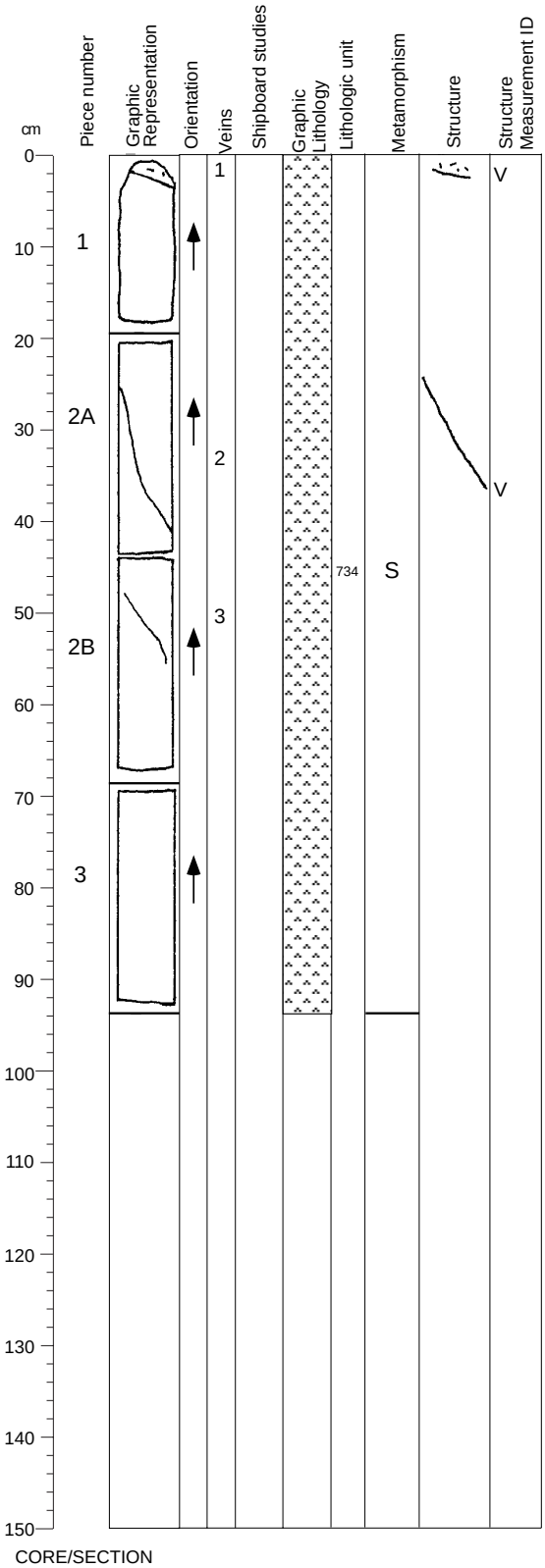
Core Image



176-735B-156R-1

Interval 734: OLIVINE GABBRO
(see Section 176-735B-155R-6)

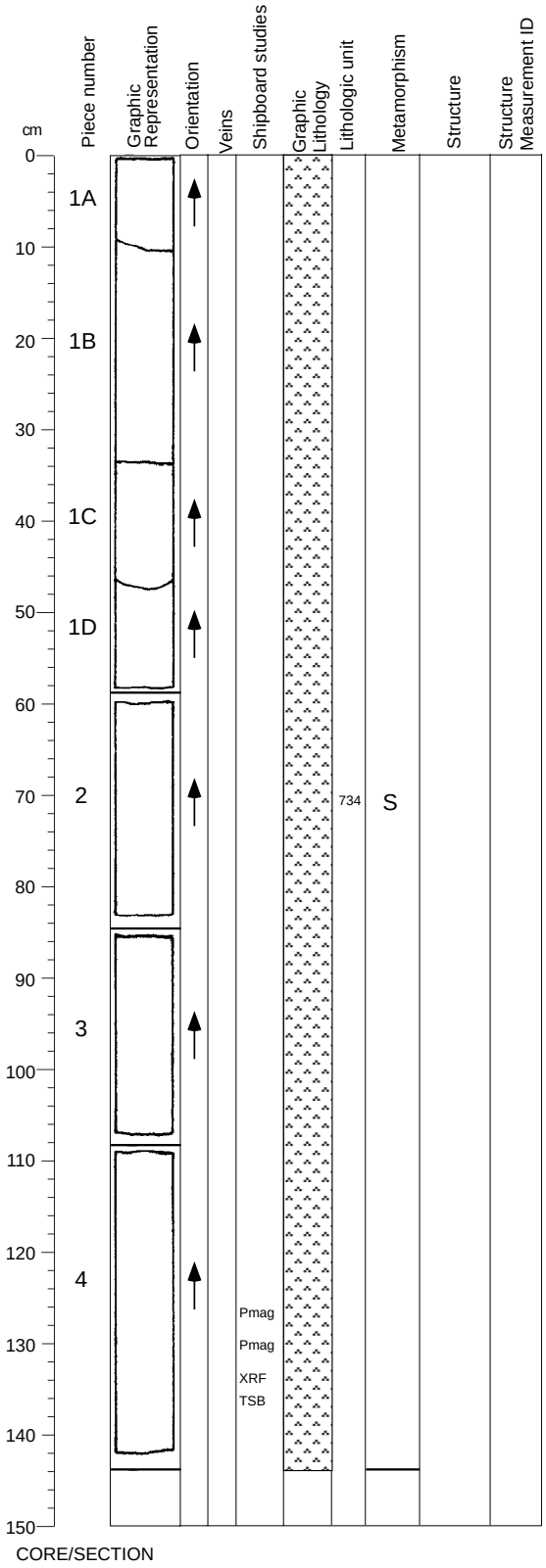
Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near a felsic vein.
Green amphibole:
Total Percent: <1
Mode of occurrence: Small patches and near an amphibole vein.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (8%). Olivine is weakly altered to amphibole (5%). Clinopyroxene is weakly altered to amphibole (6%). 12% of the plagioclase is recrystallized.

Vein/Fracture Filling:
9 mm plagioclase + amphibole vein in Piece 1; 0.4 amphibole+chlorite vein in Piece 2; 0.1 amphibole vein in Piece 2B.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by two veins in Pieces 1 and 2A.

Core Image



176-735B-156R-2

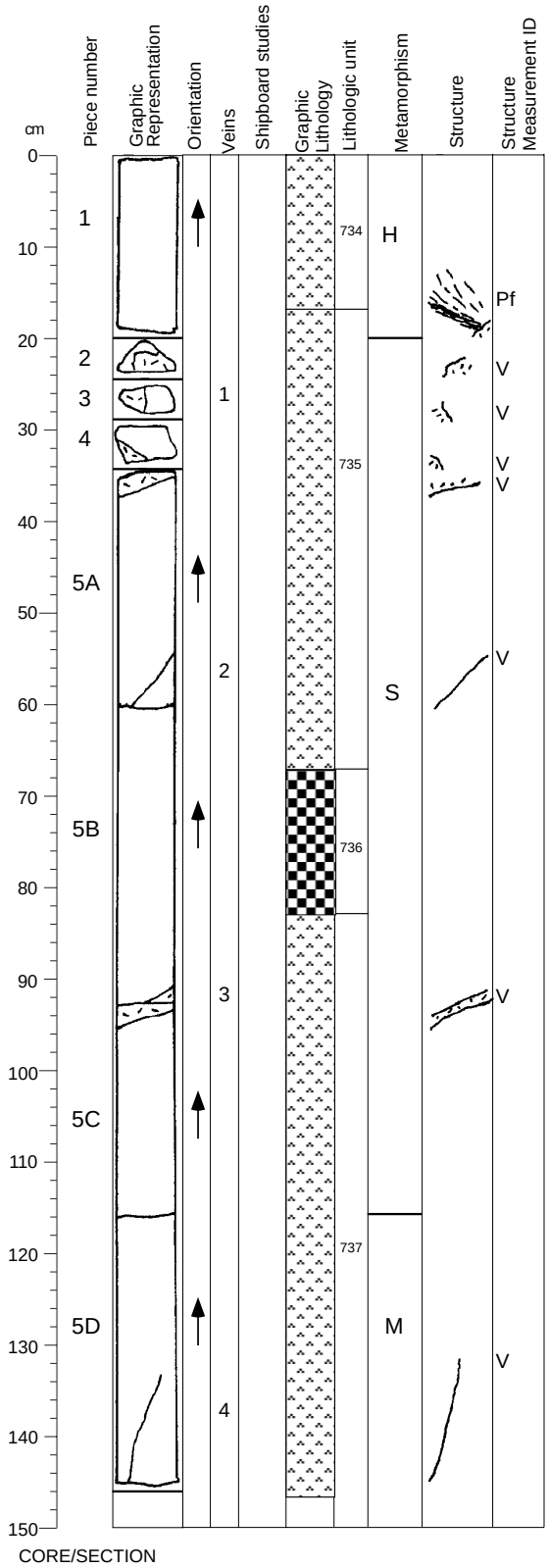
Interval 734: OLIVINE GABBRO
(see Section 176-735B-155R-6)

Alteration:
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As isolated patches or near an amphibole vein.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (10%). Olivine is weakly altered to amphibole (5%). Clinopyroxene is weakly altered to amphibole (6%). 15% of the plagioclase is recrystallized.

Structures:
Mf
The entire section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation. Where the magmatic foliation is present (from 85 cm to the bottom of the section), it is steeply dipping (60 to 70°, difficult to measure).

Core Image



176-735B-156R-3

Interval 734: OLIVINE GABBRO
(see Section 176-735B-155R-6)

Interval 735: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	156	3	17	1	1027.25
Lower contact:	156	3	67	5B	1027.75

Thickness (m): 0.50

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	15	3	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	20	1	coarse	tabular/ anhedral subhedral
Olivine	5	5	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates disseminated

Total 95.5* (see explanatory notes)
*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Top to 37 cm in 156R-3: felsic vein pocket (related to deformation?). Gradational from coarse- to medium-grained.

Interval 736: DISSEMINATED OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	156	3	67	5B	1027.75
Lower contact:	156	3	83	5B	1027.91

Thickness (m): 0.16

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	5	coarse	tabular/ subhedral anhedral
Clinopyroxene	30	40	5	pegmatitic	tabular/ subhedral anhedral
Olivine	3	10	1	medium	elongate/ anhedral
Opaques	1				interstitial lenses/ disseminated

Total 94* (see explanatory notes)
*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally porphyroclastic. Cirrus texture present.

Continued next page

Core Image

176-735B-156R-3 (cont'd)

Interval 737: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	156	3	83	5B	1027.91
Lower contact:	156	4	63	2B	1029.17

Thickness (m): 1.26

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	13	3	coarse	tabular/ subhedral
Clinopyroxene	35	20	2	coarse	tabular/ subhedral anhedral
Olivine	7	10	1	medium	elongate/ anhedral subhedral
Opaque	s0.5				amoeboidal aggregates/ disseminated
Total	102.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Locally coarse-grained patches present at 0-10 cm in 156R-4. Cirrus texture present. Mode variable. Felsic vein at 93 cm in 156R-3. Oxide locally present.

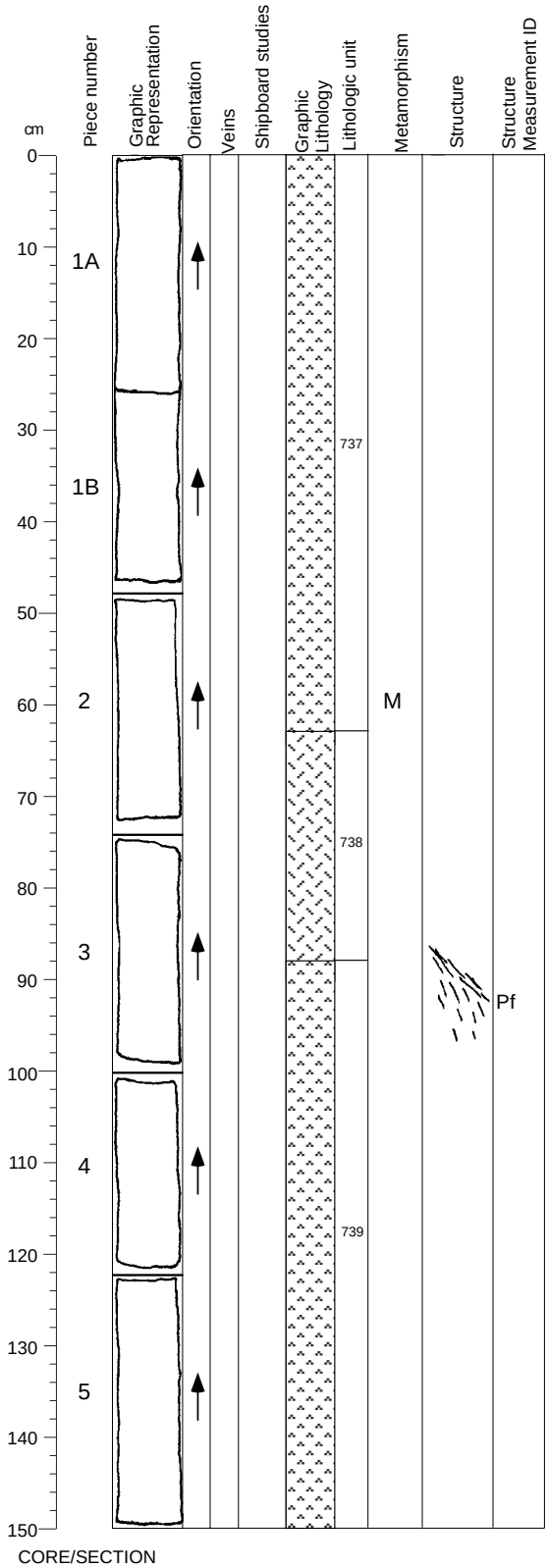
Alteration:
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: <1
Mode of occurrence: After brown amphibole near felsic veins and as patches.
Secondary plagioclase:
Total Percent: <12
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.

Background Alteration:
Degree of alteration: slight to high (6 to 50%). Piece 1: Highly deformed and recrystallized rock with large percentage of plagioclase (90%) and clinopyroxene (20%) recrystallized. Olivine is mostly fresh. Pieces 2 to 5C: slightly altered. Piece 5D: moderately altered (20%).

Vein/Fracture Filling:
10 mm compound felsic vein; 0.3-11 mm amphibole± plagioclase vein in Pieces 2-4.

Structures:
Mf>Pf>V; Mf>V
Most of the section displays a medium- to coarse-grained igneous texture, with no magmatic foliation, cut by a few veins over the entire section. The igneous texture is overprinted by a reverse mylonitic shear zone (dipping 35°) in Piece 1 (at 17 cm), itself cut by a vein. The 3 cm thick zone between 14 and 17 cm has a strong crystal-plastic foliation, sweeping out of the mylonitic zone.

Core Image



176-735B-156R-4

Interval 737: OLIVINE GABBRO
(see previous section)
Interval 738: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	156	4	63	2B	1029.17
Lower contact:	156	4	88	3	1029.42
Thickness (m): 0.25					

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	5	coarse	tabular/ subhedral
Clinopyroxene	35	30	2	coarse	tabular/ subhedral anhedral
Olivine	4	6	1	medium	amoeboidal/ anhedral
Opaques	0.8				amoeboidal aggregates/ disseminated
Total	99.8*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: From top to base, grain size decreases gradationally from very coarse- (pegmatitic), to medium-grained. Elongate plagioclase and clinopyroxene grains have grown perpendicular to contacts. Cirrus texture present. Sulfide present.

Interval 739: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	156	4	88	3	1029.42
Lower contact:	156	5	117	4	1031.21
Thickness (m): 1.79					

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	3	coarse	tabular/ subhedral
Clinopyroxene	30	10	2	coarse	equant/ anhedral
Olivine	5	3	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	95.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally deformed at 103-106 cm in 156R-5. Laminated fine- to medium-rained patches present at 60-68, 90-97, and 104-111 cm in 156R-5. Locally cirrus texture present at 63-100 cm in 156R-5.

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Core Image

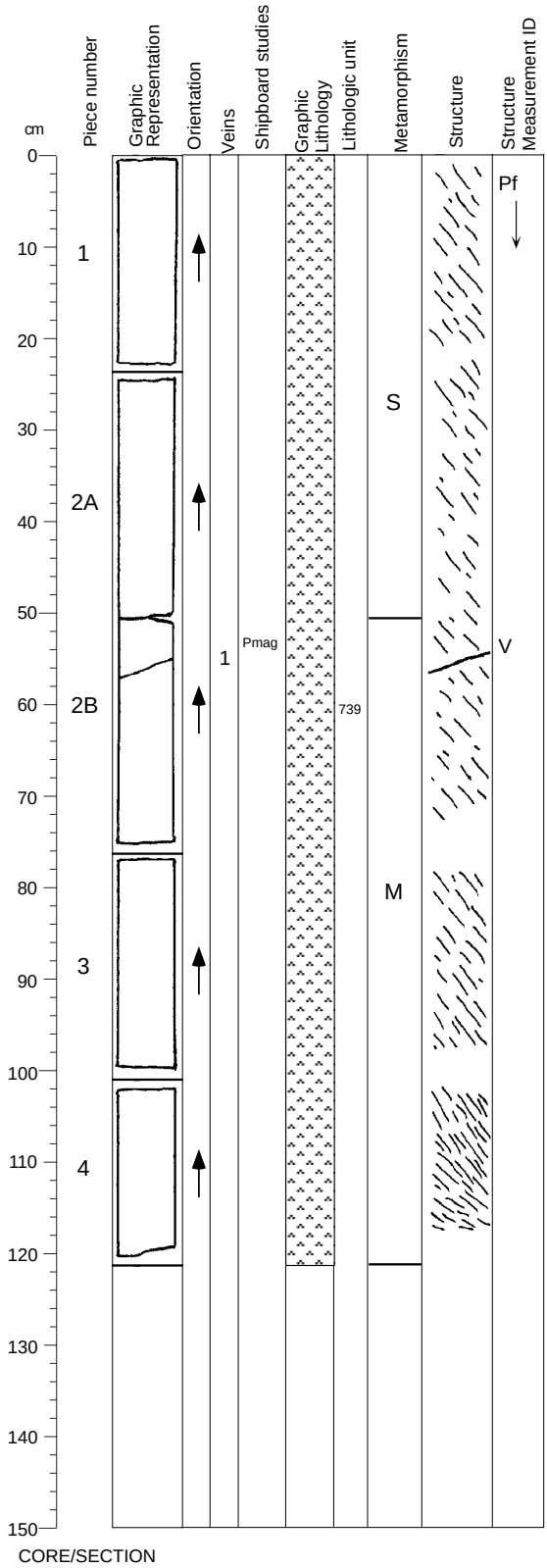
176-735B-156R-4 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: <1
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (15%). Olivine is partly altered to amphibole (10%). Clinopyroxene is partly altered to amphibole and recrystallized to secondary diopside (10%). 20% of the plagioclase is recrystallized.

Structures:
Mf>Pf
Most of the section displays a medium- to coarse-grained igneous texture, with no or a weak magmatic foliation, overprinted in Piece 3 (at 89 cm) by a reverse crystal-plastic shear zone, dipping 40°, with a porphyroclastic foliation that steepens toward the bottom of Piece 3. When present, the magmatic foliation appears to be subvertical.

Core Image



176-735B-156R-5

Interval 739: OLIVINE GABBRO
(see previous section)

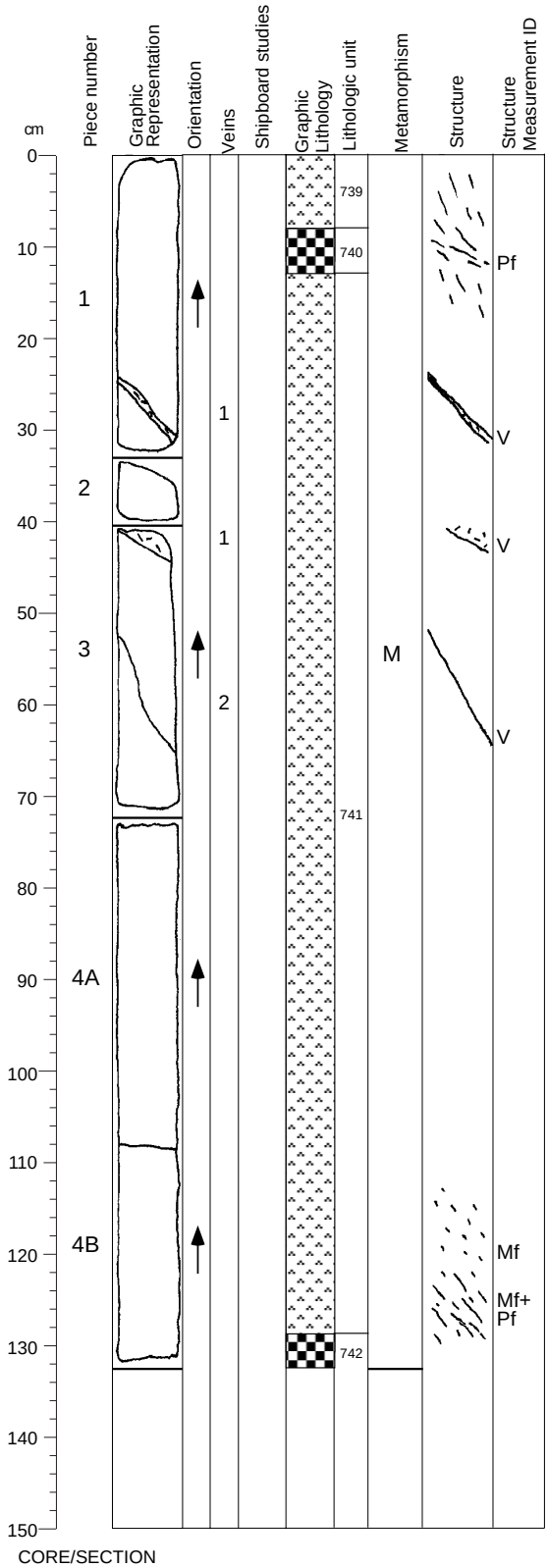
Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: <1
Mode of occurrence: As patchy alteration zones.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.

Background Alteration:
Degree of alteration: slight to moderate (10 to 30%). Pieces 1 to 2A: Olivine is partly altered to amphibole (5%). Clinopyroxene is partly altered to amphibole and recrystallized to secondary diopside (6%). 15% of the plagioclase is recrystallized. Pieces 2B to 4: increased deformation and recrystallization (olivine 10%, clinopyroxene 15%, plagioclase 45%).

Vein/Fracture Filling:
0.2 mm plagioclase+amphibole vein in Piece 2B.

Structures:
Mf>Pf>V
The entire section displays a crystal-plastic foliation, overprinting a moderate magmatic foliation. In Pieces 1 to 3 (0 to 109 cm), the plastic foliation is weak and regularly dips at 50°; it becomes stronger from Piece 3 and shallower (dip 35°) below 118 cm, at the bottom of the section.

Core Image



176-735B-156R-6

Interval 739: OLIVINE GABBRO
(see Section 176-735B-156R-4)
Interval 740: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	156	5	117	4	1031.21
Lower contact:	156	6	13	1	1031.38

Thickness (m): 0.17

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	5	N/A	medium	tabular/ subhedral
Clinopyroxene	20	20	2	coarse	tabular/ subhedral anhedral
Olivine	3	2	1	medium	elongate/ anhedral
Opaques	8				interstitial lenses/ interstitial network
Total	96*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Medium

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide up to 20% locally.

Interval 741: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	156	6	13	1	1031.38
Lower contact:	156	6	128	4B	1032.53

Thickness (m): 1.15

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	6	coarse	tabular/ subhedral
Clinopyroxene	35	12	1	coarse	equant/ anhedral
Olivine	8	4	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	108.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Local cirrus texture. Felsic vein at 43 cm in 156R-6. Oxide localy abundant at 30-35 cm in 156R-6.

Continued next page

Core Image

176-735B-156R-6 (cont'd)

Interval 742: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	156	6	128	4B	1032.53
Lower contact:	156	7	57	2B	1033.15

Thickness (m): 0.62

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	N/A	coarse	tabular/ subhedral deformed
Clinopyroxene	30	30	0.3	coarse	equant/ anhedral
Olivine	4	3	1	medium anhedral	amoeboidal/
Opaques	4				interstitial lenses/ interstitial network
Total	103*	(see explanatory notes)			

*Major phases estimated to ± 5%

Grain Size:	Medium	
	Type	Distribution
Texture:	variable texture	N/A

Comments: Mostly granular, locally porphyroclastic at 6-11 cm, 36-39 cm in 156R-7. Grain size and mode variable. In general, finer downward, and very fine grained at base. Oxide abundant in places (up to 6%).

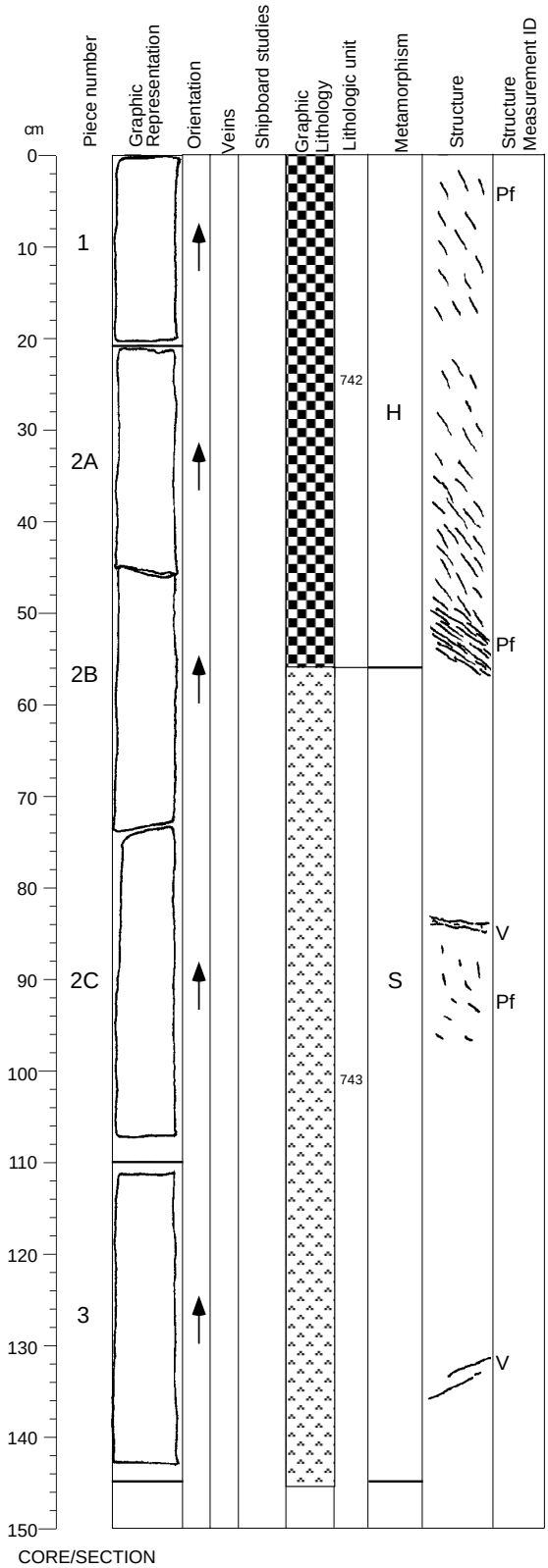
Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.

Background Alteration:
Degree of alteration: moderate (20%). Olivine is recrystallized and partly altered to amphibole (10%). Clinopyroxene is partly altered to amphibole and recrystallized to secondary diopside (15%). 25% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.5-2 mm amphibole+plagioclase veins in Pieces 1 and 3; 12 mm compound felsic vein in Piece 3.

Structures:
Mf>Pf; Mf>V
Most of the section displays a medium-grained igneous texture, with no magmatic foliation, except for Piece 4B which has a moderate magmatic foliation, dipping 40°. The igneous texture is cut by veins in Pieces 1 to 3, overprinted by a reverse, crystal-plastic shear zone at the top of Piece 1 (weak crystal-plastic foliation, associated with oxides), and the magmatic foliation in Piece 4 is overprinted by a weak crystal-plastic foliation below 123 cm.

Core Image



176-735B-156R-7

Interval 742: OXIDE GABBRO
(see previous section)

Interval 743: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	156	7	57	2B	1033.15
Lower contact:	157	1	50	5	1034.80

Thickness (m): 1.65

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral
Clinopyroxene	30	30	2	coarse	equant/ anhedral subhedral
Olivine	6	5	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	101.5*	(see explanatory notes)			

*Major phases estimated to ± 5%

Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

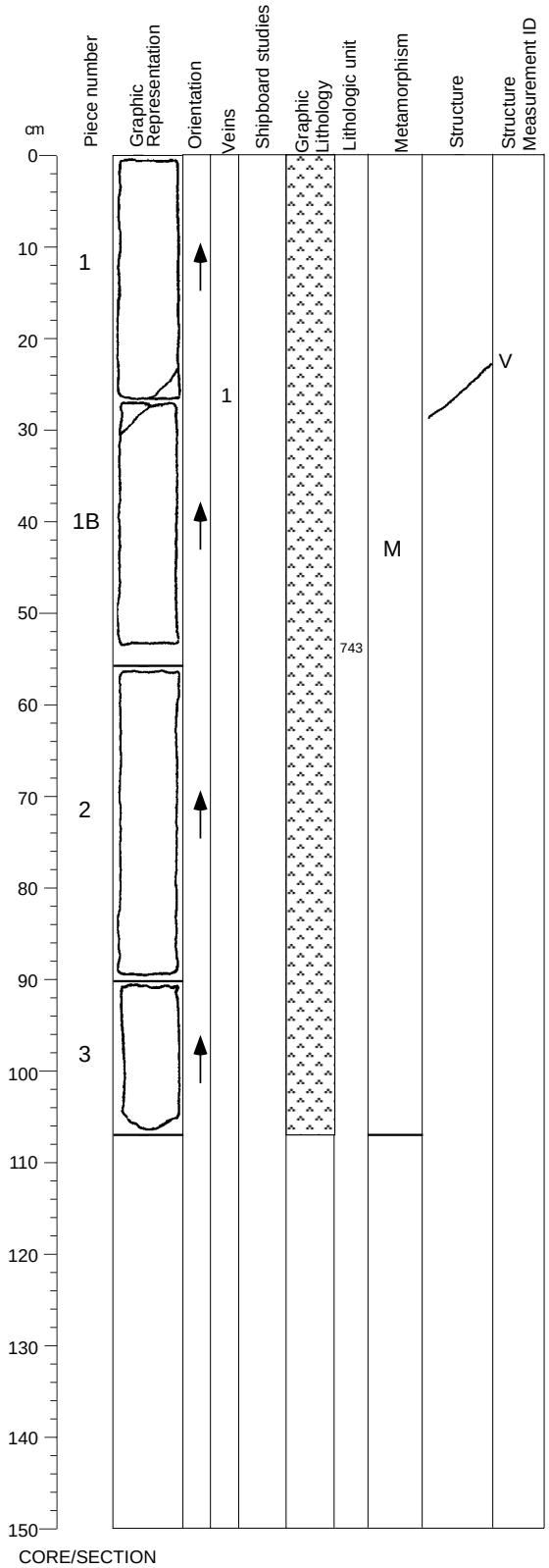
Comments: Mostly medium-grained. Locally slightly coarser-grained with cirrus texture present. Oxide locally abundant (up to 4%).

Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins and as patches.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.

Background Alteration:
Degree of alteration: slight to high (6 to 45%). Pieces 1 to 2B: Olivine is recrystallized and partly altered to amphibole (30%). Clinopyroxene is partly altered to amphibole and recrystallized to secondary diopside (30%). 60% of the plagioclase is recrystallized. Pieces 2B to 3: slightly altered.

Structures:
Mf>Pf; Mf>V
From 0 to 57 cm, the section displays a crystal-plastic folation , which increases in intensity and becomes shallower with depth (weak from 0 to 30 cm, steeply dipping; strong from 30 to 48 cm, dipping 55°; mylonitic from 48 to 57 cm, dipping 40°). The zone of mylonitic foliation is much finer grained (probably different pre-existing grain size). The rest of the section displays a medium-grained size igneous texture, with a weak magmatic foliation, locally overprinted in Piece 2C by a weak, variably oriented, crystal-plastic foliation, and cut by veins in Pieces 2C and 3.

Core Image



176-735B-156R-8

Interval 743: OLIVINE GABBRO
(see previous section)

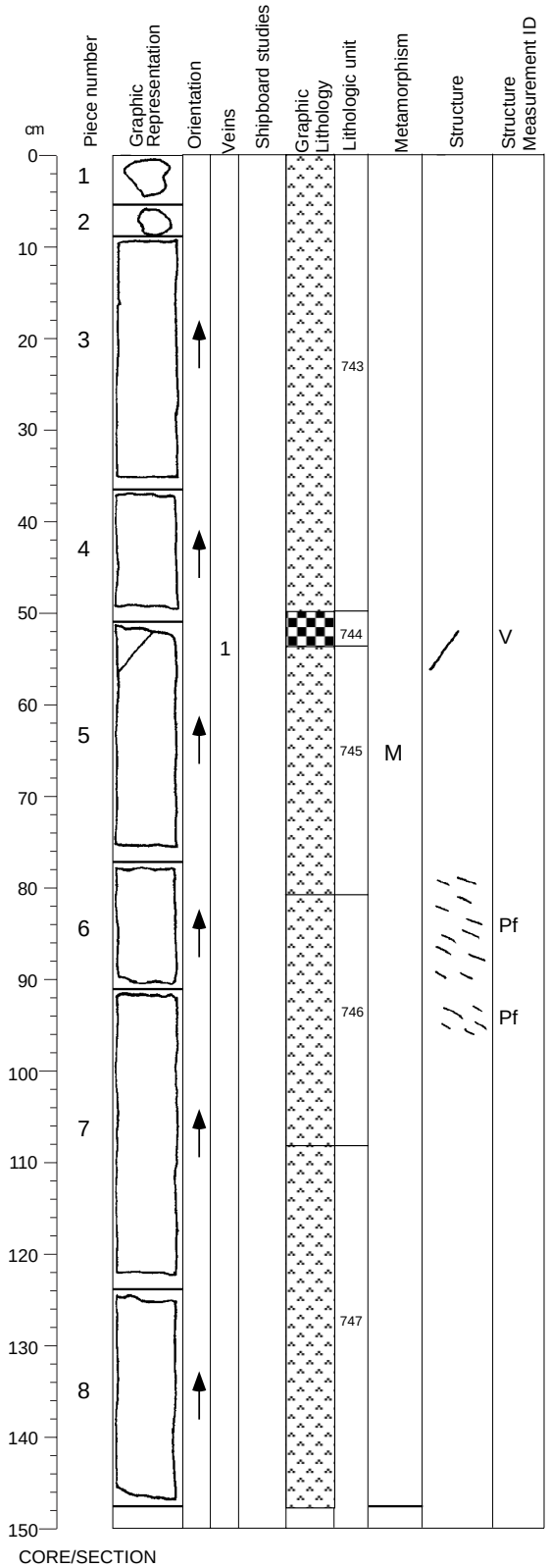
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins and as patches.
Secondary plagioclase:
Total Percent: <7
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.

Background Alteration:
Degree of alteration: moderate (12%). Olivine is recrystallized and partly altered to amphibole (5%). Clinopyroxene is partly altered to amphibole and recrystallized to secondary diopside (10%). 18% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1 mm amphibole vein in Pieces 1A to 1B.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation, cut by a vein in Piece 1A to 1B.

