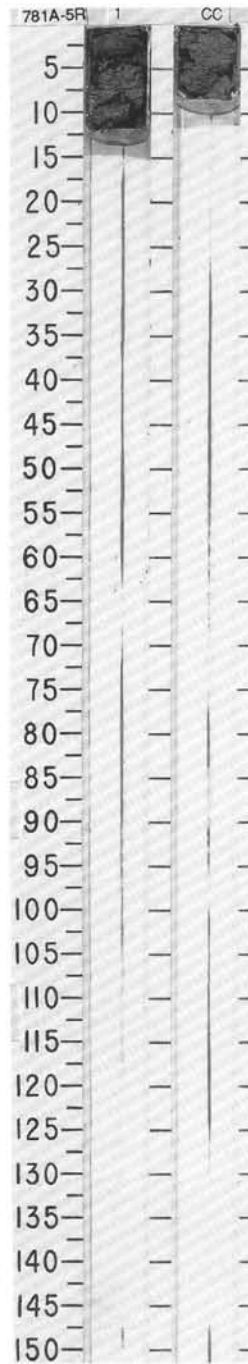


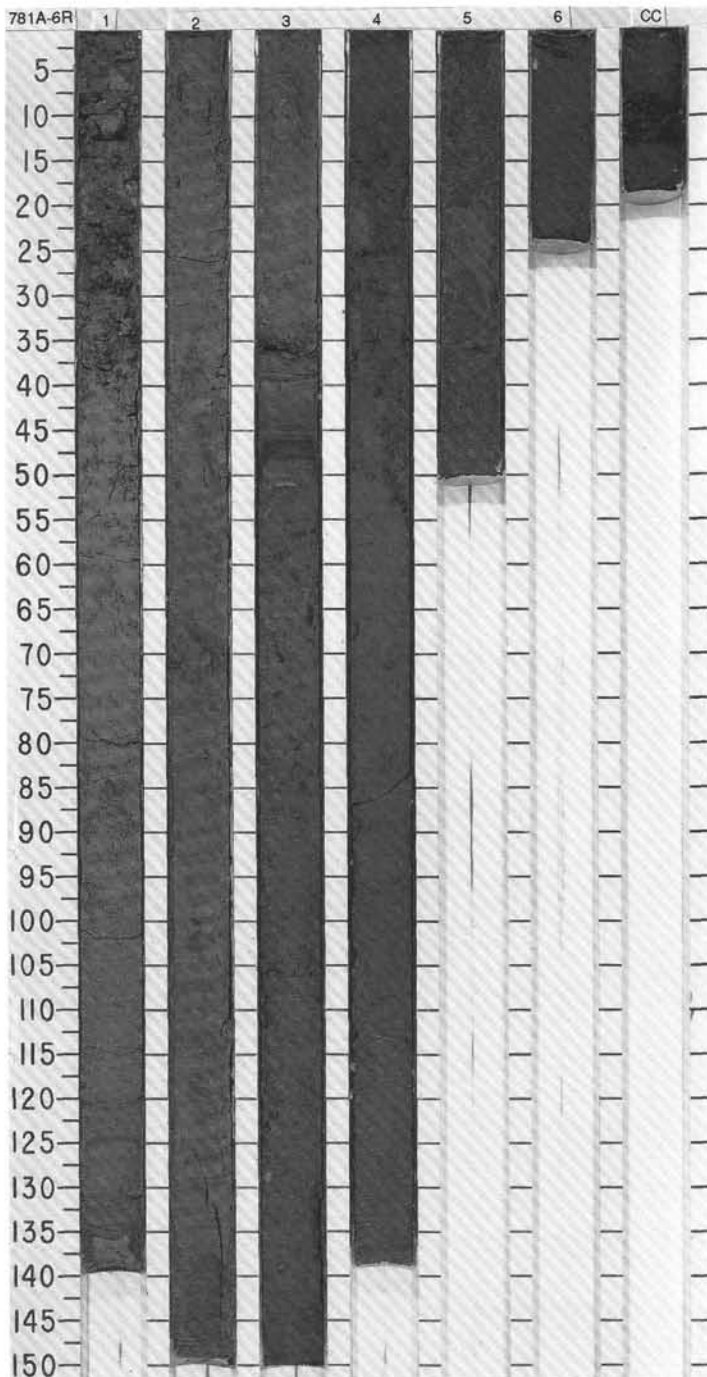
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER			PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																						
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS																																																																
LOWER/MIDDLE PLEISTOCENE	B	A/G		?			CC					*	<p>VOLCANIC GLASS-RICH CLAY AND SILTY CLAY</p> <p>Major lithology: VOLCANIC GLASS-RICH CLAY AND SILTY CLAY, dark brown (10YR 3/3) and olive gray (5Y 4/2). Homogeneous texture with one sharp contact at 4 cm in Section 1.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="0"> <tr> <td></td> <td>1, 2</td> <td>1, 6</td> </tr> <tr> <td>D</td> <td>D</td> <td>D</td> </tr> </table> <p>TEXTURE:</p> <table border="0"> <tr> <td>Sand</td> <td>10</td> <td>5</td> </tr> <tr> <td>Silt</td> <td>60</td> <td>30</td> </tr> <tr> <td>Clay</td> <td>30</td> <td>65</td> </tr> </table> <p>COMPOSITION:</p> <table border="0"> <tr> <td>Carbonate grains</td> <td>3</td> <td>—</td> </tr> <tr> <td>Chlorite</td> <td>—</td> <td>Tr</td> </tr> <tr> <td>Clay</td> <td>22</td> <td>25</td> </tr> <tr> <td>Diatoms</td> <td>—</td> <td>Tr</td> </tr> <tr> <td>Feldspar</td> <td>5</td> <td>—</td> </tr> <tr> <td>Foraminifers</td> <td>1</td> <td>Tr</td> </tr> <tr> <td>Glass</td> <td>29</td> <td>45</td> </tr> <tr> <td>Micrite</td> <td>15</td> <td>5</td> </tr> <tr> <td>Nannofossils</td> <td>10</td> <td>20</td> </tr> <tr> <td>Opagues</td> <td>8</td> <td>—</td> </tr> <tr> <td>Radiolarians</td> <td>2</td> <td>—</td> </tr> <tr> <td>Serpentine</td> <td>—</td> <td>Tr</td> </tr> <tr> <td>Zoisite</td> <td>5</td> <td>5</td> </tr> </table>		1, 2	1, 6	D	D	D	Sand	10	5	Silt	60	30	Clay	30	65	Carbonate grains	3	—	Chlorite	—	Tr	Clay	22	25	Diatoms	—	Tr	Feldspar	5	—	Foraminifers	1	Tr	Glass	29	45	Micrite	15	5	Nannofossils	10	20	Opagues	8	—	Radiolarians	2	—	Serpentine	—	Tr	Zoisite	5	5
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SITE 781 HOLE A CORE 6R CORED INTERVAL 4465.5-4475.1 mbsl; 44.9-54.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																																																																																															
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LOWER PLEISTOCENE	R/P	CN14a	B	R	?	0-64.8	0-65.7	1	0.5	[Lithology symbols]	F	F	*	VOLCANIC GLASS-RICH SILT, SAND, AND CLAY																																																																																																																															
					0-51.62	0-51.65	2	1.0	Major lithology: VOLCANIC GLASS-RICH SILT, SAND, AND CLAY, dark gray (5Y 4/1) and olive (5Y 4/3) with slight variations in shade highlighting sedimentary structures. Core consists of several fining-upward units with sharp basal contacts. Load casts are common and upper portions of units are characterized by faint parallel to slightly wavy laminations. Burrowing occurs locally. Radiolarians and other siliceous biogenic fragments are common.																																																																																																																																				
					0-70.9	0-71.52	3		SMEAR SLIDE SUMMARY (%):																																																																																																																																				
					0-74.6	0-75.1	4		<table border="1"> <tr> <td>M</td> <td>1, 20</td> <td>1, 20</td> <td>1, 50</td> <td>1, 130</td> <td>1, 138</td> <td>2, 10</td> <td>2, 70</td> </tr> <tr> <td>D</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					M	1, 20	1, 20	1, 50	1, 130	1, 138	2, 10	2, 70	D																																																																																																																							
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	0-77.4	0-77.9	5		TEXTURE:																																																																																																																																								
	0-81.1	0-81.6			<table border="1"> <tr> <td>Sand</td> <td>40</td> <td>20</td> <td>—</td> <td>—</td> <td>—</td> <td>10</td> <td>10</td> </tr> <tr> <td>Silt</td> <td>40</td> <td>60</td> <td>70</td> <td>90</td> <td>90</td> <td>70</td> <td>80</td> </tr> <tr> <td>Clay</td> <td>20</td> <td>20</td> <td>30</td> <td>10</td> <td>10</td> <td>20</td> <td>10</td> </tr> </table>	Sand	40	20	—	—	—	10	10	Silt	40	60	70	90	90	70	80	Clay	20	20	30	10	10	20	10																																																																																																																
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	0-87.1	0-87.6			<table border="1"> <tr> <td>D</td> <td>2, 140</td> <td>3, 10</td> <td>3, 30</td> <td>3, 48</td> <td>3, 120</td> <td>4, 100</td> <td>6, 10</td> </tr> <tr> <td>D</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	D	2, 140	3, 10	3, 30	3, 48	3, 120	4, 100	6, 10	D																																																																																																																															
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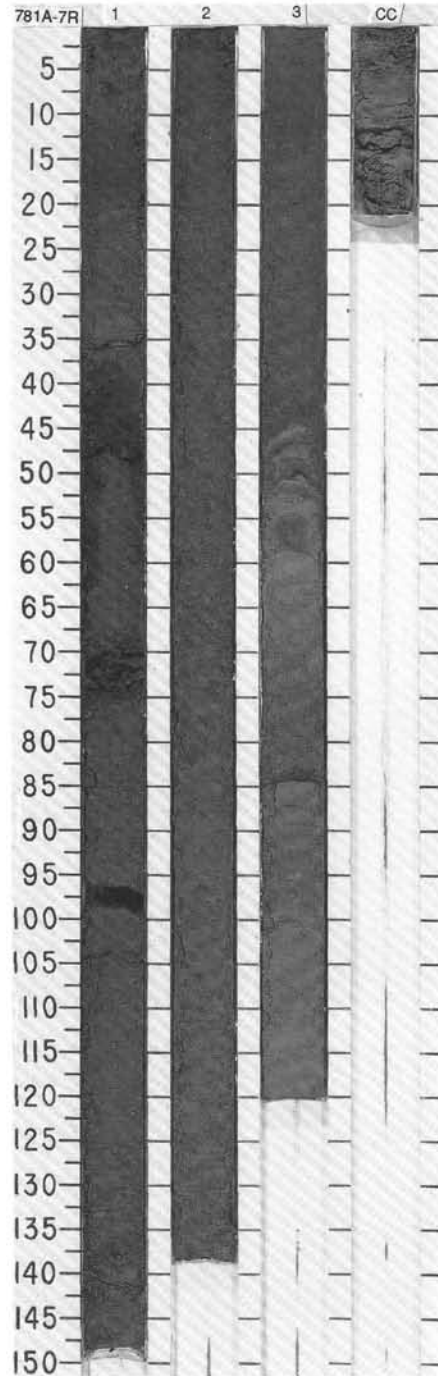
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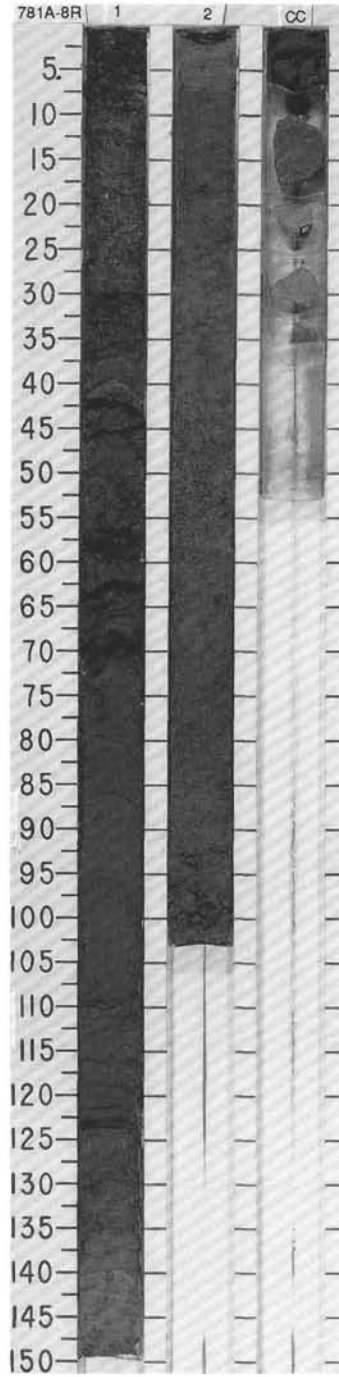
TIME - ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER			PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS									
							1	0.5 1.0				(cont.)
							2					SMEAR SLIDE SUMMARY (%): CC, 10 D TEXTURE: Sand 20 Silt 40 Clay 40 COMPOSITION: Chlorite Tr Clay 45 Glass 30 Micrite Tr Nannofossils Tr Opaques 10 Radiolarians Tr Zeolite Tr Zoisite 15

