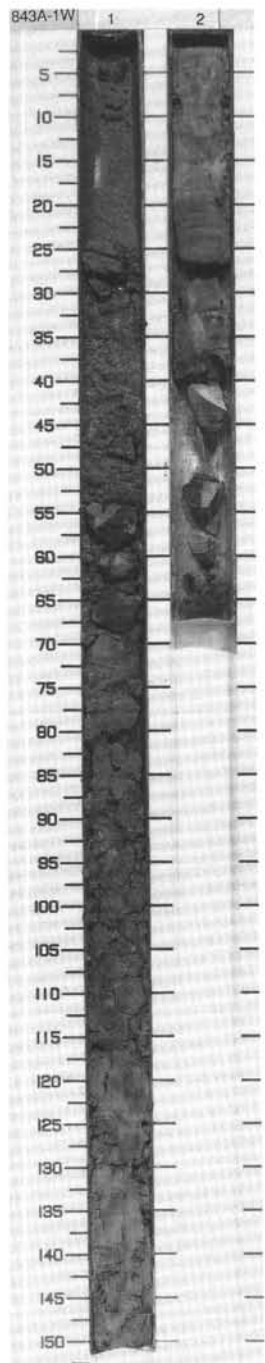


SITE 843 HOLE A CORE 1W

CORED 0.0 - 121.8 mbsf

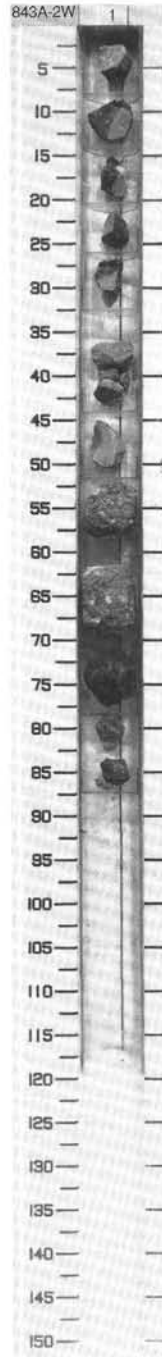
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0.5		1				S	10YR 4/3	<p>CLAY and ZEOLITIC CLAY</p> <p>Major Lithologies: Soupy dark yellowish brown(10YR 4/3) clay occurs in Section 1, 0-70 cm. Dark grayish brown (10YR 4/2) zeolitic clay and light brown (5YR 6/3) clay in Section 1, 70 cm to Section 2, 40 cm and Section 2, 62-67 cm are mottled and heavily disturbed by drilling.</p> <p>Minor Lithologies: Drill brecciated, wavy laminated dark reddish brown(10R 2/2 and 10YR 2/2) chert is found in Section 1, 44-68 cm and Section 2, 40 to 62 cm. Moderately bioturbated dark yellowish brown (10YR 4/2) ashy silty claystone occurs in Section 1. 30-34 cm.</p>
1.0						S	5YR 6/3 To 10YR 4/2	
	2			S	10YR 4/2			



SITE 843 HOLE A CORE 2W

CORED 121.8 - 228.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0.5		1						<p>CHERT</p> <p>Major Lithology: This core includes vari-colored (5R 4/2 and 3/4, 10R 5/4 and 5YR 3/2, 5/2) cherts, brecciated by drilling. In Section 1, 26-32 cm and 51-79 cm, cherts have cavities which are partially filled by chalk.</p> <p>Minor Lithology: Thin pinkish gray chalk(5YR 8/2 and 7/2) is found on fragments of dusky red chert in Section 1, 20-65 cm, and occurs as drilling breccia in Section 1.</p>



SITE 843 HOLE A CORE 3R

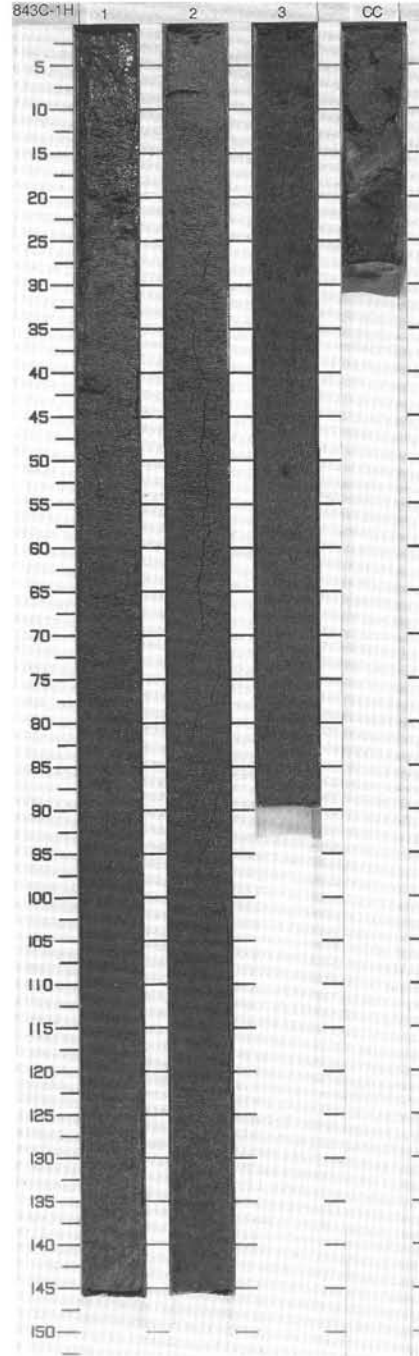
CORED 228.0 - 237.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0.5		1				S		<p>NANNOFOSSIL LIMESTONE</p> <p>Major Lithology: Wavy laminated brown (10YR 5/3) nannofossil limestone is the major lithology in the upper 64 cm of this core. This limestone is composed of silt to clay size calcite grains and nannofossils.</p> <p>Minor Lithologies: Laminated brown (10yr 5/3) and reddish yellow (5YR 6/6 with 5YR 4/6) nannofossil calcareous clay is found in Section 1, 64-84 cm. The base of this clay is just above basalt.</p>
						D	10YR 5/3 To 5YR 2.5/2	
						S	10YR 6/3	
						S	10YR 5/3 To 5YR 6/6	Dark reddish brown (5YR 2.5/2) chert breccias occur in Section 1, 6-8 cm, 31-33 cm and 40-41 cm.
1.0	Void	2				S		



SITE 843 HOLE C CORE 1H CORED 0.0 - 4.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0.0 - 1.0	[Dotted pattern]	1		~	○	S	10YR 4/3	<p>CLAY</p> <p>Major Lithology: Dark yellowish brown(10YR 4/3 and 4/4) clay occurs in Section 1, 0 cm to Section 2, 70 cm and Section 3, 47-90 cm. Dark grayish brown(2.5Y 4/2) and olive brown(2.5Y 4/4) clay which includes minor amounts of ash is found in Section 2, 90 cm to Section 3, 47cm.</p> <p>Minor Lithology: Very dark gray(10YR 3/1) ash layers are found in Section 1, 40-41 cm and Section 3, 0-1, 7-8, 25-28 and 81-82 cm. These ash layers are disrupted by bioturbation.</p>
1.0 - 2.0	[Dotted pattern]	2		~		S	10YR 4/4	
2.0 - 3.0	[Dotted pattern]	3		~		S I	2.5YR 4/4	
3.0 - 3.5	[Dotted pattern]	3		~		S I	2.5YR 4/2	
3.5 - 4.2	[Dotted pattern]	3		~		S I	10YR 4/4	
4.2 - 4.5	[Dotted pattern]	CC		~				



Leg: 136		Site: 843																
Sample	Hole, core, section, location (cm)	Depth	Lithology	Texture data			Mineral							Biogenic				
				Sand	Silt	Clay	Accessory Minerals	Clay	Feldspar	Inorganic Calcite	Opauques	Volcanic Glass	Zeolite	Diatoms	Nannofossils	Radiolarians	Silicoflagellates	Sponge Spicules
A-1-01, 32	.32	M		40	60	5	60	15		10	10							
1-01, 50	.50	D		10	90	1	90	2		5	2							
1-02, 15	1.65	D		1	99		99			1								
1-02, 21	1.71	D		5	95		65			5		30						
3-01, 6	228.06	D		10	90				59	1				40				
3-01, 35	228.35	D		10	90				70					30				
3-01, 70	228.70	D		5	95				60					40				
3-01, 81	228.81	M			100				80					20				
C-1-01, 40	.40	M	25	55	20	4	20	40		15	20				1			
1-01, 100	1.00	D		25	75		15	75		10								
1-03, 10	3.10	M		63	37	5	37	5		10	30		4		8		1	
1-03, 85	3.85	D		18	82	1	72	2		1	3		5		5	3	3	

136-843A-3R-1

UNIT 1: APHYRIC BASALT

Pieces 1a, 1b

CONTACTS: Depositional at top, unknown at base.

PHENOCRYSTS: Plagioclase: <0.1%, 0.5-2.0 mm, tabular, altered core.

GROUNDMASS: Glassy at top, medium-grained interior, plagioclase and clinopyroxene clusters, clinopyroxene is sector zoned and clear, Fe-Ti oxides and altered olivine.

