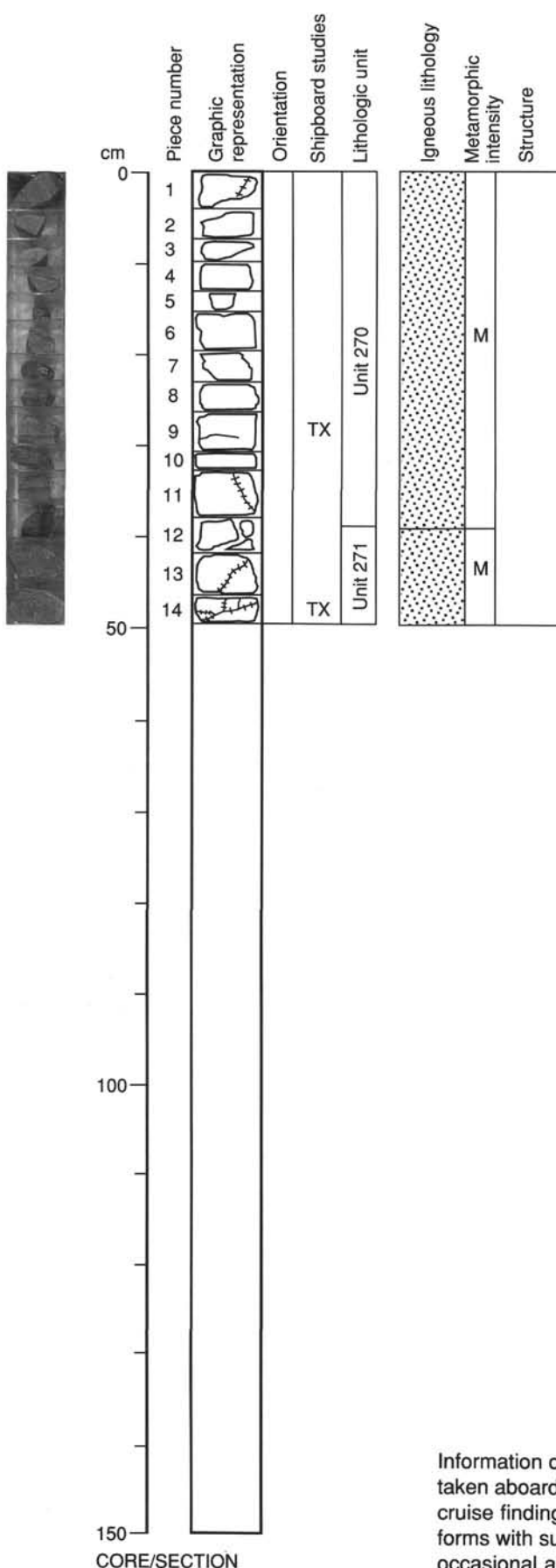


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UNIT 270: SPARSELY PHYRIC PLAGIOCLASE-CLINOPYROXENE DIABASE

Pieces 1-12



2000.4 mbsf

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 1%; 1 mm; euhedral-subhedral.

Clinopyroxene - 0.5%; 1.5 mm; euhedral-subhedral.

Olivine - 0.1%; 1 mm; euhedral.

GROUNDMASS: Texture: Fine-grained intergranular. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

COLOR: Greenish gray (5BG 6/1).

STRUCTURE: Homogeneous.

ALTERATION: Moderately altered (20%). Olivine totally replaced by chlorite, groundmass partly altered to amphibole and secondary plagioclase.

VEINS/FRACTURES: Actinolite veins (<1-2 mm) in Pieces 1 and 11.

ADDITIONAL COMMENTS: Piece 1 has grooved concave surface and probably fell from hole wall.

UNIT 271: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE CLINOPYROXENE DIABASE

Pieces 13-14

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 3%; 1 mm; euhedral-subhedral.

Clinopyroxene - 1%; 2 mm; euhedral-subhedral.

Olivine - 1%; 0.5 mm; euhedral.

GROUNDMASS: Texture: Fine-grained intergranular. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

COLOR: Greenish gray (5BG 6/1).

STRUCTURE: Homogeneous.

ALTERATION: Moderately altered (20%); olivine totally replaced by chlorite and pyrite; groundmass partly altered to amphibole and secondary plagioclase.

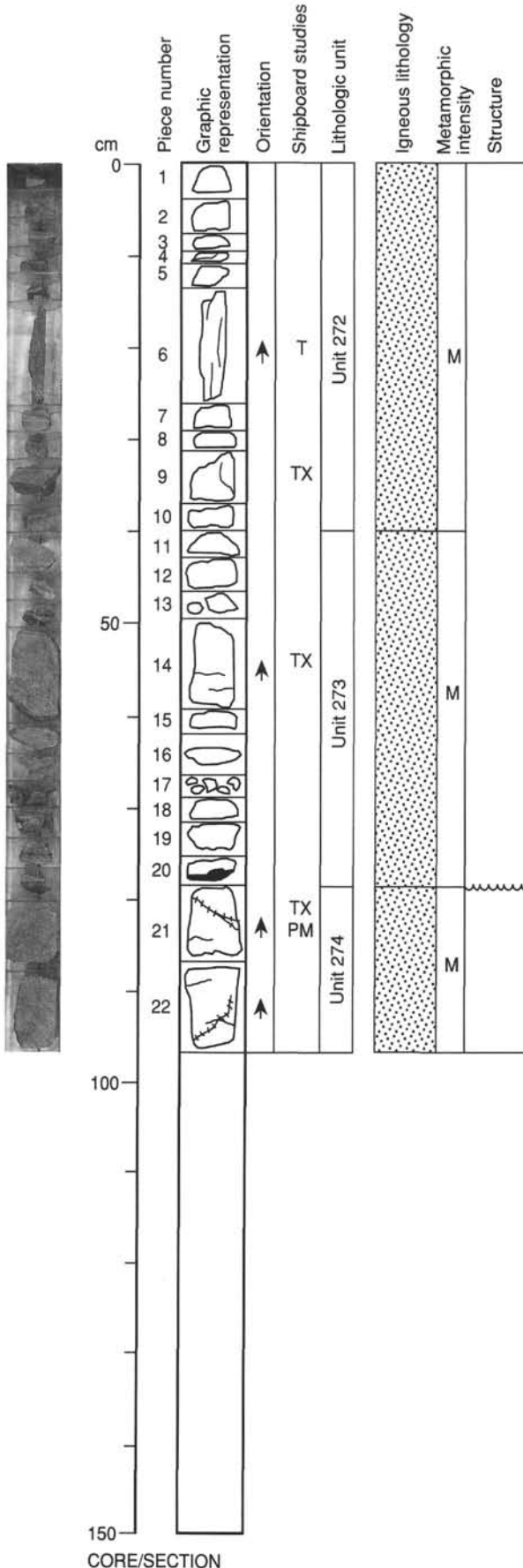
VEINS/FRACTURES: Actinolite veins, (<1-2 mm thick) in Pieces 13 and 14.

CORE/SECTION

Information on Core Description Forms, for ALL sites, represents field notes taken aboard ship. Some of this information has been refined in accord with post-cruise findings, but production schedules prohibit definitive correlation of these forms with subsequent findings. Thus, the reader should be alerted to the occasional ambiguity or discrepancy.

UNIT 272: SPARSELY PHYRIC PLAGIOCLASE DIABASE

Pieces 1–10, 12



CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 1%; 1.5 mm; euhedral-subhedral.

Clinopyroxene - 0.2%; 0.5 mm; subhedral.

Olivine - 0.1%; 0.5 mm.

GROUNDMASS: Texture: Fine-grained porphyritic. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

COLOR: Greenish gray (5G 6/1).

STRUCTURE: Homogeneous.

ALTERATION: Moderately altered (20%). Amphibole and secondary plagioclase after groundmass. Olivine altered to chlorite.

VEINS/FRACTURES: No veins.

ADDITIONAL COMMENTS: Sulfide minerals present (0.1%).

UNIT 273: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE-CLINOPYROXENE DIABASE

Pieces 11, 13–20

CONTACTS: Chilled margin in Piece 20. Interpreted as lower margin of Unit 273.

PHENOCRYSTS:

Plagioclase - 2%; 1 mm; euhedral-subhedral.

Clinopyroxene - 1%; 0.8 mm; subhedral.

Olivine - 2%; 1.5 mm; euhedral-subhedral.

GROUNDMASS: Texture: Fine-grained porphyritic. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

COLOR: Bluish gray (5B 6/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Moderately altered (30%). Amphibole and secondary plagioclase after groundmass. Olivine phenocrysts altered to chlorite and iron oxide (red). A green patch in Piece 14 contains a light green core and a darker margin. The patch (4 cm by >6 cm) extends past the edge of the sample and is subhorizontal.

VEINS/FRACTURES: Chlorite vein (<1 mm) in Piece 14.

ADDITIONAL COMMENTS: Olivine phenocrysts up to 5 mm occur.

UNIT 274: MODERATELY PHYRIC OLIVINE-PLAGIOCLASE-CLINOPYROXENE DIABASE

Pieces 21–22

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 0.5%; 2 mm; euhedral-subhedral.

Clinopyroxene - 0.5%; 2 mm; subhedral.

Olivine - 1.5%; 1.5 mm; euhedral-subhedral.

GROUNDMASS: Texture: Glomeroporphyritic, subophitic, fine-grained. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

COLOR: Bluish gray (5B 5/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Moderately altered (20%–30%). Amphibole and secondary plagioclase after groundmass. Olivine phenocrysts altered to chlorite. Patches of more intensely altered (80%) rock are present (e.g., Piece 22).

VEINS/FRACTURES: Actinolite or chlorite veins (<1-1 mm) in Pieces 21 and 22.

