

## APPENDIX IV. X-RAY MINERALOGY DATA, WESTERN INDIAN OCEAN – LEG 25 DEEP SEA DRILLING PROJECT<sup>1</sup>

J. C. Matti, I. Zemmels, and H. E. Cook, University of California, Riverside, California

### METHODS

Semiquantitative determinations of the mineral composition of bulk samples, 2-20  $\mu$ , and <2 $\mu$  fractions were performed according to the methods described in the reports of DSDP Legs 1 and 2 and in Appendix III of Volume IV. The mineral analyses of the 2-20  $\mu$  and <2 $\mu$  fractions were performed on  $\text{CaCO}_3$ -free residues.

The X-ray mineralogy results of this study are summarized in Tables 1 through 8. The mineralogy data are summarized in Tables 9 through 18. Sediment ages, lithologic units, and nomenclature of the sediment types in Tables 1 through 8 are from the DSDP Leg 25 hole summaries and from a subsequent update supplied by Dr. Tracy L. Vallier, DSDP. The stratigraphic position of samples submitted for X-ray diffraction analysis from Leg 25 are listed in Tables 1 through 8. The sample depth (in meters) below the sea floor in Tables 1 through 8 identifies the samples as they are reported in Tables 9 through 18. No samples were submitted for X-ray diffraction analysis from Sites 243, 244, and 247.

Several unidentified minerals were detected in Leg 25 samples. Their abundances were determined on a semiqualitative basis using a hypothetical mineral intensity factor of 3.0. Unidentified minerals are reported on a ranked, semiqualitative scale as outlined below:

Trace (T): <5%. Diffraction pattern was weak and identification was made on the basis of two major diagnostic peaks.

Present (P): 5-25%. A number of peaks of the mineral are visible in the diffraction pattern.

Abundant (A): 25-65%. Diffraction peaks of the mineral are prominent in the total diffraction pattern but the peaks of other minerals are of an equivalent intensity.

Major (M): >65%. The diffraction peaks of the mineral dominate the diffraction pattern.

Although a certain quantity of the unidentified minerals is implied, their concentration is not included in the concentrations of the identified minerals, which are summed to 100 percent.

### DRILLING MUD USAGE

Drilling mud, containing montmorillonite and barite, was used on Leg 25 as follows:

No mud was used at Sites 239, 245, or 249. At Site 240, drilling mud was used after Core 1 and after Core 2; at Site 241, between Cores 28 and 29; at Site 242, between Cores 8 and 9 and between Cores 12 and 13; at Site 246, between Cores 1 and 2 and between Cores 10 and 11; and at Site 248, between Cores 5 and 6, between Cores 8 and 9, between Cores 9 and 10, between Cores 10 and 11, between Cores 12 and 13, and between Cores 16 and 17. Most samples submitted for diffraction analysis do not occur close to intervals in which drilling mud was used. Barite does not occur in any samples, and montmorillonite abundances are not inordinate in any sample.

### ACKNOWLEDGMENTS

The writers wish to acknowledge the excellent work of Nicki D. Coursey in the interpretation of X-ray diffraction data, of Paul D. Johnson in X-ray data acquisition and data processing, and of Tom W. Halverson, Jr. in sample preparation.

<sup>1</sup>Institute of Geophysics and Planetary Physics, University of California Riverside, California, Contribution No. 73-44.

**TABLE 1**  
**Summary of X-ray Mineralogy Samples, Sample Depths, Lithology, Age,**  
**and X-ray Diffraction Results, Site 239**

Core, Section, Interval (cm)	Subbottom Depth (m)	Lithology and Ages	Bulk Sample Major Constituent			2-20 $\mu$ Fraction Major Constituent			<2 $\mu$ Fraction Major Constituent		
			1	2	3	1	2	3	1	2	3
1-1,80-82	0.8	Unit 1 <sup>a</sup>	Calc.	Kaol.	K-Fe.	K-Fe.	Plag.	Quar.	Mont.	Kaol.	K-Fe.
1-4,120-123	5.7	Argillaceous nanno ooze, commonly silt bearing	Calc.	K-Fe.	Plag.	Augi.	Plag.	K-Fe.	Mont.	K-Fe.	Plag.
3-1,112-114	19.1		Calc.	Arag.		Insufficient residue			Mont.	Plag.	K-Fe.
3-3,65-67	21.6		Mont.	Plag.	K-Fe.	Augi.	Plag.	K-Fe.	Mont.	Augi.	Plag.
8-2,134-136	133.8		Calc.			K-Fe.	Plag.	Quar.	Mont.	Kaol.	Quar.
8-6,147-149	140.0		K-Fe.	Plag.	Mont.	K-Fe.	Plag.	Quar.	Mont.	Kaol.	
9-2,120-122	142.7		Calc.	Plag.	Mont.	K-Fe.	Plag.	Quar.	Mont.	Kaol.	Mica
11-1,115-117	159.1	Unit 2 <sup>b</sup>	K-Fe.	Mont.	Quar.	K-Fe.	Quar.	Plag.	Mont.	Kaol.	
11-4,10-12	162.6	Silty clay and clay-rich nanno ooze	Kaol.	K-Fe.	Quar.	K-Fe.	Quar.	Plag.	Mont.	Kaol.	Paly.
13-2,85-87	217.4		Mont.	K-Fe.	Plag.	Mont.	K-Fe.	Plag.	Mont.	Plag.	
13-3,20.5-22.5	218.2		K-Fe.	Mont.	Kaol.	K-Fe.	Quar.	Plag.	Mont.	Kaol.	Paly.
14-1,50-52	263.5		Paly.	K-Fe.	Quar.	Quar.	K-Fe.	Mica	Paly.	Mont.	Kaol.
15-2,69-71	274.2		Mont.	K-Fe.	Plag.	K-Fe.	Mica	Quar.	Mont.	K-Fe.	
18-2,110-112	302.6		K-Fe.	Quar.	Mica	K-Fe.	Quar.	Mica	Paly.	Mont.	K-Fe.

<sup>a</sup>Middle Miocene through Pleistocene<sup>b</sup>Early Paleocene through early Miocene

**TABLE 2**  
**Summary of X-ray Mineralogy Samples, Sample Depths, Lithology, Age,**  
**and X-Ray Diffraction Results, Site 240**

Core, Section, Interval (cm)	Subbottom Depth (m)	Lithology and Ages	Bulk Sample Major Constituent			2-20 $\mu$ Fraction Major Constituent			<2 $\mu$ Fraction Major Constituent		
			1	2	3	1	2	3	1	2	3
1-3,59-61	3.6	Unit 1 <sup>a</sup>	Quar.	Mont.	Mica	Quar.	K-Fe.	Plag.	Mont.	Paly.	Kaol.
3-1,129-131	74.3	Silt, clay, and nanno-rich radiolarian ooze	Mont.	Mica	Quar.	K-Fe.	Plag.	Quar.	Mont.	Kaol.	Paly.
3-2,119-121	75.7		Mont.	Quar.	K-Fe.	K-Fe.	Quar.	Plag.	Mont.	Kaol.	Paly.
3-5,50-52	79.5	nanno-bearing clay	Mont.	Mica	Quar.	K-Fe.	Quar.	Plag.	Mont.	Kaol.	Paly.
5-3,74-76	160.7	Unit 2 <sup>b</sup>	Quar.	K-Fe.	Plag.	K-Fe.	Quar.	Plag.	Mont.	Kaol.	Paly.
1A-1,49-51	168.5	Unit 1 <sup>c</sup>	K-Fe.	Mont.	Plag.	K-Fe.	Plag.	Quar.	Mont.	Paly.	Kaol.

<sup>a</sup>Late Miocene through Quaternary<sup>b</sup>Eocene through late Miocene<sup>c</sup>Late Miocene through Quaternary

TABLE 3  
Summary of X-ray Mineralogy Samples, Sample Depths, Lithology, Age,  
and X-Ray Diffraction Results, Site 241