SITE 781 HOLE A CORE 7R CORED INTERVAL 4475.1-4485.1 mbsl; 54.5-64.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER			PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																																																																																																																																																																																												
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LOWER PLEISTOCENE		CN14a		R	0-65.4 P-1.65 0.77		1	0.5 1.0					<p>* VOLCANIC GLASS-RICH SILT, SAND, AND CLAY</p> <p>Major lithology: VOLCANIC GLASS-RICH SILT, SAND, AND CLAY, dark gray (5Y 4/1), very dark gray (5Y 3/1) and light gray (5Y 6/1) with slight variations in shade highlighting sedimentary structures. Core consists of several fining-upward units with sharp basal contacts. Load casts are common and upper portions of units are characterized by faint parallel to slightly wavy laminations. Burrowing occurs locally. Radiolarians and other siliceous biogenic fragments are common.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>1, 9</td> <td>1, 30</td> <td>1, 109</td> <td>2, 102</td> <td>3, 20</td> <td>3, 47</td> <td>3, 83</td> </tr> <tr> <td>D</td> <td></td> <td>M</td> <td>D</td> <td>D</td> <td>D</td> <td>M</td> <td>D</td> </tr> </table> <p>TEXTURE:</p> <table border="1"> <tr> <td>Sand</td> <td>10</td> <td>20</td> <td>30</td> <td>10</td> <td>2</td> <td>5</td> <td>95</td> </tr> <tr> <td>Silt</td> <td>60</td> <td>40</td> <td>40</td> <td>65</td> <td>63</td> <td>80</td> <td>5</td> </tr> <tr> <td>Clay</td> <td>30</td> <td>40</td> <td>30</td> <td>25</td> <td>35</td> <td>15</td> <td>—</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Amphibole</td> <td>Tr</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>Carbonate grains</td> <td>—</td> <td>3</td> <td>3</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>Chlorite</td> <td>—</td> <td>—</td> <td>—</td> <td>2</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>Clay</td> <td>16</td> <td>12</td> <td>44</td> <td>19</td> <td>35</td> <td>10</td> <td>—</td> </tr> <tr> <td>Epidote</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>6</td> </tr> <tr> <td>Feldspar</td> <td>3</td> <td>—</td> <td>1</td> <td>5</td> <td>—</td> <td>5</td> <td>2</td> </tr> <tr> <td>Foraminifers</td> <td>3</td> <td>4</td> <td>—</td> <td>—</td> <td>—</td> <td>4</td> <td>12</td> </tr> <tr> <td>Glass</td> <td>45</td> <td>50</td> <td>25</td> <td>45</td> <td>23</td> <td>54</td> <td>32</td> </tr> <tr> <td>Micrite</td> <td>15</td> <td>3</td> <td>—</td> <td>10</td> <td>9</td> <td>5</td> <td>—</td> </tr> <tr> <td>Nannofossils</td> <td>5</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>3</td> <td>3</td> </tr> <tr> <td>Opauques</td> <td>7</td> <td>10</td> <td>4</td> <td>4</td> <td>12</td> <td>8</td> <td>17</td> </tr> <tr> <td>Pyroxene</td> <td>Tr</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>1</td> <td>—</td> </tr> <tr> <td>Radiolarians</td> <td>3</td> <td>6</td> <td>6</td> <td>3</td> <td>3</td> <td>—</td> <td>—</td> </tr> <tr> <td>Rock fragment</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>10</td> <td>—</td> </tr> <tr> <td>Serpentine</td> <td>—</td> <td>9</td> <td>8</td> <td>8</td> <td>13</td> <td>—</td> <td>—</td> </tr> <tr> <td>Silicoflagellates</td> <td>—</td> <td>1</td> <td>5</td> <td>1</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>Spicules</td> <td>Tr</td> <td>2</td> <td>4</td> <td>3</td> <td>5</td> <td>—</td> <td>—</td> </tr> <tr> <td>Zoisite</td> <td>3</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>28</td> </tr> </table> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>3, 116</td> <td>CC, 6</td> </tr> <tr> <td>D</td> <td></td> <td>D</td> </tr> </table> <p>TEXTURE:</p> <table border="1"> <tr> <td>Sand</td> <td>10</td> <td>2</td> </tr> <tr> <td>Silt</td> <td>70</td> <td>60</td> </tr> <tr> <td>Clay</td> <td>20</td> <td>38</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Clay</td> <td>30</td> <td>30</td> </tr> <tr> <td>Feldspar</td> <td>7</td> <td>10</td> </tr> <tr> <td>Glass</td> <td>55</td> <td>50</td> </tr> <tr> <td>Nannofossils</td> <td>Tr</td> <td>—</td> </tr> <tr> <td>Opauques</td> <td>7</td> <td>10</td> </tr> <tr> <td>Pyroxene</td> <td>Tr</td> <td>—</td> </tr> <tr> <td>Radiolarians</td> <td>1</td> <td>—</td> </tr> </table>		1, 9	1, 30	1, 109	2, 102	3, 20	3, 47	3, 83	D		M	D	D	D	M	D	Sand	10	20	30	10	2	5	95	Silt	60	40	40	65	63	80	5	Clay	30	40	30	25	35	15	—	Amphibole	Tr	—	—	—	—	—	—	Carbonate grains	—	3	3	—	—	—	—	Chlorite	—	—	—	2	—	—	—	Clay	16	12	44	19	35	10	—	Epidote	—	—	—	—	—	—	6	Feldspar	3	—	1	5	—	5	2	Foraminifers	3	4	—	—	—	4	12	Glass	45	50	25	45	23	54	32	Micrite	15	3	—	10	9	5	—	Nannofossils	5	—	—	—	—	3	3	Opauques	7	10	4	4	12	8	17	Pyroxene	Tr	—	—	—	—	1	—	Radiolarians	3	6	6	3	3	—	—	Rock fragment	—	—	—	—	—	10	—	Serpentine	—	9	8	8	13	—	—	Silicoflagellates	—	1	5	1	—	—	—	Spicules	Tr	2	4	3	5	—	—	Zoisite	3	—	—	—	—	—	28		3, 116	CC, 6	D		D	Sand	10	2	Silt	70	60	Clay	20	38	Clay	30	30	Feldspar	7	10	Glass	55	50	Nannofossils	Tr	—	Opauques	7	10	Pyroxene	Tr	—	Radiolarians	1	—
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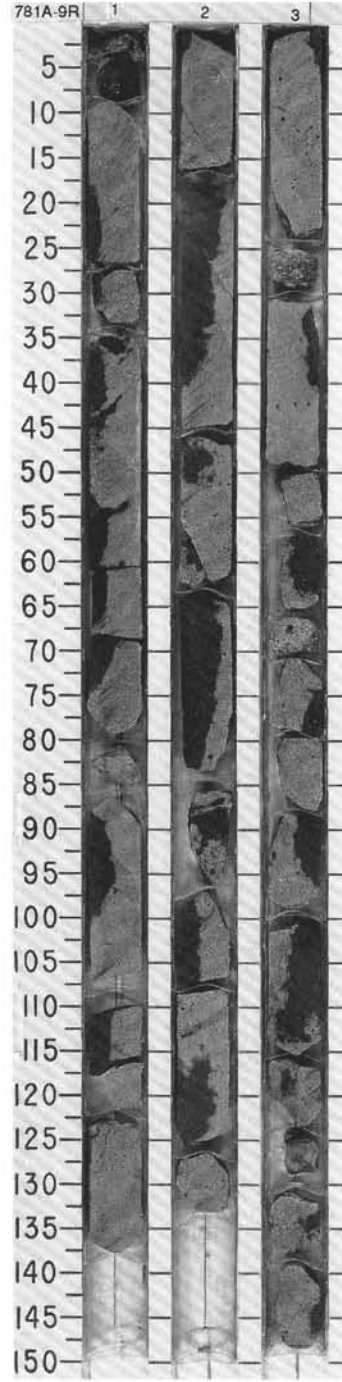


