

SITE 866 HOLE A CORE 1R CORED 0.0 - 0.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	early Plio.		W	P	10YR 8/3 To 10YR 7/3	FORAMINIFER NANNOFOSSIL OOZE
		2	early Plio.		W	P		
		CC			W	M		Major Lithology: FORAMINIFER NANNOFOSSIL OOZE, very pale brown (10YR 8/3 to 10YR 7/3), sandy in appearance due to abundant foraminifers, white (10YR 8/2) burrow mottles common, disseminated gray to black specks occur throughout.

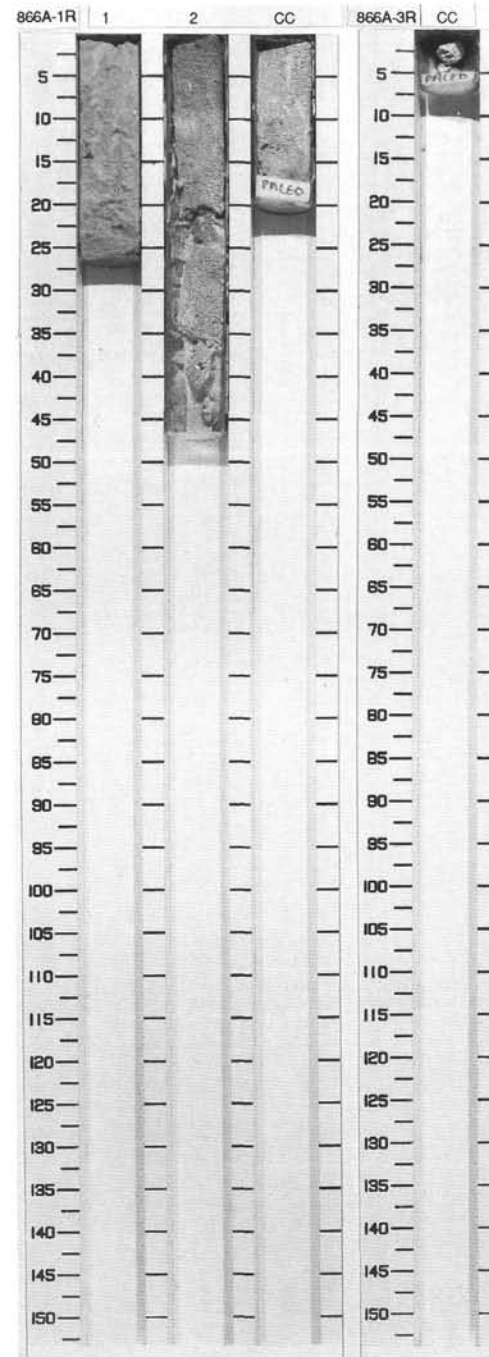
866A-2R NO RECOVERY

SITE 866 HOLE A CORE 3R CORED 10.2 - 19.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian		W	M	10YR 8/2	WACKESTONE
								Major Lithology: WACKESTONE, white (10YR 8/2), well indurated, with abundant large molds of high-spired gastropods, micrite peloids, and micritic foraminifers. The molds have some manganese-oxide in them, as well as yellow stain.

866A-4R NO RECOVERY

866A-5R NO RECOVERY



SITE 866 HOLE A CORE 6R

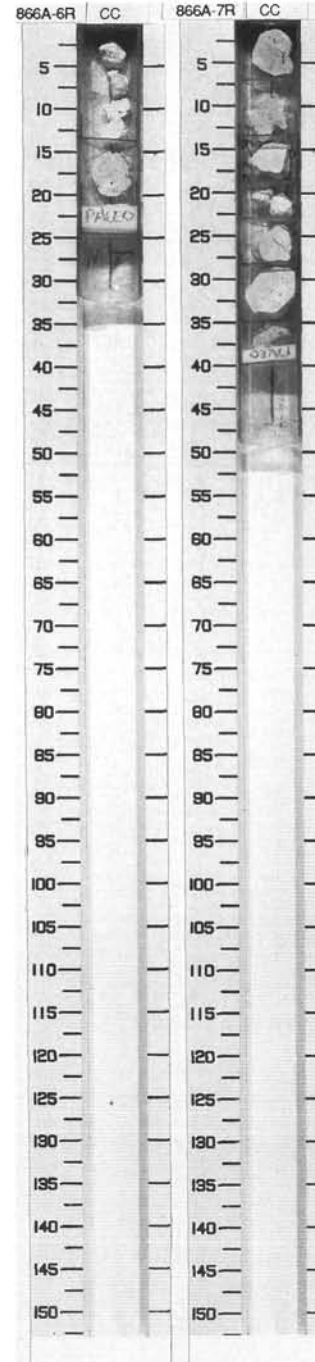
CORED 38.4 - 47.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W G G	CC	Albian	⊗ ⊙ ⊙	⊗	M	10YR 8/2	<p>WACKESTONE and GRAINSTONE</p> <p>Major Lithology: WACKESTONE, white (N9), part stained yellow, with many micritic peloids, rare mollusc fragments, benthic foraminifers, gastropod molds, and dasycladacean algae (?). White (10YR 8/2) GRAINSTONE, of coarse-grained to gravel-sized bioclastic fragments, with molluscs foraminifers, algae (?), a few micrite-filled burrows; rounded black pebble, 4 mm in diameter; phreatic cements, some yellow-stained material.</p>

SITE 866 HOLE A CORE 7R

CORED 47.8 - 57.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W P P W W P P	CC	Albian	⊗ ⊙ ⊙	⊗	PTT MTT	10YR 8/2	<p>WACKESTONE and PACKSTONE</p> <p>Major Lithology: WACKESTONE, white (10YR 8/2), with small, thin-shelled molluscs, gastropods, sponges, benthic foraminifers, and some coated grains or oncoids; cracks and vugs filled with spar cement, geopetal cavity infillings; some yellow and red staining. PACKSTONE, white (10YR 8/2), with molluscs, foraminifers, algae (?), rounded intraclasts, and pellets; minor yellow staining, predominantly in pore-spaces.</p>



SITE 866 HOLE A CORE 8R

CORED 57.3 - 67.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W P P	CC	Albian	⊗ ⊙ ⊙	×	M T	10YR 8/2	<p>WACKESTONE and PACKSTONE</p> <p>Major Lithology: WACKESTONE, white (10YR 8/2) to very pale brown (10YR 8/3), with gastropods (molds), ribbed bivalves, benthic foraminifers, dasycladacean algae, peloids, and white (N9) chalky intraclasts; probable pelletal micrite. PACKSTONE, white (10YR 8/2), with molluscs, foraminifers, and algae (dasycladacean?). Abundant recrystallized mollusc fragments, many of which have a micrite envelope; abundant intergranular cement. Many grains appear to have a micritized outer rim, but may be coated grains.</p>

SITE 866 HOLE A CORE 9R

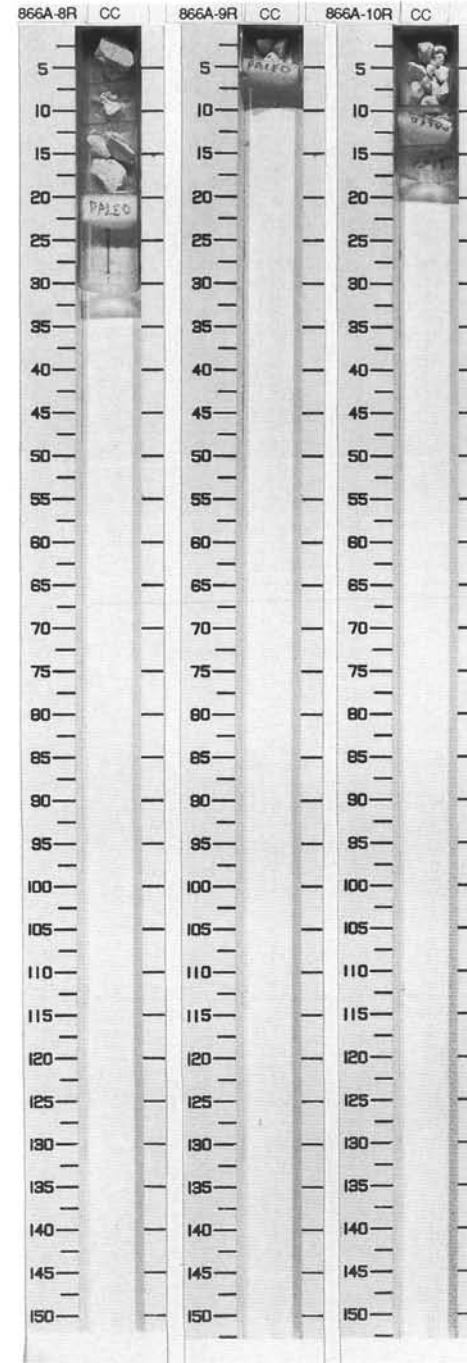
CORED 67.2 - 76.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W P P	CC	Albian	⊗ ⊙ G	×	M	N9	<p>WACKESTONE-PACKSTONE</p> <p>Major Lithology: WACKESTONE-PACKSTONE, white (N9), with gastropod and dasycladacean algae, reddish small specks.</p>

SITE 866 HOLE A CORE 10R

CORED 76.9 - 86.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W P P	CC	Albian	⊗ ⊙ G	×	T	10YR 8/1	<p>WACKESTONE</p> <p>Major Lithology: WACKESTONE, white (10YR 8/1), with abundant dasycladacean algae, gastropods, small bivalves, and well preserved foraminifers. One piece is a bivalve (oyster-type) fragment.</p>



SITE 866 HOLE A CORE 11R CORED 86.5 - 96.1 mbsf

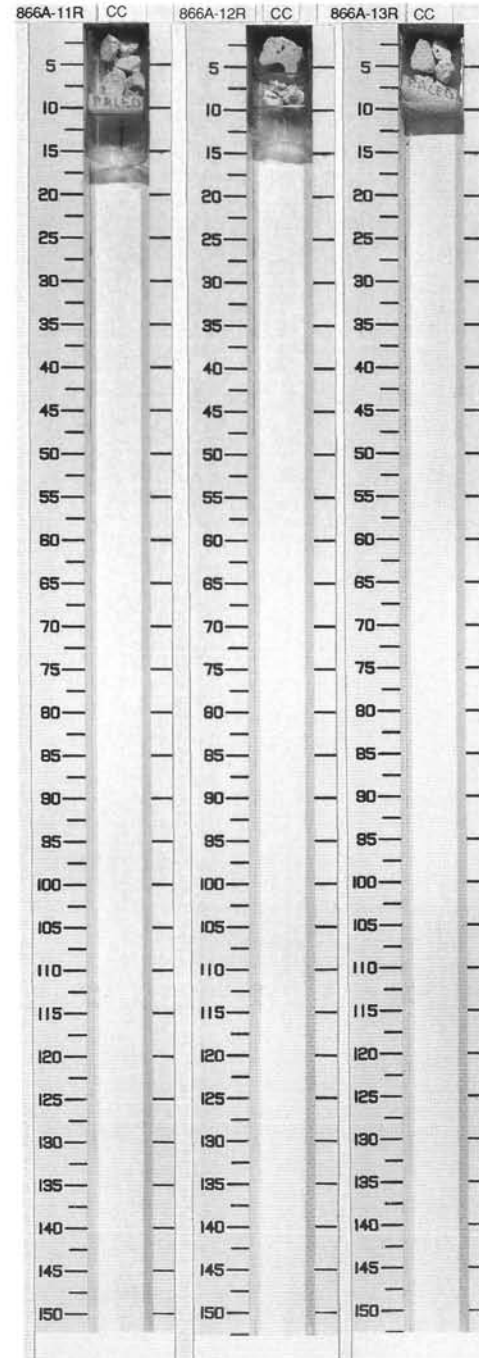
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian		X	M	10YR 8/1	<p>WACKESTONE</p> <p>Major Lithology: WACKESTONE, white (10YR 8/1), with dasycladacean algal molds, gastropods, benthic foraminifers, intraclasts, other bioclasts, sponge spicules, serpulids(?).</p>

SITE 866 HOLE A CORE 12R CORED 96.1 - 105.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian		X		10YR 8/1	<p>WACKESTONE-PACKSTONE</p> <p>Major Lithology: WACKESTONE-PACKSTONE, white (10YR 8/1), with many subrounded intraclasts (1-8 mm), gastropod molds, sponge spicules, and much moldic porosity.</p>

SITE 866 HOLE A CORE 13R CORED 105.8 - 115.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian		X	M	10YR 8/1	<p>WACKESTONE-PACKSTONE and GRAINSTONE</p> <p>Major Lithology: WACKESTONE-PACKSTONE, white (10YR 8/1), with many gastropod porosity, benthic foraminifers, and molds, burrows with pellets, dasycladacean algae, much moldic brown shell fragments. GRAINSTONE, peloidal, white (10YR 8/1).</p>



SITE 866 HOLE A CORE 14R CORED 115.4 - 125.0 mbsf

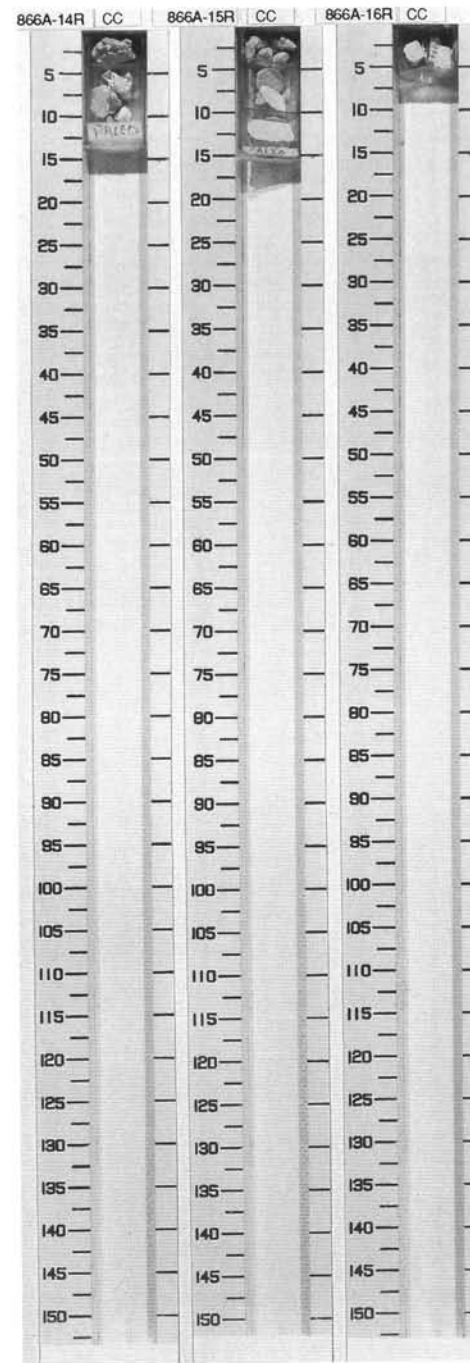
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian		X	M	10YR 8/1	<p>WACKESTONE</p> <p>Major Lithology: WACKESTONE, white (10YR 8/1) with darker patches (10YR 8/2), gastropod molds on cm scale, peloids, slight yellow staining, possible serpulids. Some brown, well-preserved material is present on outside of large nereneid gastropod.</p>

SITE 866 HOLE A CORE 15R CORED 125.0 - 134.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian		X	M P	10YR 8/1	<p>WACKESTONE and MUDSTONE</p> <p>Major Lithology: WACKESTONE (and rarely MUDSTONE), white (10YR 8/1) with dasycladacean algae, sponge spicules, foraminifers locally yellow-stained and gastropod molds.</p> <p>Minor Lithology: GRAINSTONE, pelletal, in burrow fills.</p>

SITE 866 HOLE A CORE 16R CORED 134.7 - 144.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian		X		10YR 8/1	<p>MUDSTONE and WACKESTONE</p> <p>Major Lithologies: WACKESTONE, white (10YR 8/1), with sponge spicules, dasycladacean algae and Mn-oxyhydroxide stained gastropod molds, and MUDSTONE with burrow infilled by pellets, sponge spicules, possible fenestrae, benthic foraminifers, dasycladacean algae.</p>



SITE 866 HOLE A CORE 21R

CORED 184.2 - 193.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian	3/3 6 0	X	T	10YR 8/2	<p>WACKESTONE</p> <p>Major Lithology: WACKESTONE, white (10YR 8/2) with benthic foraminifers, gastropod molds, and yellow staining. Burrows are small (1 mm diameter) or medium (0.5-1 cm) in diameter. Some mottling is present.</p>

SITE 866 HOLE A CORE 22R

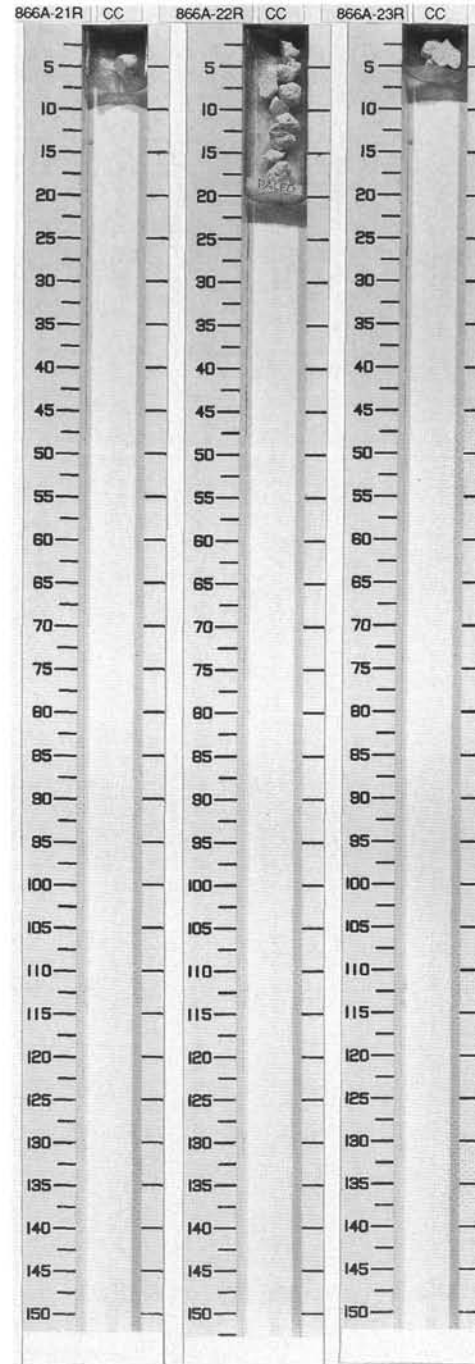
CORED 193.8 - 203.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian	3/3 6 G	X	MP	10YR 8/2	<p>WACKESTONE</p> <p>Major Lithology: WACKESTONE, white (10YR 8/2) with sponge spicules, benthic foraminifers, dasycladacean algae, echinoderm plates, serpulids (?), gastropods, burrows.</p>

SITE 866 HOLE A CORE 23R

CORED 203.4 - 213.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian	3/3 6 G	X	T	10YR 8/2	<p>WACKESTONE and GRAINSTONE</p> <p>Major Lithologies: WACKESTONE, white (10YR 8/2), with yellow stain, with dasycladacean algae, peloids, gastropods, some benthic foraminifers, recrystallised coral fragment (?).</p> <p>Minor Lithology: GRAINSTONE, peloidal, infilling burrows.</p>



SITE 866 HOLE A CORE 24R CORED 213.1 - 222.7 mbsf

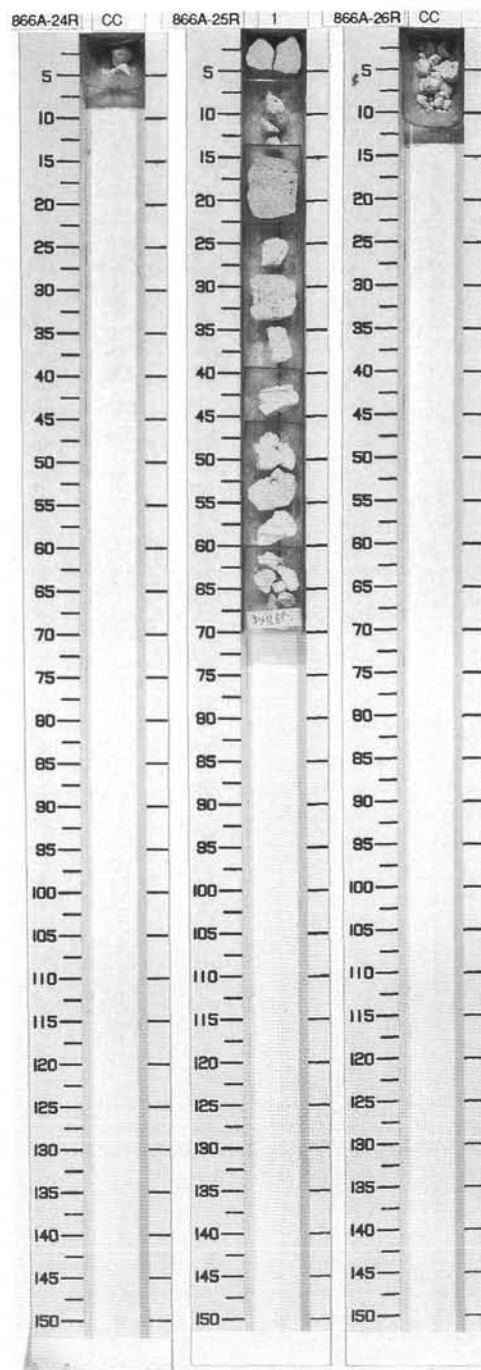
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W W W	CC	Albian	3 G	X		10YR 8/3	<p>WACKESTONE</p> <p>Major Lithology: WACKESTONE, very pale brown (10YR 8/3), with benthic foraminifers, gastropod molds, yellow staining.</p> <p>Minor Lithology: GRAINSTONE, peloidal, infilling burrows.</p>

SITE 866 HOLE A CORE 25R CORED 222.7 - 232.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W W W P P P P G G G G	CC	Albian	3 B G G	X	PT M T	10YR 8/1	<p>WACKESTONE, GRAINSTONE and PACKSTONE</p> <p>Major Lithologies: WACKESTONE, white (10YR 8/1), with peloids, benthic foraminifers, dasycladacean algae, bivalves, spicules (?), and some burrows filled with peloidal GRAINSTONE. GRAINSTONE, white (10YR 8/1), with peloids, coated grains, bioclasts, burrows and keystone vugs and some low-angle planar lamination. PACKSTONE, white (10YR 8/1), with peloids, bivalves, benthic foraminifers and burrows.</p> <p>General Description: Calcrete crust occurs on pieces in 13-21 cm and 39-46 cm.</p>

SITE 866 HOLE A CORE 26R CORED 232.4 - 242.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W W W P P P P G G G G	CC	Albian	3 B G G	X		10YR 8/1	<p>WACKESTONE and GRAINSTONE</p> <p>Major Lithologies: WACKESTONE, white (10YR 8/1), with gastropod molds, bivalve fragments, probable dasycladacean algae, and some yellow staining. Peloidal GRAINSTONE with dasycladacean algae, and bioclast (echinoderm plate ?). One fragment is a mold of a large smooth gastropod.</p>



SITE 866 HOLE A CORE 27R CORED 242.0 - 251.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian	8 6	X		10YR 8/1	GRAINSTONE Major Lithology: Peloidal GRAINSTONE, white (10YR 8/1), with bioclasts (echinoderm plates ?), gastropod molds, sponge spicules, some brown calcite.

SITE 866 HOLE A CORE 28R CORED 251.6 - 261.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian	8 6		M	10YR 8/1	WACKESTONE and GRAINSTONE Major Lithologies: WACKESTONE, and GRAINSTONE, peloidal, white (10YR 8/1), with numerous gastropods, sponge spicules, dasycladacean algae, small bivalves with brown shell.

SITE 866 HOLE A CORE 29R CORED 261.3 - 271.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Albian	8 6		M	10YR 8/1	WACKESTONE Major Lithology: WACKESTONE, white (10YR 8/1), with molds of large gastropods, ornamented bivalve mold, echinoid spine (?), cluster of dasycladacean algae, bioclasts (echinoderm plates ?), peloids, bored bioclasts, and intraclasts.

SITE 866 HOLE A CORE 30R CORED 271.0 - 280.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Aptian	4	X	M	10YR 8/1	WACKESTONE Major Lithology: WACKESTONE, white (10YR 8/1 to 10YR 8/2), with benthic foraminifers, sponges (?), and dasycladacean algae (?); larger grains with micritized linings; few burrows infilled with more porous material than surroundings.



SITE 866 HOLE A CORE 34R

CORED 309.2 - 318.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W W W	CC	Aptian	G B O	X	M T	10YR 8/1 To 10YR 8/2	<p>WACKESTONE</p> <p>Major Lithology: White (10YR 8/1 to 10YR 8/2) WACKESTONE, well cemented, with benthic foraminifers (dominant miliolids), gastropods, and bivalves. Molluscan shells are dissolved.</p>

SITE 866 HOLE A CORE 35R

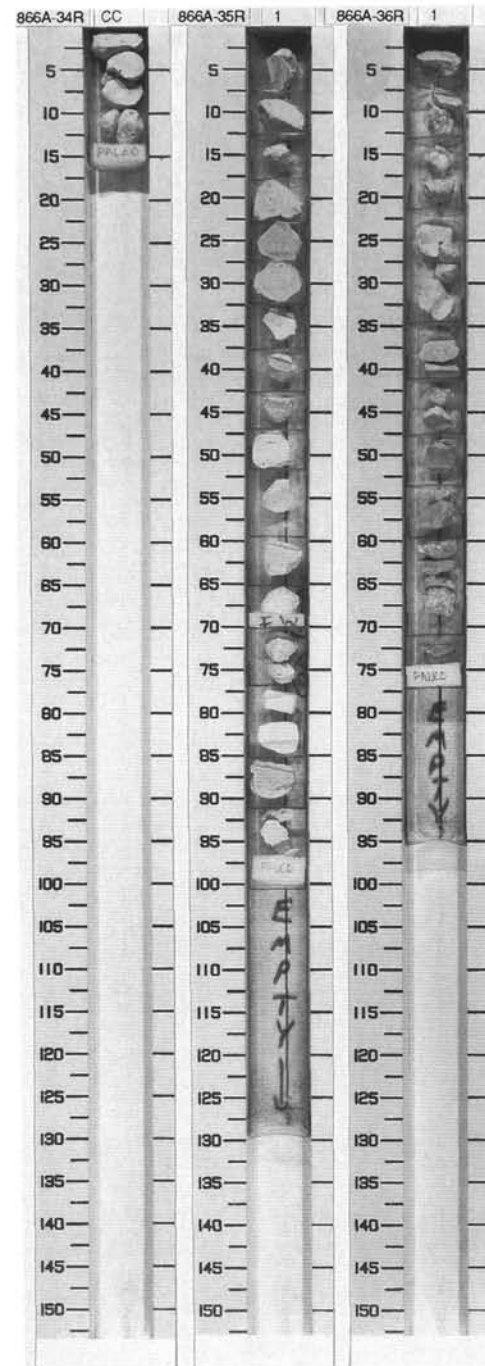
CORED 318.9 - 328.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W W W W W W W	1	Aptian	G B O ● F G	X X X X X X X X	T P M	10YR 8/2 To 10YR 7/1	<p>MUDSTONE and WACKESTONE-PACKSTONE</p> <p>Major Lithology: MUDSTONE (0-7 cm), light gray (10YR 7/1), with small benthic foraminifers, well cemented. WACKESTONE-PACKSTONE (7-101 cm), white (10YR 8/2) to light gray (10YR 7/1), with small benthic foraminifers, gastropods, bivalves, sponges (?), dasycladacean algae; burrows with fecal pellets; porous at the upper horizon (with intergranular porosity) and well cemented downward.</p>

SITE 866 HOLE A CORE 36R


CORED 328.5 - 338.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	M M M M M M M M	1	Aptian	G B F G	V V V V V V V V	T P M	10YR 8/2	<p>MUDSTONE</p> <p>Major Lithologies: MUDSTONE, white (10YR 8/2) hard compact limestone with gastropod molds; generally very homogenous, except for pebble at 55 cm which is green (10G 8/1) and more clay rich; bivalves, small foraminifers, dasycladacean algae, burrows locally filled with pelletal grainstone.</p> <p>Minor Lithology: WACKESTONE with dasycladacean algae.</p>




SITE 866 HOLE A CORE 37R

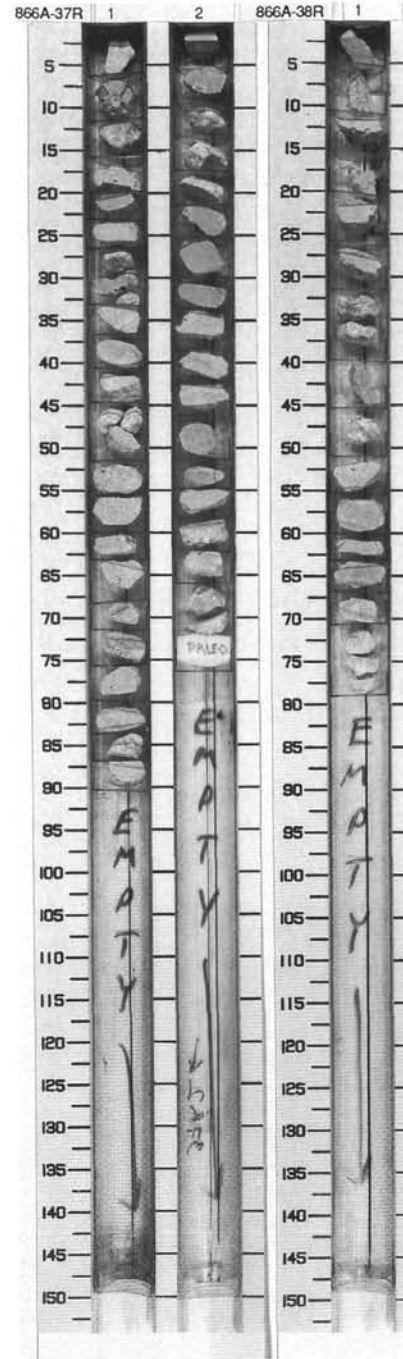
CORED 338.0 - 342.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	Aptian	}	}	TP	10YR 8/2	<p>MUDSTONE</p> <p>Major Lithology: MUDSTONE, white (10YR 8/2), hard, compact, with numerous gastropod molds; green (5GY 7/2) patina on some cavity walls; containing foraminifers, bivalves, some intraclasts, possible oncoids and burrows filled with pelletal grainstone. Partially leached shell fragment with oncolitic coating forms geopetal structure in Section 2, 5-10 cm.</p> <p>Minor Lithologies: WACKESTONE with intraclasts, foraminifers, gastropod and bivalve fragments.</p>
		2				T		
			M					

SITE 866 HOLE A CORE 38R

CORED 342.7 - 347.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian	8 6 ◆	}	MP	10YR 8/2	<p>MUDSTONE and WACKESTONE</p> <p>Major Lithologies: MUDSTONE, white (10YR 8/2), hard, compact with numerous gastropod molds; green patina (5GY 7/2) on some cavity walls; containing foraminifers, bivalves, peloids, mudstone intraclasts and burrows with pelletal grainstone fills. Grades into WACKESTONE.</p>



SITE 866 HOLE A CORE 41R CORED 367.0 - 376.6 mbsf

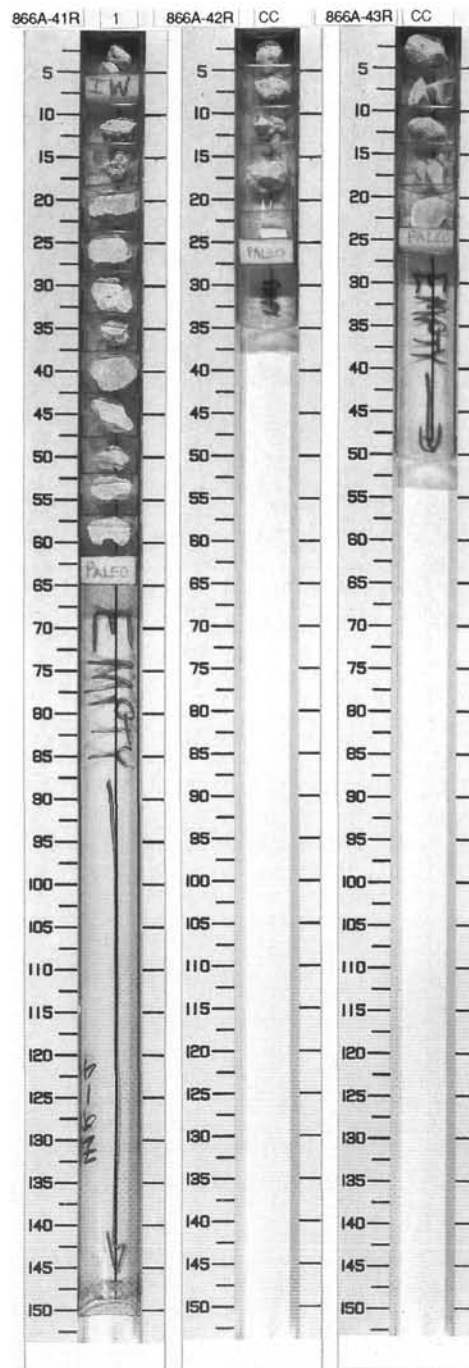
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian			P M	10YR 8/1 To 10YR 8/2	<p>WACKESTONE</p> <p>Major Lithologies: WACKESTONE, white (10YR 8/1 to 10YR 8/2), with gastropod and bivalve molds, numerous small (mm-scale) burrows, ostracods (?), several benthic foraminifers, dasycladacean algae. In 18-23 cm the lithology is as above but with irregular white to gray (10YR 8/2 to 10YR 7/2) mottling and burrows with pellets, ostracods and peloids.</p> <p>Minor Lithology: PACKSTONE</p>

SITE 866 HOLE A CORE 42R CORED 376.6 - 386.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Aptian			M	10YR 8/1 To 10YR 8/2	<p>MUDSTONE-WACKESTONE</p> <p>Major Lithology: MUDSTONE-WACKESTONE, white (10YR 8/1 to 10YR 8/2), with incipient mottling, benthic foraminifers, dasycladacean algae, peloids, pellets in burrows, very vuggy, slight light green patina on vugs, stylolites.</p>

SITE 866 HOLE A CORE 43R CORED 386.3 - 395.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Aptian			M	10YR 8/2 To 10YR 7/1	<p>MUDSTONE-WACKESTONE</p> <p>Major Lithology: MUDSTONE-WACKESTONE, white with slightly darker mottled zones (10YR 8/2 to 10YR 7/1), vuggy, with peloids, dasycladacean algae, small bivalve molds, gray clay stylolites, and very fine sub-mm laminations (incipient calcretization).</p>



SITE 866 HOLE A CORE 44R

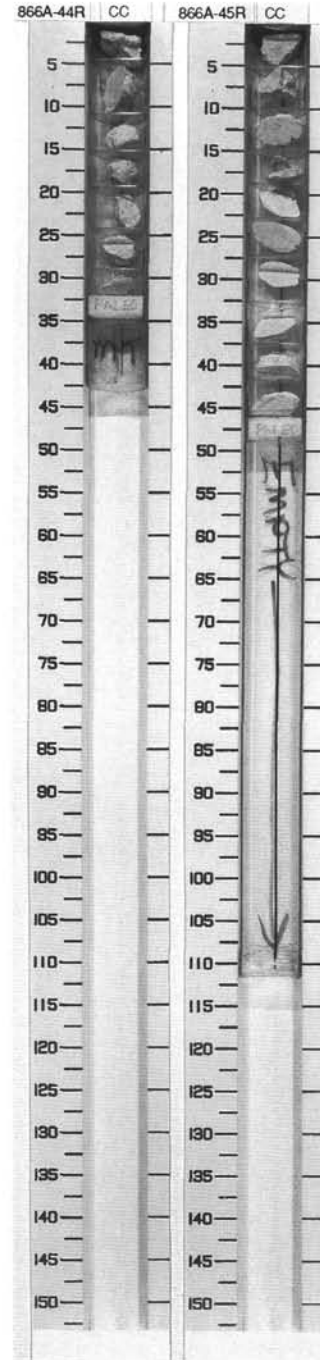
CORED 395.9 - 405.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W M M M	CC	Aptian	Φ G ●	∇	M	10YR 8/1 To 10YR 6/2	<p>WACKESTONE-MUDSTONE</p> <p>Major Lithology: WACKESTONE-MUDSTONE, white to dark gray (10YR 8/1 to 10YR 6/2), with mottles, including round zoned particle (incipient calcrite), peloids, dasycladacean algae, rare benthic foraminifers, and some laminated green-gray (5Y 5/2) clay in mm-cm scale cavities.</p>

SITE 866 HOLE A CORE 45R

CORED 405.6 - 415.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W W W W	CC	Aptian	Φ G	X	P	10YR 8/2	<p>WACKESTONE</p> <p>Major Lithology: WACKESTONE, white (10YR 8/2), with small-sized foraminifers, ostracods, dasycladacean algae, and some intraclasts. From 5–10 cm, there is a transition between light WACKESTONE and darker MUDSTONE, which appears erosional.</p> <p>Minor Lithology: MUDSTONE, occurs as part of a pebble at 5–10 cm; also occurs as clasts within adjacent WACKESTONE.</p>



SITE 866 HOLE A CORE 48R

CORED 434.4 - 444.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian	G, P, W, M	WWW	P M	10YR 8/3 to 10YR 8/2	GRAINSTONE, PACKSTONE and WACKESTONE Major Lithology: GRAINSTONE-PACKSTONE (8-44 cm) and PACKSTONE (50-56 cm), very pale brown (10YR 8/3) to white (10YR 8/2) with yellow (10YR 8/6) laminae, clastic texture; foraminifers, shells, dasycladacean algae, intraclasts; intergranular porosity; burrows partly infilled with dirty cement (34-44 cm). WACKESTONE, white (10YR 8/1 to 10YR 8/2), 0-8 cm and 56-58 cm, bioclastic texture; small gastropods and foraminifers; moldic porosity with crystalline infillings.

SITE 866 HOLE A CORE 49R

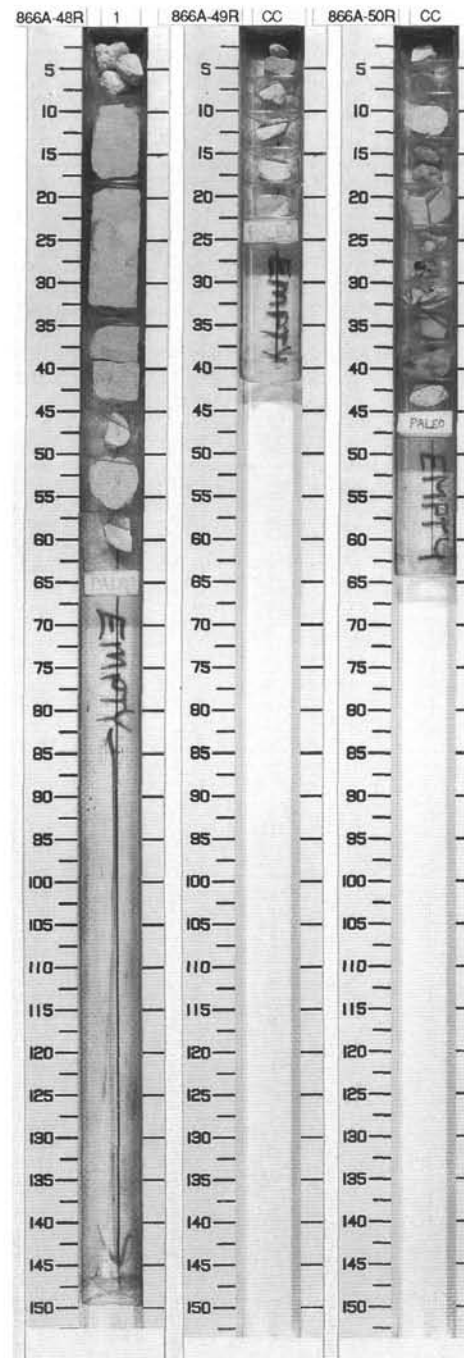
CORED 444.0 - 453.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Aptian		X	M	10YR 8/1 To 10YR 8/2	GRAINSTONE, WACKESTONE and PACKSTONE-GRAINSTONE Major Lithology: GRAINSTONE, WACKESTONE and PACKSTONE-GRAINSTONE, white (10YR 8/1 to 10YR 8/2), with foraminifers including orbitolinids.

SITE 866 HOLE A CORE 50R

CORED 453.7 - 463.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Aptian		X	P M	10YR 8/2	PACKSTONE Major Lithology: PACKSTONE (8-47 cm), white (10YR 8/2), with foraminifers and intraclasts; contains black (10YR 2/1) coal (2x1 cm in 26-30 cm) and its fragments (23-26 cm; 37-41 cm), laminated layers (ca. 1 mm) of coaly material and clastic pellets (30-33 cm). Minor Lithologies: WACKESTONE (0-4 cm), white (10YR 8/2), burrows with gray (10YR 6/1) infills. GRAINSTONE, (4-8 cm), very pale brown (10YR 7/3), bioclastic.



SITE 866 HOLE A CORE 51R

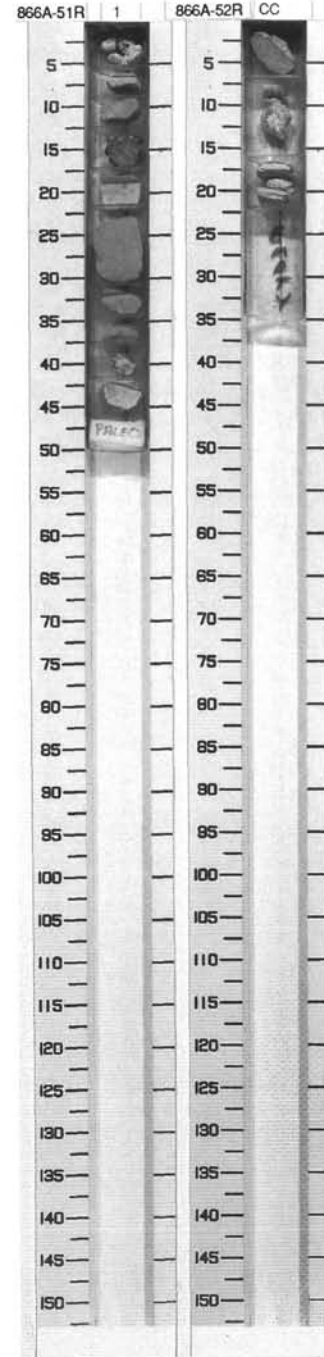
CORED 463.4 - 473.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-10	G G P P P P P P	CC	Aptian	◆	×	P M	10YR 8/2 To 10YR 3/1	<p>GRAINSTONE-PACKSTONE and PACKSTONE</p> <p>Major Lithology: GRAINSTONE-PACKSTONE, white (10YR 8/2, 5-13 cm) and very pale brown (10YR 7/3, 18-37 cm), with shells, gray lithoclasts, intergranular porosity; burrows infilled with pellets (38-41 cm). PACKSTONE, white (10YR 8/2, 0-5 cm) and gray (10YR 3/1, 13-18 and 37-50 cm), with moldic porosity.</p> <p>Minor Lithologies: MUDSTONE, white, infilling burrows (5-13 cm) and molds (13-18 cm). There is one pebble of black (10YR 2/1) peloidal WACKESTONE (0-5 cm).</p>

SITE 866 HOLE A CORE 52R

CORED 473.0 - 482.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-10	P P P P P P P P	CC	Aptian	⊖ ⊕ ⊙ ⊚ ●	×	M	10YR 7/2 To 5Y 8/1	<p>PACKSTONE</p> <p>Major Lithology: Light gray and yellowish gray (10YR and 5Y 8/1) PACKSTONE, pelletal with foraminifers, gastropods and dasycladacean algae (rare); poorly indurated and granular (0-15 cm). Wispy laminations of organic rich/ coaly limestone occur at 15-23 cm.</p>

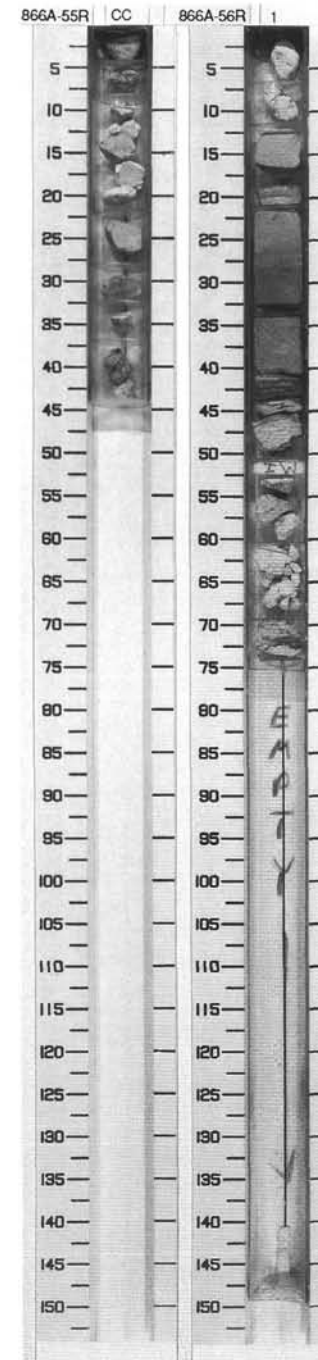


SITE 866 HOLE A CORE 55R CORED 501.9 - 511.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
5	G P P P	CC	Aptian			M	10YR 8/2	GRAINSTONE-PACKSTONE Major Lithology: GRAINSTONE-PACKSTONE, white (10YR 8/2) to dark gray (10YR 4/1) with black pebbles. Some orbitolinid foraminifers were observed. Minor Lithologies: Pelletal PACKSTONE in burrows. There is a minor amount of brown (10YR 4/4) to gray (10YR 6/1) CLAY and organic-rich PACKSTONE to CLAYEY LIMESTONE.

SITE 866 HOLE A CORE 56R CORED 511.6 - 521.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
5	P P P P	1	Aptian			P	10YR 7/2 To 10YR 5/3	PACKSTONE and CLAYEY LIMESTONE Major Lithology: PACKSTONE, light gray to brown (10YR 7/2 to 10YR 5/3), peloidal, with benthic foraminifers, clay, organic fragments and pyrite. This grades down into brown-black (10YR 3/3) laminated organic-rich CLAYEY LIMESTONE with some burrows and orbitolinid foraminifers. Geopetal structures at 50-60 cm filled with dark mudstone to wackestone with benthic foraminifers and sponge spicules. Laminated facies with organic-rich clay seams occur at the base of the section.