Core, Section, Interval (cm)	Subbottom Depth (m)	Lithology and Ages	Bulk Sample Major Constituent			2-20 $\mu$ Fraction Major Constituent			<2 $\mu$ Fraction Major Constituent		
			1	2	3	1	2	3	1	2	3
1-2,109-111	2.6	Unit 1 <sup>a</sup>	Calc.			Quar.	K-Fe.	Plag.	Mont.	Paly.	Mica
1-5,34-36	6.3	Clay-rich and clayey	Calc.			Quar.	K-Fe.	Plag.	Mont.	Mica	Paly.
2-1,102-104	10.0	nanno ooze and	Calc.			Quar.	K-Fe.	Plag.	Mont.	Paly.	Kaol.
2-6,110-112	17.6	minor nanno-rich	Calc.			Quar.	K-Fe.	Plag.	Paly.	Kaol.	Quar.
3-1,119-121	48.2	clay	Calc.	Quar.		Quar.	K-Fe.	Plag.	Mont.	Paly.	Kaol.
3-3,74-76	50.7		Calc.			K-Fe.	Plag.	Mica	Mont.	Paly.	Kaol.
4-2,129-131	58.8		Calc.			Quar.	Plag.	K-Fe.	Mont.	Paly.	Kaol.
5-5,99-101	72.0		Calc.			Quar.	K-Fe.	Plag.	Mont.	Paly.	Kaol.
6-2,99-101	106.5		Calc.			Calc.			Mont.	Paly.	
7-2,106-108	144.6		Calc.	Plag.	Mica	Plag.	Quar.	K-Fe.	Mont.	Paly.	
9-2,119-121	211.7		Calc.	K-Fe.	Quar.	Plag.	K-Fe.	Quar.	Mont.	Paly.	Kaol.
12-2,70-72	296.2		Calc.	Mont.	K-Fe.	Plag.	K-Fe.	Quar.	Mont.	Paly.	Mica
12-2,139-141	296.9		Mont.	K-Fe.	Mica	Plag.	K-Fe.	Quar.	Mont.	Paly.	Kaol.
13-1,79-81	322.8		Mica	Mont.	K-Fe.	K-Fe.	Quar.	Mica	Mont.	Paly.	Kaol.
14-1,74-76	379.7		Calc.	Paly.	Mont.	K-Fe.	Quar.	Plag.	Mont.	Paly.	Kaol.
15-2,59-61	400.1					Mont.			Mont.		
17-1,137-139	484.4	Unit 2 <sup>b</sup>	K-Fe.	Plag.	Mica	Plag.	Quar.	K-Fe.	Mont.	Paly.	Kaol.
19-1,49-51	530.5	Claystone and minor	Paly.	Mont.	Mica	Mica	Quar.	K-Fe.	Mont.	Paly.	Kaol.
21-2,114-117	580.6	nanno-rich claystone,	Mica	Paly.	Quar.	Quar.	K-Fe.	Mica	Mont.	Mica	Quar.
21-5,93-95	584.9	silty clay, and cal-	Quar.	Mica	Paly.	Quar.	K-Fe.	Mica	Mont.	Paly.	Quar.
22-1,93-95	626.9	careous sandstone.	Calc.	Mica	Quar.	Quar.	Mica	K-Fe.	Paly.	Mont.	Quar.
24-1,119-121	750.2		Mont.	Calc.	Mica	Mica	Quar.	K-Fe.	Mont.	Paly.	Mica
25-2,48-50	837.0		Mont.	Calc.	Mica	Quar.	Mica	K-Fe.	Mont.	Paly.	Mica
27-1,66-68	977.7		Calc.	Mont.	Quar.	Quar.	Mica	K-Fe.	Mont.	Paly.	Quar.
27-2,27-29	978.8		Calc.	Mont.	Mica	Quar.	Mica	K-Fe.	Mont.	Paly.	Quar.
27-2,117-119	979.7		Calc.	Quar.	Mont.	Quar.	Mica	Mont.	Mont.	Paly.	Quar.
27-3,105.5-107.5	981.1		Calc.	Mont.	Quar.	Quar.	Mica	K-Fe.	Mont.	Paly.	Quar.
27-4,66-68	982.2		Calc.	Mont.	Quar.	Quar.	Mica	Mont.	Mont.	Paly.	Quar.
27-4,102-103	982.5		Calc.	Quar.	Mont.	Quar.	K-Fe.	Mica	Mont.	Mica	Quar.
27-4,131-133	982.8		Mica	Quar.	Mont.	Quar.	Mica	K-Fe.	Mont.	Paly.	Quar.
28-1,84-86	1067.8		Calc.	Quar.	Dolo.	Quar.	K-Fe.	Plag.	Mont.		
28-3,11-13	1070.1		Quar.	Mica	K-Fe.	Quar.	K-Fe.	Plag.	Mont.	Paly.	Quar.
28-3,68-70	1070.7		Mont.	Quar.	Mica	Quar.	Mica	K-Fe.	Paly.	Quar.	Mont.
28-3,87-89	1070.9		Quar.	Mica	Plag.	Quar.	K-Fe.	Mica	Mont.	Paly.	Quar.
29-2,89-90	1169.4		Mont.	Paly.	Quar.	Quar.	Mica	K-Fe.	Mont.	Paly.	Quar.
29-2,108-110	1169.61		Mont.	Quar.	Mica	Quar.	Mica	Mont.	Mont.	Paly.	Hema.
29-2,113-114	1169.67		Mont.	Quar.	Paly.	Quar.	Mica	Mont.	Mont.	Paly.	Hema.

<sup>a</sup>Late Oligocene through Quaternary<sup>b</sup>Late Santonian? through middle Eocene

**TABLE 4**  
Summary of X-ray Mineralogy Samples, Sample Depths, Lithology, Age,  
and X-ray Diffraction Results, Site 242

Core, Section, Interval (cm)	Subbottom Depth (m)	Lithology and Ages	Bulk Sample Major Constituent			2-20 $\mu$ Fraction Major Constituent			<2 $\mu$ Fraction Major Constituent		
			1	2	3	1	2	3	1	2	3
3-6,130-132	136.8	Unit 1 <sup>a</sup> Foram-bearing to foram-rich clay and nanno ooze.	Calc.	Mica		Quar.	K-Fe.	Plag.	Mont.	Paly.	Quar.
4-3,89-91	150.9		Calc.			Mica	K-Fe.	Quar.	Mont.	Mica	Paly.
5-3,125-127	237.3		Calc.	Mica		K-Fe.	Plag.	Quar.	Mont.	Mica	Paly.
6-2,120-122	310.7	Unit 2 <sup>b</sup> Foram-bearing clay nanno chalk.	Calc.			K-Fe.	Quar.	Mica	Mont.	Kaol.	Paly.
7-5,49-51	409.5		Calc.	Mica	K-Fe.	K-Fe.	Mica	Quar.	Mont.	Kaol.	Mica
8-1,108-110	480.1	Unit 3 <sup>c</sup> Clay nanno chalk	Calc.	Mica		Mica	K-Fe.	Quar.	Mont.	Kaol.	Mica
9-3,99-101	559.0		Calc.			K-Fe.	Mica	Quar.	Mont.	Paly.	Kaol.
10-1,28-30	602.3		Calc.	Mica		Mica	K-Fe.	Quar.	Mont.	Mica	Paly.
10-5,102-104	609.0		Calc.	Mica		Mica	K-Fe.	Quar.	Mont.	Mica	Kaol.
13-1,77-79	631.8		Calc.	Mica		Mica	Quar.	K-Fe.	Mont.	Mica	Kaol.
16-1,92-94	653.9		Calc.	Mica	Quar.	Mica	Quar.	K-Fe.	Paly.	Mica	Mont.
19-2,47-49	675.0		Calc.	Paly.	Mica	Mica	K-Fe.	Quar.	Paly.	Mont.	Mica

<sup>a</sup>Late Miocene through Quaternary<sup>b</sup>Middle and late Miocene<sup>c</sup>Late Eocene through early Miocene

**TABLE 5**  
Summary of X-ray Mineralogy Samples, Sample Depths, Lithology, Age,  
and X-ray Diffraction Results, Site 245

Core, Section, Interval (cm)	Subbottom Depth (m)	Lithology and Ages	Bulk Sample Major Constituent			2-20 $\mu$ Fraction Major Constituent			<2 $\mu$ Fraction Major Constituent		
			1	2	3	1	2	3	1	2	3
1-1, 119-121	8.2	Unit 1 <sup>a</sup> Silt-rich clay	Quar.	Mica	Plag.	Quar.	Plag.	K-Fe.	Mont.	Paly.	Mica
4-5,89-91	165.9	Unit 3 <sup>b</sup>	Calc.			Clin.	Quar.	Chlo.	Paly.	Mont.	
5-4,41-43	211.9	Unit 4 <sup>c</sup> Clay-rich nanno chalk	Mont.	Calc.	Plag.	Mont.	K-Fe.	Plag.	Mont.		
9-1,101-103	312.0		Calc.	Cris.		Cris.	Trid.	Mont.	Cris.	Mont.	
10-1,45-47	320.5		Calc.	Paly.	Mont.	Quar.	Paly.	Mont.	Mont.	Paly.	Quar.
11-1,34-36	329.3		Mont.			Mont.			Mont.		
11-2,91-93	331.4		Calc.	Mont.	Plag.	Mont.			Mont.		
12-2,134-136	340.8		Calc.			Mont.	Paly.	Quar.	Mont.		
12-2,35-38	351.9		Mont.	Plag.		Mont.	Plag.		Mont.		
13-3,81-83	353.8		Mont.	Plag.		Mont.	Plag.		Mont.		
13-4,92-93	355.4		Mont.	Calc.		Mont.			Mont.		
14-6,64-65	367.1		Mont.	Mont.		Mont.			Mont.		
15-2,83-85	370.3		Mont.	Calc.		Mont.			Mont.		
1A-1,79-81	26.8	Unit 1 <sup>a</sup>	Paly.	Quar.	Mica	Quar.	Plag.	K-Fe.	Mont.	Mica	Quar.
2A-4,32-34	58.8	Silt-rich clay	Calc.			Quar.	Mica	Plag.	Mont.	Mica	Paly.
4A-5,15-17	78.2	Unit 2 <sup>d</sup>	Calc.	Mica	Quar.	Quar.	Plag.	Mica	Paly.	Mont.	Mica
5A-4,99-101	96.5	Variegated clays and oozes	Paly.	Quar.	K-Fe.	Quar.	K-Fe.	Mica	Paly.	Mont.	Mica
6A-2,29-31	101.8		Paly.	K-Fe.	Quar.	Quar.	K-Fe.	Mica	Paly.	Mont.	Mica

<sup>a</sup>Late Eocene and Miocene (?)<sup>b</sup>Unit 3 consists of clay-rich nanno ooze, and is early and middle Eocene.<sup>c</sup>Early Paleocene through early Eocene<sup>d</sup>Middle and early Eocene

**TABLE 6**  
Summary of X-ray Mineralogy Samples, Sample Depths, Lithology, Age,  
and X-ray Diffraction Results, Site 246

Core, Section, Interval (cm)	Subbottom Depth (m)	Lithology and Ages	Bulk Sample Major Constituent			2-20 $\mu$ Fraction Major Constituent			<2 $\mu$ Fraction Major Constituent		
			1	2	3	1	2	3	1	2	3
5-6, 69-71	136.2	Unit 2 <sup>a</sup>	Calc.	K-Fe.		K-Fe.	Quar.		K-Fe.	Mont.	Mixl.
9-1,34-36	164.3	Shelly carbonate sand	Calc.	K-Fe.		K-Fe.	Mixl.		Mixl.	K-Fe.	
9-3,99-101	168.0		Calc.	K-Fe.		K-Fe.	Quar.		Mixl.	K-Fe.	Quar.
9-4,74-76	169.2		Calc.	K-Fe.		K-Fe.	Quar.		Mixl.		
10-1,139-141	177.4	Unit 3 <sup>b</sup>	K-Fe.	Calc.	Phil.	K-Fe.	Phil.		Phil.	K-Fe.	Mont.
10-2,42-44	177.9	Glauconite-bearing	K-Fe.	Calc.	Phil.	K-Fe.	Phil.		Mont.	Phil.	K-Fe.
11-1,75-77	185.8	to glauconite-rich	K-Fe.	Calc.		K-Fe.	Mixl.	Quar.	Mont.	Mixl.	K-Fe.
11-2,124-126	187.7	volcanic sand and breccia; minor silty clay and limestone	Calc.	K-Fe.		K-Fe.	Quar.	Mont.	Mont.	Mixl.	

