMENTS fine-grained clays fill vesicles and replace mesostasis locally fill or partly fill vesicles adjacent to fractures; yellow-orange in color
Fe-oxyhydroxides	tr.	vesicles				
VESICLES/CAVITIES						
Vesicles	PERCENT 15-20	LOCATION throughout	SIZE (mm) 0.03-0.5	FILLING localized partial to complete	SHAPE irregular	COMMENTS partial to complete infilling by dark brown-green cryptocrystalline material

COMMENTS: Seriate textured with a continuous range in grain size. The distinction between phenocrysts and groundmass is somewhat arbitrary. Typical quench deformation is seen in some clinopyroxene. Phenocrysts are fresh. The mesostasis (40-50%) has been partly replaced by clays. Glomeroporphyritic clusters to 4 mm are very common, dominantly with clinopyroxene and plagioclase. The rock is slightly to moderately altered but the alteration is limited to replacement of the mesostasis. A 1050 point count gives: 7% plagioclase phenocrysts, 5% clinopyroxene phenocrysts, 0.8% olivine phenocrysts, 17.3% open vesicles, 1% filled vesicles, 48.5% mesostasis, 9% groundmass plagioclase, 9.9% clinopyroxene, 0.3% olivine, 1.3% opaques.

135-835B-4R-01 (Piece 18,112-115 cm) OBSERVER: WIL WHERE SAMPLED: Unit 1

ROCK NAME: Moderately phyric clinopyroxene-olivine-plagioclase basalt

GRAIN SIZE: Fine to medium grained

TEXTURE: Porphyritic, vesicular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	2-5	2-5	0.5-1.5	An70	Euhedral to subhedral	free-floating crystals and as tapered subhedral crystals intergrown with clinopyroxene in plagioclase-clinopyroxene bowtie glomerocrysts
Clinopyroxene	1-2	1-2	0.2-0.5	augite	subhedral	forms "knot" in plagioclase-clinopyroxene bow-tie glomerocrysts; glomerocrysts typically 1-1.5 mm diameter
Olivine	1-2	1-2	0.1-0.15	Fo70-80?	subhedral	scattered rounded crystals
GROUNDMASS						
Plagioclase	15-20	15-20	0.05-0.1		euhedral to subhedral	grading to microlitic
Clinopyroxene	15-20	15-20	0.02-0.05	augite	subhedral	bent; may be sector zoned; typical quench pyroxene; sweeping extinction. Grades into curved "feathers" in most rapidly quenched glass in and around vesicles
Magnetite	2-3	2-3	0.005		granules	
Mesostasis	10-20	30-40	n/a		n/a	Mesostasis is turbid brownish or yellowish-greenish with granules and crystallites of opaque oxides.
Olivine	tr	tr	0.07-0.1		euhedral to subhedral isolated grains	
SECONDARY MINERALOGY						
Smectite?	<1			REPLACING/ FILLING		COMMENTS
? mixed clays	10-20			vesicle lining, minor mesostasis replacement		reddish/yellowish-brown lining in some vesicles greenish-brownish cryptocrystalline clays replace mesostasis
VESICLES/CAVITIES						
	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	10-15	throughout	<0.1 or>1.0	very localized and rare linings	irregular	variable in size and morphology; medium size (0.5-1 mm) vesicles tend to be spherical, while both larger (>1.5 mm) and smaller (<0.1 mm) vesicles are more irregular and may be controlled in part by shapes of adjacent crystals

COMMENTS: Mesostasis becomes concentrated in and around vesicles; it is clearly a filling in some and in the larger of these segregations it becomes cryptocrystalline with feathery clinopyroxene and "hopper" plagioclase. These segregations are highly vesicular (30-40%). They are darker and "dustier" than groundmass mesostasis. A 1119 point count gives: 1.7% plagioclase phenocrysts, 1.2% olivine phenocrysts, 0.9% clinopyroxene phenocrysts, 18.2% open vesicles, 0% filled vesicles, 20.2% groundmass plagioclase, 13.9% groundmass clinopyroxene, 0.3% groundmass olivine, 0.9% groundmass magnetite, 42.7% mesostasis. Some of the discrepancies between visual modes and point counts is a matter of definition. Different observers are dealing with the seriate glomerocrysts in different ways. This point count included principally free-floating crystals as phenocrysts, while the visual mode included some of the smaller glomerocrystic aggregates. The problem is aggravated as the samples become coarser.