SITE 866 HOLE A CORE 60R

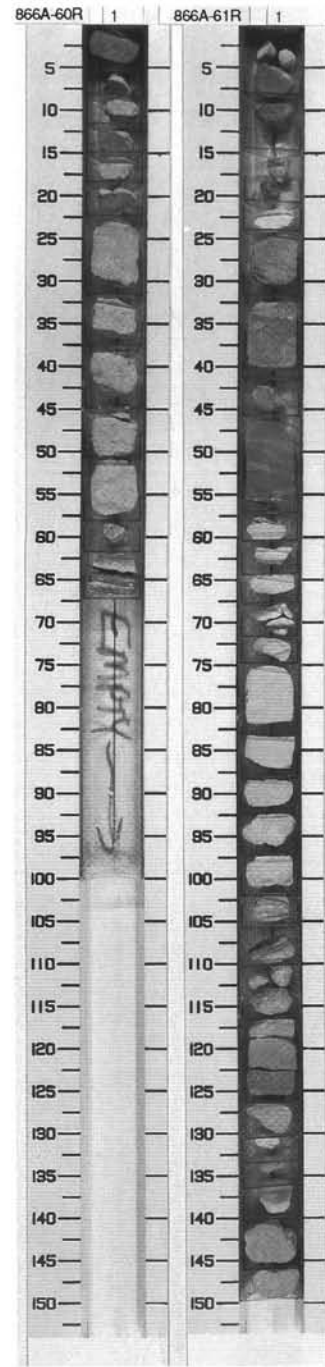
CORED 550.3 - 559.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian			P	10YR 8/2	<p>GRAINSTONE and PACKSTONE</p> <p>Major Lithology: GRAINSTONE-PACKSTONE, white (10YR 8/2), with blue-gray intraclasts, foraminifers, and organic fragments. Darker pebble occurs at 1-5 cm and contains coated grains, foraminifers, and rare intraclasts. Darker, more clay-rich laminated sediments present at 62-67 cm with mm scale limestone clasts.</p>

SITE 866 HOLE A CORE 61R

CORED 559.9 - 569.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian			P	10YR 8/2 to 10YR 6/2	<p>PACKSTONE-GRAINSTONE</p> <p>Major Lithologies: PACKSTONE-GRAINSTONE, peloidal, white-gray (10YR 8/2-6/2) with benthic foraminifers, locally blackened, very compact, and highly bioturbated. Local variations in content of organic fragments and in amount of laminated clay seams.</p> <p>Minor Lithology: WACKESTONE with dasycladacean algae, bivalves and ostracods, 20-24 cm.</p>



SITE 866 HOLE A CORE 62R

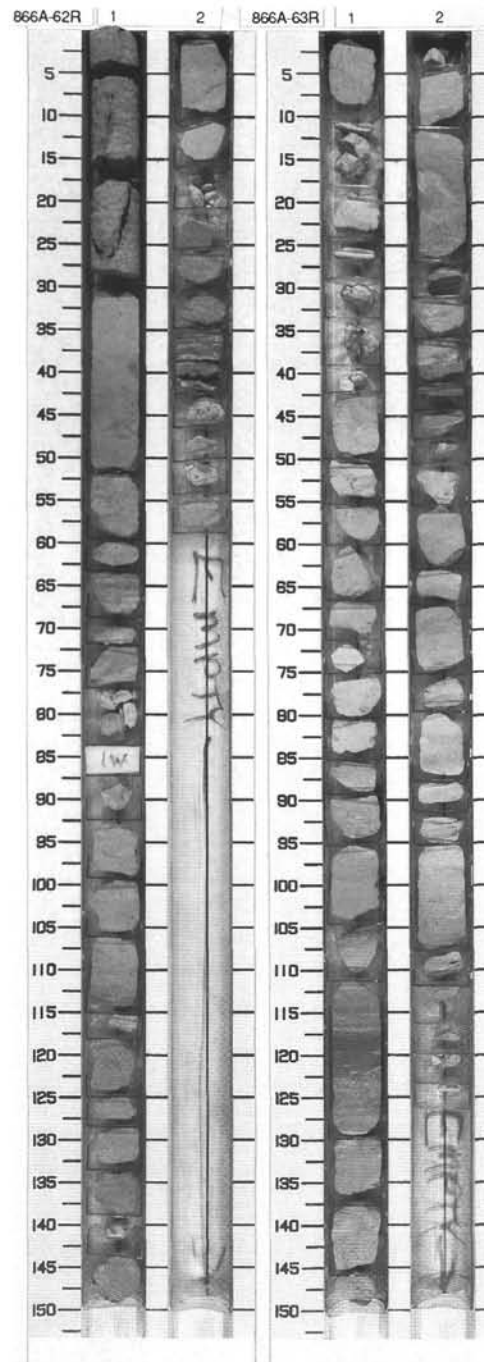
CORED 569.6 - 579.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	Aptian			I-P	10YR 8/2 To 5B 6/1	<p>WACKESTONE and GRAINSTONE</p> <p>Major Lithology: WACKESTONE-GRAINSTONE, white (10YR 8/2) with angular blue-gray clasts, benthic foraminifers and black organic particles, shelly fragments and many burrows, some filled with pelletal GRAINSTONE. Section 1, 0-30 cm contains a large subvertical plate of lignite in peloidal WACKESTONE.</p>
2		2				P		<p>Minor Lithologies: Section 2, 15-35 cm contains gray to blue-gray (10YR 7/2 to 5B 6/1) RUDSTONE with peloids, intraclasts of CLAYEY LIMESTONE and some benthic foraminifers. Section 2, 35-42 cm is a dark gray-green (5Y 5/1 to 5Y 4/1) clayey limestone, mm-laminated with dissolution seams, many intraclasts and pyrite.</p>

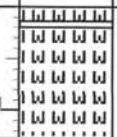


SITE 866 HOLE A CORE 63R

CORED 579.3 - 589.0 mbsf

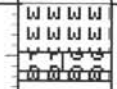


Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	Aptian			P	10YR 8/3	<p>GRAINSTONE and PACKSTONE</p> <p>Major Lithology: GRAINSTONE-PACKSTONE (Section 1, 1-150 cm), very pale brown (10YR 8/3), peloidal with dark gray intraclasts, intergranular porosity and moldic porosity of gastropods, burrowed (Section 1, 42-54 cm). In Section 1, 111-130 cm, one fining up interval. PACKSTONE (Section 2, 1-127 cm), peloidal white (10YR 8/2), with very pale brown (10YR 8/3) intraclasts, burrowed. Some bedding, gastropod molds. Fine flaser-like bedding occurs in Section 2, 42-45 cm, and coaly fragments in Section 2, 109-112 cm. Intergranular porosity, plant fragments occur throughout Section 2.</p>
2		2				P	10YR 8/2	<p>Minor Lithologies: Section 1, 33-39 cm, gray (10YR 5/1), organic-rich (?) WACKESTONE, peloidal.</p>



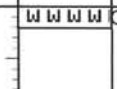


SITE 866 HOLE A CORE 66R CORED 608.3 - 618.0 mbsf

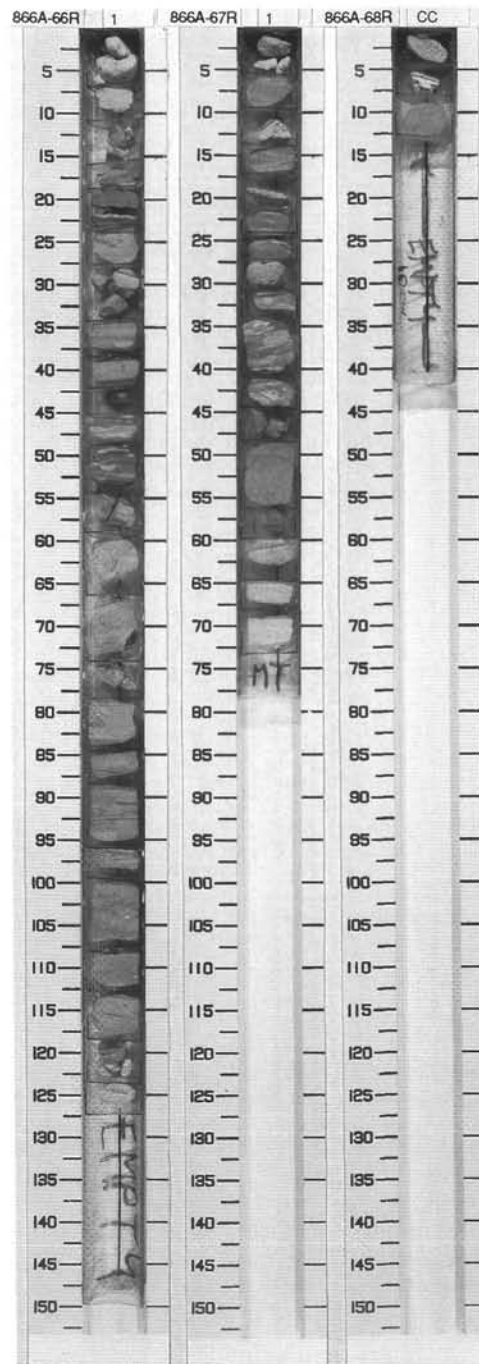
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian			I P	10YR 8/2 To 10YR 8/3	WACKESTONE Major Lithology: WACKESTONE, peloidal, white (10YR 8/2) to very light brown (10YR 8/3), with algal mat intervals (16-18, 19-23, 42-45, 46-49, 50-54, 85-89, 97-100 cm). Dark gray (10YR 4/1) WACKESTONE, from 66-74 cm; strongly stylolitized.

SITE 866 HOLE A CORE 67R CORED 618.0 - 627.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian			P	10YR 8/2	WACKESTONE, PACKSTONE and GRAINSTONE Major Lithology: WACKESTONE, peloidal, white (10YR 8/2) to very pale brown (10YR 7/3), with algal mats (30-43 cm), partly burrowed. PACKSTONE-GRAINSTONE (48-64 cm), peloidal with intergranular and moldic porosity, some benthic foraminifers.

SITE 866 HOLE A CORE 68R CORED 627.7 - 637.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Aptian			M	10YR 7/1 To 10YR 8/3	WACKESTONE Major Lithology: WACKESTONE, peloidal, light gray (10YR 7/1) to gray (10YR 6/1); small darker (10YR 5/1) intraclasts; burrows infilled with white (10YR 8/1) sediments with organic matter, foraminifers, and algae; clastic texture. WACKESTONE, peloidal, light gray (10YR 7/1), with gastropods and benthic foraminifers; bioclastic texture. WACKESTONE, peloidal, very pale brown (10YR 8/3), with benthic foraminifers and dasycladacean algae, intergranular porosity, clastic texture.



SITE 866 HOLE A CORE 69R

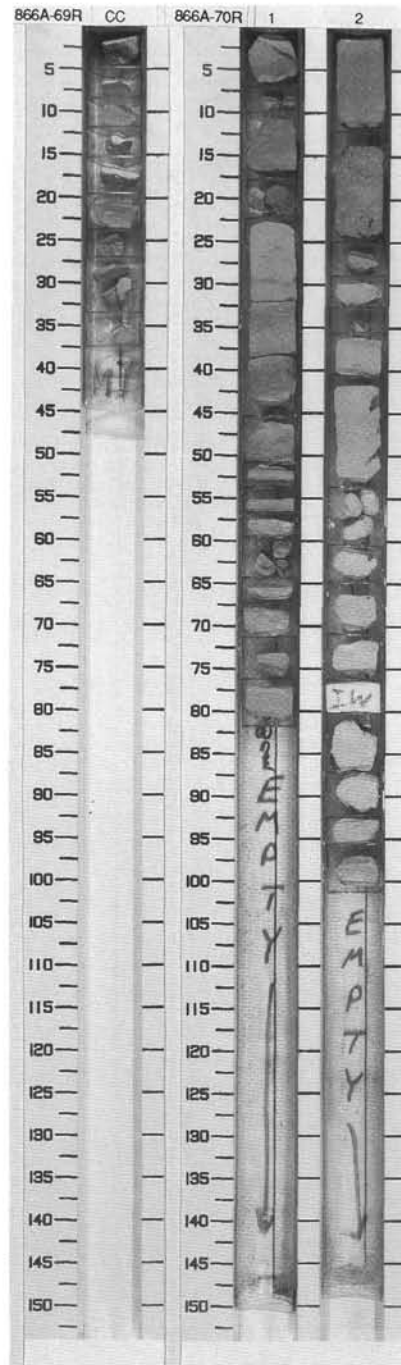
CORED 637.2 - 646.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-10	W W W W W W W W	CC	Aptian	G G G	X X		10YR 5/1 To 10YR 8/3	<p>WACKESTONE</p> <p>Major Lithology: WACKESTONE (0-19 cm), peloidal, light gray (10YR 7/1) to white (10YR 8/1), with foraminifers and gastropods; large burrow with white porous infilling (0-5 cm). WACKESTONE, peloidal (19-23 cm), gray (10YR 6/1 to 10YR 5/1), thinly laminated; burrows infilled with white (10YR 8/2) porous WACKESTONE; clastic texture. WACKESTONE (23-37 cm), peloidal, very pale brown (10YR 8/3), with benthic foraminifers and dasycladacean algae; clastic texture.</p>

SITE 866 HOLE A CORE 70R

CORED 646.9 - 656.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-17	W W	1	Aptian	G G G		P	10YR 7/2 To 10YR 6/1	<p>WACKESTONE, PACKSTONE GRAINSTONE and MUDSTONE</p> <p>Major Lithology: WACKESTONE-PACKSTONE (Section 1, 0-17 cm), light gray (10YR 7/2) to gray (10YR 6/1), peloidal, with benthic foraminifers and dacycladacean algae, burrowed. WACKESTONE (Section 1, 17 cm to Section 2, 10 cm), light gray (10YR 7/2) to very pale brown (10 YR 6/2), peloidal, with benthic foraminifers, burrows with coarse-grained infillings, fining upward sequence. GRAINSTONE (Section 2, 10-25 cm), light gray (10YR 7/2), peloidal with several rounded clasts (1-2 cm in diameter) of well-lithified structureless limestone, many stylolites, gastropod debris. MUDSTONE-WACKESTONE (Section 2, 25-102 cm), light gray (10YR 7/2), with foraminifers, (rarely) bioturbated.</p>
17-102	M M W W M M W W M M W W	2					10YR 7/2	



SITE 866 HOLE A CORE 71R

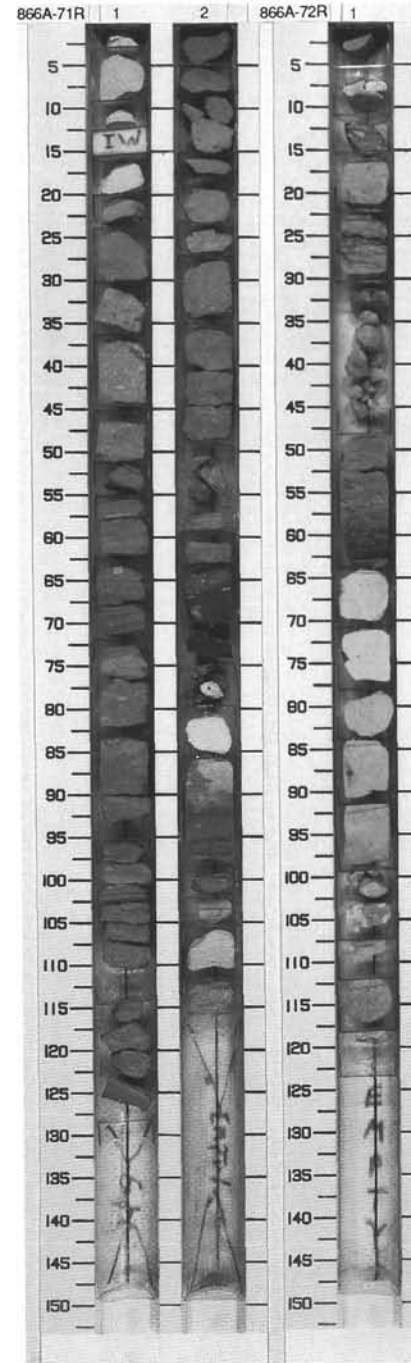
CORED 656.5 - 666.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	W W W W W W W W M M M M M M M M M M M M P P P P P P P P P P P P	1	Aptian	◆ ● ○ ○ 		I P	10YR 8/2 To 10YR 7/1 10YR 6/1 To 10YR 3/1	WACKESTONE, MUDSTONE, and PACKSTONE
2	P P P P P P P P P P P P P P P P	2		 		P	10YR 5/1 To 10YR 7/3	Major Lithology: WACKESTONE (Section 1, 0–51 cm), white (10YR 8/2; Section 1, 0–20 cm) to light gray (10YR 7/1, Section 1; 20–51 cm); with numerous miliolid foraminifers, many gray (10YR 5/1) intraclasts, algal fragments, few burrows. In Section 1, 51–130 cm and Section 2, 65–75 cm, MUDSTONE, algal laminated, gray to very dark gray (10YR 6/1 to 10YR 3/1); few foraminifers in laminated unit, some stylolitic layers (Section 1, 51–130 cm); algal mat (Section 2, 65–75 cm) underlain by carbon-rich, green (2.5G 3/2) celadonic layer (6 cm in thickness). PACKSTONE, peloidal (Section 2, 0–64 and 81–116 cm), gray (10YR 5/1, Section 2, 0–9 cm) to light gray (10YR 7/1; Section 2, 9–64 cm and 81–116 cm), with foraminifers and gastropods, white burrow mottles; cross-bedding in Section 2, 57 cm.
								Minor Lithologies: Green (2.5G 3/2) celadonic (?) MUDSTONE in Section 2, 75–81 cm.

SITE 866 HOLE A CORE 72R

CORED 666.2 - 675.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	W W W W W W W W W W W W W W W W W W W W	1	Aptian	W W ● ○ ○ 		P	10YR 8/2 2.5G 4/4 10YR 8/2	WACKESTONE
								Major Lithology: WACKESTONE, white (10YR 8/2), peloidal, with rare benthic foraminifers, wavy laminated, burrowed.
								Minor Lithologies: MUDSTONE in 47–63 cm, green (2.5G 4/4), burrowed, lenticularly laminated, stylolitized, grading finer downhole. Green clay is concentrated along the stylolitic contact and as burrow infilling.



SITE 866 HOLE A CORE 73R

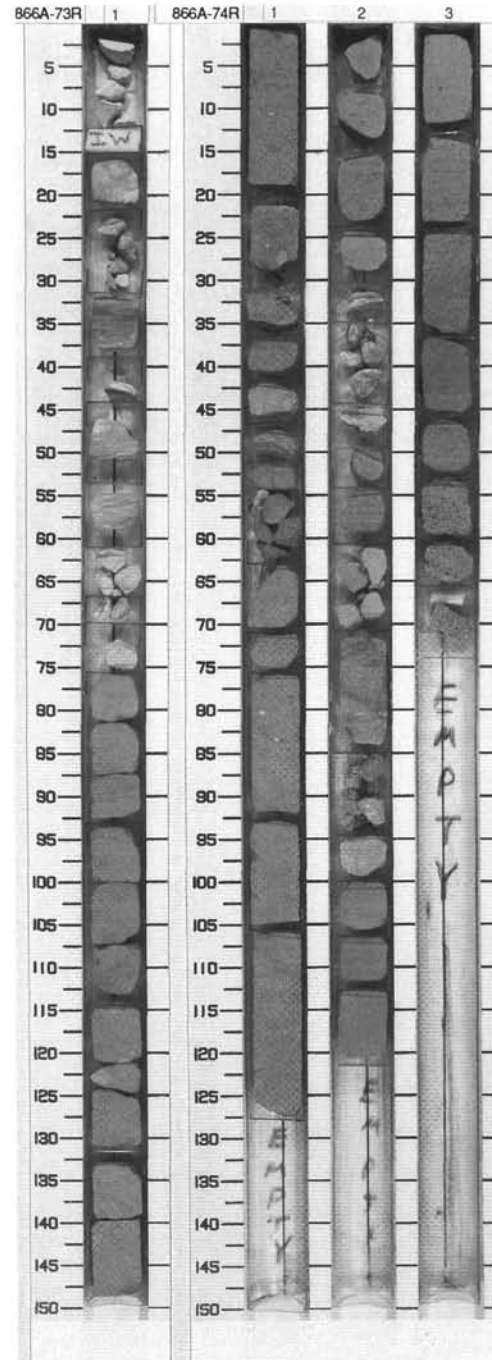
CORED 675.8 - 685.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1		1	Aptian	⊙ ⊙		IM	10YR 8/1 To 2.5G 4/2 10YR 7/3	<p>WACKESTONE, PACKSTONE and GRAINSTONE</p> <p>Major Lithologies: WACKESTONE-PACKSTONE (0-15 and 60-76 cm), white (10YR 8/1), often peloidal, with numerous benthic foraminifers, burrows filled with pellets and/or coated grains. Some pieces of WACKESTONE are gray-green clay-rich pale brown (10YR 6/3), gray-green to white (2.5G 4/2 to 10YR 8/2) WACKESTONE with many benthic foraminifers, pyrite, organic matter, and clay in distinct seams. From 76-150 cm is very pale brown (10YR 7/3) oolitic GRAINSTONE with some flaky bivalve shell material (probably oyster) lying (2.5G 4/2). From 15-60 cm is a mottled parallel to bedding, and intraclasts (on cm scale) of mudstone.</p>

SITE 866 HOLE A CORE 74R

CORED 685.5 - 695.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1		1	Aptian	⊙ ⊙ ⊙ ⊙		P P	10YR 7/3	<p>PACKSTONE, GRAINSTONE and RUDSTONE</p> <p>Major Lithology: GRAINSTONE-RUDSTONE, very pale brown (10YR 7/3), oolitic, with bivalve fragments and intraclasts, locally peloidal. Shells (mostly oysters) are current-oriented. Some echinoderm fragments and foraminifers are present, and lithoclasts contain well-preserved dasycladacean algae.</p>
1-2		2		⊙		P		
2-3		3		⊙		M	10YR 7/3	<p>RUDSTONE, in Section 2, 54-60 cm, white (10YR 8/2). PACKSTONE-GRAINSTONE, in Section 2, 60-70 cm, peloidal, white (10YR 8/2). A blackened (7.5YR 6/0 to 7.5YR 5/0) peloidal-oolitic PACKSTONE occurs in Section 2, 70-85 cm. Keystone vugs occur in Section 3, 53-74 cm.</p>

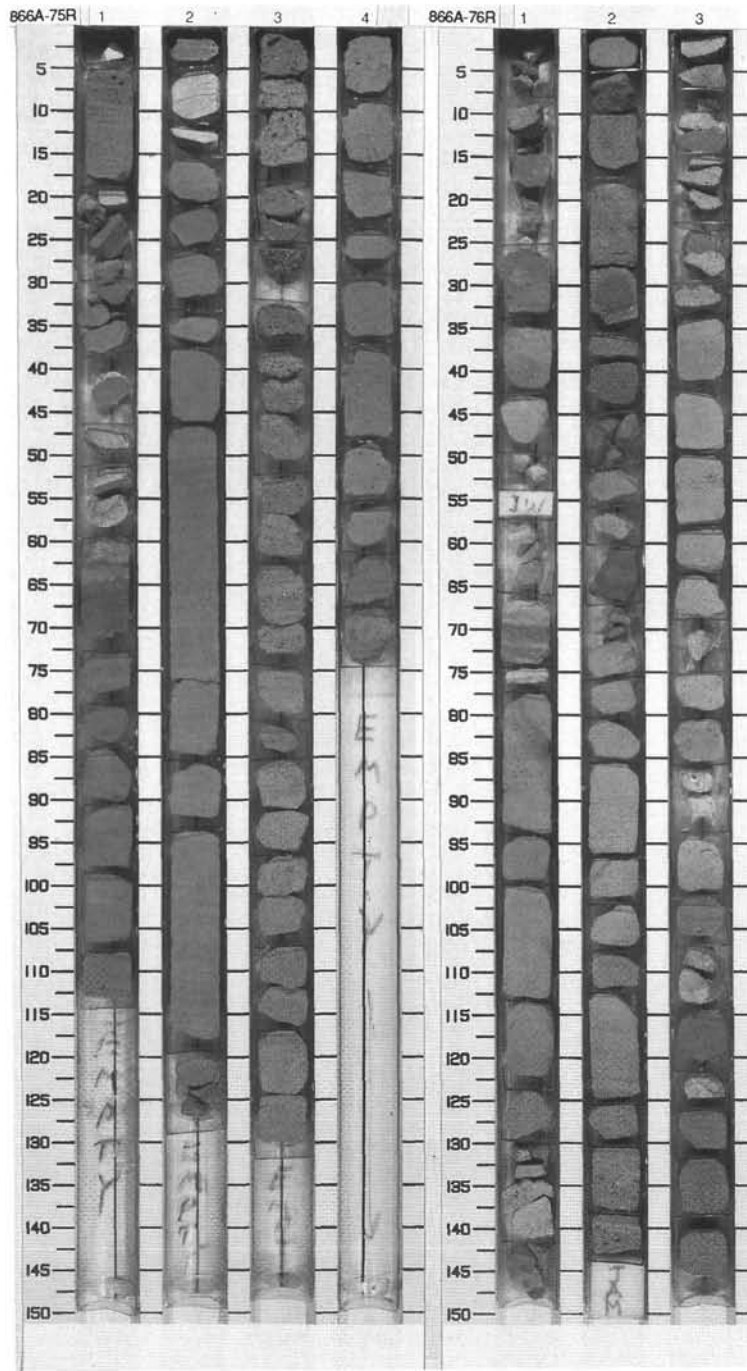


SITE 866 HOLE A CORE 75R CORED 695.1 - 704.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	[Graphic Lithology]	1	Aptian	[Structural Symbols]	[Disturbance Symbols]	P M P P T	10YR 8/2	GRAINSTONE Major Lithology: GRAINSTONE, oolitic and peloidal, white (10YR 8/2), cross-laminated with multiple coated grains and intraclasts, some blackened (2.5Y 4/0), gastropod molds, some fine organic matter, echinoderm remains and bivalve shell fragments. The sediment grades downwards towards base of Section 1 into solely oolitic GRAINSTONE with some size sorting. Keystone vugs are present at the base of Section 1, and top of Section 3.
2	[Graphic Lithology]	2						
3	[Graphic Lithology]	3						
4	[Graphic Lithology]	4						

SITE 866 HOLE A CORE 76R CORED 704.7 - 714.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	[Graphic Lithology]	1	Aptian	[Structural Symbols]	[Disturbance Symbols]	P P P T	10YR 7/3	GRAINSTONE Major Lithology: GRAINSTONE, very light brown (10YR 8/3), oolitic and peloidal, cross-laminated in some intervals, locally with layers of larger mm-cm scale interclasts with oncoidal coating, shelly fragments, larger foraminifers, and gastropod molds. Blackened peloids in Section 3, 0-67 cm. Minor Lithology: PACKSTONE, in Section 1, 65-77 cm, peloidal, finely laminated, with burrows, benthic foraminifers, and dasycladacean algae.
2	[Graphic Lithology]	2						
3	[Graphic Lithology]	3						



SITE 866 HOLE A CORE 81R

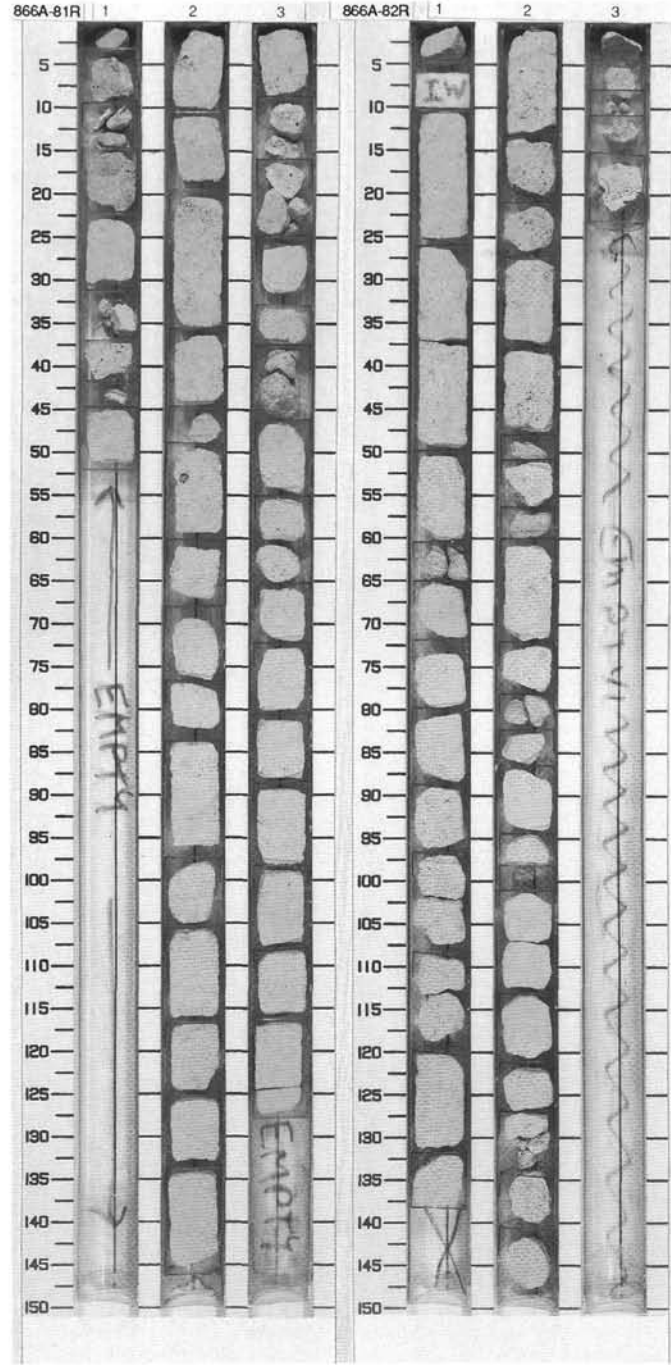
CORED 753.1 - 762.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	[Symbol]	1	Aptian		P	P	10YR 8/2	<p>GRAINSTONE and RUDSTONE</p> <p>Major Lithology: GRAINSTONE-RUDSTONE, oolitic, white (10YR 8/2), with rudist and other bivalve shells. Solitary coral in Section 1, 18 cm. Grains include ooids, superficial ooids, grapestones, grainstone-intraclasts and peloids. Most grains have sparry nuclei. The finer-grained intervals consist of well-cemented ooids, peloids, and superficial ooids with shell fragments. The coarser intervals are less sorted and contain ooids, superficial ooids, intraclasts, algal grains, and molds of large bioclasts.</p>
1-2	[Symbol]	2						
2-3	[Symbol]	3						
3	[Symbol]	3			M			

SITE 866 HOLE R CORE 82R

CORED 762.8 - 772.5 mbsf

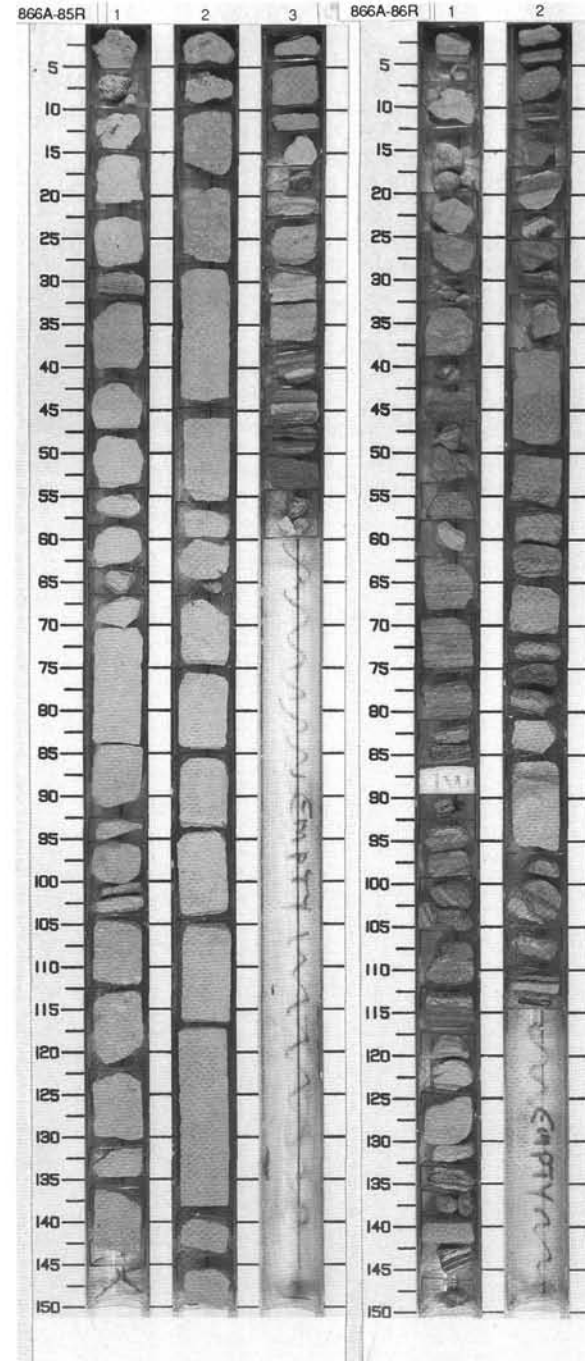
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	[Symbol]	1	Aptian		I	P P P	10YR 8/2	<p>GRAINSTONE and PACKSTONE</p> <p>Major Lithology: GRAINSTONE (Section 1, 0 cm to Section 2, 138 cm), oolitic, white (10YR 8/2), burrowed, intergranular porosity throughout, moldic porosity in Section 2. Concentration of bivalve shells (disarticulated) in Section 2, 18-20 cm. PACKSTONE, oolitic (Section 3, 0-21 cm), white (10YR 8/2); also occurs as intraclasts in Sections 1 and 2.</p>
1-2	[Symbol]	2						
2-3	[Symbol]	3						
3	[Symbol]	3			M			



SITE 866 HOLE A CORE 85R

CORED 791.8 - 801.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	P P P P P	1	Aptian		P	P	10YR 8/2	<p>PACKSTONE and WACKESTONE</p> <p>Major Lithologies: PACKSTONE (Section 1, 0–29 cm), white (10YR 8/2), with gastropods, bivalves and benthic foraminifers; moldic porosity. PACKSTONE (Section 1, 35 to Section 3, 11 cm), peloidal, very pale brown (10YR 8/3) to light gray (10YR 7/2), with gastropods and bivalves; intraclasts abundant in Section 1, 103 to 122 cm; oncoids abundant in Section 2, 0–28 and 57–75 cm. WACKESTONE (Section 3, 11–36 cm), light gray (10YR 7/2) with yellow (10YR 8/6) mottled appearance. Thin-bedded WACKESTONE (Section 3, 37–59 cm), with algal mats. A 0.5 cm-thick organic rich layer (black, 7.5YR 3/0), occurs in Section 3, 47 cm.</p> <p>Minor Lithologies: ALGAL MAT-STROMATOLITE in SECTION 1, 29–35 cm. CLAY LAMINAE (2 mm in thickness) in Section 1, 102 cm.</p>
2	P P P P P	2					10YR 8/3 To 10YR 7/2	
3	W W W W W	3	W W W W W					



SITE 866 HOLE A CORE 86R

CORED 801.5 - 811.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	P P P P P	1	Aptian		P	P	10YR 8/2	<p>PACKSTONE and MUDSTONE</p> <p>Major Lithology: PACKSTONE (Section 1, 0–40 cm), white (10YR 8/2), with mollusc fragments and some algal mats. In Section 1, 40 cm to Section 2, 116 cm, alternating PACKSTONE, peloidal, and MUDSTONE with algal mats, white (10YR 8/2). Tepee structure in Section 1, 106–112 cm.</p> <p>Minor Lithology: CLAY layers, dark gray (2.5Y N4) in Section 2, 19–20, 107–109 and 111–115 cm. Organic rich layer in Section 2, 113 cm (2 mm thick).</p>
2	P P P P P	2						
3	P P P P P	3						

SITE 866 HOLE A CORE 95R CORED 888.0 - 897.7 mbsf

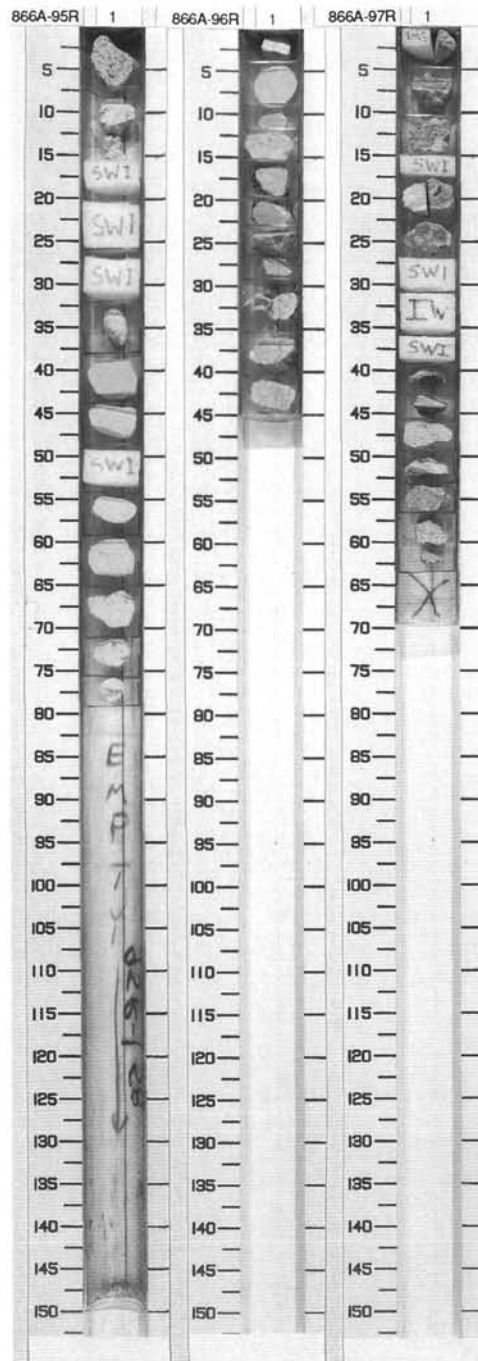
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian			M	10YR 8/2	GRAINSTONE and RUDSTONE Major Lithology: GRAINSTONE-RUDSTONE, white (10YR 8/2) with caprinid rudist fragments. From 32-79 cm, peloidal oolitic GRAINSTONE with some intact rudists.

SITE 866 HOLE A CORE 96R CORED 897.7 - 907.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian			P	10YR 8/2 and 2.5Y 6/0	PACKSTONE-WACKESTONE and FLOATSTONE Major Lithologies: PACKSTONE-WACKESTONE, white (10YR 8/2), peloidal with some dasycladacean algae. From 26-45 cm is a gray (2.5Y 6/0) breccia of partly dissolved rudist shells and peloidal WACKESTONE-FLOATSTONE.

SITE 866 HOLE A CORE 97R CORED 907.4 - 917.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian			M	2.5Y N7/0	PACKSTONE Major Lithology: PACKSTONE, blue-gray (2.5 Y N7/0 to 5/0), peloidal with benthic foraminifers, and some large fragments of caprinid rudists, mostly originally aragonitic, dissolved and filled with later cement. There are clayey stylolites and brecciation in the matrix. Interval 38-39 cm has blue clay at the base of cavities and some oyster debris. Blue micritization of sediment increases towards the base of the core. Minor Lithologies: The rudist body cavities are filled with well-cemented peloidal GRAINSTONE. Interval 42-45 cm contains WACKESTONE with wavy clay laminations.

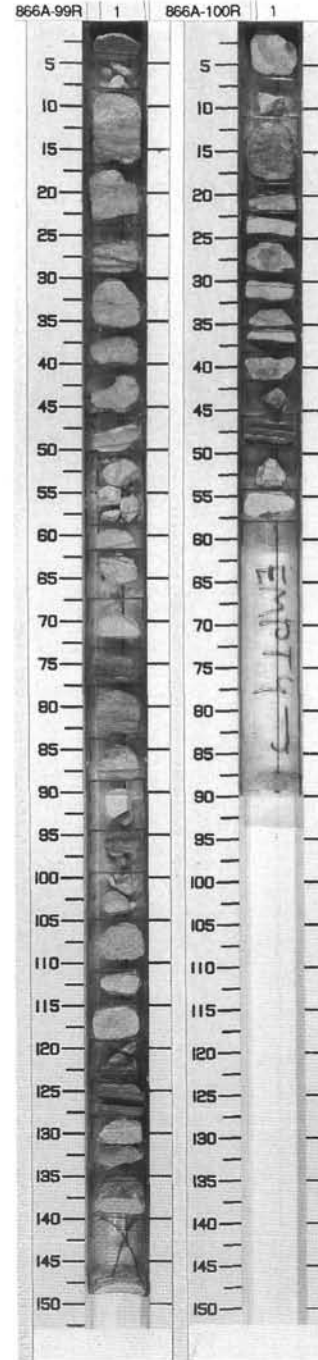


SITE 866 HOLE A CORE 99R CORED 923.9 - 933.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	W W	1	Aptian	BG BG		P T	10YR 8/2 To 10YR 7/3	<p>WACKESTONE and MUDSTONE</p> <p>Major Lithology: WACKESTONE (0-46 cm), white (10YR 8/2) to very pale brown (10YR 8/3), with gray (10YR 5/1) sand-sized intraclasts, burrowed, occasional algal laminae. WACKESTONE (46-74 cm), white (10YR 8/1), burrowed. WACKESTONE (74-120 and 130-140 cm), white (10YR 8/2) to very pale brown (10YR 7/3), algal laminae in 75-85 cm, rudist fragments in 85-90 cm. In 120-130 cm, MUDSTONE (algal-laminated), light gray (2.5YR 4/0), thinly laminated, organic rich layer at 127 cm (0.5 cm thick), burrows at 135 cm.</p>

SITE 866 HOLE A CORE 100R CORED 933.4 - 943.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	W W W W W W W W W W W W	1	Aptian	BG	W W W W	P T	10YR 8/2 To 10YR 8/1	<p>WACKESTONE and MUDSTONE</p> <p>Major Lithology: WACKESTONE-MUDSTONE, white (10YR 8/2) with gray (10YR 6/1) intraclasts (0-11 cm); light olive gray (5Y 6/2), with bivalve fragments, burrow mottles of white (10YR 8/1) infillings (11-19 cm). White (10YR 8/1), with abundant gray specks (10YR 5/1) of intraclasts and bioclasts (20-46, 46-57 cm). Thin algal laminae, very dark gray (10YR 3/1) to black (10YR 2/1) occur from 19-20 cm and 46-49 cm.</p>



SITE 866 HOLE A CORE 101R

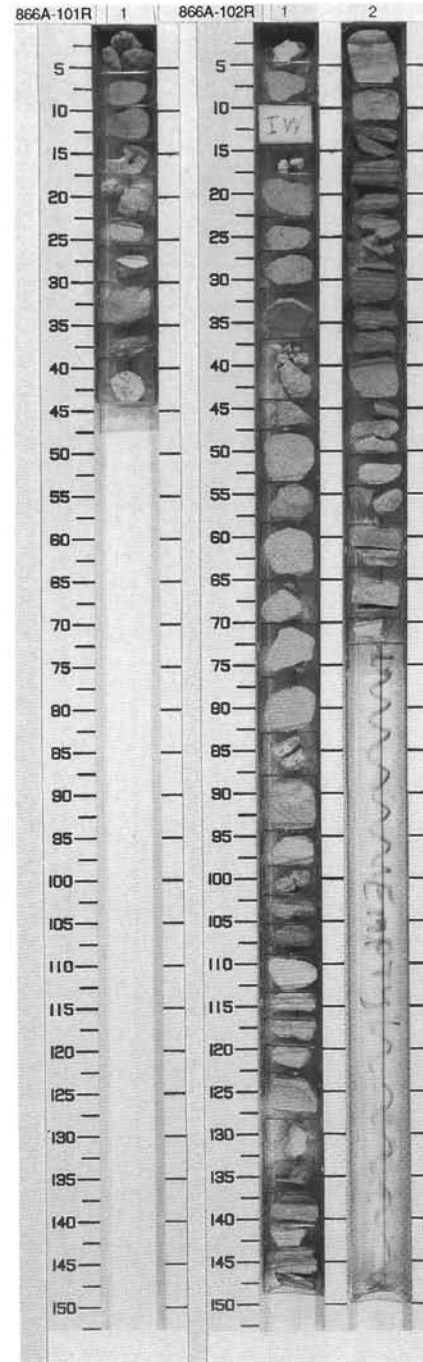
CORED 943.1 - 952.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
		1	Cret.			T	10YR 8/2 To 10YR 7/2	<p>WACKESTONE-MUDSTONE</p> <p>Major Lithology: WACKESTONE-MUDSTONE, light olive gray (5Y 6/2), with white (10YR 8/2) compressed specks, probable bioturbation (0–12 cm); white (10YR 8/2), with abundant bioclasts (shells), moldic porosity (10–30, 39–44 cm); light gray (10YR 7/2), with light gray (10YR 5/1) intraclasts and shells (30–39 cm).</p> <p>Minor Lithologies: In 34–39 cm, thin algal laminae.</p>

SITE 866 HOLE A CORE 102R

CORED 952.7 - 962.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian			P	10YR 8/2	<p>GRAINSTONE, PACKSTONE and MUDSTONE</p> <p>Major Lithology: GRAINSTONE (Section 1, 0–100 cm), white (10YR 8/2), peloidal, with coated grains, shells, ooids and gray (10YR 5/1) intraclasts, intergranular porosity. Interbedded PACKSTONE, peloidal and organic-rich MUDSTONE (algal laminae), very pale brown (10YR 8/3) and dark gray (2.5YR N4/0), from Section 1, 100 cm to Section 2, 78 cm, burrowed, bedding varies from 0.1 mm to 1 cm scale. Algal material concentrated at stylolitic contacts.</p> <p>Minor Lithology: Possible ANHYDRITE in Section 2, 65–69 cm.</p>
		2					10YR 8/2 To 2.5YR N4/0	

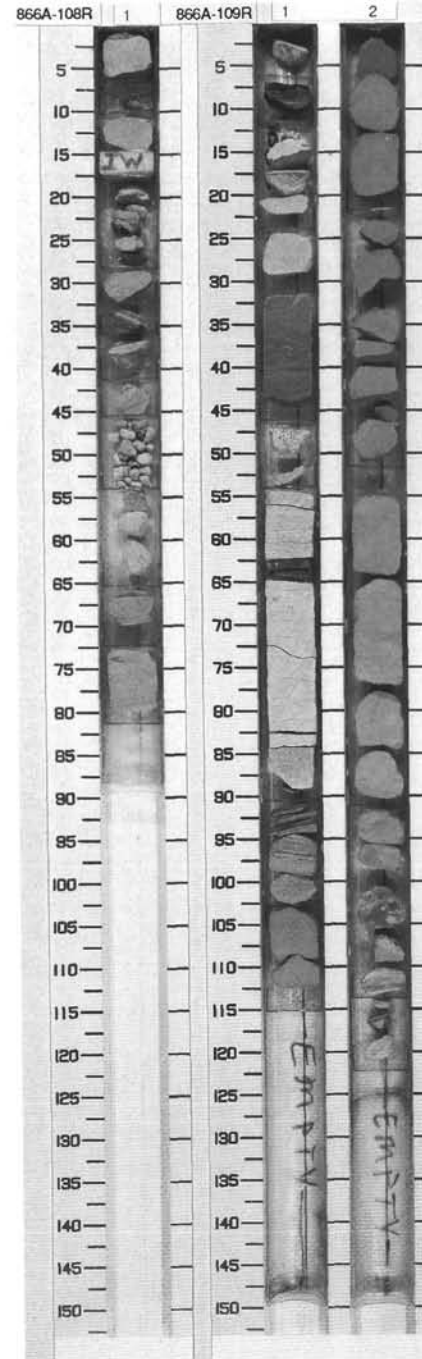


SITE 866 HOLE A CORE 108R CORED 1010.2 - 1019.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	P P P P	1	Aptian	BG G		I T P	10YR 7/1	<p>PACKSTONE</p> <p>Major Lithology: PACKSTONE, light gray (10YR 7/1), peloidal with abundant dasycladacean algae (30-80 cm) and intraclasts, burrowed.</p> <p>Minor Lithology: MUDSTONE (algal laminated) in 26 and 33-36 cm.</p>