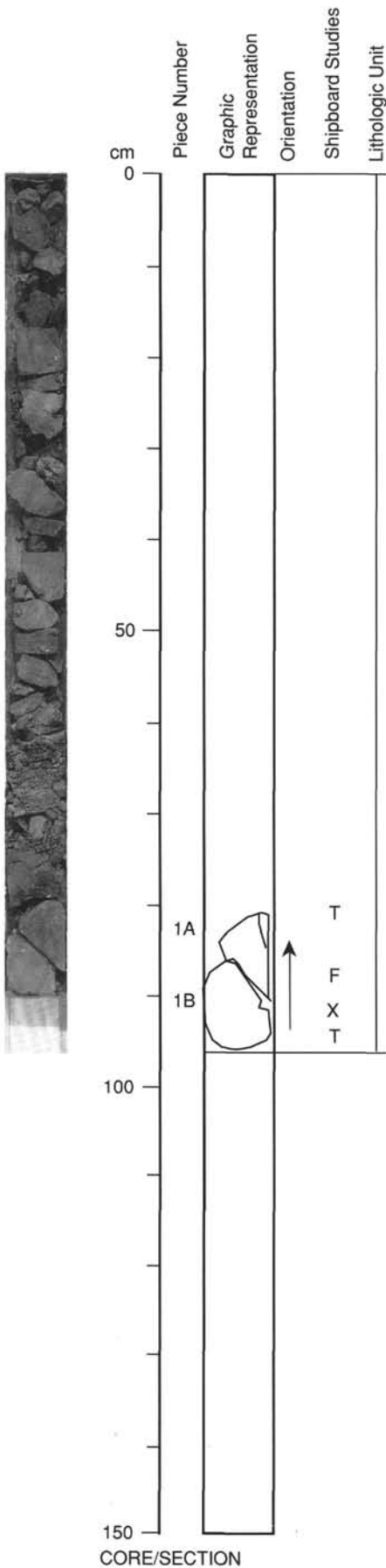
VESICLES: 1-2%, 0.5-2.0 mm, round, even, filled with clay and calcite.
Miaroles: None.

COLOR: Medium gray at top, light gray in interior.

STRUCTURE: Pillowed at top, massive in interior.

ALTERATION: Slight in interior, altered at top.

VEINS/FRACTURES: 1%, 1.0 mm, 40°, filled with calcite, chlorite and red material.



136-843A-3R-2

UNIT 1: APHYRIC BASALT

Pieces 1-5

CONTACTS: None.

PHENOCRYSTS: Plagioclase: <0.1%, 0.5-2.0 mm, tabular, altered core.

GROUNDMASS: Medium grained with plagioclase and clinopyroxene clusters, clinopyroxene is sector zoned and clear, Fe-Ti oxides and altered olivine.

VESICLES: 1-2%, <0.5-2.0 mm, round, even, filled with clay and calcite.

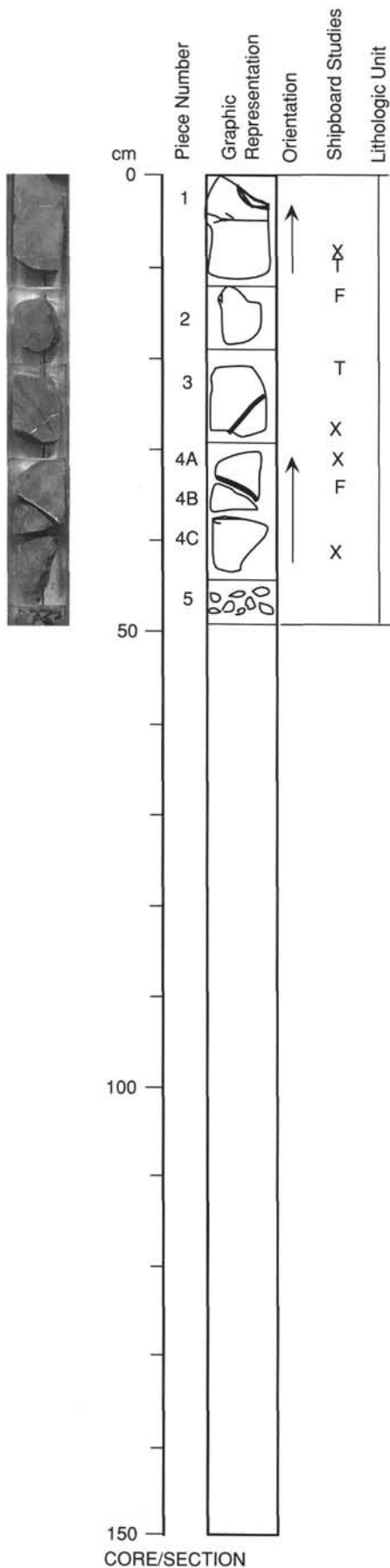
Miaroles: None.

COLOR: Light gray.

STRUCTURE: Massive.

ALTERATION: Slight, iddingsite for olivine.

VEINS/FRACTURES: 1%, 0.1-3.0 mm, 0 or 35-40°, filled with calcite with chlorite(?) and red mineral.



UNIT 1: APHYRIC BASALT

Pieces 1-9

CONTACTS: None observed.

PHENOCRYSTS: Plagioclase: <1%, 0.5-2.0 mm, tabular.

GROUNDMASS: Variable, holocrystalline (subophitic) to glassy. (hypohyaline), fine- to medium-grained plagioclase, clinopyroxene, Fe-oxide, altered olivine.

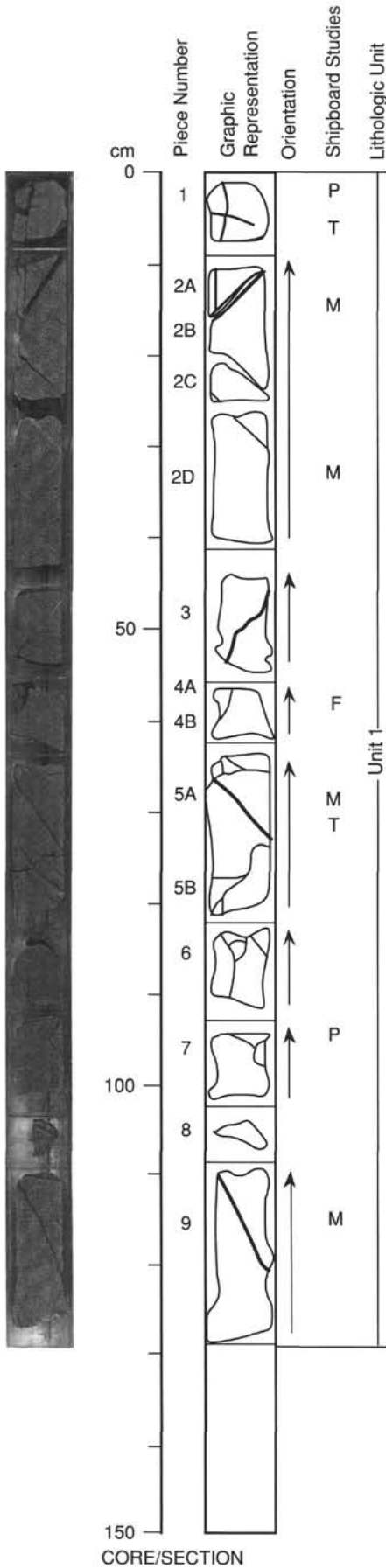
VESICLES: 1%, <1.0 mm, round, even, filled with clay and calcite.

COLOR: Medium gray.

STRUCTURE: Massive.

ALTERATION: Fresh to slightly altered.

VEINS/FRACTURES: 1%, 1.0-3.0 mm, inclined 40-60°, filled with calcite, pyrite, green colored mineral (clay) and limonite.

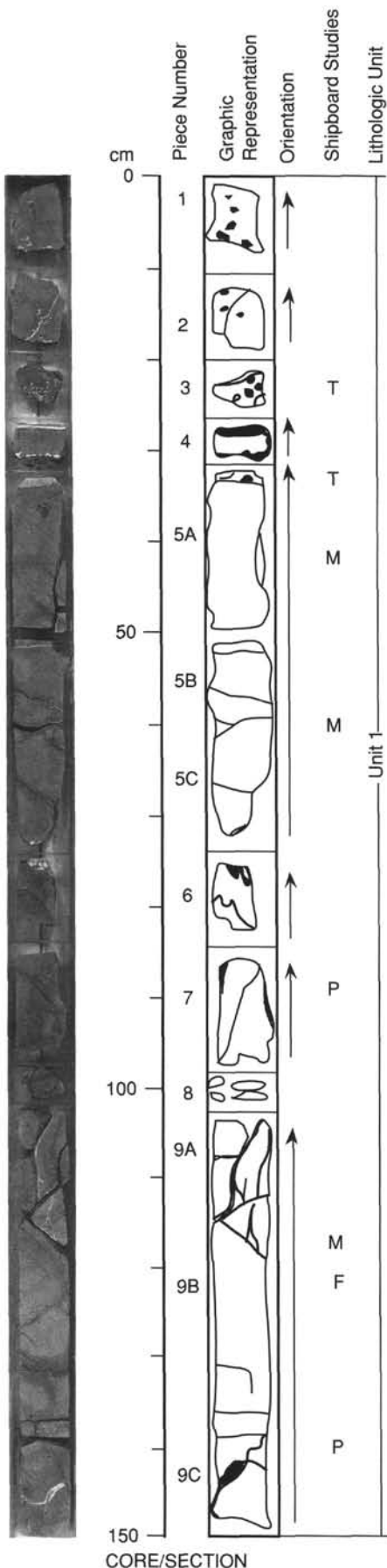


136-843B-1R-2

UNIT 1: APHYRIC BASALT

Pieces 1-9

CONTACTS: None observed.
PHENOCRYSTS: Plagioclase: <1%, 0.5-2 mm, tabular.
GROUNDMASS: Variable, holocrystalline (subophitic) to glassy. (hypohyaline), fine- to medium-grained plagioclase, clinopyroxene, Fe-oxides and altered olivine.
VESICLES: <1%, <1.0 mm, round, even, filled with clay and calcite.
COLOR: Mottled, light to medium gray.
STRUCTURE: Massive with common fractures.
ALTERATION: Moderately altered.
VEINS/FRACTURES: 1-3%, 1-12 mm wide, 0-70° inclination, filled with calcite, clay and limonite, some open vugs in upper part of section.