SITE 835

135-835B-6R-01 (Piece 9,52-57 cm)

OBSERVER: JAN

WHERE SAMPLED: Unit 1

ROCK NAME: Moderately phyrlic clinopyroxene-olivine-plagioclase basalt

GRAIN SIZE: Fine grained to glassy

TEXTURE: Vesicular, seriate (sperulitic near glassy margin)

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	1-2	1-2	up to 1		euohedral to subhedral	zoned with narrow sodic rims and distinct margins; melt inclusions in interiors
Clinopyroxene	tr-1	tr	0.2 to 1.5		subhedral	sector zoned
Olivine	tr-2	tr-2	0.2 to 1.0		subhedral	fresh, slight iddingsite in cracks
GROUNDMASS						
Plagioclase	20-30	20-30	0.1-0.5		euohedral to subhedral	elongate, randomly oriented
Clinopyroxene	15-20	15-20	0.1-0.4		subhedral to anhedral	granular to fan-like aggregates with undulose extinction; sometimes subophitic
Opagues	1-2	1-2	0.005-0.02		irregular	fine dusting in cryptocrystalline groundmass
Mesostasis	27-37	30-40	n/a		n/a	cryptocrystalline, small areas of glass on one edge, also rarely in frothy vesicular infillings
Olivine	1-2	1-2	0.05-0.2		euohedral to subhedral	fresh, isolated and interstitial grains
SECONDARY MINERALOGY						
Clays	3-5	REPLACING/ FILLING Mesostasis				None
VESICLES/CAVITIES						
Vesicles	PERCENT 15	LOCATION throughout	SIZE (mm) < 1.5	FILLING very minor	SHAPE irregular	COMMENTS globular vesicle cavities with quench material to 3 mm across; bimodal size distribution

COMMENTS: One corner of this section includes brown glass and quenched clinopyroxene and plagioclase (long needles). Quench textures also observed in the round, irregular brown patches (i.e. quenched vesicular melt infilling vesicle). Clinopyroxene and plagioclase microlites form an interlocking network. Clays (3-5%) partially replace mesostasis. A 1189 point count gives: 1.5% plagioclase phenocrysts, 0.6% clinopyroxene phenocrysts, 1.2% olivine phenocrysts, 14% open vesicles, 0.8% filled vesicles, 24.5% groundmass plagioclase, 17.5% groundmass clinopyroxene, 1.9% groundmass olivine, 1% groundmass magnetite, 37% mesostasis. Rock is fresh.

135-835B-6R-01 (Piece 15,111-114 cm) OBSERVER: KRI WHERE SAMPLED: Unit 1

ROCK NAME: Sparsely phyrlic clinopyroxene-plagioclase basalt

GRAIN SIZE: Fine grained

TEXTURE: Vesicular, holocrystalline

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Clinopyroxene	1-2	1-2	< 4		ehudral to subhedral	4+ mm optically continuous phenocryst; undulatory extinction; many show sector zoning and deformation features
Plagioclase	1-2	1-2	<1.2		ehudral to subhedral	zoned with cryptocrystalline patches in the interior
GROUNDMASS						
Plagioclase	25-30	25-30	<0.6		ehudral	elongated tabular grains form network; many zoned
Clinopyroxene	20-25	20-25	<0.6		subhedral to anhedral	intergrown with and interstitial to plagioclase
Olivine	<1	<1	<0.4		anhedral	iddingsitized along fractures, rims altered
Magnetite	3-5	3-5	<0.2		equant	skeletal, equant, cruciform
Mesostasis	20-25	20-25	n/a		interstitial	
SECONDARY MINERALOGY						
Mixed clays	PERCENT n/a	REPLACING/FILLING fill				COMMENTS both edges are more altered than the interior and show vesicle and fracture filling with yellowish-brown amorphous material
Fe-oxyhydroxides	n/a	fill				as for clays

VESICLES/CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	10-15	throughout	0.07-0.5	partial to complete	subrounded	most are partially to completely filled with either dark brown-green cryptocrystalline material or yellow-brown clay mixtures