TIME-ROCK UNIT	BIGSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																																																																																		
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UPPER PLIOCENE	B	FN12B			N			1	0.5					VITRIC-AND CLAY-RICH SILT Major lithology: VITRIC- AND CLAY-RICH SILT, dark gray (5Y 5/1), gray (5Y 5/1), to dark grayish brown (10YR 3/2) with slight variations in shade highlighting sedimentary structures. Core consists of several fining-upward units with sharp basal contacts. The upper portions of units are characterized by faint parallel to slightly wavy laminations and local small-scale ripples. The base of one unit (at 58 to 56 cm in Section 2) is inversely graded. Burrowing occurs locally. Radiolarians and other siliceous biogenic fragments are common. SMEAR SLIDE SUMMARY (%): <table border="1"> <tr> <td></td> <td>1.48</td> <td>1.143</td> <td>2.5</td> <td>2.80</td> <td>CC. 2</td> </tr> <tr> <td></td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> </tr> </table> TEXTURE: <table border="1"> <tr> <td>Sand</td> <td>30</td> <td>1</td> <td>20</td> <td>30</td> <td>20</td> </tr> <tr> <td>Silt</td> <td>50</td> <td>80</td> <td>50</td> <td>60</td> <td>60</td> </tr> <tr> <td>Clay</td> <td>20</td> <td>19</td> <td>30</td> <td>10</td> <td>20</td> </tr> </table> COMPOSITION: <table border="1"> <tr> <td>Amphibole</td> <td>3</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>Carbonate grains</td> <td>—</td> <td>5</td> <td>5</td> <td>—</td> <td>—</td> </tr> <tr> <td>Chlorite</td> <td>—</td> <td>—</td> <td>—</td> <td>Tr</td> <td>—</td> </tr> <tr> <td>Clay</td> <td>19</td> <td>20</td> <td>20</td> <td>25</td> <td>35</td> </tr> <tr> <td>Diatoms</td> <td>—</td> <td>—</td> <td>2</td> <td>1</td> <td>—</td> </tr> <tr> <td>Feldspar</td> <td>10</td> <td>8</td> <td>8</td> <td>10</td> <td>10</td> </tr> <tr> <td>Foraminifers</td> <td>1</td> <td>10</td> <td>10</td> <td>—</td> <td>—</td> </tr> <tr> <td>Glass</td> <td>30</td> <td>41</td> <td>36</td> <td>40</td> <td>45</td> </tr> <tr> <td>Nannofossils</td> <td>3</td> <td>2</td> <td>2</td> <td>Tr</td> <td>—</td> </tr> <tr> <td>Opalines</td> <td>25</td> <td>8</td> <td>10</td> <td>7</td> <td>—</td> </tr> <tr> <td>Pyroxene</td> <td>5</td> <td>—</td> <td>2</td> <td>2</td> <td>—</td> </tr> <tr> <td>Radiolarians</td> <td>1</td> <td>5</td> <td>—</td> <td>10</td> <td>Tr</td> </tr> <tr> <td>Rock fragment</td> <td>—</td> <td>—</td> <td>—</td> <td>5</td> <td>—</td> </tr> <tr> <td>Spicules</td> <td>3</td> <td>—</td> <td>5</td> <td>—</td> <td>10</td> </tr> </table>		1.48	1.143	2.5	2.80	CC. 2		D	D	D	D	D	Sand	30	1	20	30	20	Silt	50	80	50	60	60	Clay	20	19	30	10	20	Amphibole	3	—	—	—	—	Carbonate grains	—	5	5	—	—	Chlorite	—	—	—	Tr	—	Clay	19	20	20	25	35	Diatoms	—	—	2	1	—	Feldspar	10	8	8	10	10	Foraminifers	1	10	10	—	—	Glass	30	41	36	40	45	Nannofossils	3	2	2	Tr	—	Opalines	25	8	10	7	—	Pyroxene	5	—	2	2	—	Radiolarians	1	5	—	10	Tr	Rock fragment	—	—	—	5	—	Spicules	3	—	5	—	10
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SITE 781 HOLE A CORE 9R CORED INTERVAL 4493.2-4502.9 mbsl; 72.6-82.3 mbsf

TIME - ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER			PALEOMAGNETICS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS							
										No sedimentary material was recovered in this core.
				R	1	0.5 1.0	IM			
					2		IM			
					3		IM			

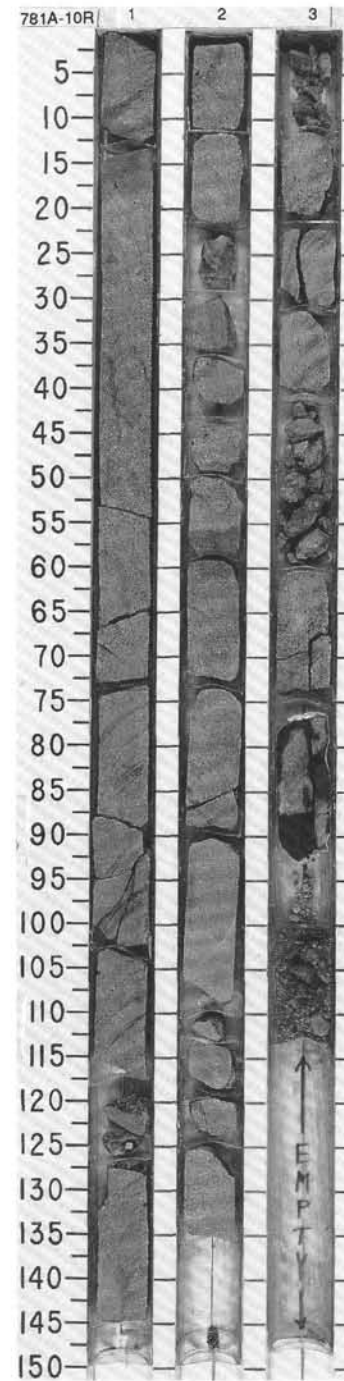


TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RAD/COLARIANS	DIATOMS										
					R	V-5.1 ● 0-6.3 P-2.62			0.5 1.0	IM				No sedimentary material was recovered in this core.
						V-5.2 ● 0-5.5 P-2.61		2		IM				
						V-5.3 ● 0-4.0 P-2.62		3		IM				

781 A 11R NO RECOVERY

781 A 12R NO RECOVERY

781 A 13R NO RECOVERY

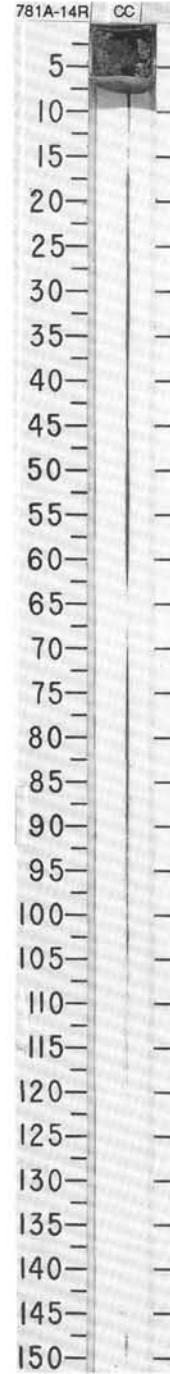


SITE 781 HOLE A CORE 14R CORED INTERVAL 4541.3-4551.0 mbsf; 120.7-130.4 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	# SAMPLES	LITHOLOGIC DESCRIPTION																		
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																											
					?			CC					<p>VITRIC SILTY CLAY</p> <p>Major lithology: VITRIC SILTY CLAY, dark gray (10YR 4/1). Core shows little stratigraphic integrity because of severe drilling disturbance.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table style="margin-left: 20px;"> <tr><td>CC, 2</td></tr> <tr><td>D</td></tr> </table> <p>TEXTURE:</p> <table style="margin-left: 20px;"> <tr><td>Sand</td><td>5</td></tr> <tr><td>Silt</td><td>30</td></tr> <tr><td>Clay</td><td>65</td></tr> </table> <p>COMPOSITION:</p> <table style="margin-left: 20px;"> <tr><td>Clay</td><td>40</td></tr> <tr><td>Glass</td><td>40</td></tr> <tr><td>Micrite</td><td>5</td></tr> <tr><td>Nannofossils</td><td>10</td></tr> <tr><td>Zoisite</td><td>5</td></tr> </table>	CC, 2	D	Sand	5	Silt	30	Clay	65	Clay	40	Glass	40	Micrite	5	Nannofossils	10	Zoisite	5
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SITE 781 HOLE A CORE 15R CORED INTERVAL 4551.0-4560.6 mbsf; 130.4-140.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	# SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS									
UPPER PLIOCENE	F/G	CN12b		A/M				1	0.5 1.0				All samples from the core catcher were given to the Paleontologists.



SITE 781 HOLE A CORE 16R CORED INTERVAL 4560.6-4570.2 mbsl; 140.0-149.6 mbsf

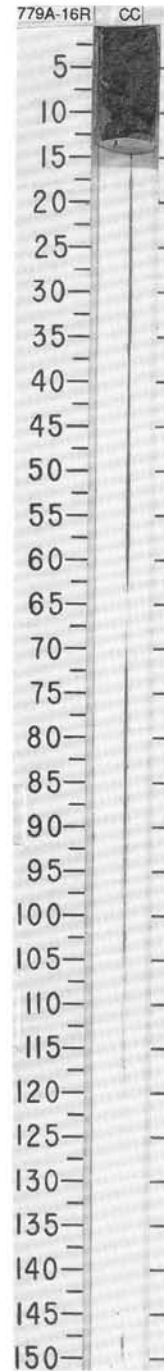
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																								
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																																		
UPPER PLIOCENE	F/M	C/P		B	?	0-48.7 P ₁ 1.71	wt. % CaCO ₃ wt. % TOC	C						<p>VITRIC SILTY CLAY</p> <p>Major lithology: VITRIC SILTY CLAY, dark gray (5Y 4/1). Core is completely disturbed by drilling; no stratigraphic integrity is retained. The lower half of the core is mixed with angular, 1/2 cm rock fragments. The interval from 8 to 11 cm in Section 1 contains vitric particles of ash or cinder 2 to 4 cm in diameter.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table style="margin-left: 20px;"> <tr><td>CC, 2</td></tr> <tr><td>D</td></tr> </table> <p>TEXTURE:</p> <table style="margin-left: 20px;"> <tr><td>Sand</td><td>5</td></tr> <tr><td>Silt</td><td>30</td></tr> <tr><td>Clay</td><td>65</td></tr> </table> <p>COMPOSITION:</p> <table style="margin-left: 20px;"> <tr><td>Chlorite</td><td>Tr</td></tr> <tr><td>Clay</td><td>40</td></tr> <tr><td>Foraminifers</td><td>5</td></tr> <tr><td>Glass</td><td>35</td></tr> <tr><td>Micrite</td><td>5</td></tr> <tr><td>Nannofossils</td><td>10</td></tr> <tr><td>Opalines</td><td>5</td></tr> <tr><td>Zoisite</td><td>Tr</td></tr> </table>	CC, 2	D	Sand	5	Silt	30	Clay	65	Chlorite	Tr	Clay	40	Foraminifers	5	Glass	35	Micrite	5	Nannofossils	10	Opalines	5	Zoisite	Tr
CC, 2																																						
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Nannofossils	10																																					
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Zoisite	Tr																																					

781 A 17R NO RECOVERY

SITE 781 HOLE A CORE 18R CORED INTERVAL 4576.9-4589.5 mbsl; 159.3-168.9 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS										
UPPER PLIOCENE	A/M	CN12a		R/P				1 2	0.5 1.0					All samples from the core catcher were given to the Paleontologists.