Core Image



176-735B-157R-1

Interval 743: OLIVINE GABBRO
(see previous section)

Interval 744: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	1	50	5	1034.80
Lower contact:	157	1	54	5	1034.84

Thickness (m): 0.04

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	10	4	coarse	tabular/ subhedral
Clinopyroxene	30	10	3	coarse	equant/ anhedral
Olivine	2	2	1	medium	amoeboidal/ anhedral
Opaques	10				interstitial lenses/ interstitial network

Total 107* (see explanatory notes)
*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Interval 745: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	1	54	5	1034.84
Lower contact:	157	1	81	6	1035.11

Thickness (m): 0.27

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	4	coarse	tabular/ subhedral
Clinopyroxene	35	20	3	coarse	equant/ anhedral
Olivine	5	3	1	medium	equant/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated

Total 100.5* (see explanatory notes)
*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Coarser at top, finer at base.

Interval 746: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	1	81	6	1035.11
Lower contact:	157	1	109	7	1035.39

Thickness (m): 0.28

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	3	coarse	tabular/ subhedral
Clinopyroxene	30	15	2	coarse	equant/ anhedral
Olivine	6	3	1	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated

Total 96.5* (see explanatory notes)
*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Mode variable. Cirrus texture present.

Continued next page

Core Image

176-735B-157R-1 (cont'd)

Interval 747: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	1	109	7	1035.39
Lower contact:	157	2	93	3B	1036.70

Thickness (m): 1.31

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	3	coarse	tabular/ subhedral
Clinopyroxene	35	15	2	coarse	equant/ anhedral
Olivine	7	6	1	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	102.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Cirrus texture present.

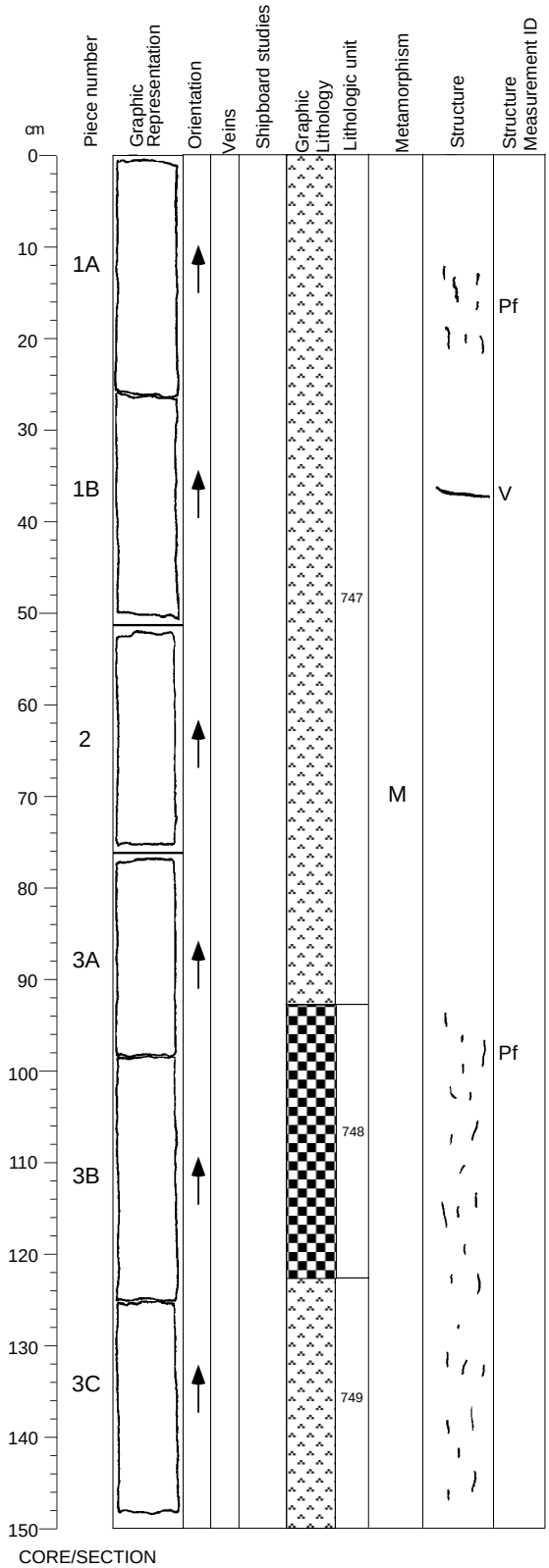
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After pyroxene and brown amphibole in deformed areas.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.

Background Alteration:
Degree of alteration: moderate (12%). Same as previous section.

Vein/Fracture Filling:
0.6 mm amphibole vein in Piece 5.

Structures:
Mf>V; Mf>Pf
Most of the section displays a medium- to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a vein at the top of Piece 5. The igneous texture is overprinted by a weak, gently dipping, crystal-plastic foliation from 80 to 109 cm.

Core Image



176-735B-157R-2

Interval 747: OLIVINE GABBRO
(see previous section)
Interval 748: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	2	93	3B	1036.70
Lower contact:	157	2	122	3B	1036.99

Thickness (m): 0.29

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	7	coarse	tabular/ subhedral anhedral
Clinopyroxene	35	30	3	coarse	tabular/ anhedral subhedral
Olivine	4	3	1	medium	amoeboidal/ anhedral
Opaques	2				interstitial lenses/ disseminated
Total	101*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Cirrus texture present. Oxide locally abundant at 92-99 cm, 115-121 cm in 157R-2.

Interval 749: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	2	122	3B	1036.99
Lower contact:	157	3	1	1	1037.28

Thickness (m): 0.29

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	3	coarse	tabular/ subhedral anhedral
Clinopyroxene	30	10	2	coarse	equant/ anhedral
Olivine	6	5	1	medium	amoeboidal/ anhedral
Opaques	0.2				amoeboidal aggregates/ disseminated
Total	101.2*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally plagioclase rich with vertical channels of altered plagioclase. Cirrus texture well developed.

Contiued next page

Core Image

176-735B-157R-2 (cont'd)

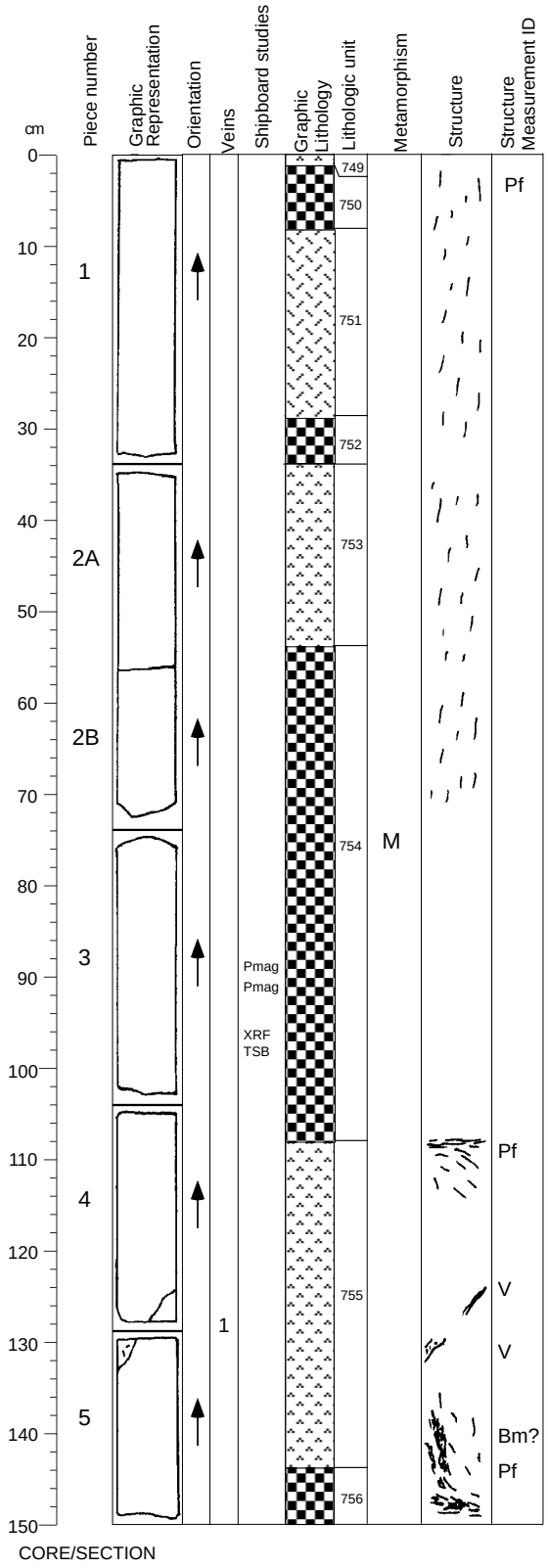
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Near a vein of amphibole and plagioclase.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.

Background Alteration:
Degree of alteration: moderate (12%). Same as previous section.

Vein/Fracture Filling:
0.2 mm amphibole vein in Piece 1.

Structures:
Mf>Pf; MF>V
The section displays mostly an igneous texture, with no or a weak magmatic foliation, overprinted in Piece 1A, and from the bottom of Piece 3A to Piece 3C by a very weak, poorly defined, nearly vertical crystal-plastic foliation. A vein cuts the igneous texture in Piece 1B.

Core Image



176-735B-157R-3

Interval 749: OLIVINE GABBRO
(see previous section)

Interval 750: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	3	1	1	1037.28
Lower contact:	157	3	8	1	1037.35

Thickness (m): 0.07

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	3	coarse	tabular/ subhedral
Clinopyroxene	30	10	2	coarse	equant/ anhedral
Olivine	3	4	1	medium	elongate/ anhedral subhedral
Opaques	2				interstitial lenses/ disseminated
Total	95*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Medium

	Type	Distribution
Texture:	granular	N/A

Comments: Cirrus texture present.

Interval 751: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	3	8	1	1037.35
Lower contact:	157	3	28	1	1037.55

Thickness (m): 0.20

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	3	coarse	tabular/ subhedral
Clinopyroxene	25	10	2	coarse	equant/ anhedral
Olivine	4	3	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	94.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Cirrus texture present.

Continued next page

Core Image

176-735B-157R-3 (cont'd)

Interval 752: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	3	28	1	1037.55
Lower contact:	157	3	33	1	1037.60

Thickness (m): 0.05

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	15	3	coarse	tabular/ subhedral
Clinopyroxene	35	50	5	coarse	equant/ anhedral
Olivine	3	3	1	medium	subhedral equant/ anhedral
Opaques	5				interstitial lenses/ interstitial network
Total	98*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Cirrus texture present. Oxide locally abundant at 28-33 cm in 157R-3.

Interval 753: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	3	33	1	1037.60
Lower contact:	157	3	53	2A	1037.80

Thickness (m): 0.20

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	3	coarse	tabular/ subhedral
Clinopyroxene	35	20	3	coarse	tabular anhedral
Olivine	7	10	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	102.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic. Cirrus texture present.

Continued next page

Core Image

176-735B-157R-3 (cont'd)

Interval 754: DISSEMINATED OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	3	53	2A	1037.80
Lower contact:	157	3	108	3	1038.35

Thickness (m): 0.55

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	4	coarse	tabular/ subhedral
Clinopyroxene	35	20	3	coarse	tabular/ anhedral subhedral
Olivine	3	5	1	medium	elongated/ anhedral subhedral
Opaques	1.5				interstitial lenses/ interstitial network
Total	99.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide concentrated in seams (53-106 cm in 157R-3). Cirrus texture present.

Interval 755: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	3	108	3	1038.35
Lower contact:	157	3	144	4	1038.71

Thickness (m): 0.36

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	10	coarse	tabular/ subhedral
Clinopyroxene	35	16	3	coarse	tabular anhedral
Olivine	7	5	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	102.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Locally veined at 132 cm in 157R-3, highly foliated at top and base. Cirrus texture present.

Continued next page

Core Image

176-735B-157R-3 (cont'd)

Interval 756: LEUCOCRATIC OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	3	144	4	1038.71
Lower contact:	157	4	4	1	1038.81

Thickness (m): 0.10

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	70	20	3	coarse	tabular/ subhedral
Clinopyroxene	25	15	3	coarse	tabular/ anhedral
Olivine	2	2	1	medium	elongate/ anhedral
Opaques	7				interstitial lenses/ interstitial network
Total	104*	(see explanatory notes)			

*Major phases estimated to ± 5%

Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Foliated oxide-rich interval. Cirrus texture extensive.

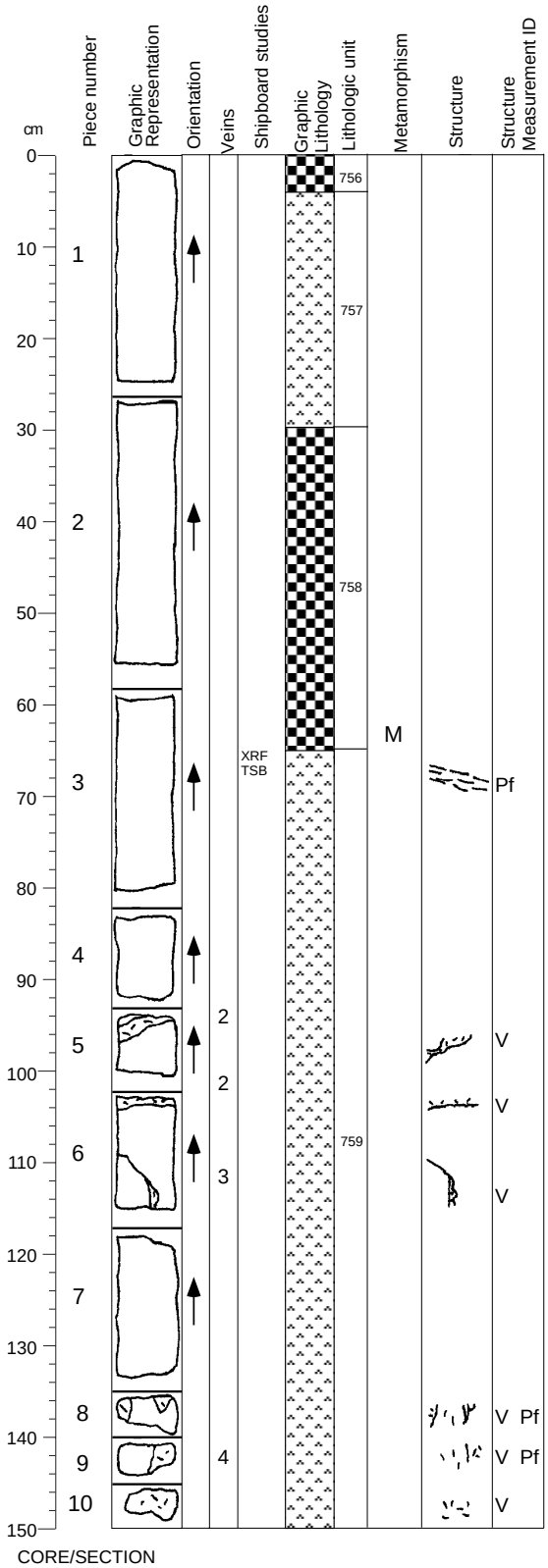
Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and brown amphibole and as patches near an amphibole vein.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.

Background Alteration:
Degree of alteration: moderate (20%). Olivine is recrystallized and partly altered to amphibole (10%). Clinopyroxene is partly altered to amphibole and recrystallized to secondary diopside (12%). 30% of the plagioclase is recrystallized

Vein/Fracture Filling:
7 mm compound felsic vein in Pieces 4 and 5.

Structures:
Mf>Pf; Mf>V; Mf>Bm?>Pf
From 0 to 73 cm, the section displays a very weak, nearly vertical crystal-plastic foliation. Piece 3 displays a coarse-grained igneous texture, with no magmatic foliation. In Pieces 4 and 5, the igneous texture is overprinted, from the top to the bottom, by a mylonitic, subhorizontal, sinistral shear zone (106-107 cm), by a vein (boundary between Pieces 4 and 5), and by a weak, variably oriented crystal-plastic foliation, overprinting a brecciated zone (magmatic, or/and hydrothermal).

Core Image



176-735B-157R-4

Interval 756: LEUCOCRATIC OXIDE GABBRO
(see previous section)

Interval 757: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	4	4	1	1038.81
Lower contact:	157	4	30	3	1039.07

Thickness (m): 0.26

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	3	coarse	tabular/ subhedral
Clinopyroxene	30	15	2	coarse	equant/ anhedral
Olivine	6	3	1	medium	elongate/ anhedral
Opaques	0.5				subhedral amoeboidal aggregates/ disseminated
Total	101.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally intergranular, locally cirrus texture present. Locally oxide abundant at 64-69 cm in 157R-4. Cirrus texture present.

Interval 758: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	4	30	3	1039.07
Lower contact:	157	4	65	3	1039.42

Thickness (m): 0.35

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	10	N/A	coarse	tabular/ subhedral anhedral
Clinopyroxene	25	20	3	coarse	equant/ anhedral
Olivine	1	2	1	medium	equant/ anhedral
Opaques	10				interstitial lenses/ interstitial network
Total	96*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Comments: Oxide abundant at 66-67 cm (~ 20%) and 67-69 cm in 157R-4. Cirrus texture present.

Continued next section

Core Image

176-735B-157R-4 (cont'd)

Interval 759: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	157	4	65	3	1039.42
Lower contact:	157	5	127	6B	1041.54

Thickness (m): 2.12

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	3	coarse	tabular/ subhedral
Clinopyroxene	30	10	2	coarse	equant/ anhedral
Olivine	6	4	1	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	101.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Locally veined at 93-115 cm, 135-149 cm in 157R-4, and 22-28 cm in 157R-5. Cirrus texture present.

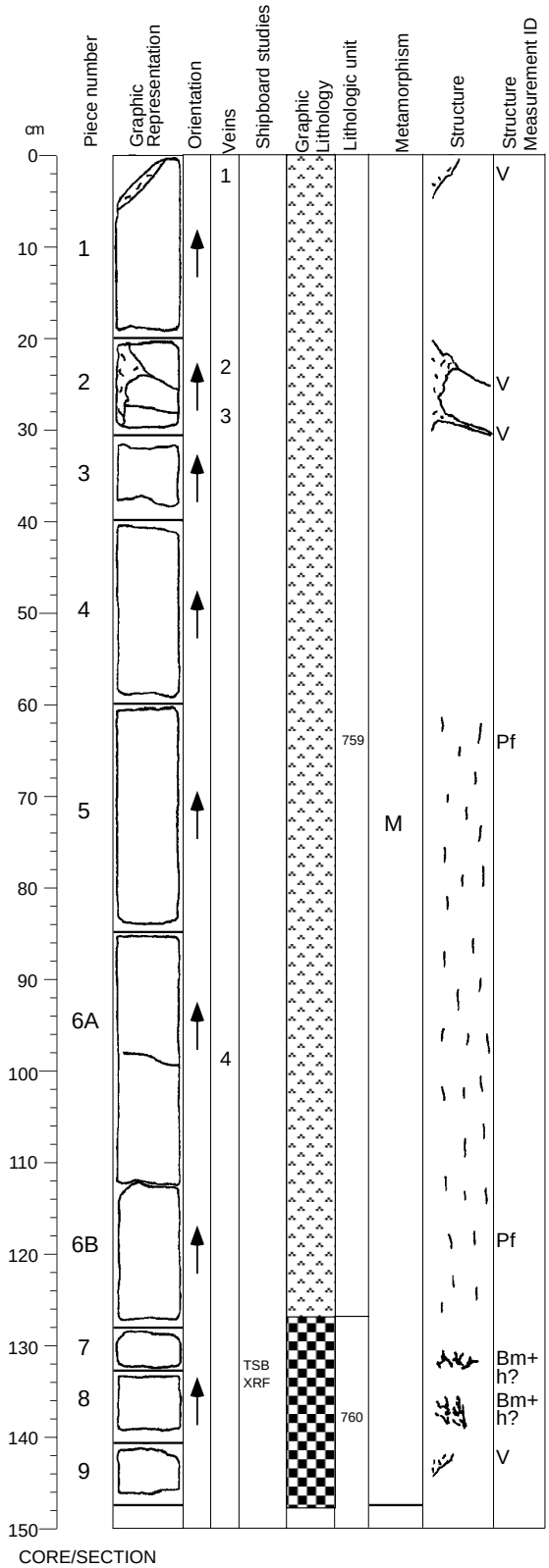
Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (20%). Same as previous section.

Vein/Fracture Filling:
2-8 mm compound felsic veins in Pieces 5, 6, and 8 to 10.

Structures:
Mf>Pf; Mf>V; Mf>V=Bm?>Pf
From 0 to 92 cm (Pieces 1 to 4), the section mostly displays an igneous texture, with no or a weak magmatic foliation, overprinted by a small, gently dipping shear zone (strong crystal-plastic foliation) associated with oxides, in Piece 3. In Pieces 4 to 10, the igneous texture is overprinted by several veins, possibly associated with magmatic brecciation, and by a weak crystal-plastic foliation (in Pieces 8 to 10), successively.

Core Image



176-735B-157R-5

Interval 759: OLIVINE GABBRO
(see previous section)
Interval 760: LEUCOCRATIC OXIDE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	157	5	127	6B	1041.54
Lower contact:	157	6	139	8	1043.12
Thickness (m): 1.58					

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	75	18	5	coarse	tabular/ anhedral subhedral
Clinopyroxene	5	6	1	coarse	equant/ anhedral interstitial
Opaques	12				lenses/ interstitial network
Total	92*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide-rich interval. Cirrus texture present.

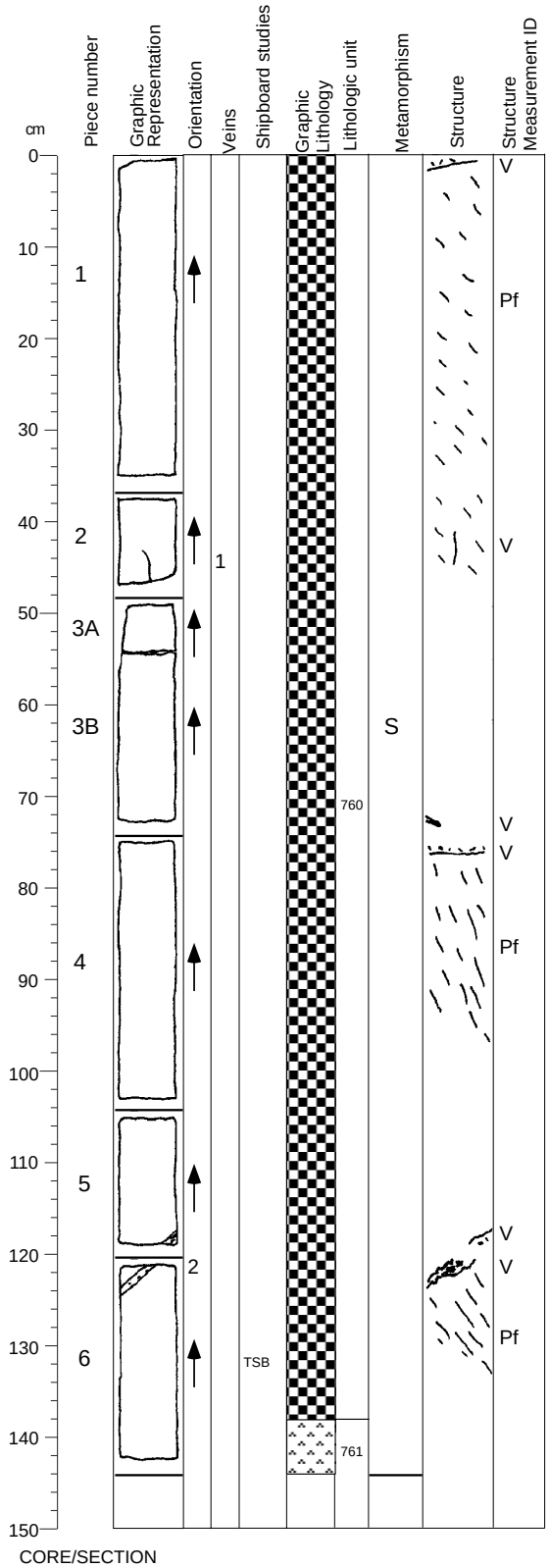
Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (20%). Same as previous section.

Vein/Fracture Filling:
1.5-8 mm compound felsic veins in Pieces 1 and 2; 0.8 mm plagioclase vein in Piece 6.

Structures:
Mf>V; Bm/h>Pf
From 0 to 59 cm, the section displays a medium- to coarse-grained texture, with no or a weak magmatic foliation, cut by veins in Pieces 1 and 2. From 63 cm to the bottom of the section, the core displays a weak, nearly vertical crystal-plastic foliation, overprinting magmatic and/or hydrothermal breccias in Pieces 7 to 9.

Core Image



176-735B-157R-6

Interval 760: LEUCOCRATIC OXIDE GABBRO
(see previous section)
Interval 761: OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	157	6	139	8	1043.12
Lower contact:	157	7	25	3	1043.41

Thickness (m): 0.29

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	20	3	coarse	tabular/ subhedral
Clinopyroxene	30	25	0.3	coarse	equant/ anhedral
Olivine	7	3	1	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	92.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Gradational grain size variation: medium-grained from top to 47 cm in 157R-6; coarse-grained at 47-78 cm in 157R-6; fine-grained at 78-95 cm in 157R-6; coarse-grained at 95-133 cm in 157R-6; fine- to medium-grained from 133 cm in 157R-6 to base. Locally veined at 140-146 cm in 157R-5, 117-124 cm in 157R-6, and 0-7 cm in 157R-7. Cirrus texture present.

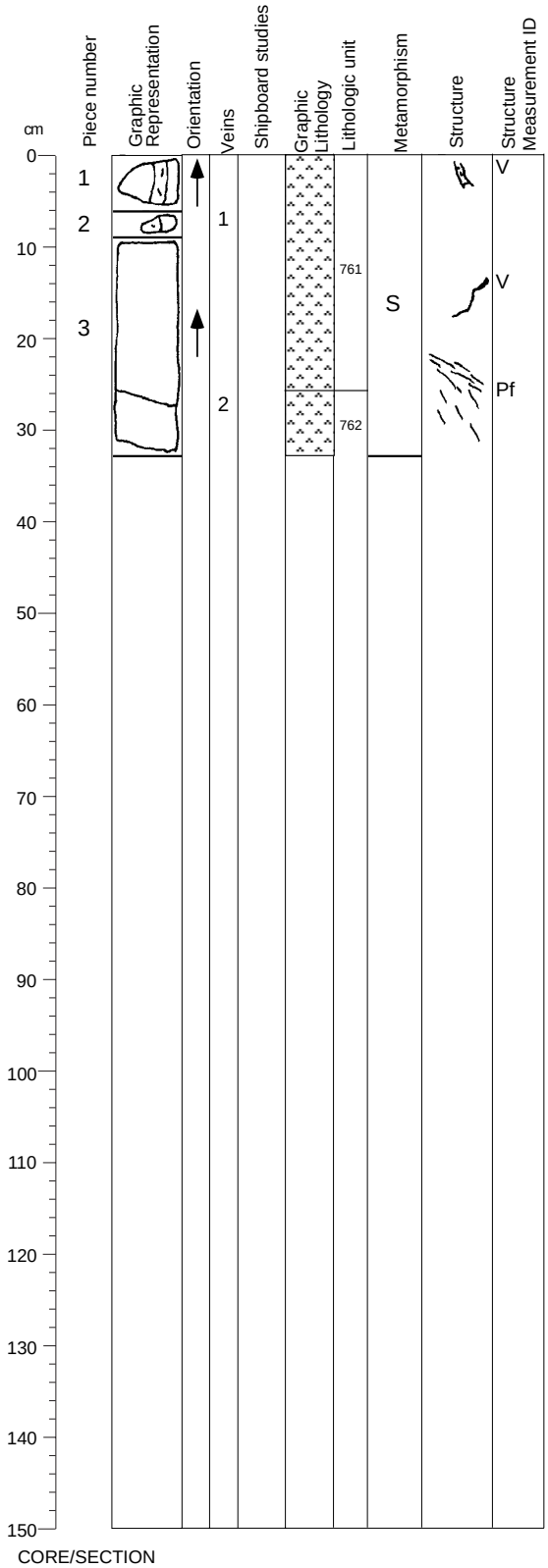
Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (10%). Olivine is recrystallized and partly altered to amphibole (5%). Clinopyroxene is partly altered to amphibole and recrystallized to secondary diopside (5%). 15% of the plagioclase is recrystallized

Vein/Fracture Filling:
0.3 mm amphibole vein in Piece 2; 3 mm compound felsic vein in Pieces 5 and 6.

Structures:
Mf>Pf>V
The section displays intervals with a weak crystal-plastic foliation alternating with intervals with an igneous texture (no magmatic foliation). The crystal-plastic foliation (0 to 45 cm, 77 to 95 cm, and 122 to 133 cm) dips between 50 and 65°. The previous fabrics are cut by a few veins.

Core Image



176-735B-157R-7

Interval 761: OLIVINE GABBRO
(see previous section)
Interval 762: OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	157	7	25	3	1043.41
Lower contact:	158	1	32	3	1044.32
Thickness (m): 0.91					

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	15	2	coarse	tabular/ subhedral
Clinopyroxene	35	15	2	coarse	equant/ anhedral
Olivine	5	2	1	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	95.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide present locally as seams. Cirrus texture present.

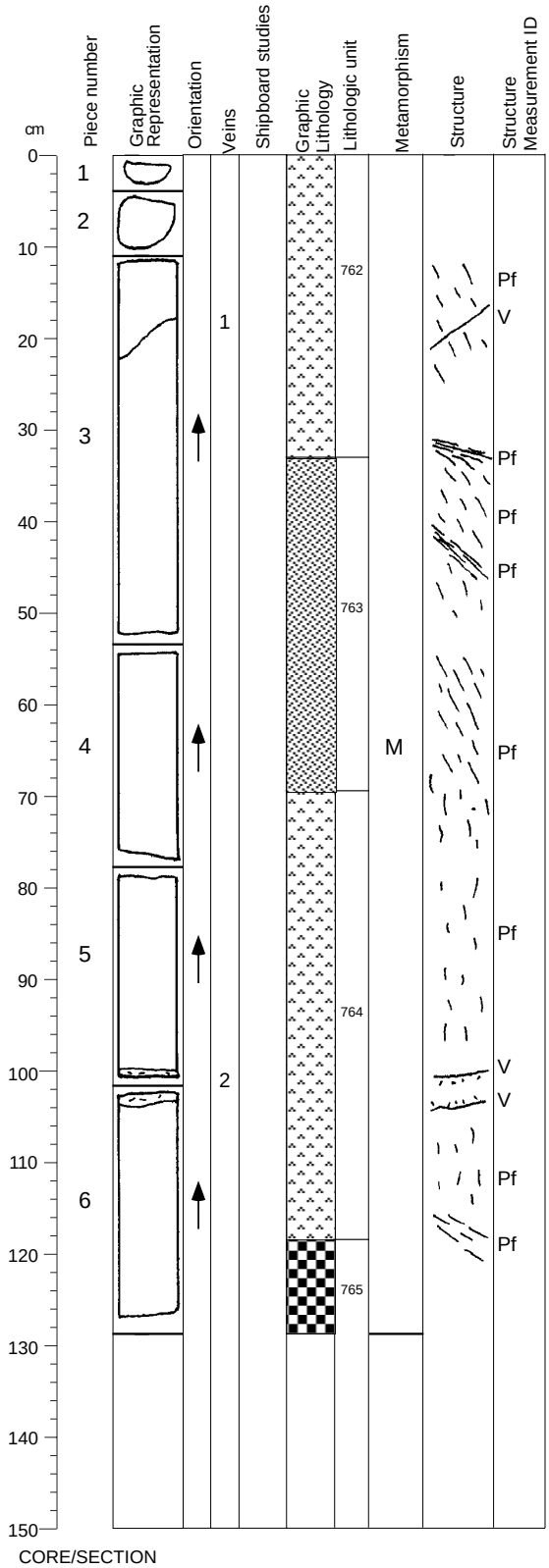
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: 4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (7%). Olivine is recrystallized and partly altered to amphibole (5%). Clinopyroxene is partly altered to amphibole and recrystallized to secondary diopside (4%). 8% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.2 mm amphibole vein in Piece 3; 10 mm compound felsic vein in Pieces 1 and 2.

Structures:
Mf>V; Mf>Pf
From 0 to 23 cm, the section displays a medium grained igneous texture, with no magmatic foliation, cut by two veins. At 23 cm, the igneous texture is overprinted by a narrow, reverse, crystal-plastic shear zone (strong foliation, dips 20°), overlying a zone of weak, steeper crystal-plastic foliation at the bottom of the section.

Core Image



176-735B-158R-1

Interval 762: OLIVINE GABBRO
(see previous section)

Interval 763: DISSEMINATED OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	158	1	32	3	1044.32
Lower contact:	158	1	69	4	1044.69

Thickness (m): 0.37

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	3	coarse	tabular/ subhedral
Clinopyroxene	25	12	3	coarse	tabular/ anhedral
Olivine	6	3	1	medium	elongate/ anhedral
Opaques	1.5				interstitial lenses/ disseminated

Total 92.5* (see explanatory notes)
*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Grain size variable. Locally coarse-, medium-, and fine-grained gradationally. Cirrus texture present.

Interval 764: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	158	1	69	4	1044.69
Lower contact:	158	1	119	6	1045.19

Thickness (m): 0.50

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	3	coarse	tabular/ subhedral
Clinopyroxene	30	15	3	coarse	tabular/ anhedral
Olivine	7	4	1	medium	elongate/ anhedral
Opaques	0.7				amoeboidal aggregates/ disseminated

Total 97.7* (see explanatory notes)
*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Cirrus texture apparent locally. Foliated slightly at top and at base.

Interval 765: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	158	1	119	6	1045.19
Lower contact:	158	1	129	6	1045.29

Thickness (m): 0.10

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	3	coarse	tabular/ subhedral
Clinopyroxene	25	10	1	coarse	equant/ anhedral
Opaques	8				interstitial lenses/ interstitial network

Total 93* (see explanatory notes)
*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide abundant at 115-128 cm in 158R-1. Cirrus texture present.