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UNIT 275: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE-CLINOPYROXENE DIABASE

Pieces 1-3

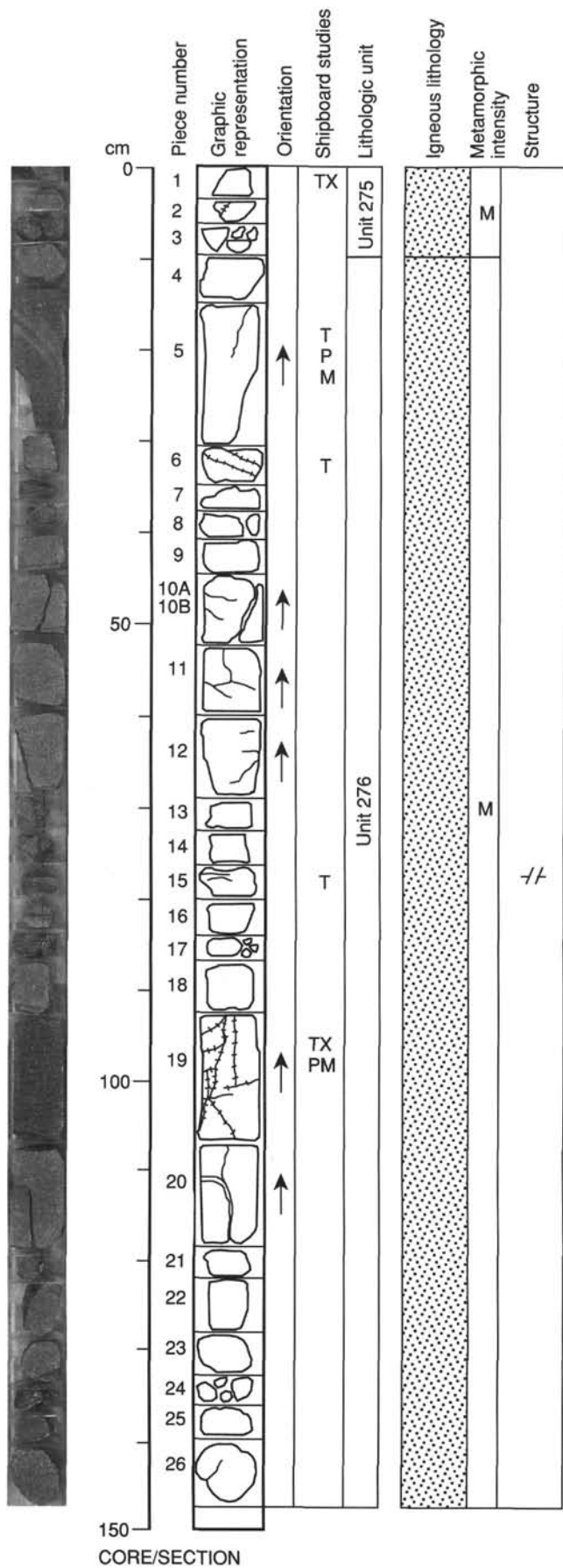
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CONTACTS: None.
PHENOCRYSTS:
 Plagioclase - 1%; 1.5 mm; euhedral-subhedral.
 Clinopyroxene - 0.5%; 2 mm; euhedral-subhedral.
 Olivine - 1%; 1.1 mm; subhedral-euhedral.
GROUNDMASS: Texture: Fine-grained, subophitic. Composition: Plagioclase, clinopyroxene, and oxide minerals.
VESICLES: None.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Homogeneous, massive.
ALTERATION: Moderately altered diabase (20%). Secondary plagioclase and amphibole after groundmass (20%).
VEINS/FRACTURES: 1 mm; one actinolite vein in Piece 2.

UNIT 276: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE-CLINOPYROXENE DIABASE

Pieces 4-26

CONTACTS: None.
PHENOCRYSTS:
 Plagioclase - 4%; 1.5 mm; euhedral-subhedral.
 Clinopyroxene - 1%; 1 mm; subhedral-anhedral.
 Olivine - 1%; 1 mm; euhedral.
GROUNDMASS: Texture: Fine-grained (0.6 mm), hypidiomorphic-granular to subophitic. Composition: Plagioclase, clinopyroxene, and oxide minerals.
VESICLES: None.
COLOR: Bluish gray (5B 5/1 to 5B 6/1).
STRUCTURE: Homogeneous, massive.
ALTERATION: Moderately altered diabase. Secondary plagioclase, amphibole, and disseminated pyrite after groundmass. Olivine completely altered to chlorite. Sparse development of mm-sized white spots composed of soft, fine hydroscopic masses (laumontite?). About 20%-30% of rock is highly altered (80% replacement). The rest of the rock is 20% altered.
VEINS/FRACTURES: The unit contains 17 actinolite-chlorite veins <1-1 mm wide (Pieces 4, 5, 6, 10, 12, 14, 15, 19, and 22). Network of veins in Piece 19.
ADDITIONAL COMMENTS: Piece 15 contains a chilled dikelet with irregular form.

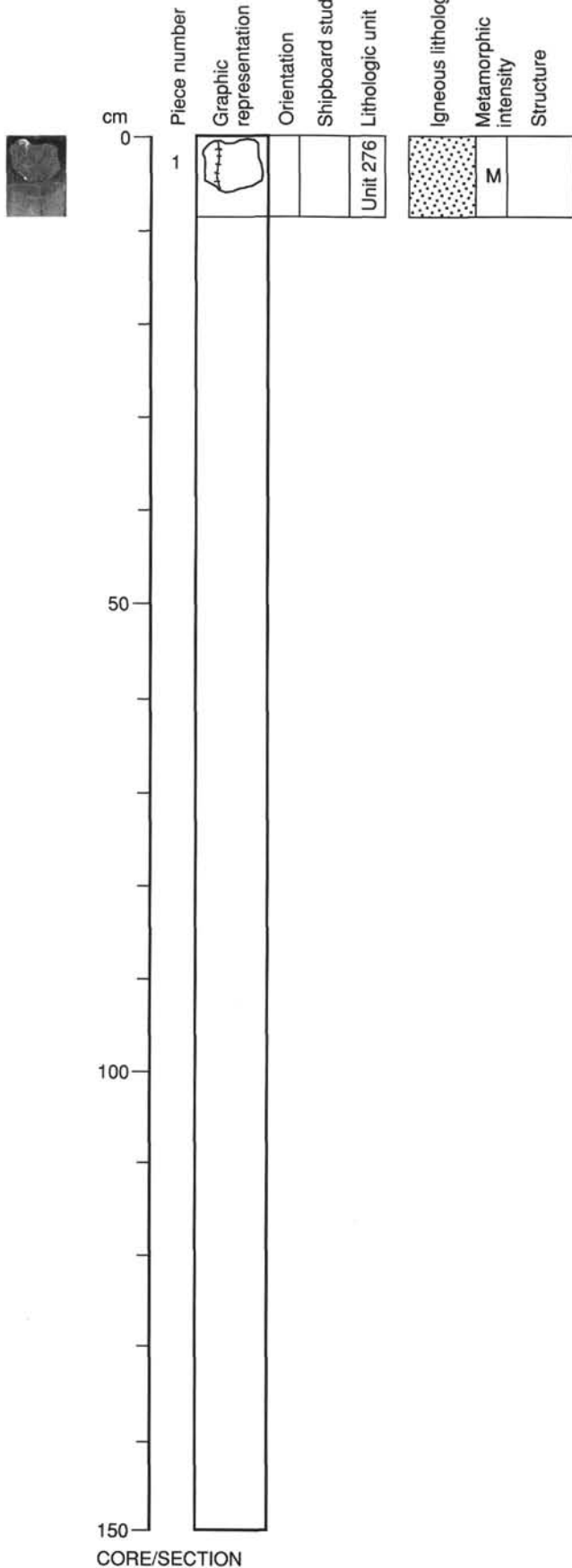


CORE/SECTION

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UNIT 276: MODERATELY PHYRIC PLAGIOCLASE-CLINOPYROXENE-OLIVINE DIABASE

Piece 1



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CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 4%; 1.5 mm; euhedral-subhedral.

Clinopyroxene - 2%; 1 mm; subhedral.

Olivine - 1%; 1 mm; subhedral.

GROUNDMASS: Texture: Fine-grained, hypidiomorphic-granular to subophitic.

Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

COLOR: Bluish gray (5B 5/1 to 5B 6/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Moderately altered diabase. Secondary plagioclase, amphibole, and disseminated pyrite after groundmass. Olivine completely altered to chlorite. Sparse development of mm-sized white spots composed of soft, fine hydroscopic masses (laumontite?). About 20%–30% of rock is highly altered (80% replacement). The rest of the rock is 20% altered.

VEINS/FRACTURES: Piece 1 contains one actinolite vein (1 mm).

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UNIT 276: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE-CLINOPYROXENE DIABASE

Pieces 1-2

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 4%, 1.5 mm, euhedral-subhedral.
 Clinopyroxene - 1%; 1 mm; subhedral.
 Olivine - 1%; 1 mm; euhedral-subhedral.

GROUNDMASS: Texture: Fine-grained, hypidiomorphic-granular to subophitic.
 Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

COLOR: Bluish gray (5B 5/1 to 5B 6/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Moderately altered diabase. Secondary plagioclase, amphibole, and disseminated pyrite after groundmass. Olivine is completely altered to chlorite. Sparse development of mm-sized white spots composed of soft fine hydroscopic masses (laumontite?). About 20%-30% of the interval is highly altered (80% replacement). The rest of the interval is 20% altered.

VEINS/FRACTURES: One actinolite vein, (~1 mm thick) with dark green halo in Piece 2.

UNIT 277: APHYRIC DIABASE

Pieces 3-10

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 0.2%; 1.3 mm; euhedral-subhedral.
 Augite - 0.2%; 1 mm; subhedral-anhedral.
 Olivine - 0.15%; 0.4 mm; euhedral-subhedral.

GROUNDMASS: Texture: Fine-grained, subophitic. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

COLOR: Bluish gray (5B 5/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Moderately altered diabase. Secondary plagioclase and amphibole replace groundmass (20%). Olivine is completely replaced by chlorite.

VEINS/FRACTURES: Three actinolite veins (<1-1 mm wide) occur in Pieces 4, 7, and 9.

UNIT 278: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE-CLINOPYROXENE DIABASE

Piece 11

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 3%; 1 mm; euhedral-subhedral.
 Clinopyroxene - 1%; 1 mm; subhedral.
 Olivine - 1%; 1 mm; euhedral.

GROUNDMASS: Texture: Fine-grained. Composition: Plagioclase, clinopyroxene, and oxide minerals.