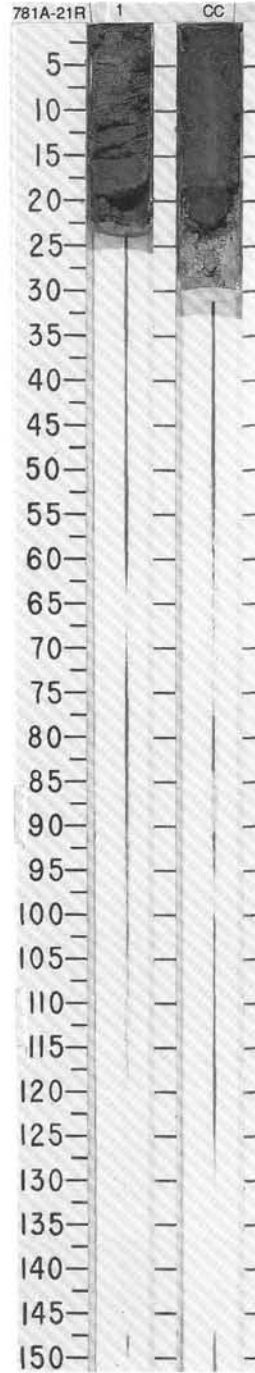
781 A 19R NO RECOVERY



781 A 20R NO RECOVERY

SITE 781 HOLE A CORE 21R CORED INTERVAL 4608.8-4618.5 mbsf; 188.2-197.9 mbsf

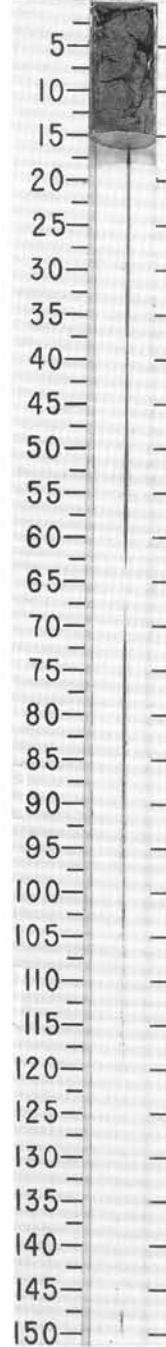
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER			PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																																
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS																																																																										
UPPER PLIOCENE	N21			?	1.3 1.06	4.2 ●	CC						<p>VITRIC CLAYEY SILT AND VITRIC SILT</p> <p>Major lithology: VITRIC CLAYEY SILT AND VITRIC SILT, dark gray (5Y 4/1) and very dark gray (5Y 3/1), severely disturbed by drilling. Contains scattered black clasts 1/4 to 1 cm in diameter throughout the core.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>1, 10</td> <td>CC, 9</td> <td>CC, 20</td> </tr> <tr> <td>D</td> <td>D</td> <td>D</td> <td>D</td> </tr> </table> <p>TEXTURE:</p> <table border="1"> <tr> <td>Sand</td> <td>10</td> <td>20</td> <td>10</td> </tr> <tr> <td>Silt</td> <td>30</td> <td>50</td> <td>70</td> </tr> <tr> <td>Clay</td> <td>60</td> <td>30</td> <td>20</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Carbonate grains</td> <td>—</td> <td>—</td> <td>3</td> </tr> <tr> <td>Clay</td> <td>40</td> <td>20</td> <td>40</td> </tr> <tr> <td>Feldspar</td> <td>—</td> <td>—</td> <td>7</td> </tr> <tr> <td>Foraminifers</td> <td>Tr</td> <td>4</td> <td>—</td> </tr> <tr> <td>Glass</td> <td>15</td> <td>28</td> <td>40</td> </tr> <tr> <td>Micrite</td> <td>20</td> <td>15</td> <td>—</td> </tr> <tr> <td>Nannofossils</td> <td>15</td> <td>—</td> <td>—</td> </tr> <tr> <td>Opaques</td> <td>5</td> <td>10</td> <td>10</td> </tr> <tr> <td>Pyroxene</td> <td>—</td> <td>—</td> <td>Tr</td> </tr> <tr> <td>Serpentine</td> <td>—</td> <td>5</td> <td>—</td> </tr> <tr> <td>Zoisite</td> <td>5</td> <td>18</td> <td>—</td> </tr> </table>		1, 10	CC, 9	CC, 20	D	D	D	D	Sand	10	20	10	Silt	30	50	70	Clay	60	30	20	Carbonate grains	—	—	3	Clay	40	20	40	Feldspar	—	—	7	Foraminifers	Tr	4	—	Glass	15	28	40	Micrite	20	15	—	Nannofossils	15	—	—	Opaques	5	10	10	Pyroxene	—	—	Tr	Serpentine	—	5	—	Zoisite	5	18	—
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TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																								
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																																	
UPPER PLIOGENE	R/P	C/M		B	?	0-63.0 P-1.55	WT. % CaCO ₃ 0.9 WT. % SiO ₂ 0.25	C				*	<p>VITRIC SILT AND CLAY</p> <p>Major lithology: VITRIC SILT AND CLAY gray (5Y 6/1). Severely disturbed by drilling. The entire core is homogenous.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="0"> <tr><td></td><td>CC, 7</td></tr> <tr><td></td><td>D</td></tr> </table> <p>TEXTURE:</p> <table border="0"> <tr><td>Sand</td><td>—</td></tr> <tr><td>Silt</td><td>50</td></tr> <tr><td>Clay</td><td>50</td></tr> </table> <p>COMPOSITION:</p> <table border="0"> <tr><td>Amphibole</td><td>2</td></tr> <tr><td>Carbonate grains</td><td>5</td></tr> <tr><td>Clay</td><td>8</td></tr> <tr><td>Feldspar</td><td>8</td></tr> <tr><td>Glass</td><td>55</td></tr> <tr><td>Nannofossils</td><td>15</td></tr> <tr><td>Opauques</td><td>7</td></tr> </table>		CC, 7		D	Sand	—	Silt	50	Clay	50	Amphibole	2	Carbonate grains	5	Clay	8	Feldspar	8	Glass	55	Nannofossils	15	Opauques	7
	CC, 7																																				
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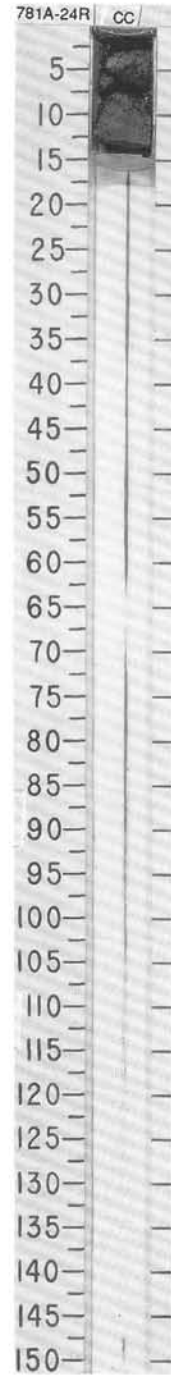
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS									
UPPER PLIOGENE	B	C/M		B					0.5 1.0				<p>All samples from the core catcher were given to the Paleontologists.</p>

781A-22R CC



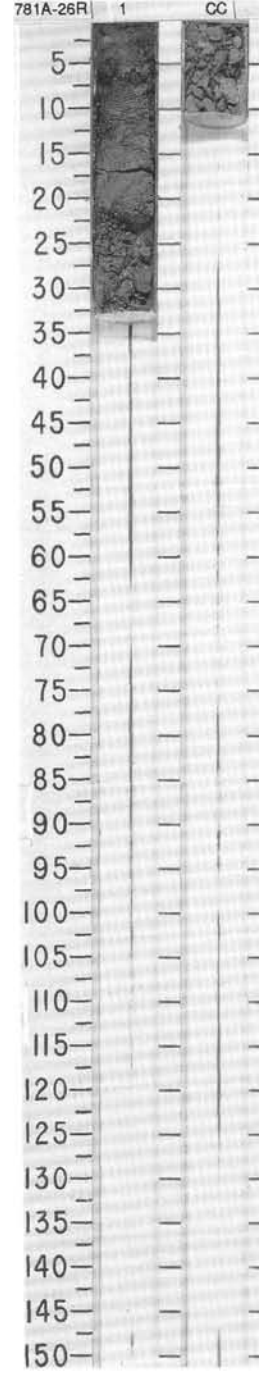
SITE 781 HOLE A CORE 24R CORED INTERVAL 4637.9-4647.5 mbsl; 217.3-226.9 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																	
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																																											
F/M	D	D	D	?			CC							<p>FELDSPAR-RICH VITRIC SAND AND SILT</p> <p>Major lithology: FELDSPAR-RICH VITRIC SAND AND SILT, very dark gray (5YR 3/1), intensely disturbed by drilling.</p> <p>Minor lithology: Ash, occurs in the interval from 6 to 8 cm in the core catcher.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <thead> <tr> <th></th> <th>CC, 6 D</th> <th>CC, 10 D</th> </tr> </thead> <tbody> <tr> <td>Sand</td> <td>60</td> <td>5</td> </tr> <tr> <td>Silt</td> <td>30</td> <td>80</td> </tr> <tr> <td>Clay</td> <td>10</td> <td>15</td> </tr> </tbody> </table> <p>TEXTURE:</p> <p>COMPOSITION:</p> <table border="1"> <tbody> <tr> <td>Carbonate grains</td> <td>5</td> <td>—</td> </tr> <tr> <td>Clay</td> <td>15</td> <td>20</td> </tr> <tr> <td>Feldspar</td> <td>20</td> <td>15</td> </tr> <tr> <td>Glass</td> <td>50</td> <td>45</td> </tr> <tr> <td>Nannofossils</td> <td>—</td> <td>5</td> </tr> <tr> <td>Opales</td> <td>—</td> <td>10</td> </tr> <tr> <td>Pyroxene</td> <td>10</td> <td>5</td> </tr> </tbody> </table>		CC, 6 D	CC, 10 D	Sand	60	5	Silt	30	80	Clay	10	15	Carbonate grains	5	—	Clay	15	20	Feldspar	20	15	Glass	50	45	Nannofossils	—	5	Opales	—	10	Pyroxene	10	5
	CC, 6 D	CC, 10 D																																													
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Opales	—	10																																													
Pyroxene	10	5																																													