<sup>a</sup>Early and middle Eocene<sup>b</sup>Early Eocene

**TABLE 7**  
Summary of X-ray Mineralogy Samples, Sample Depths, Lithology, Age,  
and X-Ray Diffraction Results, Site 248

Core, Section, Interval (cm)	Subbottom Depth (m)	Lithology and Ages	Bulk Sample Major Constituent			2-20 $\mu$ Fraction Major Constituent			<2 $\mu$ Fraction Major Constituent		
			1	2	3	1	2	3	1	2	3
2-2,120-122	3.7	Unit 1 <sup>a</sup>	Calc.	Quar.	Plag.	Quar.	Mica	Plag.	Mont.	Kaol.	Paly.
4-1,0-3	121.0	Clayey silt and sand	Calc.	Mica	Quar.	Quar.	Mica	Plag.	Mont.	Paly.	Kaol.
10-2,129-131	314.8	Unit 2 <sup>b</sup>	Paly.	Cris.	Quar.	Cris.	Quar.	Mica	Paly.	Mont.	Cris.
11-1,144-146	361.4	Laminated, silt-bearing and silt-rich	Paly.	Cris.	Quar.	Cris.	Quar.	Mica	Paly.	Mont.	Mica
11-3,30-32	363.3		Cris.	Paly.	Quar.	Cris.	Quar.	Paly.	Paly.	Mont.	
11-3,44-46	363.4	volcanic clay	Rhod.	Cris.	Paly.	Rhod.	Cris.	Quar.	Paly.	Mont.	
12-3,100-102	393.0		Quar.	Mont.	Mica	Quar.	Plag.	Mica	Paly.	Mont.	
13-1,132-134	399.3		Paly.			Quar.	K-Fe.	Mica	Paly.		
14-1,70-72	407.7	Unit 3 <sup>c</sup>	Paly.	Quar.	Mica	Quar.	Mica	K-Fe.	Paly.	Mica	Hema.
14-6,149-150	416.0	Clay and silt-bearing clay	K-Fe.	Paly.	Quar.	K-Fe.	Quar.	Mica	Paly.	Mont.	Quar.

<sup>a</sup>Middle (?) Miocene through Pleistocene in age.<sup>b</sup>Early Eocene<sup>c</sup>Early Eocene ?

TABLE 8  
Summary of X-ray Mineralogy Samples, Sample Depths, Lithology, Age,  
and X-ray Diffraction Results, Site 249

Core, Section, Interval (cm)	Subbottom Depth (m)	Lithology and Ages	Bulk Sample Major Constituent			2-20 $\mu$ Fraction Major Constituent			<2 $\mu$ Fraction Major Constituent		
			1	2	3	1	2	3	1	2	3
21-2,10-12	257.6	Unit 1 <sup>a</sup>	Calc.			Quar.	Plag.	K-Fe.	Mont.	Paly.	Quar.
21-2,102-104	258.5	Foram-rich nanno ooze and clay nanno ooze	Calc.	Paly.		Quar.	K-Fe.	Plag.	Paly.	Mont.	Quar.
23-2,56-58	286.1		Calc.	Paly.		Plag.	Quar.	K-Fe.	Paly.	Quar.	Mont.
23-4,85-87	289.4	Unit 2 <sup>b</sup>	Calc.	Clin.	Plag.	Clin.	Plag.	Quar.	Mont.	Clin.	Hali.
24,CC	303.0	Foram-bearing clay-	Cris.	Trid.		Cris.	Trid.	Quar.	Cris.	Paly.	Trid.
25-1,82-84	303.8	rich nanno-chalk	Plag.	Calc.	Cris.	Cris.	Clin.	Plag.	Cris.	Mont.	Paly.
25-2,82-84	305.3		Mont.	Plag.		Mont.	Plag.	Pyri.	Mont.	Hali.	
25,CC	312.0		Calc.			Clin.	Plag.	Pyri.	Mont.	Mica	Pyri.
26-2,87-89	315.4		Plag.	Calc.	Cris.	Cris.	Plag.	Pyri.	Mont.	Trid.	
26,CC	322.0		Cris.	Calc.	Trid.						
27,CC	331.0		Cris.	Trid.	Calc.	Cris.	Trid.	Plag.	Cris.	Trid.	Mont.
28,CC	341.0		Cris.	Calc.		Cris.	Clin.	Pyri.	Cris.	Mont.	Trid.
29,CC	360.0	Unit 3 <sup>c</sup>	Cris.	Calc.	Trid.	Cris.	Pyri.		Cris.	Mont.	
30,CC	379.0	Silty claystone and	Cris.	Calc.	Plag.	Cris.	Plag.	Trid.	Cris.	Mont.	Trid.
31-3, 36-38	392.4	volcanic	Clin.	Plag.	Mont.	Clin.	Plag.	Pyri.	Mont.	Hali.	
31,CC	398.0	conglomerate	Cris.	Trid.	Clin.	Cris.	Clin.	Trid.	Cris.	Mont.	Trid.
32,CC	408.0		Mont.	Kaol.	Quar.				Mont.	Kaol.	
33-2,20-21	409.7		Calc.				Insufficient residue		Mont.	Mica	
33-2,82-83	410.3		Mont.	Clin.	Mica		Insufficient residue				Insufficient residue
33-2,89-91	410.4		Plag.	Mont.		Plag.	Mont.	Magn.	Mont.		

<sup>a</sup>Middle Miocene through Quaternary<sup>b</sup>Campanian and Maestrichtian<sup>c</sup>Neocomian

TABLE 9  
Results of X-ray Diffraction Analysis from Hole 239

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Calc.	Arag.	Quar.	K-Fe.	Plag.	Kaol.	Mica	Chlo.	Mont.	Paly.	Phil.	Gibb.	Amph.	Hali.	Augi.
<b>Bulk Samples</b>																			
1	0-9	0.8 5.7	79.9 79.4	68.6 67.9	20.7 48.0	- -	12.9 1.0	13.2 13.7	10.5 13.4	17.0 -	9.7 -	- -	2.7 7.3	- -	7.3 6.3	- -	9.4 -	2.2 -	1.7 9.3
3	18-27	19.1 21.6	52.5 73.0	25.8 57.8	72.2 6.1	27.8 -	- 1.5	- 19.1	- 30.2	- -	- -	- -	- 36.8	- -	- 6.3	- -	- -	- -	-
8	131-140	133.8 140.0	70.0 87.8	53.1 81.0	79.9 -	4.9 -	1.7 12.8	2.2 25.5	4.7 19.0	2.2 16.3	1.5 7.3	- -	3.0 17.1	- -	- -	- -	- -	- 2.0	-
9	140-149	142.7	85.1	76.7	35.6	-	10.2	8.8	13.8	11.0	5.5	-	13.0	-	-	-	-	-	2.0
11	158-167	159.1 162.6	87.7 86.0	80.7 78.1	- -	- -	17.1 16.8	26.4 17.1	8.2 9.6	15.1 27.2	9.6 12.6	- -	23.7 16.7	- -	- -	- -	- -	- -	-
13	215-224	217.4 218.2	77.2 88.2	64.3 81.6	- -	- -	1.7 12.2	18.2 26.7	10.2 10.8	- 13.8	- 7.9	- -	69.9 16.1	- 12.6	- -	- -	- -	- -	-
14	263-272	263.5	87.2	80.0	-	-	16.0	17.2	7.5	5.8	11.2	1.8	9.4	31.0	-	-	-	-	-
15	272-281	274.2	87.2	80.0	-	-	10.0	29.5	17.0	2.6	8.8	-	32.1	-	-	-	-	-	-
18	300-309	302.6	86.7	79.2	-	-	21.9	40.0	12.1	-	15.3	1.5	4.4	4.7	-	-	-	-	-
<b>2-20<math>\mu</math> Fraction</b>																			
1	0-9	0.8 5.7	82.2 81.2	72.1 70.7			15.0 1.4	20.9 25.4	15.5 28.1	14.8 -	4.1 -	- -	5.3 7.7	- -	- 8.7	- -	12.9 -	1.3 -	10.3 28.7
3	18-27	21.6	70.6	54.1			1.3	17.9	27.1	-	-	-	17.9	-	3.5	-	-	-	32.3
8	131-140	133.8 140.0	85.8 80.8	77.7 69.9			11.7 17.9	29.6 33.3	12.8 31.1	3.5 11.1	6.0 5.7	- -	14.5 -	-	15.3 -	-	-	1.3 0.9	5.3 -
9	140-149	142.7	81.5	71.2			15.5	28.5	21.8	8.7	9.9	-	9.4	-	6.1	-	-	-	-
11	158-167	159.1 162.6	80.3 81.0	69.3 70.4			21.9 24.6	40.8 30.6	20.3 17.6	5.2 11.8	11.8 15.4	- -	- -	- -	- -	- -	- -	- -	-
13	215-224	217.4 218.2	77.3 80.8	64.6 70.0			3.0 24.3	21.2 42.1	10.9 16.7	- 4.3	1.4 7.7	- -	63.5 4.9	- -	- -	- -	- -	- -	-
14	263-272	263.5	75.5	61.7			30.9	29.8	12.9	1.5	16.1	1.0	-	7.8	-	-	-	-	-
15	272-281	274.2	77.9	65.4			17.2	46.9	15.7	2.3	17.9	-	-	-	-	-	-	-	-
18	300-309	302.6	73.8	59.0			22.9	41.8	12.7	-	16.1	1.6	-	5.0	-	-	-	-	-