Continued next page

Core Image

176-735B-158R-1 (cont'd)

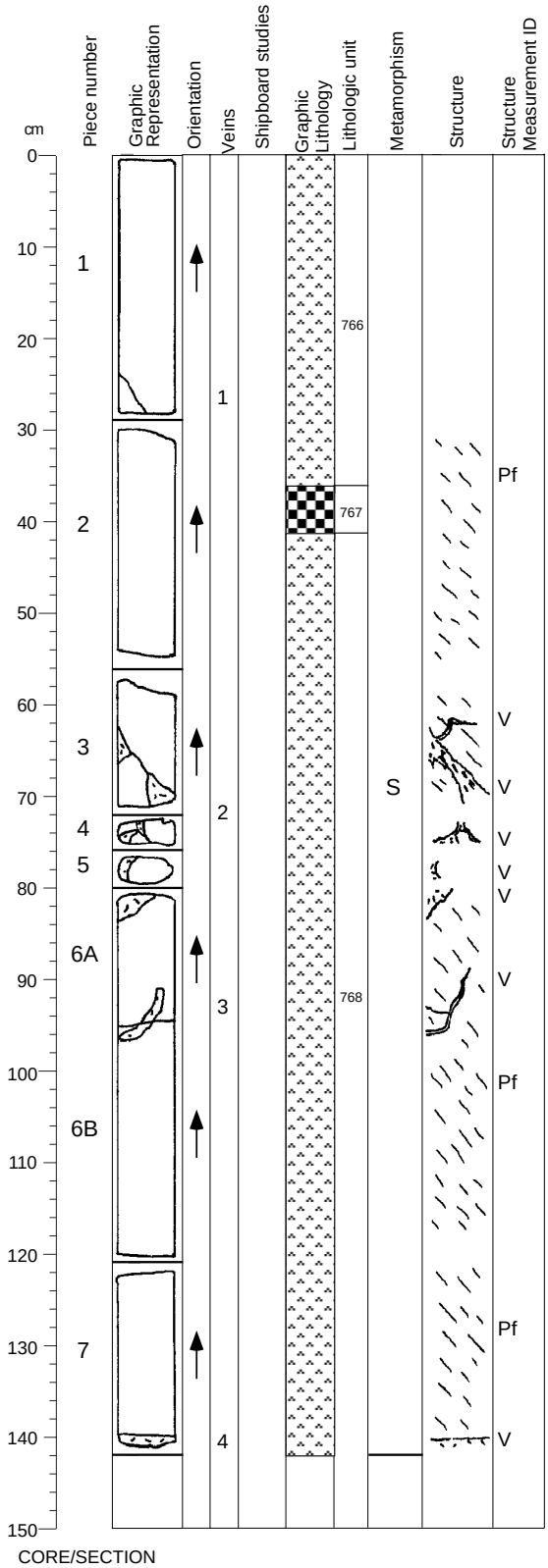
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: <12
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (15%). Olivine is recrystallized and partly altered to amphibole (10%). Clinopyroxene is partly altered to amphibole and recrystallized to secondary diopside (6%). 18% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1 mm plagioclase+amphibole vein in Piece 3; 6 mm compound felsic vein in Pieces 5 and 6.

Structures:
Mf>Pf>Pf; Pf>V
The entire section displays a weak crystal-plastic foliation, variably oriented. The plastic foliation is overprinted by two veins (Piece 3 and the boundary between Pieces 5 and 6), and by two narrow crystal-plastic shear zones (reverse, strong foliation, dipping 15 and 40°) in Piece 3. The upper shear zone is closely associated with oxides. From 55 to 112 cm, the plastic foliation is steep, and sometimes poorly defined. In Piece 6, the weak crystal-plastic foliation becomes locally shallower (dips 35°), overlying an oxide-rich layer. The foliation here is not very strong, and is deflected next to the oxide-rich layer (about 2 cm thick); this observation suggests an early stage of the shear zone present in Piece 3, in which the deformation is stronger, and the oxide layer is thinner and clearly deformed (3 mm thick on average).

Core Image



176-735B-158R-2

Interval 766: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	158	1	129	6	1045.29
Lower contact:	158	2	36	2	1045.65

Thickness (m): 0.36

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	10	3	medium	tabular/ subhedral
Clinopyroxene	35	17	2	coarse	equant/ anhedral
Olivine	8	3	1	medium	elongate/ anhedral
Opaques	0.5				subhedral amoeboidal aggregates/ disseminated
Total	103.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Medium

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic. Cirrus texture present.

Interval 767: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	158	2	36	2	1045.65
Lower contact:	158	2	41	2	1045.70

Thickness (m): 0.05

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	3	coarse	tabular/ subhedral
Clinopyroxene	35	8	2	medium	equant/ anhedral
Opaques	3				interstitial lenses/ interstitial network
Total	98*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Cirrus texture present.

Continued next page

Core Image

176-735B-158R-2 (cont'd)

Interval 768: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	158	2	41	2	1045.70
Lower contact:	158	5	131	4	1050.72

Thickness (m): 5.02

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	40	5	coarse	tabular/ subhedral anhedral
Clinopyroxene	35	50	0.5	coarse	tabular/ anhedral subhedral
Olivine	6	4	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	96.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Grain size variable. Mostly medium-grained, locally coarse/pegmatitic at 39-90 cm in 158R-3, 98 cm in 158R-4, and from 98 cm in 158R-4 to 31 cm in 158R-5.Locally veined at 94 cm in 158R-4. Oxide abundant locally at 2-3 cm in 158R-3. Sulfide present at 75 cm in 158R-3.

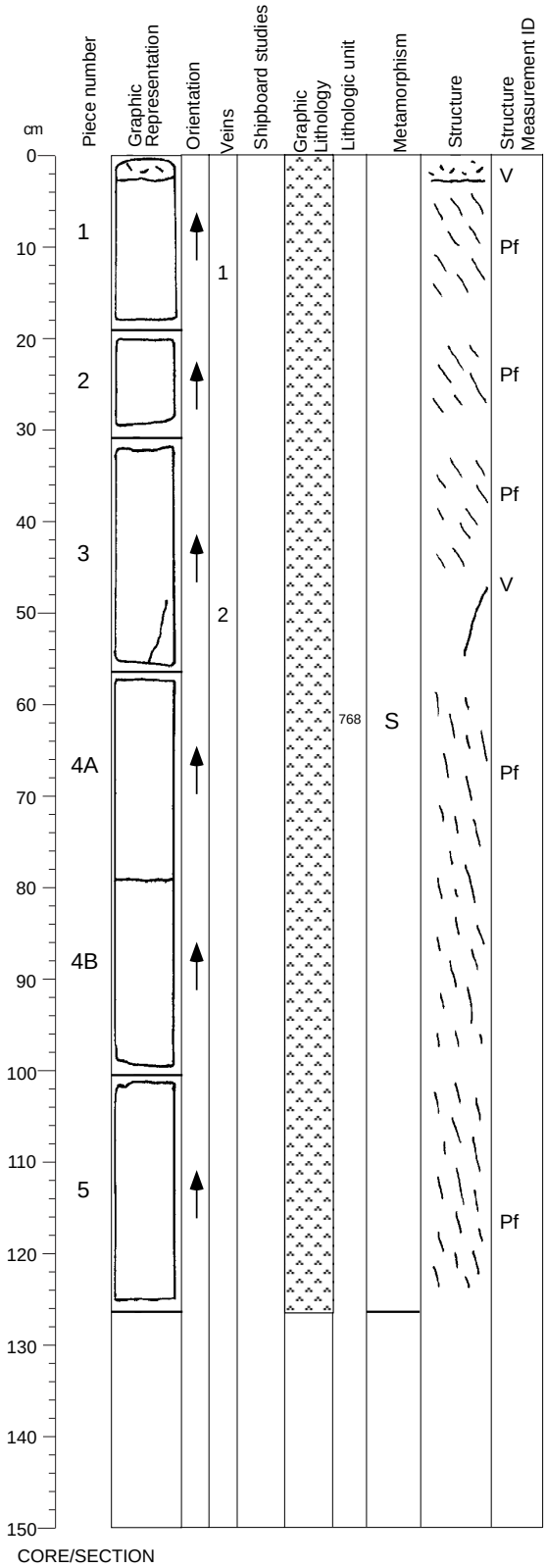
Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (8%). Olivine is recrystallized and partly altered to amphibole (5%). Clinopyroxene is partly altered to amphibole and recrystallized to secondary diopside (5%). 10% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3 mm amphibole vein in Piece 1; 2-5 mm compound felsic veins in Pieces 3-7.

Structures:
Pf>V
Most of the section displays a weak crystal-plastic foliation, dipping 45° on average, except for Piece 1 which has an igneous texture, with no magmatic foliation. The plastic foliation is overprinted by a series of veins in Pieces 3 to 7.

Core Image



176-735B-158R-3

Interval 768: OLIVINE GABBRO
(see previous section)

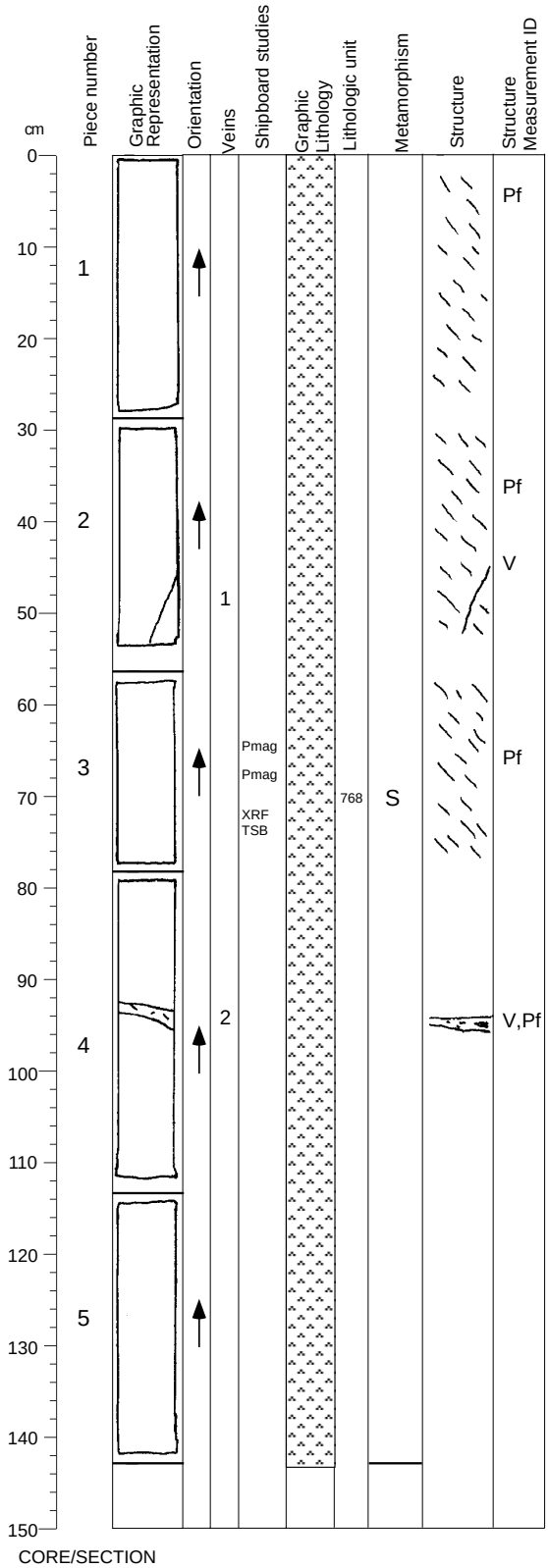
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (6%). Olivine is recrystallized and partly altered to amphibole (5%). Clinopyroxene is partly altered to amphibole and recrystallized to secondary diopside (4%). 7% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3 mm amphibole vein in Piece 3; 20 mm compound felsic vein in Piece 1.

Structures:
Mf>Pf>V; Mf>V
Most of the section displays a weak crystal-plastic foliation, except for the bottom of Piece 3, which has an igneous texture, with a weak magmatic foliation. The plastic foliation dips 50° from 0 to 49 cm, and 70° from 60 cm to the bottom of the section. Two veins cut the previous fabrics in Pieces 1 and 3.

Core Image



176-735B-158R-4

Interval 768: OLIVINE GABBRO
(see Section 176-735B-158R-2)

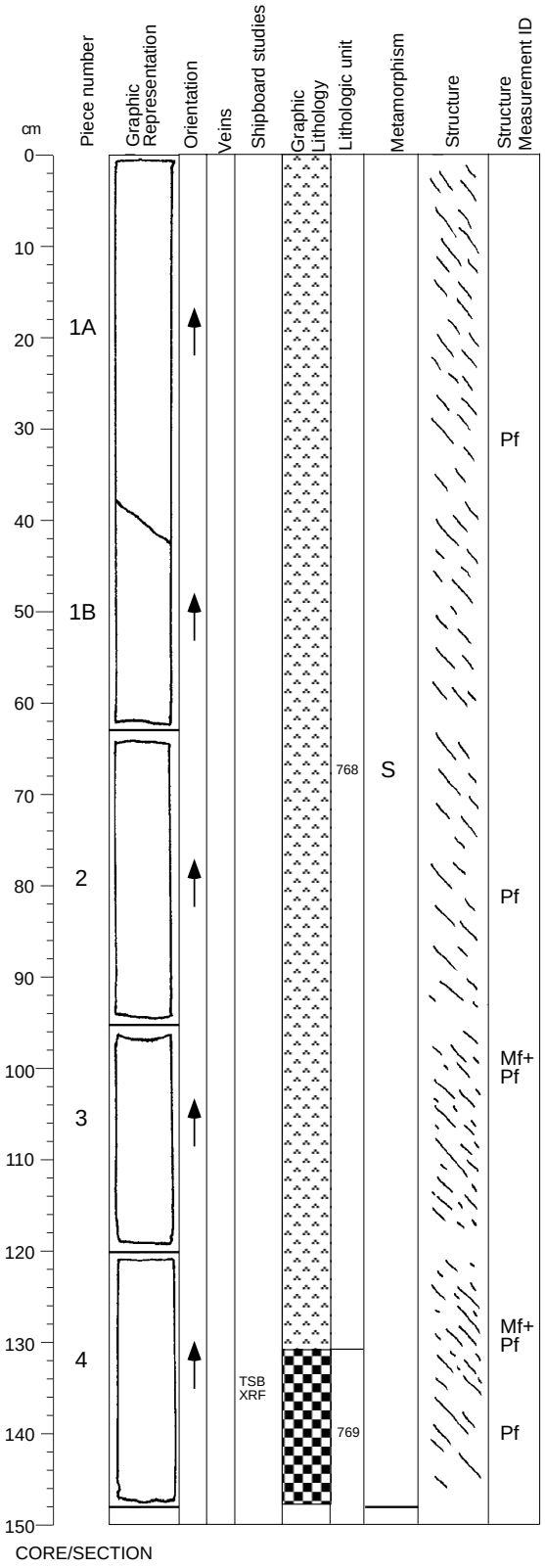
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Vein/Fracture Filling:
0.1 mm amphibole vein in Piece 2; 7 mm plagioclase+amphibole vein in Piece 4.

Structures:
Pf>V; Mf>V>Pf
The first three pieces of the section (from 0 to 78 cm) display a weak crystal-plastic foliation, regularly dipping around 45°, probably overprinting a weak to moderate magmatic foliation, and cut by a vein in Piece 2. The rest of the section displays a medium- to coarse-grained igneous texture, with no magmatic foliation, cut by a felsic vein in Piece 4. This vein clearly localizes some crystal-plastic deformation (a strong plastic foliation is present in the vein, while the host rock is undeformed).

Core Image



176-735B-158R-5

Interval 768: OLIVINE GABBRO
(see Section 176-735B-158R-2)

Interval 769: LEUCOCRATIC DISSEMINATED OXIDE GABBRO

		Depth in		Depth	
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	158	5	131	4	1050.72
Lower contact:	158	5	147	4	1050.88

Thickness (m): 0.16

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	75	40	5	coarse	tabular/ subhedral anhedral
Clinopyroxene	30	45	5	coarse	tabular/ anhedral
Olivine	3	15	1	medium	elongate/ subhedral anhedral
Opaques	1				amoeboidal aggregates/ disseminated
Total	109*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

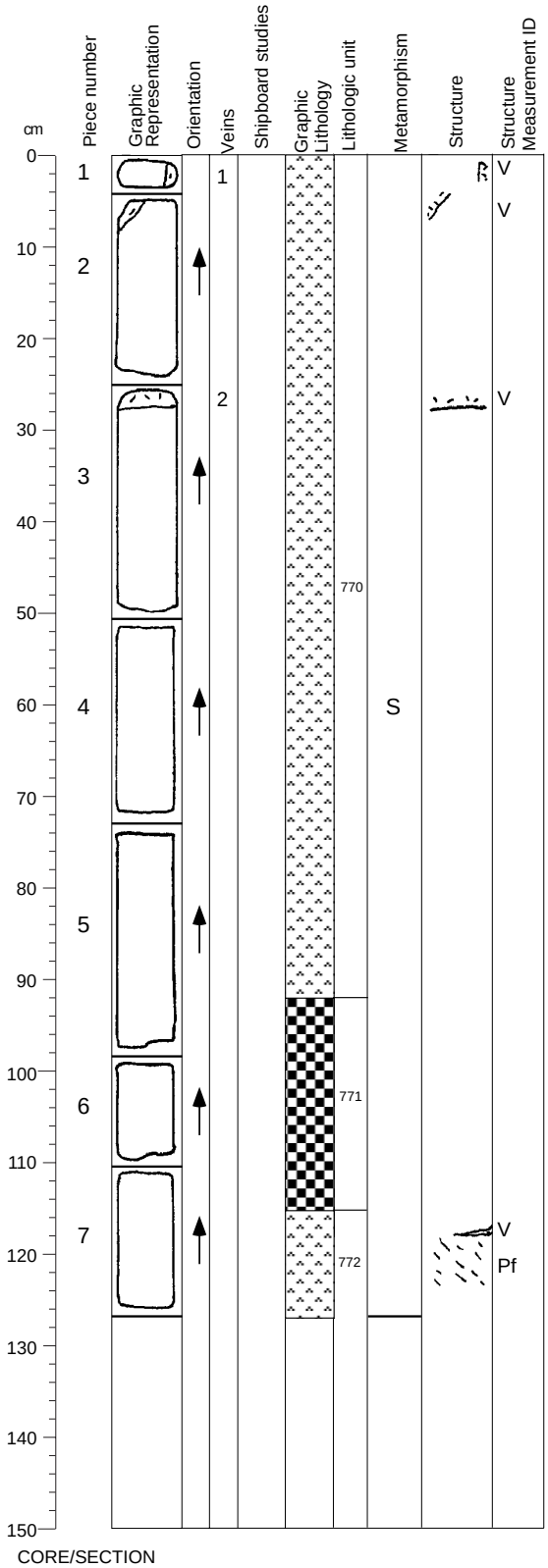
Comments: Cirrus texture present.

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Structures:
Mf>Pf
The entire section displays a weak crystal-plastic foliation, regularly dipping around 45°, overprinting from 97 to 132 a moderate magmatic foliation. The bottom half of Piece 4, at the bottom of the section, has a very coarse grain size (several cm).

Core Image



176-735B-158R-6

Interval 770: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	158	5	147	4	1050.88
Lower contact:	158	6	92	5	1051.81

Thickness (m): 0.93

	Grain Size (mm): Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	13	5	coarse	tabular/ subhedral
Clinopyroxene	35	35	2	coarse	equant/ anhedral
Olivine	6	3	1	medium	equant/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	91.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally veined at 2-10 cm and 25-28 cm in 158R-6. Oxide locally abundant (locally enclosing clinopyroxene) at 23-27 cm and 50-53 cm in 158R-6. Cirrus texture present.

Interval 771: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	158	6	92	5	1051.81
Lower contact:	158	6	115	7	1052.04

Thickness (m): 0.23

	Grain Size (mm): Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	30	5	coarse	tabular/ subhedral anhedral
Clinopyroxene	35	30	3	coarse	tabular/ anhedral subhedral
Olivine	3	3	1	medium	equant/ anhedral
Opaques	2				interstitial lenses/ interstitial network
Total	95*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide abundant at 93-116 cm in 158R-6. Porphyroclastic. Cirrus texture present.

Continued next page

Core Image

176-735B-158R-6 (cont'd)

Interval 772: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	158	6	115	7	1052.04
Lower contact:	159	1	71	7D	1054.41

Thickness (m): 2.37

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	20	3	coarse	tabular/ subhedral
Clinopyroxene	35	35	1	coarse	equant/ anhedral
Olivine	7	10	1	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	97.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Gradational grain size variation: medium-grained from top to 132 cm in 158R-7; coarse-grained from 132 cm in 158R-7 to 72 cm in 158R-8 with subophitic texture present locally. Brown clinopyroxene with green rims. Vertical channels of altered plagioclase at 30-40 cm in 151R-1. Oxide abundant at 108-109 i cm in 158R-7 and 0-1 cm in 158R-8.

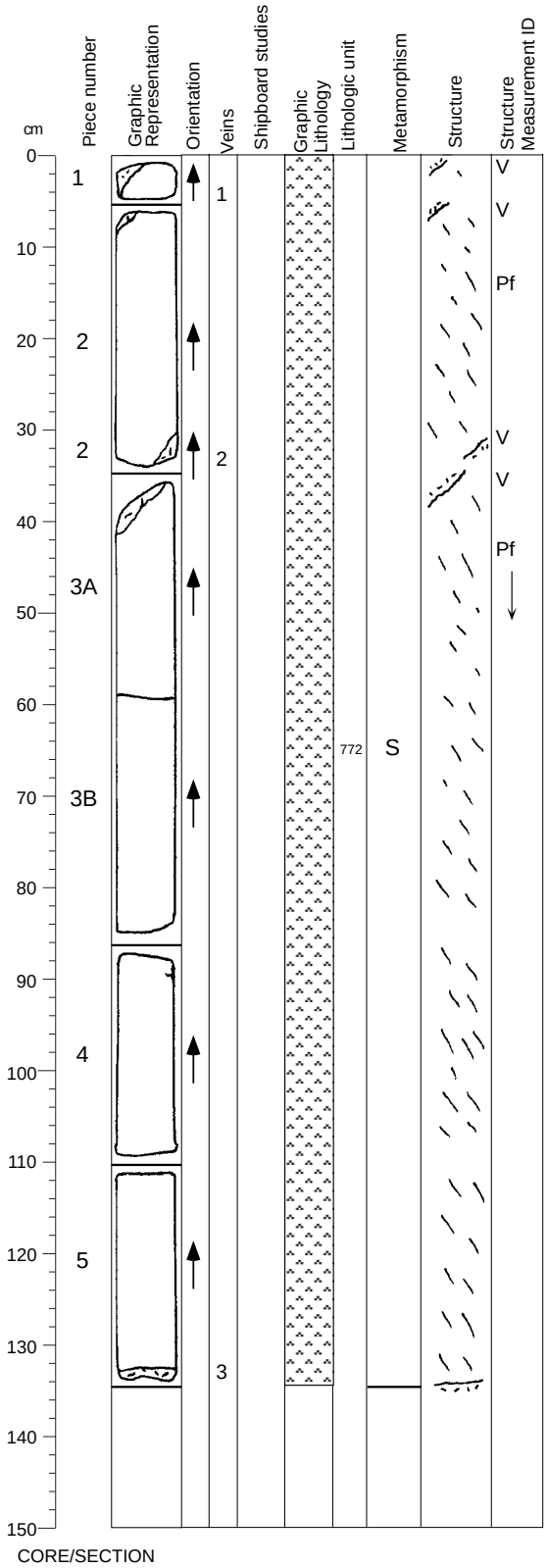
Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic veins.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Vein/Fracture Filling:
5-10 mm plagioclase+amphibole veins in Pieces 1-3.

Structures:
Mf>Pf
Most of the section displays a medium-grained igneous texture, with no magmatic foliation, except for the bottom of Piece 7, which has a weak crystal-plastic foliation, probably overprinting a weak magmatic foliation. Piece 6 and the top of Piece 7 contain a very coarse-grained gabbro, locally rich in oxides. A few veins cut the igneous texture at the top of the section and in Piece 7.

Core Image



176-735B-158R-7

Interval 772: OLIVINE GABBRO
(see previous section)

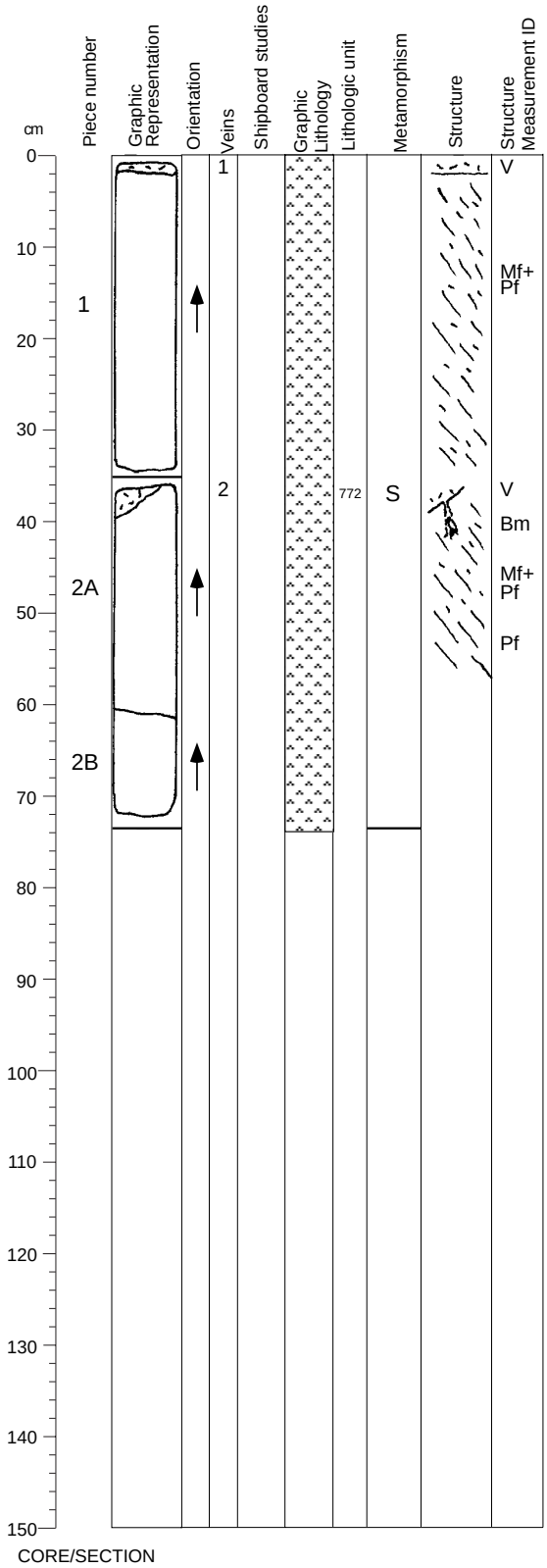
Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic veins.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Vein/Fracture Filling:
3-10 mm plagioclase+amphibole veins in Pieces 1 to 4.

Structures:
Pf>V
The entire section displays a weak, locally very weak, crystal-plastic foliation, regularly dipping around 45°, cut by a few veins in Pieces 1, 2, 3A, and 5.

Core Image



176-735B-158R-8

Interval 772: OLIVINE GABBRO
(see Section 176-735B-158R-6)

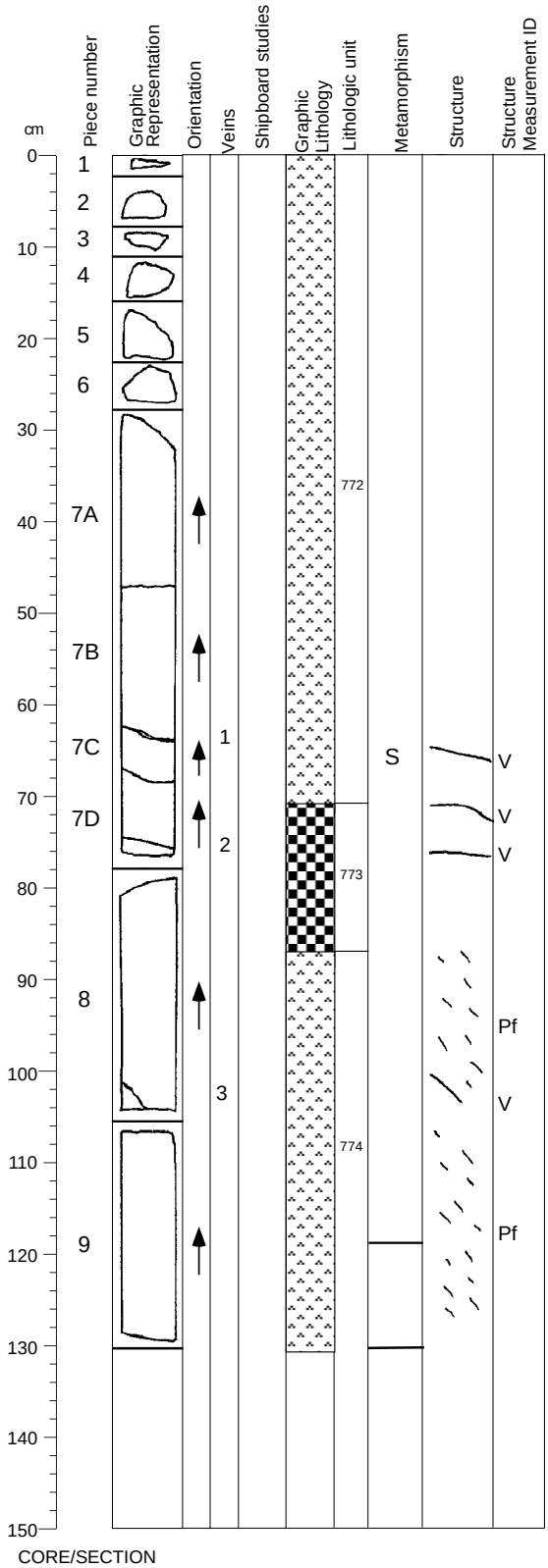
Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: tr.
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: tr.
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic veins.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Vein/Fracture Filling:
4 mm plagioclase+amphibole veins in Piece 1; 12 mm compound felsic vein in Piece 2.

Structures:
Mf>Pf>V=Bm
From 0 to 56 cm, the section displays a weak crystal-plastic foliation, overprinting a moderate magmatic foliation, and cut by two veins (top of Piece 1 and top of Piece 2). A diffuse vein splays out of the main vein in Piece 2, slightly brecciating the host rock. The bottom of the section (from 56 cm to the bottom) displays an igneous texture, with a weak magmatic foliation.

Core Image



176-735B-159R-1

Interval 772: OLIVINE GABBRO
(see Section 176-735B-158R-6)
Interval 773: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	159	1	71	7D	1054.41
Lower contact:	159	1	87	8A	1054.57

Thickness (m): 0.16

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	18	5	coarse	tabular/ subhedral anhedral
Clinopyroxene	35	15	2	coarse	equant/ anhedral
Olivine	3	3	1	medium	equant/ anhedral
Opaques	4				subhedral interstitial lenses interstitial network
Total	107*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Gradational grain size variation from coarse-grained at top to fine-grained at base. Mode variable. A diffuse felsic vein at 75 cm in 159R-1. Oxide abundant at 73-87 cm in 159R-1.

Interval 774: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	159	1	87	8A	1054.57
Lower contact:	159	2	45	2	1055.45

Thickness (m): 0.88

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	30	5	coarse	tabular/ subhedral anhedral
Clinopyroxene	25	18	3	coarse	equant/ anhedral
Olivine	8	5	1	medium	elongate/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	98.6*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic. Grain size gradational from fine-grained at top to coarse grained at base. Oxide locally abundant at 101-103 cm in 159R-1. Sulfide present at 113 in 159R-1 and 4 cm in 159R-2.

Continued next page

Core Image

176-735B-159R-1 (cont'd)

Alteration:
Dark green amphibole:
- Total Percent: <5
- Mode of occurrence: After pyroxene and olivine.
- Comments: As alteration rims.

Brown amphibole:
- Total Percent: trace
- Mode of occurrence: Along pyroxene cleavages, as rims.

Secondary plagioclase:
- Total Percent: <5
- Mode of occurrence: Replacing primary plagioclase.
- Comments: Irregularly distributed.

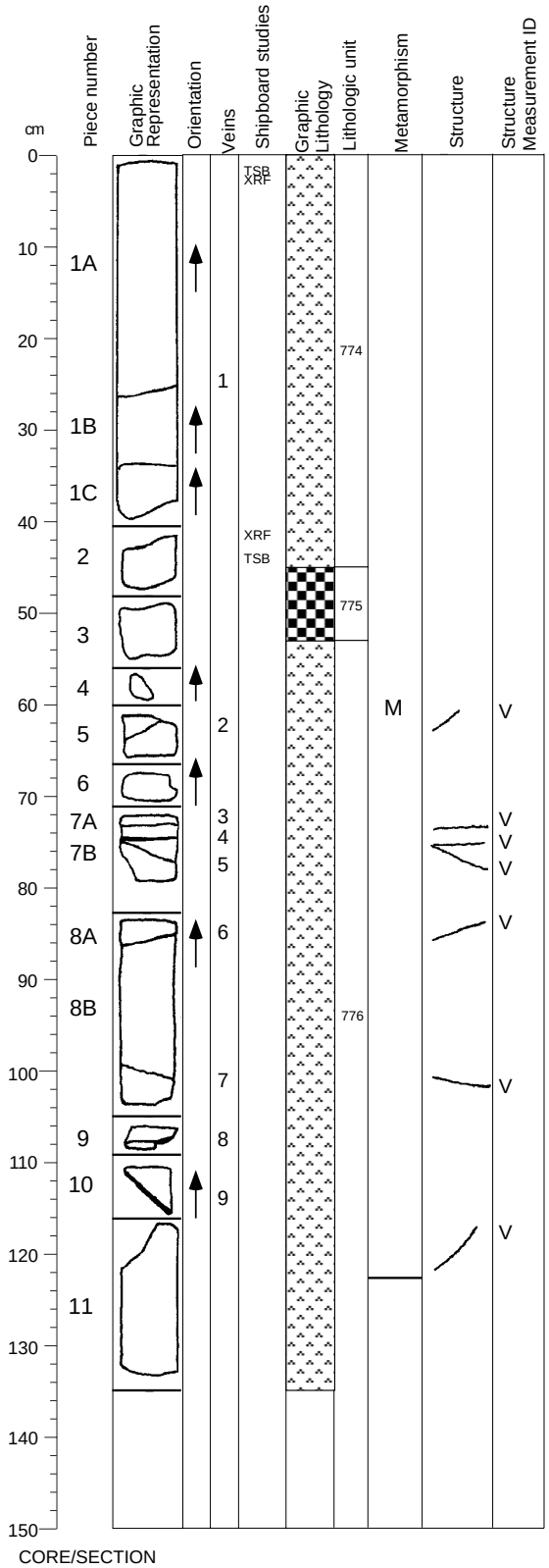
Smectite:
- Total Percent: trace
- Mode of occurrence: Green smectite near a smectite vein and near a felsic vein.

Background Alteration:
Degree of alteration: slight (10%). Olivine is partly altered to amphibole and smectite (25%). Clinopyroxene is partly altered to amphibole (4%). 6% of the plagioclase is recrystallized. Olivine alteration is increased along smectite veins and hairline cracks.

Vein/Fracture Filling:
0.3 mm smectite veins in Pieces 7 and 8.

Structures:
Mf>V; Mf>Pf>V
The section displays a medium to coarse-grained igneous texture, with no magmatic foliation, cut by a few late veins in Pieces 1B to 1D, and overprinted by a very weak crystal-plastic foliation in Pieces 8 and 9 (from 87 cm to the bottom). A late vein cuts the plastic foliation at the bottom of Piece 8.

Core Image



176-735B-159R-2

Interval 774: OLIVINE GABBRO
(see previous section)
Interval 775: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	159	2	45	2	1055.45
Lower contact:	159	2	53	3	1055.53

Thickness (m): 0.08

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	10	2	medium	tabular/ subhedral anhedral
Clinopyroxene	20	10	3	coarse	equant/ anhedral
Olivine	1	2	1	medium	elongate/ anhedral fractured
Opaques	6				amoeboidal aggregates/ disseminated
Total	92*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Medium

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide-rich interval, apparently associated with felsic vein infiltration. Oxide locally abundant at 42-52 cm in 159R-2.

Interval 776: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	159	2	53	3	1055.53
Lower contact:	159	5	128	5B	1060.59

Thickness (m): 5.06

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	20	1	coarse	equant/ anhedral oikocrystic
Olivine	8	3	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	103.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic. Locally veined (igneous) at 86 cm in 159R-2; 15, 84, 08, 132, and 141 cm in 159R-3; 19. Felsic veins at 113-122 cm in 159R-4 and 15-18 cm in 159R-5.