SITE 866 HOLE A CORE 109R CORED 1019.9 - 1029.6 mbsf

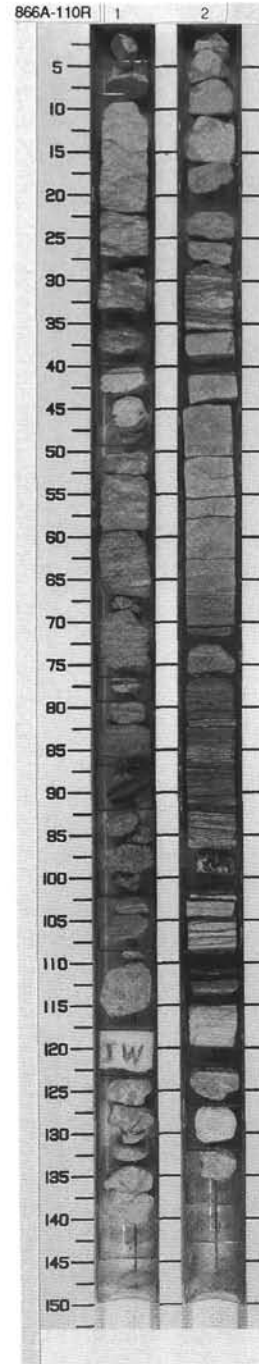
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	P P W W	1	Aptian	BG V G		T	10YR 8/2 To 10YR 6/1	<p>WACKESTONE, PACKSTONE and MUDSTONE</p> <p>Major Lithology: WACKESTONE, white (10YR 8/2) peloidal, burrowed, bird's-eye vugs in Section 1, 0-5 cm; bedding disrupted in Section 1, 11-31 cm. Gray (10YR 7/1) stylolites, intraclasts, small escape features in Section 1, 45-62 cm; light gray (10YR 7/1) disrupted bedding, algal mat flakes and oncoids in Section 2, 100-108 cm. MUDSTONE, light gray (10YR 7/1 to 10YR 6/1), bird's-eye vugs and desiccation features in Section 1, 62-90 cm. PACKSTONE, very pale brown to light gray (10YR 7/3 to 7/1), peloidal, some bedding, few fossils, in Section 1, 100 cm to Section 2, 100 cm. MUDSTONE (algal laminations), organic rich?, in Section 1, 90-115 cm and Section 2, 115-122 cm. Section 1, 31-46 cm, contains a stromatolite, pinkish gray (7.5YR 7/2), with bird's-eye vugs filled with calcite.</p>
1-2	P P W W	2		~		P		



SITE 866 HOLE A CORE 110R

CORED 1029.6 - 1039.3 mbsf

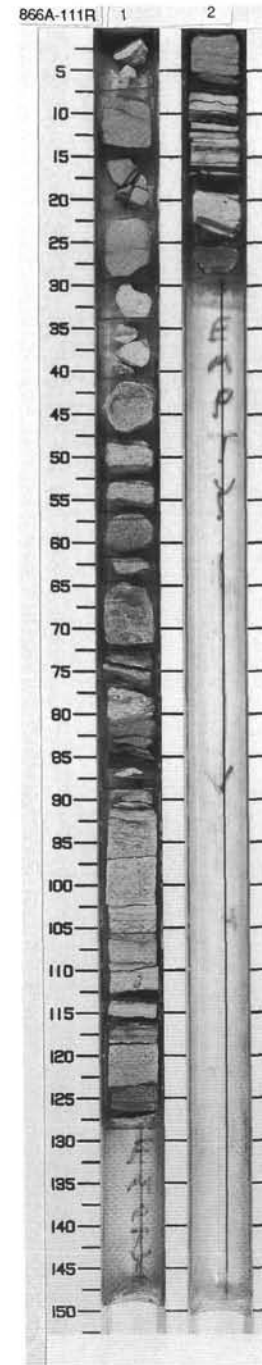
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	WWWWL GPPPP GPPPP GPPPP WWWWW WWWWW WWWWW WWWWW	1	Aptian		P I	10YR 8/1 To 10YR 4/1		MUDSTONE, WACKESTONE, GRAINSTONE, PACKSTONE, and CLAYEY LIMESTONE Major Lithology: Section 1, 0-8 cm white-gray (10YR 8/1-6/1) WACKESTONE-GRAINSTONE. Section 1, 8-40 cm, gray (10YR 7/1) WACKESTONE becomes more clay-rich and darker brown at base of unit with distinct compacted clay seams (10YR 4/1), small compacted burrows and organic fragments. Section 1, 40-49 cm white (10YR 8/2) peloidal PACKSTONE. Section 1, 49-92 cm, PACKSTONE with some GRAINSTONE, clay seams and organic fragments. Section 1, 92-105 cm disrupted algal mat facies with small-scale voids. Section 1, 105-145 cm white (10YR 8/2) peloidal PACKSTONE-GRAINSTONE with distinct burrow mottles. Section 2, 0-28 cm, white (10 YR 8/1) WACKESTONE, bioturbated and with intraclasts. Section 2, 28-36 cm, darker more clay-rich facies (2.5G 3/2) with anastomosing clay seams, intraclasts, partially dolomitized. Section 2, 36-70 cm, WACKESTONE-MUDSTONE burrowed with occasional dark clay seams, foraminifers, bird's-eye vugs, dolomitized burrow fill, ?anhydrite replaced by calcite. Section 2, 70-115 cm, CLAYEY LIMESTONE, light brown (10YR 8/3), laminae locally disrupted. Section 2, 115-138 cm white (10YR 8/2) peloidal WACKESTONE with well-developed flat-pebble conglomerate and numerous cm-scale rip-up clasts.
2	WWWWW WWWWW WWWWW WWWWW WWWWW WWWWW	2						



SITE 866 HOLE A CORE 111R

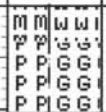
CORED 1039.3 - 1048.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	P P P P P P P P P P P P P P P P W W W W W W W W W W W W	1 2	Aptian	8 6 ⊙ 		P	10YR 8/2 To 10YR 3/2	<p>PACKSTONE, WACKSTONE, and MUDSTONE</p> <p>Major Lithology: Section 1, 0-72 cm PACKSTONE, white (10YR 8/2), becoming darker down section (10YR 6/2) mostly peloidal, with increasing amounts of intraclasts downhole, gastropods, bivalves, fragments of algal mat, organic fragments, and thin clay seam. Section 1, 72-88 cm darker (10YR 3/2) more clay-rich facies, laminated at mm-scale with some nodular carbonate. Section 1, 88-129 cm MUDSTONE, locally WACKSTONE, light brown (10YR 7/2) locally gastropod-rich (filled with peloids) and benthic foraminifers, blue to brown clay seams. Section 2 is light brown (10YR 7/2) MUDSTONE-WACKSTONE with ostracods, milioid foraminifers, bird's-eye vugs, circum-granular cracks and stylolites interbedded with gray-black (2.5Y 3/0) laminated clays in layers up to 1 cm thick. Section 2, 25-29, cm blackedne peloidal PACKSTONE, conglomeratic at base, well-rounded clasts up to 1 cm in diameter.</p>



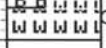
SITE 866 HOLE A CORE 112R

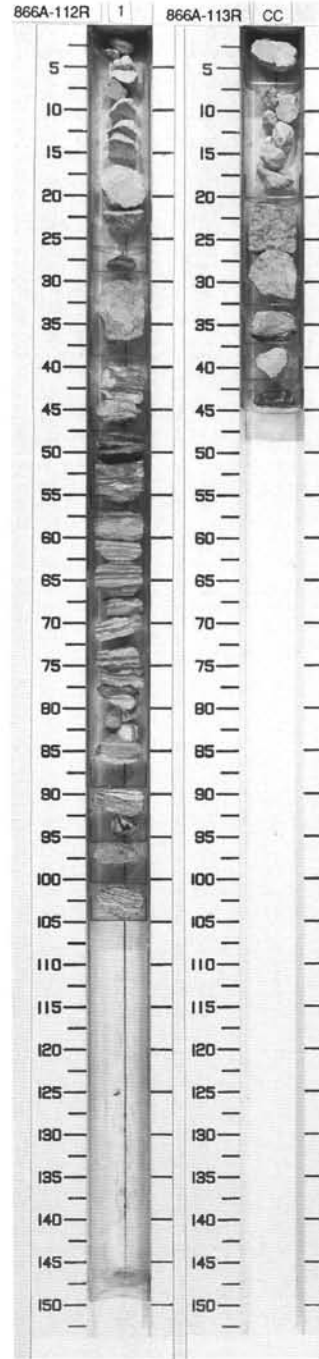
CORED 1048.9 - 1058.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		-	Aptian	W, V, G, B, C, S, O, P, T		P T	10YR 3/2 To 2.5G 6/2	<p>MUDSTONE, WACKESTONE, PACKSTONE, and GRAINSTONE</p> <p>Major Lithology: Interval 0–25 cm is white (10YR 8/1) MUDSTONE to WACKESTONE with peloids, ostracods, dasycladacean algae, desiccation cracks, and bird's-eye vugs. This is intercalated with a GRAINSTONE containing bivalve and gastropod shell hash and some peloids and ooids. Interval 23–29 cm contains a dark-brown (10YR 3/2) laminated facies with clay- and organic-rich laminae. Interval 29–38 cm is a peloidal PACKSTONE-GRAINSTONE with foraminifers, bivalves, and some bioturbation. Interval 38–105 cm is dominated by PACKSTONE-GRAINSTONE with laminations at various scales. Colors vary from red (10R 6/3) to white (10YR 8/2). Typical crinkled, calcified algal-mat facies is found at 96–105 cm. Large cm-scale burrows cut through the laminae.</p>

SITE 866 HOLE A CORE 113R

CORED 1058.5 - 1068.2 mbsf

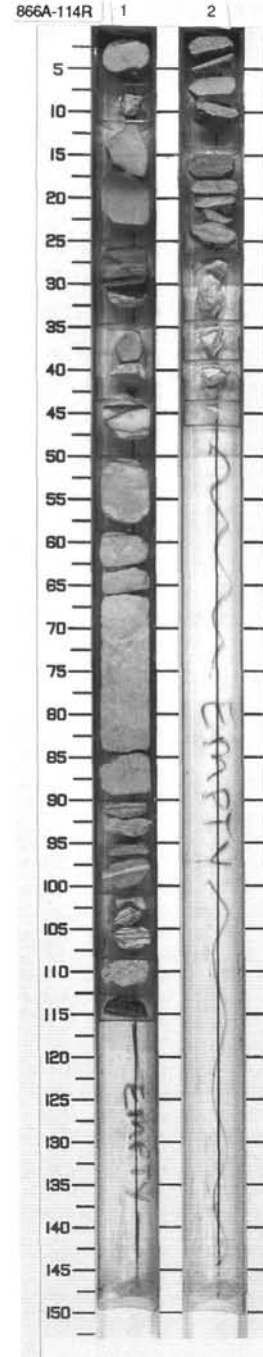
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		CC	Aptian	B, G, C, S, O, P, T		T	10YR 8/2 To 10YR 7/2	<p>WACKESTONE and PACKSTONE</p> <p>Major Lithology: Interval 0–20 cm is a burrowed, peloidal PACKSTONE-WACKESTONE, white (10YR 8/2), containing gastropods as well as some foraminifers, dasycladacean algae, bivalves and oncooids. Interval 20–33 cm is a mottled unit of peloidal gray WACKESTONE (10YR 7/2) with intraclasts, miliolid foraminifers, burrows and algal texture. Black (10YR 3/1) mm-laminated layers occur at 33–37 cm and 42–45 cm. Interval 37–41 cm is a white (10YR 8/2) peloidal WACKESTONE with ostracods, bivalves, and dasycladacean algae and foraminifers.</p>



SITE 866 HOLE A CORE 114R

CORED 1068.2 - 1077.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	W W W W W W W P P W W P P W W W W W W W W W W	1 2	Aptian	Φ G W G	 	P T P T	10YR 7/2 To 10YR 8/3	<p>WACKESTONE and PACKSTONE</p> <p>Major Lithology: Section 1, 0–25 cm is white (10YR 7/2) WACKESTONE with peloids, foraminifers, and organic fragments. Section 1, 25–34 cm contains black (10YR 3/1) organic- and clay-rich laminae. Section 1, 35–90 cm is very pale brown (10YR 8/3) peloidal, bioturbated WACKESTONE-PACKSTONE with foraminifers, dasycladacean algae and local clay seams. It grades down into bioturbated GRAINSTONE with shell hash. Section 1, 90–103 cm is a white algal-mat facies. Section 1, 103–116 cm is dominated by laminated very pale brown (10YR 8/3) facies with clay- and organic-rich, black (10YR 3/1) layers at the base. Some blackened intraclasts, bivalves, gastropods as well as foraminifers occur locally. Small desiccation cracks are found in Section 1, 109–112 cm. Section 2, 0–26 cm is a light brown (10YR 6/3 to 5/4) calcified algal-mat facies with trapped peloids and organic fragments. Section 2, 26–43 cm is gray (10YR 7/1 to 6/1) dasycladacean algae WACKESTONE with some ostracods. Fractures are filled with internal sediment (MUDSTONE) and coarse calcite spar cement. Section 2, 43–46 cm contains a small fragment of very pale brown (10YR 8/3) peloidal GRAINSTONE.</p>



SITE 866 HOLE A CORE 115R

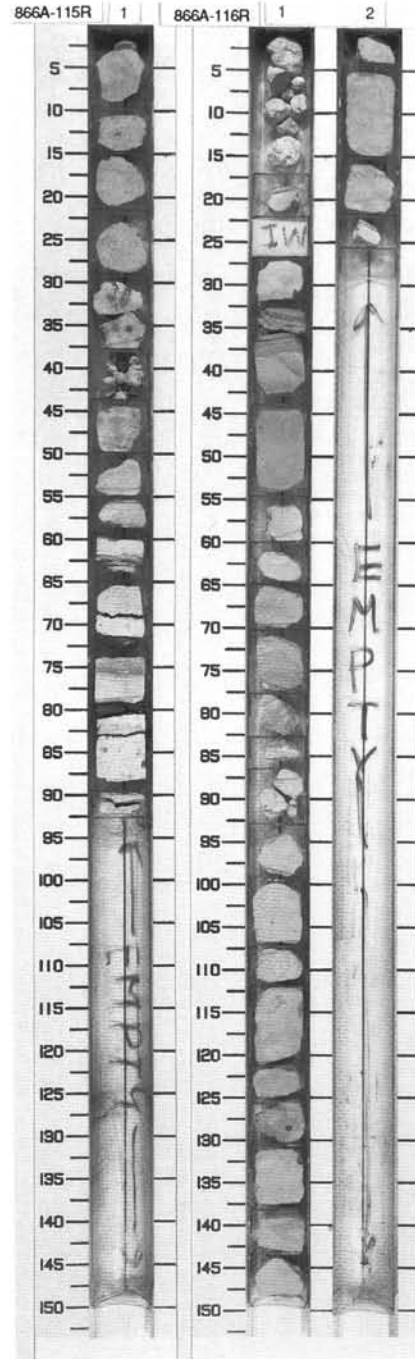
CORED 1077.9 - 1087.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
5	P P G G G G	1	Aptian	[Symbol]		P	10YR 8/1	MUDSTONE, GRAINSTONE, and PACKSTONE
10	P P G G G G							
15	P P G G G G							
20	M M M M M	2				P		Major Lithology: GRAINSTONE-PACKSTONE, white (10YR 8/2), peloidal with intraclasts and oncoids, some blackened foraminifers. 54-89 cm is MUDSTONE, white (10YR 8/1) with several layers of green-brown (2.5G 4/2-8/2) laminae of clay with local stylolites. 90-93 cm is an algal mat facies.
25	M M M M M							

SITE 866 HOLE A CORE 116R

CORED 1087.5 - 1097.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
5	G P P P	1	Aptian	[Symbol]		I P P	10YR 8/2 to 10YR 8/3	PACKSTONE-GRAINSTONE
10	G P P P							
15	G P P P	2				M		Major Lithology: PACKSTONE-GRAINSTONE, white (10YR 8/2), peloidal, with distinct burrow mottles and some gastropods. Section 1, 32-36 cm has some very pale brown (10YR 8/3) mm-scale laminated clay-rich organic facies.
20	G P P P							

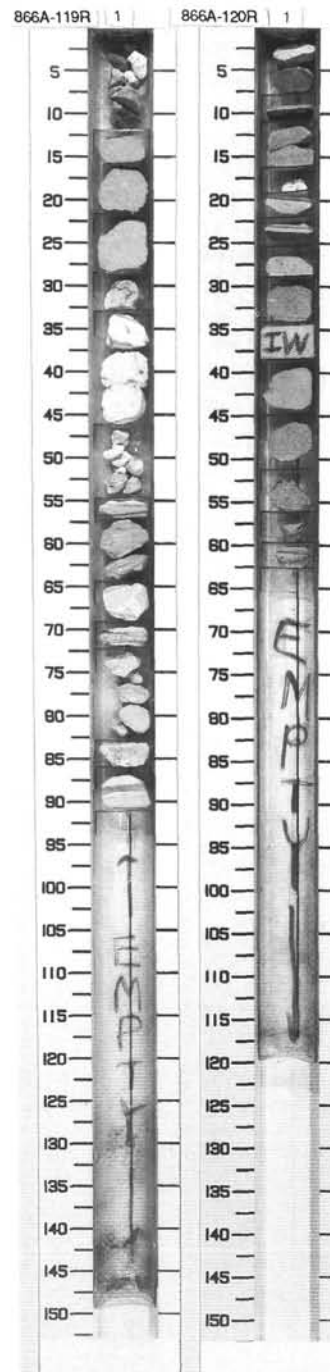


SITE 866 HOLE A CORE 119R CORED 1116.5 - 1126.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian			P	N9 To 10YR 8/2	<p>PACKSTONE, WACKESTONE, MUDSTONE, GRAINSTONE, and RUDSTONE</p> <p>Major Lithology: PELOIDAL PACKSTONE (0-30 cm), white (10YR 8/2), with dasycladacean algae, small benthic foraminifers, shell fragments and oncooids; intraclasts, dolomite, moldic porosity. White (N 9) WACKESTONE (30-46 cm) with small gastropods, burrowed. WACKESTONE and MUDSTONE (white to very pale brown, 10YR 8/2 to 10YR 7/3) with irregularly laminated algal mats (black to brown, 10YR 2/1 to 10YR 5/3) (46-72 and 86-91 cm). PELOIDAL GRAINSTONE, light bluish gray (5B 7/1) with dolomitic cement (72-83 cm). RUDSTONE, white (10YR 8/2) to light gray (N 7), with flat pebble breccia, bird's-eye structure (83-86 cm).</p>

SITE 866 HOLE A CORE 120R CORED 1126.1 - 1135.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Aptian			P	10YR 8/2	<p>PACKSTONE and GRAINSTONE</p> <p>Major Lithology: PACKSTONE-GRAINSTONE (0-8 cm), white (10YR 8/2), peloidal, with gastropods and bivalve fragments encrusted by algae, burrowed, some intergranular porosity. PELOIDAL PACKSTONE, white (10YR 8/2), moldic and intergranular porosity, minor dolomite (9-62 cm).</p> <p>Minor Lithology: Algal laminated MUDSTONE of white (10YR 8/2) and black (N0) layers (8-11 cm).</p>



SITE 866 HOLE A CORE 121R

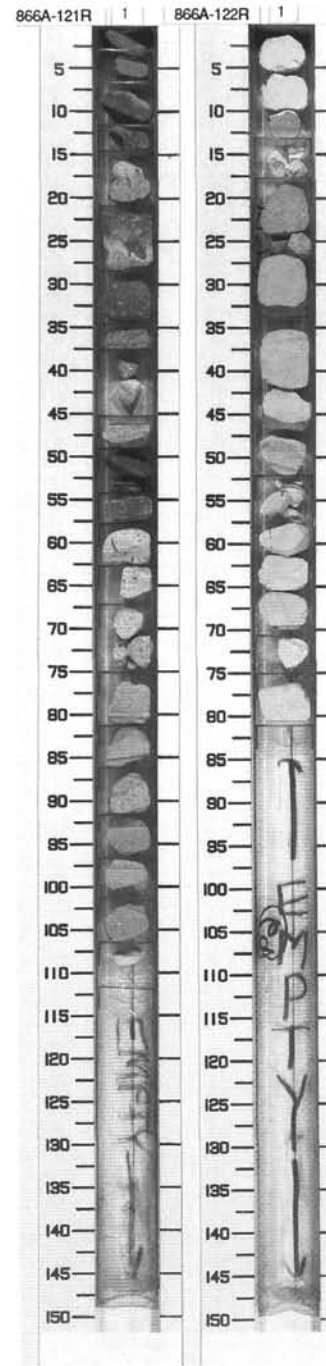
CORED 1135.7 - 1145.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-112	W W M M W W M M G G P P G G P P	1	Aptian	3 8 6	✓ ✓ ○	T P P	N6 and 10YR 8/2 10YR 8/2	<p>WACKSTONE, MUDSTONE, and GRAINSTONE-PACKSTONE</p> <p>Major Lithology: 0-2 cm, algal laminated MUDSTONE mat of white (10YR 8/2) and gray (10YR 5/1) layers. 2-49 cm, mixed lithology of WACKSTONE, olive gray (5Y 4/1), and MUDSTONE, medium light gray (N 6), burrowed, abundant intraclasts, dolomite, possible gypsum replaced by calcite, pervasive recrystallization. 49-54 cm, reddish brown (5YR 4/4) SOIL (limonite). 54-58 cm, DOLOMITIZED WACKSTONE, light gray (N 7) and stained brownish yellow (10YR 6/6), with bird's-eye vugs, dolomite, moldic porosity, and bivalves. 58-67 cm, white (10YR 8/1) MUDSTONE, bird's-eye structure. 67-112 cm, GRAINSTONE-PACKSTONE, white (10YR 8/2), with molluscs and small benthic foraminifers, intergranular porosity, part stained, stylolites.</p>

SITE 866 HOLE A CORE 122R

CORED 1145.4 - 1155.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-115	P P W W G G G G P P W W P P W W	1	Aptian	● ● ○ ●	✓ ✓ ✓	T P P	10YR 8/1 10YR 8/3	<p>WACKSTONE and PACKSTONE</p> <p>Major Lithology: PELLETAL PACKSTONE and WACKSTONE (0-18 cm), white (10YR 8/1), with gastropod and bivalve fragments, abundant dolomite rhombs, well sorted. GRAINSTONE, very pale brown (10YR 8/3), pelletal, with dolomite (18-34 cm). PACKSTONE-WACKSTONE, very pale brown (10YR 8/3), pelletal (34-81 cm), with miliolid foraminifers, shell fragments, ostracods, sponge spicules, very well sorted, fine-sand-sized, some spar cement and dolomite rhombs, some yellow stain, less dolomitic toward downhole.</p>



SITE 866 HOLE A CORE 123R

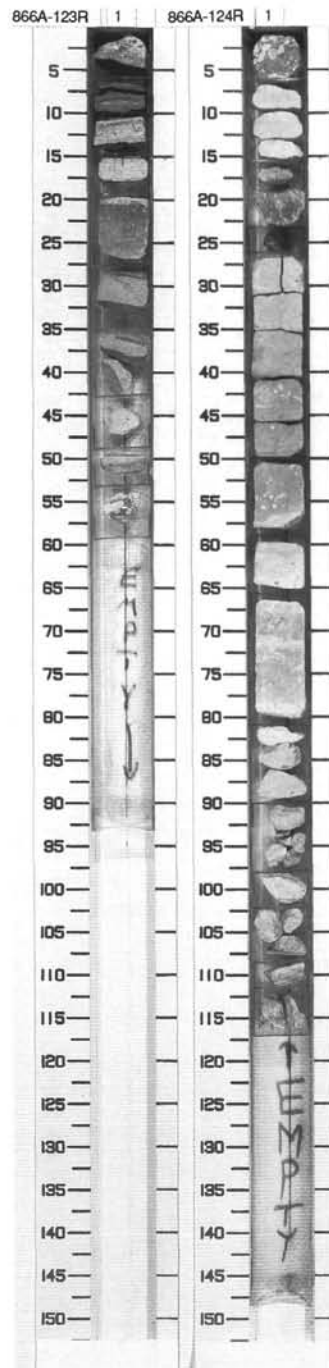
CORED 1155.1 - 1164.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	W W W W W W W W W W W W	1	Aptian	∠ ● ∠	V V V V	T P	10YR 8/6 To 10YR 8/1	<p>WACKESTONE</p> <p>Major Lithology: WACKESTONE (0–6 cm), yellow (10YR 7/6) and grayish brown (10YR 5/2), dolomitized. Dolomitized WACKESTONE (10–19 cm), yellow (10YR 8/6) to white (10YR 8/1). WACKESTONE (19–58 cm), very pale brown (10YR 7/1), peloidal, dolomitized, moldic porosity.</p> <p>Minor Lithology: CLAYSTONE (6–10 cm), light olive brown (2.5Y 6/4) and yellow (10YR 8/6).</p>

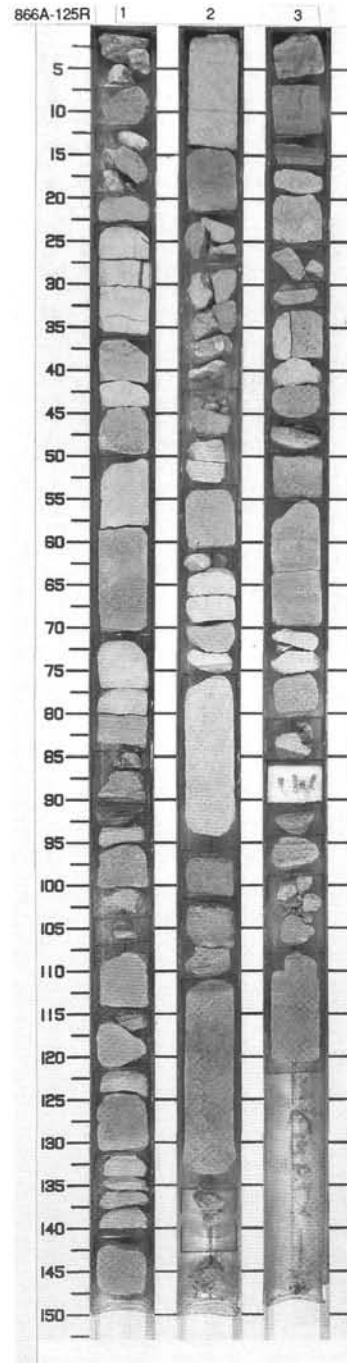
SITE 866 HOLE A CORE 124R

CORED 1164.8 - 1174.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
	P P P P P P P P P P P P P P P P P P P P	1	Aptian	∠ ● ⊙ ⊙ ⊙	V V V V	P P	10YR 8/1 To 10YR 5/2	<p>PACKSTONE and GRAINSTONE</p> <p>Major Lithology: PACKSTONE (6–15 cm), white (10YR 8/1), peloidal, burrowed. PACKSTONE, (15–23 cm), white (10YR 8/1), peloidal, yellow to red stained, recrystallized. PACKSTONE-GRAINSTONE (25–80 cm), peloidal, white to very pale brown (10YR 8/2 to 10YR 7/3, 25–59 cm) and yellow stained (10YR 8/4, 59–80 cm), recrystallized with dolomite, contains abundant intraclasts in 42–59 and 66–80 cm. PACKSTONE, (80–109 cm), very pale brown (10YR 8/3), peloidal, with shell fragments, less dolomitization, moldic porosity, and abundant white (N9) algal-encrusted intraclasts in 87–90 cm.</p> <p>Minor Lithology: Brecciated DOLOMITE (0–6 cm), with white lithoclasts in grayish brown (10YR 5/2) groundmass, algal clasts and oolites. CLAYSTONE (23–25 cm), brownish yellow (10YR 6/6), limonitic. Bedded algal mat and WACKESTONE (109–117 cm), calcite infilling, moldic porosity of dolomite or gypsum (?), bird's-eye vugs, stylolitized.</p>



Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description	
1		1	Aptian				10YR 8/3	<p>MUDSTONE, PACKSTONE, GRAINSTONE, and RUDSTONE</p> <p>Major Lithologies: GRAINSTONE-PACKSTONE, oolitic to peloidal, dominantly very pale brown (10YR 8/3). In Section 1, 0–20 cm, it contains echinoderms, large rudist fragments, other bivalves, and some blackened peloids. Section 1, 20–150 cm, the lithology remains the same, but lacks large shell fragments, and includes ostracods (Section 1, 90–93 cm), foraminifers (Section 1, 93–150 cm), and organic fragments. Noticeable structures include local keystone vugs (Section 1, 20–21 cm), and mm-laminations (Section 1, 72–84 cm), with black (10YR 3/2) organic-rich laminae toward the base. The GRAINSTONE-PACKSTONE in Section 2, 0–27 cm has a dolomitized matrix and some organic fragments. Section 2, 27–54 cm contains MUDSTONE-GRAINSTONE with peloids and bird's-eye vugs. Oolitic GRAINSTONE with bivalve fragments and blackened peloids occurs in Section 2, 54–102 cm and becomes less cemented toward the base. In Section 2, 103–114 cm, the lithology changes to peloidal PACKSTONE with green (2.5G 3/4) clay seams. In Section 2, 114–143 cm, the peloidal PACKSTONE with clay seams is partly oolitic with oncoids at the base and grades into GRAINSTONE and ultimately RUDSTONE with large oncoids, intraclasts, and many bivalve fragments. Section 3 is dominated by very pale brown (10YR 8/3) to gray (10YR 5/1) peloidal to oolitic GRAINSTONE. It is filled with shell fragments, intraclasts, algae, and dolomitized spar cement and is bioturbated toward the top; whereas towards the base it contains keystone vugs, clayseams, blackened peloids and burrows.</p> <p>Minor Lithology: Black-green, laminated CLAYSTONE occurs from 45–48 cm.</p>	
2		2							P P
3		3							I



SITE 866 HOLE A CORE 128R

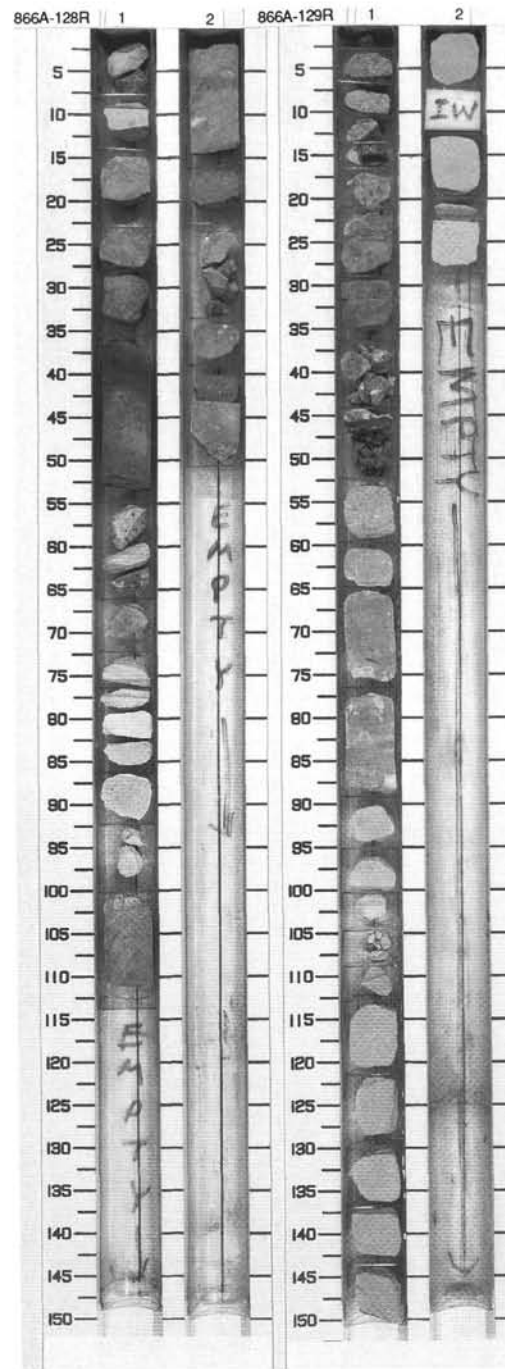
CORED 1203.2 - 1212.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	[Graphic Lith. Column 1]	1	Barremian	[Structure and Components Symbols]		P	10YR 8/2 To 10YR 3/3	GRAINSTONE and PACKSTONE Major Lithology: GRAINSTONE-PACKSTONE, white (10YR 8/2) to dark brown (10YR 3/3), dolomitic with pellets, ooids, oncoids and bioclasts. Varying degrees of dolomitization occur. The bioclasts include dasycladacean green algae and bivalve debris, much of which is poorly preserved. Peloids are blackened in some places. Minor Lithology: Thin seams of dark brown (10YR 3/3) organic rich CLAYSTONE occur in Section 1, 52-54 cm, Section 2, 0-22 cm, and Section 2, 33-47 cm.
1-2	[Graphic Lith. Column 2]	2						

SITE 866 HOLE A CORE 129R

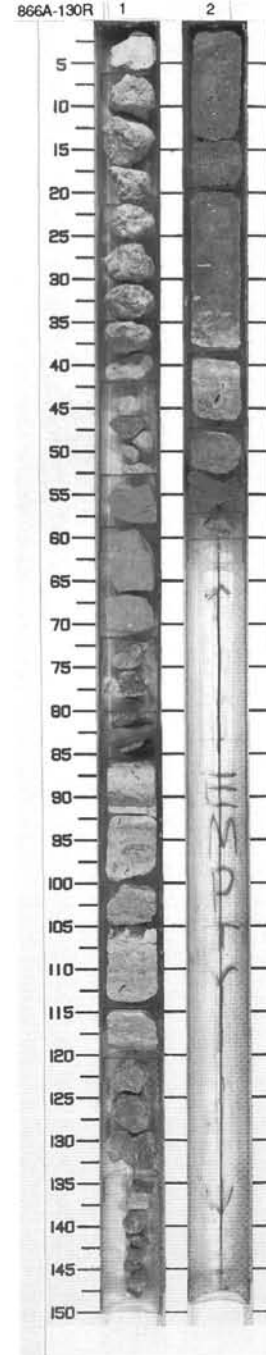
CORED 1219.9 - 1222.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	[Graphic Lith. Column 1]	1	Barremian	[Structure and Components Symbols]		P	10YR 7/3 To 10YR 5/3	WACKESTONE and GRAINSTONE Major Lithologies: Pale brown (10YR 7/3) to brown (10YR 5/3) mottled WACKESTONE-GRAINSTONE, dolomitic with relicts of peloids, and bivalve shell fragments. Some intervals are less dolomitic than others. An interval with abundant algal encrusted gastropods occurs in Section 1, 52-65 cm. From Section 1, 105 cm to Section 2, 28 cm, the core consists of fine-grained, well sorted white (10YR 8/2) oolitic GRAINSTONE. Minor Lithology: Thin seams of organic-rich CLAYSTONE occur in Section 1, 14-15 cm, and in Section 1, 44-52 cm.
1-2	[Graphic Lith. Column 2]	2						



SITE 866 HOLE A CORE 130R CORED 1222.6 - 1232.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	Barremian			P	10YR 8/2 To 10YR 4/3	<p>MUDSTONE-WACKESTONE, GRAINSTONE and DOLOMITE</p> <p>Major Lithologies: White (10YR 8/2) MUDSTONE-WACKESTONE, partially dolomitized, with abundant rudist shells, sparse small foraminifers and rare black pebbles occurs in Section 1, 0-38 cm. Very pale brown (10YR 7/3) peloidal GRAINSTONE with sparse foraminifers and dolomitized burrow fills occurs in Section 1, 38-71 cm. In Section 1, 52-71 cm it is locally laminated, with oncoids. Partially to pervasively dolomitized peloidal MUDSTONE-WACKESTONE, pale brown (10YR 6/3), occurs in Section 1, 71-120 cm. From Section 1, 120 cm to Section 2, 60 cm the material consists of brown (10YR 4/3) sucrosic DOLOMITE. Algal mat structures occur in Section 1, 115-130 cm and in Section 2, 38-52 cm.</p> <p>Minor Lithology: Thin seams of organic-rich CLAYSTONE occur in Section 1, 38-52 cm, and in Section 1, 71-85 cm.</p>
2		2						



SITE 866 HOLE A CORE 131R

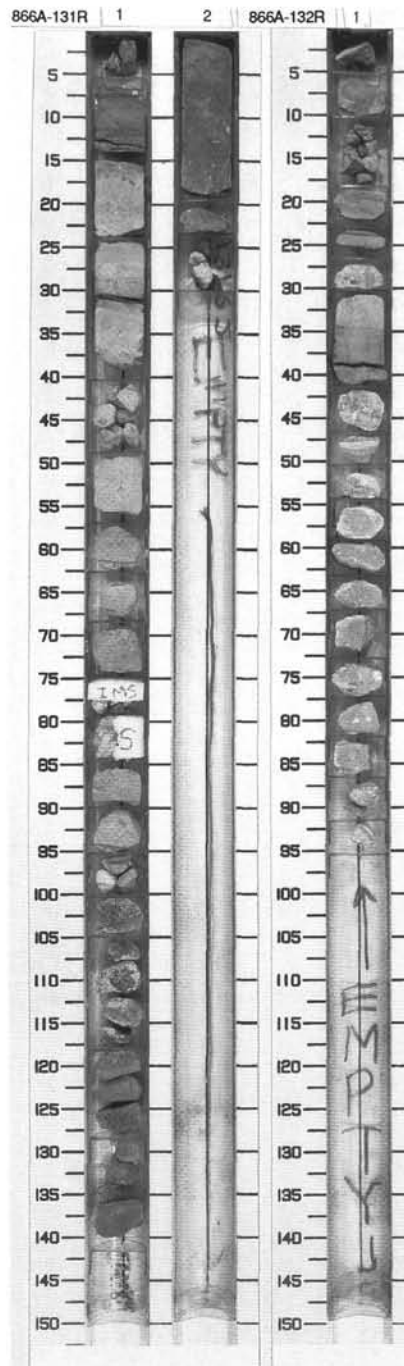
CORED 1232.2 - 1241.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-100	Wackestone/Dolomite patterns	1	Barremian	Wavy lines, 'D' symbol		T T P	10YR 6/1 To 10YR 8/4	<p>WACKESTONE and DOLOMITE</p> <p>Major Lithologies: Partly dolomitized gray (10YR 6/1) WACKESTONE, peloidal, somewhat bioturbated, becoming more dolomitized downward. Black pebbles occur in Section 1, 40–100 cm, rudist bivalve debris occurs in Section 1, 75–84 cm. From Section 1, 104 cm to Section 2, 24 cm the material consists of very pale brown (10YR 8/3 to 10YR 8/4) sucrosic DOLOMITE. White (10YR 8/2) intraclasts occur in Section 1, 104–118 cm. Gastropod shells, serpulid worm tubes and moldic porosity occur in Section 2, 0–24 cm. Section 2, 24–30 cm consists of stylolitic WACKESTONE with small amounts of clay.</p> <p>Minor Lithology: Thin seams of organic-rich CLAYSTONE occur in Section 1, 0–40 cm.</p>

SITE 866 HOLE A CORE 132R

CORED 1241.9 - 1251.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-100	Wackestone/Dolomite patterns	1	Barremian	Wavy lines, diamond symbol		T P	10YR 8/3 To 10YR 7/3	<p>WACKESTONE and DOLOMITE</p> <p>Major Lithologies: Very pale brown (10YR 7/3) WACKESTONE with dark-gray (10YR 4/1) patches, intraclasts, oncoids, pellets, and stylolites. DOLOMITE occurs from 33–96 cm. A small piece of slightly dolomitized WACKESTONE, very pale brown (10YR 8/3), with gastropods and rudists occurs in 52–53 cm.</p> <p>Minor Lithology: An interval of algal-laminated MUDSTONE occurs in 18–23 cm.</p>



SITE 866 HOLE A CORE 133R CORED 1251.6 - 1261.2 mbsf

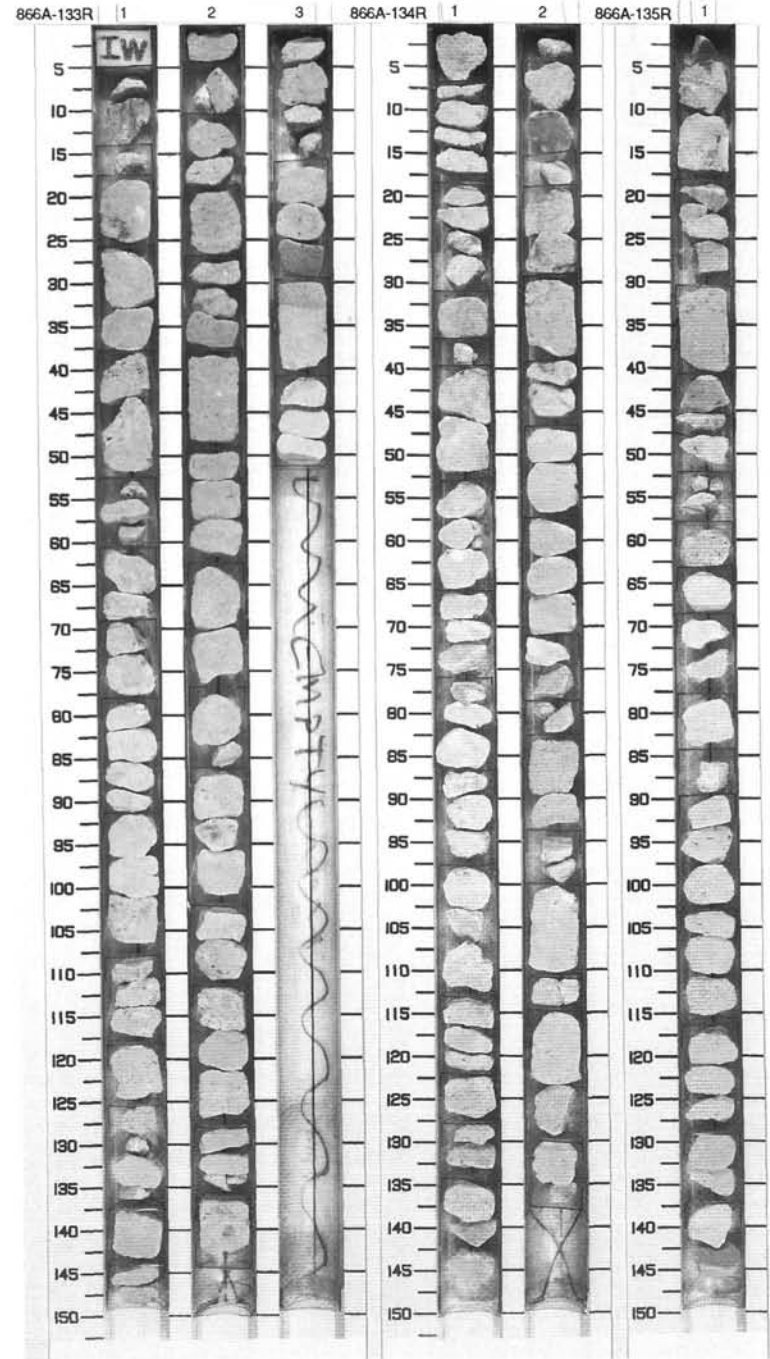
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	[Cross-hatched pattern]	1	Barremian	(K)	[Vertical hatched pattern]	I	N9	DOLOMITE Major Lithology: White (N9) DOLOMITE with sucrosic texture, high intercrystalline porosity. Some red (5R 6/6) staining occurs throughout. Keystone vugs occur in Section 1, 10 cm and 140 cm and Section 2, 20-27 and 87-93 cm. Some moldic porosity is present throughout. Fragments of echinoids occur in Section 2, 42, 95 and 125 cm.
2		2		(K) (K)		P		
3		3		(K)		P		

SITE 866 HOLE A CORE 134R CORED 1261.2 - 1270.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	[Cross-hatched pattern]	1	Barremian	◆	[Vertical hatched pattern]	P P	N9	DOLOMITE Major Lithology: White (N9) crystalline DOLOMITE with light red (5R 6/6) and yellow (10YR 8/6) stains. Intergranular porosity is high, some moldic porosity (of bivalve shells) occurs. A large stylolite occurs in Section 1, 48 cm. Dolomitized white (N9) intraclasts occur in Section 2.
2		2						

SITE 866 HOLE A CORE 135R CORED 1270.9 - 1280.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	[Cross-hatched pattern]	1	Barremian	◆ 6	[Vertical hatched pattern]	P P	N9	DOLOMITE Major Lithology: White (N9) DOLOMITE with dense white intraclasts. Yellow (10YR 8/6) and light red (5R 6/6) stains occur from 20-63 cm. High intergranular and some moldic porosity occurs, mostly from mollusc fragments. Gastropod shells occur in 66 cm and 76 cm.
1		1						



SITE 866 HOLE A CORE 136R

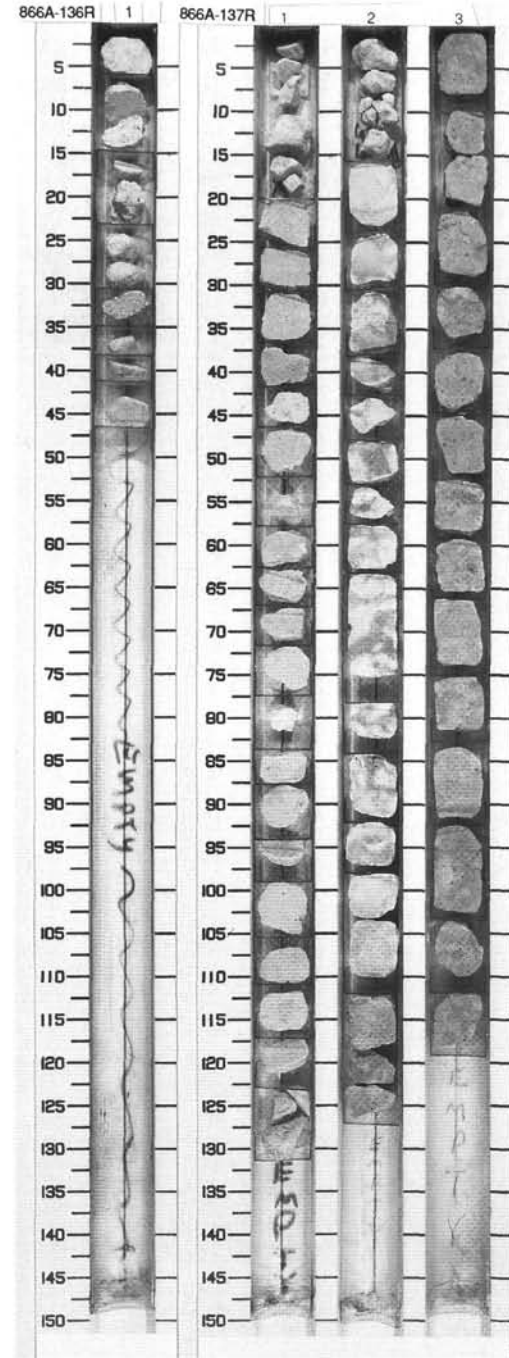
CORED 1280.2 - 1289.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	P P P P P P P P P P P P P P P	1	Barremian	P 6		P	N9	PACKSTONE Major Lithology: White (N9 to 10YR 8/2) PACKSTONE, peloidal. Abundant coarse debris of gastropods, rudist bivalves, and algal-coated grains occurs throughout. Dolomitization occurs in 30-48 cm.