SITE 781 HOLE A CORE 26R CORED INTERVAL 4657.1-4666.6 mbsl; 236.5-246.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS									
LOWER PLIOCENE	R/M	A/M			?		1						<p>FELDSPAR-RICH VITRIC SILT</p> <p>Major lithology: FELDSPAR-RICH VITRIC SILT, dark gray (5Y 4/1) with intermixed sub-rounded sand-sized grains and gray (5Y 5/1) mottled patches (burrows?). The upper 8 cm of Section 1 is a fining-upward unit with a sharp basal contact.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <p style="text-align: right;">1.4 D</p> <p>TEXTURE:</p> <p>Sand 1 Silt 79 Clay 20</p> <p>COMPOSITION:</p> <p>Carbonate grains 3 Clay 15 Feldspar 15 Glass 45 Nannofossils 5 Opalines 10 Pyroxene 2 Rock fragment 5</p>

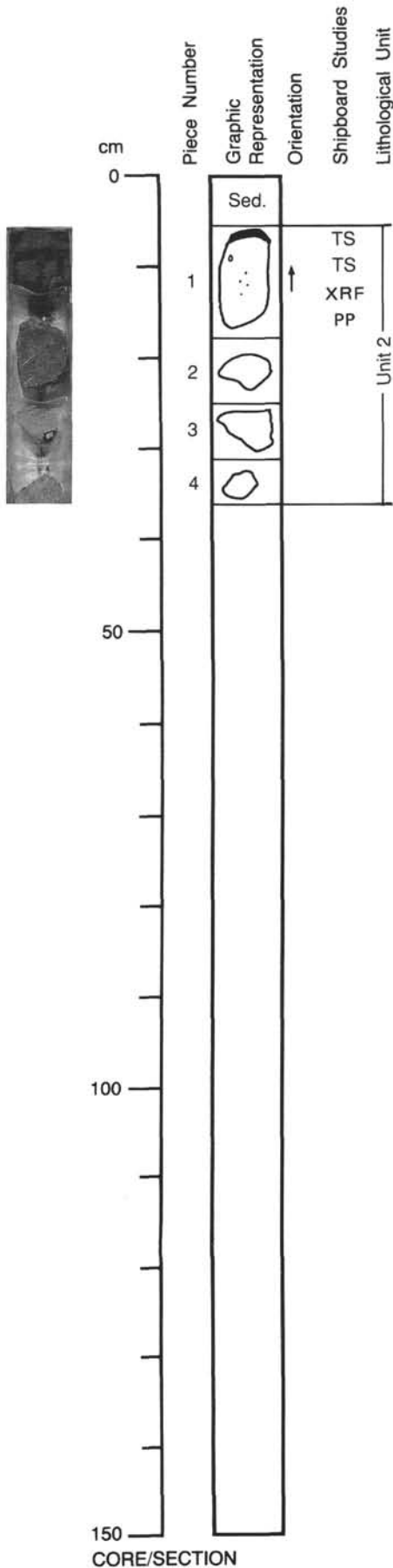


TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER			PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																																																																																																																																														
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Mixed Association F/M MIDDLE / UPPER MIOCENE - LOWER PLIOCENE (N17b-N19/20)	R/M UPPERMOST MIOCENE - LOWER PLIOCENE (N17b-N19)	A/M LOWER / UPPER PLIOCENE	B	0-0.5	0-0.5	0-0.5	1	0.5				*	<p>VITRIC ASH-BEARING SILTY CLAY AND FELDSPAR RICH VITRIC SANDY SILT</p> <p>Major lithology: VITRIC ASH-BEARING SILTY CLAY AND FELDSPAR RICH VITRIC SANDY SILT, dominantly dark brown (7.5YR 2/2) to dark gray (7.5YR 2/0). Core contains abundant very dark brown (7.5YR 2/2) subrounded, coarse sand-sized clasts of basalt. These clasts are extremely uniform in size and are mixed throughout the core from the top down to 103 cm in Section 6 where they abruptly disappear and the gray (5YR 5/1) becomes homogeneous. These clasts may be the result of severe drilling disturbance. Core also contains abundant mud clasts. Foraminifers, and nannofossils are present.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td>1, 60</td> <td>2, 65</td> <td>2, 102</td> <td>3, 58</td> <td>4, 27</td> <td>5, 64</td> <td>6, 29</td> </tr> <tr> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> </tr> </table> <p>TEXTURE:</p> <table border="1"> <tr> <td>Sand</td> <td>85</td> <td>5</td> <td>10</td> <td>20</td> <td>10</td> <td>10</td> <td>35</td> </tr> <tr> <td>Silt</td> <td>5</td> <td>10</td> <td>60</td> <td>50</td> <td>60</td> <td>30</td> <td>45</td> </tr> <tr> <td>Clay</td> <td>10</td> <td>85</td> <td>30</td> <td>30</td> <td>30</td> <td>60</td> <td>20</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Amphibole</td> <td>Tr</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>Carbonate grains</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>Tr</td> </tr> <tr> <td>Chlorite</td> <td>Tr</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>Tr</td> </tr> <tr> <td>Clay</td> <td>9</td> <td>60</td> <td>26</td> <td>35</td> <td>21</td> <td>59</td> <td>20</td> </tr> <tr> <td>Epidote</td> <td>—</td> <td>—</td> <td>—</td> <td>3</td> <td>6</td> <td>2</td> <td>—</td> </tr> <tr> <td>Feldspar</td> <td>2</td> <td>—</td> <td>2</td> <td>1</td> <td>—</td> <td>2</td> <td>10</td> </tr> <tr> <td>Foraminifers</td> <td>5</td> <td>—</td> <td>2</td> <td>1</td> <td>2</td> <td>4</td> <td>Tr</td> </tr> <tr> <td>Glass</td> <td>54</td> <td>30</td> <td>50</td> <td>40</td> <td>52</td> <td>20</td> <td>55</td> </tr> <tr> <td>Micrite</td> <td>5</td> <td>9</td> <td>8</td> <td>5</td> <td>8</td> <td>8</td> <td>—</td> </tr> <tr> <td>Nannofossils</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>2</td> <td>1</td> <td>5</td> </tr> <tr> <td>Olivine</td> <td>Tr</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>Tr</td> </tr> <tr> <td>Opauques</td> <td>5</td> <td>—</td> <td>5</td> <td>10</td> <td>5</td> <td>3</td> <td>5</td> </tr> <tr> <td>Pyroxene</td> <td>5</td> <td>—</td> <td>1</td> <td>—</td> <td>—</td> <td>—</td> <td>Tr</td> </tr> <tr> <td>Radiolarians</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>Rock fragment</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>5</td> </tr> <tr> <td>Serpentine</td> <td>5</td> <td>—</td> <td>Tr</td> <td>2</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>Zoisite</td> <td>9</td> <td>—</td> <td>5</td> <td>2</td> <td>2</td> <td>1</td> <td>—</td> </tr> </table>	1, 60	2, 65	2, 102	3, 58	4, 27	5, 64	6, 29	D	D	D	D	D	D	D	Sand	85	5	10	20	10	10	35	Silt	5	10	60	50	60	30	45	Clay	10	85	30	30	30	60	20	Amphibole	Tr	—	—	—	—	—	—	Carbonate grains	—	—	—	—	—	—	Tr	Chlorite	Tr	—	—	—	—	—	Tr	Clay	9	60	26	35	21	59	20	Epidote	—	—	—	3	6	2	—	Feldspar	2	—	2	1	—	2	10	Foraminifers	5	—	2	1	2	4	Tr	Glass	54	30	50	40	52	20	55	Micrite	5	9	8	5	8	8	—	Nannofossils	1	1	1	1	2	1	5	Olivine	Tr	—	—	—	—	—	Tr	Opauques	5	—	5	10	5	3	5	Pyroxene	5	—	1	—	—	—	Tr	Radiolarians	—	—	—	—	—	—	—	Rock fragment	—	—	—	—	—	—	5	Serpentine	5	—	Tr	2	—	—	—	Zoisite	9	—	5	2	2	1	—
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125-781A-8R-CC

UNIT 2: OLIVINE-PLAGIOCLASE PHYRIC BASALT

Pieces 1-4



CONTACTS: Upper surface of Piece 1 (8 mm thick) is chilled glass.

PHENOCRYSTS: Appear to be fresh.

Plagioclase - 15%; 1-3 mm; euhedral-subhedral; occurs in glomerocrystic clots, also with olivine.

Olivine - 5%; <2 mm; euhedral, also occurs in glomerocrystic clots with plagioclase.

Clinopyroxene - trace; <2 mm; deep green; occurs with plagioclase, but may be alteration of plagioclase.

GROUNDMASS: Fine-grained to glassy.

VESICLES: <2%; <1-5 mm; round to irregular; distributed throughout rock; some may be arranged in pipe form.

Microlites: None.

COLOR: 2.5Y 8/0 black.

STRUCTURE: Massive.

ALTERATION: Appears to be fresh.

VEINS/FRACTURES: None obvious.

ADDITIONAL COMMENTS: Appears to be the top surface of a flow unit.

125-781A-9R-1

**UNIT 2: OLIVINE-PLAGIOCLASE-CLINOPYROXENE
PHYRIC BASALT**

Pieces 1-9

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 20-25%; 1-3 mm; euhedral to subhedral; glomerocrystic, also with olivine and pyroxene.

Olivine - 1-2%; 2 mm; euhedral to subhedral, also occurs in glomerocrystic clots with plagioclase and orthopyroxene.

Clinopyroxene - 1%; <1 mm; glomerophyric, also occurs with plagioclase and olivine.

GROUNDMASS: Fine-grained to glassy.

VESICLES: 3-5%; 1-5 mm; round; distributed evenly throughout rock; Vesicle size appears to increase from Piece 1 - 9.