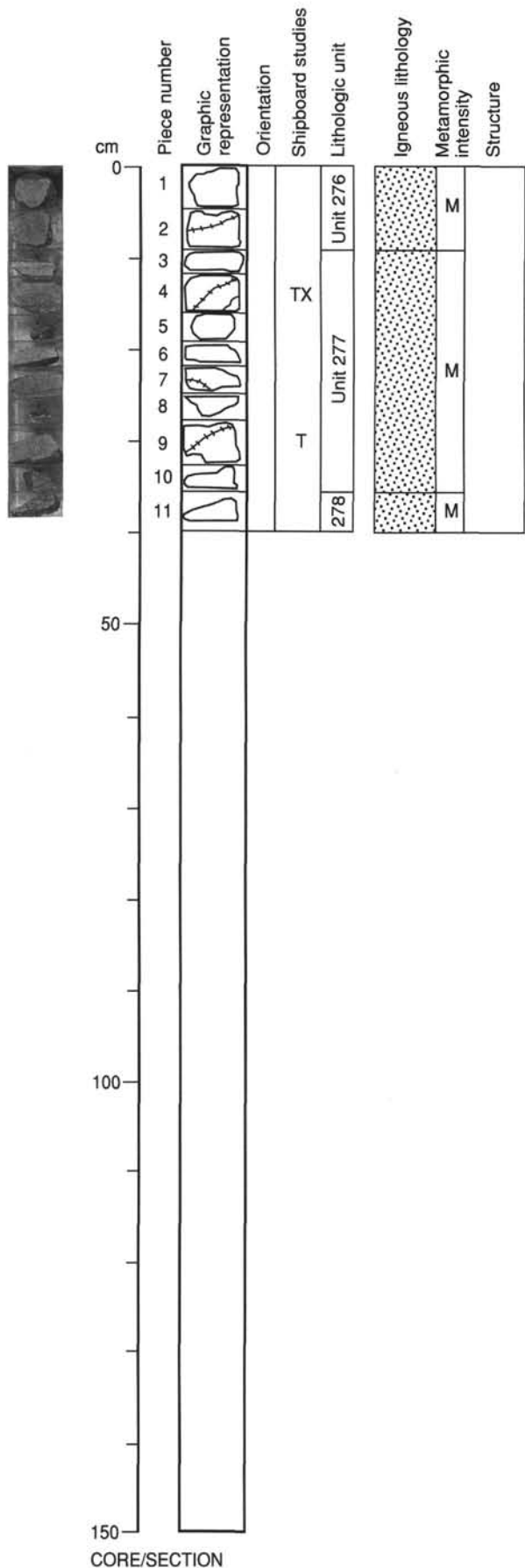
VESICLES: None.

COLOR: Greenish gray - bluish gray (5BG 5/1-5B 5/1).

STRUCTURE: Homogeneous, massive.

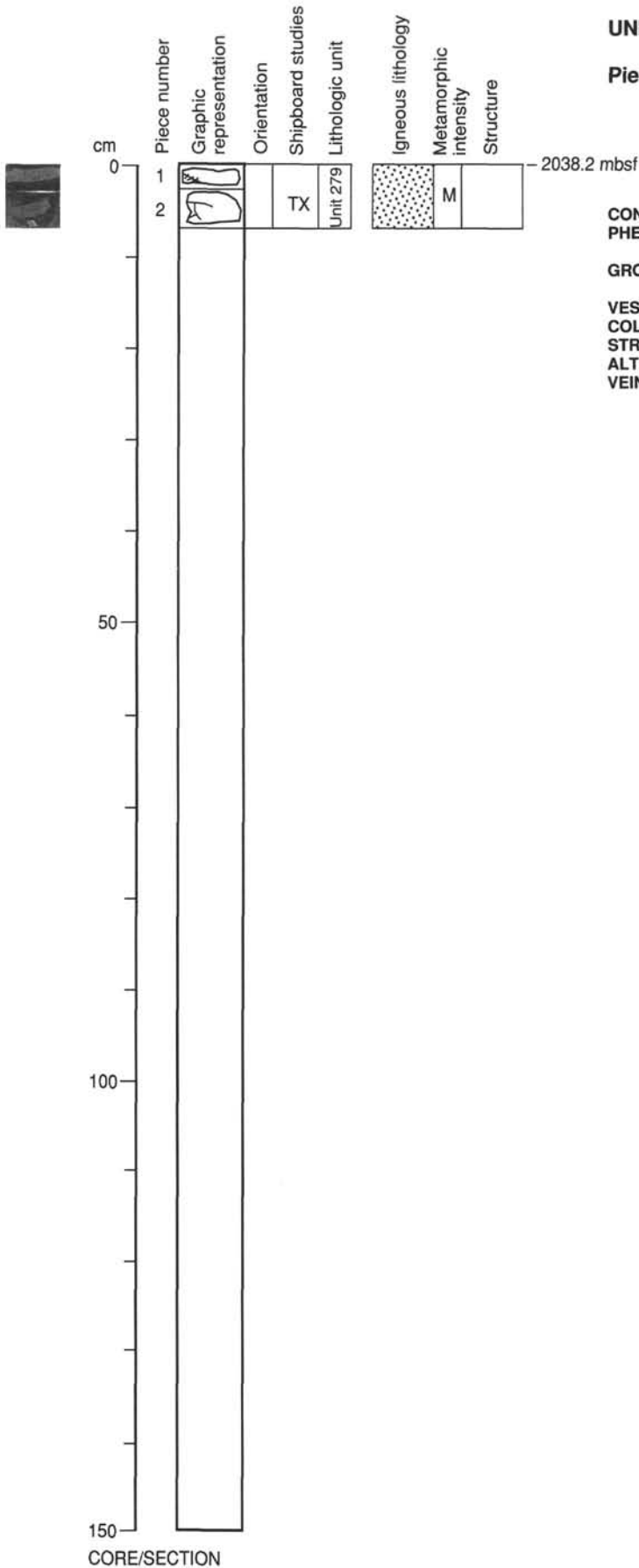
ALTERATION: Variably altered up to 35%.

VEINS/FRACTURES: None.



UNIT 279: APHYRIC DIABASE

Pieces 1-2



CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 0.2%; 1.5 mm; euhedral-subhedral.

GROUNDMASS: Texture: Fine-grained. Composition: Plagioclase, clinopyroxene, olivine, and oxide minerals.

VESICLES: None.

COLOR: Bluish gray (5B 5/1).

STRUCTURE: Homogeneous, massive.

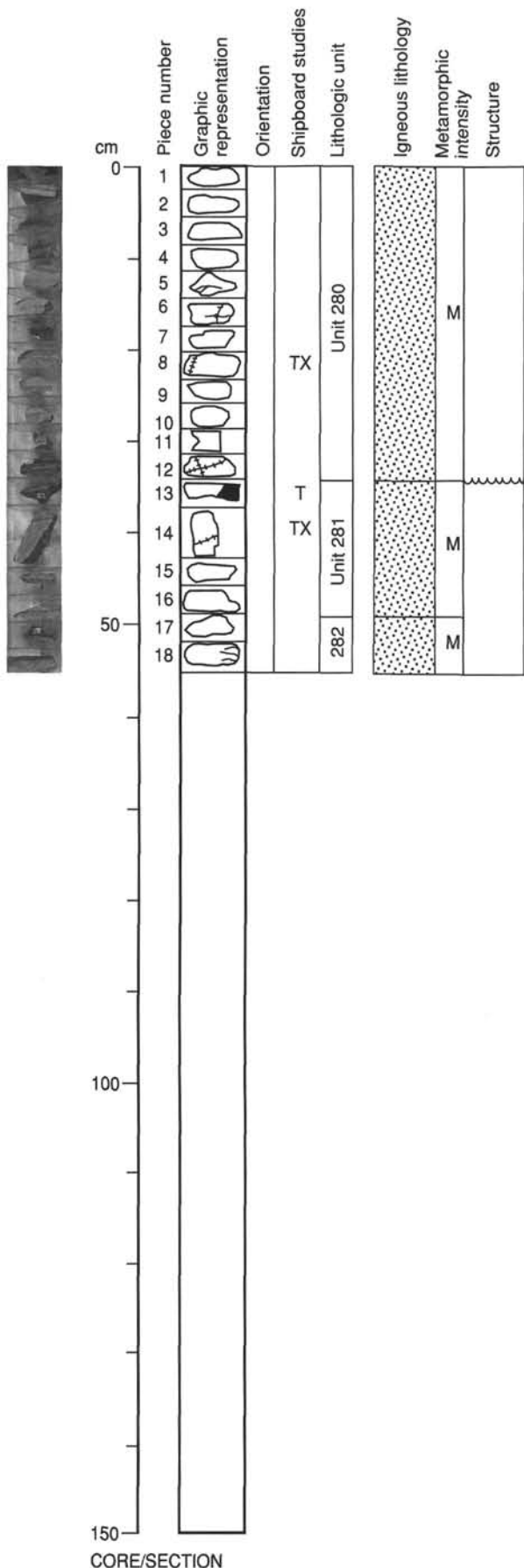
ALTERATION: Slightly to moderately altered (up to 20%).

VEINS/FRACTURES: Dark green vein in Piece 1, no halo.

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UNIT 280: SPARSELY PHYRIC PLAGIOCLASE-CLINOPYROXENE DIABASE

Pieces 1–12



CONTACTS: Chilled contact in Piece 13.

PHENOCRYSTS:

Plagioclase - 1%; 1.5 mm; euhedral-subhedral.

Augite - 1%; 1 mm; euhedral-subhedral.

GROUNDMASS: Texture: Fine-grained, subophitic. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

COLOR: Bluish gray - dark bluish gray (5B 5/1–5B 4/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Slightly to moderately altered (up to 20%).

VEINS/FRACTURES: Dark green veins, each less than 1 mm, are in Pieces 6, 8, and 12; three have light alteration halos.

ADDITIONAL COMMENTS: Unit becomes finer grained downward.

UNIT 281: SPARSELY PHYRIC PLAGIOCLASE DIABASE

Pieces 13–16

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 1.5%; 1.5 mm; euhedral.

Olivine - 0.2%; 1 mm; euhedral-subhedral.

GROUNDMASS: Texture: Fine-grained subophitic. Composition: Plagioclase, clinopyroxene, olivine, and oxide minerals.

VESICLES: None.

COLOR: Greenish gray to dark bluish gray (5BG 5/1–5B 4/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Variably altered, up to 20%.