TABLE 9 - *Continued*

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amorp.	Calc.	Arag.	Quar.	K-Fe.	Plag.	Kaol.	Mica	Chlo.	Mont.	Paly.	Phil.	Gibb.	Amph.	Hali.	Augi.
$\angle 2\mu$ Fraction																			
1	0-9	0.8 5.7	- 90.4	- 85.0			4.6 2.7	8.4 23.9	5.3 11.4	20.7 -	3.3 4.1		50.8 38.0	- -	- 9.7	7.1 -	- -	- 10.2	
3	18-27	19.1 21.6	- 80.7	- 69.8			3.1 0.5	11.4 8.8	21.2 12.3	8.4 -	- -		55.9 64.0	- -	- -	- -	- -	- 14.4	
8	131-140	133.8 140.0	88.4 88.4	81.8 81.8			8.0 5.1	4.7 6.9	6.4 4.5	24.8 16.7	6.6 4.8		49.5 62.0	- -	- -	- -	- -	- -	
9	140-149	142.7	84.5	75.7			5.1	3.8	2.3	21.5	7.7		56.9	- -	- -	- -	- -	2.7 -	
11	158-167	159.1 162.6	86.6 86.8	79.0 79.4			6.9 7.0	6.4 -	1.8 -	21.3 37.9	5.4 -		52.3 41.8	5.9 13.3	- -	- -	- -	- -	
13	215-224	217.4 218.2	74.3 87.3	59.8 80.2			- 6.4	- 10.1	- 1	1.2 21.3	- -		98.8 52.3	- 9.8	- -	- -	- -	- -	
14	263-272	263.5	88.3	81.8			7.4	-	-	15.8	5.0		30.7 82.4	41.2 -	- -	- -	- -	- -	
15	272-281	274.2	84.4	75.6			3.5	9.7	-	4.4	-		38.2	43.0	-	-	-	-	
18	300-309	302.6	89.3	83.2			6.5	7.6	-	4.7	-		-	-	-	-	-	-	

**TABLE 10**  
Results of X-ray Diffraction Analysis from Hole 240

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Quar.	K-Fe.	Plag.	Kaol.	Mica	Mont.	Paly.	Gibb.	Amph.	Hali.
<b>Bulk Samples</b>														
1	0-6	3.6	90.3	84.8	20.1	11.8	11.4	9.7	16.2	18.7	11.1	1.0	—	
3	73-82	74.3	88.1	81.5	16.4	14.0	10.3	11.6	22.7	25.1	—	—	—	
		75.7	89.0	82.8	16.7	16.3	14.1	11.4	15.0	26.6	—	—	—	
		79.5	89.3	83.2	14.8	6.0	9.5	12.3	20.5	26.6	10.3	—	—	
5	157-166	160.7	78.7	66.6	30.6	30.4	20.5	3.2	3.7	10.1	—	—	—	1.5
<b>2-20<math>\mu</math> Fraction</b>														
1	0-6	3.6	95.0	92.3	32.6	30.4	20.8	4.0	7.7	4.5	—			
3	73-82	74.3	84.8	76.3	24.7	34.7	27.1	4.4	9.1	—	—			
		75.5	77.8	65.3	25.9	28.0	25.4	6.9	13.7	—	—			
		79.5	80.1	68.9	24.9	27.6	24.5	7.1	16.0	—	—			
5	157-166	160.7	82.8	73.2	25.5	31.2	19.3	—	15.8	—	8.2			
<b>&lt;2<math>\mu</math> Fraction</b>														
1	0-6	3.6	86.8	79.4	5.0			13.6	10.2	54.6	15.6	1.0	—	
3	73-82	74.3	87.4	80.4	5.3			18.7	6.1	54.6	15.2	—	—	
		75.5	87.2	80.0	5.5			16.4	7.1	56.5	14.5	—	—	
		79.5	84.7	76.1	5.4			17.5	5.9	56.9	14.4	—	—	
5	157-166	160.7	84.9	76.3	2.6			19.7	5.1	55.5	15.2	—	—	1.9

**TABLE 11**  
Results of X-ray Diffraction Analysis from Hole 240A

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Quar.	K-Fe.	Plag.	Kaol.	Mica	Mont.	Paly.	Amph.
<b>Bulk Samples</b>												
1	168-177	168.5	86.2	78.5	17.2	22.4	18.5	5.1	8.7	20.7	6.1	1.2
<b>2-20<math>\mu</math> Fraction</b>												
1	168-177	168.5	76.4	63.1	20.7	37.0	29.7	3.2	8.1			1.2
<b>&lt;2<math>\mu</math> Fraction</b>												
1	168-177	168.5	85.4	77.2	3.6			10.4	6.1	68.0	11.9	

TABLE 12  
Results of X-ray Diffraction Analysis from Hole 241

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Calc.	Dolo.	Quar.	K-Fe.	Plag.	Kaol.	Mica	Chlo.	Mont.	Paly.	Hema.	Pyri.	Goet.	Amph.	U-1 <sup>a</sup>
<b>Bulk Samples</b>																			
1	0-9	2.6	60.1	37.6	96.1	—	1.4	1.5	—	1.0	—	—	—	—	—	—	—	—	
		6.3	69.3	52.1	85.2	—	3.4	2.3	1.5	1.6	3.7	—	2.3	—	—	—	—	—	
2	9-18	10.0	75.9	62.3	78.1	—	5.8	—	0.4	2.0	5.2	—	1.5	6.9	—	—	—	—	
		17.6	64.2	44.0	89.7	—	1.4	1.8	—	—	2.9	—	—	4.1	—	—	—	—	
3	47-56	48.2	81.0	70.3	61.1	1.4	8.3	3.2	3.1	3.1	6.9	—	5.5	6.4	—	1.1	—	—	
		50.7	59.8	37.2	93.6	—	2.0	1.5	—	1.0	1.9	—	—	—	—	—	—	—	
4	56-65	58.8	71.0	54.7	79.0	1.9	5.6	2.0	2.2	1.6	3.0	—	—	4.8	—	—	—	—	
5	65-74	72.0	67.3	49.0	83.8	—	3.1	1.0	1.2	2.0	3.1	—	1.2	4.7	—	—	—	—	
6	104-113	106.5	57.8	34.1	93.8	—	1.2	1.2	1.6	—	1.3	—	—	—	—	0.8	—	—	
7	142-151	144.6	82.0	71.9	56.0	—	7.4	3.8	9.8	2.6	7.9	—	7.6	4.9	—	—	—	—	
9	209-218	211.7	82.1	72.1	36.8	—	11.4	16.2	11.0	3.3	6.4	—	8.1	5.8	—	0.9	—	—	
12	294-303	296.2	87.1	79.8	26.7	—	7.9	11.5	7.1	3.7	8.2	—	24.6	9.3	—	1.0	—	—	
		296.9	89.9	84.3	—	—	13.1	17.8	12.2	4.1	14.6	—	25.0	13.2	—	—	—	—	
13	322-331	322.8	90.4	85.0	—	—	11.1	16.7	11.4	7.4	23.5	—	19.5	10.4	—	—	—	—	
14	379-388	379.7	86.5	78.9	36.8	1.0	8.7	6.5	1.4	4.9	7.6	—	11.5	21.7	—	—	—	—	
15	398-407	400.1	78.9	67.0	—	—	1.6	—	—	—	—	—	98.4	—	—	—	—	—	
17	483-492	484.4	81.6	71.3	—	—	13.9	27.7	26.8	4.1	14.1	—	9.1	4.4	—	—	—	—	
19	530-539	530.5	87.7	80.8	—	—	12.6	11.0	3.3	13.4	16.1	—	19.0	24.6	—	—	T	—	
21	578-587	580.6	85.6	77.4	—	—	18.1	15.8	5.7	5.6	25.2	1.9	8.5	19.2	—	—	T	—	
		584.9	86.7	79.2	—	—	24.1	16.0	3.9	6.8	19.0	2.4	10.9	16.8	—	—	T	—	
22	626-635	626.9	86.3	78.6	26.3	—	15.7	13.9	4.7	2.5	19.5	1.9	8.2	7.4	—	—	—	—	
24	749-758	750.2	88.5	82.1	20.2	—	16.1	7.0	1.5	4.6	17.0	1.1	20.4	12.1	—	—	—	—	
25	835-844	837.0	85.9	78.0	20.7	1.3	15.2	5.7	1.3	1.1	18.4	2.1	24.7	9.6	—	—	—	—	
27	977-986	977.7	81.8	71.5	25.1	1.5	17.5	8.5	4.6	2.2	14.4	1.2	21.1	3.8	—	—	—	—	
		978.8	82.7	73.0	22.8	1.6	16.3	6.0	2.2	5.8	16.4	1.0	21.9	5.9	—	—	—	—	
		979.7	76.8	63.8	43.0	3.4	14.1	3.4	2.0	2.6	8.1	—	11.8	7.6	—	—	—	—	
		981.1	76.9	64.0	58.7	1.1	9.3	1.2	—	2.8	5.1	1.7	12.1	7.9	—	—	—	—	
		982.2	76.9	63.9	55.1	1.8	10.8	2.5	2.0	1.2	7.3	1.2	12.7	5.2	—	—	—	—	
		982.5	78.6	66.5	53.8	4.9	14.0	2.7	—	2.0	5.3	1.3	9.8	6.3	—	—	—	—	
		982.8	84.7	76.1	12.1	2.8	21.3	8.5	2.7	2.1	28.2	2.1	20.2	—	—	—	—	—	
28	1067-1072	1067.8	67.9	49.8	46.8	9.5	18.0	8.8	1.3	—	5.3	—	5.2	4.9	—	—	—	—	
		1070.1	79.2	67.6	—	2.8	24.3	16.7	15.5	—	17.2	1.2	13.2	9.0	—	—	—	—	
		1070.7	81.1	70.5	—	—	19.5	17.6	8.1	—	19.4	1.0	19.6	14.8	—	—	—	—	
		1070.9	79.2	67.4	—	3.3	26.1	11.1	20.2	—	24.5	—	14.7	—	—	—	—	—	
29	1167-1174	1169.4	85.5	77.3	—	—	25.3	3.1	5.1	—	11.4	1.3	27.7	26.1	—	—	—	—	
		1169.6	85.0	76.6	—	—	17.5	—	0.3	1.6	14.9	—	44.1	10.4	11.2	—	—	—	
		1169.6	83.2	73.8	—	—	14.4	6.5	2.6	1.0	11.8	—	40.4	14.3	9.0	—	—	—	