SITE 866 HOLE A CORE 137R

CORED 1289.8 - 1299.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	G G G G G G G G G G G G G G G	1	Barremian	P 8		P	N9	GRAINSTONE and DOLOMITE Major Lithologies: White (N9) dolomitized GRAINSTONE and massive DOLOMITE. Bioclasts including echinoid fragments and bivalves occur throughout. High intergranular porosity, some moldic porosity. Parts of Section 2 contain pale brown and yellow (10YR 6/3 and 10YR 8/6) stains. Section 3 is pale brown (10YR 8/3) DOLOMITE with patches of yellow (10YR 8/6).
1-2	G G G G G G G G G G G G G G G	2						
2-3	G G G G G G G G G G G G G G G	3						

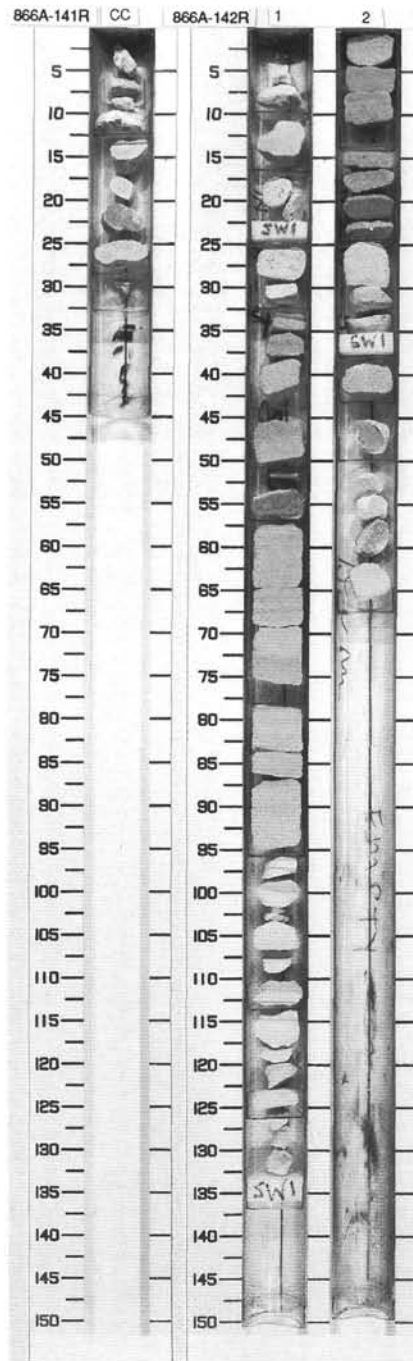


SITE 866 HOLE A CORE 141R CORED 1328.6 - 1338.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		CC	Barremian				10YR 7/3	DOLOMITE and PACKSTONE Major Lithologies: DOLOMITE, very pale brown (10YR 7/3), coarse and sucrosic, with some undolomitized, very pale brown (10YR 8/3) peloidal PACKSTONE containing algal laminae and stromatoporoids with borings in the interval 12 to 28 cm.

SITE 866 HOLE A CORE 142R CORED 1338.2 - 1347.9 mbsf

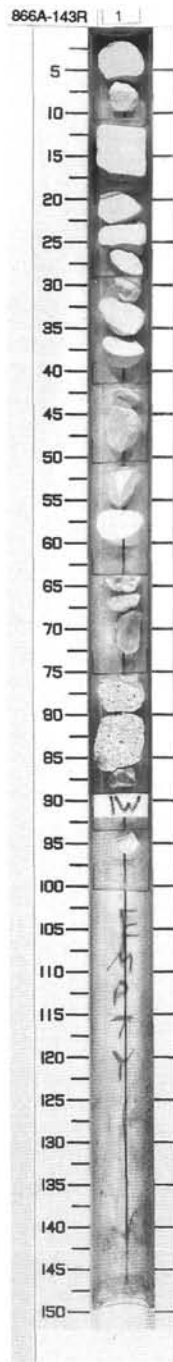
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Barremian	⊙ ⊗			10YR 8/1 To 10YR 8/2	GRAINSTONE, DOLOMITE, and BOUNDSTONE Major Lithologies: BOUNDSTONE, white (10YR 8/2), in Section 1, 0-16 cm, dolomitized, with borings filled with partially dolomitized MUDSTONE and oolitic GRAINSTONE. White (10YR 8/1), partially dolomitized, oolitic GRAINSTONE with bivalve fragments and rudists occurs from Section 1, 16-32 cm. Section 1, 32-96 cm contains very pale brown (10YR 7/3), massive, sucrosic DOLOMITE. From Section 1, 96-132 cm, the GRAINSTONE is oolitic, peloidal, and partially dolomitized. BOUNDSTONE occurs from Section 1, 132-137 cm, containing a coral whose borings are filled with internal sediment and sparite (geopetal cavity). In Section 2, 0-25 and 37-43 cm contains very pale brown (10YR 7/3), massive sucrosic DOLOMITE. From Section 2, 25-37 and 43-67 cm, white to very pale brown (10YR 8/2 to 10YR 8/3) partially dolomitized GRAINSTONE, locally oolitic and with bivalve shells passes into BOUNDSTONE with corals, which are bored, and possible sclerosponge.
		2						



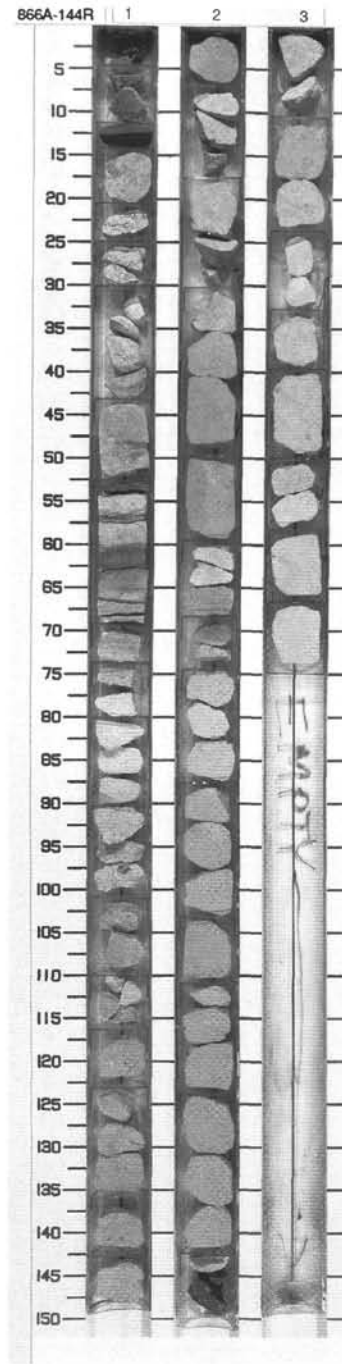
SITE 866 HOLE A CORE 143R

CORED 1347.9 - 1357.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	Barremian			P I T P	10YR 8/2 To 10YR 5/3	<p>GRAINSTONE</p> <p>Major Lithology: GRAINSTONE, white (10YR 8/2), peloidal-oolitic. From 0–40 cm, the GRAINSTONE is fine-grained, well-sorted and lightly dolomitized; it is coarser-grained with fragments of bivalve shells and green algae and has much more dolomitization from 45–55 cm. Dark DOLOMITE patches (10YR 5/3) and some oncoids occur within the GRAINSTONE from 66 to 70 cm. From 70–75 cm there are fragments of massive coral with perforations which are strongly recrystallized. Partly dolomitized, oolitic, white to brown-mottled (10YR 8/2 to 10YR 5/3) GRAINSTONE, with abundant partly dissolved gastropods and bivalves occurs from 75–98 cm, with RUDSTONE at the base.</p>



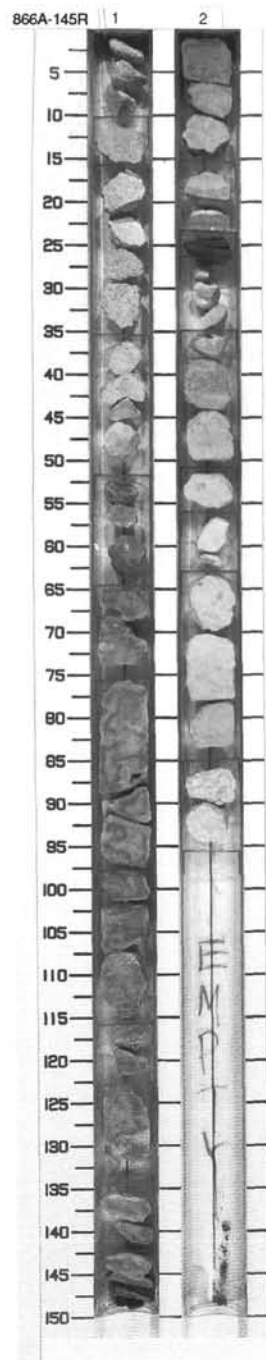
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description			
1		1	Barremian			P	10YR 7/2 To 10YR 8/3	GRAINSTONE, PACKSTONE, CLAYSTONE, and CLAYEY LIMESTONE			
2		2							P P	10YR 7/2 To 10YR 8/3	Major Lithology: PACKSTONE, mottled, very pale brown to pale white (10YR 8/4 to 10YR 6/3) in Section 1, 0-14 cm, containing intraclasts, ooids, and bivalve fragments, iron-stained and passing down into strong-brown, laminated, limonitic CLAYSTONE (7.5YR 5/8). From Section 1, 14-32 cm, occurs PACKSTONE-GRAINSTONE, very pale brown (10YR 8/3) with ooids, abundant dasycladacean algae, gastropods and oysters, partly dolomitized. From Section 1, 32-53 cm, PACKSTONE, speckled reddish yellow (7.5YR 8/6), with blackened peloids and foraminifers. Possible algal mat facies is present in Section 1, 48-52 cm. From Section 1, 53-69 cm, greenish-black (2.5G 3/2), laminated CLAYSTONE is interbedded with CLAYEY LIMESTONE that is lighter in color (pale brown, 10YR 6/3). From Section 1, 70-150 cm, laminated algal-mat facies passes down into speckled pinkish white to pale brown (7.5YR 8/5 to 10YR 6/3) GRAINSTONE with blackened peloids, oncoids of centimeter scale and gastropods.
3		3									Section 2 is dominantly GRAINSTONE, generally light gray (10YR 7/2), speckled, with blackened peloids, ooids, intraclasts, gastropods (locally with oncolitic coatings), foraminifers and organic fragments. Anastomosing clay laminae occur in Section 2, 69-71 cm, where the sediment is slightly darker. There is a black-green CLAY (2.5G 3/4) with carbonate flecks in Section 2, 146-150 cm. Section 3 comprises GRAINSTONE, very pale brown (10YR 8/3), oolitic, peloidal with bivalve fragments, and gastropods with oncolitic coatings at some levels.



SITE 866 HOLE A CORE 145R

CORED 1366.8 - 1376.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	Barremian	G, O, B, G		P	10YR 7/2 To 10YR 5/4	<p>GRAINSTONE, DOLOMITE, and WACKESTONE</p> <p>Major Lithologies: GRAINSTONE, white (10YR 8/2), with blackened peloids, ooids and bivalves, in Section 1, 0–16 cm. Light gray (10YR 7/2), peloidal WACKESTONE, partly dolomitic, occurs with miliolid foraminifers, dasycladacean algae, and abundant high-spired gastropods, in Section 1, 16–50 cm; a stylonitic and brecciated zone occurs at the base of this unit. Section 1, 50–140 cm consists of yellowish brown (10YR 5/4) DOLOMITE, which is massive, vuggy, and sucrosic with dark streaks. An algal-mat facies, which is brown (10YR 5/3) at top, passes down into black (10YR 2/1) mm-laminated clay-rich organic facies (Section 1, 140–150 cm). Section 2 consists of light gray (10YR 7/2) GRAINSTONE-WACKESTONE, partly dolomitized, with small foraminifers, gastropods, and abundant oncoids, locally concentrated. Desiccation cracks occur in Section 2, 17–19 cm.</p> <p>Minor Lithology: Traces of black CLAY are present at several levels; a centimeter-thick band (10YR 2/1) with a pyritic-limonitic veneer occurs in Section 2, 24–26 cm. A crinkled algal mat is present in Section 2, 40–42 cm.</p>
2		2				P T		

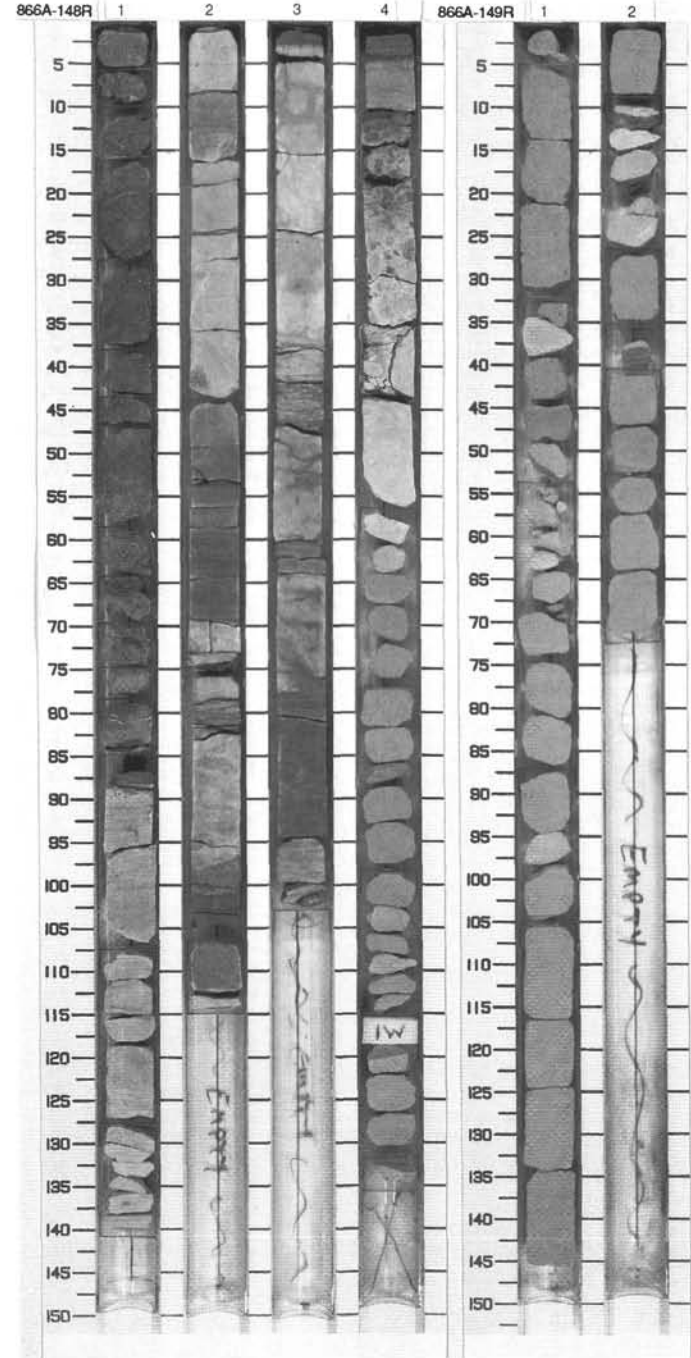


SITE 866 HOLE A CORE 148R CORED 1395.7 - 1405.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	[Pattern]	1	Barremian	(B) 		P P P P P P P P P	5GY 4/1	DOLOMITE, MUDSTONE, and PACKSTONE Major Lithologies: Dark greenish gray (5GY 4/1) to dark gray (5Y4/1) DOLOMITE with much moldic porosity (Section 1, 0-85 cm). Section 1, 85 cm to Section 4, 44 cm contains white (10YR 8/1) to light gray (N7) MUDSTONE with algal mats, stromatolites and possible birds-eye vugs. Gastropod shells and stylolites occur in Section 3. Section 4, 44-136 cm contains white (10YR 8/2) burrowed PACKSTONE, with peloids and intraclasts. Minor Lithology: Thin intervals of organic-rich CLAYSTONE occur in Section 1, 85-88 cm, Section 2, 80-82 cm and 103-106 cm, Section 3, 0-2 cm, 40-49 cm and 62-64 cm, and Section 4, 0-4 cm.
1-2	[Pattern]	2					10YR 8/1 To 5YR 8/1	
2-3	[Pattern]	3					10YR 8/1 To N7	
3-4	[Pattern]	4						

SITE 866 HOLE A CORE 149R CORED 1405.4 - 1415.1 mbsf

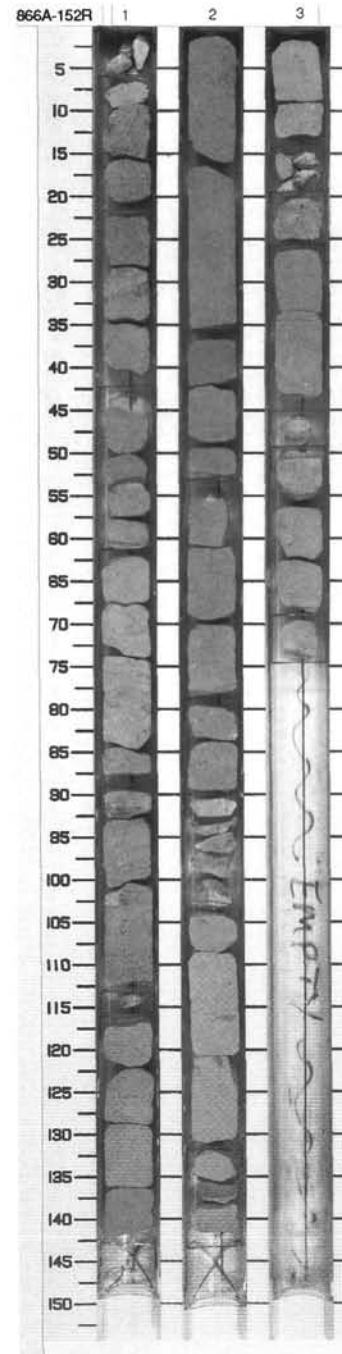
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	[Pattern]	1	Barremian			P P P P P P	10YR 8/2	GRAINSTONE Major Lithology: GRAINSTONE, peloidal, oolitic, white (10YR 8/2). The material appears well sorted, and contains small gastropods and bivalve fragments. Intraclasts, keystone vugs, and a few oncoids occur. A small coral clast occurs in Section 1, 2 cm.
1-2	[Pattern]	2						



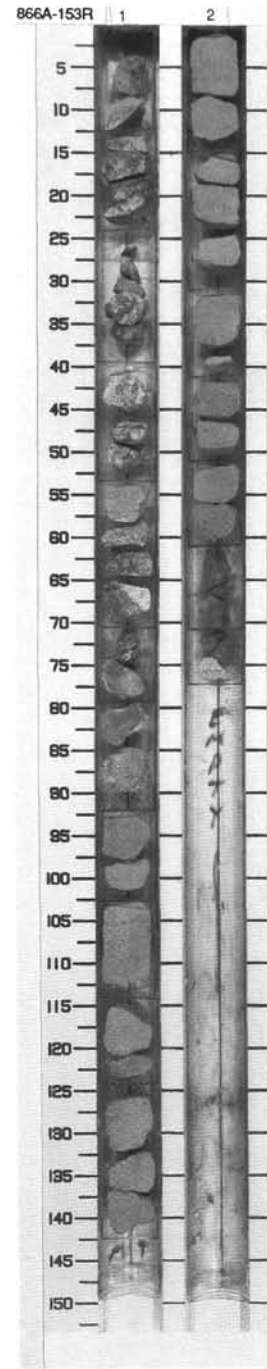
SITE 866 HOLE A CORE 152R

CORED 1434.5 - 1444.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description	
1		1	Barremian			P P	10YR 8/4 To 10YR 8/3	<p>GRAINSTONE</p> <p>Major Lithology: Section 1 contains GRAINSTONE, very pale brown (10YR 8/4), oolitic, peloidal, with gastropods, bivalve fragments, intraclasts and oncoids. In Section 1, 0-5 cm, the oncoids reach a diameter of 3 cm and are bored. Different grain-sized material is present in hydrodynamically sorted layers at various levels. Below Section 1, 40 cm, dolomitization becomes increasingly important. Stylolites are present in Section 1, 124-130 cm. Grapestones occur locally. Section 2, 0-100 cm contains very pale brown (10YR 7/3) GRAINSTONE similar to that in Section 1. A darker CLAY seam occurs in Section 2, 52-54 cm. Echinoid spines occur in Section 2, 70-75 cm. Section 2, 40 cm to Section 3, 73 cm contains very pale brown (10YR 8/3) GRAINSTONE. Oncoids are particularly abundant in Section 3, 19-25 cm where they are of centimeter size.</p>	
2		2							
3		3							
						T			



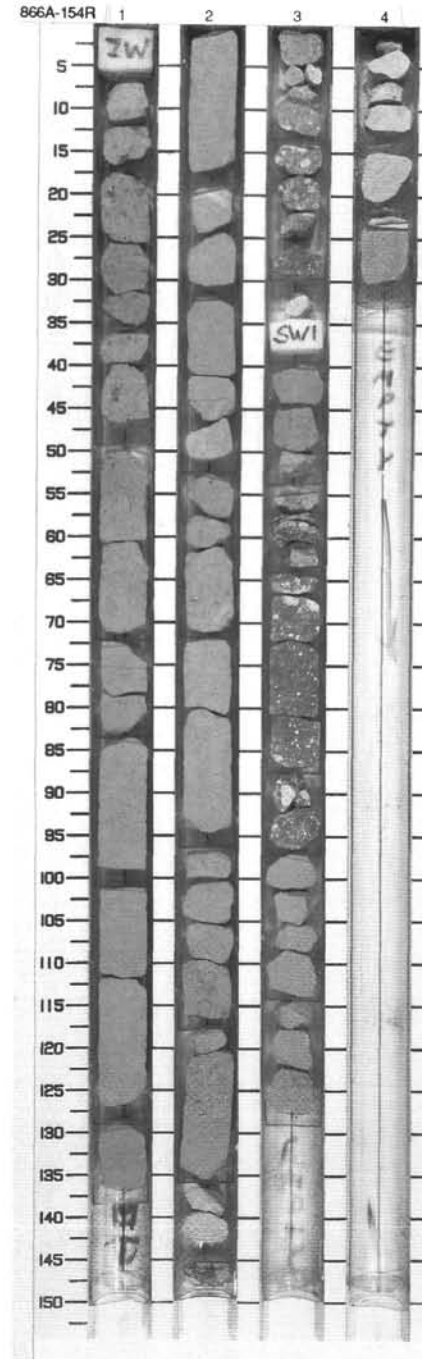
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	Barremian				10YR 8/3 To 10YR 7/3	<p>GRAINSTONE and DOLOMITE</p> <p>Major Lithology: GRAINSTONE, very pale brown (10YR 7/3) in Section 1, 0–92 cm and very pale brown (10YR 8/3) from Section 1, 92 cm, Section 2, 80 cm, oolitic, peloidal, with bivalve fragments, gastropods, echinoid spines, algal mat fragments, and local cross-laminations. In upper portion of Section 1, the facies are patchily dolomitized to dark yellowish brown (10YR 4/3), and dolomitization becomes more pervasive in Section 1, 67–92 cm. From Section 1, 92–143 cm, the GRAINSTONE becomes only slightly dolomitic, and a CLAY seam occurs in Section 1, 99 cm. Local grapestones occur in Section 2 and the GRAINSTONE becomes coarser-grained. Massive, dark brown (10YR 4/3), sucrosic DOLOMITE occurs in Section 2, 61–71 cm, with a large oncolite perforated by borings.</p>
2		2						



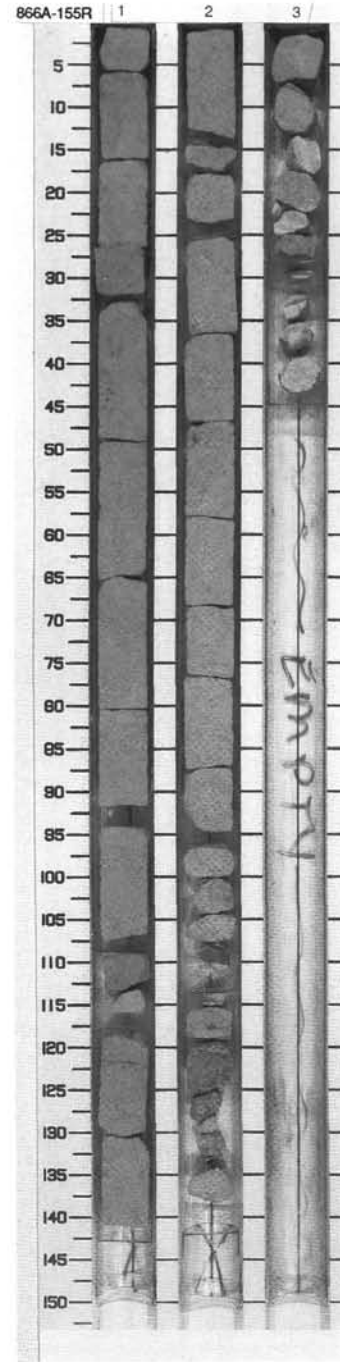
SITE 866 HOLE A CORE 154R

CORED 1453.8 - 1463.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	[Symbol]	1	Barremian	[Symbol]		P	10YR 8/3 To 10YR 5/3	<p>GRAINSTONE, DOLOMITE, and BOUNDSTONE</p> <p>Major Lithologies: Section 1 and 2 contain GRAINSTONE, very pale brown (10YR 8/3), oolitic, with bivalves, gastropods, echinoderm fragments, and patchy dolomitization. Section 1, 32-72 cm is particularly gastropod-rich, and some cross-laminae are developed in Section 1, 72-139 cm. In Section 2, the GRAINSTONE contains traces of organic matter, and concentrations of gastropods and grapestones are found in Section 2, 65-70 cm and 112-128 cm. Irregular patches of brown dark (10YR 3/3) DOLOMITE occur at the base of Section 2. Very pale brown to dark yellowish brown (10YR 8/3 to 10YR 4/4) ONCOLITIC BOUNDSTONE with lighter oncolids and intraclasts in a darker dolomitic matrix occur in Section 3, 0-30 cm. Some discrete oncolids are also present. Section 3, 30-39 contains a single oncolid (3 cm) and one gastropod (6 cm). In Section 3, 40-45 cm, the GRAINSTONE occurs with occasional blackened grains. Section 3, 54-97 cm contains tan (10YR 5/3) DOLOMITE with calcitic oncolids which occur throughout and are concentrated at the top of the interval. Very pale brown (10YR 8/3) OOLITIC GRAINSTONE, bioturbated, occurs from Section 3, 97 to Section 4, 32 cm.</p>
1-2	[Symbol]	2		[Symbol]		P		
2-3	[Symbol]	3		[Symbol]				
3-4	[Symbol]	4		[Symbol]		T		



Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description	
1		1	Barremian			P P P	10YR 8/3 To 10YR 7/3	<p>GRAINSTONE and RUDSTONE</p> <p>Major Lithologies: GRAINSTONE, very pale brown (10YR 8/3 to 10YR 7/3), oolitic, peloidal, slightly dolomitized and slightly to moderately disturbed, with fragments of bivalves, oncoids (3-5 mm in diameter), and some grapestones. Concentrations of oncoids are present in Section 1, 16-30, 82-83, 88-90 and 115-139 cm. A clayey stylolite occurs in Section 1, 121 cm. Sections 2 and 3 contain very pale brown (10YR 8/3 to 10YR 7/3), oolitic, peloidal GRAINSTONE- RUDSTONE with fragments of bivalves. Section 2 is slightly dolomitized and slightly to moderately bioturbated, and local RUDSTONE is present with oncoids (2-5 mm in diameter) and shell fragments. Section 2, 14-17 cm contains a relic of a bryozoan. Recrystallized coral is present in Section 2, 112 cm. Dolomitization is stronger in Section 2, 120-136 cm. An additional clayey stylolite occurs in Section 2, 121 cm. The GRAINSTONE- RUDSTONE in Section 3 is slightly bioturbated and contains abundant spherical oncoids which are 2 to 7 mm in diameter. Large shell fragments gave shelter porosity, but are now dissolved. Dolomitization occurs in Section 3, 35-66 cm.</p>	
2		2							
3		3							

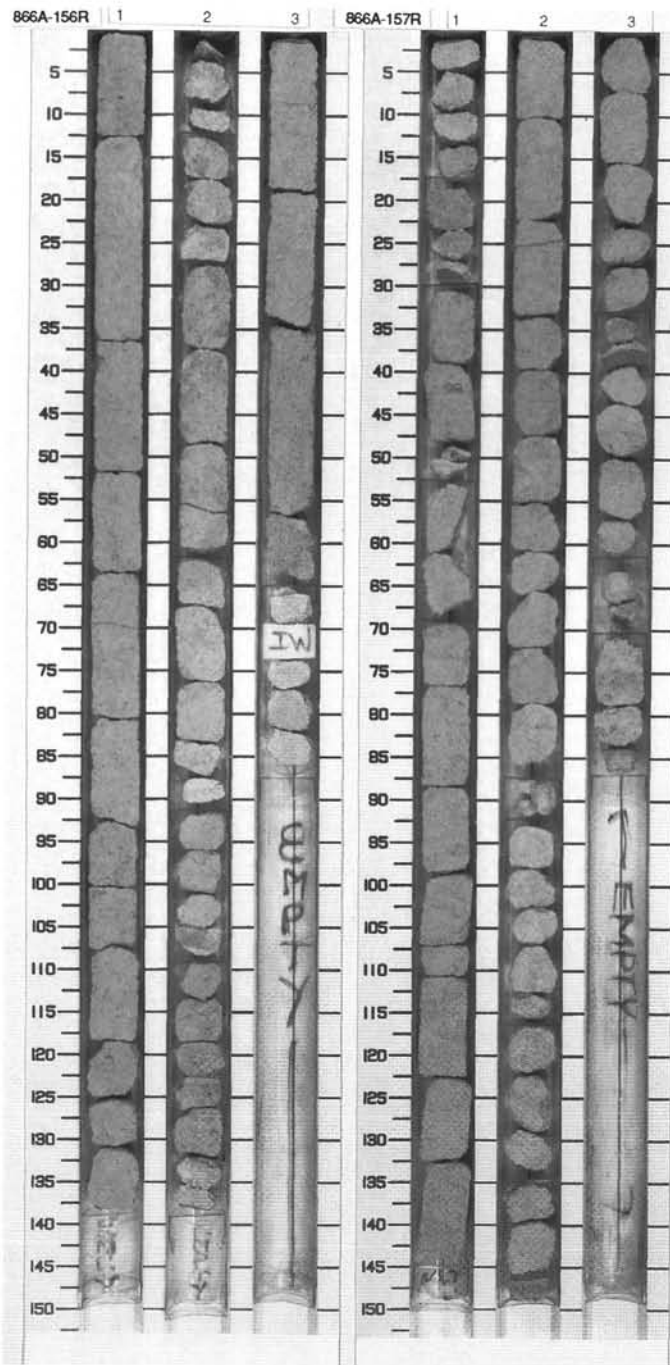


SITE 866 HOLE A CORE 156R CORED 1473.2 - 1482.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	Barremian			P	10YR 8/3 To 10YR 7/3	<p>GRAINSTONE and RUDSTONE</p> <p>Major Lithologies: GRAINSTONE-RUDSTONE, very pale brown (10YR 8/3 to 10YR 7/3), oolitic to peloidal, bimodal, slightly to moderately bioturbated, very slightly dolomitized, with bivalve fragments, gastropods and abundant and evenly distributed spherical oncoids (2-5 mm in diameter). A clayey stylolite occurs in Section 1, 70 cm. Section 2, 130-139 cm contains larger oncoids (up to 1 cm in diameter). A possible recrystallized piece of coral with perforations by a <i>Lithophaga</i>-type bivalve is present in Section 2, 107 cm. Clayey stylolites occur in Section 2, 98, 116, and 133 cm. In Section 2, the GRAINSTONE is dolomitized, but the oncoids are not dolomitized. The facies in Section 3 is identical to that in Section 1. Additional clayey stylolites occur in Section 3, 9 and 35 cm.</p>
2		2						
3		3						

SITE 866 HOLE A CORE 157R CORED 1482.8 - 1492.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	Barremian				10YR 8/3 To 10YR 7/3	<p>GRAINSTONE and RUDSTONE</p> <p>Major Lithologies: GRAINSTONE-RUDSTONE, very pale brown (10YR 8/3 to 10YR 7/3), oolitic, peloidal, bimodal, slightly to moderately bioturbated, slightly dolomitized, with abundant spherical oncoids (2-6 mm in diameter), bivalve fragments, and local patches of micritic matrix. Some of the bivalve fragments gave shelter porosity, but are now dissolved. A large dissolved nerineid gastropod is present in Section 1, 41 cm. Section 2 contains clayey stylolites at 24, 82, and 137 cm. Section 3 is similar to Sections 1 and 2, but less homogeneous. Coarser layers are present in Section 3, 46-50 and 58-86 cm. More dolomitization occurs in Section 3, 56-86 cm. An additional clayey stylolite is present in Section 3, 70 cm.</p>
2		2						
3		3						



SITE 866 HOLE A CORE 158R

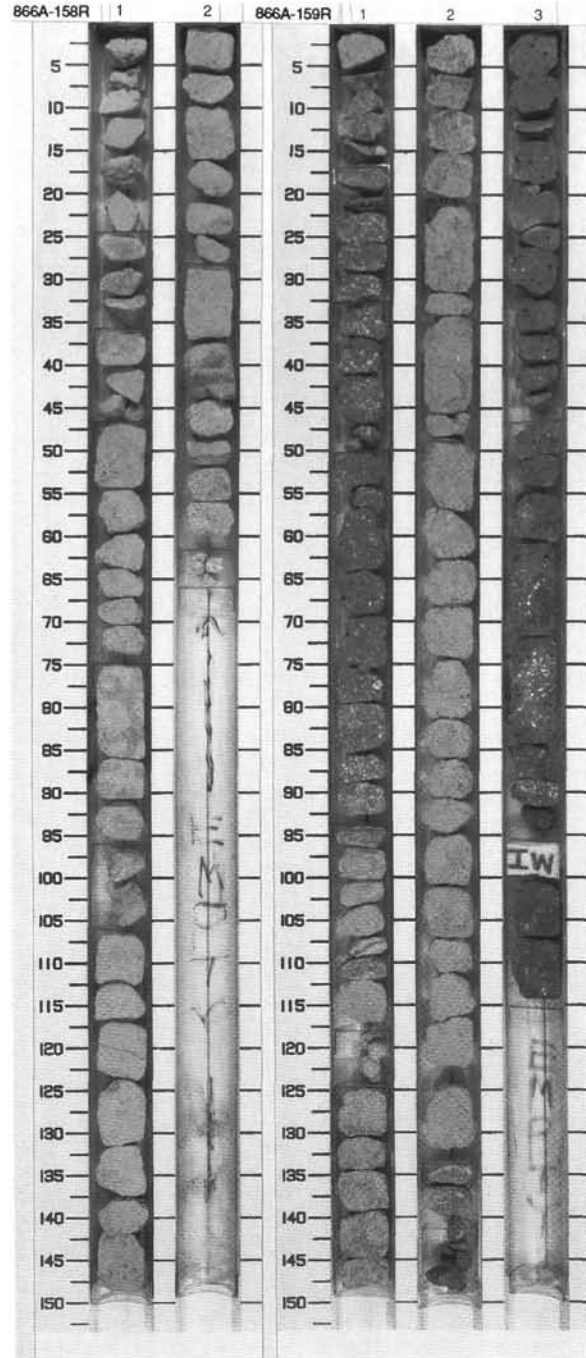
CORED 1492.5 - 1500.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	[Graphic Lithology]	1	Barremanian				10YR 8/3	<p>GRAINSTONE</p> <p>Major Lithology: GRAINSTONE, very pale brown (10YR 8/3), oolitic, peloidal, with oncooids of mm- to cm-scale, with bivalve fragments; irregularly dolomitized. Dolomitization is pronounced in Section 1, 25-35 cm, and is related to burrows between Section 1, 75 and 95 cm.</p> <p>There are a number of coarser grained intervals and some clayey stylolites. Section 2 contains large oysters (possibly <i>Arctostrea</i>), plus oncooids of mm- to cm-scale. Keystone vugs occur in Section 2, 8 cm. Patchy dolomitization is particularly evident in Section 2, 49 and 56 cm.</p>
1-2	[Graphic Lithology]	2						

SITE 866 HOLE A CORE 159R

CORED 1500.9 - 1511.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description		
0-1	[Graphic Lithology]	1	Barremanian			P	2.5Y 5/2 To 10YR 8/2	<p>RUDSTONE and GRAINSTONE</p> <p>Major Lithology: RUDSTONE-GRAINSTONE, weak red (2.5YR 5/2), gray (5Y 6/1) to white (10YR 8/2), with abundant granule- to small pebble-sized oncolites (Section 1, 0 cm to Section 2, 134 cm and Section 3, 47 to 115 cm). Groundmass is dolomitized. Oncolites are micritized, white (10YR 8/1) or dissolved (moldic porosity) with some secondary dolomitization. Pyrite occurs in places in middle of dolomite which is replacing oncolites. In Section 2, 134 cm to Section 3, 47 cm, there are scarce to absent oncolites.</p>		
1-2	[Graphic Lithology]	2							P	10YR 8/2 To 5Y 6/1
2-3	[Graphic Lithology]	3							P	10YR 4/2



SITE 866 HOLE A CORE 160R

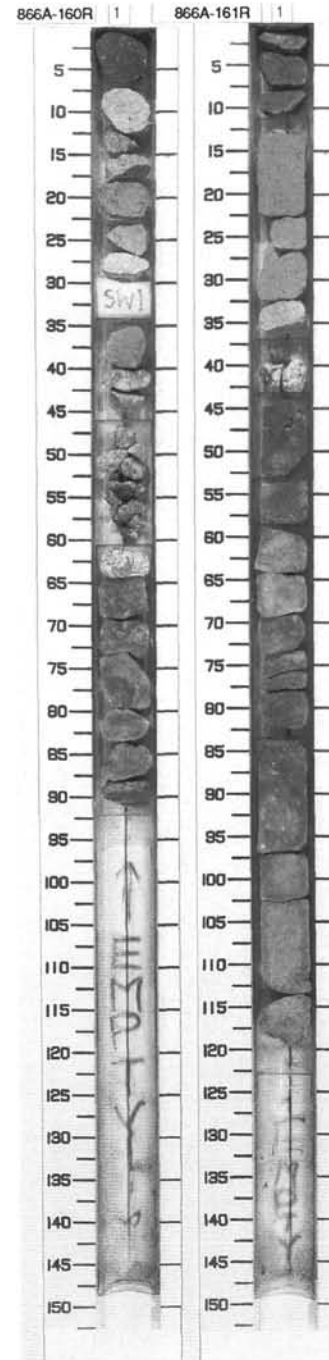
CORED 1511.7 - 1521.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Barremian			M P	10YR 8/2 10YR 4/2	GRAINSTONE and RUDSTONE Major Lithology: 0-6 cm, GRAINSTONE, dark grayish brown (10YR 4/2), dolomitized, some moldic porosity (molds of oncolites ?). 6-64 cm, RUDSTONE-GRAINSTONE, white (10YR 8/2), with oncolites, small bivalves, in part oolitic geopetals in shells, and bryozoa (30-34 cm). 64-92 cm, GRAINSTONE, dark grayish brown (10YR 4/2), dolomitized. Some dark gray drilling chips in 47-60 cm; these include very dark gray (10YR 3/1) laminites (algal mats).

SITE 866 HOLE A CORE 161R

CORED 1521.3 - 1531.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
		1	Barremian				10YR 7/2 10YR 4/2	DOLOMITE and GRAINSTONE-RUDSTONE Major Lithology: In 0-11 and 37-123 cm, DOLOMITE, dark grayish brown (10YR 4/2) with mold of coral (53-58 cm), gastropods and bivalves; intergranular and moldic porosity with secondary dolomitic infillings. In 11-37 cm, oolitic GRAINSTONE-RUDSTONE, light gray (10YR 7/2), with blackened (10YR 6/1) specks (intraclasts and oncoids) and shells, moldic porosity.



SITE 866 HOLE A CORE 162R

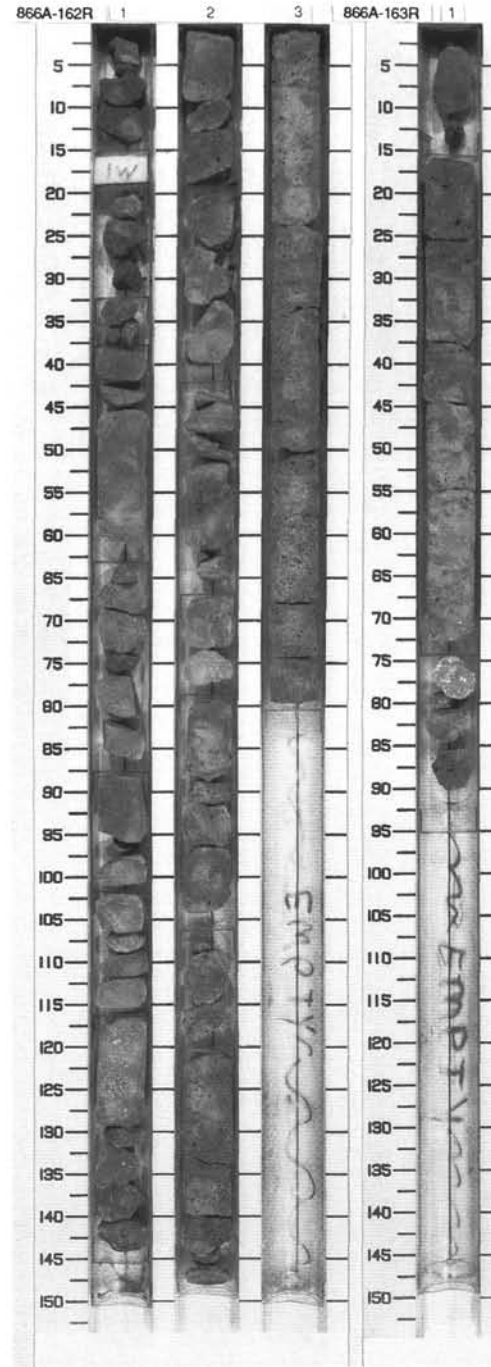
CORED 1531.0 - 1540.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	[Cross-hatched pattern]	1	Barremanian		[Vertical lines]	I	10YR 6/4 10YR 5/3	DOLOMITE
2		P				Major Lithology: DOLOMITE, light yellowish brown (10YR 6/4) to brown (10YR 5/3), intergranular and moldic porosity, some calcium carbonate particles still remaining, in general replaced by dolomite or dissolved, stylolite layers (Section 2, 0-78 cm), burrowed (Section 2, 78-150 cm and Section 3, 57-80 cm), suggestion of original bedding in Section 3, 33, 45 and 47 cm.		
3		P						

SITE 866 HOLE A CORE 163R

CORED 1540.3 - 1549.9 mbsf

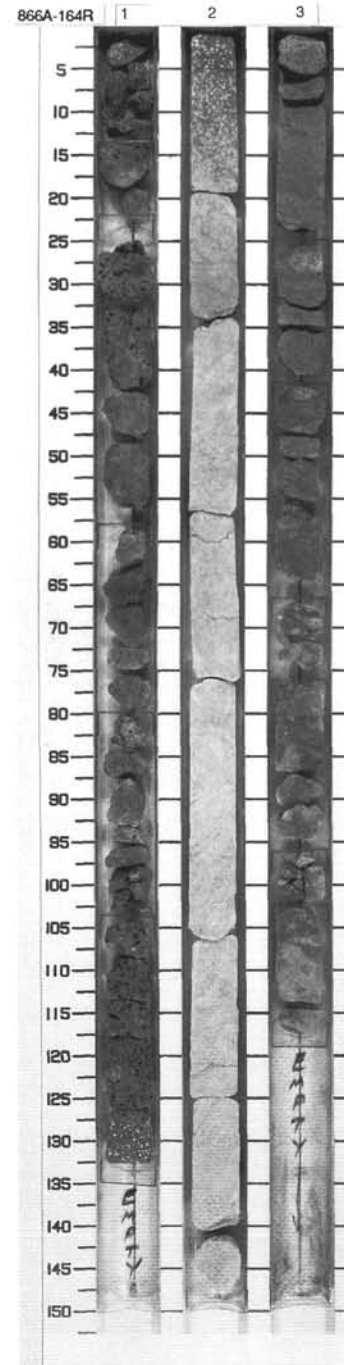
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	[Cross-hatched pattern]	1	Barremanian	[Symbol]	[Vertical lines]	P	10YR 4/4 To 10YR 3/2	DOLOMITE
								Major Lithology: DOLOMITE, dark yellowish brown (10YR 4/4) to very dark grayish brown (10YR 3/2), sucrosic, disarticulated bivalve in 60 cm; bivalve shell fragment in 77 cm and micritized oncoids in 74-83 cm, some burrows in 15-74 cm, moldic porosity.