Continued next page

Core Image

176-735B-159R-2 (cont'd)

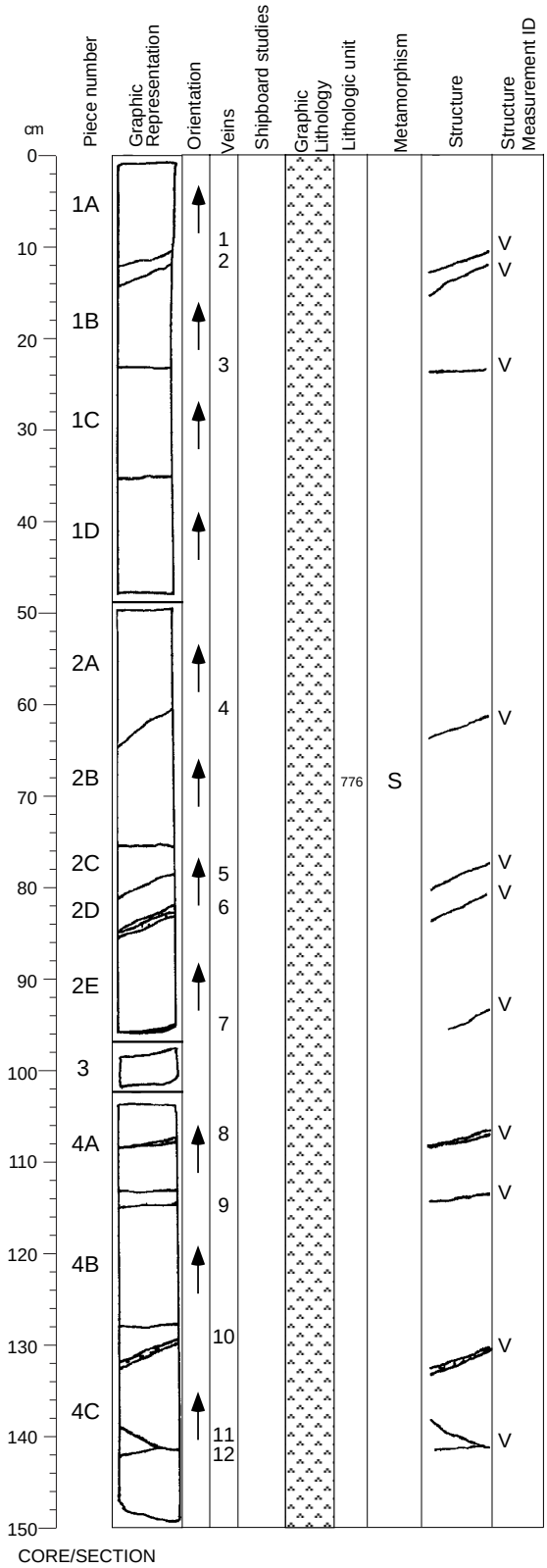
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Green smectite near a smectite vein and after amphibole.

Background Alteration:
Degree of alteration: moderate (20%). Olivine is highly altered to amphibole and smectite (50%). Clinopyroxene is partly altered to amphibole (6%). 10% of the plagioclase is recrystallized. Olivine alteration is increased along smectite veins and hairline cracks.

Vein/Fracture Filling:
0.2 mm amphibole veins in Pieces 1 and 5; 0.3-1 mm smectite veins in Pieces 7 to 10; 5 mm plagioclase+amphibole vein in Piece 8.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation, except for Piece 8B which possibly has a weak, steep, magmatic foliation. A series of late veins cut the igneous texture.

Core Image



176-735B-159R-3

Interval 776: OLIVINE GABBRO
(see previous section)

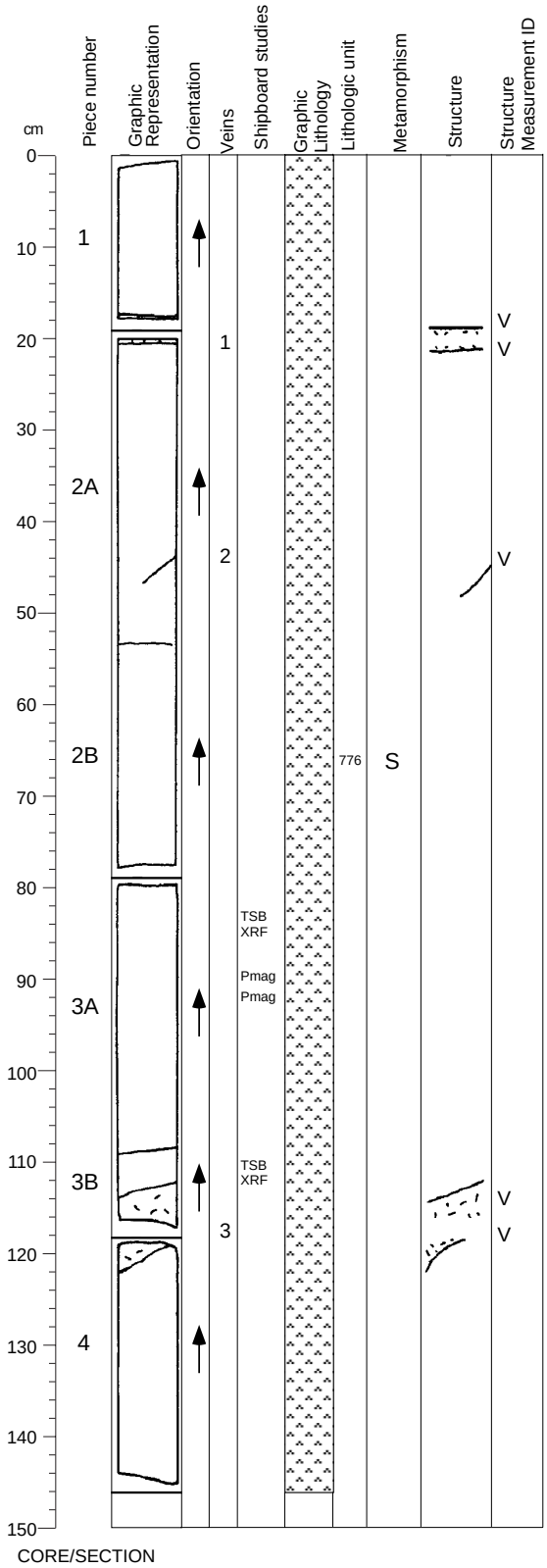
Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Green smectite near smectite veins and after amphibole in felsic veins.

Background Alteration:
Degree of alteration: slight (8%). Olivine is partly altered to amphibole and smectite (25%). Clinopyroxene is partly altered to amphibole (3%). 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
Smectite veins in Pieces 1, 2, 4B; 1-3 mm plagioclase+amphibole veins in Pieces 1, 2, and 4; plagioclase veins in Pieces 1 and 4C.

Structures:
Mf>V
The entire section displays a medium-grained igneous texture, with no or a weak magmatic foliation, cut by a series of gently dipping to subhorizontal veins.

Core Image



176-735B-159R-4

Interval 776: OLIVINE GABBRO
(see Section 176-735B-159R-2)

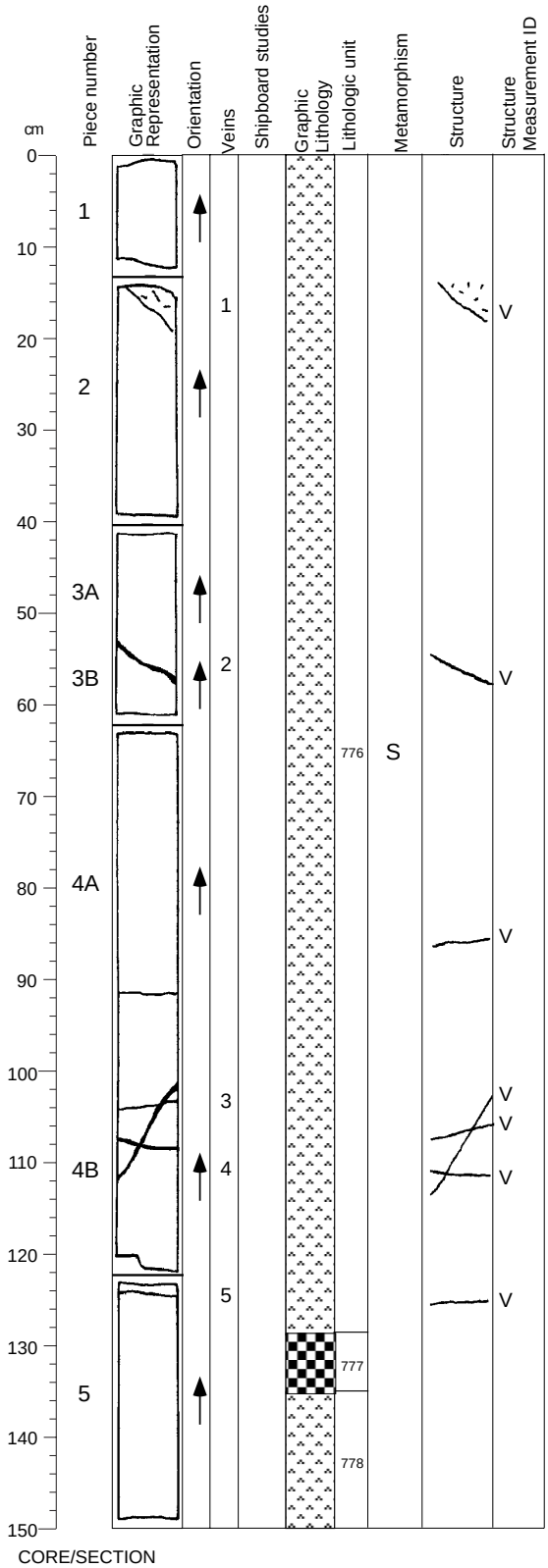
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic veins.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Brown to dark green smectite after olivine and pale green smectite after amphibole in and near felsic veins.

Background Alteration:
Degree of alteration: slight (4%). Olivine is weakly altered to amphibole and smectite (10%). Clinopyroxene is negligibly altered to amphibole (2%). 4% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.2 mm amphibole vein in Piece 2A; 4 mm plagioclase + amphibole vein in Pieces 1-2; 25 mm compound felsic vein in Pieces 3-4.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation, cut by a few veins.

Core Image



176-735B-159R-5

Interval 776: OLIVINE GABBRO
(see Section 176-735B-159R-2)
Interval 777: DISSEMINATED OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	159	5	128	5B	1060.59
Lower contact:	159	5	135	5B	1060.66

Thickness (m): 0.07

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	5	coarse	tabular/ subhedral
Clinopyroxene	40	20	5	coarse	equant/ anhedral
Olivine	2	3	1	medium	equant/ anhedral subhedral
Opaques	1				angular aggregates/ euhedral
Total	108*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Interval 778: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	159	5	135	5B	1060.66
Lower contact:	159	7	6	3	1062.33

Thickness (m): 1.67

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	3	coarse	tabular/ subhedral
Clinopyroxene	35	20	1	coarse	equant/ anhedral
Olivine	5	3	1	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	100.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic. Locally veined at 0-4 cm in 158R-6. Sulfide present at 90 cm in 159R-6.

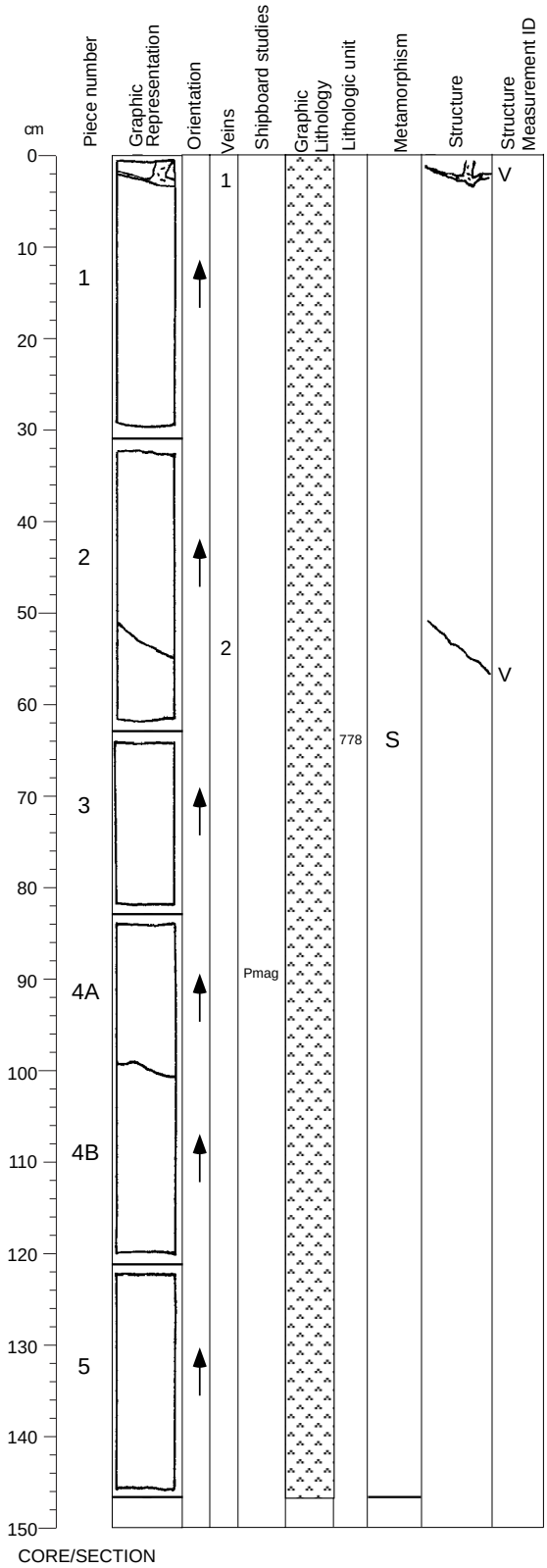
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Pale green smectite near smectite veins.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Vein/Fracture Filling:
2-15 mm plagioclase+amphibole veins in Pieces 2 to 4; 0.5-0.8 mm smectite veins in Pieces 4 and 5.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation, cut by a series of veins.

Core Image



176-735B-159R-6

Interval 778: OLIVINE GABBRO
(see previous section)

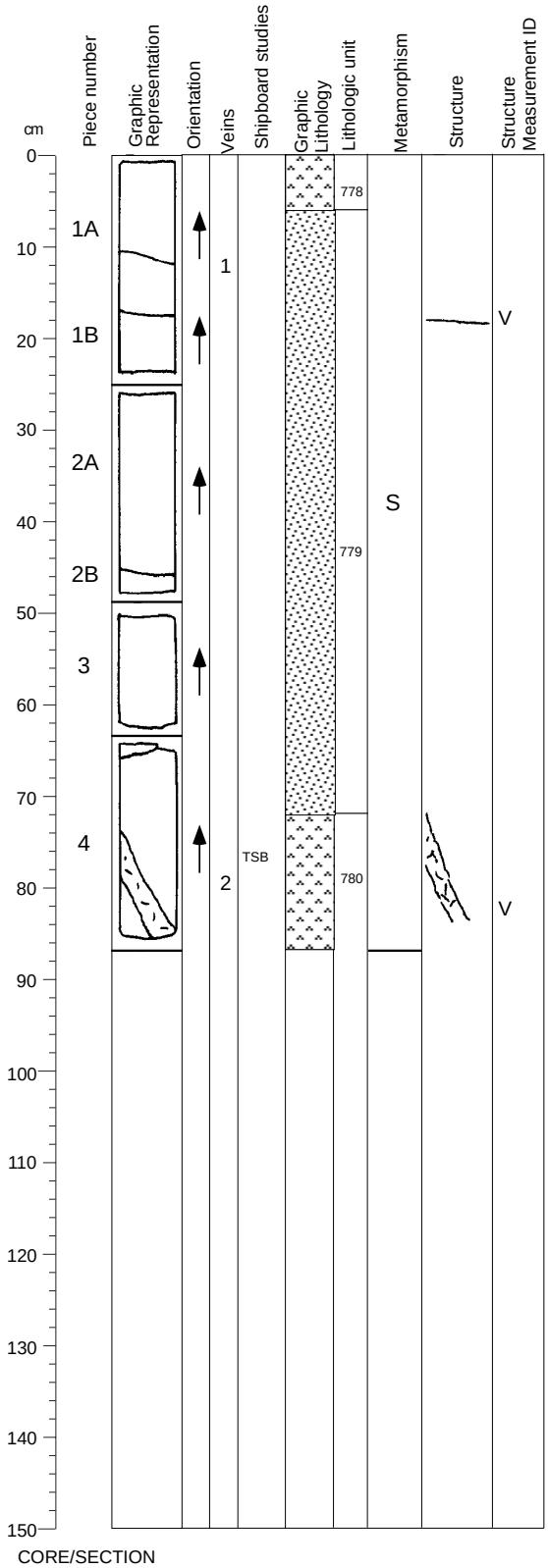
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Pale green smectite near smectite veins.

Background Alteration:
Degree of alteration: slight (5%). Olivine is weakly altered to amphibole and smectite (15%). Clinopyroxene is negligibly altered to amphibole (2%). 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1-5 mm plagioclase+amphibole veins in Pieces 1 and 2.

Structures:
Mf>V
The entire section displays a medium-grained igneous texture, with no or a weak magmatic foliation, cut by a few veins.

Core Image



176-735B-159R-7

Interval 778: OLIVINE GABBRO
(see Section 176-735B-159R-5)
Interval 779: OXIDE DIORITE

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	159	7	6	3	1062.33
Lower contact:	159	7	72	4B	1062.99

Thickness (m): 0.66

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	80	40	8	coarse	tabular/ subhedral
Opaques	5				angular aggregates/ subhedral
Total	85*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide-rich, coarse-grained dioritic vein.

Interval 780: OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	159	7	72	4B	1062.99
Lower contact:	160	6	121	3A	1071.76

Thickness (m): 8.77

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	2	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	20	2	coarse	equant/ anhedral
Olivine	6	3	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	101.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	variable texture	N/A

Comments: Mostly granular, locally subophitic. Coarse-grained patches present in places at 62-72 cm in 160R-1, 1-5 cm in 160R-2, 53-62 cm in 160R-2, 73-90 cm in 160R-2, 136-139 cm in 160R-2, 30-59 cm in 160R-4, 17-28 cm in 160R-5, 28-34 cm and 50- 69 cm in 160R-6. Locally veined at 4 cm in 160R-1, 65 cm in 160R-2, and 5 cm in 160R-6. Oxide disseminated throughout, and locally abundant at 102 and 133 cm in 160R-2, 30 and 58 cm in 160R-4, and 31 cm in 160R-5. Felsic vein at 119-125 cm in 160R-1. Clinopyroxene rich zone with intergranular plagioclase at 45-49 cm in 160R-1.

Continued next page

Core Image

176-735B-159R-7 (cont'd)

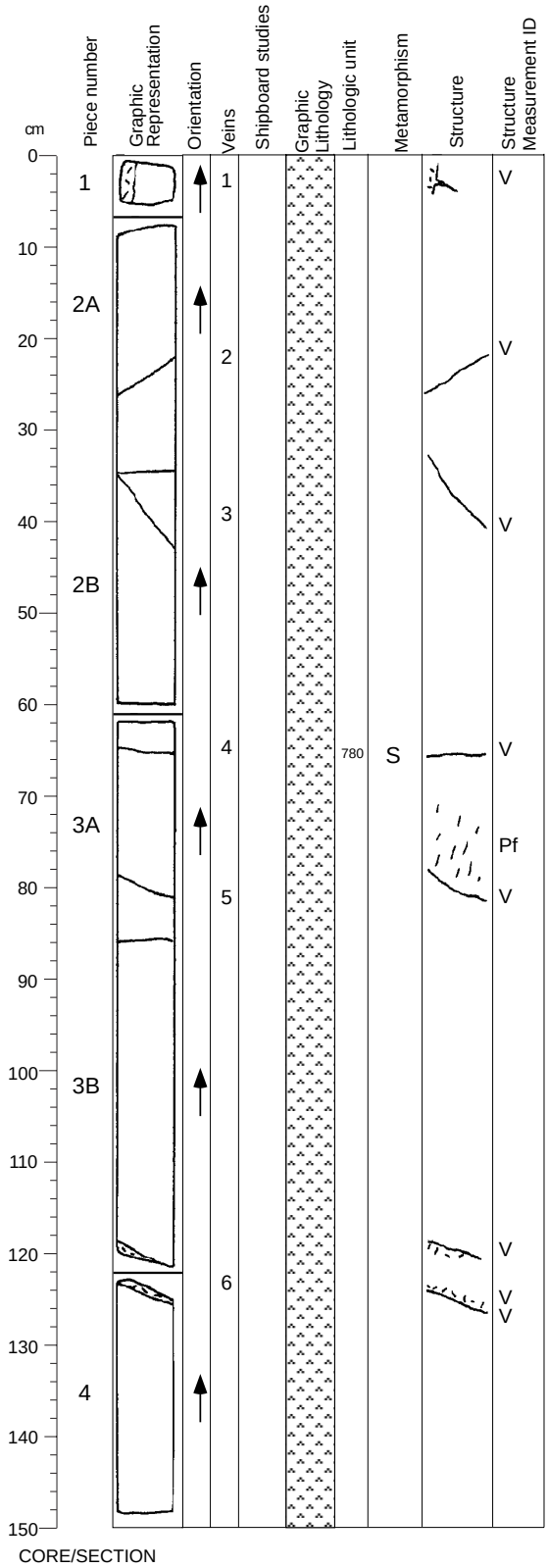
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Pale green smectite near smectite veins after pyroxene and amphibole.

Background Alteration:
Degree of alteration: slight (5 to 10%). Pieces 1 to 2: Same as previous section. Pieces 3 to 4: Olivine is weakly altered to amphibole and smectite (30%). Clinopyroxene is weakly altered to amphibole (5%). 10% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.4 mm plagioclase+amphibole vein in Piece 1; 12 mm compound felsic vein in Piece 4.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation, cut by a few veins.

Core Image



176-735B-160R-1

Interval 780: OLIVINE GABBRO
(see previous section)

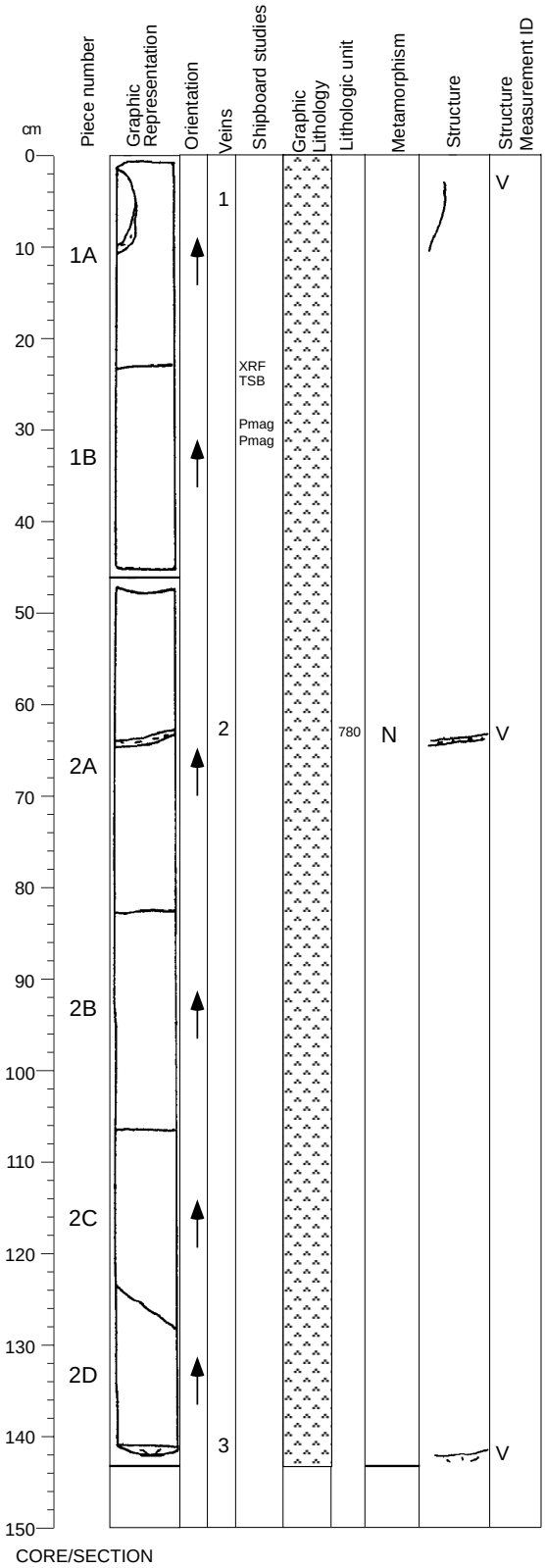
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Green and dark green smectite near smectite veins after olivine and amphibole.

Background Alteration:
Degree of alteration: slight (6%). Olivine is weakly altered to amphibole and smectite (10%). Clinopyroxene is weakly altered to amphibole (4%). 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.40.5-8 mm plagioclase+amphibole vein in Pieces 3 and 4; 6 mm compound felsic vein in Piece 1; 1.0-1.5 mm amphibole veins in Piece 2.

Structures:
Mf>Pf; Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation, overprinted by a weak, steep, crystal-plastic foliation in Piece 3A (from 72 to 80 cm), and cut by a few veins.

Core Image



176-735B-160R-2

Interval 780: OLIVINE GABBRO
(see Section 176-735B-159R-7)

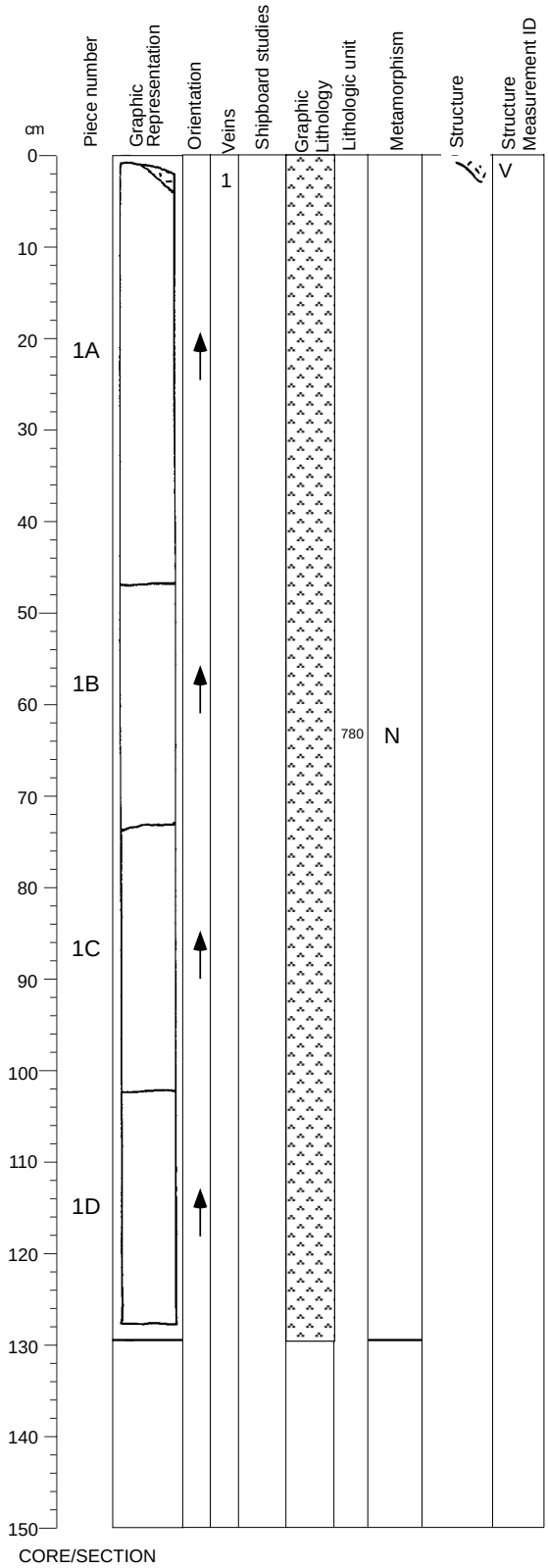
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.6-4 mm plagioclase+amphibole veins in Pieces 1 and 2.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a few veins.

Core Image



176-735B-160R-3

Interval 780: OLIVINE GABBRO
(see Section 176-735B-159R-7)

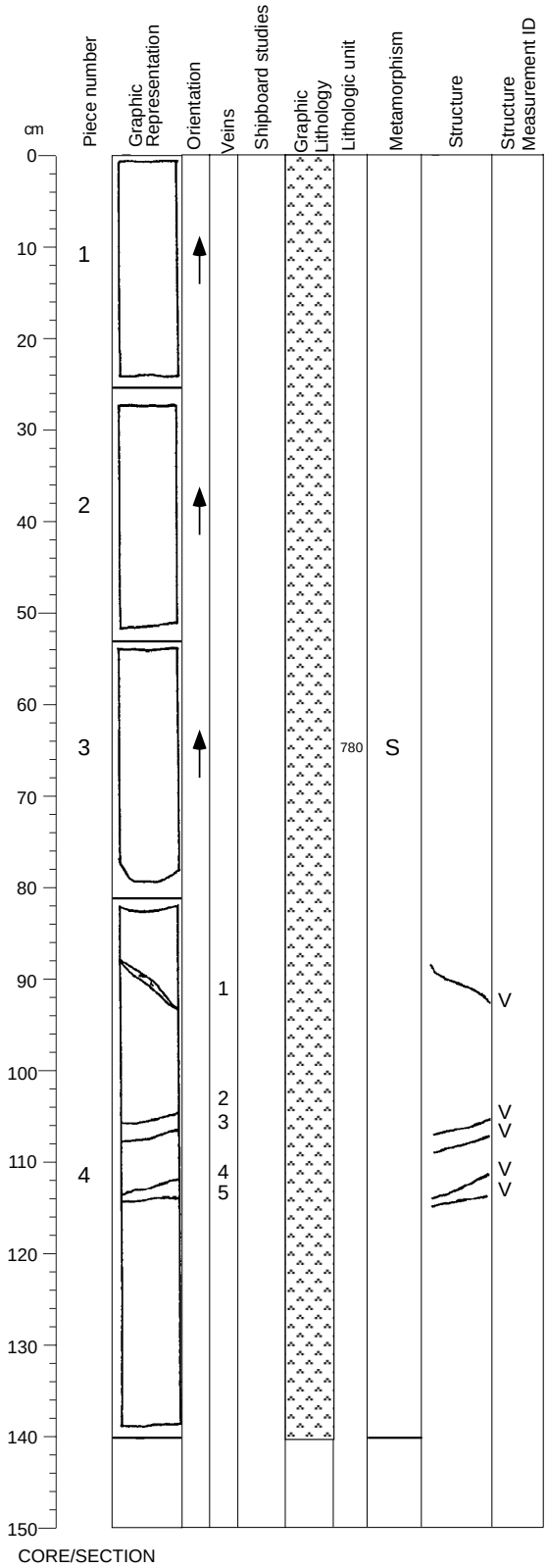
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
8 mm plagioclase+amphibole vein in Piece 1A.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a vein at the top of Piece 1A. The igneous texture is possibly overprinted by a very weak, subvertical crystal-plastic foliation from 94 cm to the bottom of the section.

Core Image



176-735B-160R-4

Interval 780: OLIVINE GABBRO
(see Section 176-735B-159R-7)

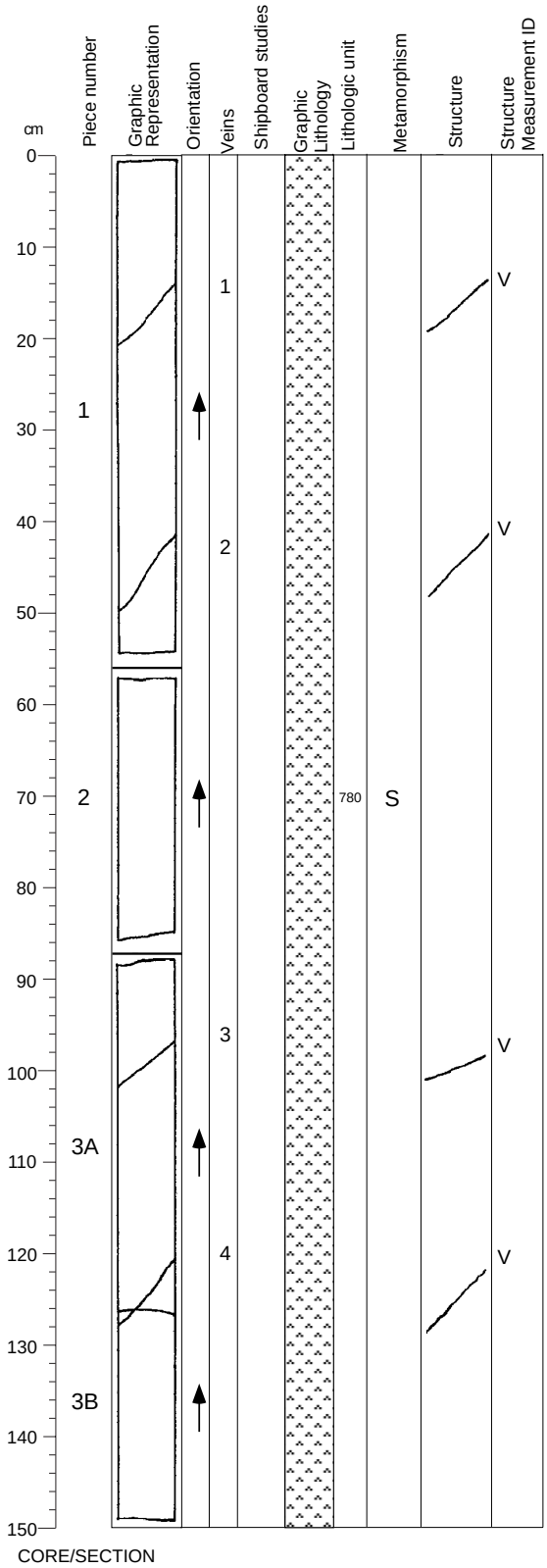
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Green smectite after amphibole near a smectite veins along felsic material.

Background Alteration:
Degree of alteration: slight (3%). Olivine is weakly altered to amphibole and smectite (5%). Clinopyroxene is negligibly altered to amphibole (1%). 4% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1 mm compound felsic vein in Piece 4A; 1 mm smectite veins in Piece 4.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a few veins in Pieces 4A to 4E.