2-20 $\mu$ Fraction															
1	0-9	2.6 6.3	93.3 85.6	89.5 77.5	32.1 25.2	22.9 23.2	15.5 21.3	3.7 5.8	12.1 15.0	- -	- -	9.8 7.1	- -	3.9 1.4	- 0.9
2	9-18	10.0	86.7	79.2	29.1	23.6	19.9	5.2	18.5	-	-	-	-	3.6	-
3	47-56	48.2 50.7	82.4 -	72.6 -	31.0 7.2	22.9 62.3	19.2 19.8	4.6 -	15.3 10.7	-	-	4.4 -	-	2.6 -	
4	56-65	58.8	82.0	71.8	30.8	19.6	25.5	3.4	9.8	-	-	6.7 -	-	4.1 -	
5	65-74	72.0	81.9	71.7	29.2	19.5	17.8	6.2	14.0	-	-	9.4 -	-	3.9 -	
7	142-151	144.6	79.3	67.7	20.4	18.5	37.0	3.2	14.3	-	-	4.6 -	-	2.0 -	
9	209-218	211.7	77.4	64.8	24.5	27.6	30.8	3.2	9.9	-	-	-	-	2.8 1.2	
12	294-303	296.2 296.9	76.5 89.5	63.4 83.6	20.8 23.7	29.3 27.3	33.5 30.6	2.3 2.4	11.9 15.9	-	-	-	-	2.1 -	
13	322-331	322.8	76.0	62.5	25.8	27.9	19.4	3.1	23.7	-	-	-	-	-	
14	379-388	379.7	76.8	63.7	25.1	30.5	22.2	3.0	19.3	-	-	-	-	-	
15	398-407	400.1	79.6	68.1	2.1	3.7	-	-	-	94.2	-	-	-	-	
17	483-492	484.4	78.7	66.7	25.5	22.0	30.1	2.6	19.8	-	-	-	-	-	
19	530-539	530.5	80.6	69.7	25.4	21.9	10.7	10.0	32.0	-	-	-	-	-	
21	578-587	580.6 584.9	75.6 75.3	61.8 61.5	31.3 36.9	26.1 24.3	13.1 11.4	2.8 3.6	20.2 22.6	1.0 1.2	-	5.4 -	-	-	
22	626-635	626.9	74.1	59.5	34.6	24.4	11.5	1.0	26.8	1.7	-	-	-	-	
24	749-758	750.2	75.8	62.3	30.2	20.4	8.8	3.0	35.8	1.9	-	-	-	-	
25	835-844	837.0	77.7	65.2	34.8	18.8	8.4	3.1	32.7	2.2	-	-	-	-	
27	977-986	977.7 978.8 979.7 981.1 982.2 982.5 982.8	79.7 80.3 80.0 79.1 79.4 77.4 80.0	68.3 69.2 68.7 67.3 67.8 64.7 68.8	29.7 30.9 42.9 42.1 41.4 43.4 31.4	16.0 13.5 10.3 11.7 10.7 17.1 16.5	10.4 8.2 7.2 7.5 9.3 8.7 9.0	3.8 9.1 9.7 8.0 5.1 3.8 3.7	19.5 23.7 16.2 15.3 18.4 15.9 29.6	1.2 1.8 - 1.1 2.2 1.2 2.3	8.8 7.1 11.5 - 13.0 9.8 6.0	9.1 4.7 -	-	1.3 1.0 2.1 3.7 - - 1.4	
28	1062-1072	1067.8 1070.1 1070.7 1070.9	71.3 78.0 71.0 79.0	55.2 65.6 54.7 67.2	53.2 27.4 29.2 30.1	23.4 22.0 23.0 18.1	8.3 21.9 15.7	- - - -	7.9 12.7 28.8 18.0	7.1 8.8 0.9 -	12.0	6.2	-	-	
29	1167-1174	1169.4 1169.6 1169.6	76.6 80.1 81.0	63.5 68.9 70.3	41.5 38.7 41.9	12.4 8.5 5.9	12.0 7.7 6.3	- - -	23.1 24.6 28.8	1.8 -	9.3 12.1 8.8	-	8.4 -	-	

TABLE 12 - *Continued*

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Calc.	Dolo.	Quar.	K.Fe.	Plag.	Kaol.	Mica	Chlo.	Mont.	Paly.	Hema.	Pyri.	Goet.	Amph.	U-1 <sup>a</sup>
<b>&lt;2μ Fraction</b>																			
1	0-9	2.6 6.3	87.6 85.6	80.7 77.6		4.3 4.0	— —	— 13.3	11.3 14.8	12.7 14.8	— —	52.7 52.4	17.6 14.4	— —	1.4 1.1	— —	— —	— —	
2	9-18	10.0 17.6	88.9 88.7	82.7 82.4		6.2 11.7	— —	— 24.6	16.0 9.9	14.8 7.4	— —	39.3 47.7	21.1 28.1	— —	2.6 0.9	— —	— —	T	
3	47-56	48.2 50.7	87.9 87.2	81.1 80.1		7.0 4.3	— —	— 11.7	14.6 7.4	4.2 7.4	— —	45.6 47.7	28.6 28.1	— —	— 0.9	— —	— —	T P	
4	56-65	58.8	88.9	82.6		5.7	—	—	12.4	8.4	—	40.6	32.9	—	—	—	—	T	
5	65-74	72.0	89.4	83.5		5.3	—	—	15.4	6.8	—	48.1	23.0	—	1.3	—	—	—	
6	104-113	106.5	88.4	81.9		6.0	—	—	—	5.6	—	49.7	33.9	—	4.7	—	—	T	
7	142-151	144.6	91.1	86.0		5.9	4.7	—	—	—	—	56.0	33.4	—	—	—	—	—	
9	209-218	211.7	86.3	78.6		5.6	2.6	3.2	13.8	6.1	—	54.3	14.5	—	—	—	—	—	
12	294-303	296.2 296.9	86.8 84.5	79.4 75.8		6.2 4.8	— 3.1	— —	7.7 9.2	9.7 4.3	— —	65.0 60.0	11.5 18.5	— —	— —	— —	— —	—	
13	322-331	322.8	88.9	82.7		6.1	4.6	—	14.6	10.4	—	40.9	23.4	—	—	—	—	—	
14	379-388	379.7	90.1	84.6		8.9	1.5	—	18.2	8.8	—	42.1	20.6	—	—	—	—	—	
15	398-407	400.1	77.2	64.3		—	—	—	—	—	—	100.0	—	—	—	—	—	—	
17	483-492	484.4	85.9	77.9		3.4	—	—	14.0	6.9	—	48.9	26.8	—	—	—	—	—	
19	530-539	530.5	87.8	80.9		6.8	5.1	—	12.3	10.1	—	40.9	24.7	—	—	T	—	—	
21	578-587	580.6 584.9	88.6 85.0	82.2 76.6		13.2 18.1	11.3 12.6	— 5.8	7.9 8.0	20.4 10.1	1.8 2.3	33.2 21.6	12.3 21.5	— —	— —	T	—	—	
22	626-635	626.9	89.4	83.4		17.0	—	—	3.4	10.9	2.1	31.6	35.0	—	—	—	—	—	
24	749-758	750.2	85.9	78.0		8.7	3.8	—	3.3	10.8	2.3	48.8	22.4	—	—	—	—	—	
25	835-844	837.0	88.5	82.1		12.3	3.9	—	2.7	12.7	3.2	42.7	22.5	—	—	—	—	—	
27	977-986	977.7 978.8 979.7 981.1 982.2 982.5 982.8	87.0 87.0 86.9 83.6 86.1 85.3 88.9	79.7 79.7 79.6 74.4 78.3 77.0 82.6		9.9 10.0 8.7 10.7 9.8 9.7 12.5	— 2.8 3.4 — — — —	0.4 5.8 5.7 — 4.1 4.4 6.4	— 8.1 6.5 — 8.2 14.9 6.2	4.7 2.3 6.5 6.9 1.9 2.2 6.2	— 51.6 65.2 66.3 59.7 64.8 46.4	35.0 18.9 10.5 14.2 16.2 4.0 28.5	— — — — — — —	— — — — — — —	— — — — — — —	— — — — — — —	— — — — — — —		
28	1067-1072	1067.8 1070.1 1070.7 1070.9	82.2 84.0 83.9 82.3	72.2 75.0 74.8 72.3		3.2 8.4 18.9 10.4	— — — —	— — — —	— — — —	— — — —	96.8 74.2 8.5 69.3	— 17.4 68.7 20.3	— — — —	— — — —	— — — —	— — — —			
29	1167-1174	1169.4 1169.6 1169.6	84.6 83.8 84.4	75.9 74.7 75.7		9.8 8.9 10.2	2.4 — —	0.9 1.7 —	3.8 5.5 5.9	— — —	53.5 55.4 55.3	29.5 17.5 17.0	— 11.0 11.6	— — —	— — —	— — —	— — —		

<sup>a</sup>Peaks at 5.74 Å, 3.62 Å, and 8.02 Å.