VEINS/FRACTURES: Four dark green veins (<1 mm wide) in Piece 14. No alteration halos.

ADDITIONAL COMMENTS: A chilled margin occurs in Piece 13. The unit is a mixture of rock types with variable grain size and phenocryst type and abundance. Pieces 14 and 16 have a microcrystalline texture.

UNIT 282: SPARSELY PHYRIC PLAGIOCLASE-CLINOPYROXENE DIABASE

Pieces 17–18

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 0.5%; 1 mm; euhedral, euhedral-anhedral.

Clinopyroxene - 0.5%; 1.5 mm; subhedral-anhedral.

GROUNDMASS: Texture: Fine-grained. Composition: Plagioclase, clinopyroxene, olivine, and oxide minerals.

VESICLES: None.

COLOR: Greenish gray - bluish gray (5BG 5/1–5B 5/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Variably altered (< 20%).

VEINS/FRACTURES: No veins.

UNIT 282: SPARSELY PHYRIC PLAGIOCLASE-CLINOPYROXENE DIABASE

Piece 1

CONTACTS: None.
PHENOCRYSTS:
 Plagioclase - 0.5%; 1 mm; euhedral-anhedral.
 Clinopyroxene - 0.5%; 1.5 mm; subhedral-anhedral.
GROUNDMASS: Texture: Fine-grained. Composition: Plagioclase, clinopyroxene, olivine, and oxide minerals.
VESICLES: None.
COLOR: Greenish gray - bluish gray (5BG 5/1-5B 5/1).
STRUCTURE: Homogeneous, massive.
ALTERATION: Variably altered up to 20%.
VEINS/FRACTURES: None.

UNIT 283: SPARSELY PHYRIC PLAGIOCLASE DIABASE

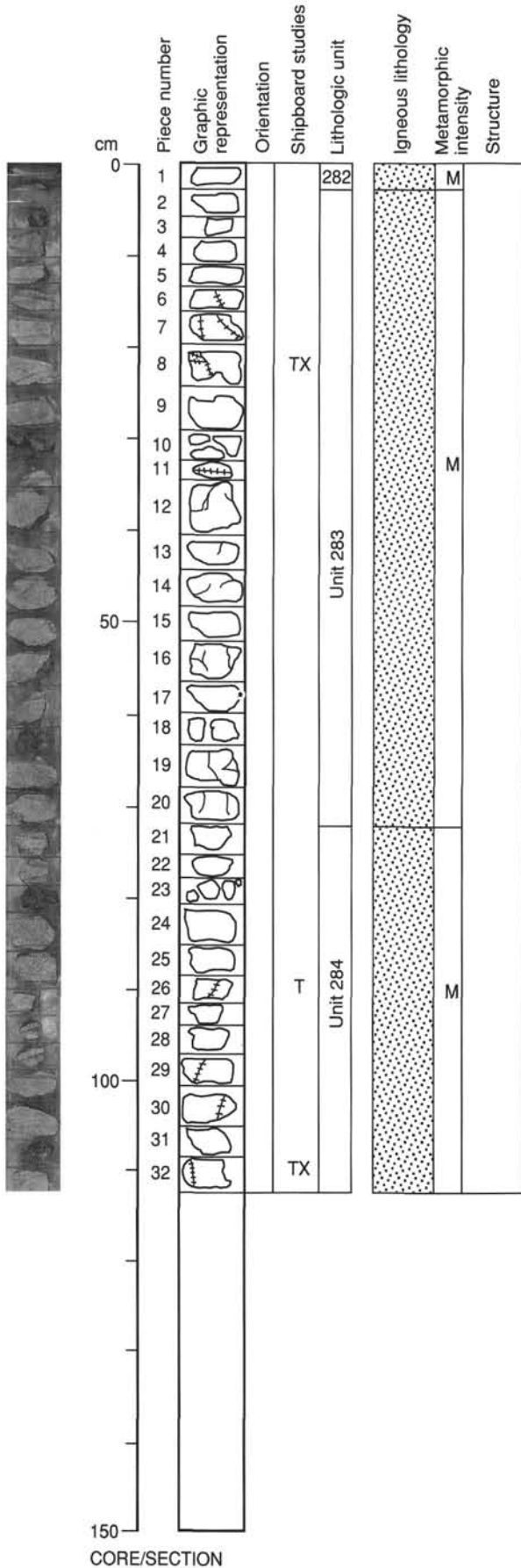
Pieces 2-20

CONTACTS: None.
PHENOCRYSTS:
 Plagioclase - 1%; 1.2 mm; euhedral, equant.
 Olivine - 0.5%; 0.5 mm; euhedral, equant.
GROUNDMASS: Texture: Fine-grained, intergranular, subophitic. Composition: Plagioclase, clinopyroxene, and oxide minerals.
VESICLES: None.
COLOR: Greenish gray to bluish gray (5BG 5/1 to 5B 5/1).
STRUCTURE: Homogeneous, massive.
ALTERATION: Variably altered, with centimeter scale patches of strong alteration comprising approximately 10% of the unit.
VEINS/FRACTURES: The unit contains 5 actinolite veins on Pieces 6, 7, 8, and 11, <1 to 1 mm thick. Four of these have dark alteration halos from 1.5 to 2 mm wide. None of these veins were oriented, however unfilled fractures have moderate to steep dips. Slickensides were developed on these fractures in Pieces 12, 13, 16, 19, and 20. Diking fractures occur in Piece 9.
ADDITIONAL COMMENTS: The grain size of this unit is quite variable but all pieces are fine-grained.

UNIT 284: SPARSELY PHYRIC PLAGIOCLASE-OLIVINE DIABASE

Pieces 21-32

CONTACTS: None.
PHENOCRYSTS:
 Plagioclase - 1%; 1.5 mm; euhedral, equant.
 Olivine - 1%; 0.8 mm; euhedral, equant.
GROUNDMASS: Texture: Fine-grained, subophitic, equigranular. Composition: Plagioclase, clinopyroxene, and oxide minerals.
VESICLES: None.
COLOR: Dark bluish gray to bluish gray (5B 4/1 to 5B 5/1).
STRUCTURE: Homogeneous, massive.
ALTERATION: Variably altered. Moderate alteration of groundmass with centimeter scale patches of strong alteration that forms approximately 10% of the unit.
VEINS/FRACTURES: One actinolite vein, 1 mm thick, with a 4 mm-wide alteration halo in Piece 26 and a second on the surface of Piece 32. One anhydrite (or laumontite?) vein and one chlorite actinolite vein in Piece 24. An actinolite vein on Piece 29. No veins were oriented but open fractures are steeply dipping (<80°). Slickensides are poorly developed on fractures in Pieces 29 and 30. A diking fracture occurs in Piece 29.



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UNIT 284: SPARSELY PHYRIC PLAGIOCLASE-OLIVINE DIABASE

Piece 1

CONTACTS: None.
PHENOCRYSTS:
 Plagioclase - 1%; 1.5 mm; euhedral, equant.
 Olivine - 1%; 0.8 mm; euhedral, equant.
GROUNDMASS: Texture: Fine-grained, subophitic. Composition: Plagioclase, clinopyroxene, and oxide minerals.
VESICLES: None.
COLOR: Dark bluish gray to bluish gray (5B 4/1 to 5B 5/1).
STRUCTURE: Homogeneous, massive.
ALTERATION: Variably altered. Moderate alteration of groundmass with centimeter scale patches of strong alteration that form approximately 10% of the unit.
VEINS/FRACTURES: No veins. No oriented structures. No slickensides on fractures.

UNIT 285: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE DIABASE

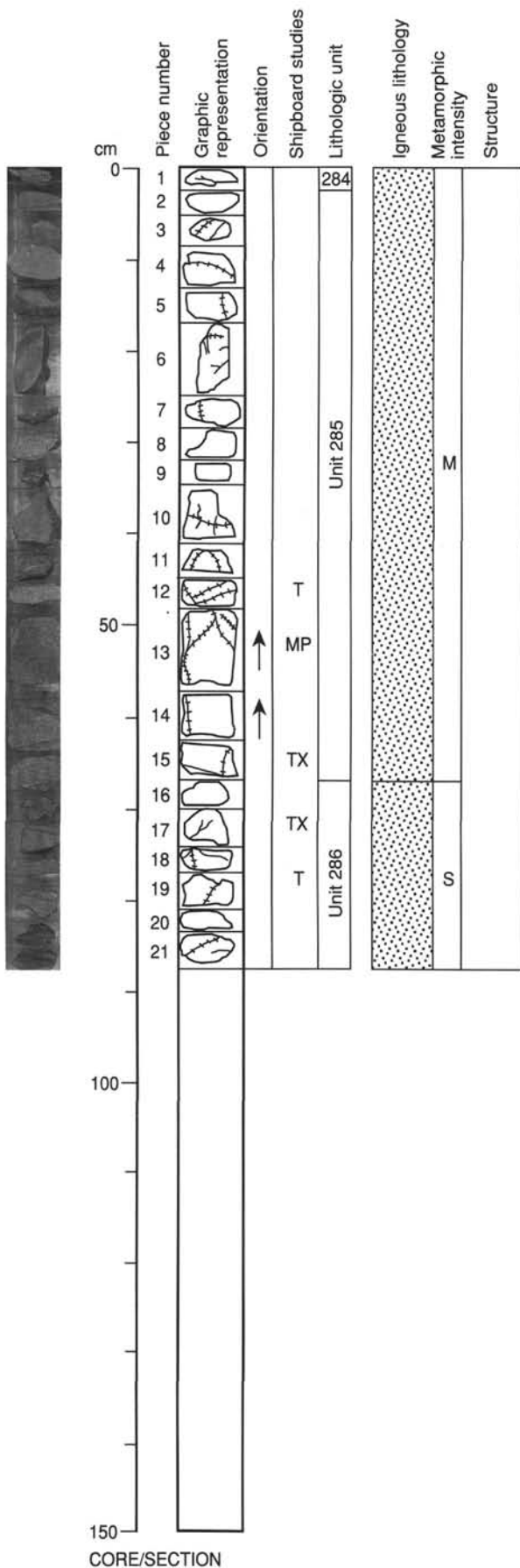
Pieces 2-15

CONTACTS: None.
PHENOCRYSTS:
 Plagioclase - 2%; 1.5 mm; euhedral to subhedral.
 Olivine - 2%; 1 mm; euhedral to subhedral.
GROUNDMASS: Texture: Fine-grained, subophitic. Composition: Plagioclase, olivine, clinopyroxene, and Fe-Ti oxide minerals.
VESICLES: None.
COLOR: Greenish gray (5G 5/1 to 5BG 5/1).
STRUCTURE: Homogeneous, massive.
ALTERATION: Groundmass is moderately, approximately 30%, altered to amphibole. Approximately 5% of the unit is strongly altered.
VEINS/FRACTURES: The unit contains 18 medium green (actinolite) veins <1 to 1 mm wide (Pieces 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, and 15). Ten of these have green alteration halos. Veins in Pieces 4, 5, 10, 11, 12, 13, and 14 were oriented and have dips ranging from 2° to 85°. A chlorite-coated fracture in Piece 10 has a dip of 88°.