SITE 866 HOLE A CORE 164R

CORED 1549.9 - 1559.6 mbsf

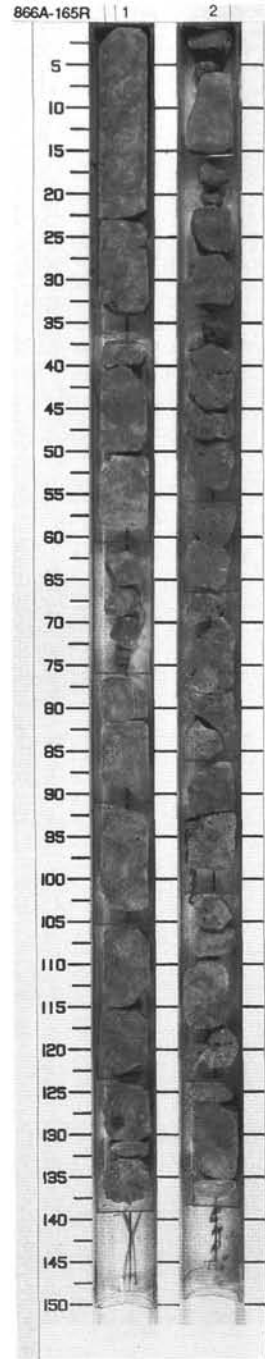
Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	Barremian				10YR 3/3 To 10YR 4/3	<p>DOLOMITE and RUDSTONE</p> <p>Major Lithology: In Section 1, 0–135 cm, contains DOLOMITE, dark brown (10YR 3/3 to 10YR 4/3), with micritized (128–135 cm) or moldic (0–78 and 99–128 cm) oncolites. The molds are smaller (mostly less than 8 mm in diam.) and more densely scattered in Section 1, 0–42 cm than in 42–78 cm (up to 3 cm in diam.) and scarce in Section 1, 78–99 cm (probable grading). Section 2, 0–45 cm, containing oncolitic RUDSTONE, grayish brown (10YR 5/2, 0–28 cm, dolomitized matrix) to light gray (10YR 7/1), with abundant oncolites. The size of oncolites is granule- to small pebble-sized in the upper part (mostly less than 8 mm in diam.) and is greater in the lower part (up to 3 cm in diam.). Section 2, 45–148 cm, contains oncolitic RUDSTONE, light gray (10YR 7/1 to 10YR 7/2), stylolites in Section 2, 59, 69, 82, 97, 104, 122, and 140 cm, with grading (?) between these stylolite layers. Throughout Section 2 each oncolite has light gray (10YR 7/1 to 10YR 6/1) rims, whereas the central portion is white (10YR 8/1 to 10YR 8/2). Section 3, 0–120 cm, contains sucrosic DOLOMITE, brown (10YR 5/3) to grayish brown (10YR 5/2), stylolitized (0–42 cm), with irregular dark gray (10YR 3/1) laminae; burrowed (42–120 cm).</p>
2		2					10YR 5/2	
3		3					10YR 7/1 To 10YR 7/2	
4							10YR 5/3 To 10YR 5/2	



SITE 866 HOLE A CORE 165R

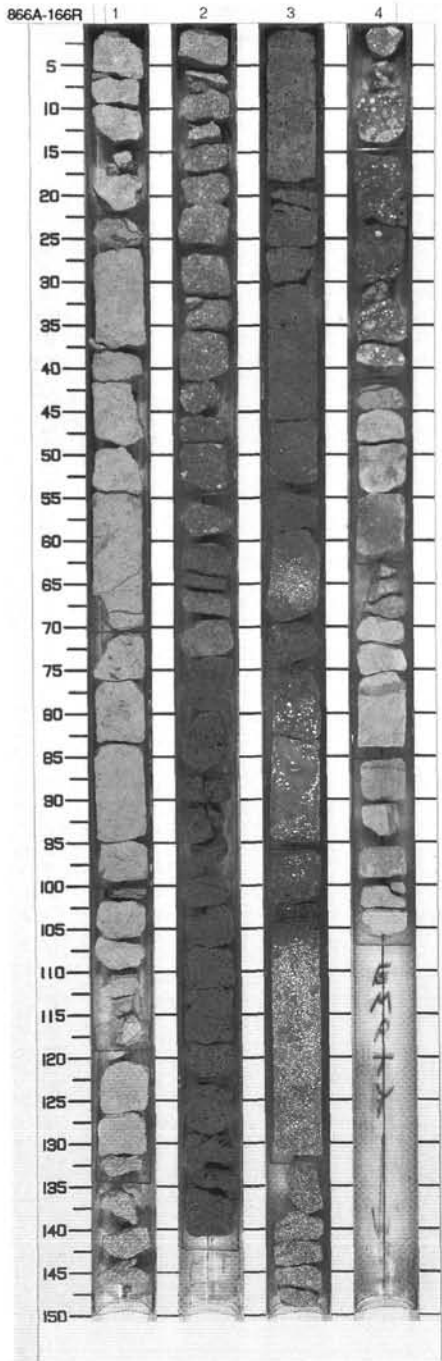
CORED 1559.6 - 1569.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	[Cross-hatched pattern]	1	Barremian	} L } O		P	10YR 4/4	DOLOMITE Major Lithology: DOLOMITE, tan (10YR 4/4), sucrosic, with relict grainstone fabric, some preserved shell fragments, and traces of bioturbation throughout most of Sections 1 and 2. Section 2 contains a piece of lignite at 28 cm and relict oncoids between 66-118 cm.
2		2						

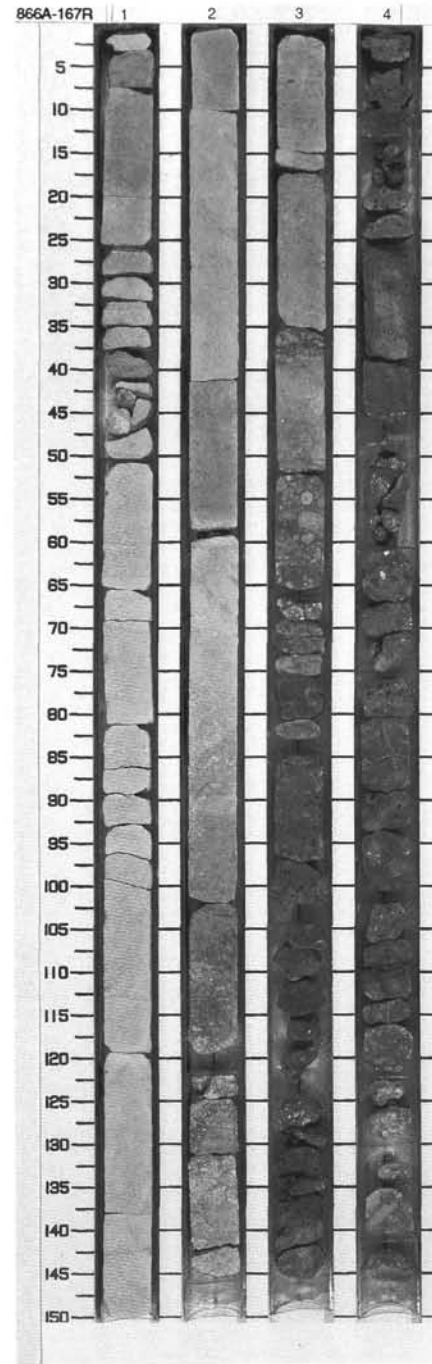


SITE 866 HOLE A CORE 166R CORED 1569.3 - 1580.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1-2	P P P P	1	Barremian	L	X	P	10YR 5/1 To 10YR 4/1	PACKSTONE, GRAINSTONE, RUDSTONE, and DOLOMITE
2-3	Pattern with oolitic and peloidal textures	2	Barremian	⊙	---		10YR 5/4	Major Lithology: Section 1, 0–134 cm, PACKSTONE, dolomitized, light gray (10YR 5/1) to dark gray (10YR 4/1), oolitic and peloidal, with abundant coated grains, oncolite up to 2.5 cm in diameter in 116–118 cm, some bivalve fragments and burrows. Section 1, 134–150 cm, RUDSTONE, brown (10YR 5/3), dolomitized, with abundant white (10YR 8/2) micritized oncoids.
3-4	Pattern with oolitic and peloidal textures	3	Barremian	⊙	---		10YR 5/4 To 10YR 4/3	Section 2, 0 cm to Section 4, 41 cm, DOLOMITE, yellowish brown to brown (10YR 5/4 to 4/3); in part very pale brown (10YR 8/3), Section 4, 0–41 cm, mostly sucrosic, with white (10YR 8/2) micritized oncoids
4-5	G G G G	4	Barremian	⊙	---		10YR 8/3	< 8 mm in diam.) in Section 2, 0–55 cm, Section 3, 61–67, 78–99 and 106–150 cm, or their molds in Section 2, 55–142 cm, Section 3, 23–61, 67–78 and 99–106 cm. Relict pebble-sized oncolites (up to 2 cm in diam.) in Section 3, 0–23 cm and Section 4, 0–41 cm; secondary dolomite crystals in these molds. Bivalve shell fragments in Section 2, 23–25 cm; burrows in Section 2, 120 and 130 cm.
5	G G G G						10YR 7/3	Section 4, 41–106 cm, GRAINSTONE, oolitic and peloidal, very pale brown (10YR 7/3) to light gray (10YR 7/1), with clastic grains, burrows in 41–63 cm, dark grayish brown (10YR 4/2) thin laminations (1 cm in thickness) in 78–79 cm.
Minor Lithologies: Drilling chips of GRAINSTONE with very dark gray (10YR 3/1) laminations in Section 1, 100–102 and 131–134 cm.								

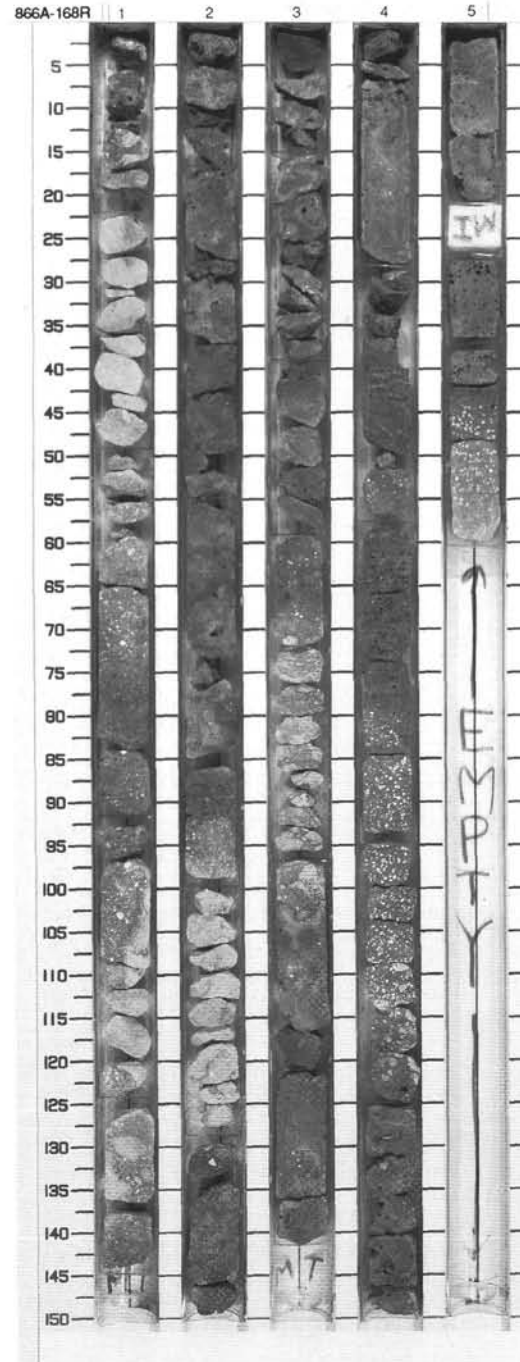


Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1	[Symbol]	1		⊙ ⊗ 8 3 6 L		P		<p>GRAINSTONE, RUDSTONE, and DOLOMITE</p> <p>Major Lithologies: GRAINSTONE, cream-gray (2.5Y 7/2), speckled, oolitic, with lightly dolomitized spar cement, and containing grapestones, bivalve shell fragments, and a green authigenic mineral within the ooids and pyrite. In Section 1 the GRAINSTONE is locally bioturbated and contains some stylolites and black (2.5Y 2/0) anastomosing clay seams of millimeter to centimeter scale. In Section 2, 0-59 cm gastropods and bryozoans are present and the ooids are overpacked and interpenetrate. There is a black (2.5Y 2/0) anastomosing clay seam in Section 2, 59-60 cm. Section 2, 60 cm to Section 3, 70 cm contains gray (2.5 Y 6/2) GRAINSTONE-RUDSTONE, oolitic with oncoids up to 3 cm in diameter, grading downwards into an increasingly dolomitized facies containing gastropods and oncoidally coated coral fragments. In Section 2, 102 cm, there is a sharp lithologic contact (? hardground) apparently bored, between more or less oncolitic facies. Section 3, 0-70 cm shows clearly bimodal grain-size distribution between ooids and oncoids. Black anastomosing clay seams occur in Section 3, 35-39 cm. Section 3, 70-150 cm and the whole of Section 4 contains tan (10YR 3/2) to dark brown (10YR 3/2) to black (2.5 2/0) irregularly stained, vuggy, sucrosic DOLOMITE containing occasional lighter-colored calcitic relict oncoids that become more common towards the base of the core.</p>
2	[Symbol]	2	Barremian	L L L L		P	2.5Y 7/2 To 10YR 3/2	
3	[Symbol]	3		L L L L		P		
4	[Symbol]	4		L L L L		T		

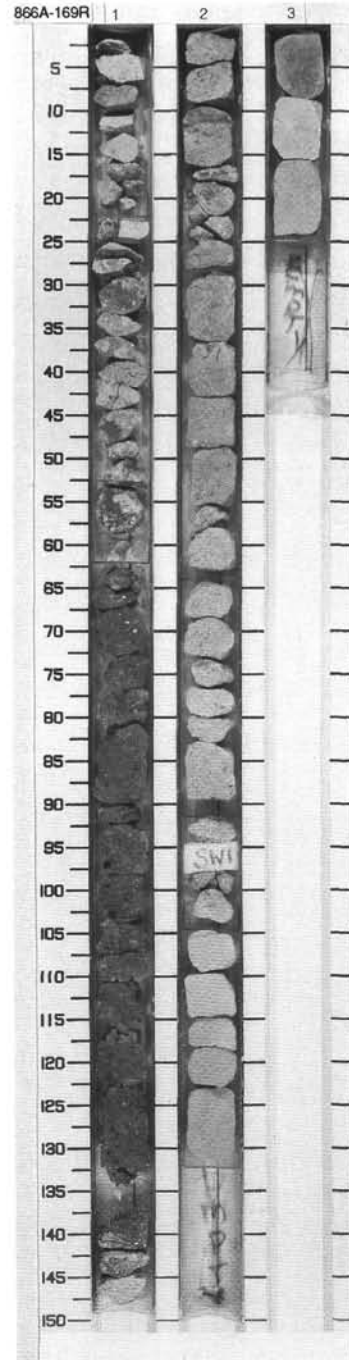


SITE 866 HOLE A CORE 168R CORED 1590.1 - 1599.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	[Pattern]	1	Barremian			P P	10YR 8/3 To 10YR 5/4	<p>GRAINSTONE, RUDSTONE, and DOLOMITE</p> <p>Major Lithologies: Section 1 to Section 2 contains DOLOMITIC GRAINSTONE, very pale brown (10YR 8/3) to tan (10YR 5/4) depending on degree of dolomitization, oolitic, with bivalve echinoid and coral fragments and centimeter-scale oncooids. In Section 1 there are coral pieces at 20 cm and 130 cm. In Section 2 the DOLOMITE is noticeably mottled and stained black (10YR 2/1). Section 2, 110-140 cm is less dolomitized. Section 3 contains massive, vuggy, brown to black (10YR 3/2 to 10YR 2/1) mottled DOLOMITE. A clay-rich GRAINSTONE-RUDSTONE with unreplaced cm-scale oncooids occurs in Section 3, 73-103 cm. Sections 4 and 5 contain white (10YR 8/2) to almost black (10YR 4/6) DOLOMITE with unreplaced calcitic oncooids at some levels.</p>
1-2	[Pattern]	2					P P	
2-3	[Pattern]	3					P	
3-4	[Pattern]	4						
4-5	[Pattern]	5					I	

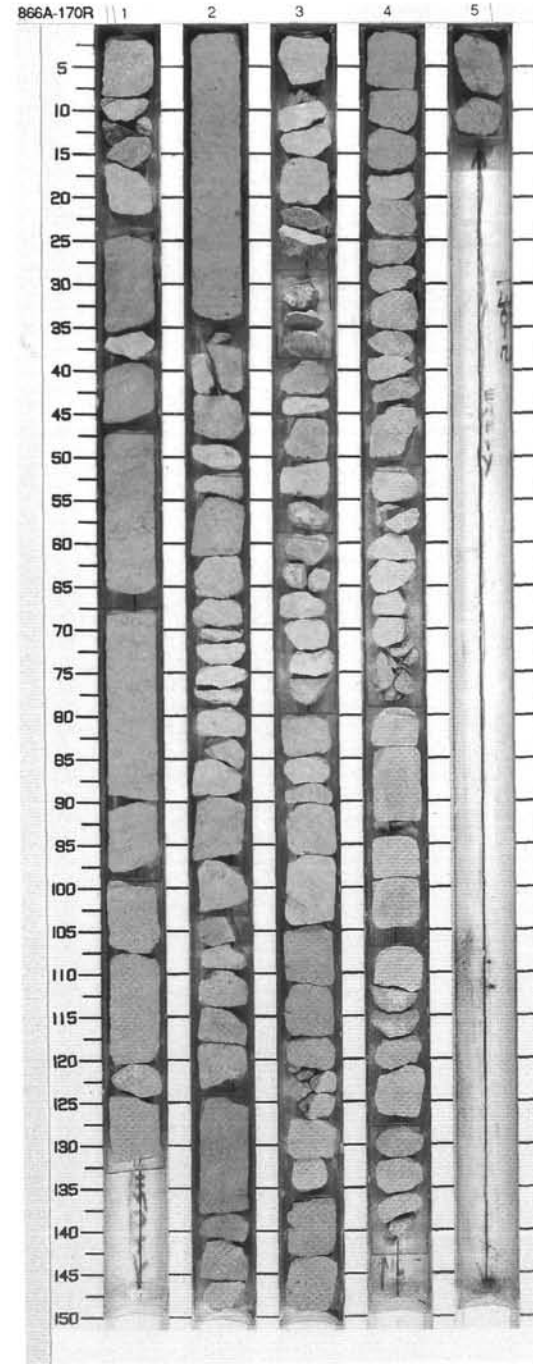


Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
1		1	Barremian			P	10YR 8/3 To 10YR 3/2	<p>GRAINSTONE and DOLOMITE</p> <p>Major Lithologies: GRAINSTONE, very pale brown (10YR 8/3), slightly dolomitized at top, but becoming increasingly so down Section 1, where the color becomes darker brown (10YR 3/2). Cm-scale oncoids are present throughout and gastropods occur in some intervals. Stylolitized clay seams and pyritized lignite occur locally. In Section 1, 62–145 cm, brown (10YR 4/4), vuggy, sucrosic DOLOMITE is developed showing ghosts of oncoids. From Section 1, 145 cm through Section 2 light brown (10YR 7/3) GRAINSTONE is present as a variably dolomitized, oolitic facies containing echinoderm and bivalve fragments and mixed with mm-scale oncoids. The degree of dolomitization decreases downwards to produce a poorly-cemented, oolitic GRAINSTONE. Large gastropods occur in Section 2, 92–104 cm. In Section 3, the GRAINSTONE is gray (10YR 7/1–10YR 6/1), oolitic, pyritic and well-cemented; it contains occasional oncoids.</p>
2		2					10YR 7/3 To 10YR 7/1	
3		3					10YR 7/1 To 10YR 6/1	



SITE 866 HOLE A CORE 170R CORED 1609.4 - 1619.1 mbsf

Meter	Graphic Lith.	Section Age	Structure and Components	Disturb	Sample	Color	Description
1		1	⊙ 8 P		P P P		GRAINSTONE Major Lithology: GRAINSTONE, oolitic, bluish-beige (2.5Y 6/0-10YR 7/2), many ooids with blackened and pyritic centres, locally coarser coated grains including echinoderms, bivalves and gastropods, coated intraclasts, oncoids, and angular black fragments. Black stain is present on the ends of some pieces.
2		2	}}				
3		3	}}			2.5Y N6/0 To 10YR 7/2	
4		4	}}				
5		5	}}				



SITE 866 HOLE A CORE 171R

CORED 1619.1 - 1628.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure and Components	Disturb	Sample	Color	Description
0-1	GGGG	1	Barremian	⊕			2.5G 6/0	GRAINSTONE, BRECCIA, and BASALT Major Lithology: Section 1, 0-19 cm, OOLITIC GRAINSTONE, gray (2.5Y 6/0), with pyrite, dolomitized, coral fragment in 5-8 cm, several stylolites, intraclasts altered green, coated grains. Clasts are greater than 5 cm in diameter. Section 1, 19 cm to Section 2, 23 cm, tuffaceous BRECCIA, green (2.5G 4/2), calcareous; large clast up to 20 cm in diameter in Section 2, 3-23 cm.
1-2	GGGG	2					2.5G 4/2	
2-3	GGGG	3					2.5G 6/0	
3-4	GGGG	4				P		
4-5	GGGG	5				P		

866A-172R NO RECOVERY

866A-173R HARD ROCK

866A-174R HARD ROCK

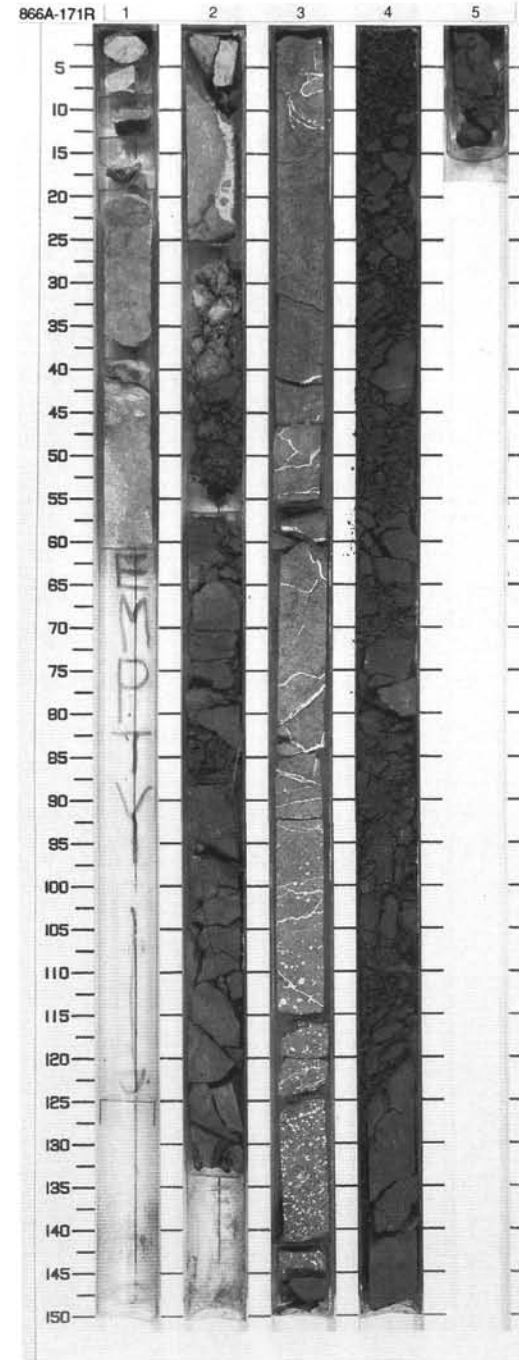
866A-175R NO RECOVERY

866A-176R NO RECOVERY

866A-177B HARD ROCK

866A-178W WASH CORE

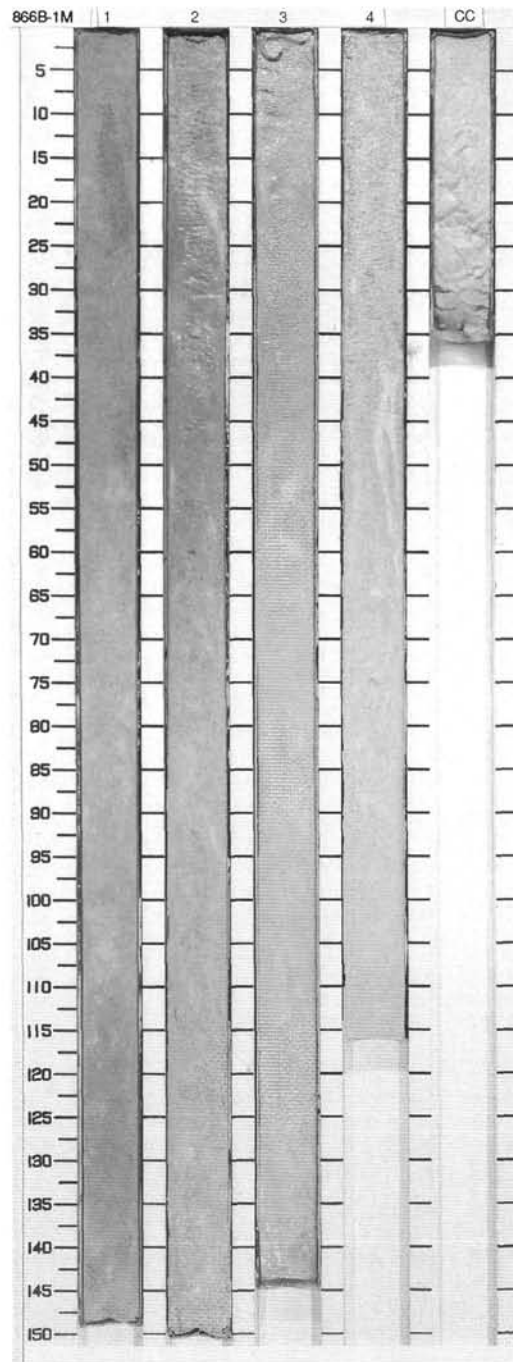
866A-179R THROUGH 189R HARD ROCKS



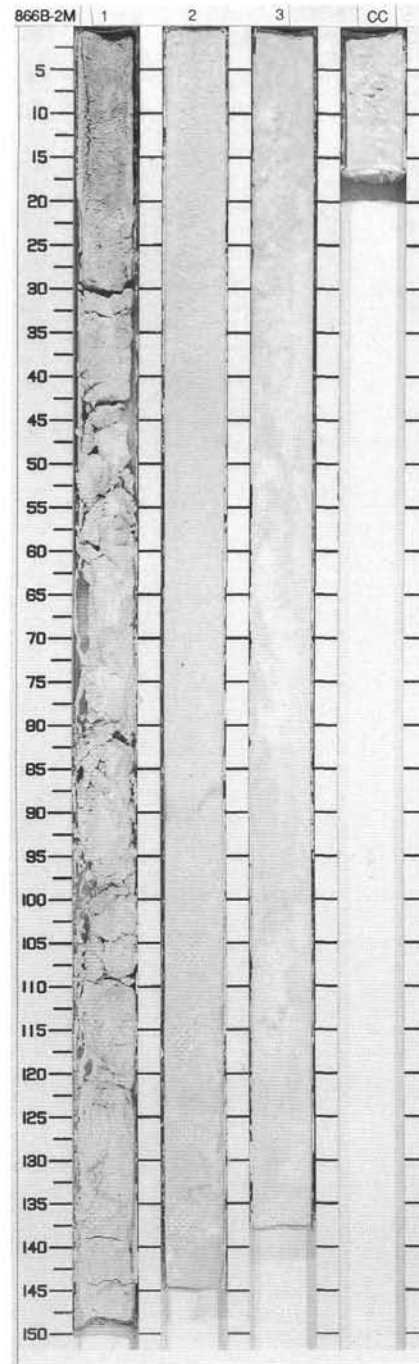
SITE 866 HOLE B CORE 1M

CORED 0.0 - 6.0 mbsf

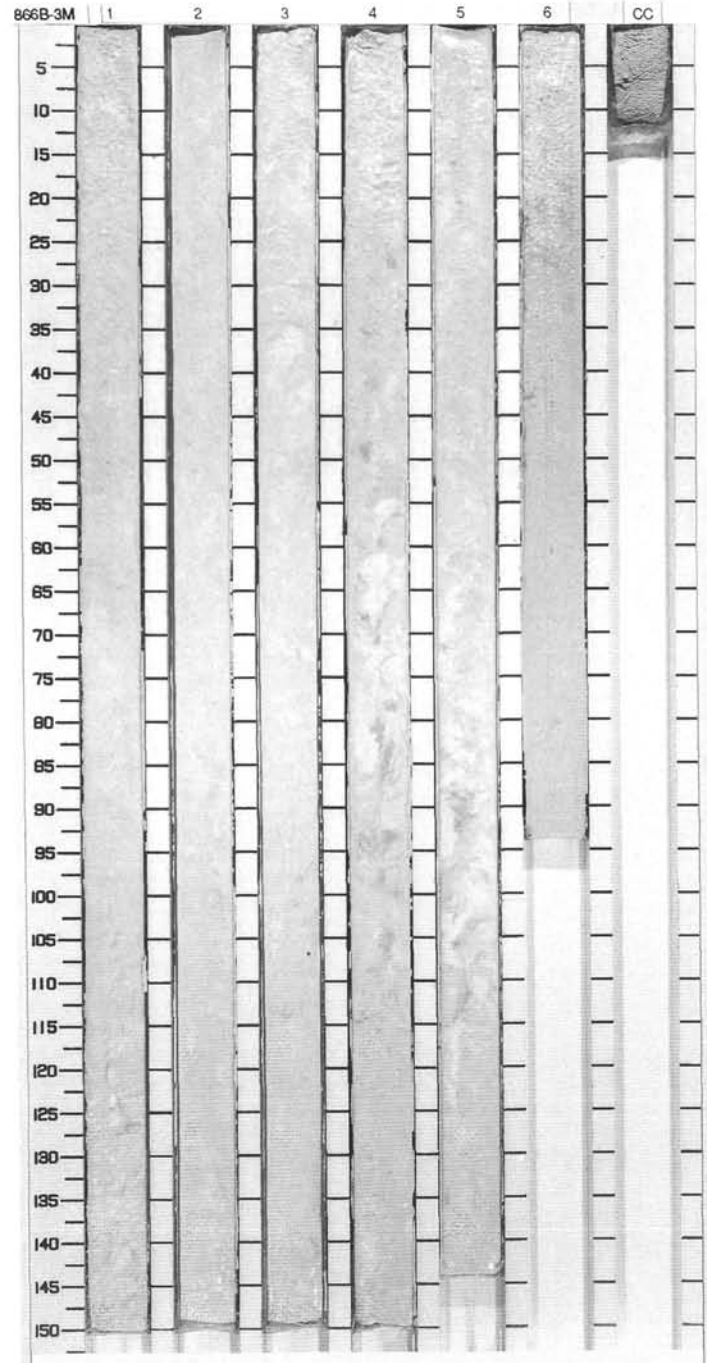
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1	+	1	Quaternary		○		10YR 7/4	NANNOFOSSIL FORAMINIFER OOZE Major Lithology: FORAMINIFER NANNOFOSSIL OOZE very pale brown (10YR 7/4 to 10YR 8/3), with burrows infilled with lighter-colored (10YR 8/2) ooze.
2								
3		3						
4							4	
5	+	4	Upper Pliocene	○		10YR 8/3		
6							CC	M



Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1	[Cross-hatched pattern]	1	Upper Pliocene		[Wavy line pattern]	10YR 7/3	10YR 7/3	Major Lithology: FORAMINIFER NANNOFOSSIL OOZE very pale brown (10YR 7/3) to white (10YR8/2 to N9), soft in Section 1, 0-20 cm, firm in Section 1, 20 to Section CC. Burrows are infilled with white nannofossil ooze throughout. A small pocket of fine black material occurs in Section 1, 135 cm.
2		2	Middle Eocene			10YR 8/1 To 10YR 8/2	10YR 8/2	
3		3				N9 To 10YR 8/1		
4	[Cross-hatched pattern]							



SITE 866 HOLE B CORE 3M				CORED 14.1 - 23.5 mbsf				
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Description	
1		1	Middle Eocene				FORAMINIFER NANNOFOSSIL OOZE	
2		2					10YR 8/1	Major Lithology: FORAMINIFER NANNOFOSSIL OOZE white (10YR 8/1 to N9), with whiter burrow mottles of nannofossils throughout.
3		3						
4		4						
5		5						
6		6					10YR 8/1 To N9	
7								
8								



SITE 866 HOLE B CORE 4M CORED 23.5 - 32.8 mbsf

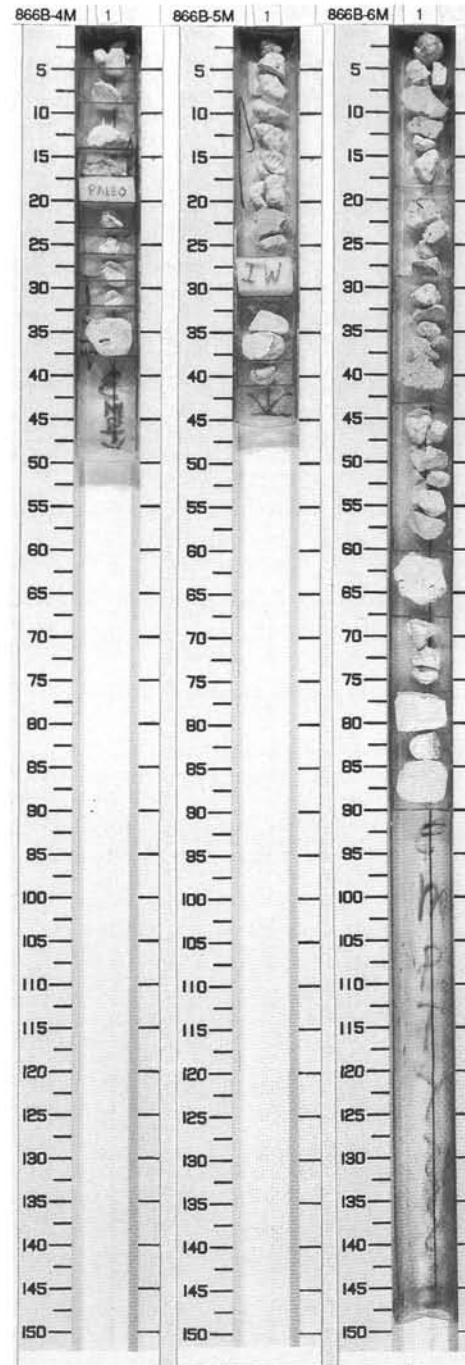
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
	M M W W M M W W	1	Cretaceous		V V	M	10YR 8/2	<p>MUDSTONE and WACKESTONE</p> <p>Major Lithology: In 0-14 and 17-38 cm, MUDSTONE and WACKESTONE, white (10YR 8/2) with molds of gastropods, foraminifers (including large <i>Cuneolina</i>), echinoid spine and dasycladacean algae and bivalve shell fragment (> 1cm in thickness). Burrow mottles contain very pale brown (10YR 8/3) infillings. Black manganese (?) specks, some yellow (2.5Y 8/6) stains occur along cavity walls.</p> <p>Minor Lithologies: In 14-17 cm, FORAMINIFER NANNOFOSSIL OOZE, white (10YR 8/2).</p>

SITE 866 HOLE B CORE 5M CORED 32.8 - 42.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
	M W W W M W W W	1	Cretaceous		V V	I	10YR 8/1	<p>WACKESTONE and MUDSTONE</p> <p>Major Lithology: In 0-31 cm, WACKESTONE, white (10YR 8/1), contains numerous molds of gastropods, bivalves and dasycladacean algae. Some bivalves are not dissolved. In 31-45 cm, MUDSTONE, white (N9).</p>

SITE 866 HOLE B CORE 6M CORED 42.2 - 51.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
	W W W W W W W W M M M M M M M M	1	Cretaceous				10YR 8/1	<p>WACKESTONE and MUDSTONE</p> <p>Major Lithology: In 0-60 cm, WACKESTONE, white (10YR 8/1 to 10YR 8/2), with abundant gastropod molds (generally high-spired; including nerineids), dacycladacean algae, burrows infilled with fecal pellets. Yellow-stained cavities and burrows occur in 18-60 cm; cracks in 56-60 cm. In 60-90 cm, MUDSTONE, white (10YR 8/1 to 10YR 8/2), with cavity infilled with pale yellow to yellow (2.5Y 8/4 to 2.5Y 8/6) mud; thin laminated in 85-90 cm.</p>



SITE 866 HOLE B CORE 7M

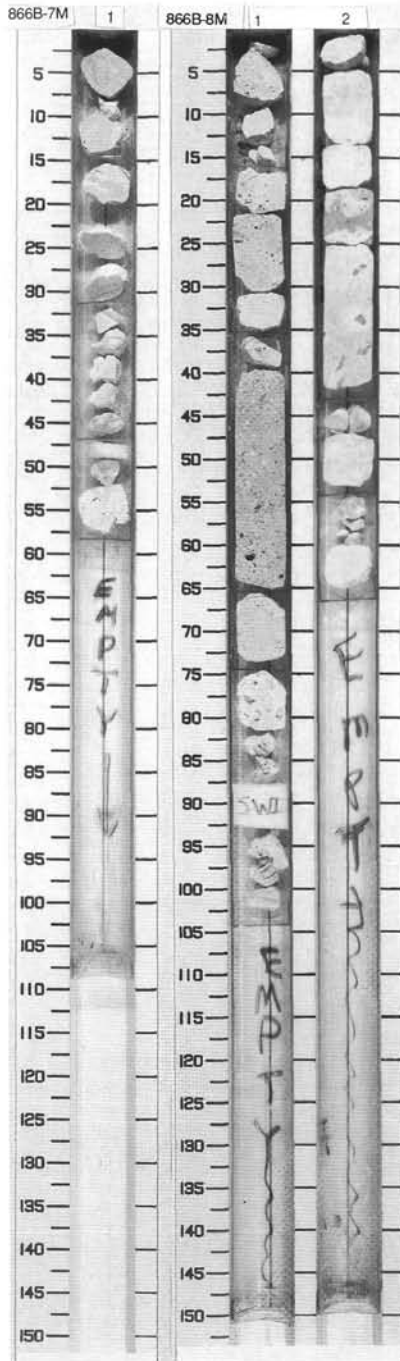
CORED 51.7 - 61.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1	W W W W W W W W W W W W	1	Cretaceous	G B G	V V V V V V V V	P T	10YR 8/1	WACKESTONE-MUDSTONE Major Lithology: WACKESTONE-MUDSTONE, white (10YR 8/1), with algal fragments, bivalves, and gastropod molds. Moldic pores are partly stained yellow (10YR 8/8) and infilled by spary calcite.

SITE 866 HOLE B CORE 8M

CORED 61.1 - 70.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1	W W W W W W W W P P P P P P P P W W W W W W W W F F F F W W W W	1 2	Cretaceous	W W W W G B G G B G B G	++++ ++++ ++++ ++++ ++++ ++++ ++++ ++++	T T	10YR 8/1 To 10YR 7/3	WACKESTONE and PACKSTONE Major Lithologies: Section 1, 0-39 and 74-104 cm and Section 2, 0-19 and 42-66 cm contains WACKESTONE, white (10YR 8/1), peloidal, with intraclasts, gastropods (some whole, some coated), bivalve fragments, dasycladacean algae (molds), oncoids, foraminifers, and white (N9) micritic intraclasts. Section 2, 0-19 cm has slight pinkish-gray (5YR 8/2) stain inside vertical burrows emanating from distinct surfaces. Section 2, 42-66 cm has slight color variation in layers and bird's-eye vugs along the boundaries. There are also white micritic intraclasts with circum-granular cracks. Very pale brown (10YR 7/3) PACKSTONE occurs in Section 1, 39-74 cm, fining upwards with randomly orientated shell fragments, notably gastropods (some entire), bivalves, peloids, white intraclasts and coated grains, foraminifers, and echinoderm fragments. The texture becomes FLOATSTONE towards the base of this interval. In Section 2, 19-42 cm, PACKSTONE, peloidal, white (N9) with shell molds. Oncoids fills burrows. the burrows are horizontal to inclined, cm-sized.



SITE 866 HOLE B CORE 9M CORED 70.5 - 79.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
	W W W W W W W W W W	1	Cretaceous	GG		T	10YR 8/2	WACKESTONE Major Lithology: WACKESTONE, white (10YR 8/2), with many benthic foraminifers including miliolids and <i>Cuneolina</i> , dasycladacean algae, sponge spicules, small burrows, and yellow staining.

SITE 866 HOLE B CORE 10M CORED 79.9 - 89.2 mbsf

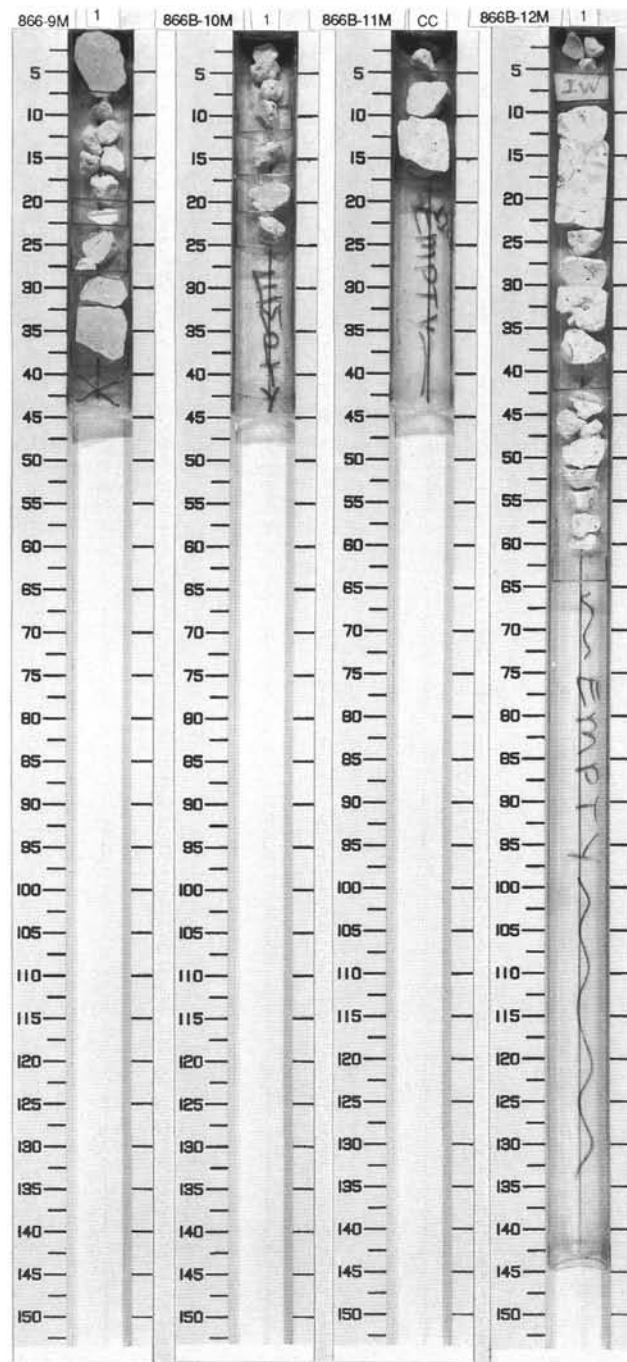
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
	M M M M	1	Cretaceous	G	V	T	10YR 8/1	MUDSTONE AND WACKESTONE Major Lithology: Interval 0-16 cm contains MUDSTONE, white (10YR 8/1). Interval 16-21 cm contains MUDSTONE-WACKESTONE with gastropod molds and sponge spicules.

SITE 866 HOLE B CORE 11M CORED 89.2 - 98.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
	W W W W W W W W W W	CC	Cretaceous	G	V	T	10YR 8/2	WACKESTONE Major Lithology: WACKESTONE, white (10YR 8/2), with gastropod molds, benthic foraminifers, and intraclasts with a faint pink stain around them.

SITE 866 HOLE B CORE 12M CORED 98.5 - 107.8 mbsf

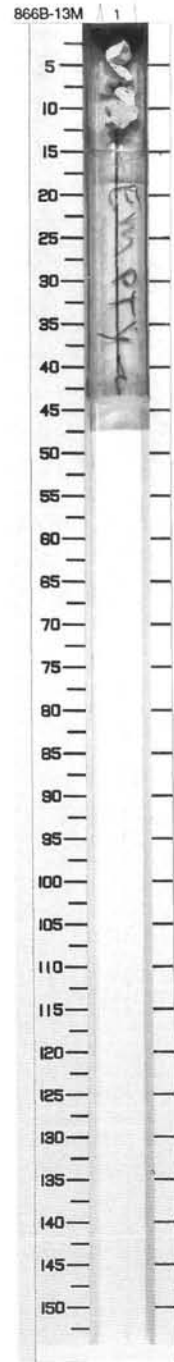
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
	W F F F F F F F F F W F F F F F F F F F	1	Cretaceous	B G G B		I	10YR 8/1	FLOATSTONE-WACKESTONE Major Lithology: FLOATSTONE, white (10YR 8/1), rich in bivalve debris and gastropod molds. Some patches are WACKESTONE with dasycladacean algae.



SITE 866 HOLE B CORE 13M

CORED 107.8 - 117.4 mbsf

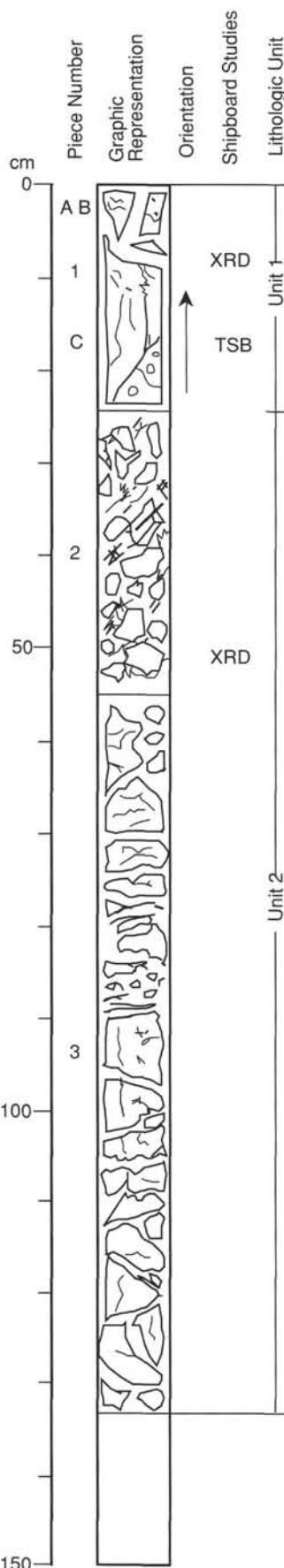
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
	W W W W	1	Cretaceous	G G G	>		10YR 8/2	WACKESTONE Major Lithology: WACKESTONE, white (10YR 8/2), with dasycladacean algae, large foraminifers, and molds of high-spired gastropods.



143-866A-171R-2

UNIT 1: VERY HIGHLY ALTERED BASALT

Piece 1



CONTACTS: Sharp contact of the lobate piece with the limestone.
PHENOCRYSTS: None visible, but some of the calcite and pyrite patches could originally have been phenocrysts.
GROUNDMASS: Microcrystalline to fine-grained, fining towards the contact. Only plagioclase, calcite, and pyrite visible.
VESICLES: A few patches of calcite and pyrite could have been vesicles or phenocrysts.
COLOR: Dark greenish gray (10Y 5/1).
STRUCTURE: Possibly a pillow lava or end of a flow because of the lobate shape and fining grain size towards the contact, but could also be offshoot of an intrusive body.
ALTERATION: Very highly altered to calcite, pyrite, and clays.
VEINS/FRACTURES: ~1%; 0.2–0.5 mm; parallel to lobate contact; infilled with calcite (plus specks of pyrite); a few tiny veinlets are perpendicular to the contact.