**TABLE 13**  
Results of X-ray Diffraction Analysis from Hole 242

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Calc.	Quar.	K-Fe.	Plag.	Kaol.	Mica	Chlo.	Mont.	Paly.	Pyri.	U-1 <sup>a</sup>
<b>Bulk Samples</b>															
3	128-137	136.8	70.5	53.9	78.2	5.8	3.4	2.3	2.7	7.5	-	-	-	-	-
4	147-156	150.9	68.2	50.3	80.2	4.2	3.0	3.4	2.1	7.1	-	-	-	-	-
5	233-242	237.3	67.0	48.4	79.8	2.5	3.3	1.6	1.5	9.0	-	2.3	-	-	-
6	308-317	310.7	66.3	47.3	89.1	2.0	-	-	1.1	3.3	-	4.5	-	-	-
7	403-412	409.5	72.9	57.7	67.3	4.1	9.5	1.6	-	10.1	-	3.6	3.8	-	-
8	479-488	480.1	82.9	73.3	58.0	7.1	5.8	2.3	-	15.6	-	4.2	6.9	-	-
9	555-564	559.0	68.1	50.2	85.8	2.5	-	3.3	1.6	4.8	-	2.1	-	-	-
10	602-611	602.3	73.5	58.6	71.1	4.9	4.3	2.5	2.2	8.9	-	6.1	-	-	-
		609.0	77.9	65.4	54.1	5.9	7.3	2.9	3.5	21.1	-	5.2	-	-	-
13	631-640	631.8	73.2	58.1	76.5	3.0	3.1	2.4	1.5	10.5	-	3.1	-	-	-
16	653-658	653.9	80.6	69.7	50.7	9.8	6.1	6.0	1.5	13.9	1.1	1.8	9.1	-	-
19	673-676	675.0	75.5	61.7	55.9	4.4	7.3	1.8	2.1	12.8	0.9	1.9	13.0	-	-
<b>2-20<math>\mu</math> Fraction</b>															
3	128-137	136.8	75.2	61.2		35.0	28.9	16.5	4.0	15.5	-	-	-	-	-
4	147-156	150.9	82.6	72.8		23.6	24.2	20.0	3.6	28.6	-	-	-	-	-
5	233-242	237.3	88.4	81.8		23.4	25.3	24.8	3.2	23.3	-	-	-	-	-
6	308-317	310.7	-	-		23.6	30.6	19.8	3.1	19.9	-	-	3.0	-	-
7	403-412	409.5	82.5	72.6		23.2	29.3	15.5	3.5	28.5	-	-	-	-	-
8	479-488	480.1	79.3	67.7		24.1	24.9	11.1	-	39.9	-	-	-	-	-
9	555-564	559.0	83.3	73.8		25.4	33.7	10.9	-	30.1	-	-	-	-	-
10	602-611	602.3	80.5	69.5		22.1	24.4	12.7	3.3	36.2	1.2	-	-	-	-
		609.0	81.5	71.1		21.5	22.4	16.5	-	39.6	-	-	-	-	-
13	631-640	631.8	81.3	70.8		22.0	21.9	13.2	2.6	39.2	1.2	-	-	-	-
16	653-658	653.9	81.0	70.3		29.7	20.5	14.8	3.1	30.8	1.2	-	-	-	-
19	673-676	675.0	82.7	73.0		19.3	23.4	15.6	2.2	38.3	1.2	-	-	-	-
<b>&lt;2<math>\mu</math> Fraction</b>															
3	128-137	136.8	87.7	80.7		8.2	-	-	-	6.4	-	49.2	36.2	-	T
4	147-156	150.9	87.9	81.0		8.7	-	-	-	30.0	-	41.5	19.9	-	-
5	233-242	237.3	86.9	79.5		6.6	-	-	-	28.1	-	45.9	19.3	-	T
6	308-317	310.7	87.5	80.5		4.9	-	-	16.7	11.9	-	48.9	14.8	2.7	-
7	403-412	409.5	88.3	81.8		7.2	-	-	20.8	20.0	-	42.7	9.3	-	T
8	479-488	480.1	87.0	79.7		8.6	3.4	-	23.2	21.1	-	32.6	11.1	-	-
9	555-564	559.0	87.7	80.8		6.3	1.4	-	11.7	8.2	-	58.3	14.1	-	-
10	602-611	602.3	86.9	79.5		7.5	5.4	-	6.5	13.6	3.4	54.9	8.7	-	-
		609.0	87.4	80.4		8.9	-	-	16.2	20.2	-	45.2	9.5	-	-
13	631-640	631.8	89.1	82.9		10.5	4.2	1.9	11.8	23.3	-	48.3	-	-	-
16	653-658	653.9	90.4	85.0		9.4	5.4	1.3	9.6	24.0	1.3	22.5	26.4	-	-
19	673-676	675.0	89.3	83.3		5.7	-	-	3.2	13.3	1.3	31.7	44.8	-	-

<sup>a</sup>Peaks at 5.74 Å, 3.62 Å, and 8.02 Å.

**TABLE 14**  
**Results of X-ray Diffraction Analysis from Hole 245**

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Calc.	Quar.	Cris.	K-Fe.	Plag.	Kaol.	Mica	Chlo.	Mont.	Paly.	Trid.	Clin.	Gibb.	U-2 <sup>a</sup>
<b>Bulk Samples</b>																		
1	7-16	8.2	89.5	83.6	—	26.0	—	16.9	18.6	7.2	19.3	—	10.4	—	—	—	1.6	—
4	159-168	165.9	57.0	32.8	92.0	0.7	—	—	—	—	1.5	—	—	3.5	—	2.3	—	—
5	207-216	211.9	76.0	62.5	20.2	1.1	—	6.4	11.7	—	—	—	60.6	—	—	—	—	—
9	311-320	312.0	58.9	35.7	85.4	—	10.9	—	—	—	—	—	—	1.4	—	2.3	—	—
10	320-329	320.5	78.8	66.8	63.0	6.3	—	2.6	—	—	6.2	—	8.4	13.5	—	—	—	—
11	329-338	329.3	76.9	63.9	5.0	—	—	—	2.8	—	—	—	92.2	—	—	—	—	—
		331.4	74.6	60.4	68.6	2.9	—	—	9.3	—	—	—	19.2	—	—	—	—	—
12	338-347	340.8	53.0	26.5	97.8	—	—	—	—	—	—	—	—	2.2	—	—	—	—
13	350-359	351.9	76.5	63.3	—	0.6	—	—	46.1	—	—	—	53.3	—	—	—	—	T
		353.8	76.7	63.6	—	—	—	—	10.9	—	—	—	89.1	—	—	—	—	—
		355.4	76.8	63.8	10.5	0.6	—	—	7.0	—	—	—	81.9	—	—	—	—	—
14	359-368	367.1	79.5	68.0	—	1.2	—	—	—	—	—	—	98.8	—	—	—	—	—
15	368-376	370.3	79.6	68.1	25.1	0.9	—	—	—	—	—	—	74.0	—	—	—	—	—
<b>2-20μ Fraction</b>																		
1	7-16	8.2	81.7	71.4	—	41.5	—	13.9	27.8	1.8	13.3	1.7	—	—	—	—	—	—
4	159-168	165.9	77.5	64.9	—	17.8	—	13.0	9.9	—	10.8	13.2	—	7.2	—	28.0	—	—
5	207-216	211.9	76.4	63.1	—	0.6	—	14.6	12.1	—	—	—	72.7	—	—	—	—	—
9	311-320	312.0	90.0	84.4	—	1.3	63.7	2.0	2.3	—	—	—	—	14.4	—	16.4	—	—
10	320-329	320.5	88.0	81.3	—	30.3	—	13.2	8.1	—	7.6	—	15.6	23.7	—	1.5	—	—
11	329-338	329.3	79.3	67.6	—	1.4	—	—	2.9	—	—	—	88.4	7.4	—	—	—	—
		331.4	76.2	62.8	—	1.7	—	—	6.4	—	—	—	87.7	4.2	—	—	—	—
12	338-347	340.8	92.4	88.1	—	11.9	—	—	9.1	—	10.9	—	51.5	11.9	—	4.6	—	—
13	350-359	351.9	77.8	65.3	—	0.9	—	—	39.3	—	—	—	53.3	6.5	—	—	—	P
		353.8	77.1	64.3	—	—	—	—	17.1	—	—	—	82.9	—	—	—	—	—
		355.4	76.1	62.7	—	0.4	—	—	—	—	—	—	99.6	—	—	—	—	—
14	359-368	367.1	77.9	65.4	—	0.7	—	—	—	—	—	—	99.3	—	—	—	—	—
15	368-376	370.3	81.7	71.5	—	3.7	—	—	5.2	—	—	—	91.0	—	—	—	—	—
<b>&lt;2μ Fraction</b>																		
1	7-16	8.2	88.8	82.6	—	11.0	—	6.6	7.1	12.6	15.6	—	28.3	19.0	—	—	—	—
4	159-168	165.9	89.1	82.9	—	3.5	—	—	—	—	6.3	—	23.1	62.5	—	4.6	—	—
5	207-216	211.9	72.4	56.9	—	—	—	—	—	—	—	—	100.0	—	—	—	—	—
9	311-320	312.0	88.0	81.3	—	0.6	63.6	—	—	—	—	—	28.6	—	7.2	—	—	—
10	320-329	320.5	89.7	83.9	—	11.2	—	—	—	—	6.4	—	49.9	32.6	—	—	—	—
11	329-338	329.3	71.6	55.5	—	—	1.8	2.3	—	—	—	—	95.8	—	—	—	—	—
		331.4	71.0	54.7	—	—	—	1.4	—	—	—	—	98.6	—	—	—	—	—
12	338-347	340.8	83.1	73.6	—	1.2	—	—	—	—	—	—	98.8	—	—	—	—	—
13	350-359	351.9	76.8	63.7	—	—	—	16.9	—	—	—	—	83.1	—	—	—	—	T
		353.8	75.3	61.4	—	—	—	2.0	—	—	—	—	98.0	—	—	—	—	—
		355.4	73.8	59.1	—	—	—	—	—	—	—	—	100.0	—	—	—	—	—
14	359-368	367.1	71.1	54.9	—	—	—	—	—	—	—	—	100.0	—	—	—	—	—
15	368-376	370.3	76.9	64.0	—	—	—	—	—	—	—	—	100.0	—	—	—	—	—

<sup>a</sup>Peaks at 2.14 Å, 2.52 Å, 1.87 Å and other positions.