CORE/SECTION

UNIT 1: APHYRIC BASALT

Pieces 1-4

CONTACTS: None observed.

PHENOCRYSTS: Plagioclase: <1%, 0.5-2.0 mm, tabular.

GROUNDMASS: Variable, holocrystalline (subophitic) to glassy (hypohyaline), fine- to medium-grained plagioclase, clinopyroxene, Fe-oxides and altered olivine.

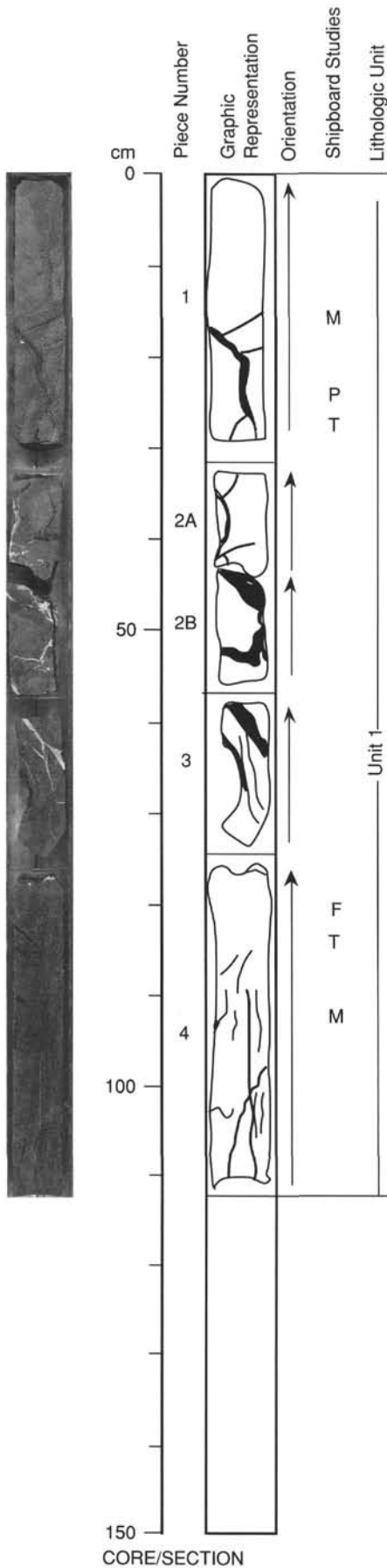
VESICLES: <1%, <1.0 mm, round, even, filled with clay and calcite.

COLOR: Mottled medium gray to yellowish brown.

STRUCTURE: Massive with abundant fractures.

ALTERATION: Moderately altered.

VEINS/FRACTURES: 2-4%, hairline to 7.0 mm, horizontal to vertical filled with calcite, blue-green colored mineral and limonite



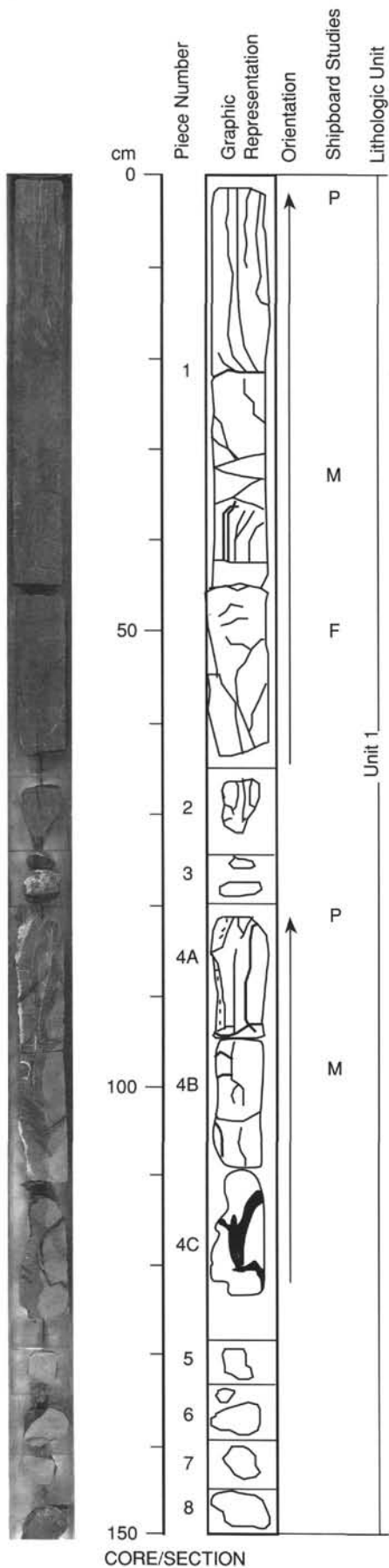
CORE/SECTION

136-843B-1R-4

UNIT 1: APHYRIC BASALT

Pieces 1-8

CONTACTS: None observed.
PHENOCRYSTS: Plagioclase: <1%, 0.5-2.0 mm, tabular.
GROUNDMASS: Variable, holocrystalline (subophitic) to glassy (hypohyaline), fine- to medium-grained plagioclase, clinopyroxene, Fe-oxides and altered olivine.
VESICLES: <1%, <1.0 mm, round, even, filled with calcite and clay.
COLOR: Mottled yellowish brown to light gray.
STRUCTURE: Massive with abundant fractures.
ALTERATION: Moderate.
VEINS/FRACTURES: 2-5%, hairline to 12.0 mm, horizontal to vertical, filled with calcite, blue-green mineral and limonite

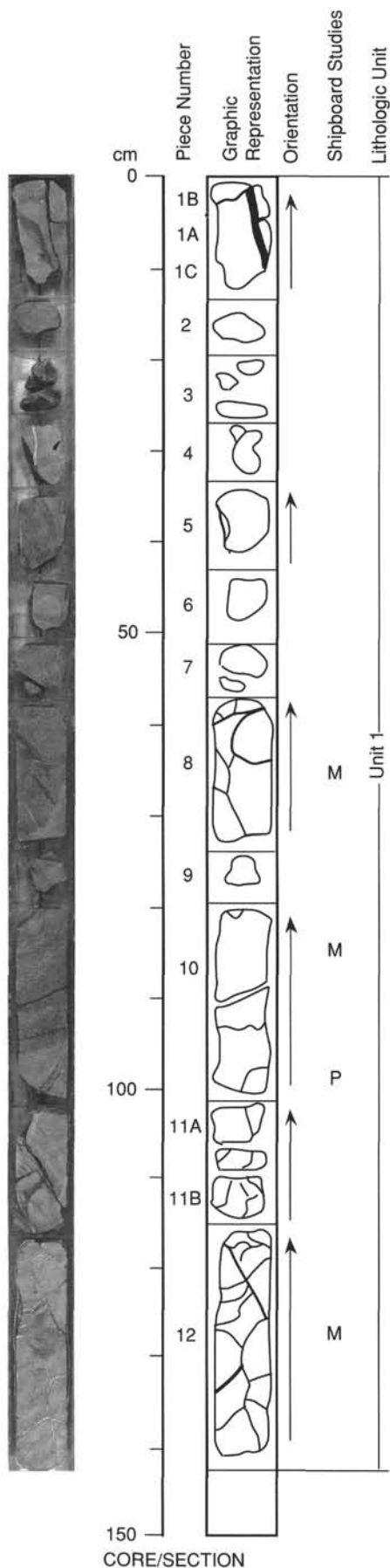


CORE/SECTION

UNIT 1: APHYRIC BASALT

Pieces 1-12

CONTACTS: None observed.
PHENOCRYSTS: Plagioclase: <1%, 0.5-2.0 mm, tabular.
GROUNDMASS: Variable, holocrystalline (subophitic) to glassy (hypohyaline), fine- to medium-grained plagioclase, clinopyroxene, Fe-oxide and altered olivine
VESICLES: <1%, <1.0 mm, round, even, filled with clay and calcite.
COLOR: Mottled dark gray to yellowish brown.
STRUCTURE: Massive with common fractures.
ALTERATION: Moderate.
VEINS/FRACTURES: 1-3%, hairline to 3.0 mm, horizontal to vertical, filled with calcite and limonite.