Core Image



176-735B-160R-5

Interval 780: OLIVINE GABBRO
(see Section 176-735B-159R-7)

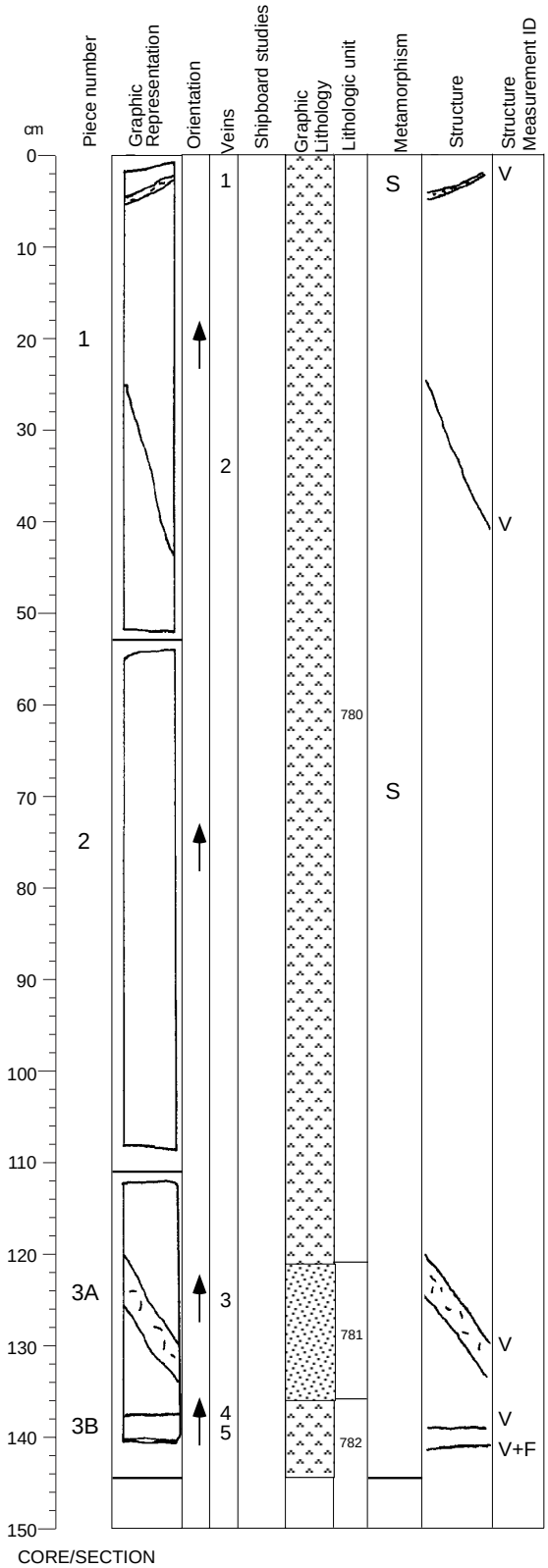
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: tr.
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: tr.
Mode of occurrence: Green smectite after amphibole near a smectite veins along felsic material.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.6-1 mm plagioclase+amphibole veins in Pieces 1 and 3; 0.5 mm smectite vein in Pieces 3A and 3B.

Structures:
Mf>V
The entire section displays a medium-grained igneous texture, with no or a weak magmatic foliation, cut by a few veins.

Core Image



176-735B-160R-6

Interval 780: OLIVINE GABBRO
(see Section 176-735B-159R-7)
Interval 781: OXIDE DIORITE

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	160	6	121	3A	1071.76
Lower contact:	160	6	136	3B	1071.91

Thickness (m): 0.15

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	85	15	3	coarse	tabular/ subhedral
Opaques	6				interstitial lenses/ disseminated
Total	91*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: A thick felsic (igneous) vein. Primary dark-green euhedral amphibole, biotite, and alkali feldspar(?). Oxide abundant and concentrated near contacts.

INTERVAL 782: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	160	6	136	3B	1071.91
Lower contact:	161	1	105	3B	1074.05

Thickness (m): 2.14

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	2	coarse	tabular/ subhedral
Clinopyroxene	35	20	2	coarse	equant/ anhedral
Olivine	5	4	1	medium	oikocrystic amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic/ophitic. Oxide present, locally abundant at 46 and 73 cm in 160R-7. Locally altered and deformed at 46-78 cm in 160R-7 and 40-50 cm in 161R-1.

Continued next page

Core Image

176-735B-160R-6 (cont'd)

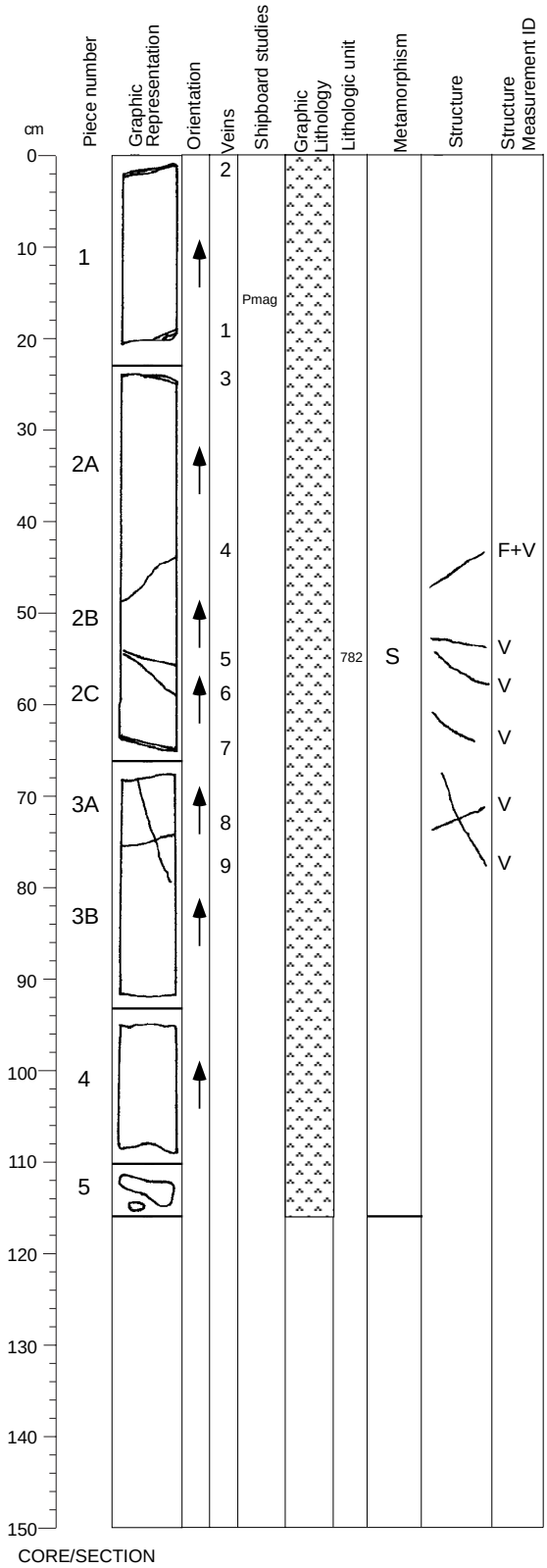
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic intrusions.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole in and near felsic areas.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Green smectite after amphibole in and near felsic material.
Chlorite(?):
Total Percent: trace
Mode of occurrence: Greenish-gray chlorite or mixed-layer in a felsic vein after biotite.

Background Alteration:
Degree of alteration: slight (5%). Olivine is weakly altered to amphibole and smectite (10%). Clinopyroxene is negligibly altered to amphibole (2%). 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
4 mm plagioclase+amphibole veins in Piece 1; 1 mm amphibole vein in Piece 1; 25 mm compound felsic vein in Piece 3; 0.5-1 mm smectite veins in Piece 3.

Structures:
Mf>V
The entire section displays a medium-grained igneous texture, with no or a weak magmatic foliation, cut by a few veins. The last vein, at the bottom of Piece 3B grades into a fault (nice set of slickenslides, parallel to the cut face, on the fault face).

Core Image



176-735B-160R-7

Interval 782: OLIVINE GABBRO
(see previous section)

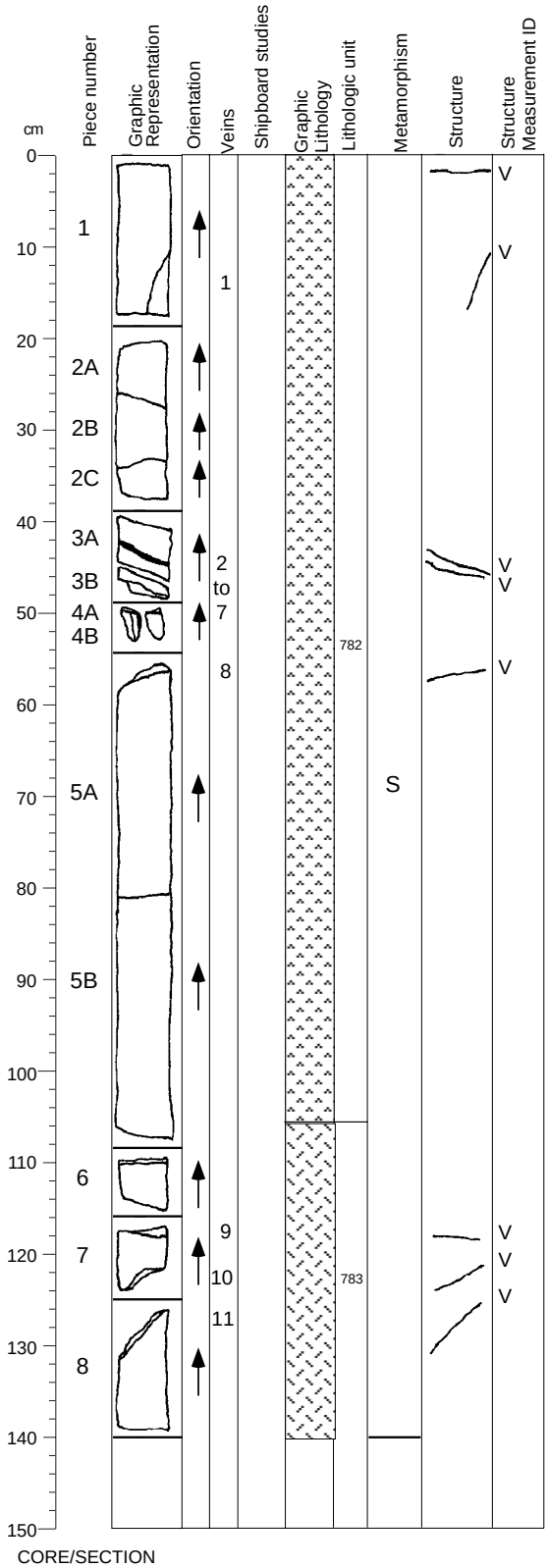
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine and pale green smectite after plagioclase in the vicinity of smectite veins.

Background Alteration:
Degree of alteration: slight (10%). Olivine significantly altered to amphibole and smectite (35%). Clinopyroxene is negligibly altered to amphibole (2%). 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3-1 mm smectite veins in Pieces 1-3; 0.3 mm plagioclase+amphibole vein in Piece 2; 3 mm compound felsic vein in Piece 3.

Structures:
Mf>V
The entire section displays a medium-grained igneous texture, with no magmatic foliation, cut by a few veins.

Core Image



176-735B-161R-1

Interval 782: OLIVINE GABBRO
(see Section 176-735B-160R-6)
Interval 783: GABBRO

	Core	Section	Depth in Section	Piece	Depth mbsf
Interval Location:	161	1	105	3B	1074.05
Upper contact:	161	2	2	1	1074.41

Thickness (m): 0.36

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	5	coarse	tabular/ subhedral
Clinopyroxene	35	20	10	coarse	tabular/ subhedral anhedral
Olivine	4	15	1	coarse	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	99.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide abundant at 47 cm and 73 cm in 160R-7.

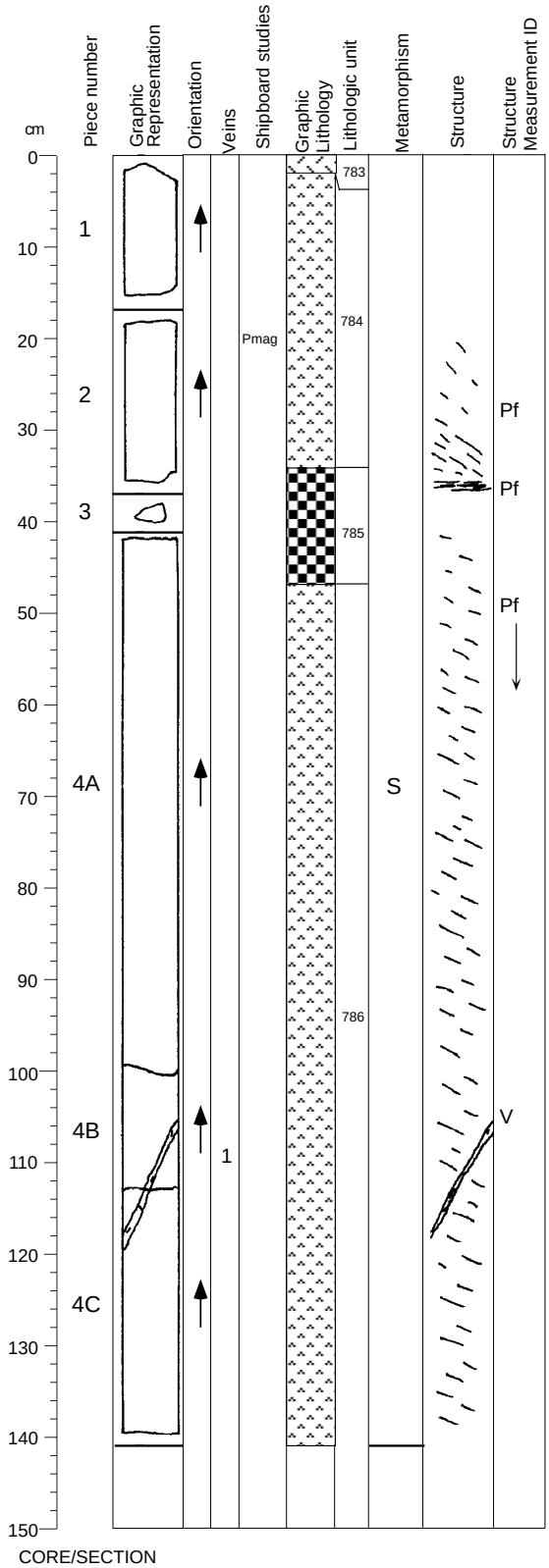
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <3
Mode of occurrence: Some patches of dark green smectites and sulfides after olivine.
Comments: In the vicinity of smectite veins and cracks.

Background Alteration:
Degree of alteration: slight to moderate (4 to 20%). Low abundance of amphibole after clinopyroxene (1%) and secondary plagioclase (2%). The olivine is variously altered to smectite and sulfide along smectite veins and cracks in Pieces 3 to 5 and 6 to 8. In Pieces 6 to 8, pyrite and calcite(?) are replacing olivine in addition to smectite.

Vein/Fracture Filling:
0.2-4 mm smectite veins in Pieces 3,4,6-8; 0.8 mm amphibole vein in Pieces 1 and 5.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation, cut by a series of veins.

Core Image



176-735B-161R-2

Interval 783: GABBRO
(see previous section)

Interval 784: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	161	2	2	1	1074.41
Lower contact:	161	2	34	2	1074.73

Thickness (m): 0.32

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	3	coarse	tabular/ subhedral
Clinopyroxene	30	25	1	coarse	equant/ anhedral
Olivine	10	20	1	coarse	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Interval 785: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	161	2	34	2	1074.73
Lower contact:	161	2	47	4A	1074.86

Thickness (m): 0.13

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	5	coarse	tabular/ subhedral anhedral
Clinopyroxene	25	15	1	coarse	equant/ anhedral
Olivine	3	3	1	medium	amoeboidal/ anhedral
Opaques	5				interstitial lenses/ interstitial network
Total	98*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Foliated with felsic segregations.

Continued next page

Core Image

176-735B-161R-2 (cont'd)

Interval 786: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	161	2	47	4A	1074.86
Lower contact:	161	3	122	2E	1077.02

Thickness (m): 2.16

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape	Habit
Plagioclase	60	15	5	coarse	tabular/ subhedral	
Clinopyroxene	30	20	1	coarse	equant/ anhedral	
Olivine	10	5	1	medium	amoeboidal/ anhedral	
Opaques		0.5			amoeboidal aggregates/ disseminated	
Total	100.5*		(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Locally intergranular/subophitic. Gradational grain size variation. Locally veined at 106-120 cm in 161R-2. Oxide locally abundant at 95-96 cm in 161R-2, 4 cm and 24 cm in 161R-3. Plagioclase altered near base.

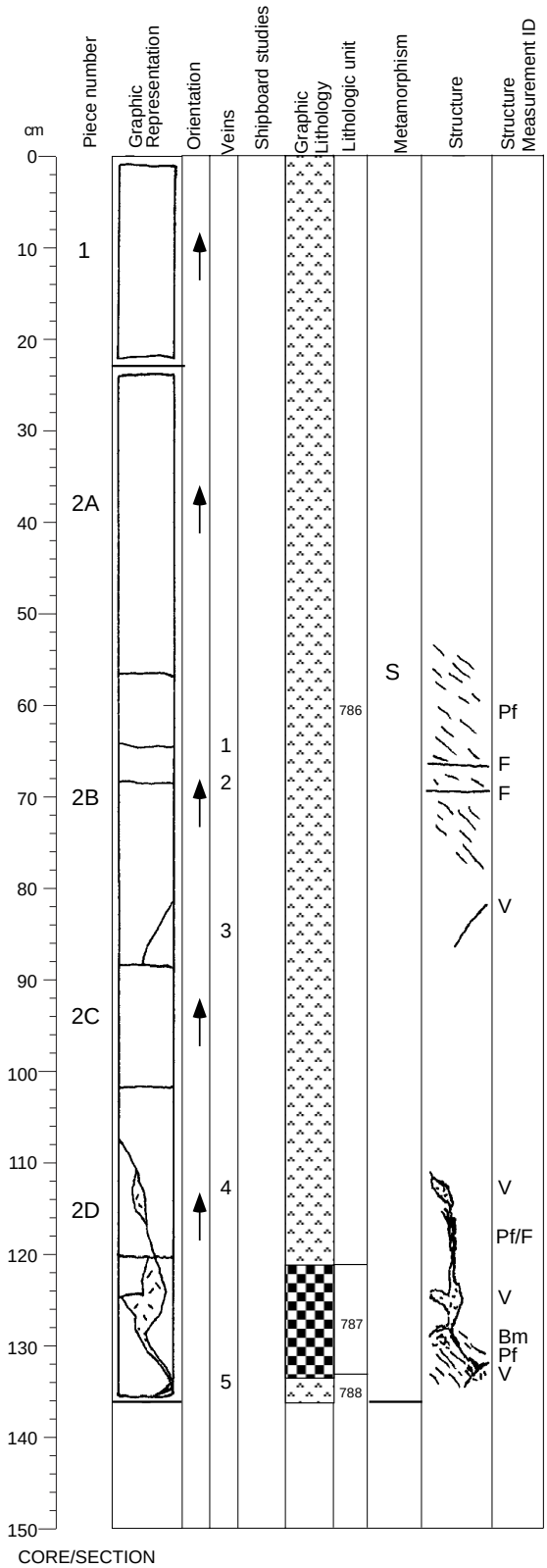
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (8%). Olivine is weakly altered to amphibole and smectite (10%). Clinopyroxene is partly altered to amphibole (6%). 8% of the plagioclase is recrystallized.

Vein/Fracture Filling:
4 mm plagioclase+amphibole vein in Pieces 4B and 4C.

Structures:
Mf>Pf>Pf; Pf>V
Most of the section displays a weak crystal-plastic foliation, regularly dipping 25˚, except for Piece 1, which has a coarse-grained igneous texture, with no magmatic foliation, and for Piece 2, in which the plastic foliation is strong between 28 and 35 cm, ending in a 2 cm-thick mylonitic zone (dipping 5˚; 35-37 cm). A vein cut the plastic foliation in Pieces 4B to 4C.

Core Image



176-735B-161R-3

Interval 786: OLIVINE GABBRO
(see previous section)
Interval 787: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	161	3	122	2E	1077.02
Lower contact:	161	3	134	2E	1077.14

Thickness (m): 0.12

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	10	3	medium	tabular/ subhedral
Clinopyroxene	30	12	2	coarse	equant/ anhedral
Olivine	1	2	1	medium	equant/ anhedral
Opaques	3				interstitial lenses/ interstitial network
Total	99*		(see explanatory notes)		

*Major phases estimated to ± 5%)
Grain Size: Medium

	Type	Distribution
Texture:	granular	N/A

Comments: Veined interval with felsic patches, dark-green amphibole.

Interval 788: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	161	3	134	2E	1077.14
Lower contact:	161	4	83	3A	1077.99

Thickness (m): 0.85

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	35	6	coarse	tabular/ subhedral anhedral
Clinopyroxene	30	40	6	coarse	tabular/ anhedral subhedral
Olivine	10	5	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally veined at 3 cm in 161R-4, 45-53 cm in 161R-4.

Continued next page

Core Image

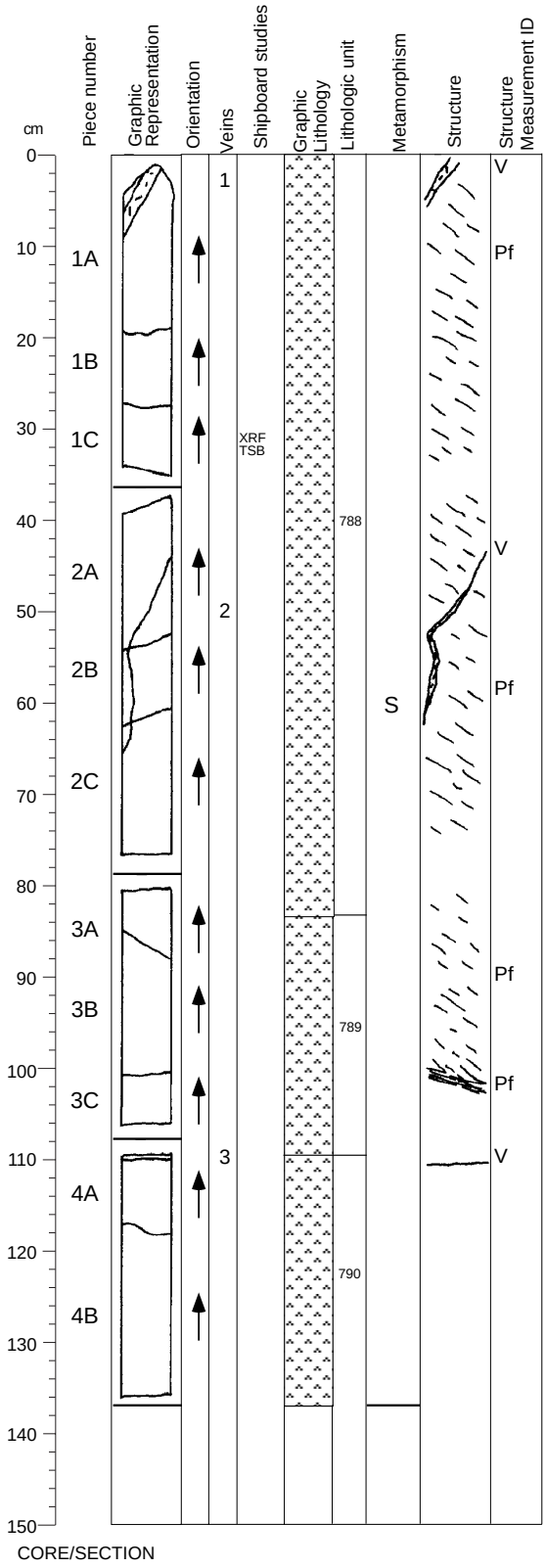
176-735B-161R-3 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near a felsic vein.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near the felsic vein.
Chlorite(?):
Total Percent: trace
Mode of occurrence: In the felsic vein.

Background Alteration:
Degree of alteration: slight (8%). Same as previous section.
Vein/Fracture Filling:
0.5-8 mm amphibole+plagioclase veins in Pieces 2B, 2D; 4 mm compound felsic vein in Piece 2D.

Structures:
Mf>Pf>F; Mf>V; Mf>V>Pf/F; Mf>V=Bm>Pf
From 0 to 54 cm and from 80 to 114 cm, the section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation. From 54 to 80 cm, a weak crystal-plastic foliation dips at 30˚, and is cut by two faults. At the bottom of the section, below 114 cm, the igneous texture is overprinted by veins and associated magmatic breccias, and localized crystal-plastic deformation, successively. At the bottom of Piece 4, the localized subvertical shear zone grades into a fault.

Core Image



176-735B-161R-4

Interval: 788: OLIVINE GABBRO
(see previous section)
Interval 789: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	161	4	83	3A	1077.99
Lower contact:	161	4	109	4A	1078.25

Thickness (m): 0.26

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	12	2	medium	tabular/ subhedral
Clinopyroxene	30	12	1	medium	equant/ anhedral
Olivine	8	5	1	medium	elongate/ anhedral
Opaques	0.5				subhedral amoeboidal aggregates/ disseminated
Total	103.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium

	Type	Distribution
Texture:	granular	N/A

Interval 790: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	161	4	109	4A	1078.25
Lower contact:	162	4	144	4B	1087.80

Thickness (m): 9.55

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	3	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	20	1	coarse	equant/ anhedral
Olivine	8	4	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	108.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	N/A

Comments: Medium- to coase-grained. Locally fine-grained at 90-100 cm in 161R-5, and 105-110 cm in 161R-7. Locally veined at 70-84 cm in 161R-1, 36 cm in 161R-8, 73 cm in 162R-3 and 104 cm in 162R-4.

Continued next page

Core Image

176-735B-161R-4 (cont'd)

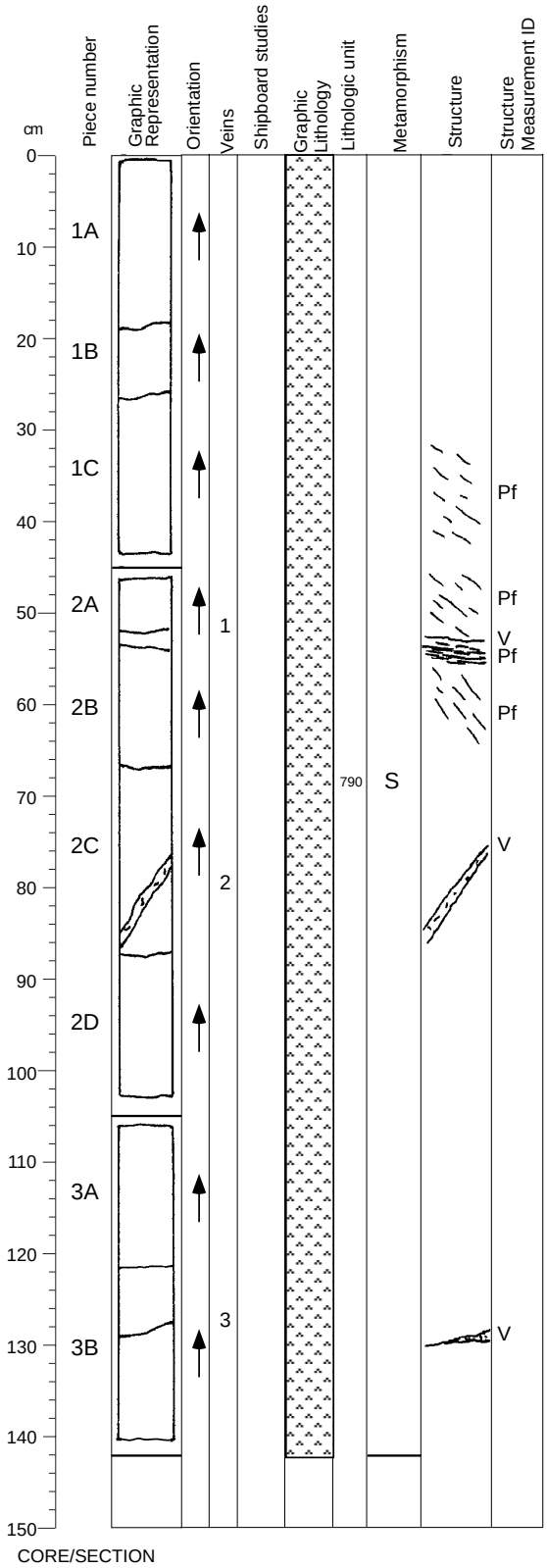
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole, in the vicinity of felsic veins.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near the felsic vein.
Chlorite:
Total Percent: trace
Mode of occurrence: At contact with the amphibole-plagioclase vein.
Smectite:
Total Percent: trace
Mode of occurrence: Dark smectite after olivine.

Background Alteration:
Degree of alteration: slight (10%). Olivine is partly replaced by amphibole and smectite (10%). Clinopyroxene is negligibly altered to amphibole (8%). 12% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.2-3 mm plagioclase+amphibole+chlorite veins in Pieces 1, 2, and 4.

Structures:
Mf>Pf>V; Pf>Pf; Mf>V
From 0 to 100 cm, the section displays a weak crystal-plastic foliation, dipping 35˚, cut by two veins. This plastically deformed zone ends at 100-101 cm with a narrow, reverse, mylonitic shear zone, dipping 5˚.The rest of the section displays a medium- to coarse-grained igneous texture, with a weak to moderate magmatic foliation, cut by a vein at the top of Piece 4A.

Core Image



176-735B-161R-5

Interval: 790: OLIVINE GABBRO
(see previous section)

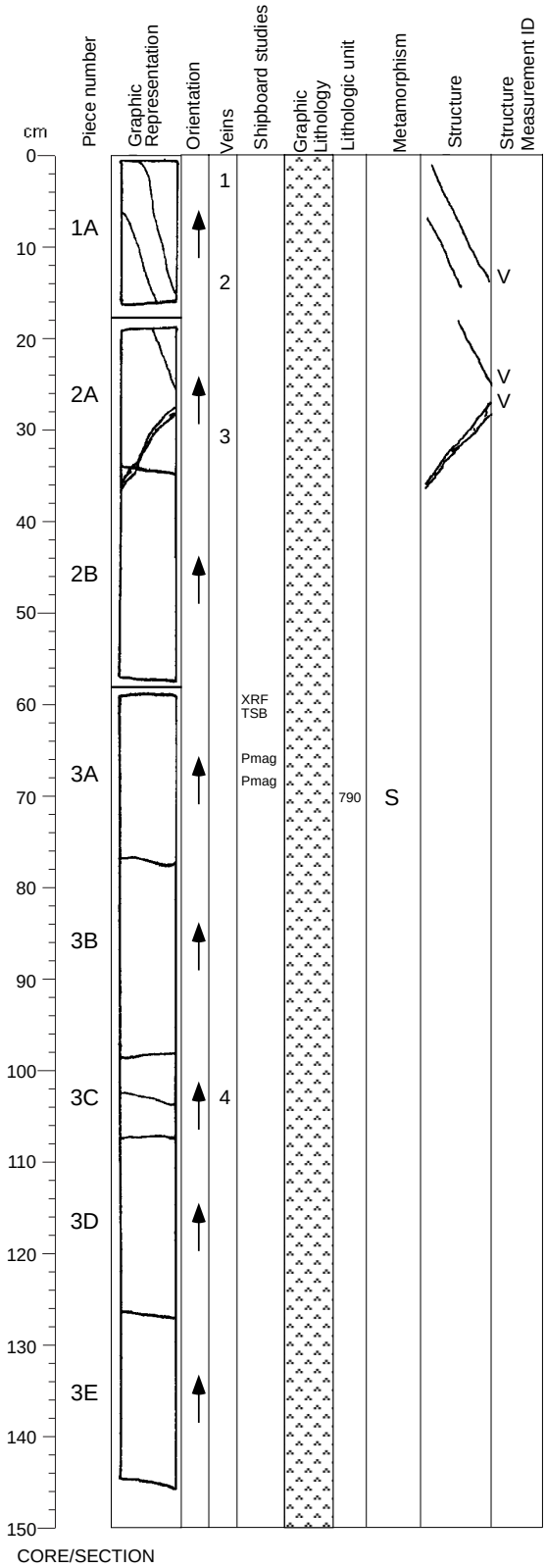
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole, in the vicinity of felsic veins.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near the felsic vein.

Background Alteration:
Degree of alteration: slight (4%). Olivine is weakly altered to amphibole and smectite (6%). Clinopyroxene is slightly altered to amphibole (3%). 4% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.2-4 mm plagioclase+amphibole veins in Pieces 2 and 3.

Structures:
Mf>Pf>V; Pf>Pf; Mf>V
From 0 to 32 cm, and from 61 to 139 cm, the section displays a medium-grained igneous texture, with a weak to moderate magmatic foliation (dips at 20˚), cut by two veins in Pieces 2C and 3B. From 32 to 61 cm, a weak to moderate crystal-plastic foliation dips 30 to 45˚, and is overprinted between 52 and 55 cm by a narrow crystal-plastic shear zone (strong foliation, dips at 10˚).

Core Image



176-735B-161R-6

Interval: 790: OLIVINE GABBRO
(see Section 176-735B-161R-4)

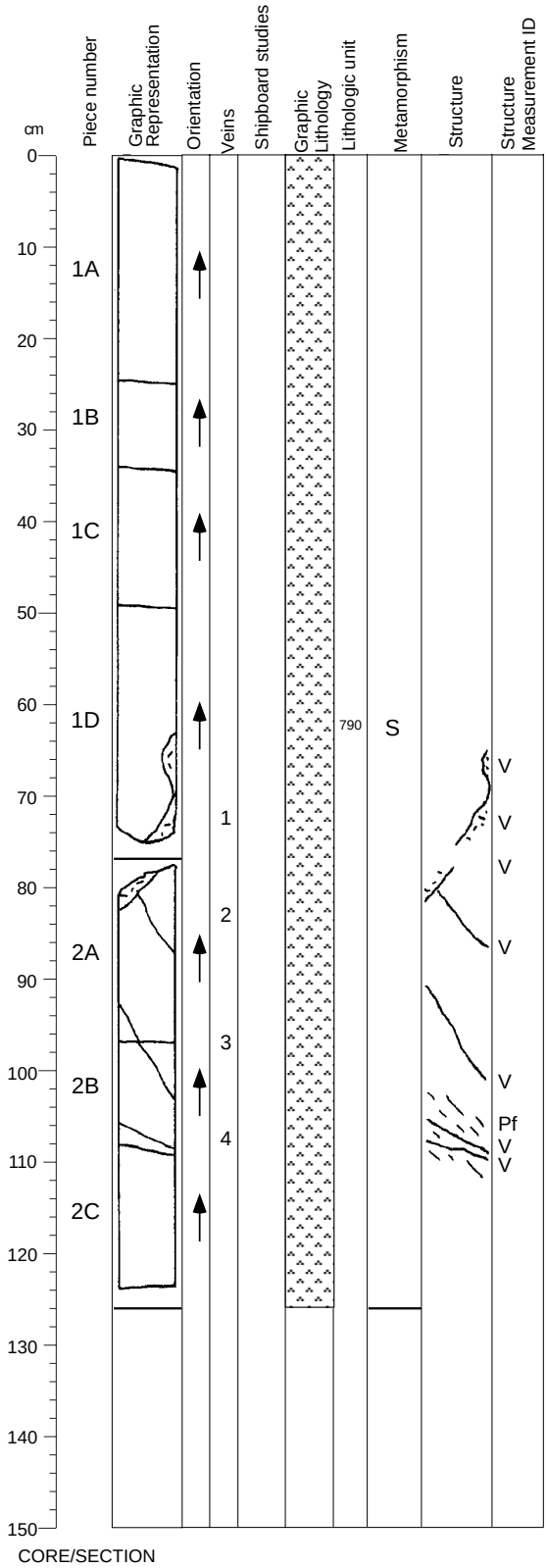
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Vein/Fracture Filling:
0.5-8 mm plagioclase+amphibole veins in Pieces 1, 2, and 3C.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation, and cut by a few veins in Pieces 1 to 2B.