**TABLE 15**  
**Results of X-ray Diffraction Analysis from Hole 245A**

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Calc.	Quar.	K-Fe.	Plag.	Kaol.	Mica	Chlo.	Mont.	Paly.	Gibb.
<b>Bulk Samples</b>														
1	26-35	26.8	89.2	83.2	—	20.0	3.5	17.0	6.4	18.4	—	7.5	26.3	1.0
2	54-63	58.8	67.9	49.8	76.0	6.7	3.5	2.3	1.2	6.0	—	—	4.3	—
4	72-81	78.2	82.9	73.3	38.5	13.0	10.6	7.0	1.8	15.6	0.9	7.6	4.9	—
5	91-100	96.5	86.5	78.8	—	17.4	17.0	8.8	1.9	12.0	1.1	8.1	33.6	—
6	100-109	101.8	87.9	81.1	6.6	15.9	16.8	4.7	2.1	11.6	1.1	3.3	37.8	—
<b>2-20<math>\mu</math> Fraction</b>														
1	26-35	26.8	82.6	72.9	—	33.5	20.1	30.1	4.4	10.9	—	—	—	1.1
2	54-63	58.8	85.1	76.7	—	37.7	14.5	21.2	4.2	22.4	—	—	—	—
4	72-81	78.2	79.4	67.7	—	33.5	18.9	23.6	—	22.2	1.8	—	—	—
5	91-100	96.5	78.1	65.7	—	31.5	27.5	18.0	—	20.4	2.6	—	—	—
6	100-109	101.8	80.8	70.0	—	27.7	27.2	16.7	—	19.3	2.1	6.9	—	—
<b>&lt;2<math>\mu</math> Fraction</b>														
1	26-35	26.8	87.3	80.1	—	14.6	6.0	11.1	11.4	16.7	—	33.7	5.6	0.9
2	54-63	58.8	89.8	84.1	—	9.4	—	—	10.1	25.0	—	35.5	20.0	—
4	72-81	78.2	90.9	85.8	—	12.0	6.8	1.8	6.9	15.7	—	18.2	38.5	—
5	91-100	96.5	87.6	80.6	—	6.7	0.5	0.3	4.1	10.0	2.0	19.0	57.4	—
6	100-109	101.8	91.8	87.2	—	7.6	—	—	—	12.8	—	18.0	61.7	—

**TABLE 16**  
Results of X-ray Diffraction Analysis from Hole 246

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Calc.	Quar.	K-Fe.	Plag.	Kaol.	Mont.	Clin.	Phil.	Pyri.	Mixl <sup>a</sup>	Hali.	Goet.
<b>Bulk Samples</b>																
5	128-137	136.2	61.2	39.4	54.0	2.7	43.4			-	-	-	-		T	
9	164-173	164.3	50.9	23.3	88.1	0.4	11.5			-	-	-	-		-	
		168.0	55.8	31.0	91.8	-	8.2			-	-	-	-		-	
		169.2	51.2	23.8	69.1	-	30.9			-	-	-	-		-	
10	176-185	177.4	73.4	58.4	33.0	1.2	50.1			3.2	0.7	11.8				
		177.9	78.7	66.7	34.5	1.4	49.9			3.6	-	10.5				
11	185-194	185.8	54.9	29.5	43.6	2.0	54.4			-	-	-				
		187.7	58.8	35.7	81.5	2.4	16.2			-	-	-			-	
<b>2-20<math>\mu</math> Fraction</b>																
5	128-137	136.2	86.8	79.4		11.2	77.2	8.5		-	-	-	-	3.1	T	
9	164-173	164.3	89.4	83.5		7.1	82.1	-		-	-	-	-	10.8	-	
		168.0	82.2	72.2		7.8	90.7	-		-	1.5	-	-	-	-	
		169.2	78.7	66.7		7.5	92.5	-		-	-	-	-	-	-	
10	176-185	177.4	84.2	75.2		3.1	51.6	-		6.4	3.8	35.1	-	-	-	
		177.9	84.3	75.5		2.3	65.6	-		3.5	2.8	25.8	-	-	-	
11	185-194	185.8	92.8	88.8		9.0	61.1	-		8.2	-	-	7.2	14.6	P	
		187.7	94.6	91.5		13.3	77.4	-		9.3	-	-	-	-	P	
<b>&lt;2<math>\mu</math> Fraction</b>																
5	128-137	136.2	94.9	92.0		4.1	34.1		8.7	32.7	-	-	20.4	-	P	
9	164-173	164.3	94.9	92.0		-	28.2		-	-	-	-	71.8	-	-	
		168.0	95.5	93.0		7.6	23.1		-	-	-	-	69.3	-	-	
		169.2	95.3	92.7		-	-		-	-	-	-	100.0	-	T	
10	176-185	177.4	85.5	77.3		2.3	35.4		-	17.0	2.1	39.3	-	3.9	-	
		177.9	85.7	77.6		-	7.6		-	67.1	-	25.3	-	-	-	
11	185-194	185.8	96.8	95.0		-	14.3		-	52.3	-	-	33.4	-	A	
		187.7	94.2	91.0		-	-		-	64.0	-	-	36.0	-	-	

<sup>a</sup>Mixl is a possible mixed layer clay with a broad peak at about 11 Å in the first samples and 10.5 Å in the last samples.

**TABLE 17**  
Results of X-ray Diffraction Analysis from Hole 248

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Calc.	Rhod.	Quar.	Cris.	K-Fe.	Plag.	Kaol.	Mica	Mont.	Chlo.	Paly.	Trid.	Clin.	Hema.	Pyri.	Amph.	Hali.
<b>Bulk Samples</b>																					
2	1-10	3.7	79.1	67.3	21.1	—	21.0	—	15.2	15.8	5.1	15.6	6.2	—	—	—	—	—	—	—	
4	121-130	121.0	83.1	73.6	26.7	—	17.4	—	5.4	12.9	3.9	23.9	8.7	—	—	—	—	—	—	1.1	
10	312-321	314.8	84.9	76.5	—	—	18.0	22.8	2.2	6.5	—	7.1	12.0	28.3	3.3	—	—	—	—	—	
11	360-369	361.4	85.7	77.7	—	—	17.7	22.2	4.1	7.0	—	7.8	9.3	28.1	2.6	—	—	—	—	1.0	
		363.3	87.0	79.6	—	—	13.4	37.0	6.6	6.2	—	7.0	5.5	21.3	3.0	—	—	—	—	—	
		363.4	79.6	68.0	—	32.0	11.7	15.8	6.5	7.2	—	6.5	6.2	14.1	—	—	—	—	—	—	
12	389-398	393.0	82.7	72.9	—	—	25.2	10.3	9.8	11.0	—	12.9	20.3	6.1	—	4.5	—	—	—	—	
13	398-407	399.3	85.0	76.6	—	—	6.8	—	—	—	—	4.3	7.0	81.9	—	—	—	—	—	—	
14	407-416	407.7	84.5	75.8	—	—	15.2	—	10.3	4.1	—	14.6	9.9	37.5	—	—	8.4	—	—	—	
		416.0	85.4	77.2	—	—	20.6	—	24.0	2.0	2.1	17.3	11.2	22.8	—	—	—	—	—	—	
<b>2-20<math>\mu</math> Fraction</b>																					
2	1-10	3.7	78.8	66.9	—	34.3	—	17.1	19.1	7.4	21.1	—	—	—	—	—	—	—	—	1.0	
4	121-130	121.0	79.4	67.8	—	36.2	—	15.9	19.9	4.0	24.2	—	—	—	—	—	—	—	—	—	
10	312-321	314.8	82.9	73.3	—	22.5	29.9	7.4	10.6	—	14.6	1.6	10.4	3.0	—	—	—	—	—	—	
11	360-369	361.4	85.9	78.0	—	19.6	38.0	7.6	8.8	—	11.5	—	9.4	4.1	—	—	1.0	—	—	—	
		363.3	85.2	76.8	—	17.3	44.3	5.9	9.1	—	6.4	—	16.9	—	—	—	—	—	—	—	
		363.4	78.3	66.0	26.7	18.9	19.3	6.2	9.9	—	11.3	—	7.7	—	—	—	—	—	—	—	
12	389-398	393.0	70.8	54.3	—	40.1	5.8	14.9	19.0	—	18.9	—	—	1.3	—	—	—	—	—	—	
13	398-407	399.3	81.2	70.6	—	33.8	—	21.6	16.4	—	17.7	—	10.5	—	—	—	—	—	—	—	
14	407-416	407.7	71.7	55.7	—	36.1	—	22.2	12.3	—	23.6	2.1	—	—	—	3.7	—	—	—	—	
		416.0	75.0	61.0	—	32.7	—	40.0	6.4	—	19.6	1.3	—	—	—	—	—	—	—	—	
<b>&lt;2<math>\mu</math> Fraction</b>																					
2	1-10	3.7	85.8	77.9	—	7.6	—	—	—	20.4	14.8	41.1	16.0	—	—	—	—	—	—	—	
4	121-130	121.0	85.9	78.0	—	7.7	—	—	—	17.6	17.5	33.5	23.8	—	—	—	—	—	—	—	
10	312-321	314.8	85.9	78.0	—	6.1	13.5	—	—	—	5.5	29.3	43.4	2.2	—	—	—	—	—	—	
11	360-369	361.4	87.3	80.1	—	2.6	—	—	—	—	7.7	32.8	53.8	2.3	—	0.8	—	—	—	—	
		363.3	88.4	81.8	—	3.4	5.4	—	—	—	—	29.6	59.2	2.4	—	—	—	—	—	3.1	
		363.4	86.8	79.0	—	3.7	—	—	—	—	5.0	31.5	54.1	2.5	—	—	—	—	—	—	
12	389-398	393.0	83.1	73.6	—	4.4	0.6	—	—	—	—	39.9	55.0	—	—	—	—	—	—	—	
13	398-407	399.3	87.2	80.0	—	3.2	—	—	—	—	—	4.6	87.3	—	—	—	—	—	—	5.0	
14	407-416	407.7	84.1	75.2	—	9.1	—	—	—	—	18.4	9.2	49.7	—	10.6	—	3.0	—	1.5	5.0	
		416.0	89.8	84.1	—	7.7	—	3.4	—	—	7.2	36.0	39.2	—	—	—	—	—	—	—	