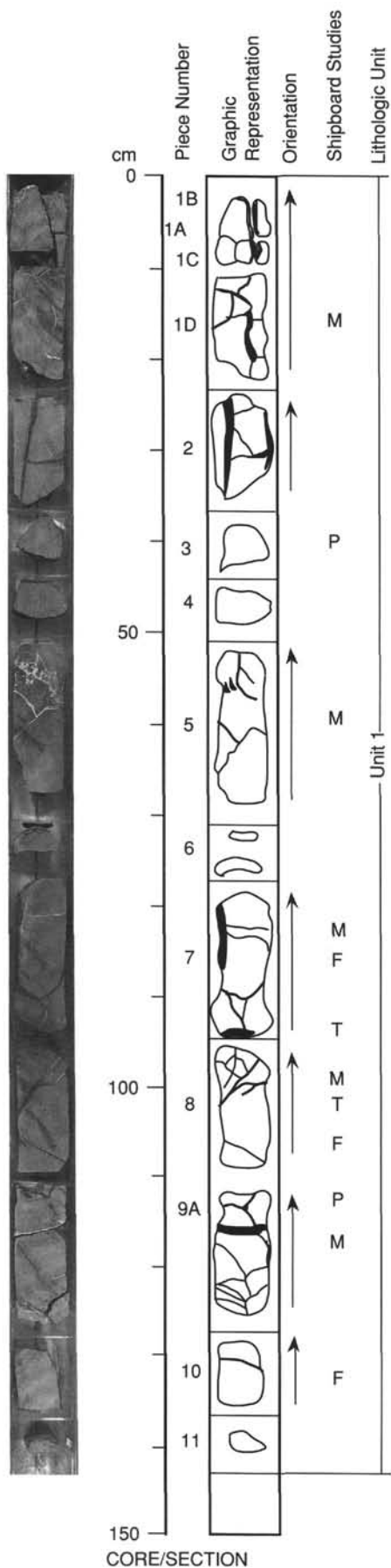


136-843B-1R-6

UNIT 1: APHYRIC BASALT

Pieces 1-11

CONTACTS: None observed.
PHENOCRYSTS: Plagioclase: <1%, 0.5-2.0 mm, tabular.
GROUNDMASS: Variable, holocrystalline (subophitic) to glassy (hypohyaline), fine- to medium-grained plagioclase, clinopyroxene, Fe-oxides, and altered olivine.
VESICLES: <1%, <1.0 mm, round, even, filled with clay and calcite.
COLOR: Light to dark gray.
STRUCTURE: Massive with common fractures.
ALTERATION: Slight to moderate.
VEINS/FRACTURES: 1-3%, 1.0-8.0 mm, horizontal to vertical, filled with calcite, clay and limonite.



136-843B-1R-7

UNIT 1: APHYRIC BASALT

Pieces 1-4

CONTACTS: None observed.

PHENOCRYSTS: Plagioclase: <1%, 0.5-2.0 mm, tabular.

GROUNDMASS: Variable, holocrystalline (subophitic) to glassy (hypohyaline), fine- to medium-grained plagioclase, clinopyroxene, Fe-oxides and altered olivine.

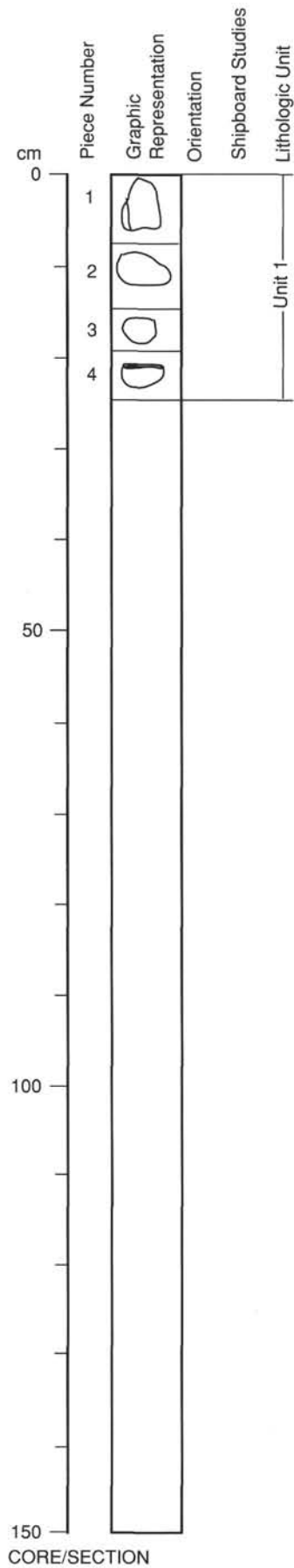
VESICLES: <1%, <1.0 mm, round, even, filled with clay and calcite.

COLOR: Dark gray.

STRUCTURE: Massive

ALTERATION: Slight.

VEINS/FRACTURES: 0-1%, hairline to 1.0 mm, unknown, filled with limonite and clay.



136-843B-2R-1

UNIT 2: APHYRIC BASALT

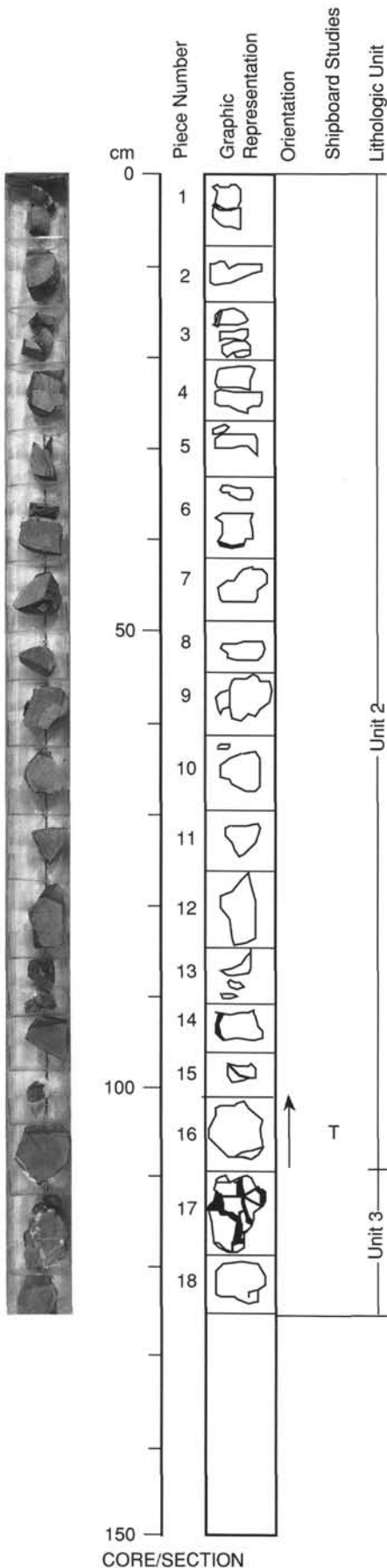
Pieces 1-16

CONTACTS: None observed.
PHENOCRYSTS: Plagioclase: <1%, 0.5-2.0 mm, tabular.
GROUNDMASS: Hypocrystalline to hypohyaline, fine-grained plagioclase, clinopyroxene and Fe-oxide.
VESICLES: <1%, <1.0 mm, round, even, filled with clay and calcite.
COLOR: Light to medium gray.
STRUCTURE: Massive.
ALTERATION: Slight.
VEINS/FRACTURES: 1-5%, 1.0-15.0 mm, horizontal to vertical, filled with calcite, limonite and green mineral.

UNIT 3: APHYRIC BASALT

Pieces 17 and 18

CONTACTS: None observed.
PHENOCRYSTS: Plagioclase: <1%, 0.5-2.0 mm, tabular.
GROUNDMASS: Hypocrystalline to hypohyaline, fine-grained plagioclase, clinopyroxene and Fe-oxide.
VESICLES: <1%, <1.0 mm, round, even, filled with calcite and clay.
COLOR: Medium gray.
STRUCTURE: Massive to brecciated.
ALTERATION: Slight to highly.
VEINS/FRACTURES: 1-20%, 1.0-15.0 mm, horizontal to vertical, filled with calcite and clays.
ADDITIONAL COMMENTS: Rare gabbroic (plagioclase and clinopyroxene) xenoliths, small (1.0-5.0 mm) and medium-grained.



UNIT 3: APHYRIC BASALT

Pieces 1-9

CONTACTS: None observed.

PHENOCRYSTS: Plagioclase: <1%, <1.0 mm.

GROUNDMASS: Hypohyaline, fine-grained plagioclase, clinopyroxene and Fe-oxide in a glassy matrix.

VESICLES: <1%; <1.0 mm, round, even, filled with clay and calcite.

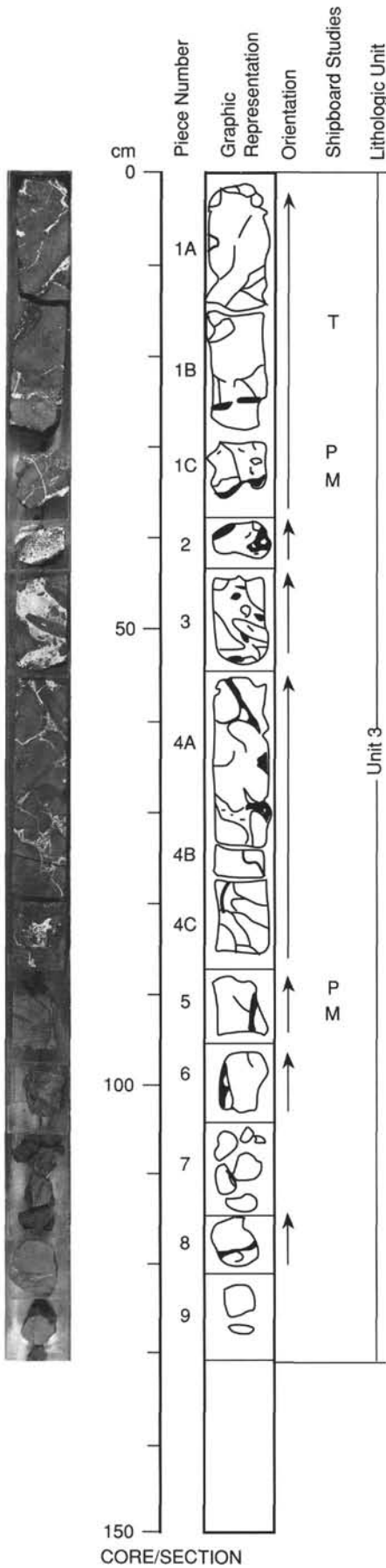
COLOR: Medium gray to reddish brown.