COMMENTS: The coarser magnetite is almost microphenocrystal. There seems to be a second-generation of very fine grained magnetite (<=0.005 mm) in the mesostasis. Both edges show complete breakdown of mesostasis and infilling of vesicles with yellow-green-brown clays. Rock is dominantly a network of elongate plagioclase with interstitial, anhedral, equant clinopyroxene and microcrystalline mesostasis that is completely replaced by cryptocrystalline dark-brown clays. Alteration is moderate, but is limited to the mesostasis breakdown; mineral grains are fresh. A 1092 point count gives: 0.9% plagioclase phenocrysts, 0.8% clinopyroxene phenocrysts, 9% open vesicles, 5.7% filled vesicles, 30.8% groundmass plagioclase, 23.4% groundmass clinopyroxene, 3.9% groundmass opaques, 0.55% groundmass olivine, 25% mesostasis. The distinction between mesostasis and vesicle fill was difficult and hopefully not arbitrary.

SITE 835

135-835B-7R-01 (Piece 8,44-48 cm)

OBSERVER: JAN

WHERE SAMPLED: Unit 1

ROCK NAME: Highly phyric olivine clinopyroxene-plagioclase basalt

GRAIN SIZE: Fine grained

TEXTURE: microporphyritic, vesicular (microplitic to sperulitic in vesicle linings)

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	5-8	5-8	0.2-1.5		euohedral to subhedral	strongly zoned, occur as single crystals, glomerocrysts, and intergrown with clinopyroxene; some have melt inclusions
Clinopyroxene	3-5	3-5	0.2-1.5		euohedral to subhedral	sector zoned, single crystals and intergrown with plagioclase
Olivine	tr-1	tr-1	0.1-0.8		subhedral to anhedral	single crystals and associated with clinopyroxene phenocrysts.
GROUNDMASS						
Plagioclase	5-10	5-10	0.05-0.5		subhedral	as long narrow laths
Clinopyroxene	5-10	5-10	0.05-0.2		anhedral	granular and as fibrous clusters
Opaques	1-2	1-2	0.002-0.01		irregular	as fine dusting in cryptocrystalline groundmass concentrated in vesicular infills
Mesostasis	35-45	40-50	n/a		n/a	cryptocrystalline, includes brown glass associated with vesicles
Olivine	tr-1	tr-1	0.06-0.1		euohedral to subhedral	isolated crystals
SECONDARY MINERALOGY						
Clays (yellow)	5-10	REPLACING/ FILLING replacement				COMMENTS extremely fine grained clays partially replace mesostasis

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	15-20	throughout	0.02-1.5	frothy vesicular basalt or none	round to irregular	larger vesicles appear more irregular (a result of the smaller ones coalescing). Large patches of dark finely vesicular basalt fill or line some of the original vesicles and plagioclase laths may be wrapped around the outside of the original void.

COMMENTS: An 1110 point count yields: 9.2% plagioclase phenocrysts (> 200 microns or in large glomerocrysts); 5% clinopyroxene phenocrysts, 0.5% olivine phenocrysts, 16.3% open vesicles, 0.7% filled vesicles, 47.8% mesostasis, 8.4% groundmass plagioclase, 9.5% groundmass clinopyroxene, 0.3% groundmass olivine, 2.2% groundmass opaques. Rock is slightly altered,

135-835B-7R-02 (Piece 5,89-93 cm)