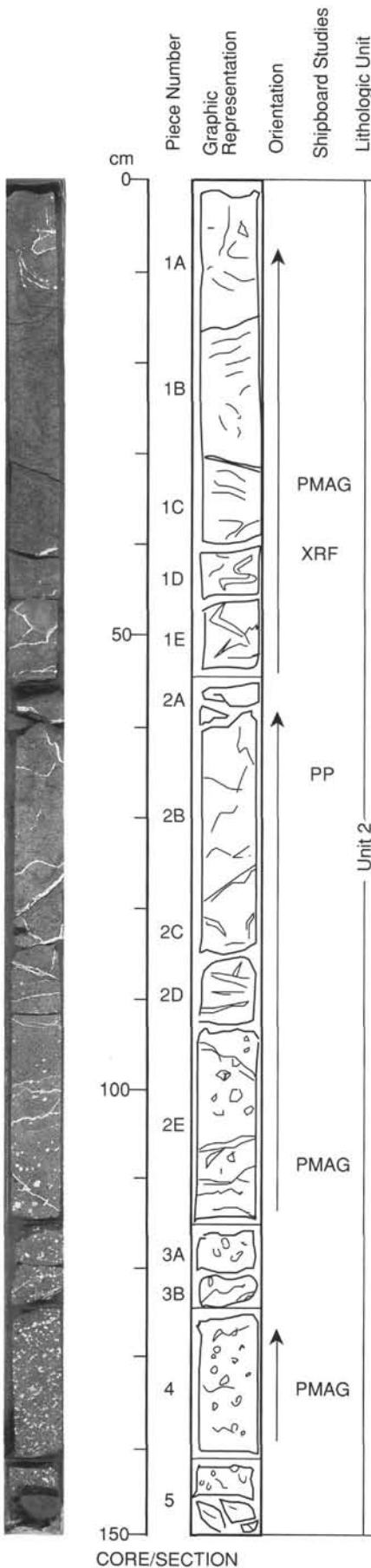
UNIT 2: COMPLETELY ALTERED MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 2 and 3

CONTACTS: None visible, but probably in rubble referred to as Piece 2, at top of reddened area (40 cm).
PHENOCRYSTS: Relatively uniform distribution.
 Olivine - 5%; 0.5–2.0 mm; subhedral; entirely altered to clay minerals.
 Pyroxene - 1%; 1.0–4.0 mm; subhedral; completely pseudomorphed by iron oxides and clay minerals.
GROUNDMASS: Microcrystalline to fine-grained (<0.2 mm); plagioclase, pyroxene and iron oxide minerals, anhedral to subhedral.
VESICLES: <1%; <1.0 mm; subrounded; random distribution; sparse and small.
COLOR: Dark greenish gray (10Y 5/1) with red veins (2.5YR 4/6).
STRUCTURE: Lava flow or sill.
ALTERATION: Completely altered to clay minerals and calcite.
VEINS/FRACTURES: 10%; 0.5–5.0 mm; orientation 95° and 165°; red (2.5YR 4/6), filled with clay minerals and iron oxides.
ADDITIONAL COMMENTS: Unit 2 is separated from Unit 1 by rubble, referred to as Piece 2, which consists of red soil or clay containing fragments of completely altered basalt.

UNIT 2: VERY HIGHLY ALTERED MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1A to 5



CONTACTS: None observed.

PHENOCRYSTS: Relatively uniform distribution.

Olivine - 8%; 0.5–2.0 mm; subhedral; completely altered to clay minerals.

Pyroxene - 2%; 1.0–4.0 mm; subhedral; completely pseudomorphed by iron oxides and clay minerals.

GROUNDMASS: Microcrystalline to fine-grained (<0.3 mm); plagioclase, subhedral; pyroxene, subhedral to acicular; iron oxide minerals, subhedral to anhedral.

VESICLES: 2%–8%; 1.0–7.0 mm; subrounded; irregularly distributed; more abundant in lower part of section (Pieces 2E to 5). Filled with clay minerals in Pieces 1 to 2D and with calcite in Pieces 2E to 5.

COLOR: Light greenish green (10YR 6/1).

STRUCTURE: Lava flow or sill.

ALTERATION: Very highly altered to clay minerals and iron oxides; alteration is pervasive. Secondary pyrite present.

VEINS/FRACTURES: 3%; 0.5–5.0 mm; orientation 50°, 70°, 130°; filled with calcite and clay minerals; the latter dominant in Pieces 1B and 1C.

143-866A-171R-4

UNIT 2: VERY HIGHLY ALTERED MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces all

CONTACTS: None observed.

PHENOCRYSTS:

Olivine - 4%; 0.5–2.0 mm; subhedral; entirely altered to clay minerals.

Pyroxene - 1%; 1.0–4.0 mm; subhedral; completely pseudomorphed by iron oxides and clay minerals.

GROUNDMASS: Microcrystalline to fine-grained (<0.3 mm) plagioclase laths and subhedral pyroxene and iron oxides.

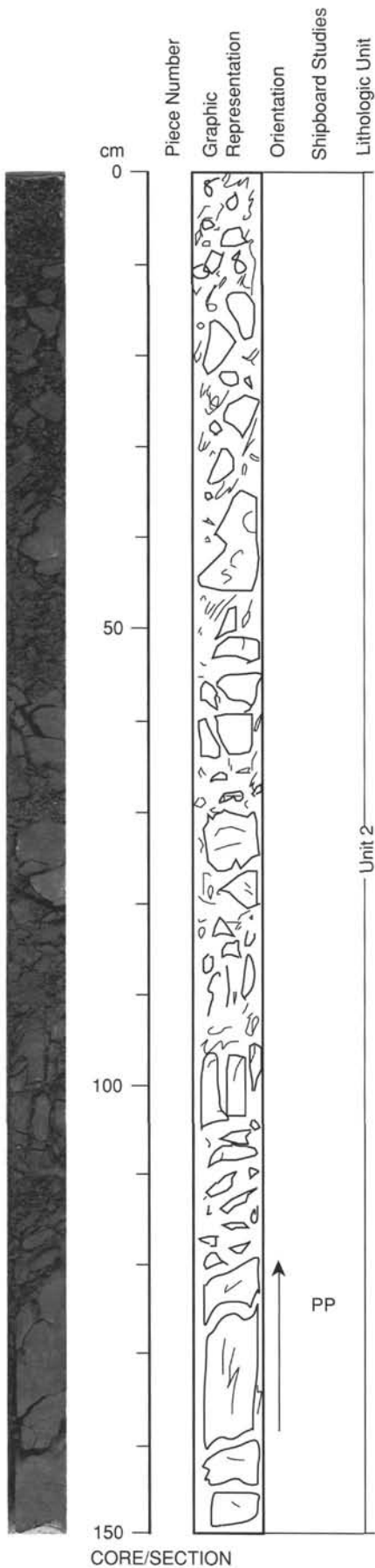
VESICLES: <1%; <1.0 mm; subrounded; irregularly distributed; filled with clay minerals (smectite?).

COLOR: Gray (2.5Y 5/0) with red (2.5YR 4/6) clay.

STRUCTURE: Lava flow or sill.

ALTERATION: Very highly altered to clay minerals (smectite?) and iron oxides. Secondary pyrite present.

VEINS/FRACTURES: 5%; 0.5–1.5 mm; 65°; filled with red (2.5YR 4/6) clay (smectite?).



143-866A-171R-5

**UNIT 2: COMPLETELY ALTERED MODERATELY OLIVINE-PYROXENE
PHYRIC BASALT**

Pieces all

CONTACTS: None observed.

PHENOCRYSTS: Uniform distribution.

Olivine - 3%; 0.5–2.0 mm; entirely altered to clay minerals.

Pyroxene - 1%; 1.0–3.0 mm; subhedral; completely pseudomorphed by clay minerals and iron oxides.

GROUNDMASS: Microcrystalline to fine-grained (<0.2 mm) anhedral plagioclase, pyroxene, and iron oxide minerals.

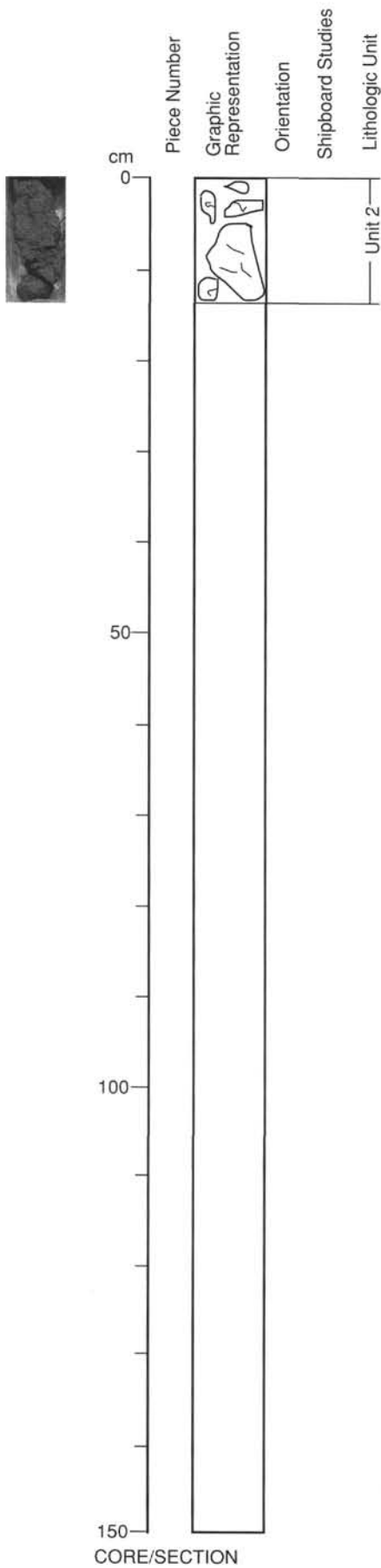
VESICLES: <1%; <1 mm; subrounded; irregular distribution; filled with clay minerals (smectite?).

COLOR: Gray (2.5YR 6/0) to reddish brown (5YR 5/4).

STRUCTURE: Lava flow or sill.

ALTERATION: Completely altered to clay minerals and iron oxides. Secondary pyrite present.

VEINS/FRACTURES: 5%; 0.5–1.0 mm; 120°; filled with clay minerals.

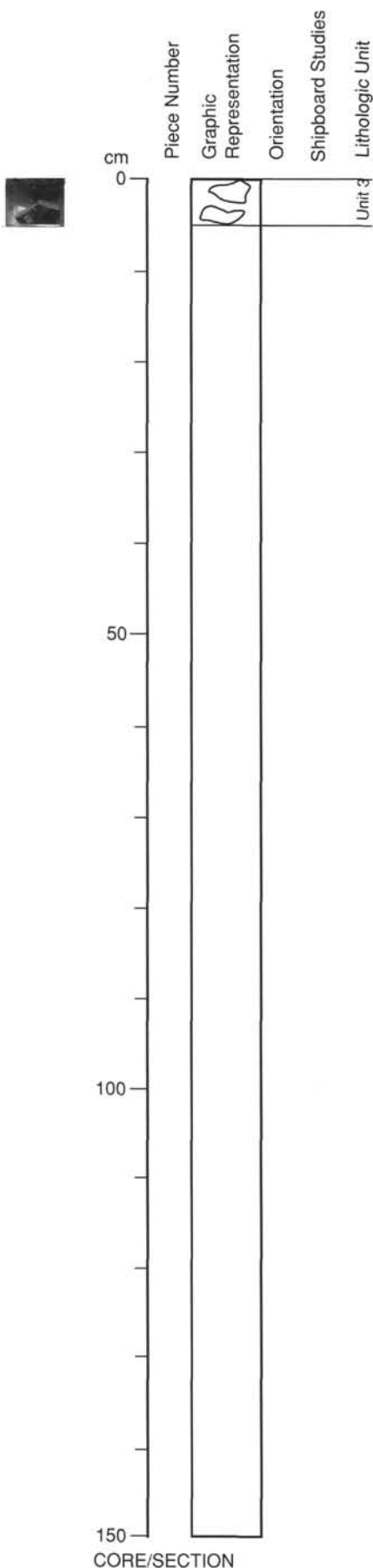


143-866A-173R-1

UNIT 3: MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces all

CONTACTS: None observed.
PHENOCRYSTS: Uniform distribution.
 Olivine - 5%; 0.5–2.0 mm; subhedral; completely pseudomorphed by iron oxides and clay minerals.
 Pyroxene - 1%; 0.5–4.0 mm; subhedral; partly altered to iron oxide minerals and clay minerals.
GROUNDMASS: Microcrystalline to fine-grained (<0.3 mm) anhedral plagioclase, pyroxene, and iron oxide minerals.
VESICLES: <1%; <0.5 mm; subrounded; uniform distribution; filled with calcite.
COLOR: Gray (7.5YR 5/0).
STRUCTURE: Lava flow or sill.
ALTERATION: Moderately altered to clay minerals and iron oxides. Secondary pyrite present.
VEINS/FRACTURES: 1%; 0.5–1.0 mm; random orientation; filled with calcite and clay minerals.



143-866A-174R-1

UNIT 3: MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces all

CONTACTS: None observed.

PHENOCRYSTS: Uniform distribution.

Olivine - 6%; 0.5–2.0 mm; subhedral; pseudomorphed by iron oxides and clay minerals.

Pyroxene - 1%; 0.5–3.0 mm; subhedral; partly altered to clay minerals, chlorite and iron oxide minerals.

GROUNDMASS: Microcrystalline (~0.05 mm); anhedral plagioclase, pyroxene and iron oxide minerals.

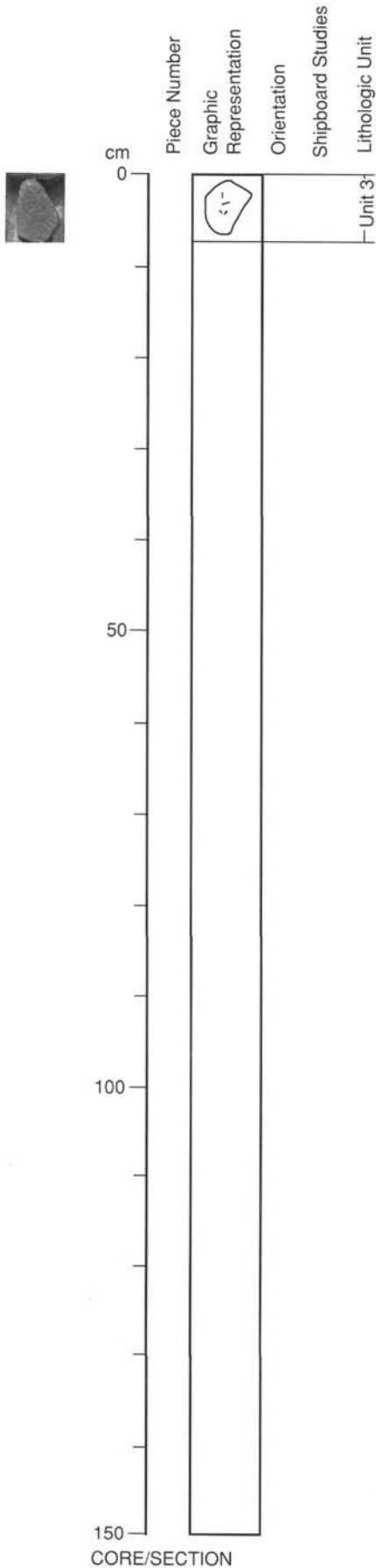
VESICLES: <1%; <0.5 mm; subrounded; irregular distribution; filled with calcite.

COLOR: Gray (7.5YR N5.0).

STRUCTURE: Lava flow or sill.

ALTERATION: Moderately altered to clay minerals and iron oxides. Secondary pyrite present.

VEINS/FRACTURES: <1%; <0.5 mm; irregular orientation; filled with calcite.



143-866A-177B-1

UNIT 3: MODERATELY OLIVINE-PYROXENE-PLAGIOCLASE PHYRIC BASALT

Pieces 1 to 3

CONTACTS: None visible.

PHENOCRYSTS: Also xenocrystic clusters (<1 cm) of plagioclase with pyroxene.

Olivine - 4%; 0.5–2.0 mm; subhedral; pseudomorphed by iron oxides and clay minerals.

Pyroxene - 1%; 0.5–5.0 mm; subhedral; partly altered to chlorite, clay minerals and iron oxide minerals.

Plagioclase - 1%; 0.5–1.0 mm; subhedral; fresh(?).

GROUNDMASS: Uniformly fine-grained (about 0.05 mm); anhedral plagioclase, pyroxene, and iron oxide minerals.

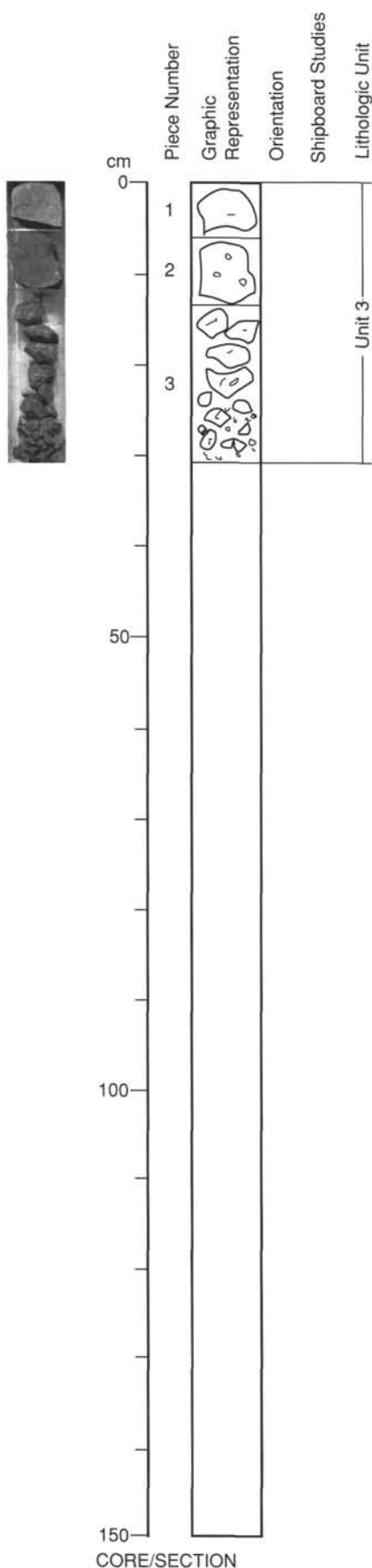
VESICLES: None.

COLOR: Gray (2.5YR N5/0).

STRUCTURE: Part of lava flow or sill.

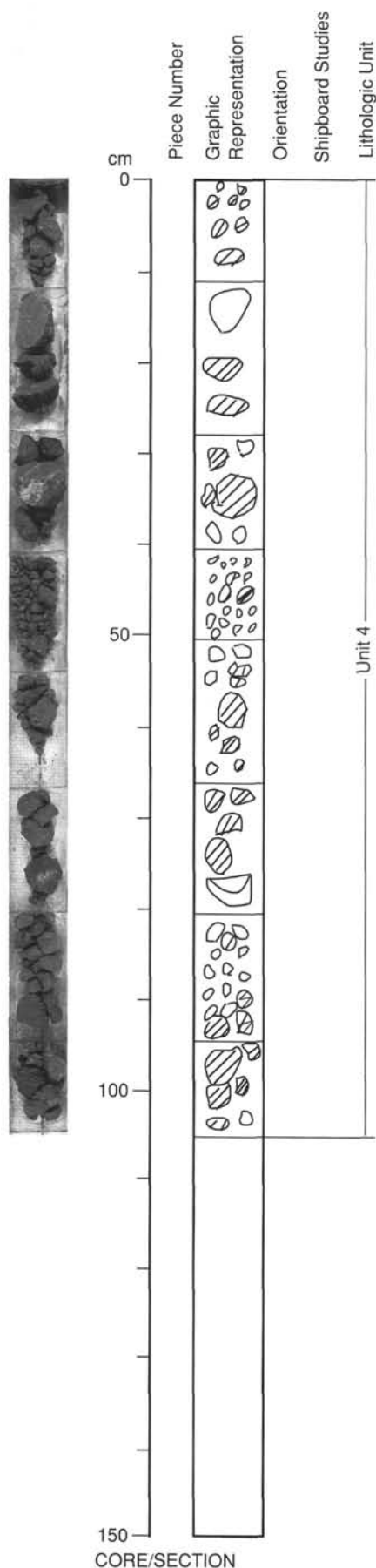
ALTERATION: Moderately altered to clay minerals and iron oxides.

VEINS/FRACTURES: 1%; <0.5 mm; irregular orientation; filled with calcite.



UNIT 4: VERY HIGHLY ALTERED MODERATELY OLIVINE-PYROXENE PHYRIC BASALT AND RED CLAY RUBBLE

Pieces all



CONTACTS: None observed.

PHENOCRYSTS: Distribution of phenocrysts in each fragment is random; some fragments are too small and highly altered to see any phenocrysts in them.

Olivine - 2%–5%; 1.0–3.0 mm; subhedral to anhedral grains; some are skeletal. Completely pseudomorphed by clay and Fe-oxyhydroxides.

Pyroxene - 1%–3%; 1.0–6.0 mm; subhedral to anhedral prisms that are completely altered to clay and Fe-oxyhydroxides.

GROUNDMASS: Microcrystalline to fine-grained; mostly anhedral plagioclase, pyroxene and olivine(?) altered to clays, calcite, and Fe-oxyhydroxides.

VESICLES: Trace; 1.0–2.0 mm; subangular shape; irregular distribution; most of the basalt fragments are highly altered so that it is difficult to distinguish altered phenocrysts and vesicles infilled with clays, calcite, and Fe-oxyhydroxides.

COLOR: Very dark gray (5Y 3/1) to light gray (5Y 7/1).

STRUCTURE: Rubble.

ALTERATION: Very highly to completely altered.

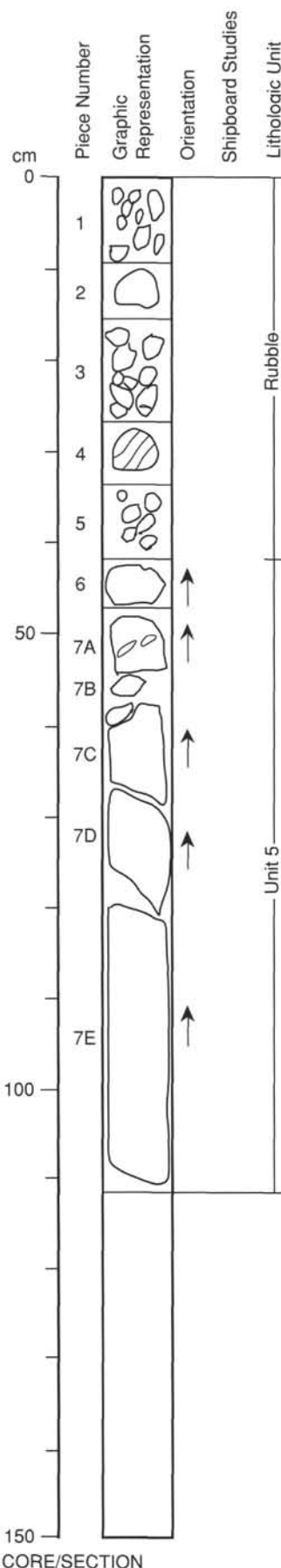
VEINS/FRACTURES: None.

ADDITIONAL COMMENTS: Basalt fragments are mixed with clay fragments which are dark red (10R 3/4). The clay fragments (hachured) are most probably deposited between basalt units because they contain subrounded sand-size grains of basalt. The clay fragments also contain zeolite(?) veinlets. A few fragments of pyrite aggregates are also present.

143-866A-179R-1

UNIT 5: MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 6 to 7E



CONTACTS: None observed, but Pieces 1 to 5 are basalt rubble (Piece 4 is limestone).

PHENOCRYSTS:

Olivine - 3%; 0.5–5.0 mm; anhedral to subhedral prisms; moderately to very highly altered to Fe-oxyhydroxides and clays; some are skeletal.

Pyroxene - 2%; 0.5–4.0 mm; anhedral to subhedral grains; moderately to highly altered to clays and Fe-oxyhydroxides.

Plagioclase - <1%; <2.0 mm; anhedral laths; slightly altered; only occasionally present in the groundmass.

GROUNDMASS: Generally microcrystalline; sometimes fine-grained.

VESICLES: 10%; 1.0 mm– 5.0 cm; rounded to elongate and angular; irregular orientation; almost all are infilled with green clays but the centers of a few have calcite; the elongated opening in Piece 7E is lined with crystalline celadonite(?) and then partially infilled with calcite.

COLOR: Dark gray (7.5 YR 4/0).

STRUCTURE: Lava flow.

ALTERATION: Moderately to highly altered to clays, Fe-oxyhydroxides and calcite; some of the clays infilling the vesicles dried up, swelled, warped and came out of the vesicles.

VEINS/FRACTURES: <1%; 0.1 mm; subhorizontal; infilled with green clays.

UNIT 5: MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1A to 1D

CONTACTS: None observed, but Pieces 2 to 5 are basalt rubble separating Units 5 and 6.

PHENOCRYSTS:

Olivine - 3%; 0.5–2.0 mm; anhedral to subhedral prisms; a few are skeletal; highly to completely pseudomorphed by clays and Fe-oxyhydroxides.

Pyroxene - 1%–2%; 0.5–4.0 mm; subhedral prisms; moderately to highly altered to clays and Fe-oxyhydroxides.

GROUNDMASS: Microcrystalline to fine-grained.

VESICLES: 5%–10%; 0.1–1.2 cm; subrounded to subangular; random distribution; infilled with green clays (smectite and celadonite?); some are partially or completely filled with calcite.

Miaroles: 2%; 1.5–4.0 cm; subrounded to subangular; limited in Pieces 1C and 1D; partially infilled with crystalline calcite; crystals protrude towards the hollow center.

COLOR: Dark gray (7.5 YR 4/0).

STRUCTURE: Lava flow.

ALTERATION: Moderately altered, mostly to green clays, Fe-oxyhydroxides and calcite.

VEINS/FRACTURES: Trace; <0.2 mm; subhorizontal; filled with clays and calcite.

UNIT 6: MODERATELY PLAGIOCLASE-OLIVINE PHYRIC BASALT

Pieces 6A to 7D

CONTACTS: None observed, but overlain by basalt rubble.

PHENOCRYSTS:

Plagioclase - 3%–4%; 1.0–9.0 mm; subhedral to anhedral, stubby laths; cloudy and moderately altered to white clays with green checkers inside.

Olivine - 1%–2%; 0.5–4.0 mm; subhedral to anhedral prisms; some are skeletal; highly altered to Fe-oxyhydroxides and green clays.

Pyroxene - 1%; 0.1–0.2 mm; anhedral grains; brownish (could be spinel?)

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

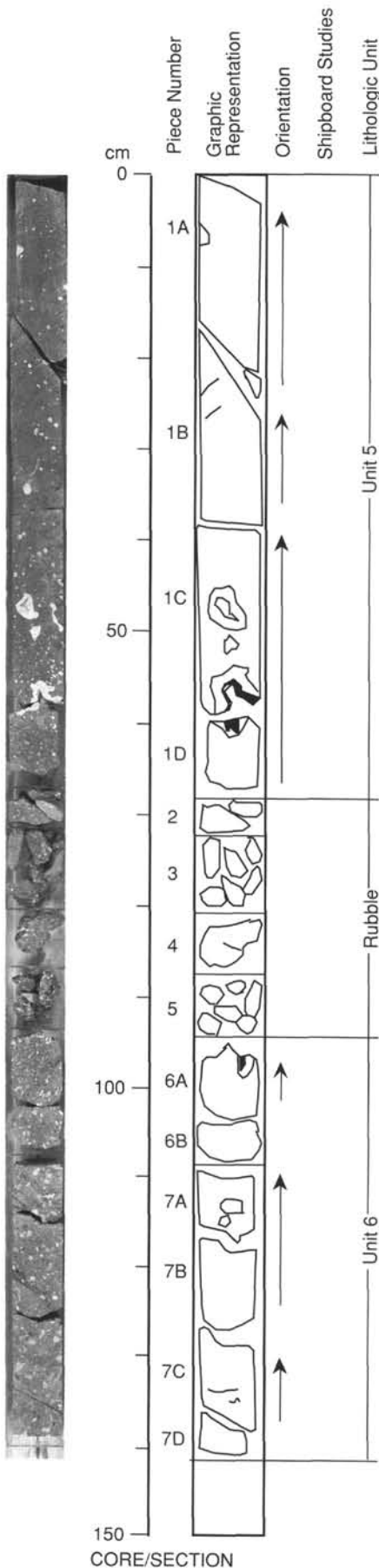
VESICLES: 15%; 1–15 mm; very irregular shape; random distribution; angular green clay-filled vesicles display swirling arrangement, most probably due to flow; a few are partially infilled with calcite.

COLOR: Dark gray (7.5 YR 4/0).

STRUCTURE: Lava flow.

ALTERATION: Moderately altered to clays and calcite.

VEINS/FRACTURES: <1%; <0.2 mm.; subhorizontal; infilled with green clays.



143-866A-179R-3

UNIT 6: MODERATELY PLAGIOCLASE-OLIVINE PHYRIC BASALT

Pieces 1A to 4E

CONTACTS: None observed.

PHENOCRYSTS:

Plagioclase - 2%; 1.0–10.0 mm; anhedral to subhedral stubby laths; moderately to highly altered to white clays with green checkers inside.

Olivine - 1%; 0.5–2.0 mm; anhedral to subhedral prisms; highly to completely pseudomorphed by Fe-oxyhydroxides and clays.

Pyroxene - <1%; 0.2–0.5 mm; anhedral grains, brownish (could be spinel?).

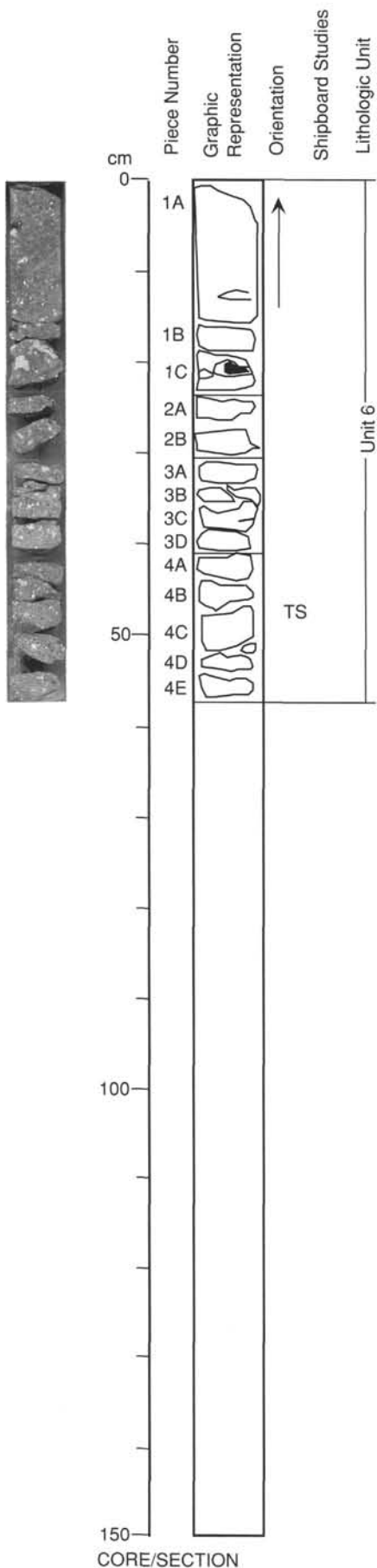
GROUNDMASS: Microcrystalline to fine-grained; intergranular, getting coarser towards the bottom.

VESICLES: 8%–10%; 1.0–20.0 mm; irregular shape; random distribution; swirling texture of the angular vesicles that started in Section 143-866A-179R-2 is still visible.

COLOR: Dark gray (7.5 YR 4/0).

STRUCTURE: Lava flow.

ALTERATION: Moderately to highly altered.



143-866A-179R-4

UNIT 6: MODERATELY PLAGIOCLASE-OLIVINE PHYRIC BASALT

Pieces 1 to 11C

CONTACTS: None observed.
PHENOCRYSTS:

Plagioclase - 3%; 0.5 mm–10 cm; anhedral to subhedral laths, mostly stubby; highly altered to white clays with green checkers inside; abundant in Pieces 5A, 5B, 5C and 11A.
 Olivine - 2%; 0.5–2.0 mm; anhedral to subhedral prisms; highly to completely pseudomorphed by Fe-oxyhydroxides and clays.
 Pyroxene - 1%; 0.2–0.5 mm; anhedral brownish grains.

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

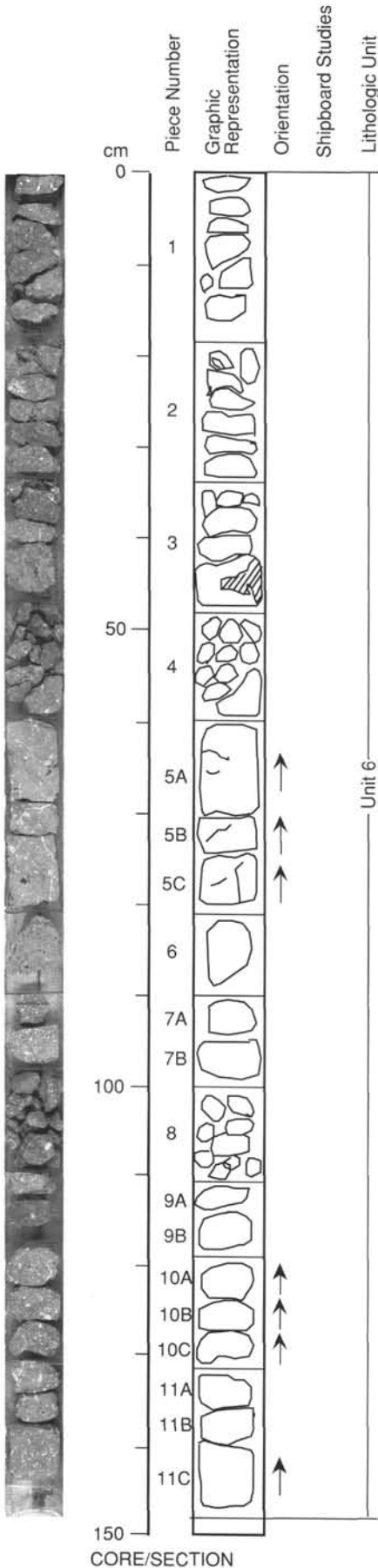
VESICLES: 8%–10%; 0.5–5.0 mm; very irregular shape; random distribution; some are only partially infilled with green clays; they still show the apparent swirling texture.

COLOR: Dark gray (7.5 YR 4/0).

STRUCTURE: Lava flow.

ALTERATION: Moderately to highly altered.

VEINS/FRACTURES: <1%; <0.5 mm; 45° to 90°; mostly in Pieces 5A, 5B and 5C.



CORE/SECTION

143-866A-179R-5

UNIT 6: HIGHLY PLAGIOCLASE-OLIVINE-PYROXENE PHYRIC BASALT

Pieces all

CONTACTS: None observed, but grain size decreases towards the bottom.

PHENOCRYSTS:

Plagioclase - 2%–8%; 1.0–9.0 mm; anhedral to subhedral laths; fresh to moderately altered; occurs either as solitary or cumuloaphyric with pyroxene; abundance of phenocrysts diminishes towards the bottom.

Olivine - 1%–3%; 1.0–5.0 mm; anhedral to subhedral prisms; slightly altered to highly altered; some are skeletal; some are still transparent olive-green but are generally rimmed with clays and Fe-oxyhydroxides.

Pyroxene - 1%; 1.0–5.0 mm; anhedral to subhedral prisms; moderately altered; some are still transparent dark green crystals.

GROUNDMASS: Generally microcrystalline at the bottom to fine-grained towards the top; intergranular texture.

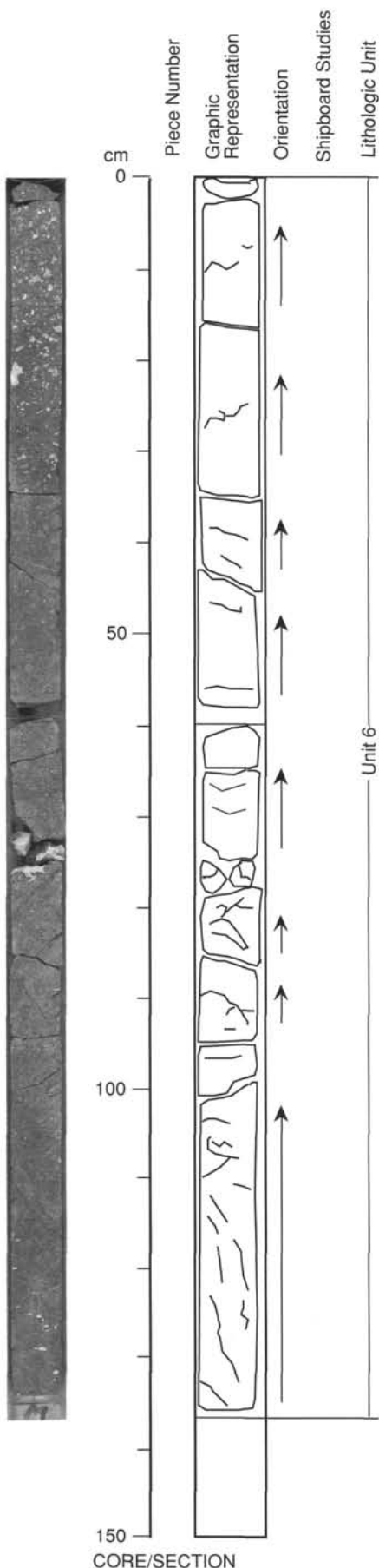
VESICLES: 1%–4%; 1.0–25.0 mm; subrounded to angular in shape; more (4%) at the top (Pieces 1A, 1B, 1C) decreasing downwards; infilled with green clays and calcite.

COLOR: Dark gray (7.5 YR 4/0).

STRUCTURE: Lava flow.

ALTERATION: Moderately altered to clays, calcite and Fe-oxyhydroxides.

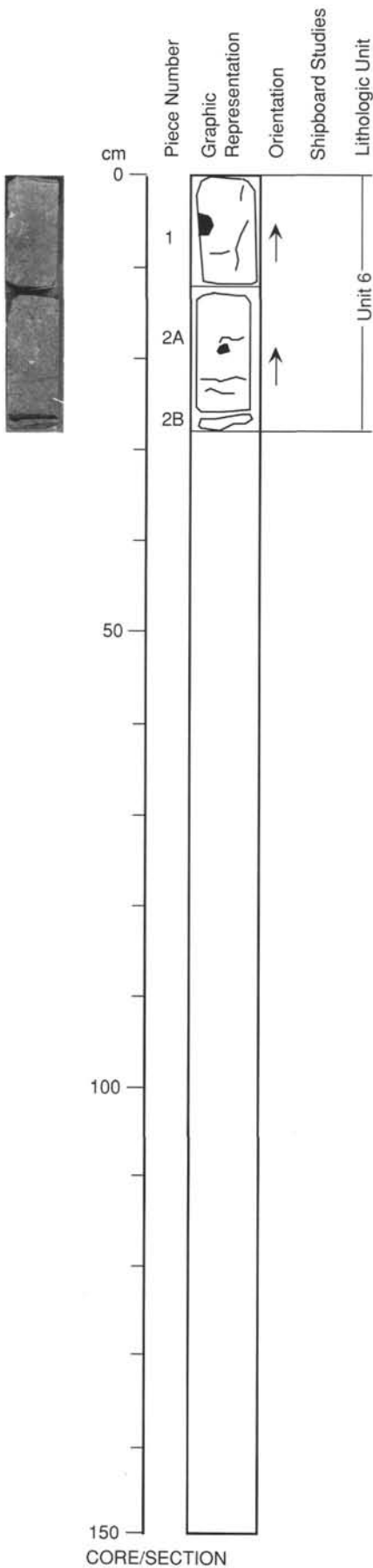
VEINS/FRACTURES: 2%; 0.1–1.0 mm; mostly subhorizontal. Bottom piece has vertical fractures. Infilled with green clays and calcite.



CORE/SECTION

UNIT 6: SPARSELY PLAGIOCLASE-OLIVINE PHYRIC BASALT

Pieces 1 and 2A



CONTACTS: None observed, but grain size fining towards the bottom.

PHENOCRYSTS: Most of the plagioclase phenocrysts are megacrysts and are most probably also xenocrysts; a few are cumuloaphyric with pyroxene and sometimes with olivine.
 Plagioclase - 1%–2%; 1.0–8.0 mm; anhedral to subhedral laths; slightly to moderately altered to clays.
 Olivine - 1%–2%; 1.0–4.0 mm; anhedral to subhedral prisms; moderately to highly pseudomorphed by clays, pyrite, and calcite.
 Pyroxene - 1%; 1.0–3.0 mm; anhedral to subhedral prisms; slightly to moderately altered to clays, pyrite, and calcite.

GROUNDMASS: Microcrystalline to fine-grained, fining towards the bottom.

VESICLES: <1%; 3.0–10.0 mm; subrounded to subangular in shape; random distribution; very few but large; infilled with green clays that bowed out/warped when completely dried.

COLOR: Dark-gray (7.5YR 4/0).

STRUCTURE: Part of a massive lava flow.

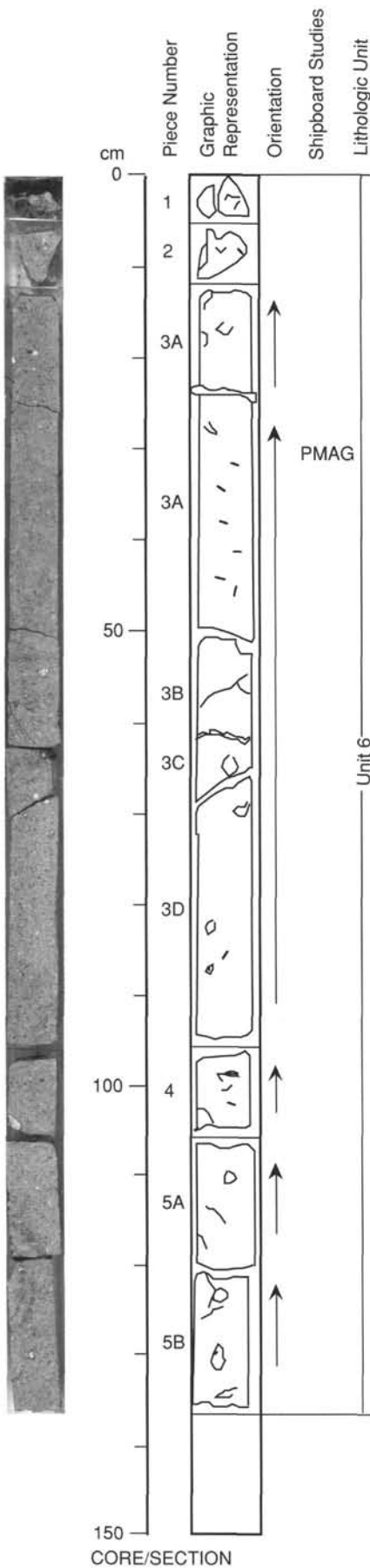
ALTERATION: Moderately altered to clays, calcite, and trace of pyrite.

VEINS/FRACTURES: <1%; <0.2 mm; horizontal at the bottom of piece 2A; infilled with green clays and trace of calcite.

143-866A-180R-1

UNIT 6: MODERATELY OLIVINE-PLAGIOCLASE-PYROXENE PHYRIC BASALT

Pieces 1 to 5B



CONTACTS: None visible.

PHENOCRYSTS: Random, but fairly homogeneous distribution.

Olivine - 4%; 0.5–1.0 mm; subhedral; altered to iron oxides and clay minerals.

Plagioclase - 3%; 1.0–2.0 mm; subhedral; altered.

Pyroxene - 1%; 1.0–5.0 mm; subhedral; altered to clay minerals.

GROUNDMASS: Fine-grained; intergranular.

VESICLES: 3%; 1.0–8.0 mm; generally subrounded; random distribution. Filled with clay minerals and calcite.

COLOR: Gray (7.5 YR N5/0).

STRUCTURE: Massive lava flow.

ALTERATION: Moderately altered to clay minerals and iron oxides.

VEINS/FRACTURES: 0.5%; <0.5 mm; 40° and 130°; filled with clay minerals and calcite.

ADDITIONAL COMMENTS: Contains megacrysts or xenocryst clusters (<12 mm), dominantly plagioclase, with some pyroxene.

UNIT 6: MODERATELY OLIVINE-PLAGIOCLASE-PYROXENE PHYRIC BASALT

Pieces 1 to 2B

CONTACTS: None visible.

PHENOCRYSTS: Xenolithic to xenocrystic clusters of plagioclase and pyroxene, angular to subrounded; 8%; <1 cm. Some may be megacrysts of plagioclase.

Olivine - 4%; 0.5–1.0 mm; subhedral; altered to iron oxides and clay minerals.

Plagioclase - 3%; 1.0–2.0 mm; subhedral, altered.

Pyroxene - 1%; 1.0–4.0 mm; subhedral; altered to clay minerals.

GROUNDMASS: Fine-grained (<0.1 mm) with subhedral to anhedral plagioclase and anhedral pyroxene.

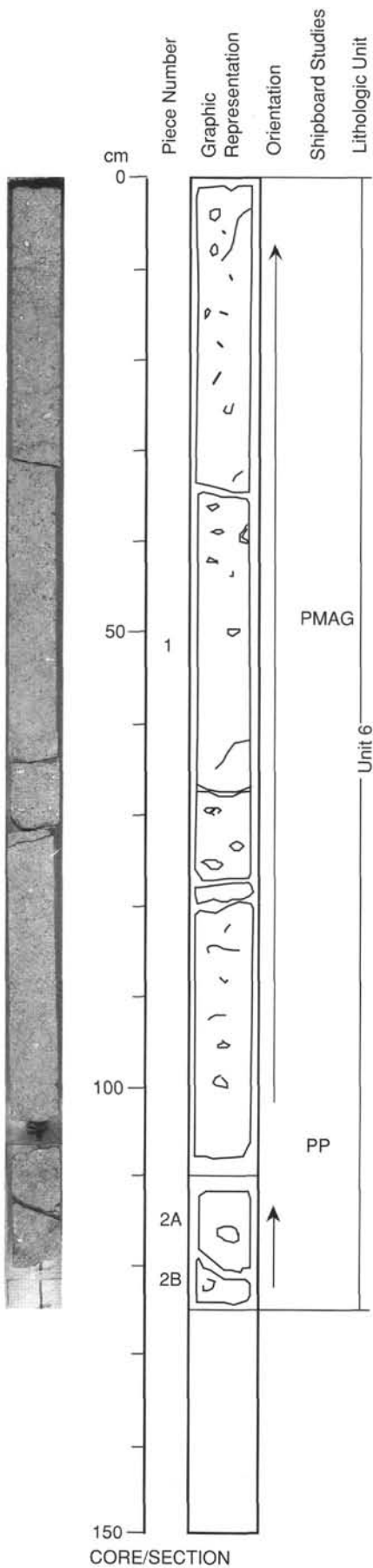
VESICLES: 3%; 1.0–10.0 mm; subrounded; random distribution; filled with green clay (smectite?).