Core Image



176-735B-161R-7

Interval: 790: OLIVINE GABBRO
(see Section 176-735B-161R-4)

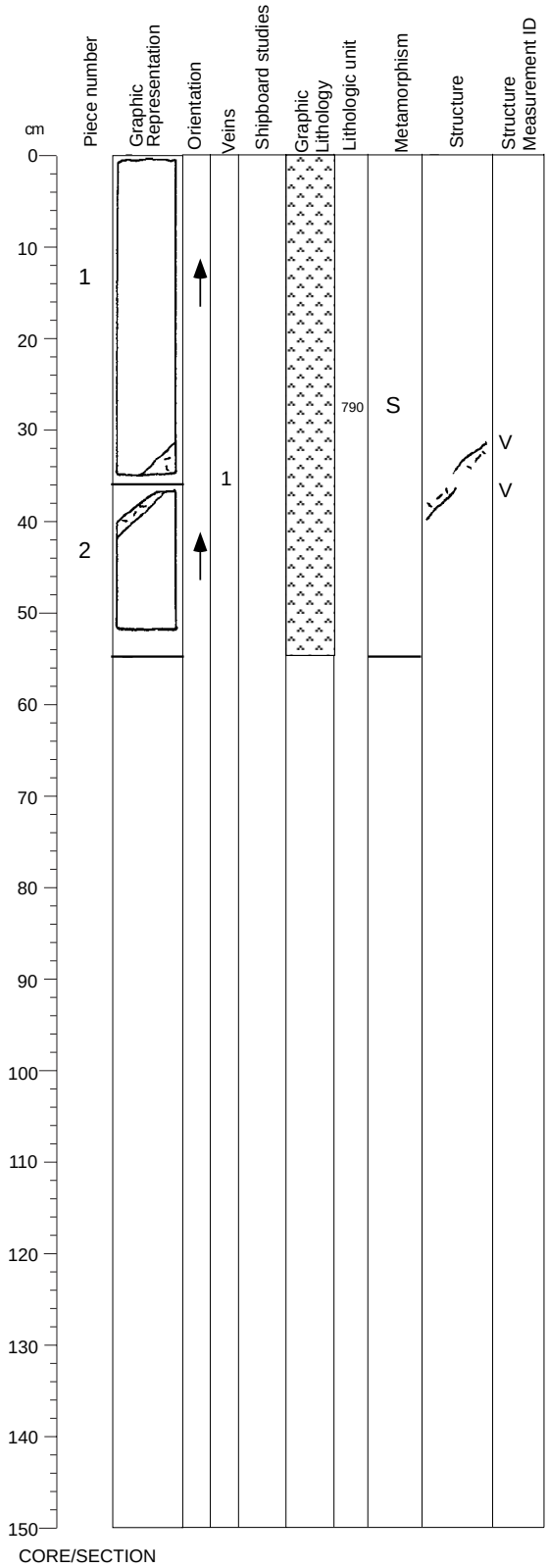
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Mode of occurrence: More abundant near felsic a vein.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole, in the vicinity of the felsic vein.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near the felsic vein.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Vein/Fracture Filling:
0.5-6 mm plagioclase+amphibole veins in Pieces 1 and 2; 0.4 mm amphibole veins in Piece 2A and 2B.

Structures:
Mf>V; Mf>Pf>V
Most of the section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation, except for Piece 2B, which has a weak crystal-plastic foliation between 102 and 109 cm. The previous fabrics are cut by a few veins in Pieces 1D to 2B.

Core Image



176-735B-161R-8

Interval: 790: OLIVINE GABBRO
(see Section 176-735B-161R-4)

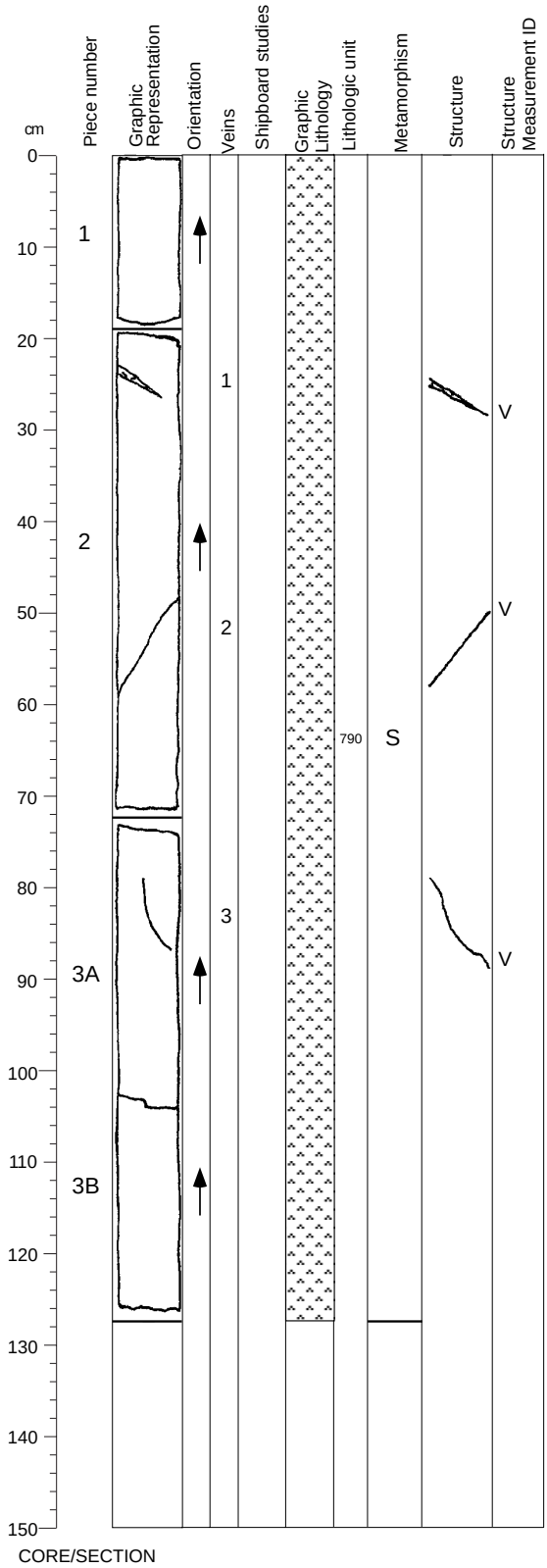
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic a vein.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole, in the vicinity of the felsic vein.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near the felsic vein.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Vein/Fracture Filling:
8 mm plagioclase+amphibole vein in Pieces 1and 2.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation, cut by a vein at the boundary between Pieces 1 and 2.

Core Image



176-735B-162R-1

Interval: 790: OLIVINE GABBRO
(see Section 176-735B-161R-4)

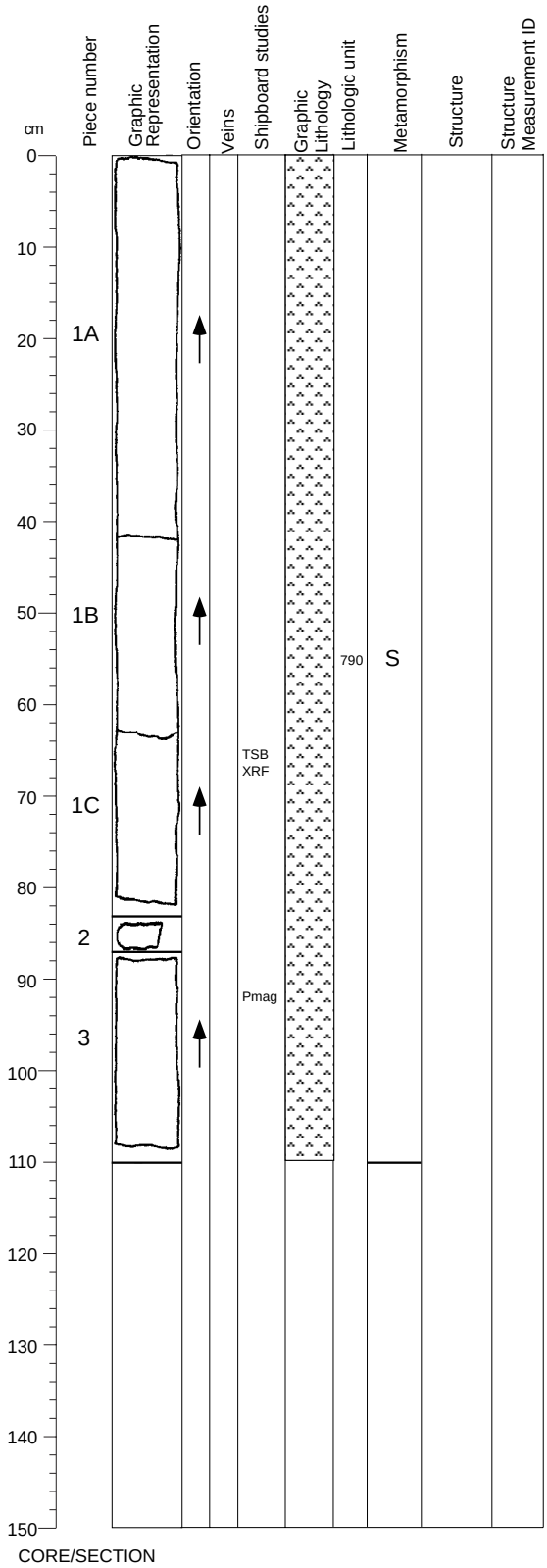
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole near felsic vein and in the halos of green amphibole veinlets.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near the felsic vein.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Vein/Fracture Filling:
0.5-3 mm amphibole+plagioclase veins in Pieces 2 and 3.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation, and cut by a few veins in Pieces 2 and 3A.

Core Image



176-735B-162R-2

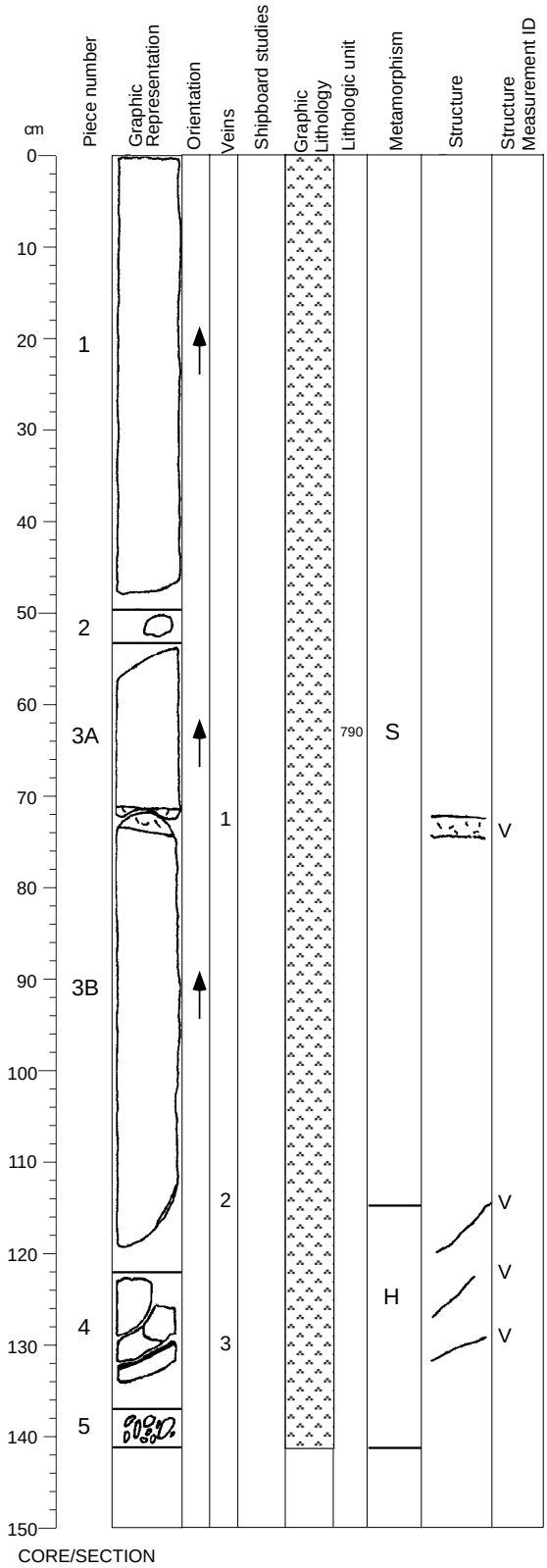
Interval: 790: OLIVINE GABBRO
(see Section 176-735B-161R-4)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (6%). Olivine is weakly altered to amphibole and smectite (10%). Clinopyroxene is slightly altered to amphibole (3%). 5% of the plagioclase is recrystallized.

Structures:
Mf
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-162R-3

Interval: 790: OLIVINE GABBRO
(see Section 176-735B-161R-4)

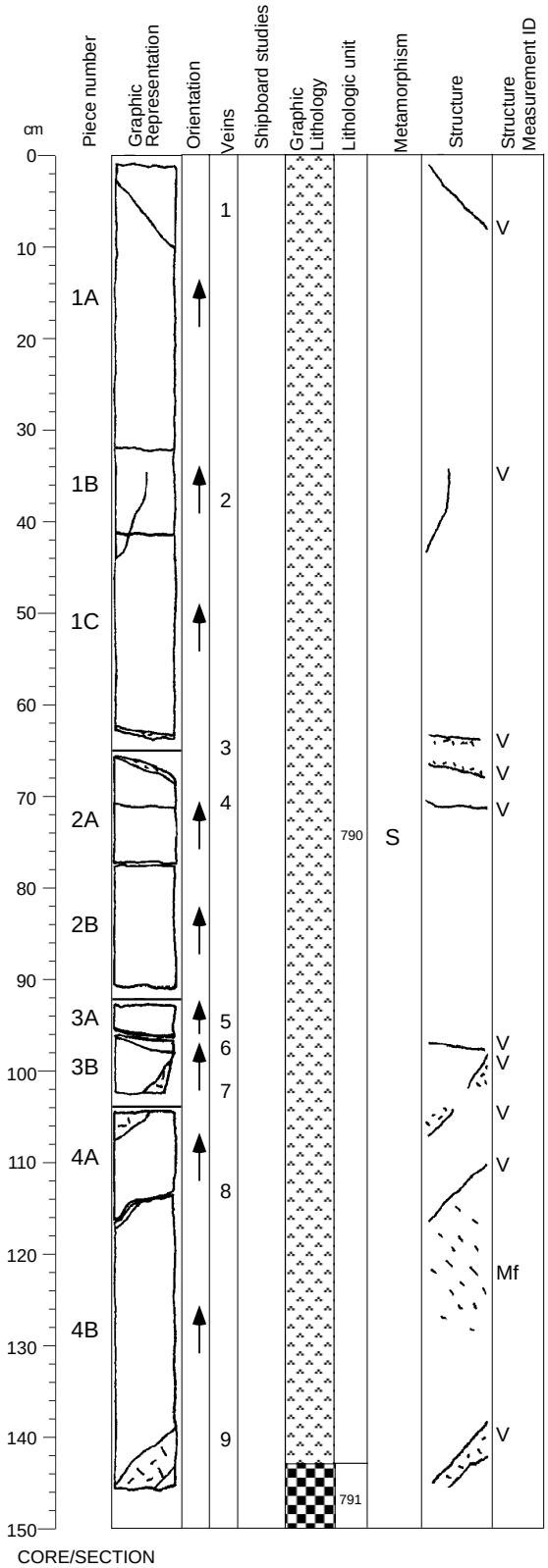
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <2
Mode of occurrence: Dark smectite after olivine, and pale green after brown amphibole in felsic areas.

Background Alteration:
Degree of alteration: slight to high (8 to 50%). Pieces 1 to 3B: Olivine is weakly altered to amphibole and smectite (15%). Clinopyroxene is slightly altered to amphibole (4%). 6% of the plagioclase is recrystallized. Pieces 3B to 5: Smectite replaces olivine (90%), plagioclase (10%), and clinopyroxene (20%).

Vein/Fracture Filling:
0.5 mm smectite veins in Pieces 3 and 4; 25 mm plagoclase+amphibole vein in Piece 3.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, and cut by a few veins in Pieces 3A to 4.

Core Image



176-735B-162R-4

Interval: 790: OLIVINE GABBRO
(see Section 176-735B-161R-4)
Interval 791: LEUCOCRATIC OXIDE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	162	4	144	4B	1087.80
Lower contact:	162	5	5	1	1087.90

Thickness (m): 0.10

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	70	13	3	coarse	tabular/ subhedral
Clinopyroxene	25	20	1	coarse	equant/ anhedral subhedral
Opaques	5				angular aggregates/ subhedral
Total	100*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable

	Type	Distribution
Texture:	granular	uniform

Comments: Oxide-rich interval associated with a felsic vein pocket.

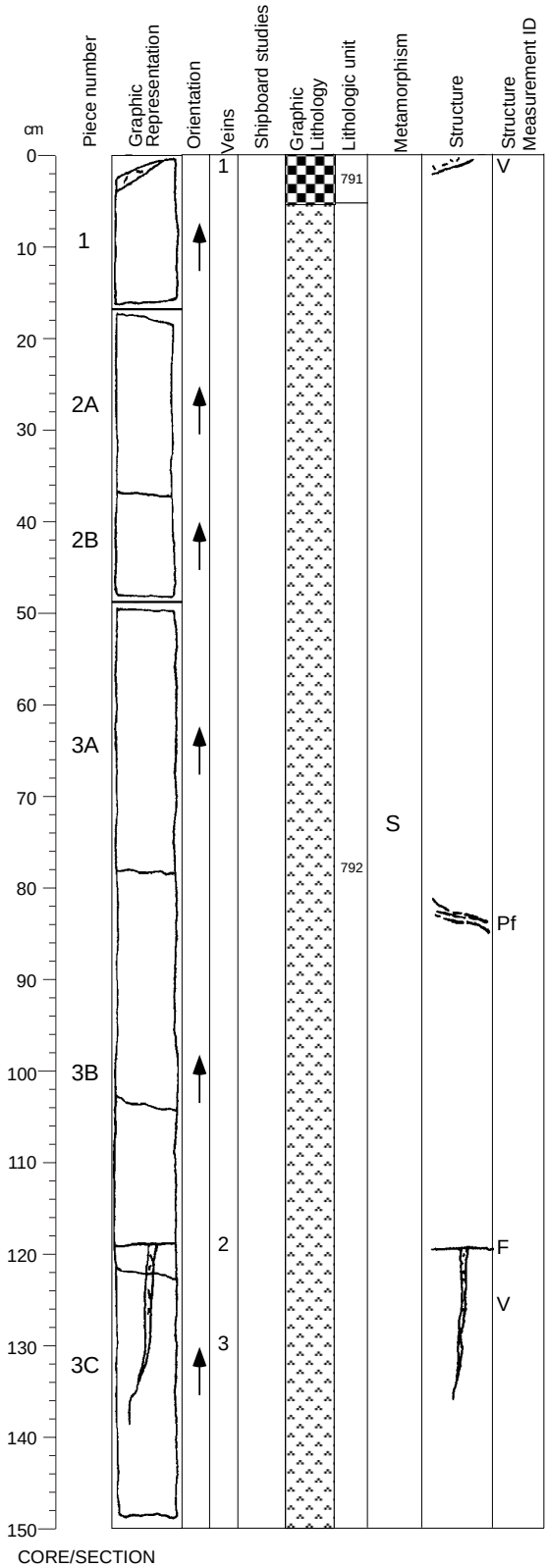
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In felsic areas.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Chlorite:
Total Percent: trace
Mode of occurrence: At contact with the amphibole-plagioclase vein.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine near smectite veins and pale green in felsic areas.

Background Alteration:
Degree of alteration: slight (5%). Olivine is weakly altered to amphibole and smectite (10%). Clinopyroxene is slightly altered to amphibole (4%). 4% of the plagioclase is recrystallized.

Vein/Fracture Filling:
plagioclase+amphibole veins in Pieces 1, 2A, 3A, 3B, and 4A; 18 mm compound felsic vein in Piece 3B; 0.5 mm smectite veins in Piece 3.

Structures:
Mf>V
Most of the section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation, except for the interval between 114 to 126 cm, which has a moderate magmatic foliation (dips at 45˚). The igneous texture is cut by a few veins over the entire section.

Core Image



176-735B-162R-5

Interrval 791: LEUCOCRATIC OXIDE GABBRO
(see previous section)
Interval 792: OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	162	5	5	1	1087.90
Lower contact:	162	6	25	1A	1089.60

Thickness (m): 1.70

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	4	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	15	1	coarse	equant/ anhedral
Olivine	12	4	1	medium	elongate/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	102.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally intergranular/subophitic. Veined at 120-148 cm in 162R-5.

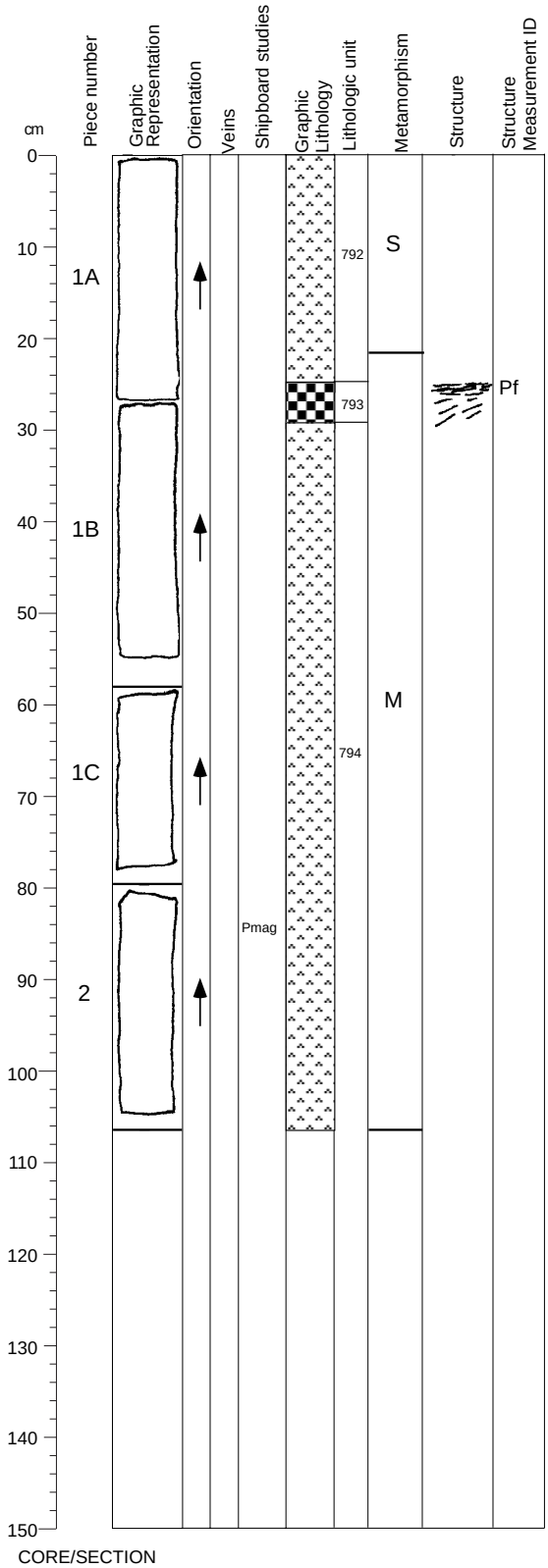
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant in felsic areas.
Green amphibole:
Total Percent: trace
Mode of occurrence: In and near felsic areas.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near felsic areas.

Background Alteration:
Degree of alteration: slight (6%). Olivine is weakly altered to amphibole and smectite (10%). Clinopyroxene is slightly altered to amphibole (4%). 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.4-4 mm plagioclase+amphibole veins in Pieces 1 and 3.

Structures:
Mf>V>F; Mf>Pf
The section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation. The igneous texture is cut by a vein in Piece 1, overprinted by a narrow, reverse crystal-plastic shear zone (dips at 20˚) in Piece 3B, and cut by a vein and a fault, sucessively, in Piece 3C.

Core Image



176-735B-162R-6

Interval 792: OLIVINE GABBRO
(see previous section)
Interval 793: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	162	6	25	1A	1089.60
Lower contact:	162	6	29	1B	1089.64

Thickness (m): 0.04

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	45	8	3	medium	tabular/ subhedral deformed
Clinopyroxene	30	10	1	coarse	equant/ anhedral
Olivine	1	N/A	N/A	N/A	equant/ anhedral fractured
Opaques	4				interstitial lenses/ concordant seams
Total	80*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide-rich interval associated with a shear zone. Mode variable.

Interval 794: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	162	6	29	1B	1089.64
Lower contact:	162	7	31	1	1090.72

Thickness (m): 1.08

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	6	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	20	2	coarse	equant/ anhedral
Olivine	12	8	1	medium	elongate/ anhedral subhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	107.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic.

Continued next page

Core Image

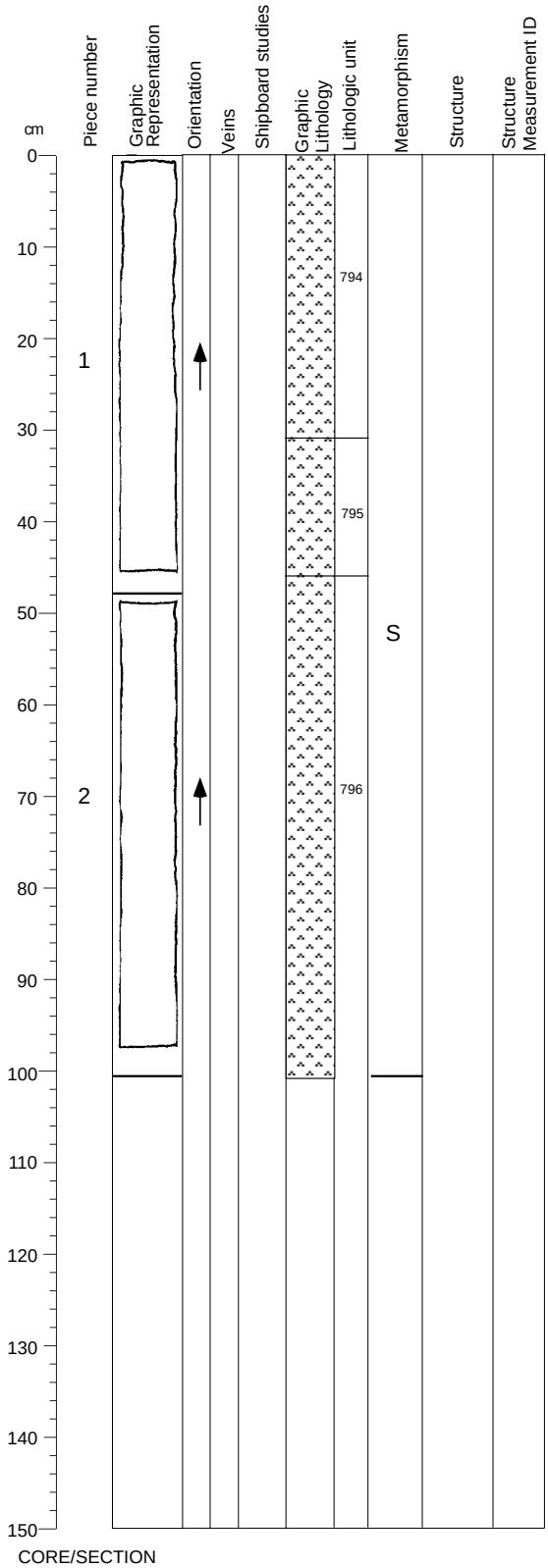
176-735B-162R-6 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant in felsic areas.
Green amphibole:
Total Percent: trace
Mode of occurrence: In and near felsic areas.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: In olivine cracks and in the rims.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight to moderate (6 to 20%). Piece 1A: Same as previous section. Pieces 1B to 3: 20% of the olivine are altered to amphibole and smectite. Clinopyroxene is partly replaced by amphibole and probably some secondary clinopyroxene (8%). 35% of the plagioclase is recrystallized.

Structures:
Mf>Pf
The section displays a coarse-grained igneous texture, with no magmatic foliation, overprinted at the boundary between Pieces 1A and 1B by a subhorizontal, crystal-plastic shear zone. The plastic foliation is mylonitic and subhorizontal from 26 and 28 cm, and strong from 28 and 30 cm, sweeping out of the mylonite.

Core Image



176-735B-162R-7

Interval 794: OLIVINE GABBRO
(see previoous section)
Interval 795: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	162	7	31	1	1090.72
Lower contact:	162	7	46	1	1090.87

Thickness (m): 0.15

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	10	3	coarse	tabular/ subhedral euhedral
Clinopyroxene	20	7	0.3	medium	equant/ anhedral
Olivine	15	3	1	medium	platy/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	90.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic.

Interval 796: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	162	7	46	1	1090.87
Lower contact:	162	8	16	1	1091.56

Thickness (m): 0.69

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	8	coarse	tabular/ subhedral
Clinopyroxene	35	15	1	coarse	equant/ anhedral
Olivine	10	4	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse

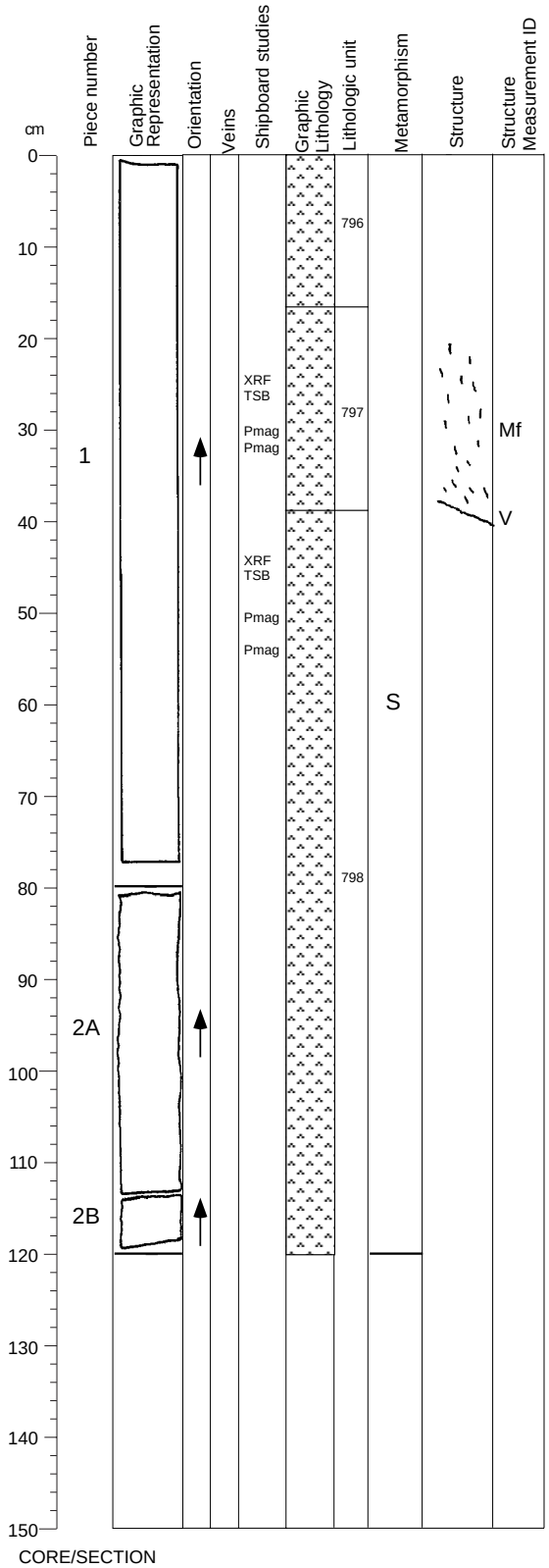
	Type	Distribution
Texture:	granular	N/A

Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (10%). 10% of the olivine are altered to amphibole and smectite. Clinopyroxene is partly replaced by amphibole and probably some secondary clinopyroxene (6%). 12% of the plagioclase is recrystallized.

Structures:
Mf
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-162R-8

Interval 796: OLIVINE GABBRO
(see previous section)

Interval 797: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	162	8	16	1	1091.56
Lower contact:	162	8	39	1	1091.79

Thickness (m): 0.23

	Grain Size (mm): Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	8	2	medium	tabular/ subhedral
Clinopyroxene	25	6	0.3	medium	equant/ anhedral
Olivine	15	2	1	fine	platy/ subhedral anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium

Texture:	Type	Distribution
	granular	N/A

Interval 798: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	162	8	39	1	1091.79
Lower contact:	163	6	67	1	1098.96

Thickness (m): 7.17

	Grain Size (mm): Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	4	coarse	tabular/ subhedral euhedral
Clinopyroxene	25	20	2	coarse	equant/ anhedral
Olivine	15	15	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable

Texture:	Type	Distribution
	granular	N/A

Comments: Medium- to coarse-grained. Locally finer (gradational) at 79-94 cm in 163R-3, 5-17 cm in 163R-4, and 102-123 cm in 163R-5. Harrisitic texture locally developed at 12-30 cm in 163R-3. Locally troctolitic.

Continued next page

Core Image

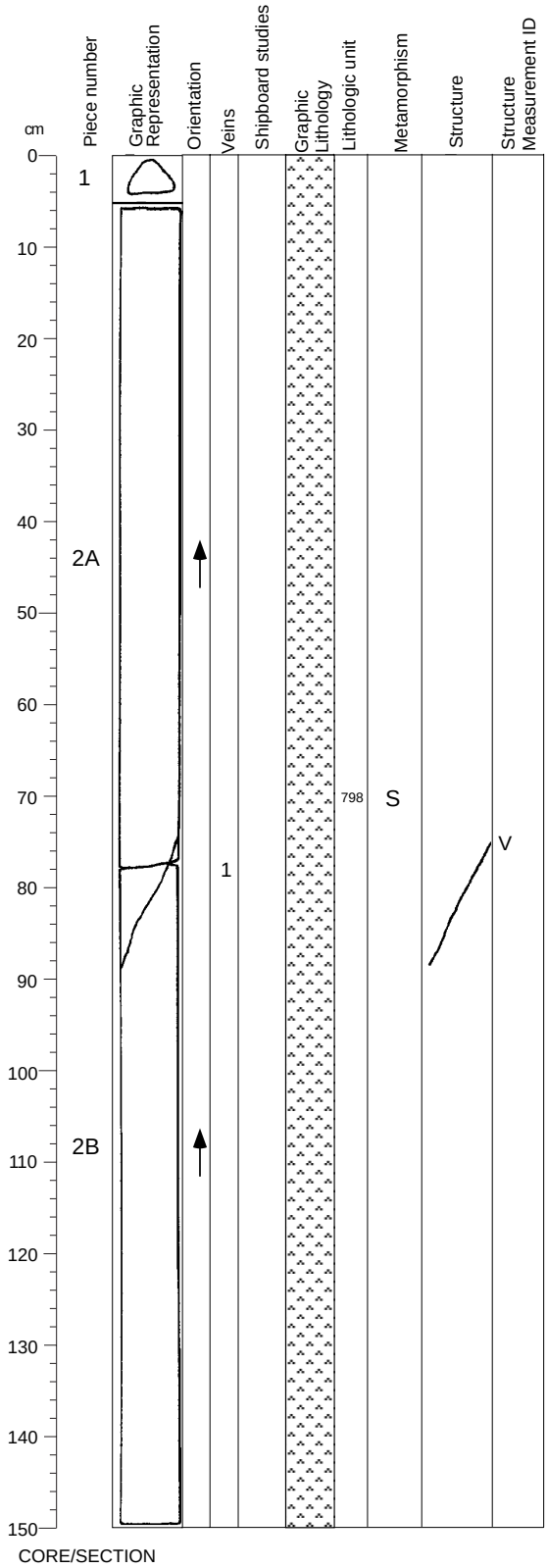
176-735B-162R-8 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (6%). 5% of the olivine is altered to amphibole and smectite. Clinopyroxene is partly replaced by amphibole and probably some secondary clinopyroxene (4%). 7% of the plagioclase is recrystallized.