OBSERVER: WIL

WHERE SAMPLED: Unit 1

ROCK NAME: Highly phyrlic olivine clinopyroxene plagioclase basalt

GRAIN SIZE: Fine to medium grained

TEXTURE: glomerophyrlic, vesicular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	15-20	15-20	0.5-1.5	An65	euhedral to subhedral	rarely acicular and bent
Clinopyroxene	5-10	5-10	0.2-0.8	augite	anhedral to subhedral	excellent examples of "pinwheel" extinction; glomerocrysts vary in size and intersect, forming a patchy network with interstitial glassy matrix
Olivine	<1	<1	0.2-0.5?		anhedral to subhedral	identification questionable
GROUNDMASS						
Plagioclase	18-20	20	0.08-0.1		euhedral to subhedral	aggregates
Clinopyroxene	15-20	15-20	0.05-0.1		subhedral	intergranular to subophitic
Magnetite	3-4	3-4	0.02-0.06		anhedral to subhedral	two size ranges of magnetite-0.03-0.15 and <=0.02 mm; larger ones almost microphenocrystal as euhedral, subhedral, sometimes skeletal crystals; small grains restricted to mesostasis and included in plagioclase
Mesostasis	5-8	20-30	n/a		n/a	mesostasis locally encloses cryptocrystalline plagioclase and clinopyroxene; most mesostasis is now devitrified or altered and cryptocrystalline
SECONDARY MINERALOGY						
Clays	PERCENT 10-20	REPLACING/ FILLING replacement				COMMENTS brownish to greenish clays extensively replace the groundmass.
VESICLES/CAVITIES						
Vesicles	PERCENT 5	LOCATION throughout	SIZE (mm) 0.2-1	FILLING various	SHAPE irregular	COMMENTS clay filling (blue-white in hand sample) is common; hard to differentiate these fillings from altered mesostasis

COMMENTS: Groundmass has smaller plagioclase/clinopyroxene glomerocrysts enclosed in brown mesostasis--some gradation in size from phenocrysts to groundmass. There are also common skeletal and acicular plagioclase-clinopyroxene crystals which appear to be quench aggregates occurring in the mesostasis. Groundmass appears extensively replaced by brownish to greenish clays. A 1016 point count gives: 16.3% plagioclase phenocrysts (arbitrarily set at about > 200 u), 6.3% clinopyroxene phenocrysts, 0.1% olivine phenocrysts, 7% open vesicles, 0.3% filled vesicles, 0.1% hematitic alteration, 23.3% groundmass plagioclase, 17.3% groundmass clinopyroxene, 3.1% groundmass opaques, 26.1% mesostasis. Rock is moderately altered. The pronounced seriate texture led to several different estimates of phenocryst %. The point count has been used as the appropriate estimate.

SITE 835

135-835B-7R-03 (Piece 7B, 55-58 cm) OBSERVER: SHE WHERE SAMPLED: Unit 1

ROCK NAME: Highly phyric clinopyroxene-plagioclase diabase

GRAIN SIZE: Fine to medium grained

TEXTURE: vesicular, glomerophyric to intergranular and intersertal

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	5-15?	5-15?	to 1.8		euhedral	in plagioclase-clinopyroxene glomerocrysts; these grade down in size to microlites in the mesostasis
Clinopyroxene	5-10?	5-10?	to 1.5		euhedral to subhedral	
GROUNDMASS						
Plagioclase	15-20	20-25	<0.05-1		euhedral to anhedral	intergrown with clinopyroxene; smaller crystals in radiating bundles
Clinopyroxene	15-20	15-20	<0.05-0.4		subhedral to anhedral	
Opagues	2	2	0.02-0.1		euhedral to subhedral	magnetite; two size groups, one 0.04-0.1 mm as isolated crystals and partly included in plagioclase and clinopyroxene, also as <=0.02 mm variably granular aggregates restricted to the mesostasis
Olivine	<1	<1	0.2-0.3		subhedral	clearer than clinopyroxene, sharp extinction, no cleavage; identification questionable
Mesostasis	0	20-25	n/a		n/a	contains very small skeletal and acicular plaioclase-quite noticeable in patches (a quench feature?)
SECONDARY MINERALOGY						
Clays	PERCENT 20-25	REPLACING/ FILLING Mesostasis				COMMENTS red-brown clays
VESICLES/ CAVITIES						
Vesicles	PERCENT 12-15	LOCATION throughout	SIZE (mm) 0.2-1.5		FILLING various	SHAPE irregular COMMENTS 10% to 100% filled by yellow-brown clay; hard to distinguish from altered mesostasis

COMMENTS: There is some incipient alteration of plagioclase along fractures and margins. The mesostasis is completely altered to red-brown clays; these hand samples have a yellow-brown cast. The sample is close to a diabase texturally, perhaps transitional to a highly phyric basalt with seriate glomerocrysts. A 1064 point count gives 15% plagioclase phenocrysts (> 200 microns), 6.4% clinopyroxene phenocrysts, 0.1% olivine phenocrysts, 6.6% open vesicles, 3% filled vesicles, 26.6% mesostasis, 23.1% groundmass plagioclase, 15.9% groundmass clinopyroxene, 0.1% olivine, 3.2% opaque. The mesostasis may be, in part, vesicle fill. The phenocryst distinction is artificial--there is a continuous gradation in size to the groundmass.