Microlites: None.

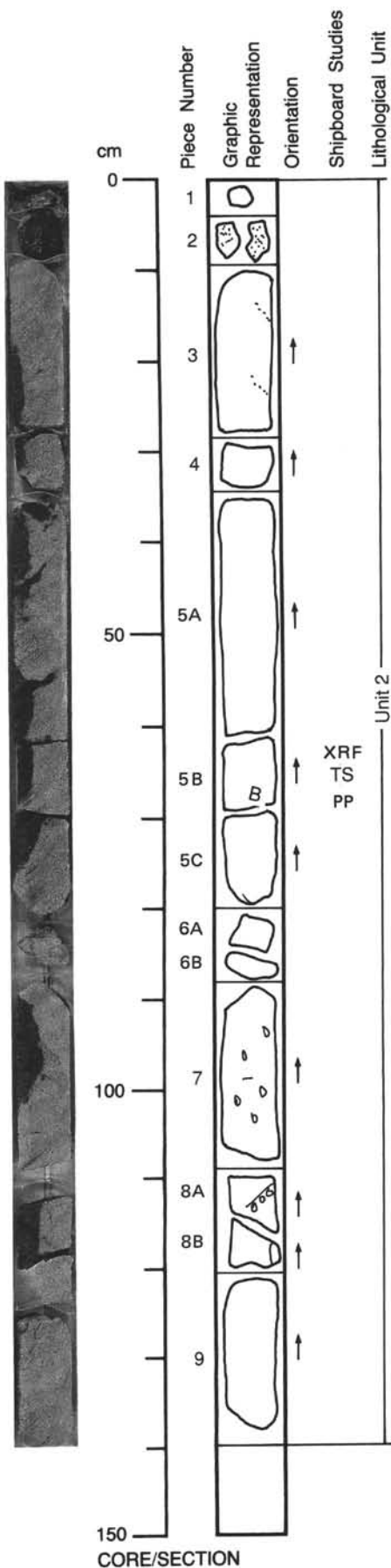
COLOR: 7.5YR 4/0 gray.

STRUCTURE: Massive.

ALTERATION: Appears to be relatively fresh.

VEINS/FRACTURES: <3%; 0.8-1.0 cm wide; dip at 35-45 degrees.

ADDITIONAL COMMENTS: Appears to be a part of a sill; Piece 1 is probably near the top of the sill.



125-781A-9R-2

**UNIT 2: OLIVINE-PLAGIOCLASE-CLINOPYROXENE
PHYRIC BASALT**

Pieces 1-8

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 20-25%; 2 mm; euhedral to subhedral; occurs in glomerocrystic clots, also with olivine and pyroxene.

Olivine - 1-2%; 2 mm; euhedral to subhedral, also occurs in glomerocrystic clots with plagioclase and orthopyroxene.

Clinopyroxene - 1%; <1 mm; glomerophyric, also occurs with plagioclase and olivine.

GROUNDMASS: Fine-grained to glassy.

VESICLES: 3-5%; 1-5 mm; round; distributed evenly throughout rock.

Miaroles: None.

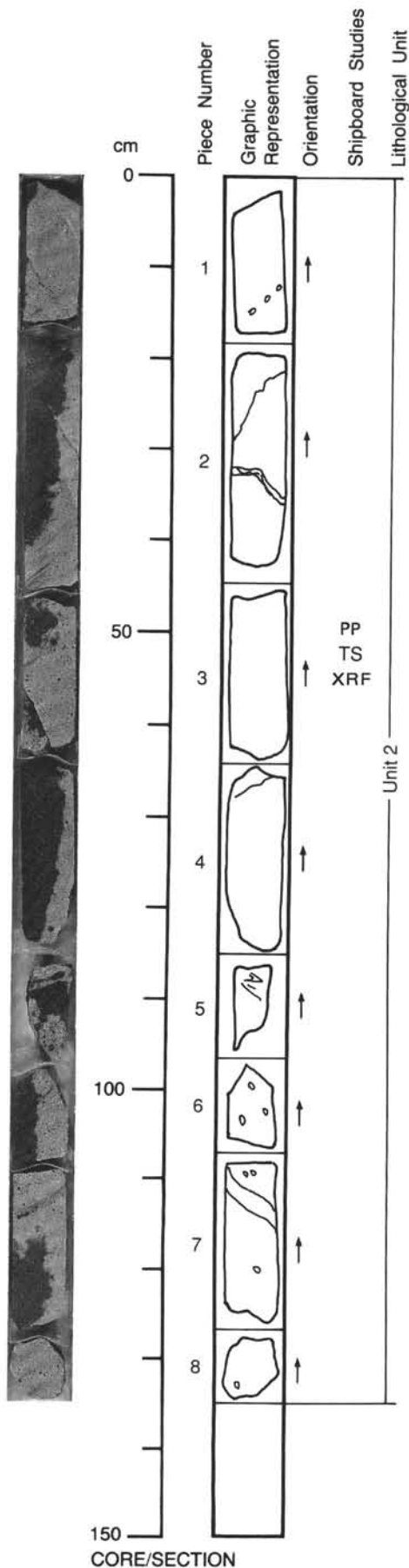
COLOR: 7.5YR 4/0 gray.

STRUCTURE: Massive.

ALTERATION: Appears to be relatively fresh.

VEINS/FRACTURES: <1%; 0.1-0.8 mm; dip at 35-45 degrees.

ADDITIONAL COMMENTS: Pieces 2, 5, 7 have <1-cm-wide darker gray "bands" which may have less plagioclase than the surrounding rock.



125-781A-9R-3

**UNIT 2: OLIVINE-PLAGIOCLASE-CLINOPYROXENE
PHYRIC BASALT**

Pieces 1-14

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 20-25%; 1-3 mm; euhedral-subhedral; glomerocrystic; also with olivine and pyroxene olivine - 1-2%; 2 mm; euhedral-subhedral; also in glomerocrystic clots with plagioclase and orthopyroxene.

Clinopyroxene - 1%; <1 mm; glomerophyric, also with plagioclase and olivine.

GROUNDMASS: Fine-grained to glassy.

VESICLES: 3-5%; 1-4 mm; round; distributed evenly throughout rock

Miaroles: None.

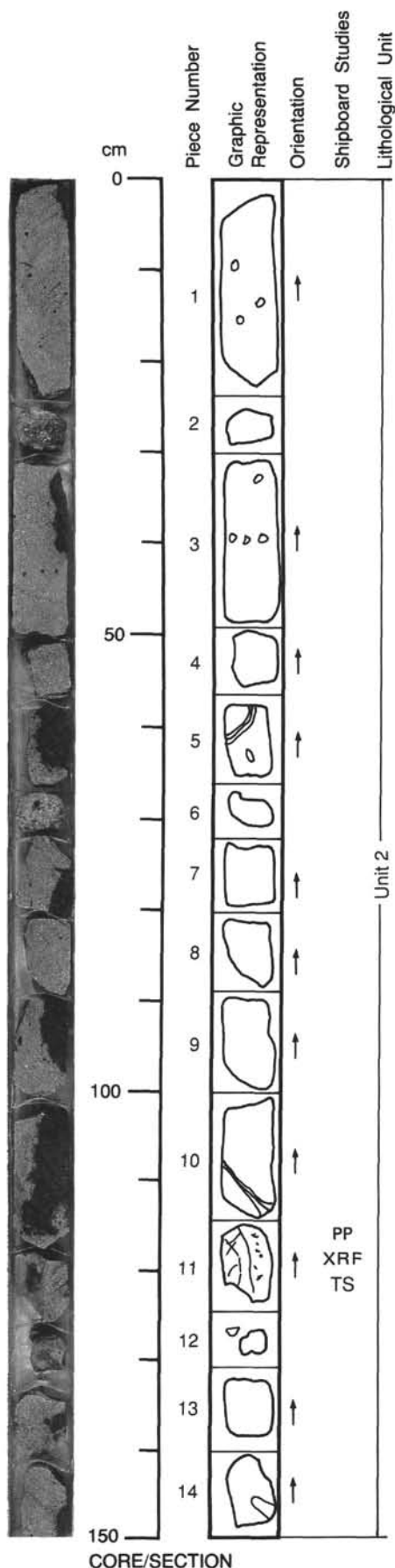
COLOR: 7.5YR 4/0 gray.

STRUCTURE: Massive.

ALTERATION: Appears to be relatively fresh.

VEINS/FRACTURES: None visible.

ADDITIONAL COMMENTS: Pieces 5, 10, 11, 14 have "bands" (<1 cm-1.5 cm wide) of darker gray material which may reflect a decrease in the abundance of plagioclase. Piece 11 is a contact between a plagioclase-rich, vesicular basalt and a plagioclase-poor, less vesicular basalt. TS and XRF samples were taken from the finer-grained portion.



125-781A-10R-1

**UNIT 2: OLIVINE-PLAGIOCLASE-CLINOPYROXENE
PHYRIC BASALT**

Pieces 1-6

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 20-30%; 1-3 mm; euhedral to subhedral; glomerocrystic; also with olivine and pyroxene.

Olivine - 5%; 1-3 mm; euhedral to subhedral; glomerocrystic.

Clinopyroxene - 5-10%; <2 mm; euhedral to subhedral; glomerocrystic.

GROUNDMASS: Fine-grained to glassy.

VEICLES: 5-10%; 0.3-8 mm; round to subround to irregular; throughout rock.

Miaroles: None.

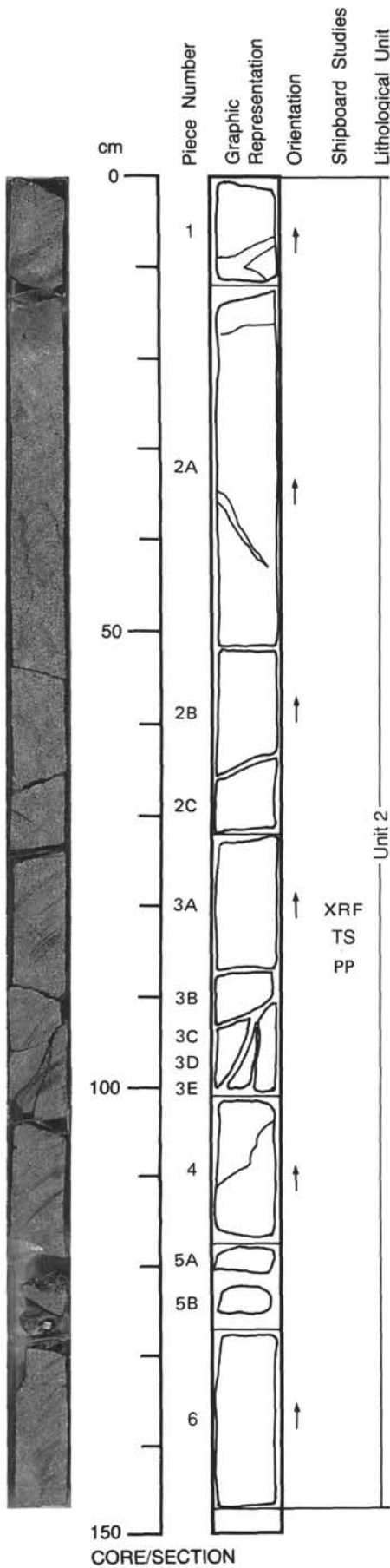
COLOR: 7.5YR 4/0 gray.