Structures:
Ic≥Mf?
The entire section displays a fine to coarse-grained igneous texture, with no or a weak magmatic foliation. From 0 to 38 cm, the grain size decreases progressively (up to 1 cm at the top, around 1-2 mm at the bottom). The interval between 15 and 38 cm (fine-grained material) displays a weak magmatic foliation, which dips at 70-75˚ between 15 and 31 cm and becomes shallower (25-30˚) close to the contact with the underlying coarse-grained gabbro. The contact (at 38 cm) dips on average at 15-20˚.

Core Image



176-735B-163R-1

Interval 798: OLIVINE GABBRO
(see previous section)

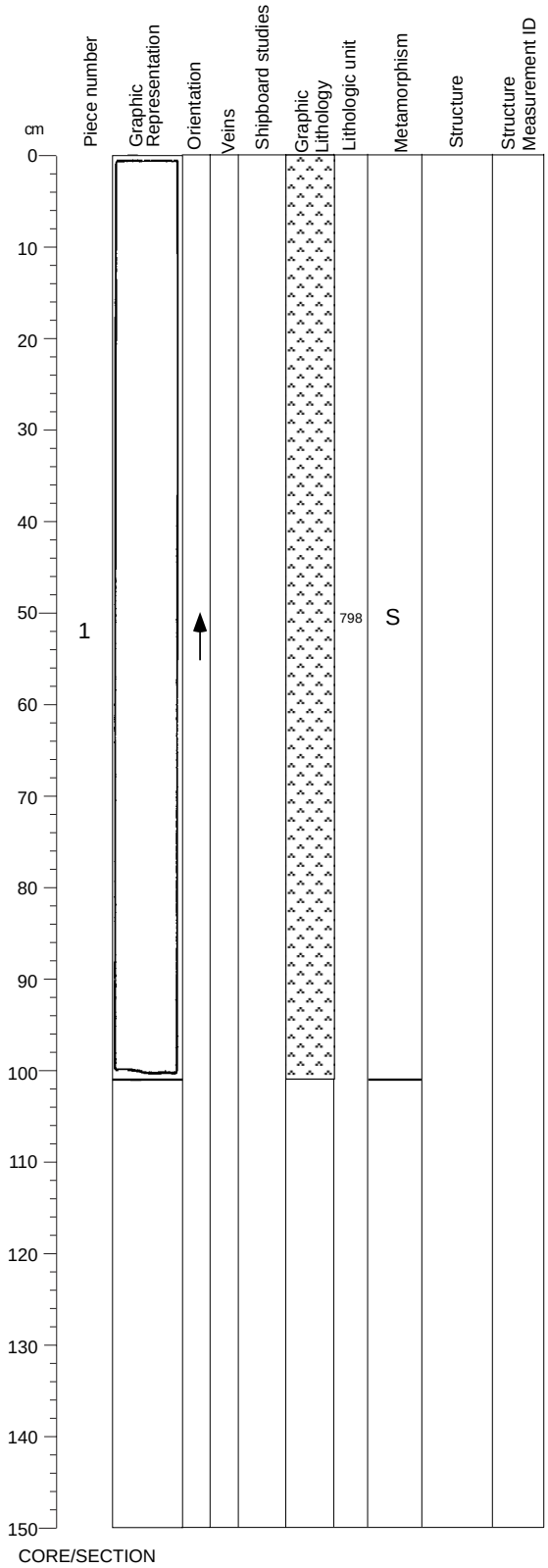
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: In olivine cracks and in the rims.

Background Alteration:
Degree of alteration: slight (3%). 5% of the olivine are altered to amphibole and smectite. Clinopyroxene is partly replaced by amphibole (2%). Around 4% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1 mm plagioclase vein in Piece 2.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no magmatic foliation, cut by a vein at the boundary between Pieces 2A and 2B.

Core Image



176-735B-163R-2

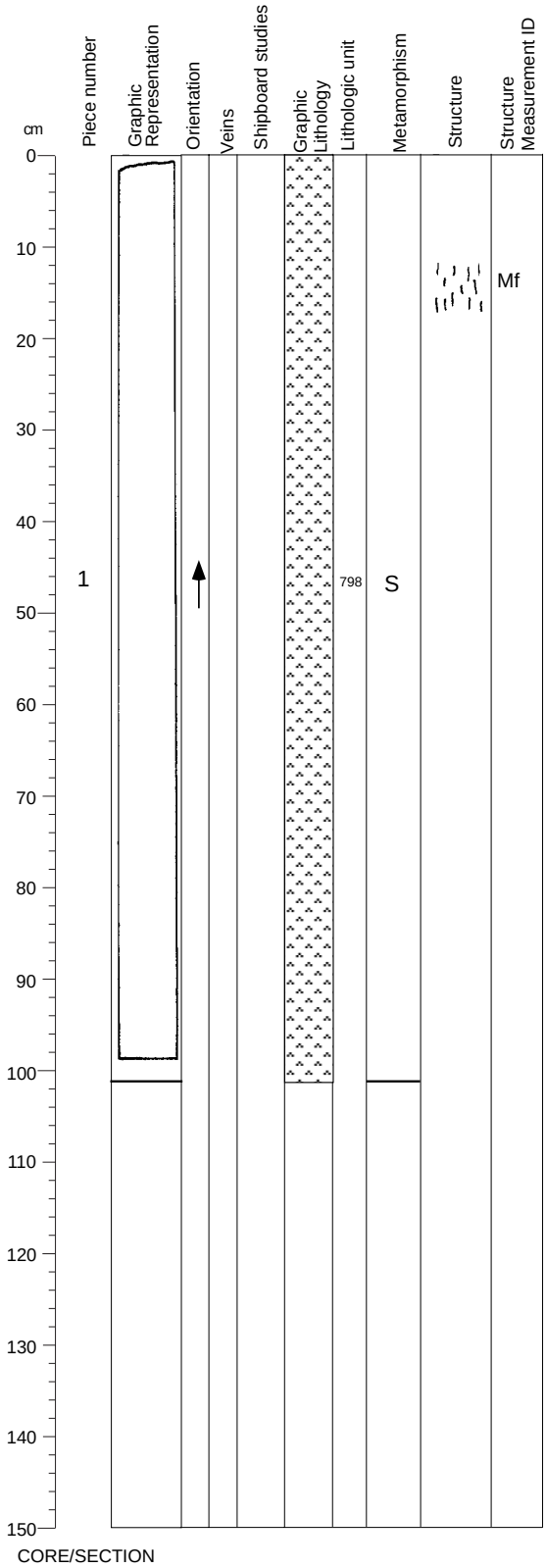
Interval 798: OLIVINE GABBRO
(see Section 176-735B-162R-8)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: In olivine cracks and in the rims.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Structures:
Mf
This long piece displays a medium to coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-163R-3

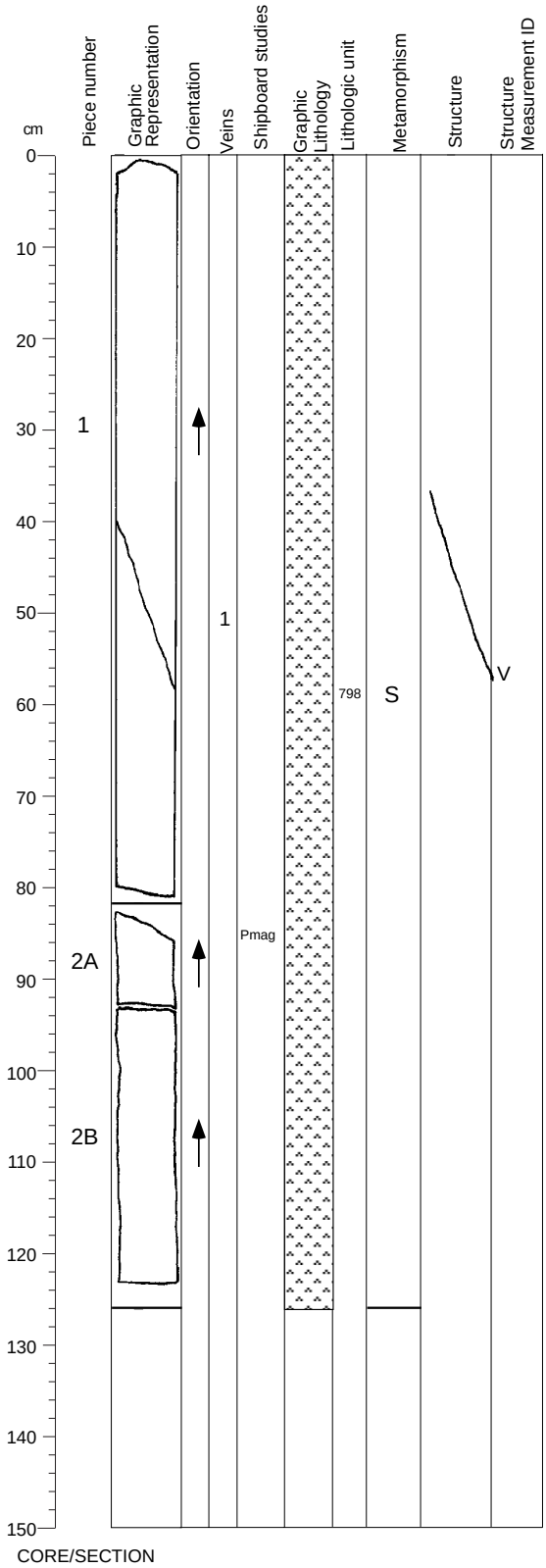
Interval 798: OLIVINE GABBRO
(see Section 176-735B-162R-8)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: In olivine cracks and in the rims.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Structures:
Mf
This long piece displays a medium to coarse-grained igneous texture, with no magmatic foliation, except for the interval between 11 and 18 cm, which displays a moderate to strong, vertical magmatic foliation (better seen on the back of the piece). Both the upper and lower boundaries between this foliated interval and the isotropic igneous texture are sharp.

Core Image



176-735B-163R-4

Interval 798: OLIVINE GABBRO
(see Section 176-735B-162R-8)

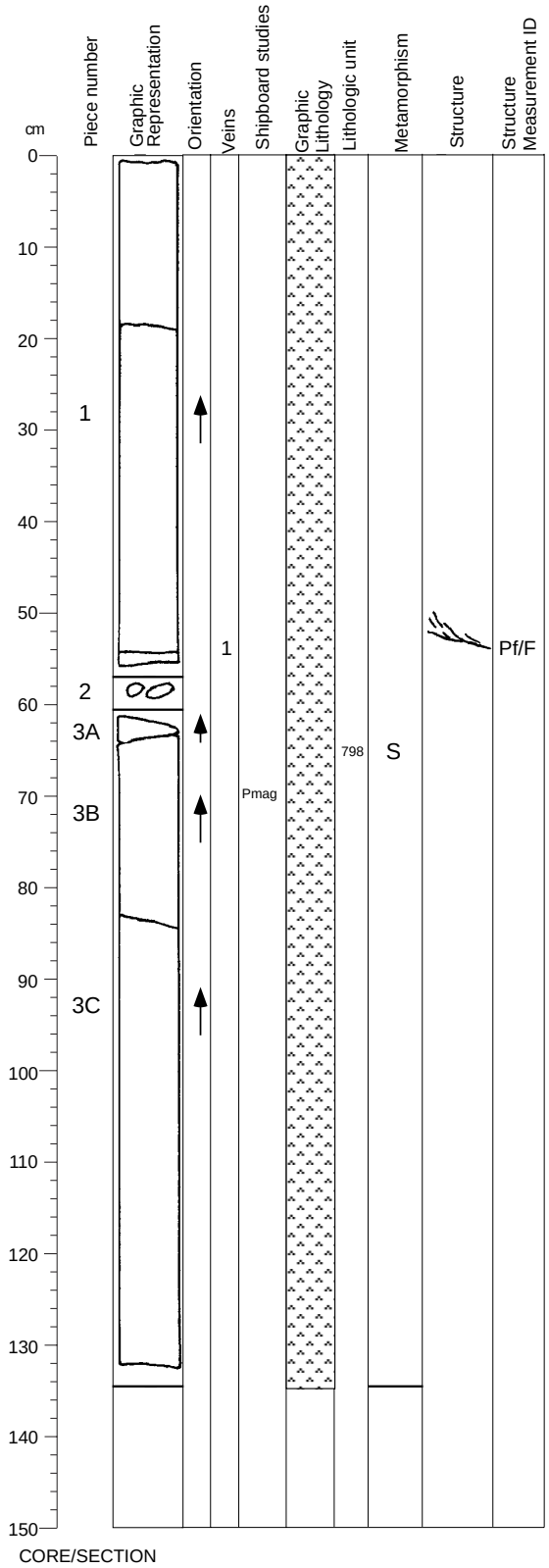
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: In olivine cracks and in the rims.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.8 mm plagioclase vein in Piece 1.

Structures
Mf>V
The entire section displays a medium-grained igneous texture, with no or a weak magmatic foliation, cut by a vein in Piece 1.

Core Image



176-735B-163R-5

Interval 798: OLIVINE GABBRO
(see Section 176-735B-162R-8)

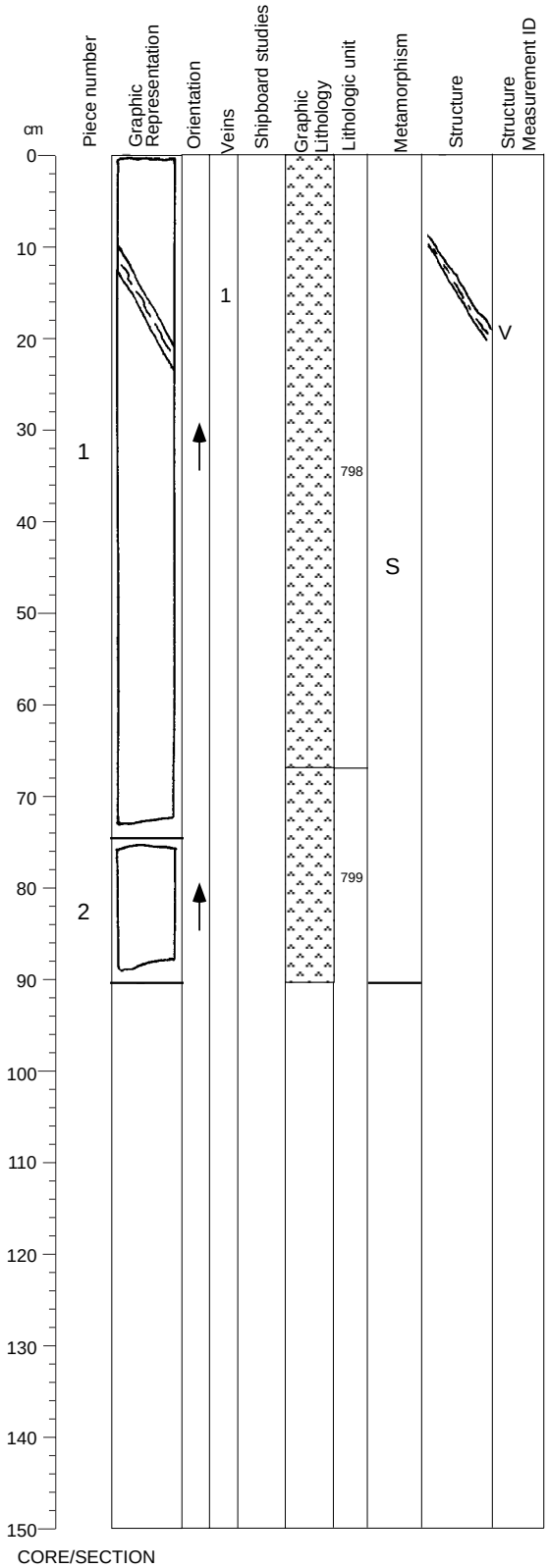
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace.
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.3 mm amphibole vein in Piece 1.

Structures:
Mf>Pf>F
The section displays a fine to coarse-grained texture, with no or a weak magmatic foliation, overprinted at the bottom of Piece 1 by a small zone of strong crystal-plastic foliation, bounded by a fault dipping around 10° (reverse, semi-brittle shear zone).

Core Image



176-735B-163R-6

Interval 798: OLIVINE GABBRO
(see Section 176-735B-162R-8)
Interval 799: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	163	6	67	1	1098.96
Lower contact:	163	6	90	2	1099.19

Thickness (m): 0.23

	Grain Size (mm): Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	50	10	pegmatitic	tabular/ subhedral anhedral
Clinopyroxene	35	115	5	pegmatitic	elongate/ subhedral anhedral
Olivine	6	25	2	medium	elongate/ subhedral anhedral
Opaques	0.8				angular aggregates/ subhedral
Total	106.8*		(see explanatory notes)		

*Major phases estimated to ± 5%

Grain Size: Pegmatitic

	Type	Distribution
Texture:	porphyritic	N/A

Comments: Interval of pegmatitic (at 5 cm) gabbro.

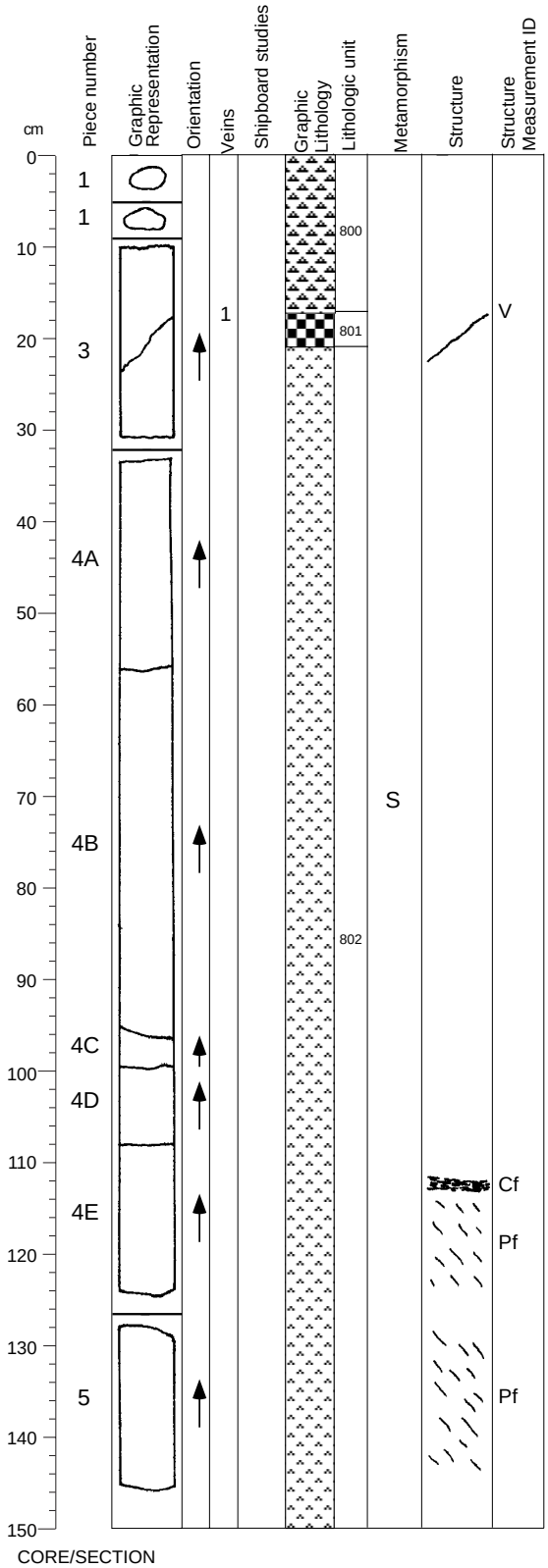
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole in and near felsic areas, and as patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: In olivine cracks and in the rims.
Smectite:
Total Percent:trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
6 mm compound felsic vein in Piece 1.

Structures:
Mf>V
The section displays a medium to coarse-grained texture, with no magmatic foliation, cut by a vein in piece 1. The grain size is very large (a few cm) at the bottom of Piece 1 and in Piece 2.

Core Image



176-735B-164R-1

Interval 800: OLIVINE MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	163	6	90	2	1099.19
Lower contact:	164	1	17	3	1099.57

Thickness (m): 0.38

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	4	N/A	fine	tabular/ anhedral subhedral
Clinopyroxene	25	2	0.2	fine	equant/ anhedral
Olivine	10	3	1	medium	equant/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates / disseminated
Total	100.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine

	Type	Distribution
Texture:	equigranular	uniform

Comments: Biotite present.

Interval 801: LEUCOCRATIC OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	164	1	17	3	1099.57
Lower contact:	164	1	21	3	1099.61

Thickness (m): 0.04

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	80	10	5	medium	tabular/ subhedral anhedral
Clinopyroxene	15	12	0.5	medium	equant/ anhedral subhedral
Opaques	3				angular aggregates/ subhedral
Total	98*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium

	Type	Distribution
Texture:	granular	N/A

Comments: Interval of felsic veining. Felsic (plagioclase and quartz?) material coarse grained/recrystallized. Oxide abundant as large patches filling "intersticies".

Continued next page

Core Image

176-735B-164R-1 (cont'd)

Interval 802: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	164	1	21	3	1099.61
Lower contact:	165	2	27	1	1106.83

Thickness (m): 7.22

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	3	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	18	1	coarse	equant/ anhedral
Olivine	12	4	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	107.5*		(see explanatory notes)		

*Major phases estimated to ± 5%

Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Slight grain size variation gradational. Oxide present, locally abundant at 12 cm in 164R-1.

Alteration:

Dark green amphibole:
- Total Percent: <2
- Mode of occurrence: After pyroxene and olivine.
- Comments: As alteration rims.

Brown amphibole:
- Total Percent: trace
- Mode of occurrence: Along pyroxene cleavages, as rims.
- Comments: More abundant near a felsic vein.

Green amphibole:
- Total Percent: trace
- Mode of occurrence: After brown amphibole in and near felsic areas.

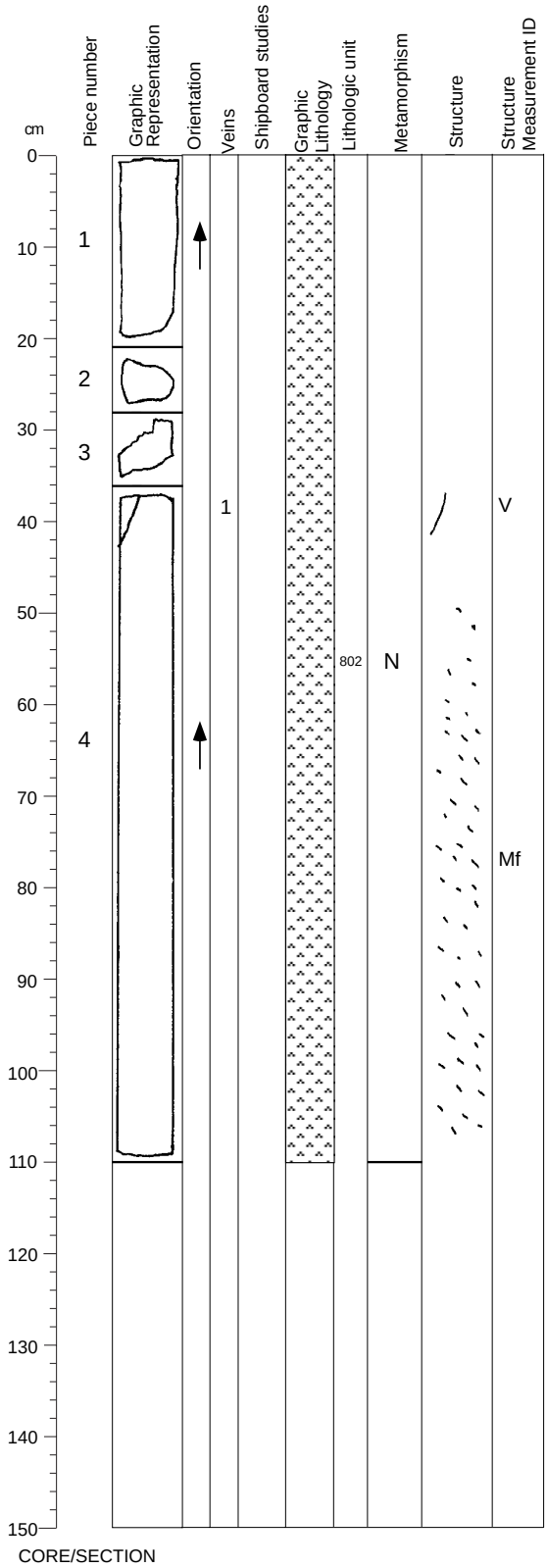
Secondary plagioclase:
- Total Percent: <2
- Mode of occurrence: Replacing primary plagioclase.
- Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (3%). Olivine is mildly altered to amphibole, smectite and rare sulfide (10%). Clinopyroxene and plagioclase are negligibly recrystallized (2%).

Vein/Fracture Filling:
0.5 mm plagioclase + amphibole vein in Piece 3.

Structures:
Mf>V; Mf>Pf>Cf
From 0 to 112 cm, the section displays a fine to coarse-grained igneous texture, with no or a weak magmatic foliation. From 113 to 147 cm, a crystal-plastic foliation dips at 30˚. This plastically deformed interval is bounded at the top by a 1 cm thick, gently dipping, cataclastic zone.

Core Image



176-735B-164R-2

Interval 802: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

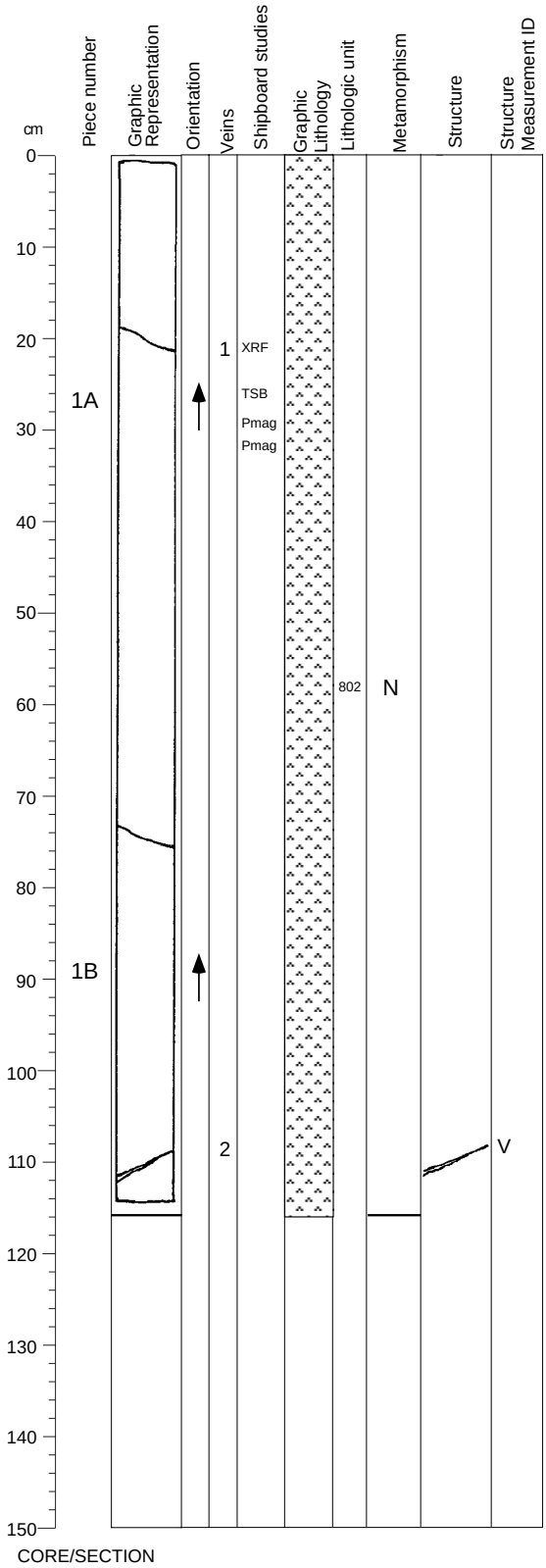
Background Alteration:

Degree of alteration: negligible (2%). Some smectite replacing olivine.

Vein/Fracture Filling:
0.1 mm amphibole vein in Piece 4.

Structures:
Mf>V
The entire section displays a fine to coarse-grained igneous texture, with a weak to moderate magmatic foliation from 36 cm to the bottom, cut by a vein at the top of Piece 4.

Core Image



176-735B-164R-3

Interval 802: OLIVINE GABBRO
(see Section 176-735B-164R-1)

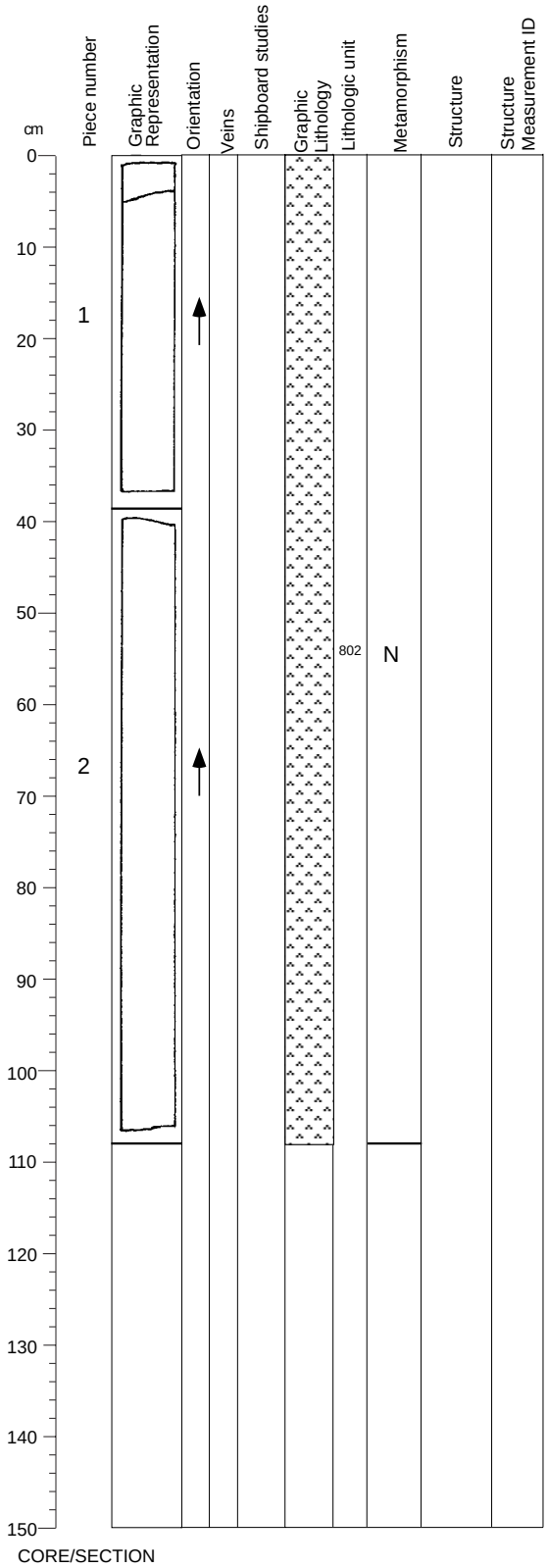
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.1-1.5 mm amphibole+plagioclase veins in Piece 1.

Structures:
Mf>V
The entire section displays a fine to medium-grained igneous texture, with no or a weak magmatic foliation cut by a vein at the bottom of Piece 1B.

Core Image



176-735B-164R-4

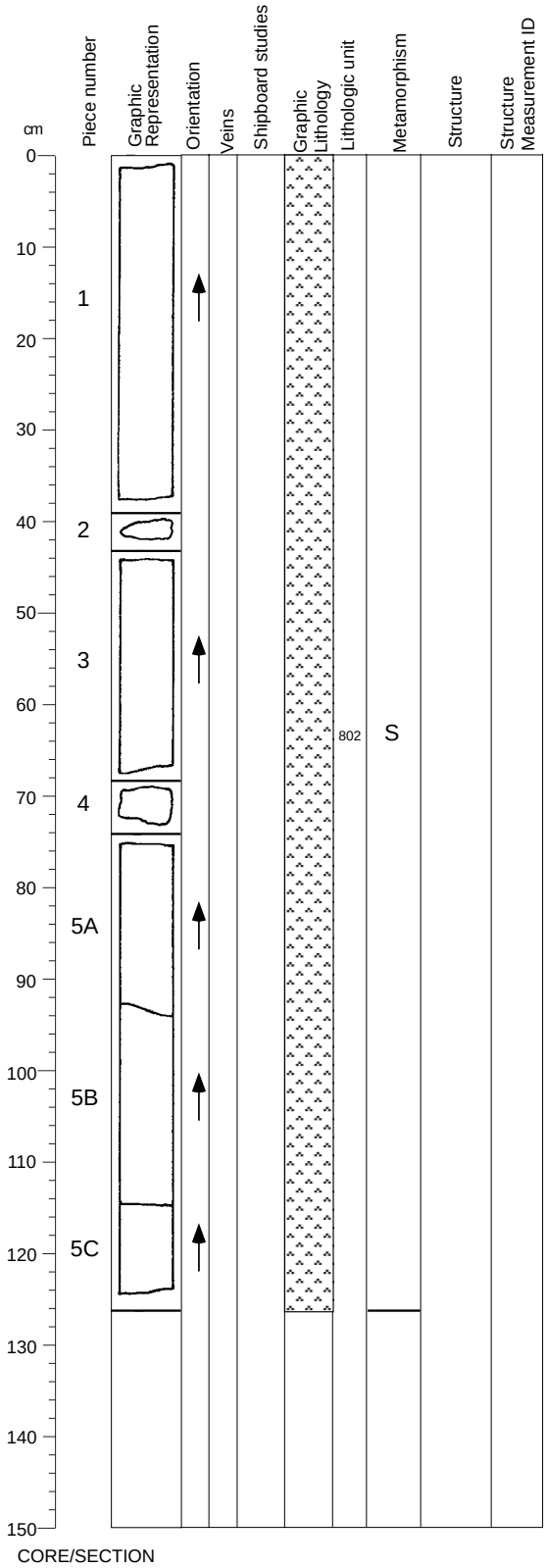
Interval 802: OLIVINE GABBRO
(see Section 176-735B-164R-1)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: negligible (2%).

Structures:
Mf
The entire section displays a medium-grained igneous texture, with no or a weak magmatic foliation.