STRUCTURE: Brecciated, 0-87 cm, massive, 88-130 cm.

ALTERATION: Moderate.

VEINS/FRACTURES: 1-50%, hairline to 50.0 mm, 50-60° dip, filled with calcite, clay and limonite.

ADDITIONAL COMMENTS: Rare gabbroic (plagioclase and clinopyroxene) xenoliths, small (1.0-5.0 mm) and medium-grained.



CORE/SECTION

136-843B-3R-1

UNIT 3: APHYRIC BASALT

Pieces 1-11

CONTACTS: None observed.

PHENOCRYSTS: Plagioclase: <1%, <1 mm.

GROUNDMASS: Hypohyaline, plagioclase in a glassy matrix.

VESICLES: <1%, <1.0 mm, round, even, filled with calcite and clay.

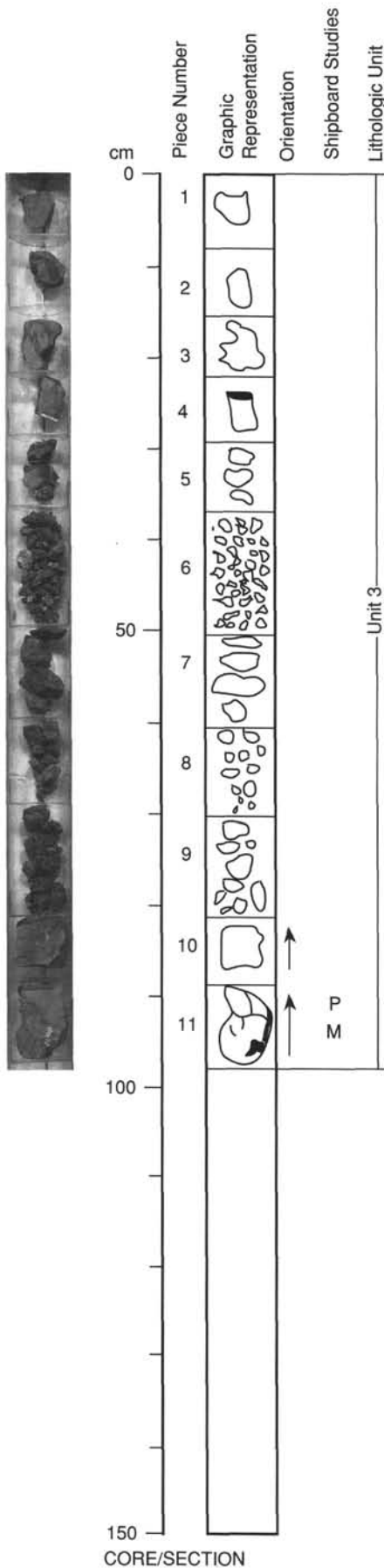
COLOR: Variable, dark gray, yellowish brown, dark greenish gray.

STRUCTURE: Rubbly, 0-81 cm, massive, 81-98 cm.

ALTERATION: Moderately.

VEINS/FRACTURES: 1%, hairline to 1.0 mm, horizontal to vertical, filled with limonite, calcite and clay.

ADDITIONAL COMMENTS: Rare gabbroic (plagioclase and clinopyroxene) xenoliths, small (1.0-5.0 mm), medium-grained.



UNIT 4: APHYRIC BASALT

Pieces 1-16

CONTACTS: None observed.

PHENOCRYSTS: Plagioclase: <1%, <1.0 mm.

GROUNDMASS: Hypocrystalline, fine-grained plagioclase, clinopyroxene and Fe-oxide.

VESICLES: <1%, <1.0 mm, round, even, filled with calcite and clay.

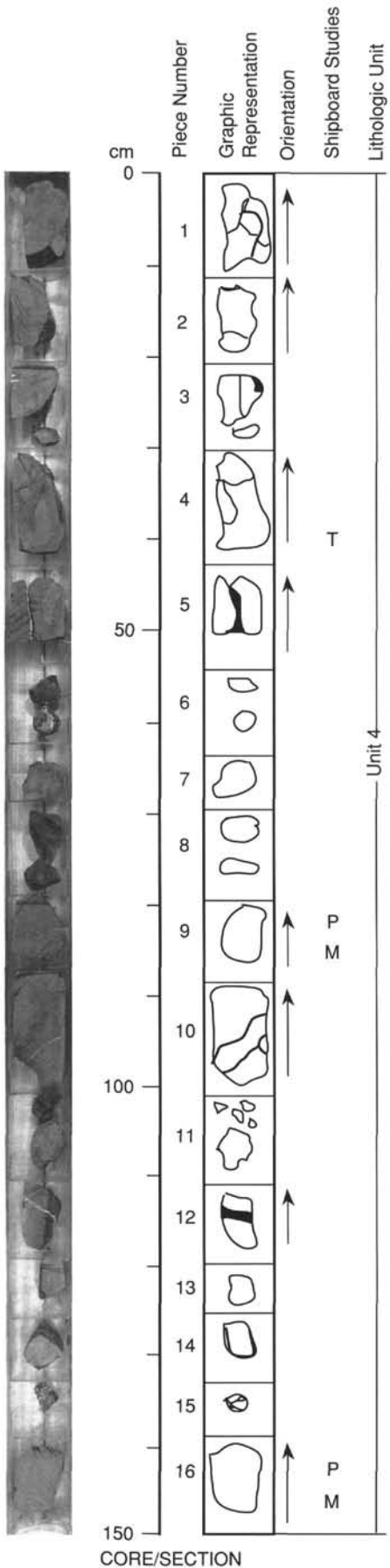
COLOR: Mottled light to medium gray.

STRUCTURE: Massive.

ALTERATION: Slight.

VEINS/FRACTURES: 1-3%, hairline to 3.0 mm, horizontal to vertical, filled with calcite, clay and limonite.

ADDITIONAL COMMENTS: Rare gabbroic (plagioclase and clinopyroxene) xenoliths, small (1.0-5.0 mm), medium-grained.



CORE/SECTION

136-843B-4R-2

UNIT 4: APHYRIC BASALT

Pieces 1-4

CONTACTS: Chilled margins (?): dark gray, 24-25 cm, dark green, 77-81 and 124-125 cm.

PHENOCRYSTS: Plagioclase: <1%, <1.0 mm.

GROUNDMASS: Hypohyaline to hypocrystalline, fine-grained plagioclase, clinopyroxene and Fe-oxide.

VESICLES: <1%, <1.0 mm, round to irregular, even, filled with clay and calcite.

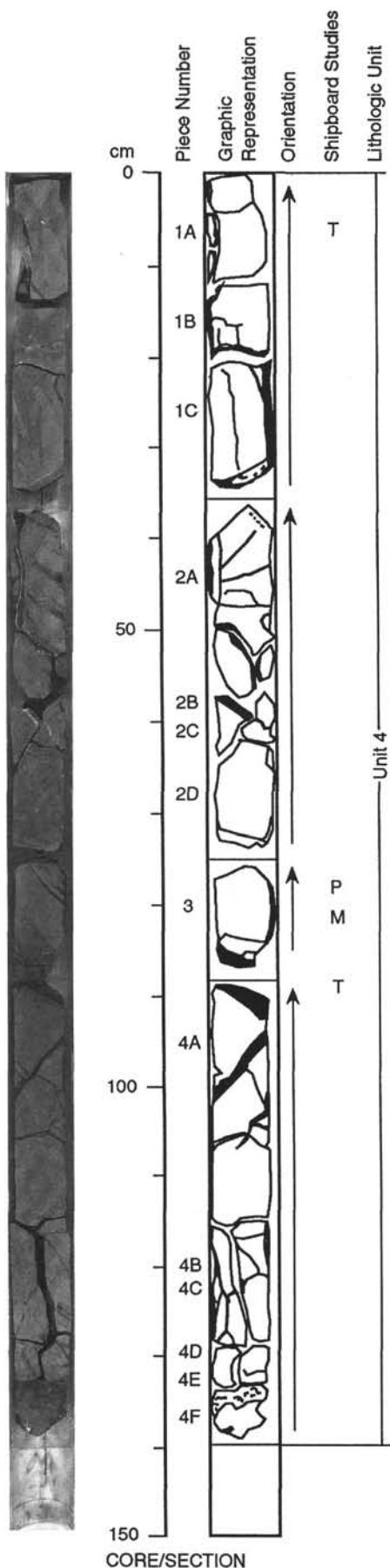
COLOR: Mottled medium to light gray.

STRUCTURE: Massive with chilled margins (?).