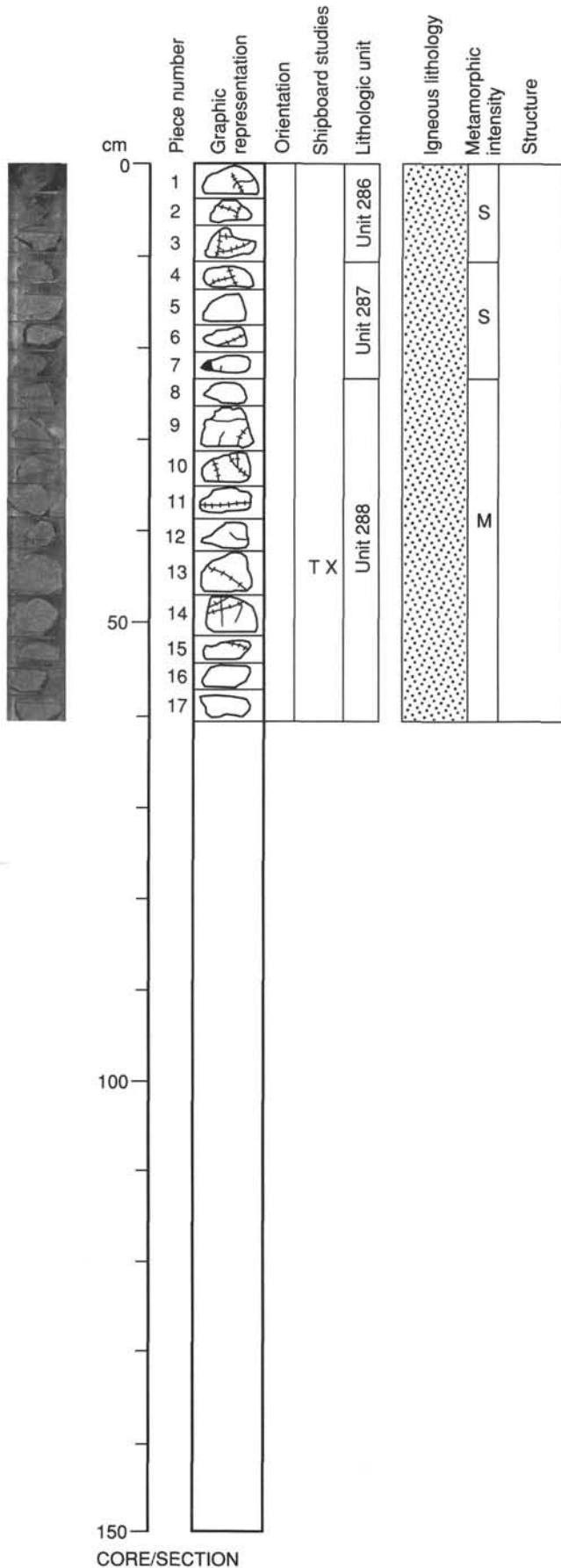
UNIT 286: MODERATELY PHYRIC OLIVINE-PLAGIOCLASE DIABASE

Pieces 16-21

CONTACTS: None.
PHENOCRYSTS:
 Plagioclase - 1%; 0.8 mm; euhedral-subhedral.
 Olivine - 2%; 1 mm; euhedral-subhedral.
GROUNDMASS: Texture: Fine-grained, hypidiomorphic, subophitic. Composition: Plagioclase, clinopyroxene, olivine, and oxide minerals.
VESICLES: None.
COLOR: Gray to greenish gray (5G 5/1).
STRUCTURE: Homogeneous, massive.
ALTERATION: No visible groundmass alteration or alteration patches.
VEINS/FRACTURES: Three actinolite veins (<1.5 mm wide) with complex white halos (1-10 mm wide) in Pieces 18, 19, and 21. No orientable structures. Pieces 16, 17, 18, and 20 have slickensides on fracture surfaces.



CORE/SECTION



UNIT 286: MODERATELY PHYRIC OLIVINE-PLAGIOCLASE DIABASE

Pieces 1-3

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CONTACTS: None.
PHENOCRYSTS:
 Plagioclase - 1%; 0.8 mm; euhedral-subhedral.
 Olivine - 2%; 1 mm; euhedral-subhedral.
GROUNDMASS: Texture: Fine-grained, hypidiomorphic, subophitic. Composition: Plagioclase, clinopyroxene, olivine, and oxide minerals.
VESICLES: None.
COLOR: Gray to greenish gray (5G 5/1).
STRUCTURE: Homogeneous, massive.
ALTERATION: No visible groundmass alteration or alteration patches.
VEINS/FRACTURES: Three actinolite veins (<1 mm wide), both with and without halos, in Pieces 1, 2, and 3. No orientable structures.
ADDITIONAL COMMENTS: Piece 1 is coarser than the rest of the unit.

UNIT 287: MODERATELY PHYRIC OLIVINE- PLAGIOCLASE DIABASE

Pieces 4-7

CONTACTS: Chilled contact with lower unit in Piece 7.
PHENOCRYSTS:
 Plagioclase - 1%; 1 mm; euhedral-subhedral.
 Olivine - 2%; 1 mm; euhedral-subhedral.
GROUNDMASS: Texture: Fine-grained, hypidiomorphic, subophitic. Composition: Plagioclase, olivine, clinopyroxene, and oxide minerals.
VESICLES: None.
COLOR: Greenish gray (5BG 6/1).
STRUCTURE: Homogeneous, massive.
ALTERATION: Groundmass is slightly altered (<10%) but the grain size is too fine for the identification of phases.
VEINS/FRACTURES: Three actinolite veins (<1-2 mm wide), with and without halos, in Pieces 4, 5, 6, and 7B.
ADDITIONAL COMMENTS: Two oriented actinolite veins are present within Piece 4. The gently dipping vein (14°) is truncated by the more steeply dipping vein (73°).

UNIT 288: MODERATELY PHYRIC CLINOPYROXENE-PLAGIOCLASE DIABASE

Pieces 8-17

CONTACTS: None.
PHENOCRYSTS:
 Plagioclase - 0.5%; 1 mm; euhedral.
 Olivine - 0.2%; 1 mm; subhedral.
 Clinopyroxene - 1.5%; 1 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, hypidiomorphic, subophitic. Composition: Plagioclase, clinopyroxene, olivine, and oxide minerals.
VESICLES: None.
COLOR: Greenish gray (5BG 6/1).
STRUCTURE: Massive, homogeneous.
ALTERATION: Moderate alteration (20%) with development of amphibole in groundmass; minor development (<5%) of more highly altered patches.
VEINS/FRACTURES: Eight actinolite +/- chlorite veins (<1-3 mm wide) with complex halos in Pieces 8-11, 13, 15, and 17. Actinolite veins in Pieces 8, 11, 13, and 15 exhibit a wide range of inclinations (10°-70°). A chlorite-coated fracture in Piece 17 dips at 64°.
ADDITIONAL COMMENTS: There is a gradual subtle increase in grain size towards the center of this unit.

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UNIT 288: MODERATELY PHYRIC CLINOPYROXENE-PLAGIOCLASE DIABASE

Pieces 1-2

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 0.5%; 1 mm; euhedral.
Olivine - 0.2%; 1 mm; subhedral.
Clinopyroxene - 1.5%; 1 mm; euhedral.

GROUNDMASS: Texture: Fine-grained, hypidiomorphic, subophitic. Composition: Plagioclase, clinopyroxene, olivine, and oxide minerals.

VESICLES: None.

COLOR: Greenish gray (5BG 6/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Moderate alteration (20%) with development of amphibole in groundmass; minor development (<5%) of more highly altered patches.

VEINS/FRACTURES: Two actinolite veins (<1 mm wide) with halos in Piece 2.

ADDITIONAL COMMENTS: No oriented structures.

UNIT 289: APHYRIC BASALT

Piece 3

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 0.2%; 0.25 mm; euhedral-subhedral.
Olivine - 0.2%; 0.3 mm; subhedral.

GROUNDMASS: Texture: Aphanitic, microcrystalline. Composition: Indeterminable.

VESICLES: None.

COLOR: Gray (5B 5/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: No visible alteration.

VEINS/FRACTURES: One chlorite vein (2 mm wide) with halo.

ADDITIONAL COMMENTS: No oriented structures.

UNIT 290: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE DIABASE

Pieces 4-28

CONTACTS: Chilled lower contact with Unit 291. Contact dips at 76°.

PHENOCRYSTS:

Plagioclase - 2%; 1 mm; euhedral-subhedral.
Olivine - 1%; 0.9 mm; euhedral-subhedral.

GROUNDMASS: Texture: Fine-grained, subophitic. Composition: Plagioclase, clinopyroxene, olivine, and oxide minerals.

VESICLES: None.