COLOR: Gray (7.5 YR N5/0).

STRUCTURE: Massive lava flow.

ALTERATION: Moderately altered to clay minerals and iron oxides.

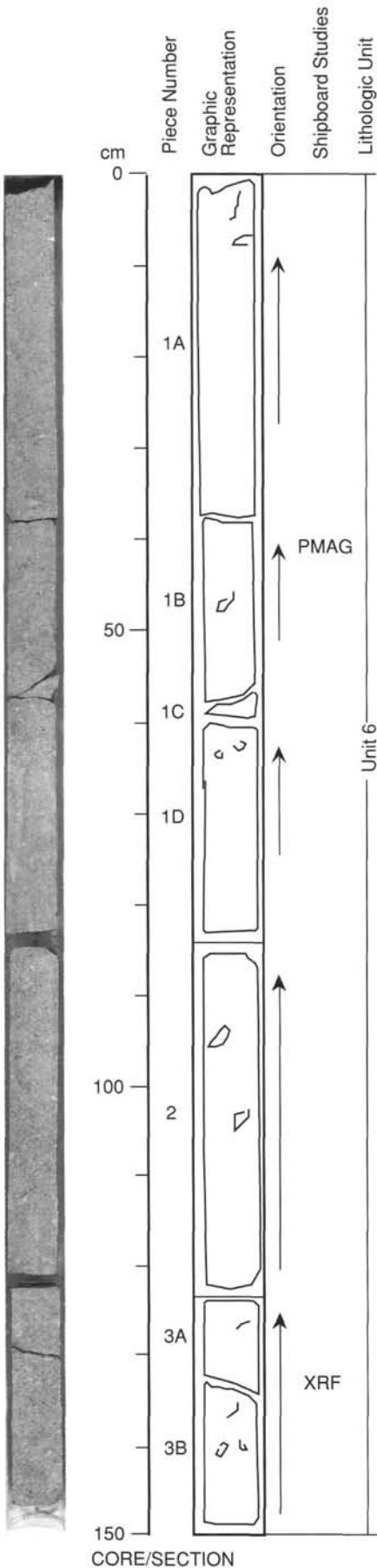
VEINS/FRACTURES: 0.5%; <1 mm; 70° and 100°. Filled with clay minerals and calcite.



143-866A-180R-3

UNIT 6: MODERATELY OLIVINE-PLAGIOCLASE-PYROXENE PHYRIC BASALT

Pieces 1A to 3B



CONTACTS: None visible.

PHENOCRYSTS: Random, but fairly homogeneous distribution.

Olivine - 3%; 1.0-2.0 mm; subhedral; altered to clay minerals.

Plagioclase - 2%; 1.0-3.0 mm; subhedral laths; altered(?).

Pyroxene - 1%; 1.0-4.0 mm; subhedral; altered to clay minerals. Also megacrysts or xenocrysts of plagioclase and pyroxene(?); 8%; <1.5 cm.

GROUNDMASS: Fine-grained (<0.1 mm) with subhedral to anhedral plagioclase and pyroxene.

VESICLES: 2%; 1.0-3.0 mm; subrounded; random distribution. Filled with green clay (smectite?).

COLOR: Gray (7.5YR 5/0).

STRUCTURE: Massive lava flow.

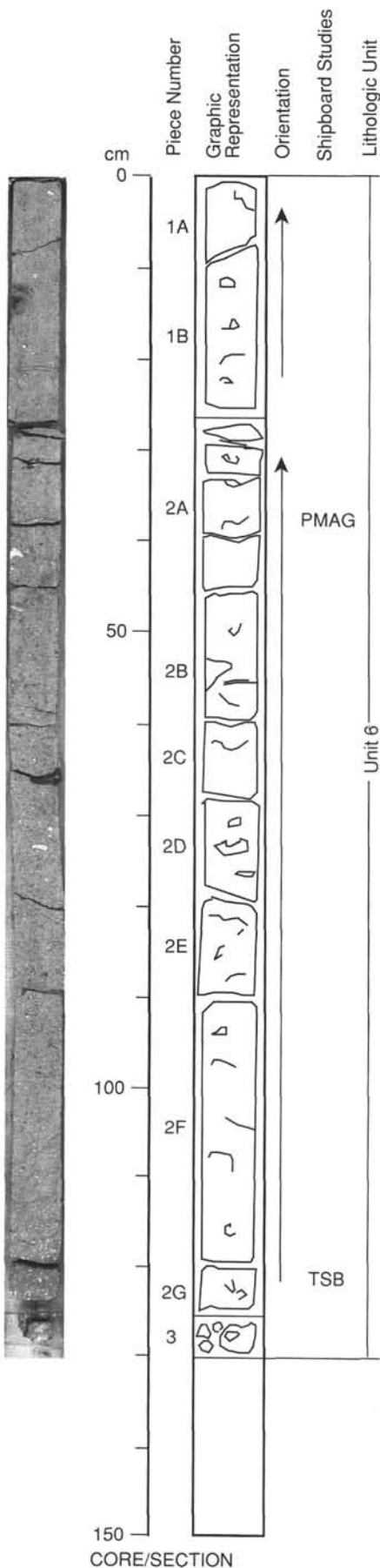
ALTERATION: Moderately altered to clay minerals and iron oxides.

VEINS/FRACTURES: <0.5%; <1.0 mm; 40° in Piece 1; rare; filled with clay minerals.

143-866A-180R-4

UNIT 6: MODERATELY OLIVINE-PLAGIOCLASE-PYROXENE PHYRIC BASALT

Pieces 1A to 3



CONTACTS: None visible.

PHENOCRYSTS: Plagioclase increase towards bottom in Pieces 2F and 2G.

Olivine - 4%; 1.0–2.0 mm; subhedral; altered to clay minerals and iron oxides.

Plagioclase - 3%–5%; 1.0–4.0 mm; subhedral; altered(?).

Pyroxene - 1.5%; 1.0–5.0 mm; subhedral; altered to clay minerals. Also megacrysts or xenocrysts of plagioclase with pyroxene(?); 8%; <1 cm.

GROUNDMASS: Fine-grained with subhedral to anhedral plagioclase and pyroxene.

VESICLES: 4%; 1.0–19.0 mm; subrounded to elongate; random distribution. Filled with calcite and clay mineral (smectite?).

COLOR: Gray (7.5YR 5/0).

STRUCTURE: Massive lava flow.

ALTERATION: Moderately altered to clay minerals and iron oxides.

VEINS/FRACTURES: 1%; <1.0 mm; 100°–120°; more abundant in middle of section (Pieces 2B–2F); filled with greenish clay mineral (smectite?).

143-866A-180R-5

UNIT 7: VOLCANIC BRECCIA (PARTLY BOLE)- WEATHERED SURFACE OF LAVA FLOW?

Pieces 1 to 15

CONTACTS: None visible.

PHENOCRYSTS:

- Olivine - 3%; 1.0–2.0 mm; subhedral; completely altered to clay minerals.
- Pyroxene - 2%; 1.0–2.0 mm; subhedral; completely altered to clay minerals.
- Plagioclase - 1%; 1.0–2.0 mm; subhedral; altered(?). Some altered megacrysts or xenocrysts of plagioclase with pyroxene(?); 1%; <1 cm.

GROUNDMASS: Fine-grained, highly altered, plagioclase and pyroxene(?).

VEVICLES: 5%; 1.0–5.0 mm; subrounded to elongate; random distribution. Open or some filled with clay minerals.

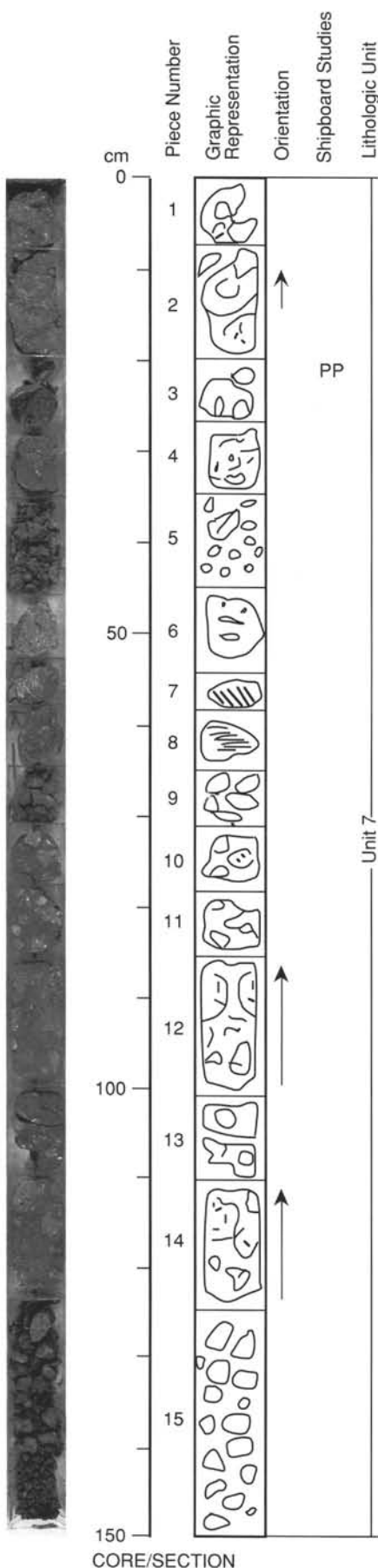
COLOR: Typically red (2.5YR 4/6).

STRUCTURE: Breccia.

ALTERATION: Almost completely altered to iron oxides and clay minerals.

VEINS/FRACTURES: 2%; 0.5–2.0 mm; Random orientation. Filled with clay minerals.

ADDITIONAL COMMENTS: Completely altered rubbly weathered surface of lava. Description refers to typical fragments of lavas in Piece 14. Piece 7 in red clay.



UNIT 7: VOLCANIC BRECCIA (PARTLY BOLE) - WEATHERED SURFACE OF LAVA FLOW ?

Pieces 1 to 14

CONTACTS: None visible.

PHENOCRYSTS:

- Olivine - 3%; 1.0–2.0 mm; completely pseudomorphed by clay minerals.
- Pyroxene - 1%; 1.0–3.0 mm; subhedral; completely altered to clay minerals.
- Plagioclase - 1%; 1.0–2.0 mm; subhedral, altered.

GROUNDMASS: Fine-grained; altered.

VESICLES: 8%; 1.0–3.0 mm; subrounded to irregular; random distribution. Open, or filled with calcite and clay minerals.

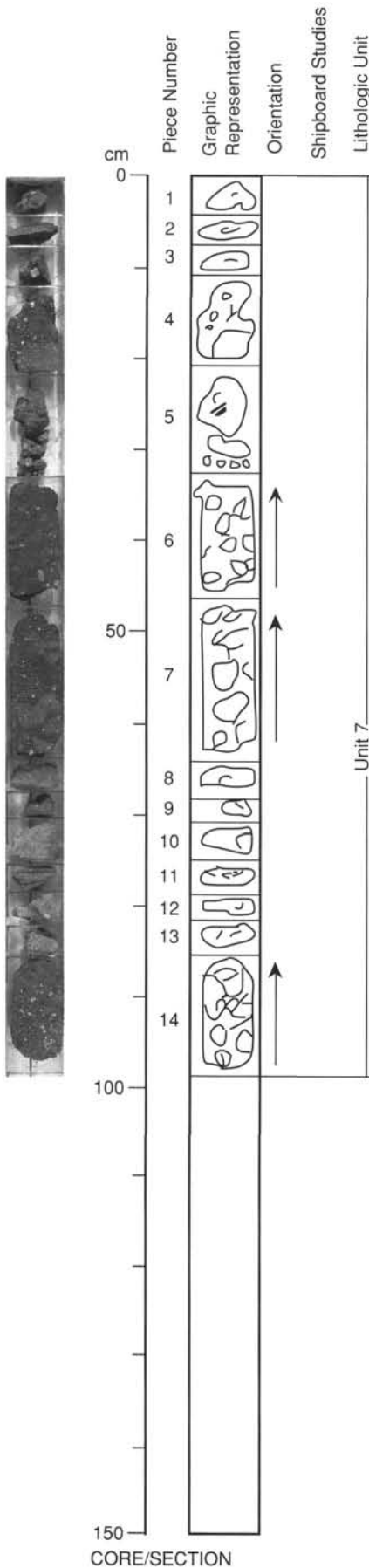
COLOR: Red (2.5YR 4/6) to gray (7.5YR 5/0).

STRUCTURE: Breccia and isolated fragments of lava, presumed from breccia (e.g., Pieces 1 to 3).

ALTERATION: Almost completely altered to iron oxides and clay minerals.

VEINS/FRACTURES: 1%; 0.5–1.0 mm; highly irregular. Filled with clay minerals.

ADDITIONAL COMMENTS: Rubby tops of lava flow with scree (i.e., some downslope deposition (Pieces 6-7). Piece 14 more "in situ" weathering. Description refers to characteristic lava clast.



143-866A-181R-1

UNIT 7: VOLCANIC BRECCIA

Pieces 1 to 20

CONTACTS: None visible.

PHENOCRYSTS:

Olivine - 2%; 1.0–2.0 mm; completely altered to iron oxides and clay minerals.

Pyroxene - 1%; 1.0–2.0 mm; subhedral; completely altered to clay minerals.

Plagioclase - 1%; 1.0–2.0 mm; subhedral; altered.

GROUNDMASS: Very fine-grained; altered.

VESICLES: 10%; 1.0–5.0 mm; highly irregular shape; random distribution. Open, or filled with calcite or clay minerals.

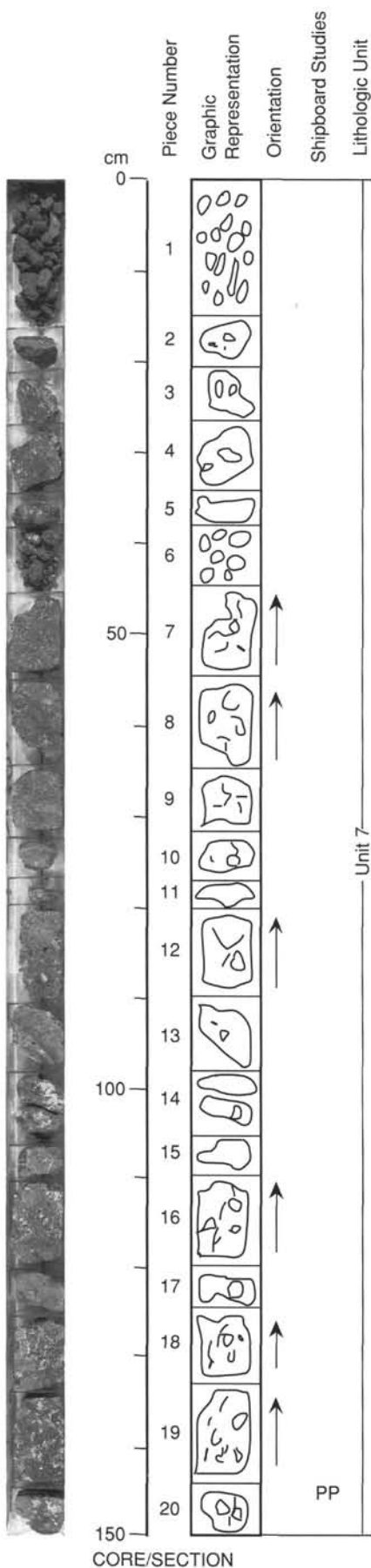
COLOR: Mainly gray (7.5YR 5/0).

STRUCTURE: Breccia and loose fragments of lava from breccia.

ALTERATION: Completely altered to iron oxides and clay minerals.

VEINS/FRACTURES: 10%; 0.5–5.0 mm; highly irregular; filled with calcite, clay minerals, zeolites, and analcime.

ADDITIONAL COMMENTS: Breccia representing scree slope, hence veined and fractured in nature.



UNIT 7: VOLCANIC BRECCIA

Pieces 1 to 19

CONTACTS: None visible.

PHENOCRYSTS:

Olivine - 2%; 1.0-2.0 mm; subhedral; altered to iron oxides and clay minerals.

Pyroxene -1%; 1.0-3.0 mm; subhedral, completely altered to clay minerals.

Plagioclase - 1%; 1.0-2.0 mm; subhedral; altered.

GROUNDMASS: Very fine-grained; altered to clay minerals.

VESICLES: 6%; 1.0-5.0 mm; highly irregular shape; random distribution. Open, or filled with calcite or clay minerals.

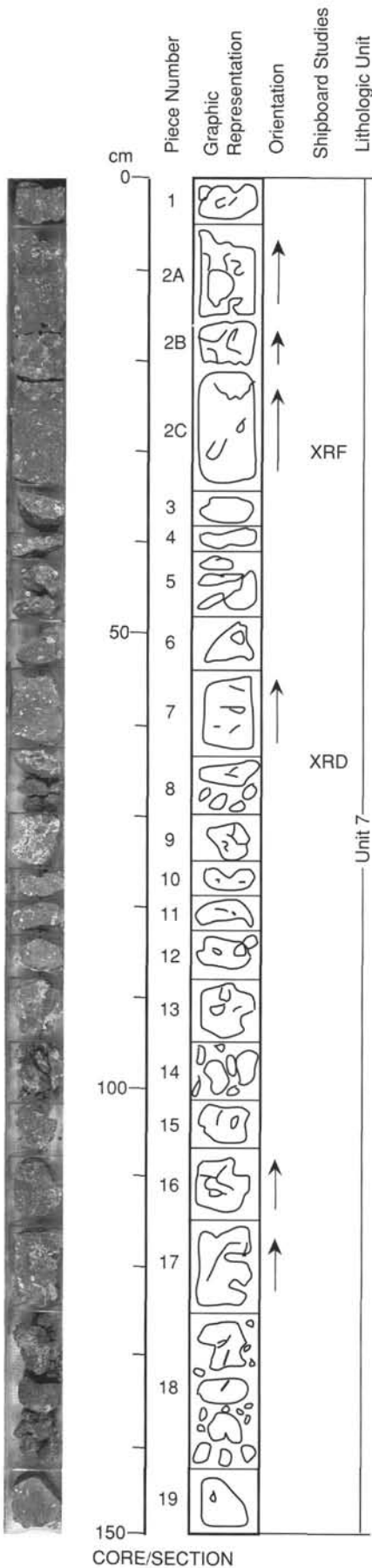
COLOR: Mainly gray (7.5YR 5/0).

STRUCTURE: Breccia and loose fragments of lava from breccia.

ALTERATION: Completely altered to iron oxides and clay minerals.

VEINS/FRACTURES: 10%; 0.5-5.0 mm; highly irregular; pervasive; filled with calcite, clay minerals, zeolites and analcime.

ADDITIONAL COMMENTS: Breccia representing scree slope.



143-866A-181R-3

UNIT 7: VOLCANIC BRECCIA

Pieces 1 to 10

CONTACTS: None visible.

PHENOCRYSTS:

- Olivine - 2%; 1.0–2.0 mm; Completely altered to clay minerals and iron oxides.
- Pyroxene - 1%; 1.0–2.0 mm; subhedral; completely altered to clay minerals.
- Plagioclase - 1%; 1.0–2.0 mm; subhedral; altered.

GROUNDMASS: Very fine-grained; altered.

VESICLES: 5%; 1.0–5 mm; subrounded to elongate; random distribution.

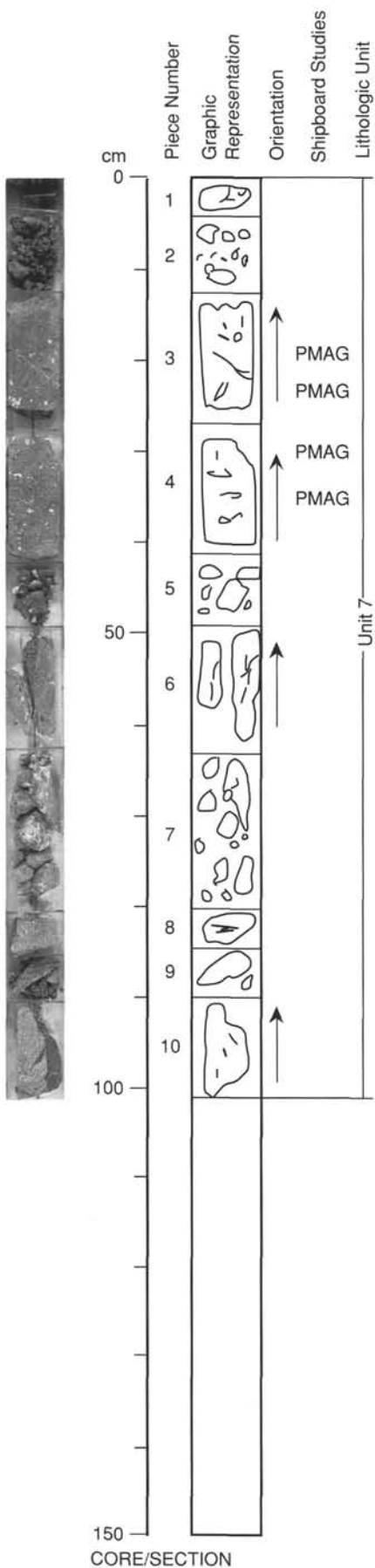
COLOR: Mainly gray (7.5YR 5/0).

STRUCTURE: Breccia and lava blocks from breccia.

ALTERATION: Very highly altered to iron oxides and clay minerals.

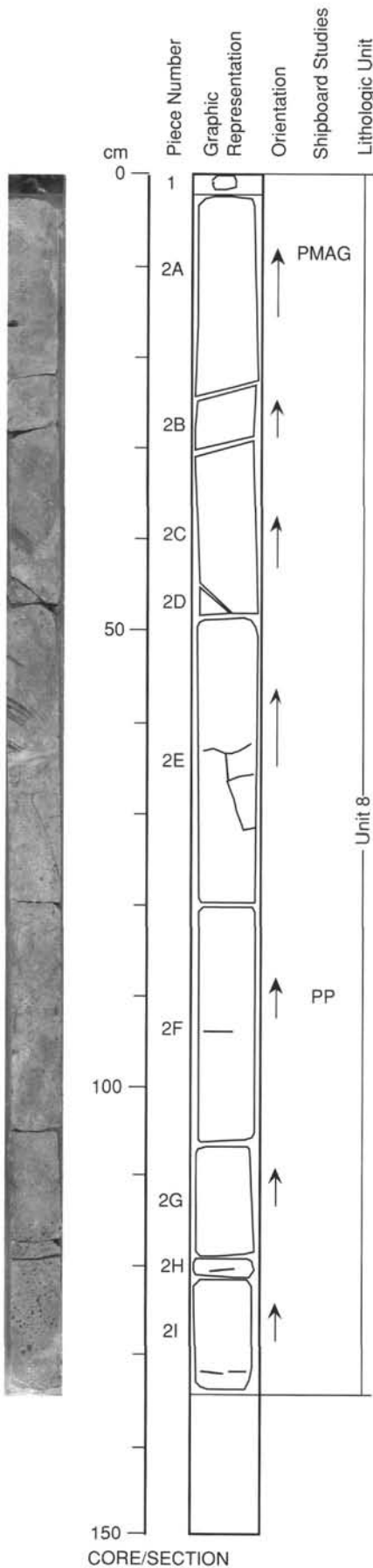
VEINS/FRACTURES: 2%; 0.5–2.0 mm; 130°; filled with calcite, clay minerals, and zeolites.

ADDITIONAL COMMENTS: Although there are several pieces of solid lava, this is still thought to be derived from a scree or talus deposit.



UNIT 8: MODERATELY PLAGIOCLASE-OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 2I



CONTACTS: None observed, but top is finer grained than the bottom and grain size change is gradational.

PHENOCRYSTS: Almost all plagioclase megacrysts are moderately altered to white clays but have patches of green clays inside creating a checkered appearance. Some plagioclase megacrysts are cumulophyric with pyroxene and olivine phenocrysts. Plagioclase megacrysts are most probably xenocrysts.

Plagioclase - 2%-3%; 0.5-18.0 mm; anhedral to subhedral laths; moderately altered.

Olivine - 1%-2%; 0.5-4.0 mm; anhedral to subhedral prisms; highly to completely pseudomorphed by clays and Fe-oxyhydroxides.

Pyroxene - ~1%; 0.5-8.0 mm; Anhedral to subhedral grains; highly altered to clays and Fe-oxyhydroxides.

GROUNDMASS: Microcrystalline to fine-grained, coarsening towards the bottom; intergranular.

VESICLES: Trace; <1.0 mm; subrounded; random distribution. Infilled with clays.

COLOR: Dark gray (7.5YR 4/0).

STRUCTURE: Massive lava flow.

ALTERATION: Moderately altered to clay minerals and Fe-oxyhydroxides.

VEINS/FRACTURES: 1%; 0.2-1.0 mm; mostly subhorizontal. Veins are branching in Piece 2E; infilled with clays and calcite.

143-866A-182R-2

UNIT 8: MODERATELY PLAGIOCLASE-OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 6

CONTACTS: None observed.

PHENOCRYSTS:

Plagioclase - 1%–5%; 0.5–6.0 mm; anhedral to subhedral laths; moderately altered. Plagioclase xenocrysts, some cumulophyric with pyroxene or olivine, are moderately altered to whitish or greenish clays with patches of dark green clays in the center.

Olivine - <1.0%–3%; 0.5–4.0 mm; anhedral to subhedral prisms; some are skeletal; highly to completely pseudomorphed by clays and Fe-oxyhydroxides.

Pyroxene - <1%–2%; 0.5–5.0 mm; anhedral to subhedral grains; moderately to highly altered to clays.

GROUNDMASS: Microcrystalline to fine-grained with middle pieces generally showing the microcrystalline texture; intergranular.

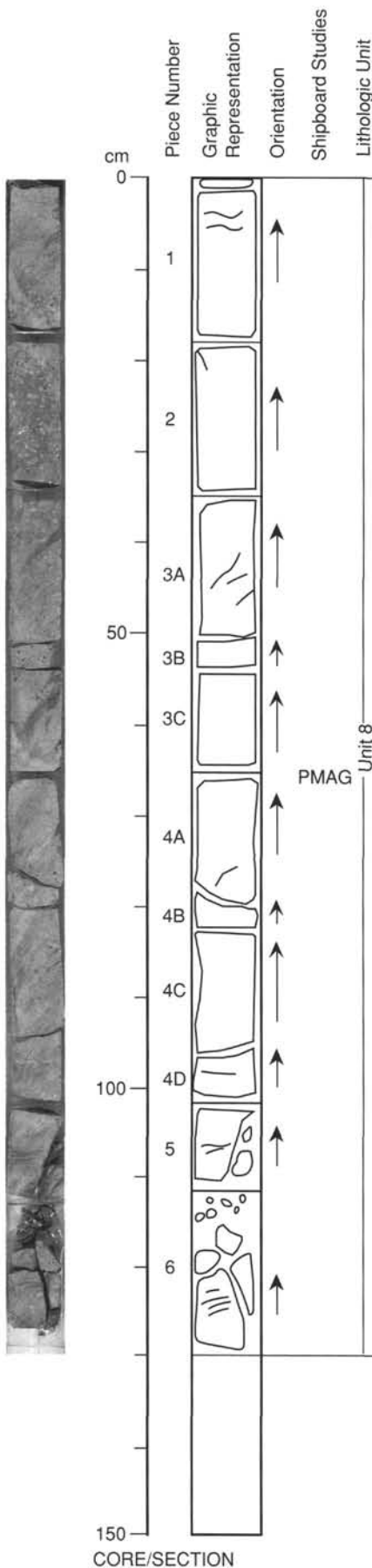
VESICLES: Trace; <1.0 mm; subrounded; random distribution. Mostly infilled with green clays.

COLOR: Dark gray (75.YR 4/0).

STRUCTURE: Massive lava flow.

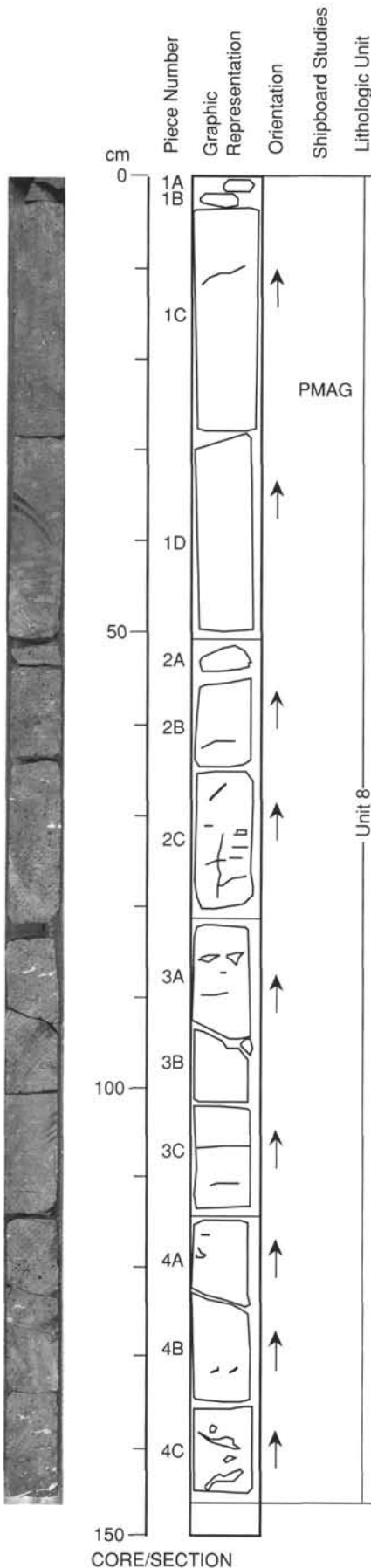
ALTERATION: Moderately altered to clays.

VEINS/FRACTURES: 1%; <0.5 mm; subhorizontal to 45°; more common in the bottom pieces; infilled with clays and calcite; veins in Pieces 5 and 6 have 5-mm wide halos.



UNIT 8: MODERATELY PLAGIOCLASE-OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1A to 4C



CONTACTS: None observed.

PHENOCRYSTS:

Plagioclase - 2%–3%; 0.5–10 mm; anhedral to subhedral stubby laths. Plagioclase xenocrysts are generally altered to whitish clays with dark green clay patches in the middle; sometimes also altered to transparent green clays; also cumuloaphyric, mostly with pyroxene and less commonly with olivine. A pyroxene megacryst is present in Piece 2D, which appears to contain plagioclase inclusions. Olivine - 2%–3%; 0.5–4.0 mm; anhedral to subhedral prisms; some are skeletal; highly or completely pseudomorphed by clays and Fe-oxyhydroxides. Pyroxene - 1%–2%; 0.5–10.0 mm; anhedral to subhedral grains; very highly altered to clays and Fe-oxyhydroxides.

GROUNDMASS: Microcrystalline to fine-grained, fining towards the top though generally patchy distribution.

VESICLES: 1%–2%; 2.0–20.0 mm; angular and elongated; irregularly distributed. Some vesicles are stretched horizontally; smaller ones generally occur at the top and larger ones at the bottom starting at Piece 2D; infilled mostly with calcite.

COLOR: Dark gray (7.5YR 4/0).

STRUCTURE: Massive lava flow.

ALTERATION: Moderately altered.

VEINS/FRACTURES: ~2%; 0.2–4.0 mm; subhorizontal, but crisscrossing in Piece 2D. Bottom veins are 45°; infilled with green clays that bowed out/warped when dried; calcite infillings in some.

143-866A-182R-4

UNIT 8: MODERATELY PLAGIOCLASE-OLIVINE-PYROXENE PHYRIC BASALT

Piece 1

CONTACTS: None observed.

PHENOCRYSTS:

Plagioclase - 3%; 0.5–7.0 mm; anhedral to subhedral laths; megacrysts altered to white clays with dark green clay patches inside.

Olivine - 1%–2%; 0.5–4.0 mm; anhedral to subhedral prisms; very highly to completely pseudomorphed by clays and Fe-oxyhydroxides.

Pyroxene - 1%; 0.5–7.0 mm; anhedral to subhedral grains; megacrysts are generally fragmented and have mineral inclusions; altered to clays and Fe-oxyhydroxides.

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

VESICLES: 1%; 0.5–5 mm; subangular; random distribution. Some are elongated subhorizontally and are infilled mostly with calcite.

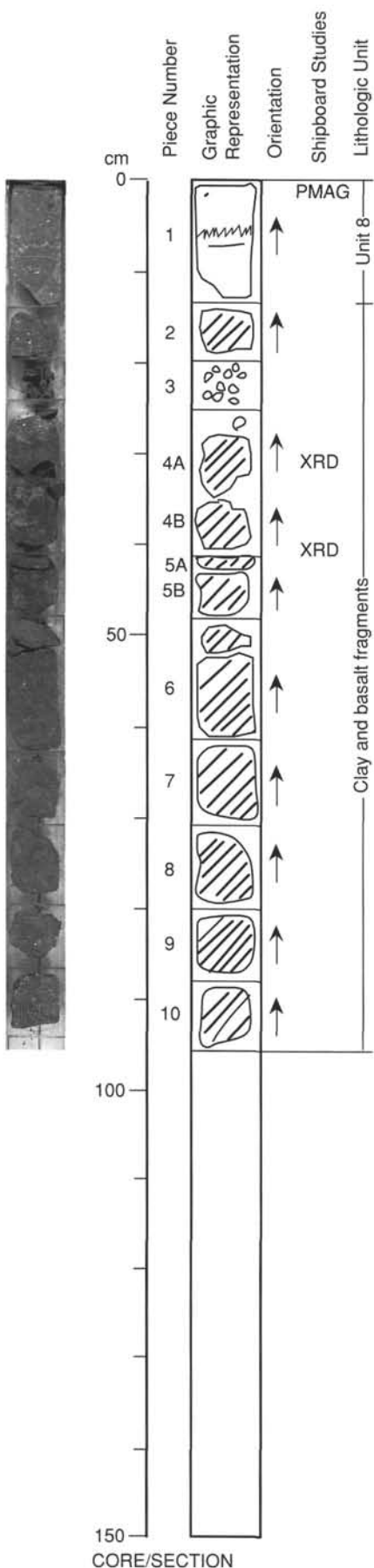
COLOR: Dark gray (7.5YR 4/0).

STRUCTURE: Bottom piece of a massive lava flow.

ALTERATION: Moderately altered to clays and calcite.

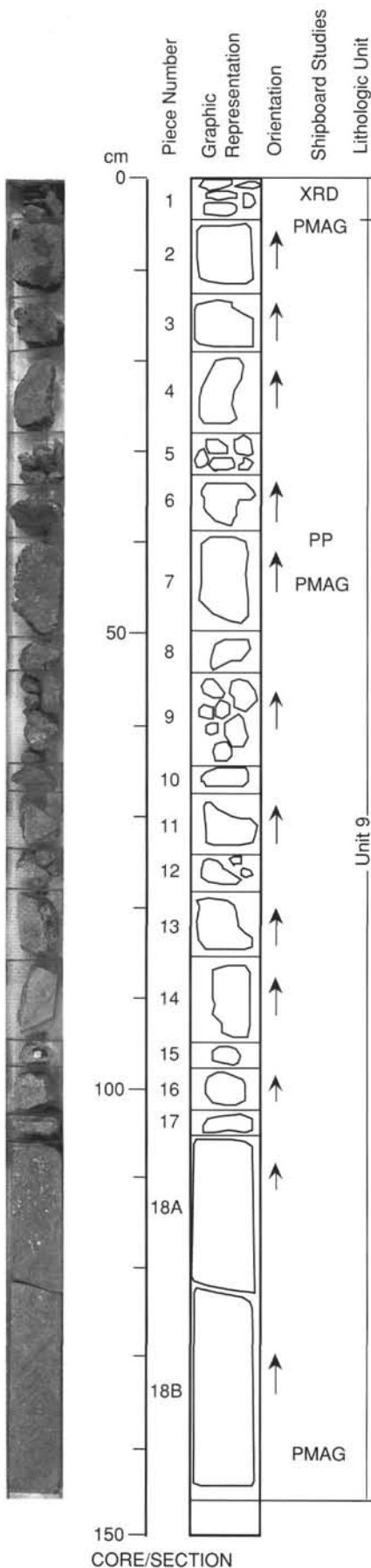
VEINS/FRACTURES: 1%; <0.2–2.0 mm; subhorizontal. Infilled with green clays and calcite; one vein in the middle of Piece 1 is meandering.

ADDITIONAL COMMENTS: Unit 6 is underlain by dark reddish brown (5YR 3/3) soil/clay fragments (Pieces 2 to 10). The brown soil/clay contains very highly to completely altered fragments of vesicular basalt. This whole package may represent inter lava flow weathering surface and sedimentary deposit.



UNIT 9: SPARSELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 2 to 18B



CONTACTS: None observed, but Piece 2 may represent the vesicular, microcrystalline top of the whole unit.

PHENOCRYSTS:

Olivine - ~1%; 0.5–2.0 mm; anhedral to subhedral prisms; highly to completely pseudomorphed by clays and Fe-oxyhydroxides.

Pyroxene - ~1%; 0.5–1.0 mm; anhedral to subhedral grains; highly altered to clays and Fe-oxyhydroxides.

Plagioclase - <1%; 0.5–1.0 mm; anhedral needles; clear; only slightly to moderately altered.

GROUNDMASS: Microcrystalline at the top and fine-grained towards the bottom.

VESICLES: 1%–5%; <1.0–8.0 mm; irregular shape and distribution. The larger and only partially infilled vesicles are at the top (Pieces 2 to 5); less common in Piece 18A. Infilled mostly with green clays; when partially infilled, clays have colloform/botryoidal texture.

COLOR: Very dark gray (5YR 3/0).

STRUCTURE: Lava flow.

ALTERATION: Moderately altered, mostly to green clays and Fe-oxyhydroxides.

VEINS/FRACTURES: None.

ADDITIONAL COMMENTS: Piece 1 consists of fragments of inter lava flow sediments mentioned in the previous section.

143-866A-184R-1

UNIT 9: SPARSELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 2 to 6

CONTACTS: None observed, but Pieces 7 and 8 are highly oxidized basalt fragments that may represent inter lava flow sedimentary deposit or weathered surface of the underlying lava flow.

PHENOCRYSTS:

Olivine - 1%; <1.0 mm; anhedral to subhedral prisms that are completely pseudomorphed by clays and Fe-oxyhydroxides.
 Pyroxene - ~1%; <1.0 mm; anhedral, tiny grains that are completely altered to clays and Fe-oxyhydroxides.

GROUNDMASS: Generally microcrystalline to fine-grained; showing ~10° flow lineation.

VESICLES: ~1%; 0.1 to 7.0 mm; very angular in shape; random distribution. Mostly elongated subhorizontally parallel to the 10° flow lineation; infilled with calcite and/or green clays.

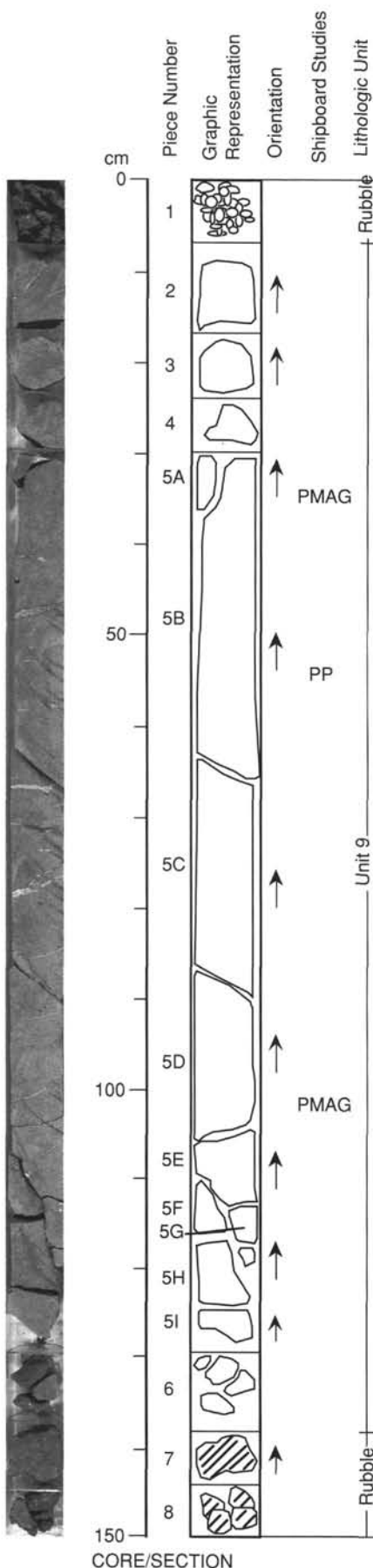
COLOR: Dark gray (7.5YR 3/0).

STRUCTURE: Lava flow.

ALTERATION: Moderately altered to clays and calcite.

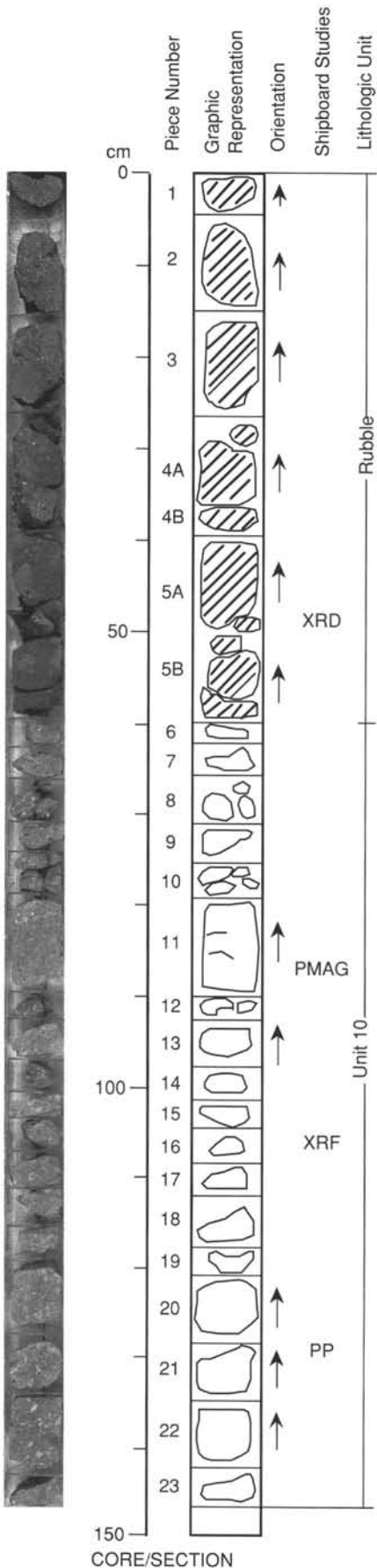
VEINS/FRACTURES: 3%; 0.5–7.0 mm; parallel to the 10° flow lineation; infilled mostly with light green clays with patches of dark green clays; also infilled with layers of calcite.

ADDITIONAL COMMENTS: Piece 1 consists of chips of brown soil/clay that could have fallen down the hole before Core 143-866A-184R was drilled. Pieces 7 and 8 are oxidized basalt rubble that mark the start of the inter lava flow sedimentary deposit shown in the following section.



UNIT 10: SPARSELY PLAGIOCLASE-OLIVINE-PYROXENE PHYRIC BASALT

Pieces 6 to 23



CONTACTS: None observed, but Pieces 6 to 10 are overlain by inter lava flow brown soil/clay.

PHENOCRYSTS:

Plagioclase - <1%; 0.5–4.0 mm; subhedral laths; slightly to moderately altered.
 Olivine - ~1%; 0.5–4.0 mm; anhedral to subhedral prisms; a few are skeletal; highly to completely pseudomorphed by clays and Fe-oxyhydroxides.
 Pyroxene - ~1%; 0.5–3.0 mm; anhedral to subhedral grains; highly altered to clays and Fe-oxyhydroxides.

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

VESICLES: 20%; 0.5–10.0 mm; very irregular shape; random distribution. Subangular to elongated to horizontal; appears to be 2 generations - some are infilled with green clays and a few, subrounded and smaller ones (<0.5 mm) infilled with calcite.

COLOR: Dark gray (7.5YR 3/0).

STRUCTURE: Lava flow.

ALTERATION: Moderately altered.

VEINS/FRACTURES: Trace; <0.2 mm; subhorizontal orientation; veins present only in Piece 11.

ADDITIONAL COMMENTS: Pieces 1 to 5B are brown soil/clay that enclose completely altered basalt fragments; most probably inter lava flow sedimentary deposit or weathered surface of the underlying lava flow.

UNIT 10: SPARSELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 9

CONTACTS: None observed.

PHENOCRYSTS:

Olivine - ~1%; 0.5–3.0 mm; anhedral to subhedral prisms; highly to completely pseudomorphed by Fe-oxyhydroxides and clays.

Pyroxene - ~1%; 0.5–5.0 mm; anhedral to subhedral grains; very highly altered to clays and Fe-oxyhydroxides.

Plagioclase - Trace; 0.5–4.0 mm; needles; moderately altered to green and white clays.

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

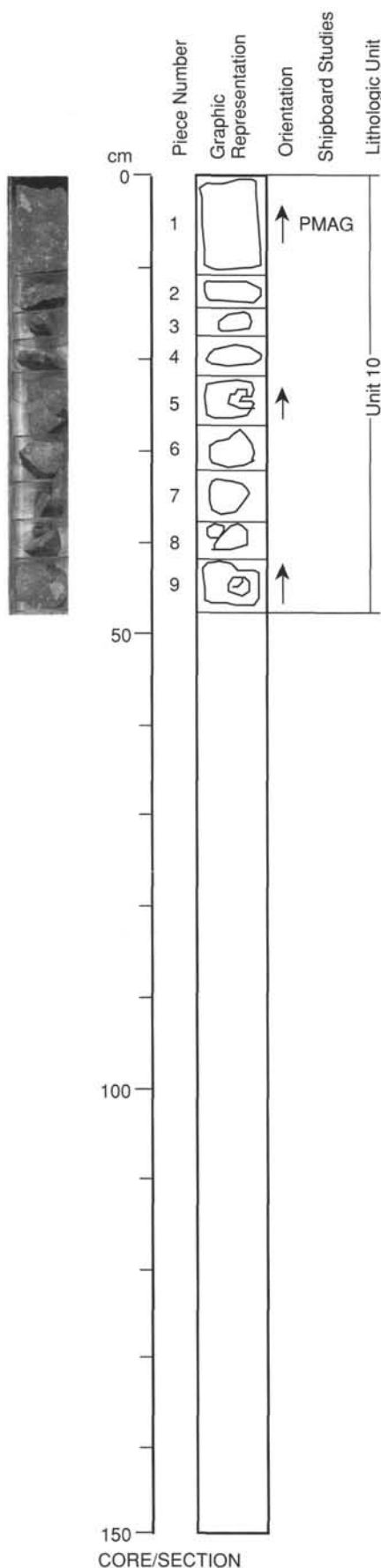
VESICLES: 20%–25%; 0.5–20.0 mm; angular to subrounded in shape; irregular distribution. Angular vesicles in Piece 1 and subrounded ones in Pieces 4 to 9; mostly infilled with green clays. Vesicles in Pieces 5 and 9 are only partially infilled with green clays and zeolites that display *colloform/botryoidal* texture. Minute vesicles infilled with calcite overprint the larger, green amygdules.