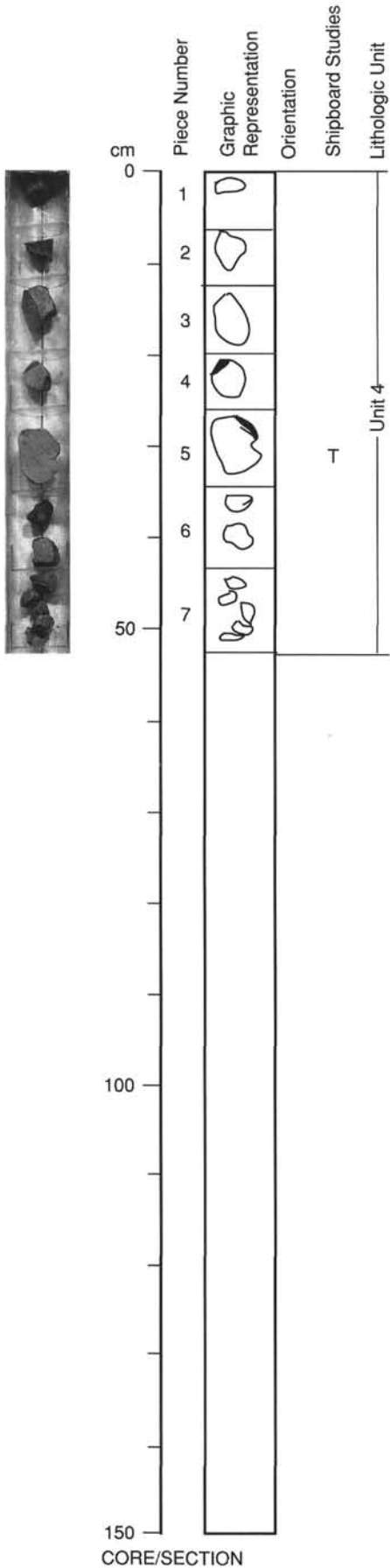
ALTERATION: Slight.

VEINS/FRACTURES: 1-3%, hairline to 5.0 mm, horizontal to vertical, filled with calcite, limonite and calcite.

ADDITIONAL COMMENTS: Rare gabbroic (plagioclase and clinopyroxene) xenoliths, small (1.0-5.0 mm) and medium-grained.



CORE/SECTION



UNIT 4: APHYRIC BASALT

Pieces 1-7

CONTACTS: None observed.

PHENOCRYSTS: Plagioclase: <1%, <1.0 mm.

GROUNDMASS: Hypohyaline, fine-grained plagioclase, clinopyroxene and Fe-oxide in a glassy matrix.

VESICLES: <1%, <1.0 mm, round, even, filled with clays and calcite.

COLOR: Mottled light to medium gray.

STRUCTURE: Massive.

ALTERATION: Slight to moderate.

VEINS/FRACTURES: <1%, hairline, unknown, filled with limonite.

ADDITIONAL COMMENTS: Rare gabbroic (plagioclase and clinopyroxene) xenoliths, small (1.0-5.0 mm), medium-grained.

136-843A-3R-01 (Piece 1A, 83–85 cm) OBSERVER: GUY WHERE SAMPLED: Pillow rim.

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Hypohyaline.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Plagioclase	0.1	0.1	1.0	–	Euhedral	Cores are altered to sericite(?). Rims are generally fresh.
GROUNDMASS Plagioclase	17	17	0.01–0.5	An _{60–70}	Euhedral.	Plagioclase microlites are common. Some alteration of cores.
Clinopyroxene	9	9	0.1–0.2	–	Subhedral.	Brown pleochroism, generally fresh but minor alteration observed.
Olivine	0	5	0.2–0.4	–	Euhedral.	Completely altered to red clay (iddingsite?).
Oxides	0	4	<0.01	–	Euhedral.	Completely altered to limonite.
Glass	0	65	<5	–	Irregular.	Glass and microlites altered to brown iron-stained clays and calcite.
SECONDARY MINERALOGY	REPLACING/ PERCENT	FILLING				COMMENTS
Clays	5	Olivine.				Generally a red clay (iddingsite?).
Clays	65	Glass/microlites.				Various unidentified phases present.
Calcite	<1	Glass				More common near upper margin of pillow.
Limonite	4	Oxides				Oxides gone from upper margin of pillow.
VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	
Vesicles	3	Even.	0.6	Clay.	Round.	Segregation vesicles filled with up to 3 generations of green and yellow clay and limonite.

COMMENTS: Section through formerly glassy margin and variolitic zone of uppermost pillow fragment.

136-843A-3R-01 (Piece 1B, 93-94 cm) OBSERVER: GUY WHERE SAMPLED: Pillow interior.

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Plagioclase	0.1	0.1	1.0	—	Euhedral.	Cores are altered to sericite(?). Rims are fresh.
GROUNDMASS Plagioclase	31	31	0.01-0.4	An ₆₀₋₇₀	Euhedral.	Generally fresh glomerocrysts, Microlites also present.
Clinopyroxene	17	17	0.1-0.2	—	Subhedral.	Brown pleochroism, generally fresh.
Olivine	0	11	0.1-0.5	—	Euhedral.	Generally altered to a green clay except near cross-cutting vein where a red clay (iddingsite?) occurs.
Oxides	15	15	<0.1	—	Euhedral	Magnetite and ilmenite are present.
Glass	0	26	<3	—	Irregular.	Completely altered to yellow and brown clays.
SECONDARY MINERALOGY	REPLACING/ PERCENT	FILLING				COMMENTS
Clays	11	Olivine.				Both red and green clays are observed.
Clays	26	Glass.				Brown to gray in color.
Carbonate	<1	Vein filling.				Also associated with olivine alteration.
VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	
Vesicles	3	Even.	0.4-0.5	Clays.	Round.	Segregation vesicles filled with clays.
Vein	<1	Random.	0.2	Clays, limonite, zeolite.	30-45 degrees.	In the vicinity of the vein, the cores of the plagioclases are commonly altered. Olivines tend to be altered to a red clay plus limonite near the vein.

COMMENTS: The matrix of this sample is much finer grained and more highly altered than the matrix of basalts from Section 136-843A-3R-2.

136-843A-3R-02 (Piece 1, 5–6 cm) OBSERVER: GUY WHERE SAMPLED: Flow interior.

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	0.1	0.1	1.0–2.0	–	Euhedral.	Cores are altered to sericite(?). Rims are fresh.
GROUNDMASS						
Plagioclase	36	36	0.1–0.4	An _{60–70}	Euhedral.	Fresh glomerocrysts, average size 0.2 mm.
Clinopyroxene	22	22	0.1–0.2	–	Subhedral.	Brown pleochroism, appear to be fresh.
Olivine	0	16	0.1–0.4	–	Euhedral-Subhedral.	Completely altered to green or reddish-brown clay.
Glass	0	11	<0.1	–	Irregular.	Altered to clay minerals.
Oxides	15	15	<0.1	–	Euhedral.	Magnetite and ilmenite are present.
SECONDARY MINERALOGY						
	PERCENT	REPLACING/ FILLING				COMMENTS
Clays	16	Olivine.				Green or reddish-brown clays.
Clays	11	Glass.				Brown, green and yellow clays.
Carbonate	<1	Glass				Not common.
VESICLES/CAVITIES						
	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	
Vesicles	1	Even.	0.6	Clay.	Round.	Segregation vesicles filled with green clay minerals.

136-843A-3R-02 (Piece 3, 26–28 cm) OBSERVER: GUY WHERE SAMPLED: Flow interior.

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	0.1	0.1	1.0–2.0	–	Euhedral.	Cores are altered to sericite(?). Rims are fresh.
GROUNDMASS						
Plagioclase	39	39	0.2–0.4	An _{60–70}	Euhedral.	Fresh glomerocrysts, average size 0.2 mm.
Clinopyroxene	26	26	0.1–0.6	–	Subhedral.	Brown pleochroism, appear to be fresh
Olivine	0	22	0.1–0.4	–	Euhedral-Subhedral.	Completely altered to green or reddish-brown clay.
Oxides	11	11	<0.1	–	Euhedral.	Magnetite and ilmenite are present.
Glass	0	2	<0.05	–	Irregular.	Altered to clay minerals. Primarily associated with glomerocrysts.
SECONDARY MINERALOGY						
	PERCENT	REPLACING/ FILLING				COMMENTS
Clays	22	Olivine.				Generally a green clay mineral.
Clays	2	Glass.				Generally a yellow to green clay.
VESICLES/CAVITIES						
	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	
Vesicles	<1	Even.	0.3–0.5	Clay.	Round.	Segregation vesicles filled with green clays.

COMMENTS: This basalt has the least interstitial glass and has a coarser matrix than the other basalts observed. It is also probably the least altered in Hole 843A.

136-843B-1R-01 (Piece 1, 7–8 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow interior

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
GROUNDMASS						
Plagioclase	45	45	1.4	An ₆₀₋₇₀	Euhedral.	Fresh glomerocrysts; Undulatory extinction.
Clinopyroxene	18	18	0.3	-	Subhedral.	Fresh with brown pleochroism; Some with zoning.
Olivine	10	16	0.3	-	Euhedral to Subhedral	Some fresh and some altered to blue-green clays.
Oxides	12	12	0.2	-	Euhedral.	Magnetite identified.
Glass	1	9	<0.1	-	Irregular.	Interstitial glass; Fresh, devitrified and altered glass present.
SECONDARY MINERALOGY						
	REPLACING/ PERCENT	FILLING				COMMENTS
Clays	6	Olivines				Green clay mineral
Clays	11	Glass				Green clay mineral
VESICLES/ CAVITIES						
	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	1	Even	0.4–1	Clay	Round	Segregation vesicles with generations of alteration minerals. Fan-shaped yellow, red and white birefringent alteration phase.
Veins	<0.1	Irregular	<0.1	Calcite, clays	40–60 degree orientation	Alteration more intense in vicinity of calcite in veins.