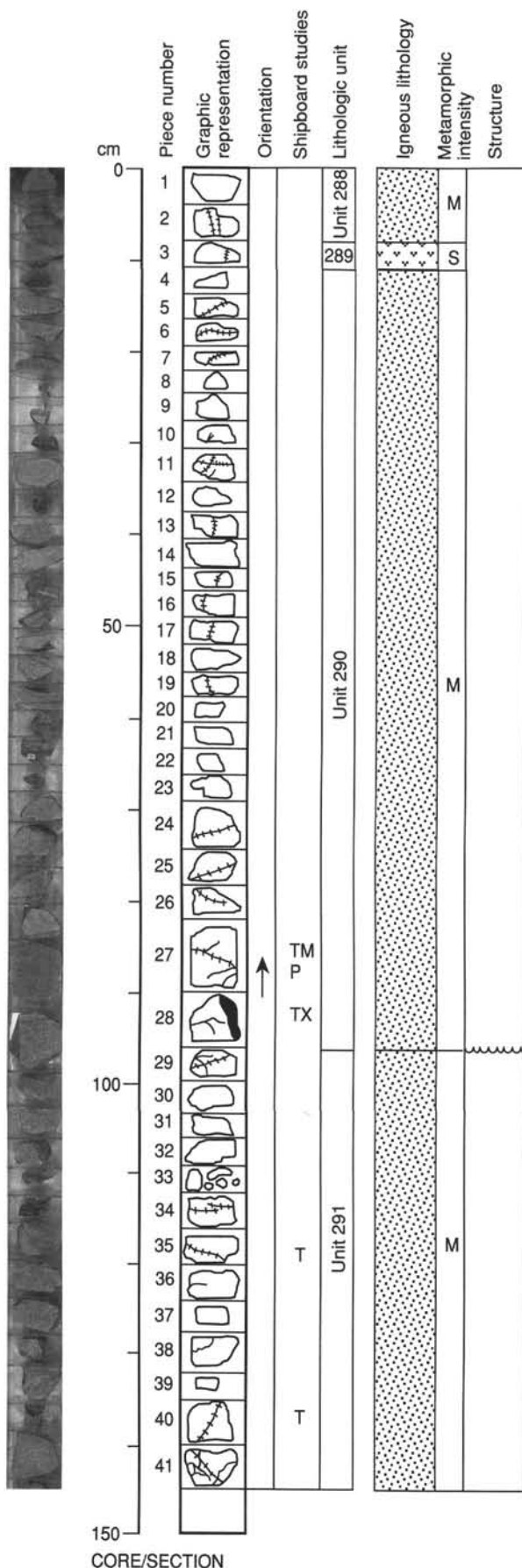
COLOR: Greenish gray (5G 5/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Moderate alteration of groundmass to amphibole (20%); minor development of highly altered patches (<5%).

VEINS/FRACTURES: Sixteen actinolite or chlorite veins (<1-2 mm wide) with associated halos crosscut Pieces 5-7, 11, 13, 15-17, 19-22, and 25-27. Slickensides are present on fractured surfaces in Pieces 5-7, 13-19, 21, and 24. Discing fractures are poorly developed in Pieces 11 and 17. Oriented actinolite veins in Pieces 25-27 dip a less than 45°.

ADDITIONAL COMMENTS: Grain size of groundmass coarsens towards base of unit.



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**UNIT 291: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE-
CLINOPYROXENE DIABASE**

Pieces 29–41

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 1%; 1.2 mm; euhedral-subhedral.
Olivine - 0.5%; 1 mm;; euhedral.
Clinopyroxene - 0.5%; 1 mm; euhedral-subhedral.

GROUNDMASS: Texture: Fine-grained, hypidiomorphic, subophitic. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

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

STRUCTURE: Homogeneous, massive.

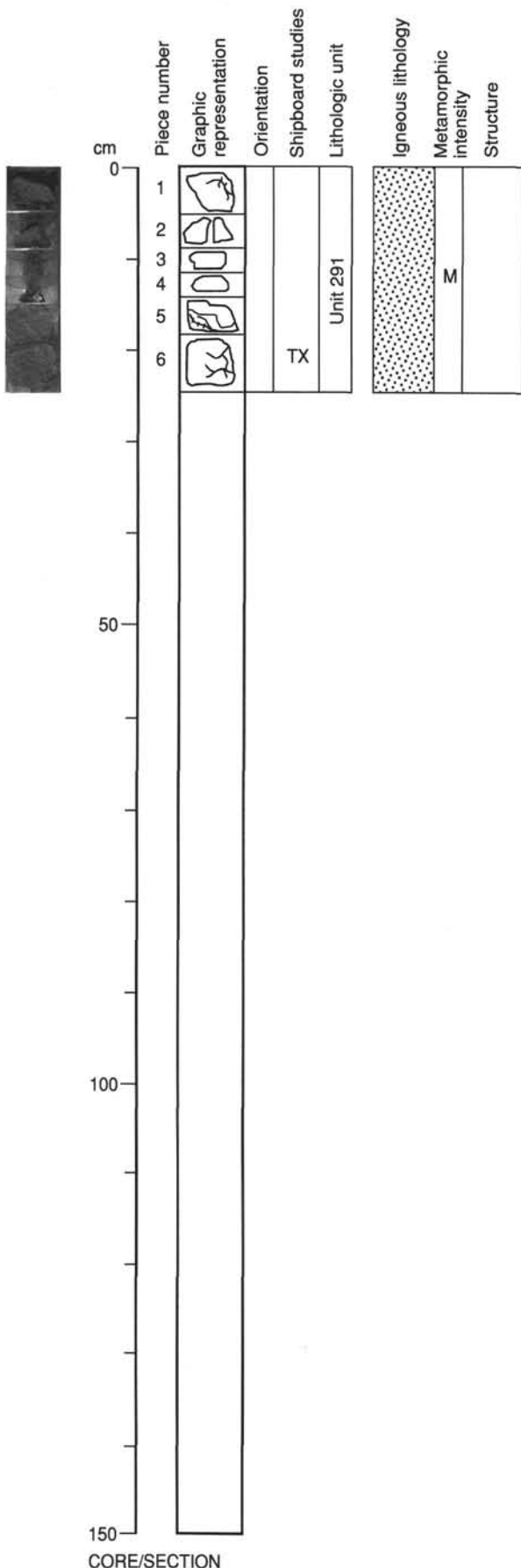
ALTERATION: Moderate alteration of groundmass to amphibole (20%); minor development of highly altered patches (<5%).

VEINS/FRACTURES: Eight actinolite or chlorite veins (<1–3 mm wide), commonly with associated alteration halos, in Pieces 29, 31, 34–35, and 40–41. Actinolite vein in Piece 34 and chlorite-rich vein in Piece 35 are gently dipping (<25°). Chlorite-coated fracture in Piece 34 dips at 76°.

148-504B-249R-2

UNIT 291: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE-CLINOPYROXENE DIABASE

Pieces 1-6



2072.7 mbsf

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 1%; 1.2 mm; euhedral-subhedral.

Olivine - 0.5%; 1 mm; euhedral.

Clinopyroxene - 0.5%; 1 mm; euhedral-subhedral.

GROUNDMASS: Texture: Fine-grained, hypidiomorphic, subophitic. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

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

STRUCTURE: Homogeneous, massive.

ALTERATION: Moderate alteration of groundmass to amphibole (20%); minor development of highly altered patches (<5%). Original igneous texture still visible within alteration patches.

VEINS/FRACTURES: Three chlorite and pyrite veins (<1 mm wide) with associated halos in Pieces 3 and 4. No oriented structures.

ADDITIONAL COMMENTS: Grain size of groundmass coarsens towards base of unit.

UNIT 291: MODERATELY PHYRIC OLIVINE-PLAGIOCLASE-CLINOPYROXENE DIABASE

Pieces 1–28

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 1%; 1.2 mm; euhedral to subhedral.

Olivine - 1.5%; 1 mm; euhedral to subhedral.

Clinopyroxene - 0.5%; 1 mm; euhedral to subhedral.

GROUNDMASS: Texture: Fine-grained, hypidiomorphic, subophitic. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

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

STRUCTURE: Homogeneous, massive.

ALTERATION: Moderate alteration to amphibole (20%); several alteration patches (<5% volume of unit) which still preserve some igneous texture.

VEINS/FRACTURES: Thirty-three chlorite veins (<1 mm) and surface coatings with halos. Seven actinolite veins (<1 to 1 mm thick) with dark halos. Chlorite-coated fractures in Pieces 9, 16, and 17 are steeply (>60°) dipping, while a second set in Piece 17 is shallowly dipping (<10°). Three actinolite veins in Pieces 16 and 25 are moderately dipping (21° to 32°). Pieces 5 and 6 have slickensided fractures.

UNIT 292: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE-CLINOPYROXENE DIABASE

Pieces 29–32

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 2%; 1 mm; euhedral to subhedral.

Olivine - 1.2%; 0.6 mm; subhedral to anhedral.

Clinopyroxene - 1%; 0.8 mm; euhedral to subhedral.

GROUNDMASS: Texture: Fine-grained, hypidiomorphic granular. Composition: Plagioclase, clinopyroxene, and oxide minerals.

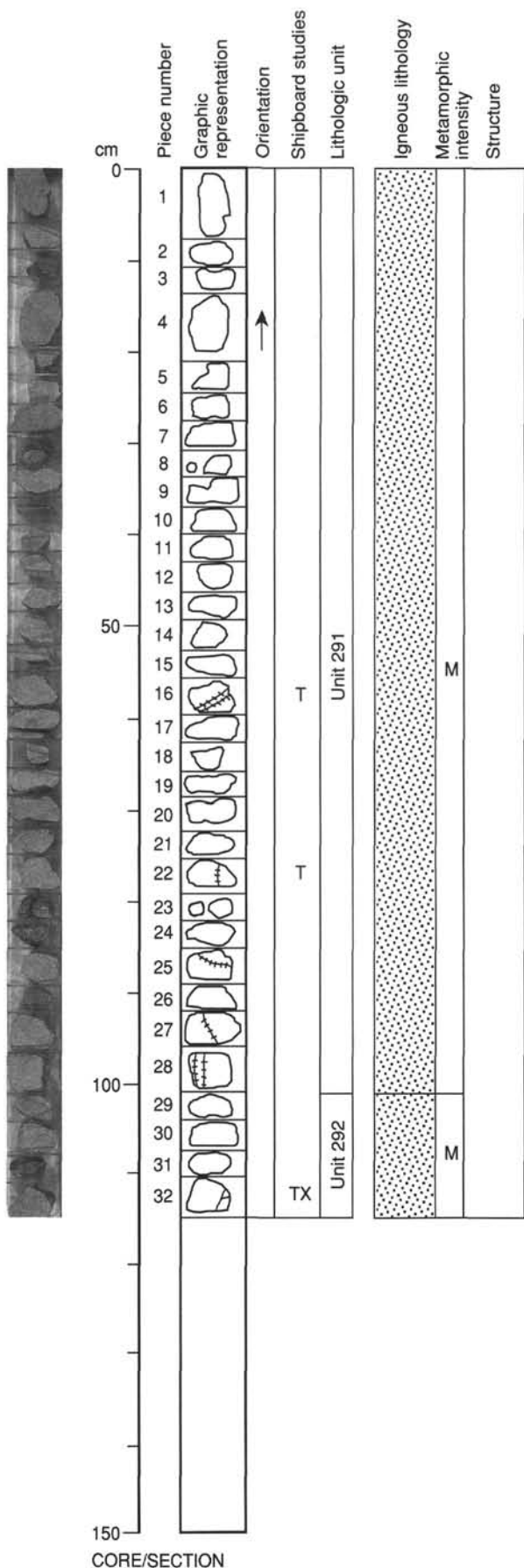
VESICLES: None.