STRUCTURE: Massive.

ALTERATION: Appears to be fresh.

VEINS/FRACTURES: None obvious.

ADDITIONAL COMMENTS: Pieces 1, 2A, 3A have darker gray "bands" (1-5 cm) (schlieren?) which may have less plagioclase than the surrounding rock.



125-781A-10R-2

**UNIT 2: OLIVINE-PLAGIOCLASE-CLINOPYROXENE
PHYRIC BASALT**

Pieces 1-14

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 20-25%; 1-3 mm; euhedral to subhedral; glomerocrystic; also with olivine and pyroxene.

Olivine - 2-3%; 1-3 mm; euhedral to subhedral; glomerocrystic.

Clinopyroxene - 5-8%; 1-2 mm; euhedral-subhedral; glomerocrystic

GROUNDMASS: Fine-grained to glassy.

VESICLES: 4-5%; 0.2-1 mm wide; round to angular; throughout rock.

Miaroles: None.

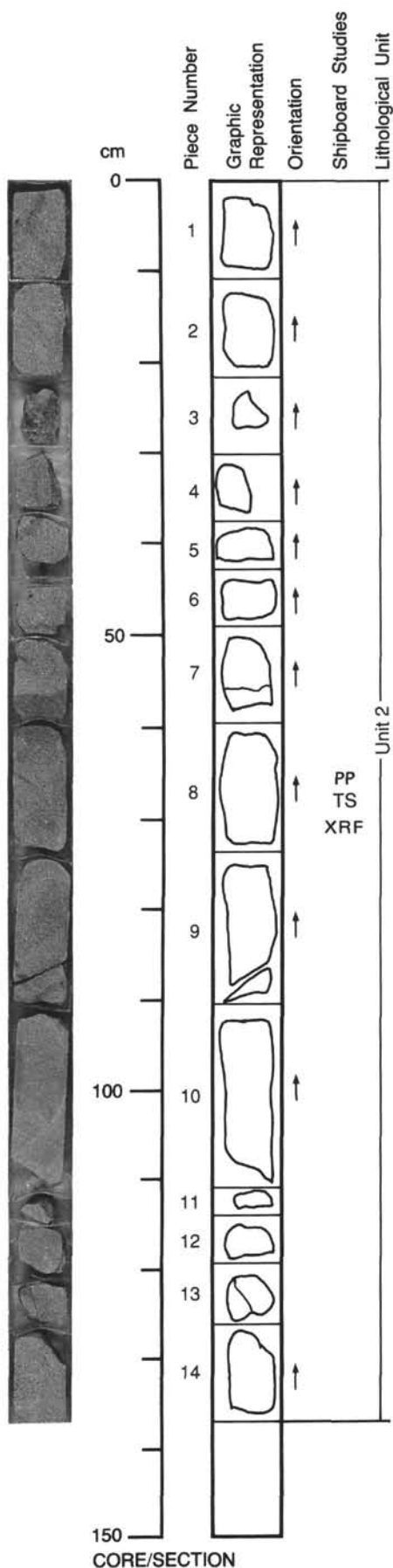
COLOR: 7.5YR 4/0 gray.

STRUCTURE: Massive.

ALTERATION: Appears to be relatively fresh.

VEINS/FRACTURES: <1%; <1 mm; no visible orientation; <1-mm-wide black veining in some samples.

ADDITIONAL COMMENTS: Piece 7 shows contact between plagioclase-rich and plagioclase-poor basalt.



125-781A-10R-3

**UNIT 2: OLIVINE-PLAGIOCLASE-CLINOPYROXENE
PHYRIC BASALT**

Pieces 1-8

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 15-25%; 1-3 mm; euhedral to subhedral; glomerocrystic; also with olivine and pyroxene.

Olivine - 2-3%; <2 mm; euhedral to subhedral; glomerocrystic.

Clinopyroxene - 2-4%; 1-3 mm; euhedral-subhedral; glomerocrystic.

GROUNDMASS: Fine-grained to glassy.

VESICLES: 10%; <2 mm; round to angular; distributed evenly throughout rock.

Miaroles: None.

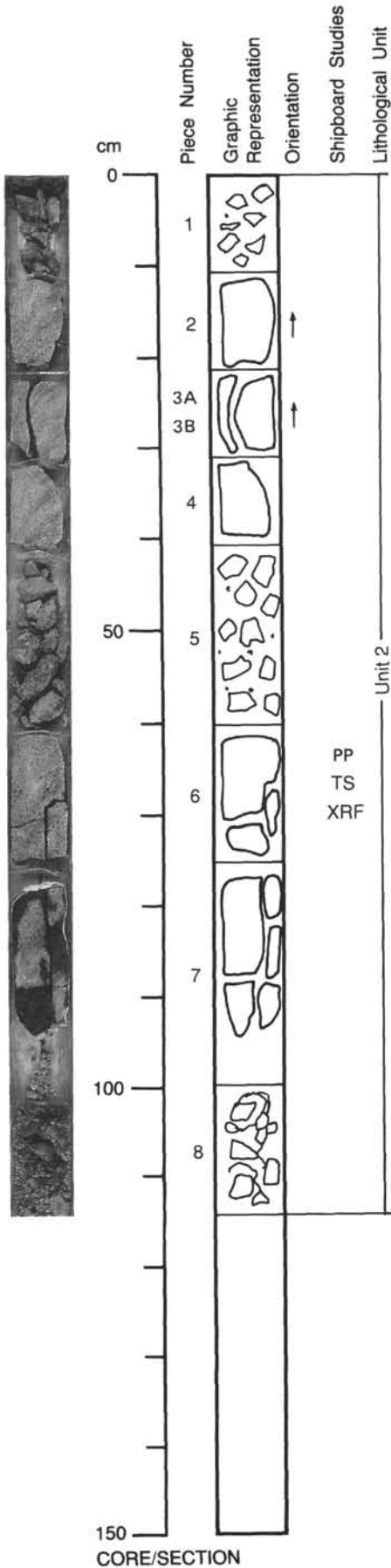
COLOR: 7.5YR 4/0 gray.

STRUCTURE: Massive.

ALTERATION: Appears to be relatively fresh.

VEINS/FRACTURES: Pieces 6 and 7 are fractured; no veining is visible.

ADDITIONAL COMMENTS: Pieces 1, 5, 8 consist of multiple fragments of basalt. Piece 8 also contains some fine-grained altered basaltic(?) rocks which appear to result from drilling disturbance.



125-781A-8R-CC (Piece 1,10-13 cm)

OBSERVER: MUR

WHERE SAMPLED: Northwest of Conical Seamount

ROCK NAME: Andesite/arc tholeiite

GRAIN SIZE: 0.1-7 mm

TEXTURE: Fine-grained, plagioclase phyric

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	35-40	35-40	0.5-7		Euhedral	Often as glomerocrysts, oscillatory zoning common.
Clinopyroxene	8-10	8-10	0.5-1		Subhedral-euhedral	Occurs with plagioclase in glomeroclusters.
Magnetite	0.5-1	0.5-1	0.2-0.5		Euhedral	Euhedral clusters.
GROUNDMASS						
Plagioclase	10	15-20	0.1-0.3		Laths, subhedral	
Clinopyroxene	10	10-8	0.2-0.3		Anhedral-subhedral	
Glass	10-5	15-20	N/A		N/A	Chilled margin with fresh yellow-brown glass plagioclase and clinopyroxene quench crystals.
SECONDARY MINERALOGY						
Clays	PERCENT 5-10	REPLACING/FILLING Glass				COMMENTS Abundant glass - quenched plagioclase and rapidly grown plagioclase in groundmass that has abundant (now altered) dark brown glass. Brown amorphous clay throughout matrix and plagioclase.
Clays	10-15	Plagioclase				

VESICLES/CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Cavities	10-15	Throughout	<1-3	No	Irregular

COMMENTS: Two thin sections-one from 11-13 cm is slightly fresher than 10-13 cm.

125-781A-8R-CC (Piece 1,10-13 cm)

OBSERVER: JOH

WHERE SAMPLED: Northwest of Conical Seamount

ROCK NAME: Olivine-clinopyroxene-plagioclase-phyric basalt

GRAIN SIZE: 0.01-3 mm

TEXTURE: Hyalocrystalline-intersertal

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	1-2	1-2	0.3-0.5		Rounded	
Plagioclase	15-20	15-20	0.2-2		Euhedral	Inclusions of opaques and glass fragment as glomerocryst and +/- clinopyroxene and olivine.
Clinopyroxene	4-6	4-6	0.01-1		Anhedral	As glomerocrysts +/- plagioclase infrequent twinning.
GROUNDMASS						
Glass	0	45-55	N/A		N/A	100% altered to dark brown clay.
Plagioclase	4-7	4-7	0.01-0.04		Euhedral	Laths, occasionally quench needles.
Clinopyroxene	20-30	20-35	<0.01-0.02		Anhedral	10-25% alteration to clay.
Opaques	1-3	1-3	<0.01-0.03		Euhedral-subhedral	Randomly distributed and as inclusions.
SECONDARY MINERALOGY						
Clays	PERCENT 40-50	REPLACING/FILLING Glass, clinopyroxene				COMMENTS Dark brown, amorphous after glass and dusty gray brown after clinopyroxene.

VESICLES/CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	15-20	Throughout	0.1-4	None	Irregular

COMMENTS: Glassy margin contains euhedral quench clinopyroxene (angite: 0.01 mm) and plagioclase laths (0.01-0.03 mm, albite-twinning) and phenocrysts of plagioclase and clinopyroxene. Plagioclase grains are usually albite-twinning and typically zoned.