COMMENTS: Probably part of the interior of a massive flow. Large blocky plagioclase crystals sometimes show an undulatory extinction. Segregations of finer grained plagioclase, olivine and clinopyroxene suggest a late stage separation of residual melt. Globules of primary sulfide minerals are found in the interstitial glass.

136-843B-1R-01 (Piece 5, 72-74 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow interior

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	<0.1	<0.1	1.0	-	Euhedral	Generally fresh
GROUNDMASS						
Plagioclase	45	45	0.6	An ₈₂ ?	Subhedral.	Fresh glomerocrysts
Clinopyroxene	28	28	0.1	-	Subhedral.	Fresh with brown and pink pleochroism
Olivine	5	10	0.1	-	Subhedral.	Some fresh and some altered to clay
Oxides	10	10	0.2	-	Euhedral.	Alteration to sulfide observed
Glass	2	7	<0.01	-	Irregular.	Interstitial glass largely altered
SECONDARY MINERALOGY						
Clays	PERCENT 5	REPLACING/ FILLING Olivines				COMMENTS Both red alteration phase (jiddingsite?) and green clays.
Clays	5	Glass				A malachite-colored green clay predominates
Sulfides	<0.1	Olivines, Magnetite				Pyrrhotite and chalcopyrite found replacing magnetite and olivines Large (0.8 mm) grains found inside associated veins

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	1	Even	0.8	Clays	Round	Segregation vesicles filled with green clays

COMMENTS: The description is for the freshest part of the thin section away from fractures and the major veins which cross-cut the sample. There is one major vein 2 mm wide which is in turn cross-cut by two smaller veins about 0.1 mm wide. The large sulfide grains are found only in the later veins. The sulfides appear to be associated with the alteration of olivines and more rarely magnetite. There are also later stage veins which follow and bisect the earlier veins and have deposited an amorphous phase.

136-843B-1R-02 (Piece 3, 23-25 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow margin

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Hypohyaline.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Plagioclase	<0.1	<0.1	1	-	Euhedral	Generally fresh
GROUNDMASS Plagioclase	12	12	0.3	An ₇₀	Euhedral	Generally fresh glomerocrysts of Plag.-Olivine-Cpx 0.6-1.0 mm in diameter
Clinopyroxene	9	9	0.1	-	Subhedral	Generally fresh with brown pleochroism
Olivines	0	4	0.1	-	Euhedral-Subhedral	Altered to green clays
Oxides	8	8	<0.01	-	Euhedral	Very finely disseminated
Glass	0	57	<1	-		Irregular Glass has been devitrified and altered to clays
Microclites	10	10	<0.01	-	Microclitic	Fine-grained mixture of glass, plagioclase laths and clinopyroxene which cannot be resolved under the microscope.
SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING				COMMENTS
Clays	4	Olivines				Green Clays
Clays	57	Glass				Mottled brown color; Alteration more intense in light colored areas
VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	1	Even	0.5	Clay	Round	Filled with yellow and green clays and limonite

COMMENTS: The modal mineralogy description is for the freshest part of the thin section away from veins and vugs. The basalt contains about 10 percent vugs partially filled with dark green and yellow clays and calcite. The largest vug has a diameter of 8 mm and contains a 2 mm filling of secondary minerals and 3 mm of void. Veins with widths between 0.2 and 0.4 mm connect the vugs to one another.

136-843B-1R-02 (Piece 5A, 35-37 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow margin

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Hypohyaline.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Plagioclase	0.1	0.1	1.0	-	Euhedral	Generally fresh
GROUNDMASS Plagioclase	10	10	<0.5	An ₇₀	Euhedral	Generally fresh glomerocrysts of Plag-Cpx-Ol 0.4-2.0 mm in diameter
Clinopyroxene	7	7	<0.3	-	Subhedral	Generally fresh crystals with brown pleochroism
Olivine	1	5	<0.2	-	Subhedral	Some fresh and some altered to green clays
Oxides	9	9	<0.02	-	Euhedral	Very finely disseminated
Glass	0	51	<1	-	Irregular	Glass is devitrified and altered to clays
Microlites	10	10	<0.01		Microlitic	Fine-grained mixture of glass, plagioclase laths and clinopyroxene; some altered
SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING				COMMENTS
Clays	4	Olivines				Green clays
Clays	51	Glass, microlites				Darker near the contact with the calcite-rich layer
VESICLES/ CAVITIES Vesicles	PERCENT <1	LOCATION Even	SIZE (mm) <0.5	FILLING Clay	SHAPE Round	COMMENTS Limonite, green and yellow clays

COMMENTS: The modal mineralogy estimate is for the least altered portion of the thin section away from the contact with the overlying white layer. This contact appears to be depositional in nature, with clasts of what appears to have been basalt, now completely altered to clays, in sedimentary contact with the hypohyaline basalt. The white layer consists mainly of calcite along with an amorphous phase, possible opal. Both plagioclase and clinopyroxene appear to remain fresh to within 1 mm of the contact zone.

136-843B-1R-03 (Piece 1, 27–28 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow interior

ROCK NAME: Aphanitic basalt

GRAIN SIZE: Fine-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	0.1	0.1	1.0	-	Euhedral	Some alteration
GROUNDMASS						
Plagioclase	45	45	0.5	-	Euhedral	Some slight alteration
Clinopyroxene	30	30	0.2	-	Subhedral	Some slight alteration; Brown pleochroism
Olivine	0	10	0.3	-	Subhedral	Altered to brown-green clays
Oxides	10	10	0.3	-	Euhedral	Large magnetites
Glass	0	5	<0.01	-	Irregular	Interstitial glass; Altered to brownphase
SECONDARY MINERALOGY						
Clays	10	REPLACING/ FILLING Olivine				Yellow clay and brown limonite
Clays	5	Glass				Blue-green and light-green clays

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	<1	Even	0.4	Limonite, Clay	Irregular	Rims are brown clay and centers are green clay

COMMENTS: The modal mineral composition is based on examination of the least altered part of the thin section away from any veins. There are three major veins in this rock. The largest is 8 mm wide and results from the intersection of three smaller veins. The veins contain calcite, green clays, limonite, and a gray to dark grayish green zeolite (1.2 mm radiating blades). Hematite is found as an alteration product in the groundmass. There was some severe plucking of mineral phases during thin section preparation which may have influenced the modal abundances.

136-843B-1R-03 (Piece 4, 83–85 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow interior

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
GROUNDMASS						
Plagioclase	39	39	1.4	An ₅₀ ?	Euhedral	Fresh glomerocrysts; Some with undulatory extinction
Clinopyroxene	21	21	0.3	-	Subhedral	Fresh with brown pleochroism
Olivines	1	19	0.2	-	Subhedral	A few fresh olivines but most altered to blue-green clays
Oxides	8	8	<0.2	-	Euhedral	Large magnetites; Some altered to limonite
Glass	0	12	<0.01	-	Irregular	Altered interstitial glass
SECONDARY MINERALOGY						
Clays	18	REPLACING/ FILLING Olivines				Limonite and green clays
Clays	12	Glass				Mostly brown iron-stained clays
VESICLES/ CAVITIES						
Vesicles	<0.1	Even	0.3	Clay	Round	Brown iron-stained clays
Veins	<1	Even	.01-.06	Clay	Cross-cutting	Brown iron-stained clays, zeolites and calcite

COMMENTS: The degree of alteration of the groundmass of this basalt is related to the number and proximity to veins.

136-843B-1R-06 (Piece 7, 93-95 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow margin

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Hypohyaline.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	<0.1	<0.1	1	-	Euhedral	Some zoning; Some fresh; some with altered cores
GROUNDMASS						
Plagioclase	4	4	0.3	An ₆₅	Euhedral	Fresh glomerocrysts
Clinopyroxene	4	4	<0.1	-	Euhedral-Subhedral	Fresh with brown pleochroism
Olivine	0	1	<0.1	-	Euhedral	Olivine is not very common; Alters to a blue-green clay
Oxides	12	12	<0.01	-	Euhedral	Finely disseminated
Glass	0	60	<1	-	Irregular	Glassy matrix to rock; Altered to brown clays
Microlites	19	19	<0.01	-	Microclitic	Fine-grained mixture of glass, plagioclase laths and clinopyroxene; some altered
SECONDARY MINERALOGY						
Clays	PERCENT 1	REPLACING/ FILLING Olivines				COMMENTS Blue-green clays with some limonite
Clays	60	Glass and microlites				Brown iron-stained clays
Carbonate	<1	Veins				Minor component
VESICLES/CAVITIES						
Vesicles	PERCENT 3	LOCATION Even	SIZE (mm) 0.5	FILLING Clay	SHAPE Irregular	COMMENTS Filled by scaly appearing lizard green-yellow clays, blue-green birefringent fan-shaped minerals and calcite; Up to 4 generations of fillings

COMMENTS: This section may be from the chilled basal margin of a flow and hence the higher vesicle content and their squashed irregular shape. The basalt was very glassy when erupted (73%) and has very few phenocrysts.