**TABLE 18**  
Results of X-ray Diffraction Analysis from Hole 249

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Calc.	Quar.	Cris.	K-Fe.	Plag.	Kaol.	Mica	Chlo.	Mont. <sup>a</sup>	Paly.	Trid.	Clin.	Anal.	Hema.	Pyri.	Hali.	Magn.	Goet	U-3 <sup>b</sup>
<b>Bulk Samples</b>																							
21	256-265	257.6 258.5	62.6 70.8	41.6 54.4	88.8 63.1	4.0 6.6	— —	1.3 2.7	— 5.0	— —	2.3 7.0	— —	3.6 15.5	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
23	284-293	286.1 289.4	71.4 81.9	55.2 71.8	61.0 19.2	6.2 13.6	— —	4.9 4.9	5.3 15.6	— —	6.5 10.7	1.2 9.6	14.1 9.7	— —	0.9 16.8	— —	— —	— —	— —	— —	— —	— —	— —
24	294-303	303.0	91.6	86.9	—	7.1	58.7	3.5	6.7	—	1.9	—	3.4	16.4	—	—	—	2.3	—	—	—	—	
25	303-312	303.8 305.3 312.0	85.6 80.8 73.7	77.5 70.0 58.9	15.6 8.2 76.3	8.7 0.7 1.6	15.0 — —	8.7 24.6 —	15.8 — 6.2	— — —	2.4 2.5	2.7 65.2 —	7.9 — —	7.5 — —	12.0 — 7.3	— — —	— — —	— — —	3.6 1.3 6.1	— — —	— — —	— — —	— — —
26	313-322	315.4 322.0	79.8 87.7	68.5 80.7	20.0 18.7	3.1	17.0	—	22.9	—	—	15.9	—	1.3	12.9	—	—	6.9	— —	— —	— —	— —	— —
27	322-331	331.0	88.9	82.6	19.5	5.5	34.6	—	10.5	—	—	—	—	—	21.8	1.7	—	6.4	— —	— —	— —	— —	— —
28	332-341	341.0	80.6	69.7	33.4	2.1	39.5	2.5	4.9	—	—	3.3	—	5.6	4.8	—	—	3.8	— —	— —	— —	— —	— —
29	351-360	360.0	85.5	77.3	10.9	2.4	51.3	2.8	8.3	—	—	4.3	—	9.7	5.0	—	—	5.3	— —	— —	— —	— —	— —
30	370-379	379.0	84.3	75.4	13.5	2.4	50.5	1.7	10.2	—	—	3.4	—	9.0	5.4	—	—	3.9	— —	— —	— —	— —	— —
31	389-398	392.4 398.0	73.5 83.5	58.6 74.2	13.4 7.1	6.1 3.6	— 54.9	— —	18.8 6.3	— —	— —	16.6 3.1	— —	— 12.7	38.1 9.7	— —	— —	7.0 2.7	— —	— —	— —	— —	— —
32	405-408	408.0	84.6	76.0	—	9.3	—	—	—	17.5	—	73.3	—	—	—	—	—	—	—	—	P	—	—
33	408-412	409.7 410.3 410.4	50.2 75.5 71.4	22.1 61.7 55.3	89.6 3.7 —	0.6 — —	— — —	3.0 — 52.6	— — —	— — 1.5	— — —	5.8 59.6 42.3	— — —	— — —	1.1 25.1 1.5	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
<b>2-20μ Fraction</b>																							
21	256-265	257.6 258.5	78.0 75.2	65.7 61.3	— 43.3	50.9 20.5	— 17.8	19.1 13.4	19.8 1.4	— —	— —	— —	— —	— —	— —	— —	— —	— 3.6	— —	— —	— —	— —	
23	284-293	286.1 289.4	80.7 73.9	69.9 59.1	— 23.0	26.5 12.6	— 24.6	18.1 8.0	28.9 —	— —	10.1 —	1.8 —	— —	11.2 —	— —	— 31.8	— —	— —	2.2 —	— —	— —	— —	— —
24	294-303	303.0	91.1	86.1	—	13.2	52.8	7.6	8.1	— —	— —	— —	— —	— —	16.7 —	— —	— —	1.5	— —	— —	— —	— —	
25	303-312	303.8 305.3 312.0	82.0 87.0 73.9	71.8 79.7 59.3	— — —	10.1 23.7 7.0	— — —	28.8 23.7 26.9	7.5 — 5.1	17.1 — —	3.2 — —	— — —	— — —	— — —	6.5 — —	18.4 — —	— —	8.4 9.5 24.4	— — —	— — —	— — —	— — —	
26	313-322	315.4	78.2	65.9	—	4.7	27.4	—	26.1	— —	— —	11.3	— —	2.2	13.0	— —	— —	15.3	— —	— —	— —	— —	
27	322-331	331.0	90.5	85.1	—	4.7	59.1	4.7	10.1	— —	— —	— —	— —	— —	11.9	1.3	— —	8.2	— —	— —	— —	— —	
28	332-341	341.0	82.8	73.1	—	3.5	56.1	—	9.9	— —	— —	— —	— —	— —	8.5	12.1	— —	9.9	— —	— —	— —	— —	
29	351-360	360.0	81.6	71.2	—	2.7	60.7	2.9	9.1	— —	— —	— —	— —	— —	8.2	5.5	— —	10.9	— —	— —	— —	— —	
30	370-379	379.0	84.4	75.7	—	3.2	61.8	—	11.1	— —	— —	— —	— —	— —	9.7	6.5	— —	7.7	— —	— —	— —	— —	
31	389-398	392.4 398.0	68.3 81.6	50.5 71.3	— —	6.9 2.8	— 53.4	— —	18.1 8.0	— —	— —	10.0 —	— —	— —	51.6 12.5	— 17.2	— —	13.5 6.1	— —	— —	— —	— —	
33	408-412	410.4	74.2	59.7	—	1.6	— —	50.9	— —	3.3	— —	35.0	— —	— —	1.6	— —	— —	7.6	— —	— —	— —	— —	

TABLE 18 - *Continued*

Core	Cored Interval Below Sea Floor (m)	Sample Depth Below Sea Floor (m)	Diff.	Amor.	Calc.	Quar.	Cris.	K-Fe.	Plag.	Kaol.	Mica	Chlo.	Mont. <sup>a</sup>	Paly.	Trid.	Clin.	Anal.	Hema.	Pyri.	Hali.	Magn.	Goet.	U-3 <sup>b</sup>	
<b>&lt;2<math>\mu</math> Fraction</b>																								
21	256-265	257.6	89.6	83.8		9.2	-		-	-	-	-	54.3	36.5	-	-	-	-	-	-	-	-	-	
		258.5	88.2	81.6		14.2	-		-	-	-	-	1.5	38.3	46.0	-	-	-	-	-	-	-	-	
23	284-293	286.1	87.8	81.0		12.2	-		3.2	-	7.7	-	10.7	60.6	-	2.6	-	-	2.8	-	-	-	-	
		289.4	90.0	84.3		6.8	-		8.1	-	6.9	-	33.0	12.4	-	16.9	-	-	15.9	-	-	-	-	
24	294-303	303.0	92.9	88.9		1.1	41.0		-	-	9.6	-	10.6	22.4	15.4	-	-	-	-	-	-	-	-	
25	303-312	303.8	93.7	90.1		2.3	38.7		-	-	-	-	5.7	-	29.7	17.6	6.0	-	-	-	-	2.7	8.8	-
		305.3	80.3	69.2		-	-		-	-	-	-	-	88.4	-	-	-	-	-	-	-	-	-	-
		312.0	95.7	93.2		5.4	-		-	-	-	-	26.4	-	41.0	-	8.8	-	18.5	-	-	-	-	-
26	313-322	315.4	86.3	78.6		1.2	2.9		-	-	-	-	-	74.7	-	14.7	-	-	6.5	-	-	-	-	-
27	322-331	331.0	95.5	93.0		0.7	71.2		2.0	-	-	-	-	11.2	-	14.9	-	-	-	-	-	-	-	-
28	332-341	341.0	91.4	86.6		1.1	70.1		-	-	-	-	-	14.5	-	8.1	2.8	-	3.4	-	-	-	-	-
29	351-360	360.0	90.0	84.4		-	68.4		-	-	-	-	-	22.8	-	6.6	1.2	-	1.0	-	-	-	-	-
30	370-379	379.0	91.5	86.7		0.4	66.8		-	-	-	-	-	18.8	-	10.3	1.7	-	2.1	-	-	-	-	-
31	389-398	392.4	91.5	86.7		1.5	-		-	-	-	-	-	77.0	-	-	4.0	-	5.3	12.2	-	-	-	-
		398.0	89.6	83.8		-	60.6		-	-	-	-	-	27.1	-	8.5	3.8	-	-	-	-	-	-	-
32	405-408	408.0	83.1	73.6		5.2	-		-	20.8	-	-	-	73.2	-	-	-	-	0.9	-	-	P	-	-
33	408-412	409.7	88.8	82.5		-	-		-	-	15.5	-	82.5	-	-	-	-	-	2.0	-	-	-	-	-
		410.4	-	-		-	-		5.7	-	-	-	88.9	-	-	-	-	-	-	-	-	5.4	-	-

<sup>a</sup>Mont. at 410.4 meters may be partly or wholly something other than montmorillonite. Note: S = strong; M = medium; and W = weak.

1) The table of (Mont.) intensities for 410.4 meters for bulk samples and <2 $\mu$  fraction is as follows:

14.0 $\text{\AA}$	4.60 $\text{\AA}$	4.50 $\text{\AA}$	3.44 $\text{\AA}$	2.58 $\text{\AA}$	2.39 $\text{\AA}$	1.704 $\text{\AA}$	1.533 $\text{\AA}$	1.507 $\text{\AA}$
S	W	M	M	M	W	W	W	W
sharp	broad	broad	sharp	broad	broad	very brd	sharp	broad

2) The table of (Mont) intensities for 410.4 meters for the 2-20 $\mu$  fraction is as follows:

17.7 $\text{\AA}$	4.60 $\text{\AA}$	4.50 $\text{\AA}$		2.58 $\text{\AA}$	2.39 $\text{\AA}$	1.704 $\text{\AA}$	1.533 $\text{\AA}$	1.507 $\text{\AA}$
S	W	M		M	W	W	W	W
sharp	broad	broad		broad	broad	very brd	sharp	broad

<sup>b</sup>Somewhat broad peaks at 3.09 $\text{\AA}$ , 3.64 $\text{\AA}$ , 3.33 $\text{\AA}$  and many other positions.