COLOR: Dark gray (7.5YR 3/0).

STRUCTURE: Lava flow.

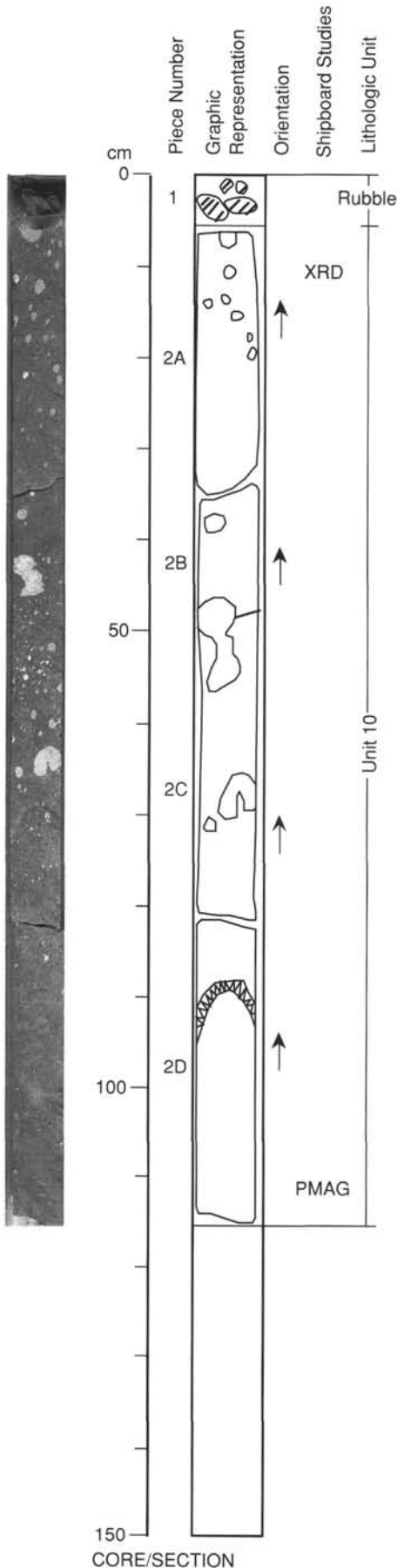
ALTERATION: Highly altered to clays, zeolites, and Fe-oxyhydroxides.

VEINS/FRACTURES: None observed.



UNIT 10: SPARSELY PLAGIOCLASE-OLIVINE-PYROXENE PHYRIC BASALT

Pieces 2A to 2D



CONTACTS: None observed.

PHENOCRYSTS:

Plagioclase - ~1%; 2.0–8.0 mm; anhedral to subhedral laths; most of the megacrysts (xenocrysts) are altered to clays with dark green patches; most abundant in Pieces 2B and 2C.

Olivine - ~1%; 0.5–4.0 mm; anhedral to subhedral prisms; completely pseudomorphed by clays and Fe-oxyhydroxides.

Pyroxene - ~1%; 0.5–4.0 mm; anhedral to subhedral grains; very highly altered to clays and Fe-oxyhydroxides; a few grains are still black and shiny.

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

VESICLES: 10%–15%; 0.5 to 50.0 mm; mostly subrounded; irregularly distributed; very large vesicles at the top of Piece 2A and in the middle of Piece 2B–2C; infilled with green clays with patches of calcite inside; green clays bowed out/warped when dried; bottom of the large vesicle in Piece 2B has dark brown clay as if sedimented.

COLOR: Dark gray (7.5YR 3/0).

STRUCTURE: Massive lava flow.

ALTERATION: Moderately to highly altered to clays, calcite, and Fe-oxyhydroxides.

VEINS/FRACTURES: Trace; <0.2 mm; mostly subhorizontal; infilled with green clays.

ADDITIONAL COMMENTS: Piece 1 consists of tiny fragments of brown inter lava flow soil/clay which could have fallen to the bottom of the hole before Core 143-866A-185R was drilled. An Fe-oxyhydroxide front(?) is present in Piece 2D but there is practically no difference in the alteration state above and below the front.

UNIT 10: MODERATELY PLAGIOCLASE-OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1A to 1E

CONTACTS: None observed.

PHENOCRYSTS:

Plagioclase - ~2%; 0.5-6.0 mm; anhedral to subhedral stubby laths; megacrysts are characteristically fractured and turning into greenish clays; sometimes cumulophyric with pyroxene and/or olivine.
 Olivine - ~1%; 0.5-3.0 mm; anhedral to subhedral prisms; some are skeletal; completely pseudomorphed by clays and Fe-oxyhydroxides.
 Pyroxene - ~1%; 0.5-6.0 mm; anhedral to subhedral grains; very highly altered by clays and Fe-oxyhydroxides.

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

VESICLES: 2%-3%; 0.5-20.0 mm; subrounded to oblate; random distribution. Infilled mostly with green clays and less commonly with calcite.

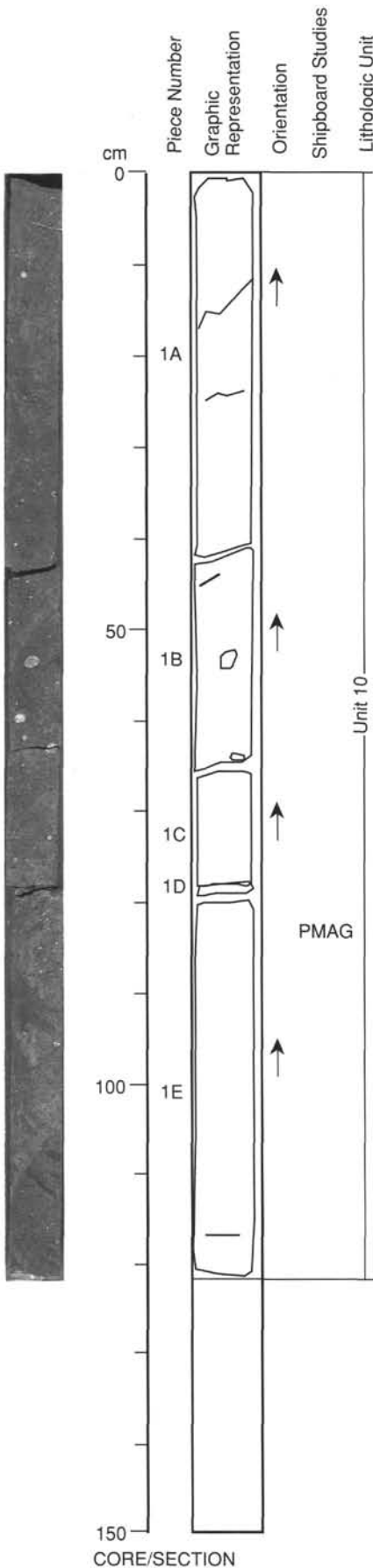
COLOR: Dark gray (7.5YR 3/0).

STRUCTURE: Massive lava flow.

ALTERATION: Moderately altered.

VEINS/FRACTURES: <1%; <0.2 mm; mostly subhorizontal; infilled with green clays plus pyrite.

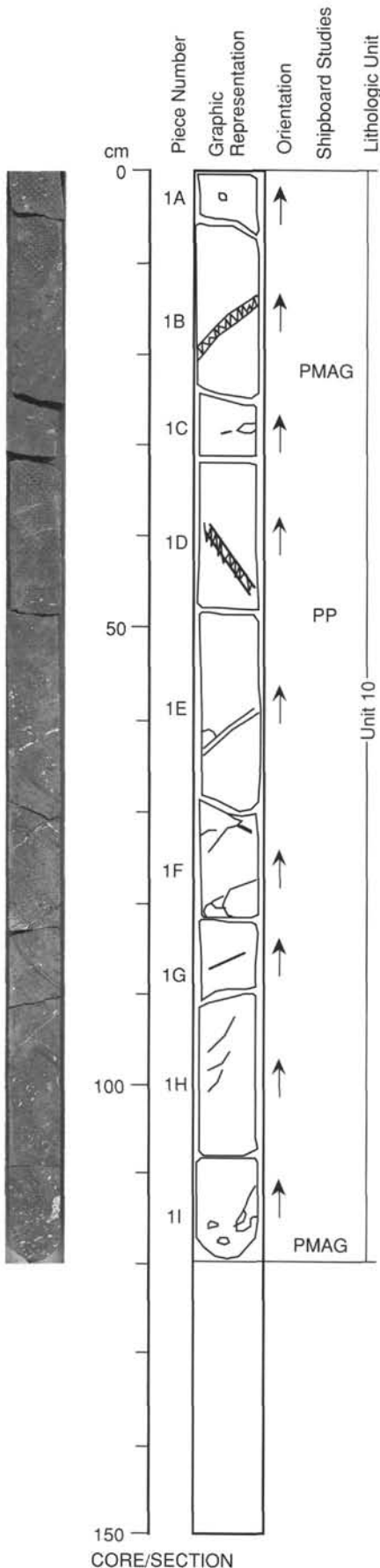
ADDITIONAL COMMENTS: Clays inside vesicles bowed out/warped when dried.



CORE/SECTION

UNIT 10: MODERATELY PLAGIOCLASE-OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1A to 1I



CONTACTS: None observed.

PHENOCRYSTS:

Plagioclase - 2%–3%; 0.5–10.0 mm; anhedral to subhedral stubby laths; most megacrysts (xenocrysts?) are fractured and turning into greenish clays; a few have pyroxene-olivine inclusions.
 Olivine - <1%; 0.5–3.0 mm; anhedral to subhedral prisms; a few are skeletal; completely pseudomorphed by green clays and Fe-oxyhydroxides.
 Pyroxene - <1%; 0.5–4.0 mm; anhedral to subhedral grains; very highly altered to green clays and Fe-oxyhydroxides.

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

VESICLES: 2%–3%; 0.5–30.0 mm; oblate to irregular shape; irregular distribution. Oblate horizontally at top pieces and irregular, elongated 45° in Pieces 1H and 1I; infilled with green clays that bowed out/warped when dried; partially infilled with calcite in some cases; large vesicles in Pieces 1F and 1I.

COLOR: Dark gray (7.5YR 3/0).

STRUCTURE: Massive lava flow.

ALTERATION: Moderately altered to green clays, calcite, Fe-oxyhydroxides, and zeolites.

VEINS/FRACTURES: 1.0%–2%; 0.2–10 mm; oriented parallel to vesicle elongation; Mainly present at bottom Pieces 1F to 1I; infilled with green clays and calcite; two Fe-oxyhydroxide fronts similar to that in Section 1 are present in Pieces 1B and 1D.

UNIT 11: SPARSELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 6A to 24

CONTACTS: None observed but Pieces 6A and 6B are microcrystalline basalt fragments overlain by brown soil/clay fragments that may represent interlava flow sedimentary deposit.

PHENOCRYSTS:

Olivine - ~1%; 0.5-3.0 mm; anhedral to subhedral prisms; a few are skeletal; completely pseudomorphed by clays and Fe-oxyhydroxides.

Pyroxene - <1%; 0.5-3.0 mm; anhedral to subhedral grains; highly altered to clays and Fe-oxyhydroxides.

GROUNDMASS: Microcrystalline to fine-grained, generally coarsening towards the bottom; intergranular.

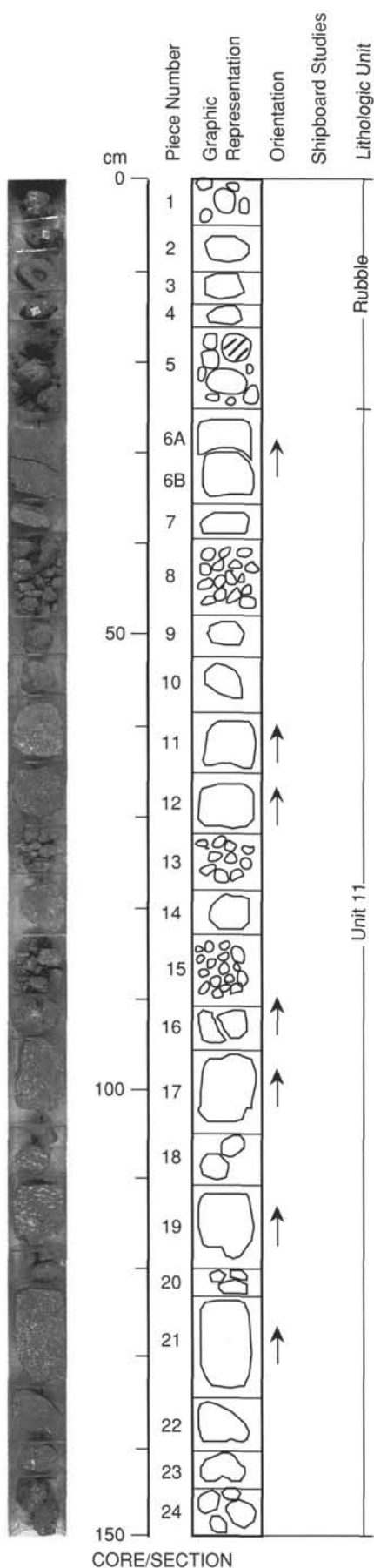
VESICLES: 20%-25%; 0.5-10 mm; very irregular shape. Irregular distribution. Some vesicles show grading (Pieces 6A and 6B) with finer size at top and larger size at the bottom; others show flowage texture (Piece 19), while others are randomly distributed; mostly infilled with green clays and calcite.

COLOR: Dark gray (7.5YR 4/0) to dark brown (7.5YR 3/2).

STRUCTURE: Possibly fragments of a vesicular, rubbly (aa?) lava flow.

ALTERATION: Highly altered to clays, calcite, and Fe-oxyhydroxides.

VEINS/FRACTURES: None observed.

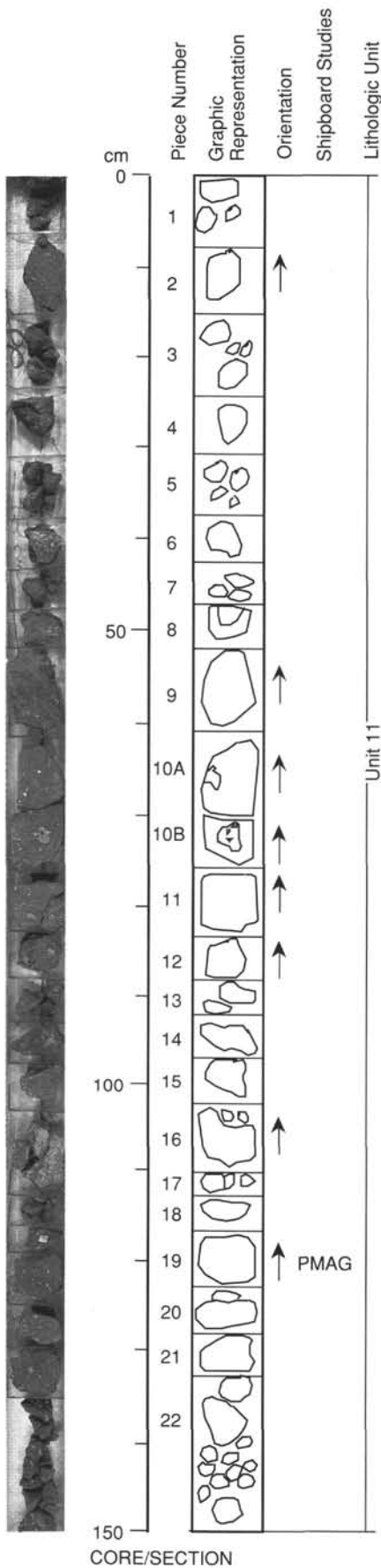


CORE/SECTION

143-866A-186R-1

UNIT 11: SPARSELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 22



CONTACTS: None observed.

PHENOCRYSTS:

Olivine - ~1%; 0.5-3.0 mm; anhedral to subhedral prisms; completely pseudomorphed by clays and Fe-oxyhydroxides.

Pyroxene - ~1%; 0.5-3.0 mm; anhedral to subhedral grains; very highly altered to clays and Fe-oxyhydroxides.

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

VESICLES: 4%-6%; 0.5-20.0 mm; very irregular to subrounded shape; irregular distribution; infilled mostly with green clays plus calcite in a few instances; large vesicles are present in Pieces 10A and 10B.

COLOR: Dark brown (7.5YR 3/2).

STRUCTURE: Possibly fragments of a highly vesicular, rubbly (aa?) lava flow.

ALTERATION: Highly altered to clays, calcite, and Fe-oxyhydroxides.

VEINS/FRACTURES: None observed in the small fragments.

UNIT 11: SPARSELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 15

CONTACTS: None observed.

PHENOCRYSTS:

Olivine - <1%; 0.5-3.0 mm; anhedral to subhedral prisms; completely pseudomorphed by clays and Fe-oxyhydroxides.

Pyroxene - <1%; 0.5-3.0 mm; anhedral to subhedral grains; very highly altered to clays and Fe-oxyhydroxides.

Plagioclase - Trace; 0.7-5.0 mm; anhedral to subhedral laths; moderately altered to clays.

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

VESICLES: 5%; 0.5-5.0 mm; very irregular shape; randomly distributed. Sometimes anastomosing (e.g., Pieces 8 and 14); infilled with clays plus calcite. Vesicles/amygdules generally decrease from top to bottom of the unit.

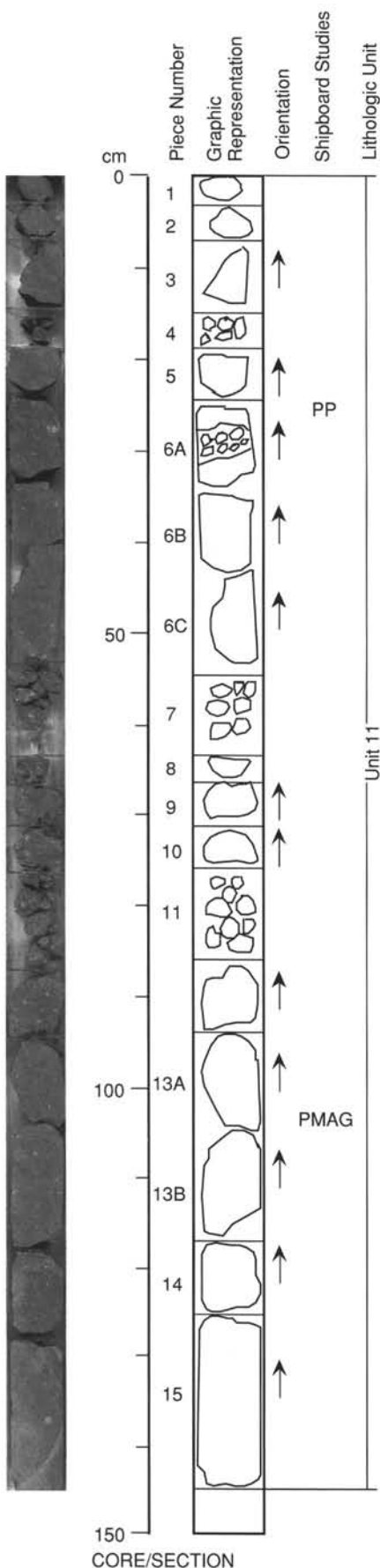
COLOR: Dark brown (7.5YR 3/2).

STRUCTURE: Possibly fragments of a highly vesicular, rubbly (aa?) lava flow.

ALTERATION: Highly altered to clays, Fe-oxyhydroxides, and calcite.

VEINS/FRACTURES: None observed in the small pieces.

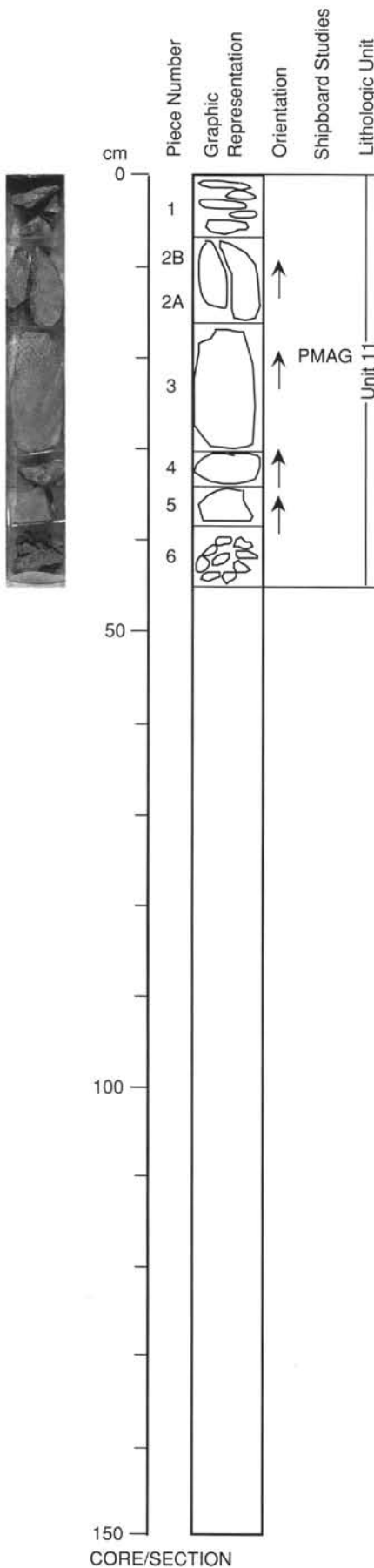
ADDITIONAL COMMENTS: Piece 6A appears to be a previous cavity now infilled with basalt fragments cemented with green clays; Piece 10 is similar.



CORE/SECTION

UNIT 11: SPARSELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 6



CONTACTS: None observed.

PHENOCRYSTS:

Olivine - ~1%; 0.5–4.0 mm; anhedral to subhedral prisms; completely pseudomorphed by clays and Fe-oxyhydroxides.

Pyroxene - ~1%; 0.5–3.0 mm; anhedral to subhedral grains; very highly altered to clays and Fe-oxyhydroxides.

Plagioclase - Trace; 0.5–6.0 mm; anhedral to subhedral stubby laths; moderately altered and characteristically fragmented.

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

VESICLES: <1%; 0.5–2.0 mm; subrounded; random distribution. Fewer vesicles compared to the top of the unit; infilled with green clays.

COLOR: Dark brown (7.5YR 3/2).

STRUCTURE: Possibly the lower portion of a vesicular, rubbly (aa?) lava flow.

ALTERATION: Highly altered to clays, calcite, and Fe-oxyhydroxides.

VEINS/FRACTURES: 1%; 0.2 mm; vertical orientation; Pieces 2A and 2B are separated by a vein.

ADDITIONAL COMMENTS: Unit 11 must have been a vesicular, rubbly (aa?) lava flow with plenty of empty spaces. Vesicularity decreases towards the bottom of the unit.

UNIT 11: SPARSELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 25

CONTACTS: None observed.

PHENOCRYSTS:

Olivine - ~1%; 0.5–6.0 mm; anhedral to subhedral prisms; completely pseudomorphed by clays and Fe-oxyhydroxides.

Pyroxene - ~1%; 0.5–7.0 mm; anhedral to subhedral grains; very highly altered to clays and Fe-oxyhydroxides.

Plagioclase - Trace; 0.5–4.0 mm; anhedral to subhedral laths; moderately altered to white clays.

GROUNDMASS: Microcrystalline to fine-grained; intergranular.

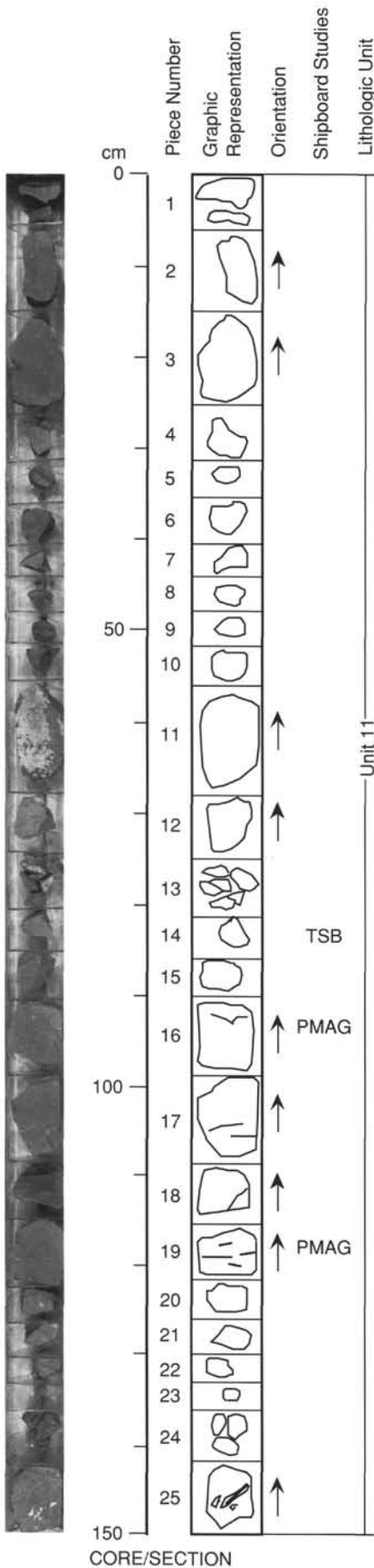
VESICLES: <1%; 0.5–14.0 mm; very irregular shape; random distribution. Infilled with green clays and calcite; vesicles in Piece 25 appear like flames.

COLOR: Dark brown (7.5YR 3/2).

STRUCTURE: Possibly fragments of a vesicular, rubbly (aa?) lava flow.

ALTERATION: Highly altered to clays, Fe-oxyhydroxides, and calcite.

VEINS/FRACTURES: 1%; 0.2 mm; mostly subhorizontal; infilled with calcite and green clays; Piece 11 is split along a natural face of a vertical vein. It is lined with green clays that warped when dried.



CORE/SECTION

UNIT 11: SPARSELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 22

CONTACTS: None visible.

PHENOCRYSTS:

Olivine - 1%; 0.5–5.0 mm; anhedral to subhedral; completely pseudomorphed by iron oxides and clay minerals.

Pyroxene - 1%; 0.5–6.0 mm; anhedral to subhedral; completely altered to clay minerals and Fe-oxides.

Plagioclase - Trace; 0.5–3.0 mm; anhedral to subhedral; moderately altered to clay minerals.

GROUNDMASS: Microcrystalline to fine-grained.

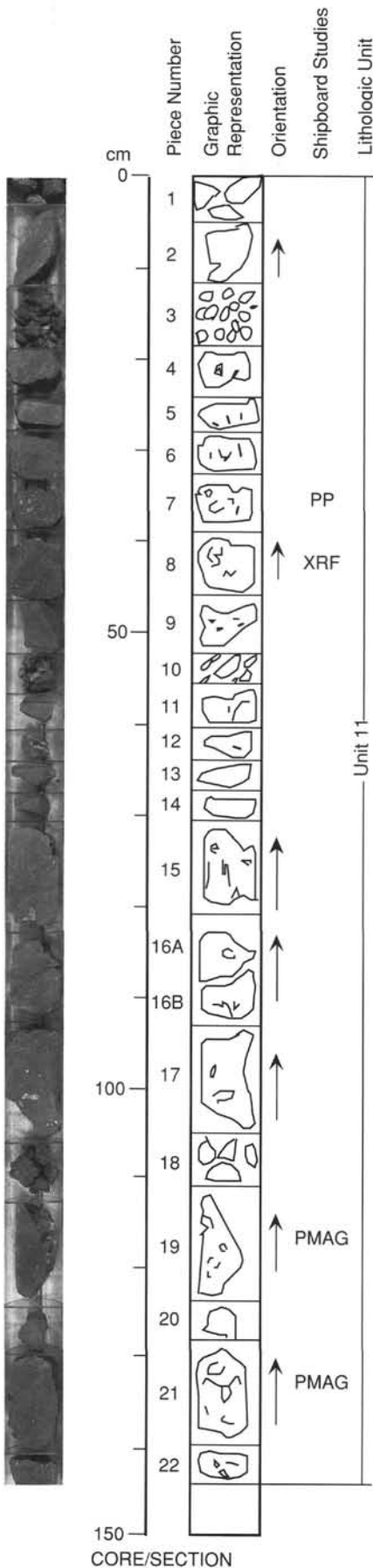
VESICLES: 2%; <1 cm; subrounded to irregular in shape; random distribution. Filled with calcite and greenish clay (smectite?).

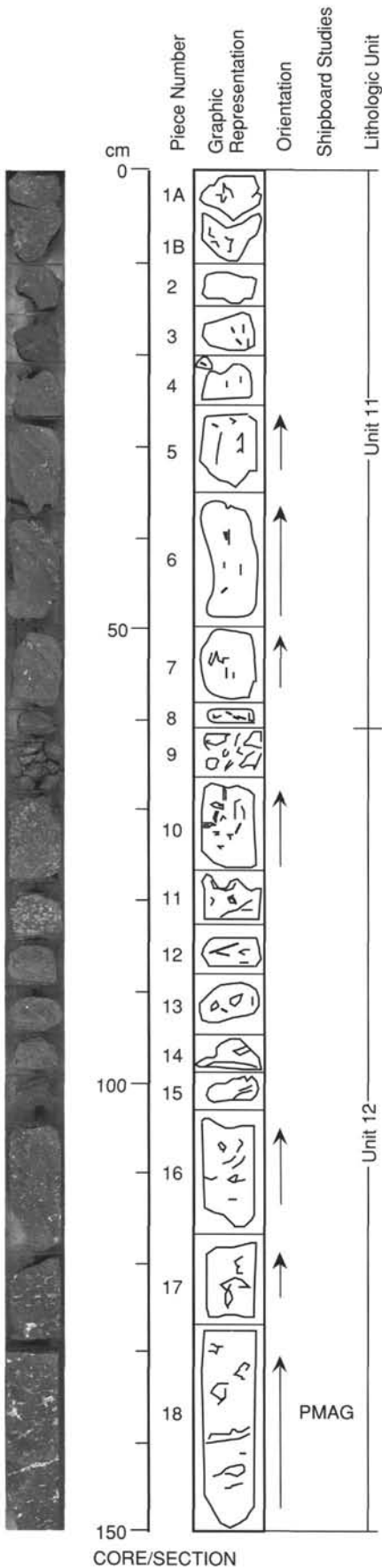
COLOR: Reddish gray (10R 6/1).

STRUCTURE: Blocks and fragments of lava.

ALTERATION: Highly altered to clay minerals and iron oxides.

VEINS/FRACTURES: 1%; 0.2 mm; highly irregular orientation; filled with calcite and clay minerals.





UNIT 11: SPARSELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1A to 8

CONTACTS: None visible but contact with underlying flow presumably at Piece 9.

PHENOCRYSTS:

Olivine - 1%; 0.5–5.0 mm; subhedral to anhedral; pseudomorphed by iron oxides and clay minerals.

Pyroxene - 1%; 0.5–5.0 mm; subhedral to anhedral; completely altered to clay minerals and iron oxides.

Plagioclase - Trace; 0.5–3.0 mm; subhedral to anhedral; moderately altered to clay minerals.

GROUNDMASS: Microcrystalline to fine-grained.

VESICLES: 4%; <1 cm; stretched and irregular; random distribution; mainly filled with greenish clays and calcite.

COLOR: Reddish gray (10R 6/1).

STRUCTURE: Possibly still fragments of lava, rubbly flow, or scree.

ALTERATION: Highly altered to clay minerals and iron oxides.

VEINS/FRACTURES: <1%; <1.0 mm; orientation 10° and 50°; filled with clay minerals.

UNIT 12: MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 9 to 18

CONTACTS: None visible.

PHENOCRYSTS:

Olivine - 4%; 0.5–4.0 mm; subhedral to anhedral; completely altered to clay minerals.

Pyroxene - 3%; 0.5–5.0 mm; subhedral to anhedral; completely altered to clay minerals.

GROUNDMASS: Microcrystalline to fine-grained.

VESICLES: 3%–20%; 0.5–20 mm; varied shapes; irregular distribution. Concentrated in Pieces 10 and 11.

Rounded in Piece 11; elongate, irregular and stretched in Pieces 16 to 18. Filled mainly with green clay (grayish green (10G 8/1) smectite?), and some calcite.

COLOR: Greenish gray (5BG 5/1).

STRUCTURE: Lava flow.

ALTERATION: Highly altered to clay minerals and iron oxides.

VEINS/FRACTURES: 1%; <4.0 mm; orientation 70°; filled with calcite.

CORE/SECTION

UNIT 12: MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 4E

CONTACTS: None visible.

PHENOCRYSTS:

Olivine - 4%; 0.5–4.0 mm; subhedral to anhedral; completely altered to clay minerals.

Pyroxene - 3%; 0.5–5.0 mm; subhedral to anhedral; completely altered to clay minerals.

GROUNDMASS: Microcrystalline to fine-grained.

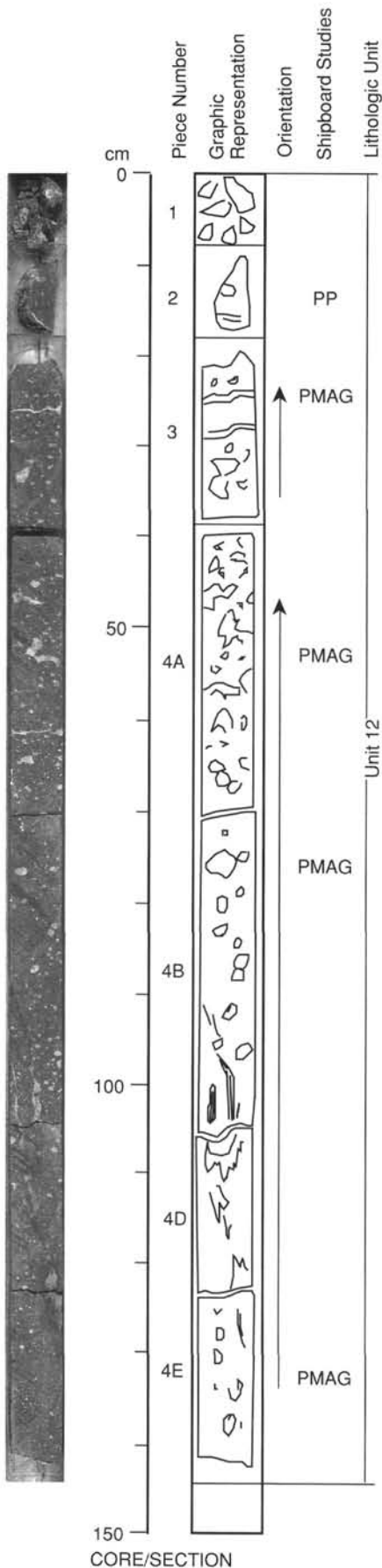
VESICLES: 15%; 1.0–15.0 mm; rounded to subrounded and irregular; random distribution; filled with grayish green (10G 8/1) clay mineral (smectite?) and some calcite.

COLOR: Greenish gray (5BG 5/1).

STRUCTURE: Lava flow.

ALTERATION: Highly altered to clay minerals and iron oxides.

VEINS/FRACTURES: 2%; 0.5–10.0 mm; orientation 90° and 170°; filled with smectite and calcite.



UNIT 12: MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Piece 1

CONTACTS: None visible.

PHENOCRYSTS:

Olivine - 4%; 0.5–4.0 mm; subhedral to anhedral; completely altered to clay minerals and iron oxides.
 Pyroxene - 3%; 0.5–5.0 mm; subhedral to anhedral; completely altered to clay minerals.

GROUNDMASS: Fine-grained; intergranular.

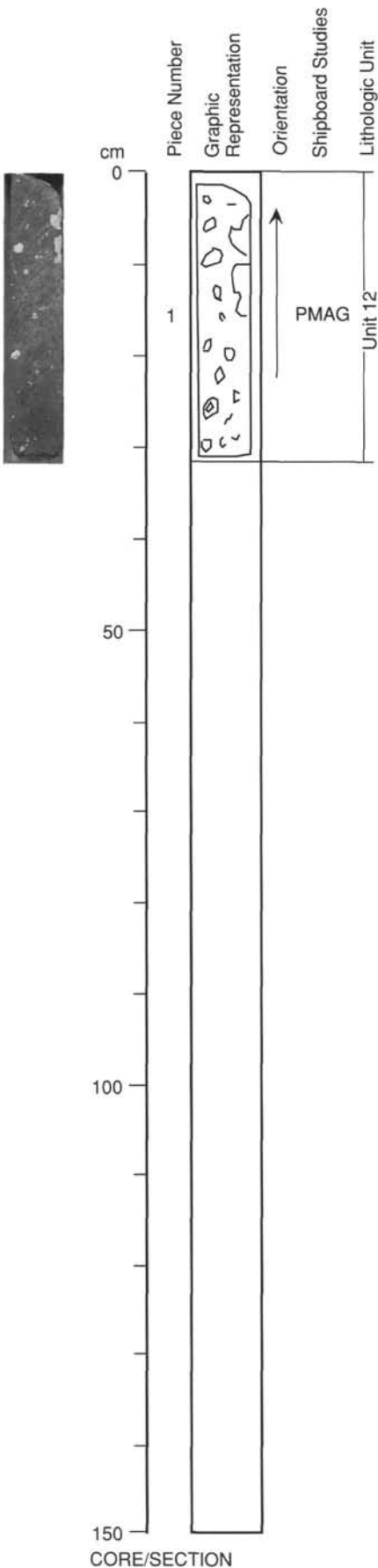
VESICLES: 15%; 1.0–30.0 mm; rounded, subrounded, irregular; random distribution. Filled with greenish gray (10G 8/1) clay mineral (smectite?) and some calcite.

COLOR: Greenish gray (5BG 5/1).

STRUCTURE: Lava flow.

ALTERATION: Highly altered to clay minerals and iron oxides.

VEINS/FRACTURES: <1%; <1.0 mm; 70° and 90°; filled with smectite.



UNIT 12: MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 5M

CONTACTS: None observed; reddened fragments in Piece 1 may have fallen from formations higher in the hole.

PHENOCRYSTS:

Olivine - 4%; 1.0-3.0 mm; subhedral; altered to clays and iron oxides.

Pyroxene - 3%; 1.0-5.0 mm; subhedral; completely altered to clay minerals.

GROUNDMASS: Fine-grained; intergranular.

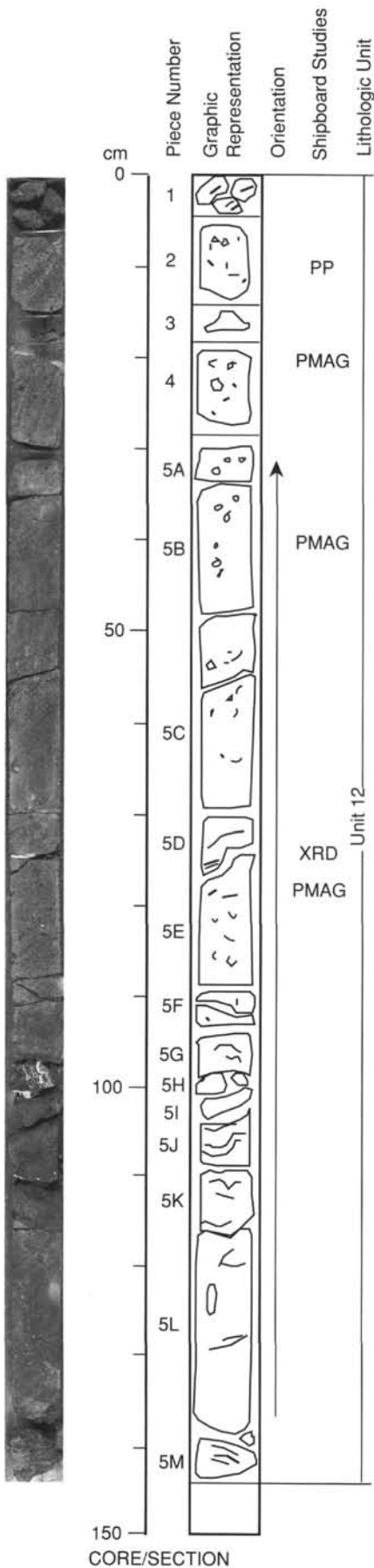
VESICLES: 3%; 1.0-3.0 mm; subrounded to elongate; irregular distribution. Concentrated in lower part, Piece 5I.

COLOR: Gray (2.5YR 5/0).

STRUCTURE: Massive lava flow.

ALTERATION: Moderately to highly altered to clay minerals and iron oxide minerals.

VEINS/FRACTURES: 4%; 1.0-7.0 mm; orientation 70°-80°; filled with calcite, smectite, and zeolites.



CORE/SECTION

UNIT 12: MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 8B

CONTACTS: None observed apart from passage unto more brecciated zone in Pieces 5-7.

PHENOCRYSTS:

Olivine - 5%; 1.0-3.0 mm; subhedral; altered to clay minerals and iron oxides.

Pyroxene - 4%; 1.0-4.0 mm; subhedral; completely altered to clay minerals.

GROUNDMASS: Fine-grained; intergranular.

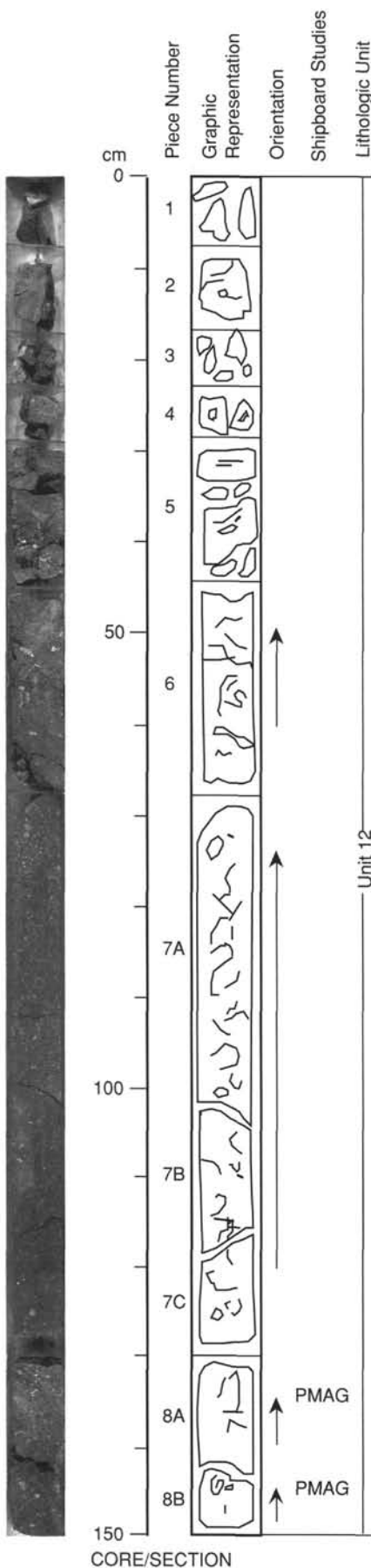
VESICLES: 3%-20%; 1.0-5.0 mm; subrounded; irregular distribution. Filled with smectite and calcite. Maximum in Piece 7B.

COLOR: Gray (7.5G 6/0).

STRUCTURE: Lava flow (auto brecciate(?) in Pieces 5-7).

ALTERATION: Moderately to highly altered to clay minerals and iron oxides.

VEINS/FRACTURES: 3%-15%; 0.5-7.0 mm; irregular orientation; Pieces 5-7 are extremely and irregularly fractured; filled with smectite and zeolites.



CORE/SECTION

UNIT 12: MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 18

CONTACTS: None visible.

PHENOCRYSTS:

Olivine - 5%; 1.0–3.0 mm; subhedral; altered to clay minerals and iron oxides.

Pyroxene - 4%; 1.0–4.0 mm; subhedral; completely altered to clay minerals.

Plagioclase occurs as megacrysts or xenocrystic clusters <1 cm in size.

GROUNDMASS: Fine-grained; intergranular.

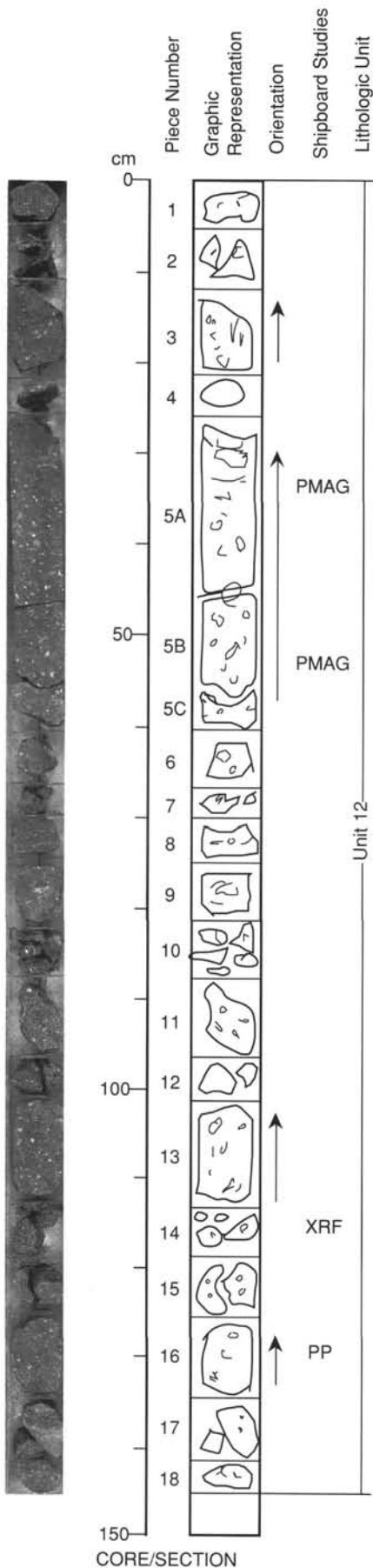
VESICLES: 15%; 1.0–5.0 mm; rounded; random distribution. Filled with greenish clay mineral (smectite?) and calcite.

COLOR: Dark gray (2.5YR 4/0).

STRUCTURE: Lava flow.

ALTERATION: Moderately to highly altered to clay minerals and iron oxides.

VEINS/FRACTURES: <1%; <1.0 mm; irregular orientation; sparse; filled with calcite and smectite.



UNIT 12: MODERATELY OLIVINE-PYROXENE PHYRIC BASALT

Pieces 1 to 5

CONTACTS: None visible.

PHENOCRYSTS:

- Olivine - 5%; 1.0–3.0 mm; subhedral; altered to clay and iron oxides.
- Pyroxene - 4%; 1.0–4.0 mm; subhedral; completely altered to clay minerals.
- Plagioclase occurs as megacrysts or xenocrystic clusters <1 cm in size.

GROUNDMASS: Fine-grained; intergranular.

VESICLES: 15%; 1.0–10.0 mm; irregular shape; random distribution. Filled with greenish clay (smectite?) and calcite.

COLOR: Dark gray (2.5YR 4/0).

STRUCTURE: Lava flow.

ALTERATION: Moderately to highly altered to clay minerals and iron oxides.

VEINS/FRACTURES: <1%; <1.0 mm; irregular orientation; filled with calcite and smectite.