136-843B-1R-06 (Piece 8, 102–104 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow margin

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Hypohyaline.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Plagioclase	<0.1	<0.1	1	-	Euhedral	Fresh zoned crystals with some mantling by lower An plagioclase
GROUNDMASS Plagioclase	8	16	<0.2	An ₆₅	Euhedral	Some fresh in glomerocrysts; Some as microlites and indistinguishable from altered
Clinopyroxene	9	9	<0.2	-	Euhedral-Subhedral	Fresh with brown pleochroism even as microlites in groundmass
Olivines	3	4	<0.3	-	Euhedral-Subhedral	Olivines associated with glomerocrysts are usually fresh
Oxides	13	13	<0.01	-	Euhedral	Finely disseminated in groundmass and may be overcounted
Glass	0	51	<2	-	Irregular	Glassy groundmass now devitrified and altered.
Microlites	7	7	<0.01		Microclitic	Fine-grained mixture of glass, plagioclase laths and clinopyroxene that is now altered.
SECONDARY MINERALOGY Clays	PERCENT 1	REPLACING/ FILLING Olivines				COMMENTS Usually solitary grains are altered, those in glomerocrysts are usually fresh
Clays	8	Plagioclase microlites				Altered to a light colored phase
Clays	51	Glass				Altered to a dark brown phase
VESICLES/ CAVITIES Vesicles	PERCENT <1	LOCATION Even	SIZE (mm) 0.3–0.6	FILLING Clay	SHAPE Round	COMMENTS 2 generations of green and brown clays

COMMENTS: Glomerocrysts <0.8 mm diameter floating in a formerly glassy matrix.

136-843B-2R-01 (Piece 16, 106-108 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow margin

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Plagioclase	<0.1	<0.1	1	An ₉₀	Euhedral	Cores generally altered with one exception measured for An content
GROUNDMASS Plagioclase	40	40	0.1	An ₅₀₋₅₅	Euhedral-Subhedral	Individual lath-shaped crystals and multiple crystal glomerocryst; Some alignment of laths
Clinopyroxene	20	20	0.05	-	Subhedral	Associated with lomerocrysts
Olivine	0	11	0.1	-	Subhedral	Associate with glomerocrysts
Oxides	12	13	<0.01	-	Irregular	Magnetite is sometimes altered to limonite
Glass	2	16	<1	-	Irregular	Usually altered and some heavily iron-stained to the point of being opaque, except when associated with interstices of glomerocrysts where some fresh glass exists
SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING				COMMENTS
Clays	11	Olivines				Red limonite stained clays
Clays	14	Glass				Heavily iron-stained
Limonite	1	Fe-Oxides				Fe-oxyhydroxides generally termed limonite
VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	1	Even	0.14	Clays	Round	Heavily iron-stained clays

COMMENTS: This basalt has been strongly oxidized. There is a pronounced alignment of plagioclase laths in some parts of the basalt while other parts have random orientations.

136-843B-2R-02 (Piece 1B, 16–18 cm)

OBSERVER: GUY

WHERE SAMPLED: Contact between flows

ROCK NAME: Hyaloclastite

GRAIN SIZE: Hypohyaline

TEXTURE: Subophitic

Glass Fragment A

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	10	10	2.0	An ₈₅	Euhedral	Single crystals floating in the glass; fresh
Olivine	<0.1	<0.1	<0.05	–	Euhedral-Subhedral	Single crystals; fresh
Clinopyroxene	0.1	0.1	<0.05	–	Euhedral-Subhedral	Single crystals; fresh with brown pleochroism
GROUNDMASS						
Glass	30	90	>5.0	–	Continuous	Light brown, partially devitrified and altered glass
SECONDARY MINERALOGY						
Clays	60	REPLACING/ FILLING Glass				COMMENTS Yellow alteration phase along the glass; dark brown alteration or devitrification patches

Glass Fragment B

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	<0.1	<0.1	1.5-1.0	–	Euhedral	Single crystals floating in the glass; fresh
GROUNDMASS						
Plagioclase	5	5	<1.0	An ₆₅₋₇₀	Euhedral	Single laths
Glass	5	95	–	–	Continuous	Dark brown altered and devitrified glass
SECONDARY MINERALOGY						
Clays	90	REPLACING/ FILLING Glass				COMMENTS Dark brown alteration products and devitrified areas

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	<0.1	Even	0.1	Clay	Round	Yellow clay filling

Comments: The contact between the two glass units is a 14 mm zone of calcite, radial clays and fibrous zeolites. The different An contents of the plagioclases indicate these are distinct flow units. The dark brown altered and devitrified glass unit would appear to be the oldest.

136-843B-4R-01 (Piece 4, 40–42 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow interior

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Very fine-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	<0.1	0.4	-	Euhedral	Completely altered to blue-green clay
GROUNDMASS						
Plagioclase	40	40	<0.2	An ₆₂₋₆₇	Euhedral	Fresh laths and glomerocrysts
Clinopyroxene	25	25	<0.2	-	Subhedral-Anhedral	Fresh with brown pleochroism
Olivine	1	10	<0.1	-	Anhedral	Preserved as interstitial phase in Glomerocrysts
Oxides	12	12	<0.01	-	Euhedral	Finely disseminated
Glass	2	13	<0.01	-	Interstitial	Preserved interstitially in glomerocrysts
SECONDARY MINERALOGY						
Clays	9	REPLACING/ FILLING Olivines				COMMENTS Alteration phases vary from red to green in different parts of section but does not appear to be related the degree of olivine alteration
Clays	11	Glass				Green and brown alteration phases
VESICLES/CAVITIES						
Vesicles	<0.1	LOCATION Even	SIZE (mm) 0.04	FILLING Clay	SHAPE Round	COMMENTS Red stained clay in part of section, green clay in others
Vein	<0.1	One	0.02	Clay	Long	Alteration more intense near vein

COMMENTS: The darker part of the thin section appears to be less altered. Olivines and clays are usually a green color in the darker portions of the section. The lighter part of the section contains the vein.

SITE 843

136-843B-4R-02 (Piece 1A, 7-9 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow interior

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	<0.1	<0.1	0.8	An ₉₀	Euhedral	Fresh anorthitic phenocrysts
GROUNDMASS						
Plagioclase	41	41	<0.4	An ₆₀₋₆₅	Euhedral	Fresh glomerocrysts
Clinopyroxene	25	25	0.2	-	Subhedral-Anhedral	Fresh with brown pleochroism
Olivine	0	16	0.3	-	Subhedral-Anhedral	Altered to brown and green clays
Oxides	9	9	<0.06	-	Euhedral	Magnetite
Glass	0	9	<0.05	-	Irregular	Interstitial trapped liquid now altered
SECONDARY MINERALOGY						
	PERCENT	REPLACING/ FILLING				COMMENTS
Clays	16	Olivines				Brown and green clays
Clays	9	Glass				Green clays
Limonite	<1	Olivine, Glass				Causes iron-staining in parts of section
VESICLES/CAVITIES						
	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	1	Even	0.6	Clays	Round	Brown clay with cracks; Green clay with radial structure and higher birefringence

COMMENTS: This section has the freshest Anorthite-rich phenocrysts.

136-843B-4R-02 (Piece 4A, 89-91 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow margin

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Hypohyaline.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Plagioclase	<0.1	<0.1	1.4	An ₉₀	Euhedral	Fresh Anorthite-rich plagioclase
GROUNDMASS Plagioclase	15	15	<0.6	An ₈₅ ?	Euhedral	Lath-shaped crystals in glomerocrysts around 0.8 mm diameter
Clinopyroxene	9	9	<0.1	-	Subhedral	Fresh with brown pleochroism
Olivine	0	6	<0.2	-	Euhedral	Alteration to green clay and red clay and limonite(iddingsite?)
Oxides	11	11	<0.004	-	Euhedral	Finely disseminated
Glass	0	39	<1	-	Irregular	Brown to green clays
Microlites	20	20	<0.01	-	Microclitic	Fine-grained mixture of glass, plagioclase laths and clinopyroxenes.
SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING				COMMENTS
Clays	6	Olivines				Green-yellow and red clays
Clays	39	Glass				Brown and green clays
VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	1	Even	0.6-0.04	Clay	Round	Filled with bright green radia, yellow and brown clays with 4-5 generations of growth. Some with irregular shape.

COMMENTS: The modal mineralogy of this rock is typical of these formerly glassy rocks that crystallize microlites when quenched. Determination of plagioclase in the quenched phase is made difficult by masking of them by the alteration products of trapped glass. The finely disseminated oxides are also a problem to accurately estimate especially when the surrounding material is nearly opaque.

SITE 843

136-843B-4R-03 (Piece 5, 30–32 cm)

OBSERVER: GUY

WHERE SAMPLED: Flow margin

ROCK NAME: Aphyric basalt.

GRAIN SIZE: Hypohyaline.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	<0.1	<0.1	1	An ₈₀	Euhedral.	Fresh anorthite-rich plagioclase.
GROUNDMASS						
Plagioclase	21	21	<0.4	An _{60–65}	Euhedral.	Fresh glomerocrysts.
Clinopyroxene	12	12	<0.2	-	Subhedral.	Fresh with brown pleochroism.
Olivine	1	6	<0.1	-	Subhedral.	Some fresh olivine and some altered to green clays and red clays.
Oxides	12	12	<0.06	-	Euhedral.	Magnetite.
Glass	0	24	<0.1	-	Irregular.	Altered to green and brown clays.
Microlites	25	25	<0.01	-	Microlitic	Fine-grained mixture of glass, plagioclase laths and clinopyroxenes; some alteration
SECONDARY MINERALOGY						
Clays	5	REPLACING/ FILLING				COMMENTS
Clays	24	Olivines. Glass.				Green and red clays. Dark brown iron-stained clays in some places.
VESICLES/CAVITIES						
Vesicles	<1	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
		Random	0.4	Limonite,	Round.	Brown, green and blue-green clays in 3 generations.
Vein	<1	Random	0.4	Clays.	30–40 degree orientation	Limonite and green clay fillings

COMMENTS: Another typically altered formerly glassy basalt.