COLOR: Bluish gray to dark bluish gray (5B 5/1 to 5B 4/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Moderate alteration (20%). No alteration patches.

VEINS/FRACTURES: Rare, unoriented, incipient fractures.



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UNIT 292: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE-CLINOPYROXENE DIABASE

Pieces 1-3

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 1%; 1 mm; euhedral to subhedral.
Olivine - 0.5%; 0.5 mm; euhedral to subhedral; equant.
Clinopyroxene - 0.5%; 0.8 mm; euhedral to subhedral; laths and equant.

GROUNDMASS: Texture: Fine-grained, hypidiomorphic granular. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

COLOR: Bluish gray to greenish gray (5B 5/1 to 5BG 5/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Slight alteration; olivine phenocrysts are totally replaced by soft chlorite(?).

VEINS/FRACTURES: Piece 2 contains an chlorite-quartz vein, dipping at 27°, with 3-mm-thick halos.

UNIT 293: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE-CLINOPYROXENE DIABASE

Pieces 4-20

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 2%; 1.5 mm; euhedral.
Olivine - 1.5%; 1 mm; subhedral.
Clinopyroxene - 0.5%; 1 mm; euhedral.

GROUNDMASS: Texture: Fine-grained, inequigranular, subophitic. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

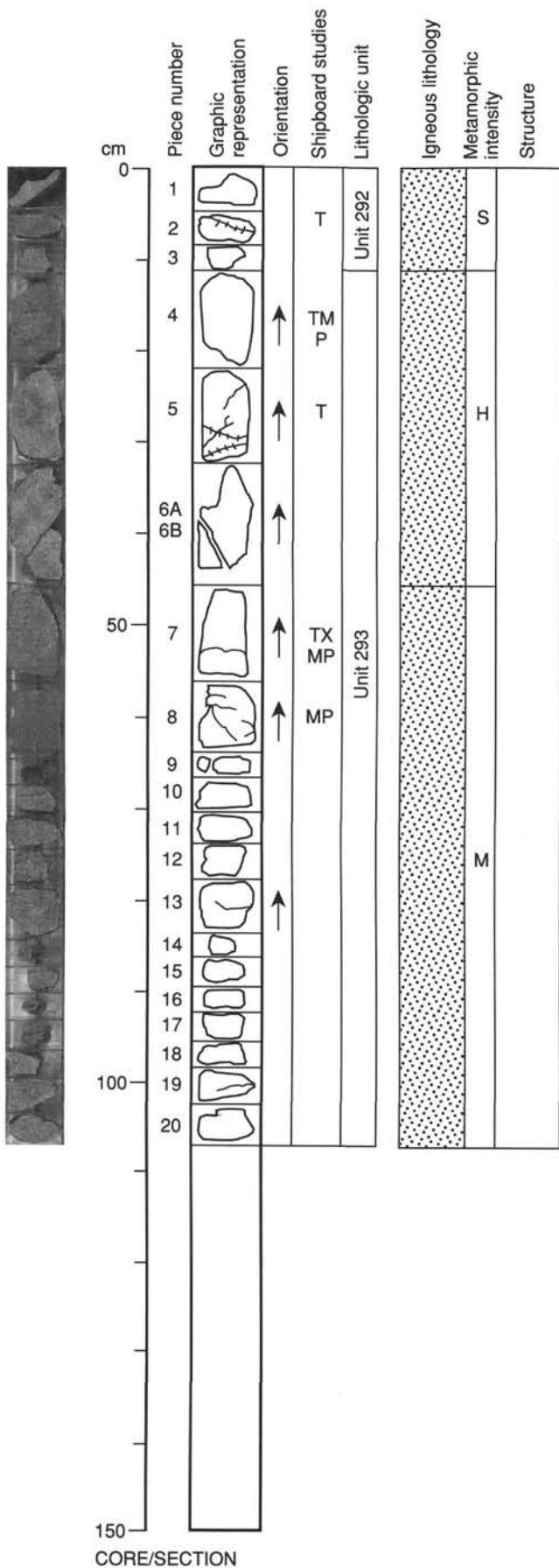
COLOR: Greenish gray (5BG 5/1).

STRUCTURE: Homogeneous, massive.

ALTERATION: Highly altered (60%) to amphibole in Pieces 4 to 6; Piece 4 contains 5-mm epidote amygdules. Pieces 7 to 17 are moderately altered (20%). Green patches of stronger alteration comprise 10% of the unit.

VEINS/FRACTURES: Piece 5 contains an actinolite vein surrounded by a halo 5 to 9 mm wide. The vein dips at 16° to 17°. Pieces 6, 7, and 8 contain 10 chlorite veins with halos. Pieces 5, 6, and 7 have moderately to steeply dipping (37° to 85°) chlorite-coated veins.

ADDITIONAL COMMENTS: An altered chilled margin on the working half of Piece 4 dips at 84°.

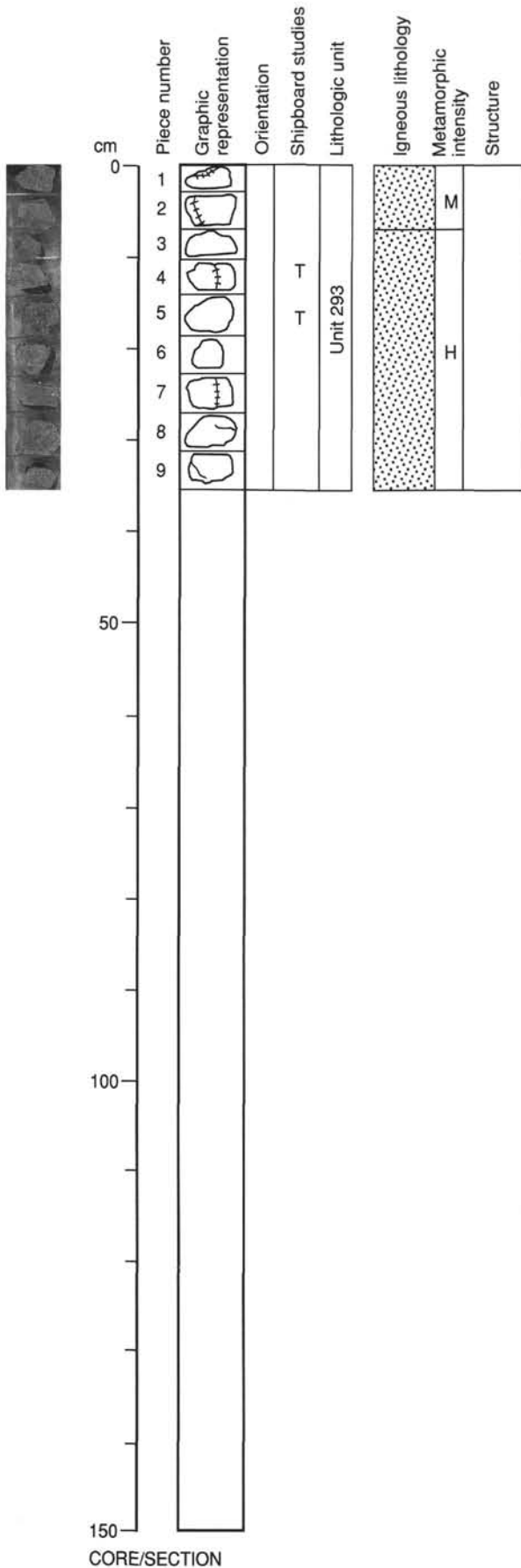


2089.9 mbsf

150
CORE/SECTION

UNIT 293: MODERATELY PHYRIC PLAGIOCLASE-OLIVINE-CLINOPYROXENE DIABASE

Pieces 1-9



2099.4 mbsf

CONTACTS: None.

PHENOCRYSTS:

- Plagioclase - 2%; 1.5 mm; euhedral.
- Olivine - 1.5%; 1 mm; euhedral.
- Clinopyroxene - 0.5%; 1 mm; subhedral.

GROUNDMASS: Texture: Fine-grained intergranular subophitic. Composition: Plagioclase, clinopyroxene, and oxide minerals.

VESICLES: None.

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

STRUCTURE: Homogenous, massive.

ALTERATION: Pieces 1 to 3 are moderately (20%) altered to amphibole; Pieces 4 to 9 are highly altered (60%) to amphibole. Piece 5 contains white-green amygdules (a few mm in size) that may consist of laumontite. Piece 6 contains cm-scale green patches (epidote?).