135-835B-7R-03 (Piece 14,137-140 cm) OBSERVER: JAN WHERE SAMPLED: Unit 1

ROCK NAME: Highly phyrlic olivine-clinopyroxene-plagioclase basalt

GRAIN SIZE: Fine grained to glassy

TEXTURE: microporphyritic, vesicular, spherulitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	3-5	3-5	0.2-1.2		euhedral to subhedral	zoned single crystals to glomerocrysts; also intergrown with clinopyroxene; some contain quite prominent cryptocrystalline 'matrix' inclusions
Clinopyroxene	2-3	2-3	0.1-1.4		subhedral to anhedral	sector zoned, intergrown with plagioclase, undulose extinction
Olivine	1-3	1-3	0.3-3.0		subhedral to euhedral	single crystals, some skeletal
GROUNDMASS						
Plagioclase	5-10	5-10	to 0.2		anhedral	fine needle-like laths forked terminations
Clinopyroxene	1-2	1-2	0.1		anhedral	
Opagues	1-2	1-2	0.002-0.005		anhedral	a very fine dusting in the mesostasis; also as elongate needles
Mesostasis	68	70	n/a		n/a	cryptocrystalline, spherulitic, includes pale brown glass at one edge with variolitic texture
Olivine	tr	tr	to 0.07		subhedral to euhedral	small isolated crystals, fresh
SECONDARY MINERALOGY						
yellow-orange clays	PERCENT 1-2	REPLACING/ FILLING replacement				COMMENTS replacing mesostasis; < 5% replacement, very localized

VESICLES/CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	10	throughout	0.02-1	clear	round to irregular

COMMENTS: 1102 point count yields: 3.6% plagioclase phenocrysts, 4.4% clinopyroxene phenocrysts, 2.5% olivine phenocrysts, 6.5% open vesicles (excludes one very large vesicle on one side of slide which may in part art be plucked), 74.1% mesostasis, 7% groundmass plagioclase, 1.8% groundmass clinopyroxene, 0.1 % groundmass olivine, opaques too small to count.

SITE 835

135-835B-8M-01 (Piece 1,0-19 cm)

OBSERVER: KRI

WHERE SAMPLED: junk core at the bottom of the hole

ROCK NAME: Moderately phyrlic clinopyroxene-olivine-plagioclase basalt

GRAIN SIZE: fine grained

TEXTURE: seriate porphyritic, vesicular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	3-5	3-5	0.4-1.5		euohedral	minor zoning, narrow sodic rims, melt inclusions in the interiors of several grains
Olivine	1-2	1-3	<1		euohedral	some skeletal
Clinopyroxene	1	1	0.8-1.2		subhedral	intergrown with plagioclase into glomeroporphyritic clusters
GROUNDMASS						
Plagioclase	15-20	15-20	<1		euohedral	elongate crystals, randomly oriented
Olivine	3-5	3-5	<0.4		euohedral-subhedral	quench morphologies common
Clinopyroxene	10-15	10-15	<1		subhedral-anhedral	intimately intergrown with plagioclase; feathery quench grains in interstitial regions, some equant grains as well
Mesostasis	0-10	45	n/a		interstitial	much finer grained near glassy margin
Magnetite	tr	tr	0.005		equant	forms fine dust in groundmass
SECONDARY MINERALOGY						
? mixed clays	n/a		REPLACING/ FILLING replacement			COMMENTS partial replacement of mesostasis by fine grained clays
VESICLES/CAVITIES						
Vesicles	PERCENT 15-20	LOCATION irregular	SIZE (mm) <1	FILLING very minor	SHAPE irregular	COMMENTS minor infilling; bimodal size distribution- see below. Vesicle abundance increases away from glassy rim

COMMENTS: Clusters of microphenocrysts reach 2 mm across; glassy portion on one edge with remnant glassy domains to 0.3 mm across; bimodal vesicle distribution with the very fine vesicles imparting a fine scale porosity to the rock. Large vesicles may be accumulations of smaller ones. Rock is fresh and alteration is limited to minor replacement of mesostasis by fine grained clays