SITE 781

125-781A-8R-CC (Piece 1,10-13 cm)

OBSERVER: JOH

WHERE SAMPLED: Northwest of Conical Seamount

ROCK NAME: Olivine-clinopyroxene-plagioclase-phyric basalt

GRAIN SIZE: 0.01-3 mm

TEXTURE: Hyalocrystalline-interstitial

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	1-2	1-2	0.3-0.5		Rounded	
Plagioclase	15-20	15-20	0.2-2		Euhedral	Inclusions of opaques and glass fragment as glomerocryst and +/- clinopyroxene and olivine.
Clinopyroxene	4-6	4-6	0.01-1		Anhedral	As glomerocrysts +/- plagioclase infrequent twinning.
GROUNDMASS						
Glass	0	45-55	N/A		N/A	100% altered to dark brown clay.
Plagioclase	4-7	4-7	0.01-0.04		Euhedral	Laths, occasionally quench needles.
Clinopyroxene	20-30	20-35	<0.01-0.02		Anhedral	10-25% alteration to clay.
Opaques	1-3	1-3	<0.01-0.03		Euhedral-subhedral	Randomly distributed and as inclusions.
SECONDARY MINERALOGY						
Clays	PERCENT 40-50	REPLACING/FILLING Glass, clinopyroxene				COMMENTS Dark brown, amorphous after glass and dusty gray brown after clinopyroxene.

VESICLES/CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	15-20	Throughout	0.1-4	None	Irregular

COMMENTS: Glassy margin contains euhedral quench clinopyroxene (augite: 0.01 mm) and plagioclase laths (0.01-0.03 mm, albite-twinned) and phenocrysts of plagioclase and clinopyroxene. Plagioclase grains are usually albite-twinned and typically zoned.

125-781A-9R-01 (Piece 5B,69-71 cm)

OBSERVER: VAN

WHERE SAMPLED: Northwest of Conical Seamount

ROCK NAME: Olivine-plagioclase-clinopyroxene-phyric basalt

GRAIN SIZE: <3 mm

TEXTURE: Glomerophyric-interstitial

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	1	1	<1		Anhedral	In glomerocrysts with plagioclase and as phenocrysts.
Plagioclase	15-20	15-20	<3		Euhedral	In glomerocrysts with minor olivine.
Clinopyroxene	2	2	<1	Augite	Anhedral-subhedral	In glomerocrysts, small rounded crystals in core, subhedral layer crystals at rim, zoning absent.
GROUNDMASS						
Plagioclase	30	30	0.05-.2		Euhedral	Laths, no orientation.
Clinopyroxene	20	20	<0.1		Anhedral-subhedral	
Glass	25	25	N/A		N/A	Greenish +/- brown, slightly devitrified.
Opaques	5-10	5-10	<0.1		Euhedral	Black, random.
Olivine	<1	<1	<0.01		Subhedral	
SECONDARY MINERALOGY						
Zeolite	PERCENT <1	REPLACING/FILLING Vesicles				COMMENTS Colorless, low reflective index, low-birefringence, fills in vesicles.

VESICLES/CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	15	Throughout	<10	None	Spheroid to elongate	Very irregular shapes, no preferred orientation.

COMMENTS: Plagioclase is rarely zoned, sometimes with glass and opaque inclusions outlining core area. Clinopyroxene without zoning.

125-781A-9R-02 (Piece 3,49-51 cm)

OBSERVER: VAN

WHERE SAMPLED: Northwest of Conical Seamount

ROCK NAME: Olivine-plagioclase-clinopyroxene phyric basalt

GRAIN SIZE: < 3 mm

TEXTURE: Glomerophyric

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	1-2	1-2	<1		Round/resorting	
Plagioclase	25-30	25-30	<3		Euhedral	Glomerocrysts of plagioclase; plagioclase + olivine; plagioclase + clinopyroxene.
Clinopyroxene	1-2	1-2	<1		Anhedral	
GROUNDMASS						
Plagioclase	30	30	<0.2		Euhedral, laths	
Clinopyroxene	20	20	<0.1		Anhedral, rounded	
Glass	10-15	10-15	N/A		N/A	Greenish devitrified.
Opagues	5	5	<0.1		Euhedral-subhedral	Black.
Olivine	<1	<1	<0.01		N/A	

VESICLES/CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	25	Random	<3	Glass distributed into cavity	Irregular	Partly filled with glass.

COMMENTS: Clinopyroxene - no zoning. Plagioclase, sometimes zoned; opaque inclusions outlining crystal shape. Surface nucleation of clinopyroxene on plagioclase observed.

125-781A-9R-03 (Piece 11,117-119 cm)

OBSERVER: TER

WHERE SAMPLED: Northwest of Conical Seamount

ROCK NAME: Olivine-augite-plagioclase phyric basalt

GRAIN SIZE: Chilled margin to 3 mm

TEXTURE: Intergranular, glomerophyric

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	1-2	1-2	0.5-1		Euhedral	
Plagioclase	10-20	10-20	1-3		Euhedral, laths	Many are zoned, some glomerocrysts with clinopyroxene.
Clinopyroxene	2-4	2-4	1-2		Euhedral-subhedral	2V=45 degrees.
GROUNDMASS						
Glass	40-50	40-50	N/A		N/A	Olive-brown, devitrified.
Plagioclase	20-30	20-30	<0.3		Laths, needles	Random laths to quench needles.
Clinopyroxene	15-25	15-25	<0.2	Augite	Subhedral plumose	Random crystals, plumose crystals in glassy portion.
Olivine	<1	<1	?		?	
Opagues	4-7	4-7	0.01-0.3		Euhedral, laths, needles	Random crystals in coarser part of rock, random needles in chilled zone.

VESICLES/CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0-35	Throughout	0.1-1.5	No	Irregular	Variable percent throughout.

COMMENTS: Top of thin section is a chilled margin with 50-60% glass and <2% phenocrysts. Quench textured plagioclase, clinopyroxene and opaque grains are present. Texture ranges from intersertal to intergranular and is partly variolitic. Glomerocrysts of plagioclase and clinopyroxene occur.

SITE 781

125-781A-10R-01 (Piece 3A,84-86 cm) OBSERVER: VAN WHERE SAMPLED: Northwest of Conical Seamount
 ROCK NAME: Olivine-plagioclase-clinopyroxene phyric basalt
 GRAIN SIZE: <3 mm
 TEXTURE: Glomerophyric intersertal

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	<1	<1	<1		Round	
Plagioclase	25-30	25-30	0.8-3		Euhedral	Laths occasionally zoned, opaque inclusions, glomerocryst with clinopyroxene.
Clinopyroxene	2-4	2-4	0.2-2		Subhedral-anhedral	Occasionally as glomerocrysts with plagioclase.
GROUNDMASS						
Glass	<5	20-25	N/A		N/A	85-100% altered to brown clay.
Plagioclase	20-30	20-30	0.05-0.15		Euhedral	Laths random orientation.
Clinopyroxene	10-15	10-15	0.02-0.1		Anhedral	Intimate intergrowth, infrequent twinning with plagioclase.
Olivine	<1?	<1?	?		N/A	
Opagues	3-7	3-7	0.01-0.2		Subhedral	Black, random, occasionally as inclusions in plagioclase.
SECONDARY MINERALOGY						
Clays	PERCENT 20-25	REPLACING/ FILLING Glass				COMMENTS Brown, amorphous after glass.
VESICLES/CAVITIES						
Vesicles	PERCENT 10-15	LOCATION Throughout	SIZE (mm) 0.1-3	FILLING None	SHAPE Irregular	COMMENTS Equant to elongate.

125-781A-10R-02 (Piece 8,68-70 cm) OBSERVER: VAN WHERE SAMPLED: Northwest of Conical Seamount
 ROCK NAME: Olivine-plagioclase phyric basalt
 GRAIN SIZE: < 3 mm
 TEXTURE: Glomerophyric, intersertal

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	2	2	<1		Rounded	
Plagioclase	25-30	25-30	<3		Euhedral-subhedral	Glomerocrysts with plagioclase. Glomerocrysts with olivine, occasionally zoned opaque inclusions.
Clinopyroxene	Trace	Trace	<1	Augite	Rounded	
GROUNDMASS						
Plagioclase	25	25	0.05-0.2		Euhedral	Laths, rare hollow (quench) shapes.
Clinopyroxene	25	25	0.01-0.1		Anhedral	Rare twinning.
Glass	0	15	N/A		N/A	Altered and devitrified.
Opagues	5	5	0.02-0.1	Magnetite	Euhedral	Black, random distribution.
Olivine	<1	<1	N/A		N/A	
SECONDARY MINERALOGY						
Clays	PERCENT 15	REPLACING/ FILLING Glass				COMMENTS Brown amorphous clays.
VESICLES/CAVITIES						
Vesicles	PERCENT 15	LOCATION Random	SIZE (mm) 0.1-5	FILLING None	SHAPE Round	COMMENTS Glass extruded into cavities and devitrified.

COMMENTS: Two generations of plagioclase phenocryst growth apparent in crosscutting crystals.

125-781A-10R-03 (Piece 6,65-67 cm)

OBSERVER: VAN

WHERE SAMPLED: Northwest of Conical Seamount

ROCK NAME: Olivine-clinopyroxene-plagioclase phyric basalt

GRAIN SIZE: 0.5-3 mm

TEXTURE: Glomerophyric intersertal

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	1-2	1-2	0.2-1	Fo80-85	Subhedral	2V=+90 degrees.
Plagioclase	25-30	25-30	0.5-3		Euhedral	Albite and Carlsbad twinning, as glomerocryst +/- clinopyroxene, olivine and glass inclusions.
Clinopyroxene	2-4	2-4	0.1-1	Augite	Subhedral	Carlsbad twinning rare.
GROUNDMASS						
Glass	N/A	20-30	N/A		N/A	10-50% altered to clay and chlorite.
Plagioclase	35-40	35-40	0.05-0.15		Euhedral	Laths, albite and Carlsbad twinning.
Clinopyroxene	20-30	20-30	0.01-0.05		N/A	Infrequent Carlsbad twinning.
Olivine?	<1	<1	<0.02		Rounded	
Opakes	N/A	N/A	0.01-0.2		Euhedral-subhedral	Black, disseminated.
SECONDARY MINERALOGY						
	PERCENT	REPLACING/ FILLING				COMMENTS
Clays	5-10	Glass				Brown, microcrystalline after devitrified glass.
Chlorite	10-15	Glass				Pleochroic, green-brown, radiating, low birefringence.

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	10-15	Throughout	0.1-4	No	Elongate, equant	Some glass extrusions into vesicles.

COMMENTS: Plagioclase phenocrysts have glass (0.01-0.02 mm, now altered) and opaque (0.01-0.02 mm) inclusions. Olivine appears to be out of equilibrium (resorbing).