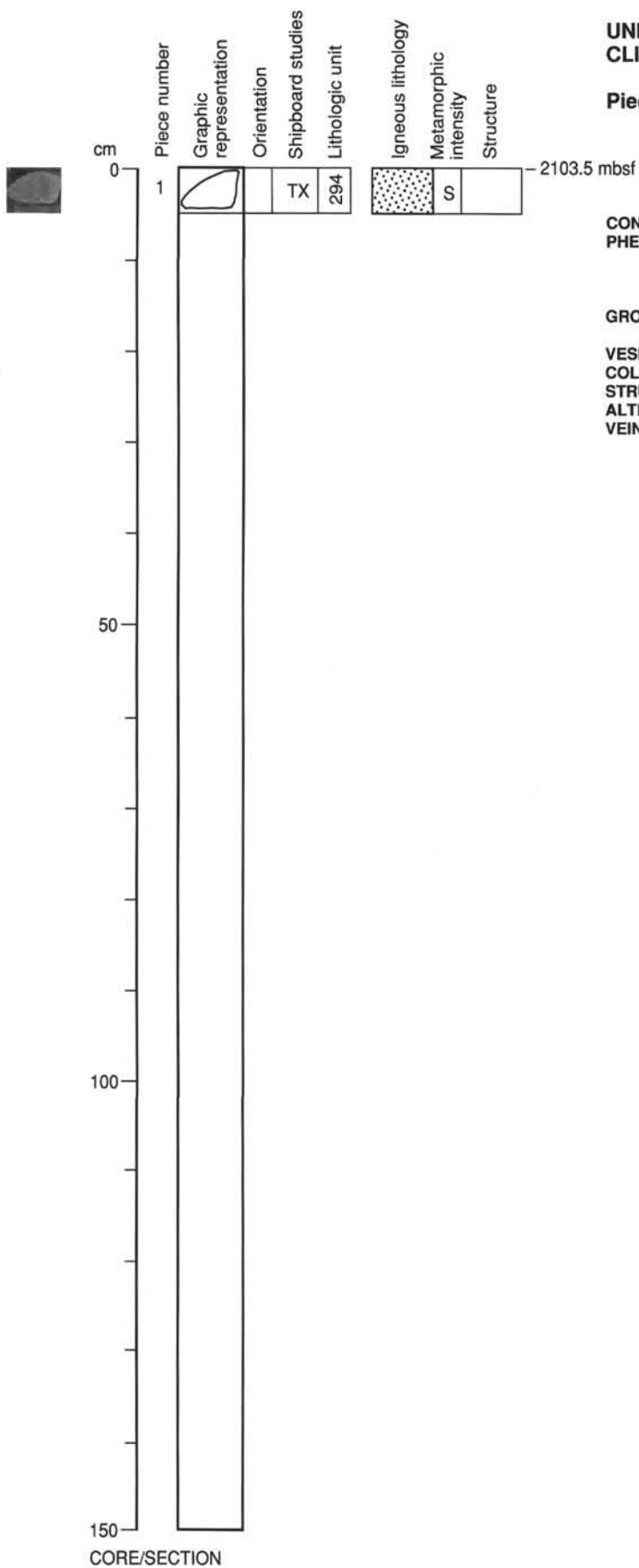
VEINS/FRACTURES: Pieces 1, 4, and 9 contain 4 dark green chlorite veins (<1 mm). Pieces 1, 2, 4, and 7 contain 5 medium green actinolite veins surrounded by halos. Piece 4 contains 1 light green vein. No oriented structures.

ADDITIONAL COMMENTS: Pieces 5 to 9 fell out of core catcher.

148-504B-253R-1

UNIT 294: SPARSELY PHYRIC OLIVINE-PLAGIOCLASE-CLINOPYROXENE DIABASE

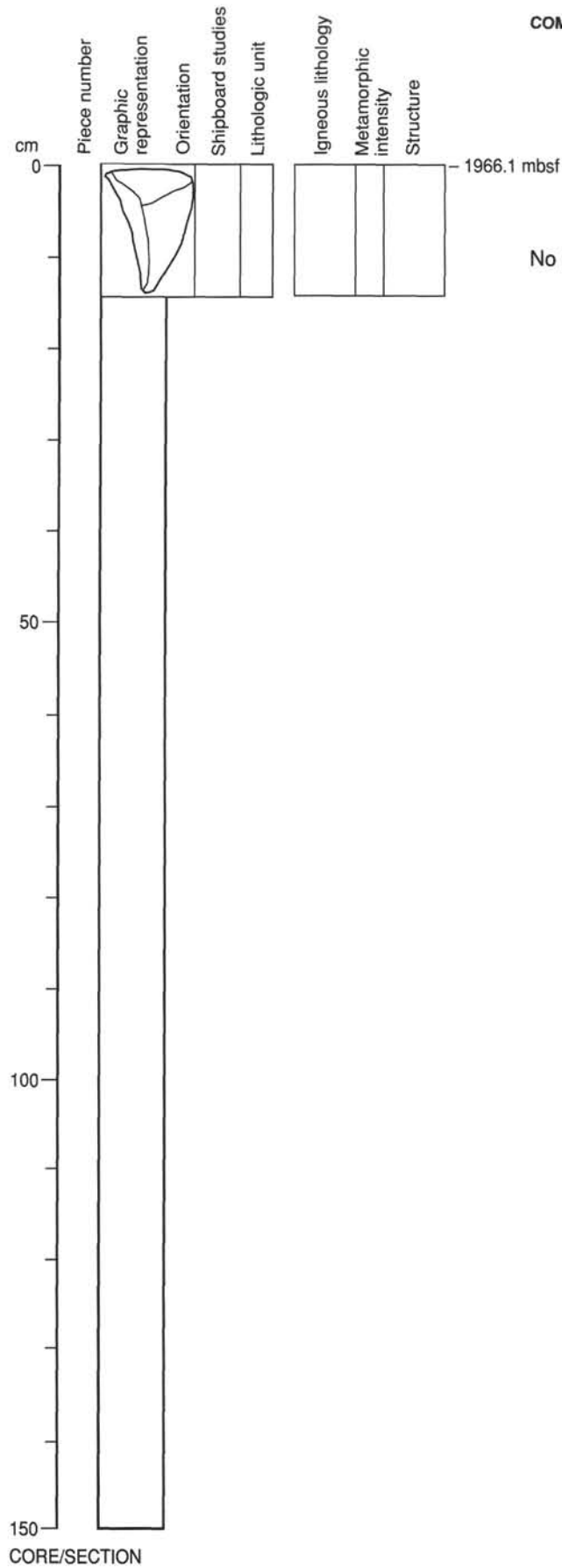
Piece 1



CONTACTS: None.
PHENOCRYSTS:
 Plagioclase - 0.5%; 1 mm; euhedral to subhedral.
 Olivine - 1%; 1 mm; euhedral to subhedral.
 Clinopyroxene - 0.5%; 1.5 mm; subhedral.
GROUNDMASS: Texture: Fine-grained intergranular. Composition: Plagioclase, clinopyroxene, and oxide minerals.
VESICLES: None.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Homogeneous, massive.
ALTERATION: No patches. Typical slight-to-moderate background alteration.
VEINS/FRACTURES: None. No oriented structures.

148-504B-254M-1

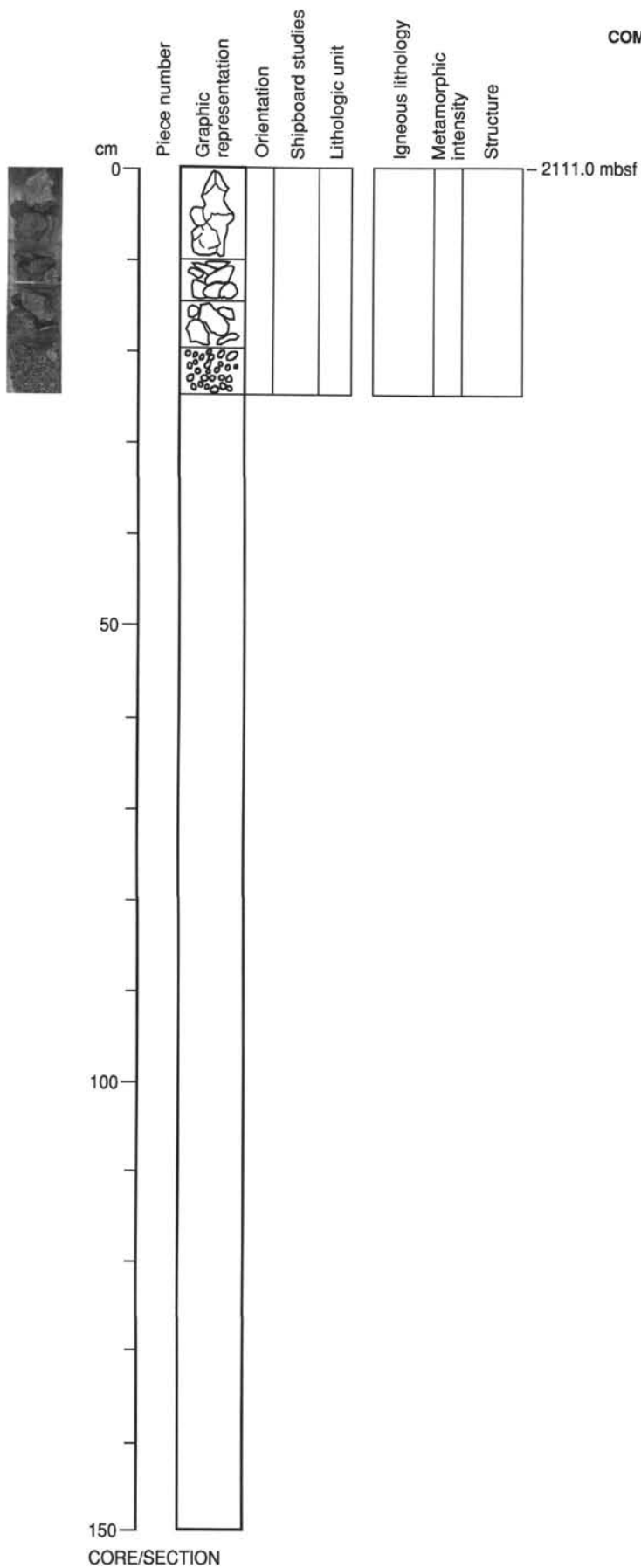
COMMENTS: This core consists of a basalt fragment from unknown depth that fell into drill collars stuck in the hole. The fragment dimensions are 6x10x13 cm. A curved face of the fragment formed part of the borehole wall. Two exposed fracture surfaces are coated with secondary minerals: one with rosettes of aragonite needles and the other with a greenish phyllosilicate.



No photo available.

148-504B-255M-1

COMMENTS: The core contains representative basaltic rubble from unknown depth that was removed from the junk basket run with the drill bit that became stuck in the hole. Many pieces are flat and platy, and exhibit microfault features described from 2000.4 to 2100 mbsf.



148-504B-256M-1

COMMENTS: The core contains representative basaltic rubble from unknown depth that was removed from the first mill bit run to mill the drill bit stuck in the hole. Many pieces are flat and platy, and exhibit microfault features described from 2000.4 to 2100 mbsf.