Core Image



176-735B-165R-1

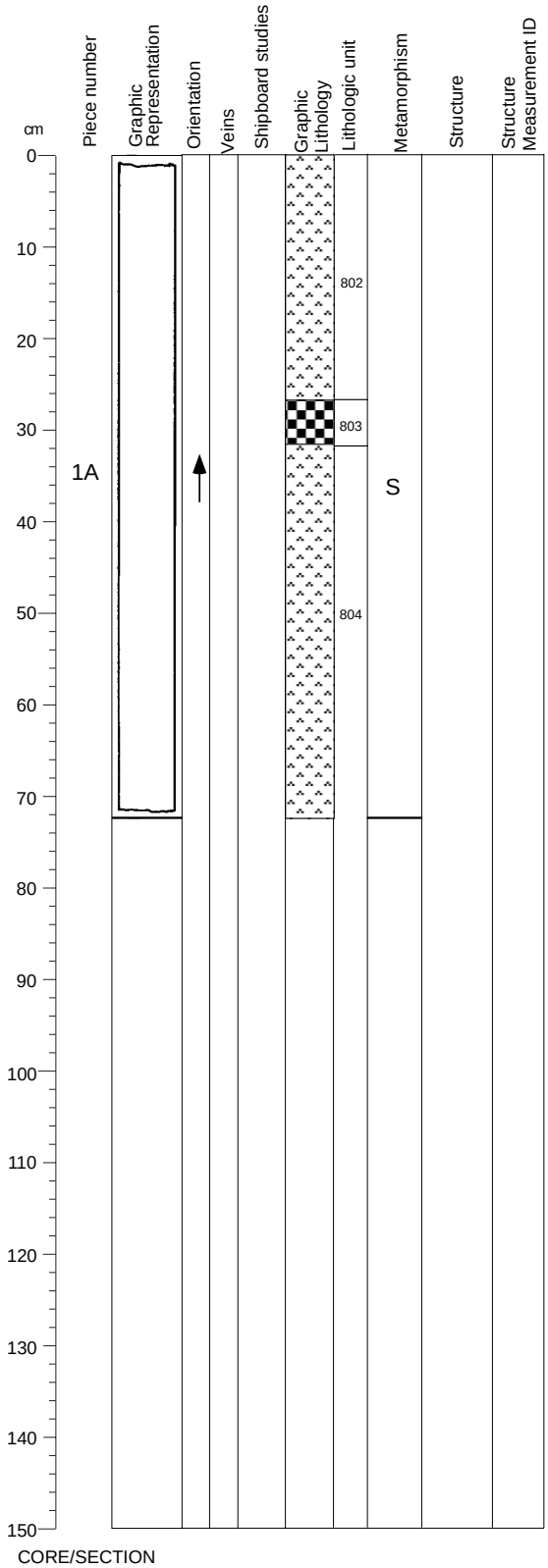
Interval 802: OLIVINE GABBRO
(see Section 176-735B-164R-1)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (3%). Some replacement of olivine by amphibole and smectite (5%). Plagioclase and clinopyroxene are negligibly altered/recrystallized.

Structures:
Mf
The entire section displays a medium-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-165R-2

Interval 802: OLIVINE GABBRO
(see Section 176-735B-164R-1)
Interval 803: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	165	2	27	1	1106.83
Lower contact:	165	2	32	1	1106.88

Thickness (m): 0.05

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	10	3	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	8	8	coarse	equant/ anhedral
Olivine	1	2	1	medium	amoeboidal/ anhedral
Opaques	3				amoeboidal aggregates/ disseminated
Total	94*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Interval 804: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	165	2	32	1	1106.88
Lower contact:	165	3	97	2A	1108.25

Thickness (m): 1.37

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	3	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	15	1	coarse	equant/ anhedral
Olivine	10	4	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium

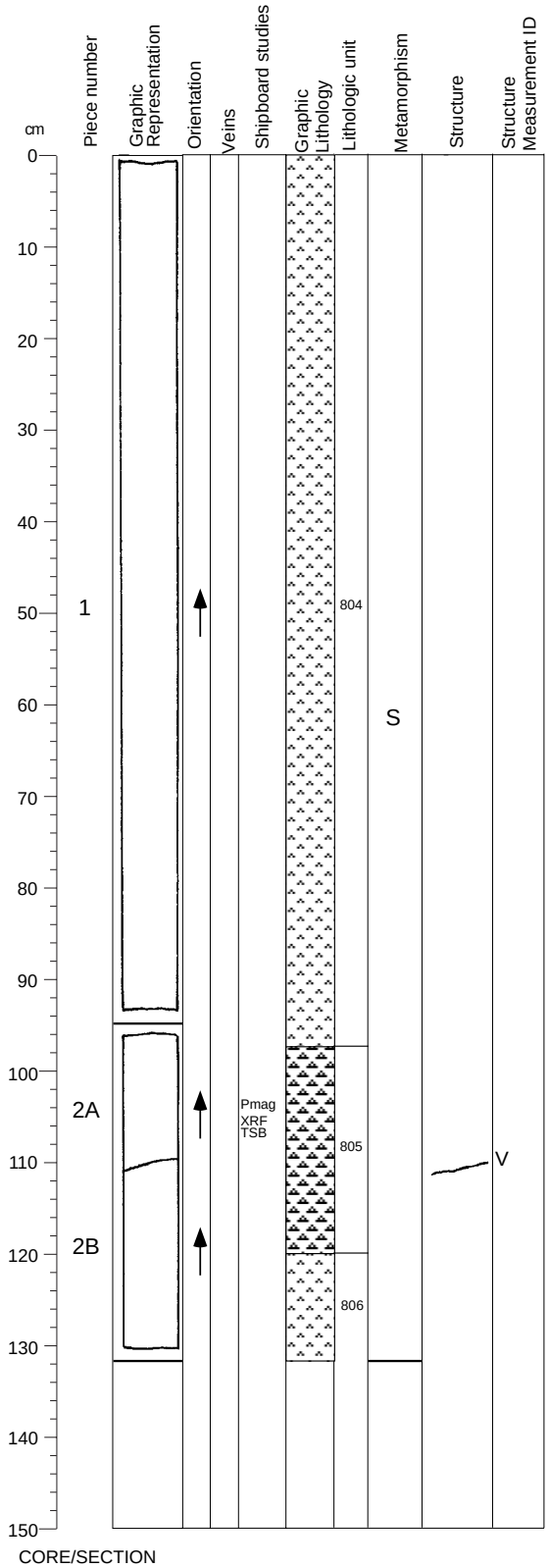
	Type	Distribution
Texture:	granular	N/A

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: tr.
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Structures:
Mf
The entire section displays a medium-grained igneous texture, with no or a very weak magmatic foliation.

Core Image



176-735B-165R-3

Interval 804: OLIVINE GABBRO
(see previous section)
Interval 805: OLIVINE MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	165	3	97	2A	1108.25
Lower contact:	165	3	120	2B	1108.48

Thickness (m): 0.23

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	5	N/A	fine	tabular/ anhedral subhedral
Clinopyroxene	20	1	0.2	fine	equant/ anhedral
Olivine	15	2	1	fine	equant/ subhedral anhedral
Opaques	0.1				
Total	100.1*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine

	Type	Distribution
Texture:	granular	N/A

Comments: Fine-grained with coarse-patches present locally.

Interval 806: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	165	3	120	2B	1108.48
Lower contact:	165	4	52	3A	1109.11

Thickness (m): 0.63

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	10	2	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	7	1	coarse	equant/ anhedral
Olivine	12	3	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	107.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

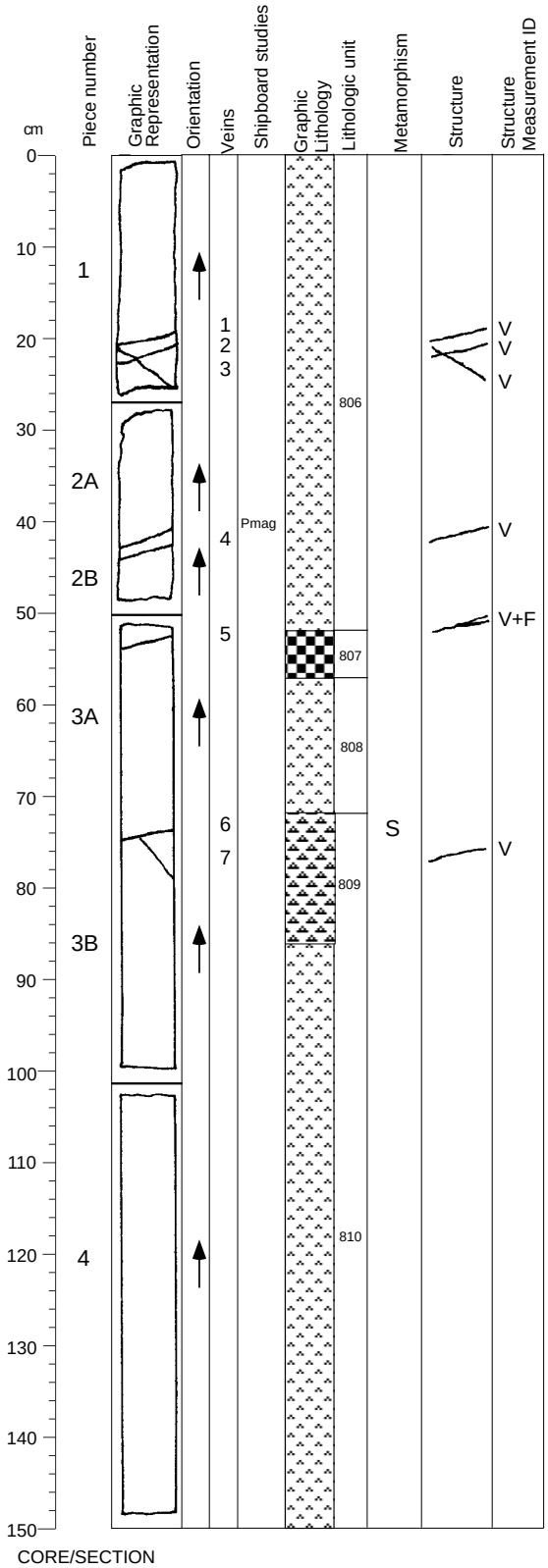
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.8 mm plagioclase+amphibole vein in Piece 2.

Structures:
Mf>V
The entire section displays an igneous texture, with no or a weak magmatic foliation. Most of the section has a medium grain size, except for Pieces 2A and 2B, which display an interval (97 to 120 cm) of very fine grained, intrusive material. The contacts with the coarser grained gabbro are sharp, dip at 25-30˚, and the fine-grained gabbro contains narrow schlieren of medium grained gabbro and a weak magmatic foliation, parallel to the contacts. A late vein cuts the fine-grained igneous texture, at the boundary between Pieces 2A and 2B.

Core Image



176-735B-165R-4

Interval 806: OLIVINE GABBRO
(see previous section)

Interval 807: LEUCOCRATIC OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	165	4	52	3A	1109.11
Lower contact:	165	4	57	3A	1109.16

Thickness (m): 0.05

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	75	10	3	coarse	tabular/ anhedral subhedral
Clinopyroxene	30	15	3	coarse	equant/ anhedral
Olivine	3	3	1	medium	amoeboidal/ anhedral
Opaques	15				interstitial lenses/ interstitial network
Total	123*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse

Texture:	Type	Distribution
	granular	N/A

Interval 808: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	165	4	57	3A	1109.16
Lower contact:	165	4	72	3B	1109.31

Thickness (m): 0.15

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	3	medium	tabular/ subhedral anhedral
Clinopyroxene	35	12	3	coarse	equant/ anhedral
Olivine	10	4	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium

Texture:	Type	Distribution
	granular	N/A

Continued next page

Core Image

176-735B-165R-4 (cont'd)

Interval 809: LEUCOCRATIC TROCTOLITIC MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	165	4	72	3B	1109.31
Lower contact:	165	4	86	3B	1109.45

Thickness (m): 0.14

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	70	4	N/A	fine	tabular/ anhedral subhedral
Clinopyroxene	15	1	0.1	fine	equant/ anhedral
Olivine	15	2	1	fine	equant/ anhedral subhedral
Opaques	0.2				amoeboidal aggregate/ disseminated
Total	100.2*		(see explanatory notes)		

*Major phases estimated to ± 5%)

Grain Size: Fine

	Type	Distribution
Texture:	granular	N/A

Comments: Large mode and grain size gradational variation. Oxide-rich.

Interval 810: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	165	4	86	3B	1109.45
Lower contact:	168	6	123	5B	1138.38

Thickness (m): 28.93

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	3	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	20	2	coarse	equant/ anhedral
Olivine	6	4	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	101.5*		(see explanatory notes)		

*Major phases estimated to ± 5%

Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide locally present at 30-31 cm in 165R-5 and 64-65 cm in 165R-6. Sulfide present at 133 cm in 166R-6.

Continued next page

Core Image

176-735B-165R-4 (cont'd)

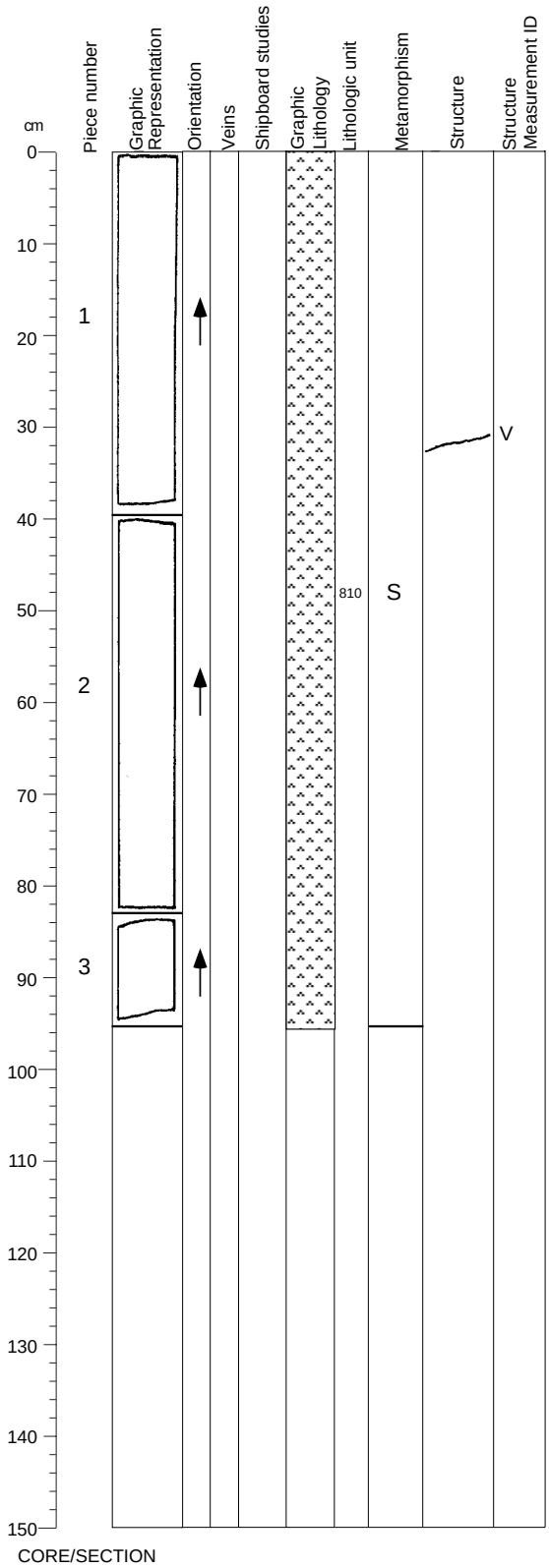
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole in and near felsic areas.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.
Comments: Near carbonate veins.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.2 mm amphibole vein in Piece 3B; 0.5-1 mm plagioclase veins in Pieces 1, 2, and 3A; 0.5-1 mm plagioclase+amphibole veins in Pieces 1 and 3.

Structures:
Mf>V>F
The entire section displays fine to medium-grained igneous texture, with no or a weak magmatic foliation. A zone of fine-grained material, probably intrusive, similar to the one observed in the previous section (165R-3), is present from 72 to 81 cm, both the upper and the lower contacts dipping 30°. A series of veins cut the igneous texture in Pieces 1 to 3B; the vein at the top of Piece 3A grades into a fault.

Core Image



176-735B-165R-5

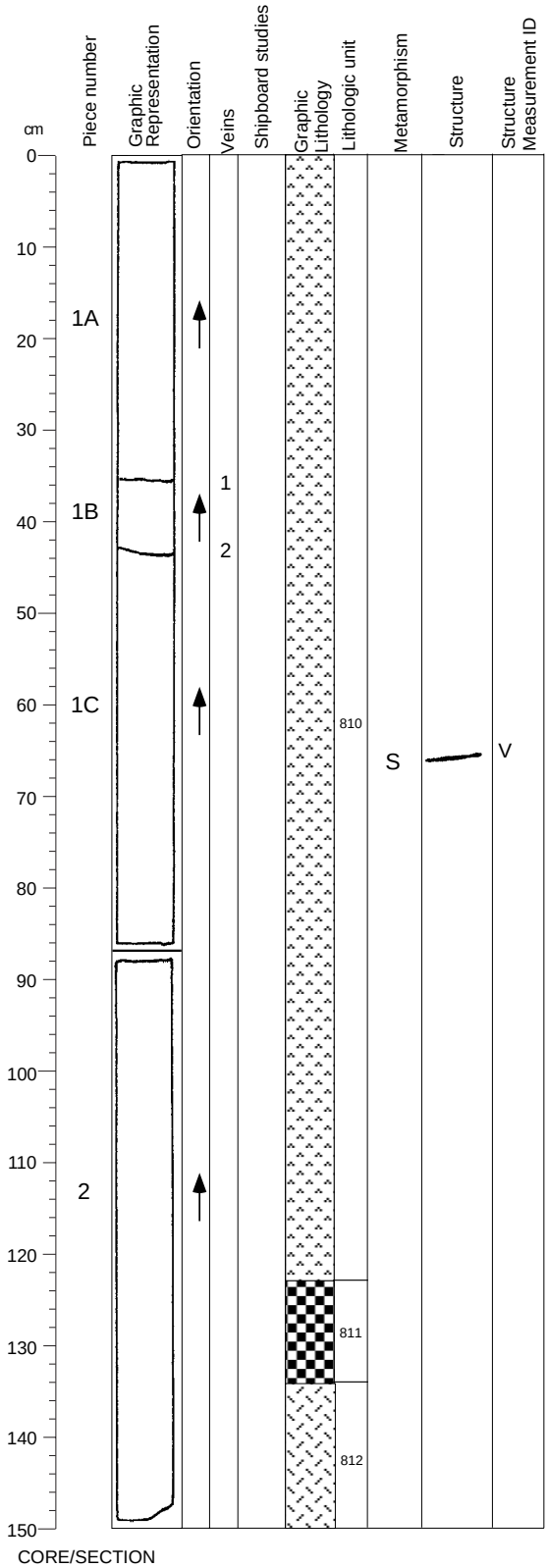
Interval 810: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Structures:
Mf>F
The entire section displays a medium-grained igneous texture, with no magmatic foliation, cut by a fault in Piece 1.

Core Image



176-735B-165R-6

Interval 810: OLIVINE GABBRO
(see Section 176-735B-165R-4)
Interval 811: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	168	6	123	5B	1138.38
Lower contact:	168	6	134	6	1138.49

Thickness (m): 0.11

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	10	3	medium	tabular/ subhedral
Clinopyroxene	25	15	4	coarse	equant/ anhedral
Olivine	2	2	1	medium	equant/ anhedral
Opaques	10				interstitial lenses/ interstitial network
Total	97*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium

	Type	Distribution
Texture:	granular	N/A

Interval 812: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	168	6	134	6	1138.49
Lower contact:	170	1	82	4A	1150.12

Thickness (m): 11.63

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	25	1	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	15	2	coarse	equant/ anhedral
Olivine	1	5	1	medium	equant/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	91.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Gradational grain size variation defining "layers": top to 16 cm in 168R-7 (fine), to 50 cm in 168R-7 (coarse), to 128 cm in 168R-8 (medium), to 62 cm in 169R-1 (coarse/medium), to 120 cm in 169R-1 (fine/medium), to 102 cm in 169R-2 (coarse), to 117 cm in 169R-2 (fine), to 36 cm in 169R-3 (coarse/medium), to 125 cm 169R-3 (fine), to 140 cm in 169R-3 (coarse/medium), 17 cm in 169R-4 (medium), to 27 cm in 169R-4 (coarse/medium; mafic rich), to 20 cm in 169R-5 (fine/medium), to 38 cm in 169R-5 (fine- 34 cm in 170R-1 (coarse), to 57 cm in 170R-1 (coarse/medium), to 82 cm in 170R-1 (fine).

Continued next page

Core Image

176-735B-165R-6 (cont'd)

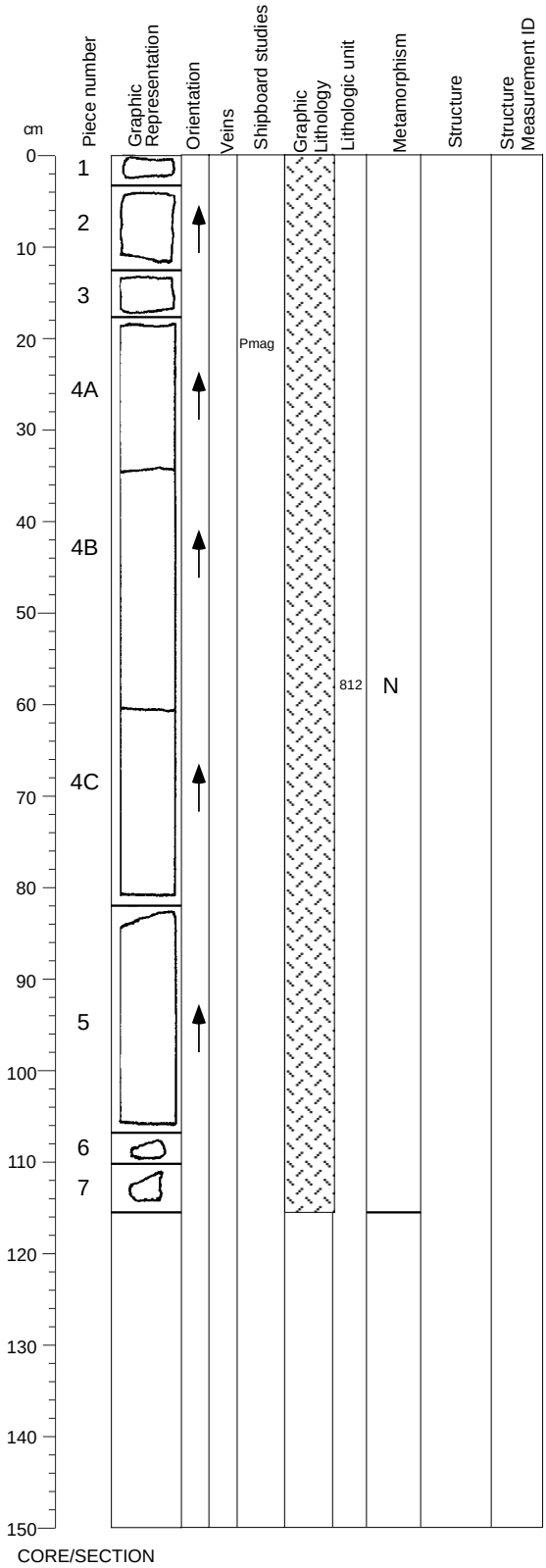
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
1 mm plagioclase+amphibole veins in Pieces 1B and 1C.

Structures:
Mf>F
The entire section displays a medium-grained igneous texture, with no or a weak magmatic foliation, cut by a fault in Piece 1C.

Core Image



176-735B-166R-1

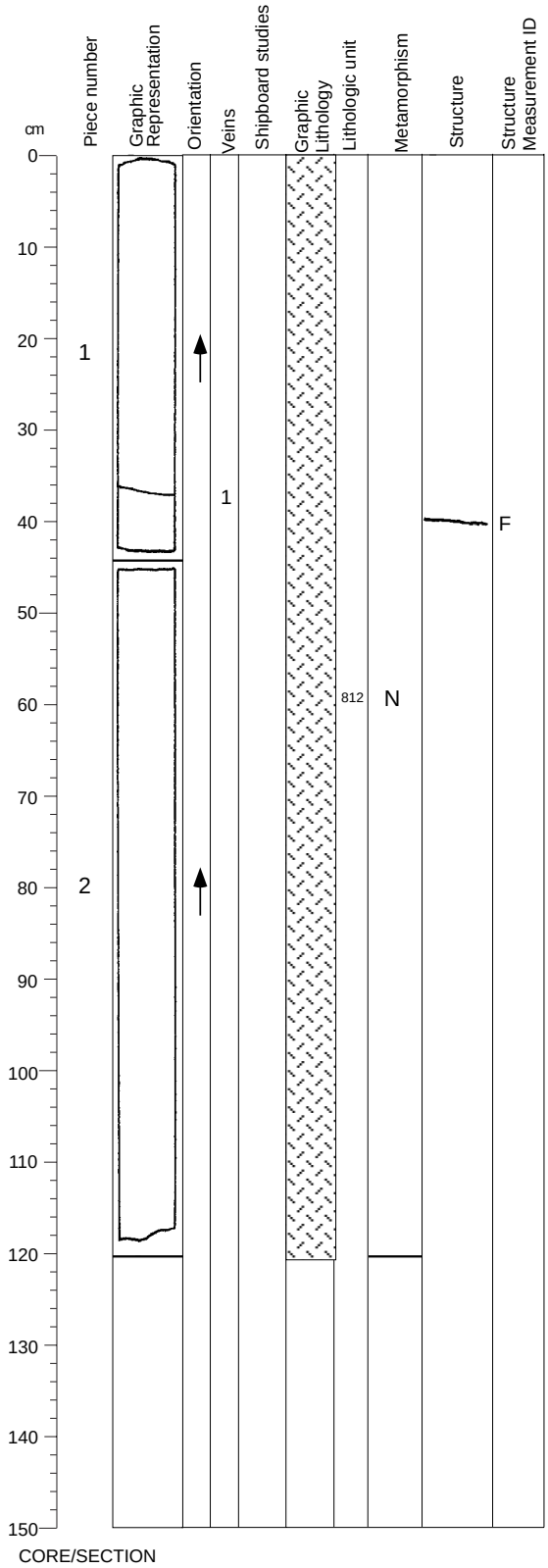
Interval 812: GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: negligible (2%).

Structures:
Mf
The entire section displays a medium-grained igneous texture, with a weak magmatic foliation, dipping regularly 30°.

Core Image



176-735B-166R-2

Interval 812: GABBRO
(see Section 176-735B-165R-6)

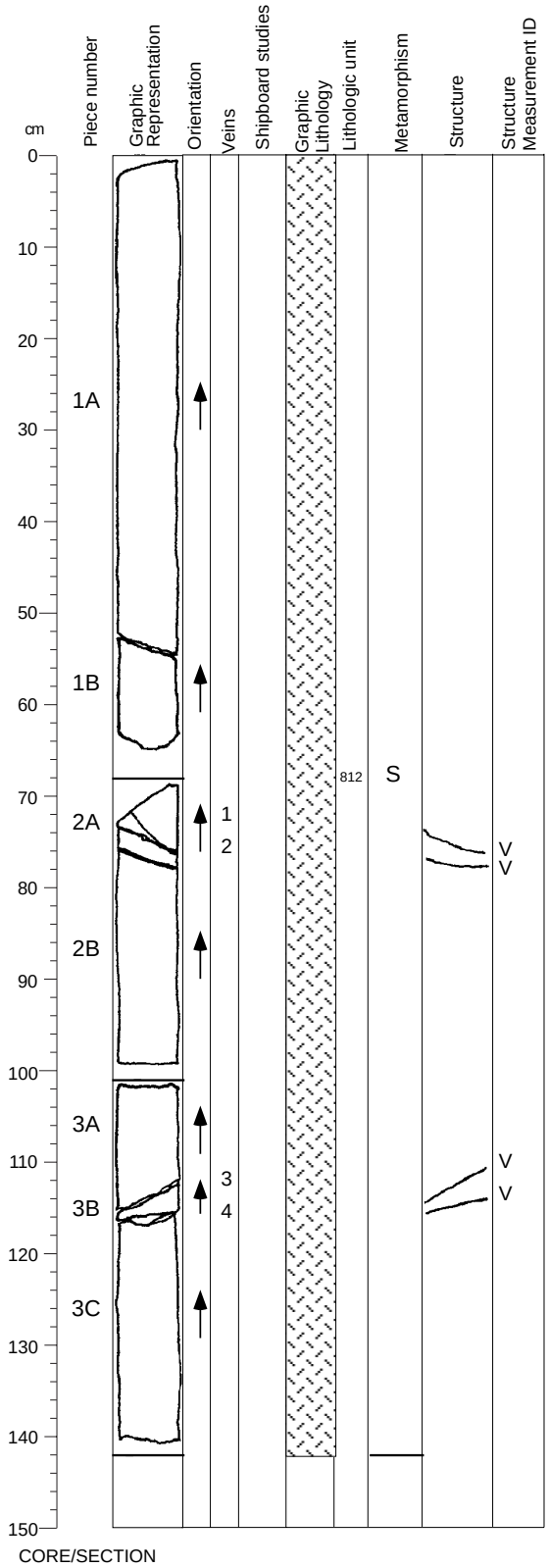
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
1 mm plagioclase + amphibole vein in Piece 2.

Structures:
Mf>F
The entire section displays a medium-grained igneous texture, with a weak magmatic foliation, dipping regularly 30˚, cut by a fault in Piece 1 (at 38 cm).

Core Image



176-735B-166R-3

Interval 812: GABBRO
(see Section 176-735B-165R-6)

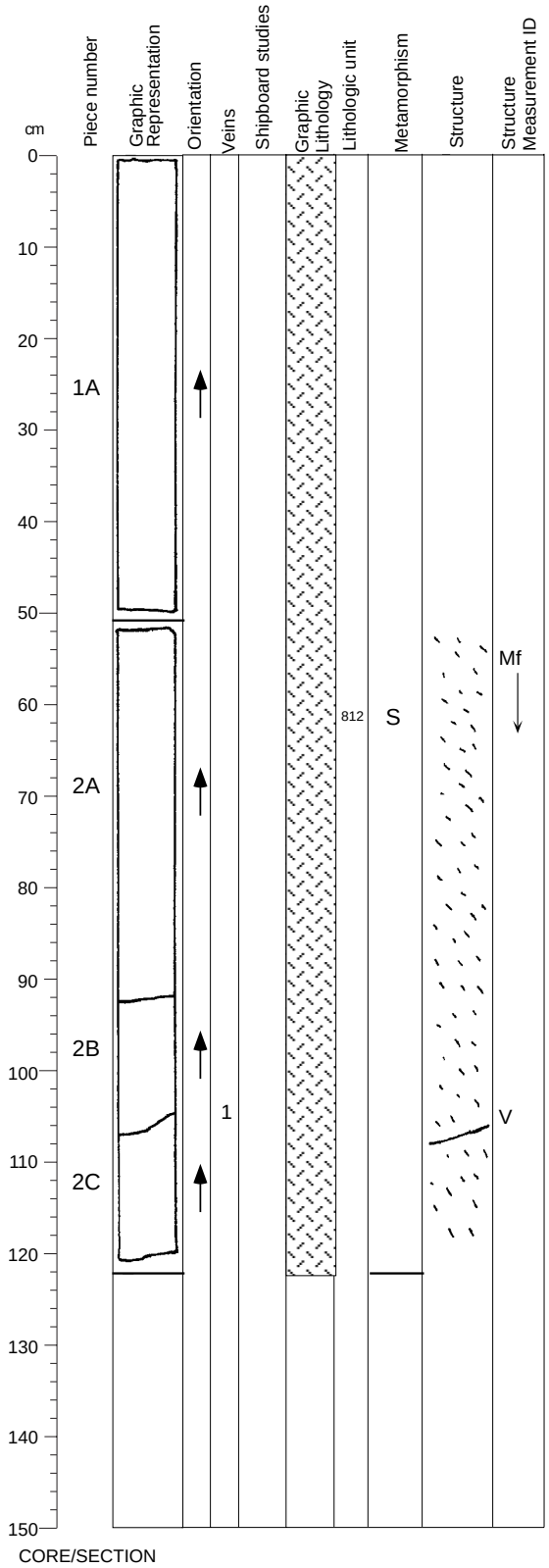
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: tr.
Mode of occurrence: Dark green smectite after olivine.
Comments: Near smectite veins.

Background Alteration:
Degree of alteration: slight (3%). Minor replacement of olivine by amphibole and smectite. Plagioclase and clinopyroxene are negligibly altered/recrystallized (1%).

Vein/Fracture Filling:
1-2 mm smectite veins in Pieces 1, 2, and 3; 1.5 mm plagioclase vein in Piece 3.

Structures:
Mf>V
The entire section displays a medium-grained igneous texture, with a weak magmatic foliation, dipping 30 to 40°, cut by a few veins in Pieces 2A to 3B.

Core Image



176-735B-166R-4

Interval 812: GABBRO
(see Section 176-735B-165R-6)

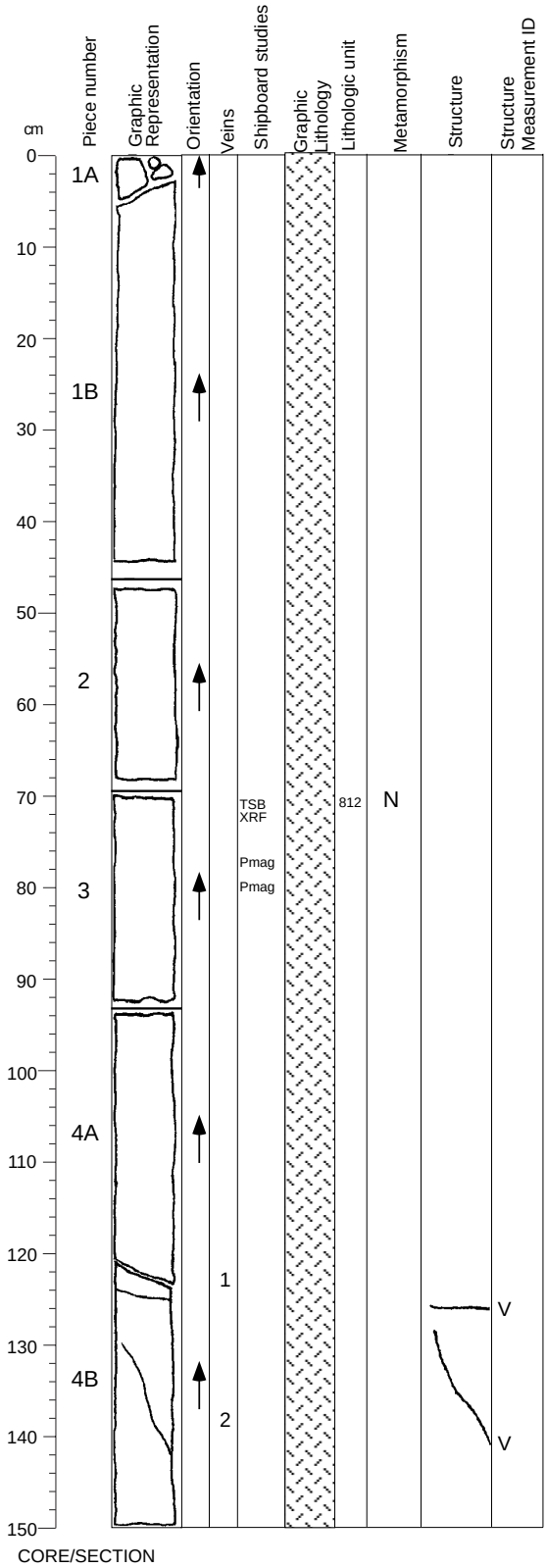
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.
Comments: Near smectite veins.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
1 mm plagioclase+amphibole vein in Piece 2.

Structures:
Mf>V
The entire section displays a fine to medium-grained igneous texture, with a moderate to strong magmatic foliation from 51 cm to the bottom, dipping regularly 40°, cut by a vein in Piece 2B to 2C.

Core Image



176-735B-166R-5

Interval 812: GABBRO
(see Section 176-735B-165R-6)

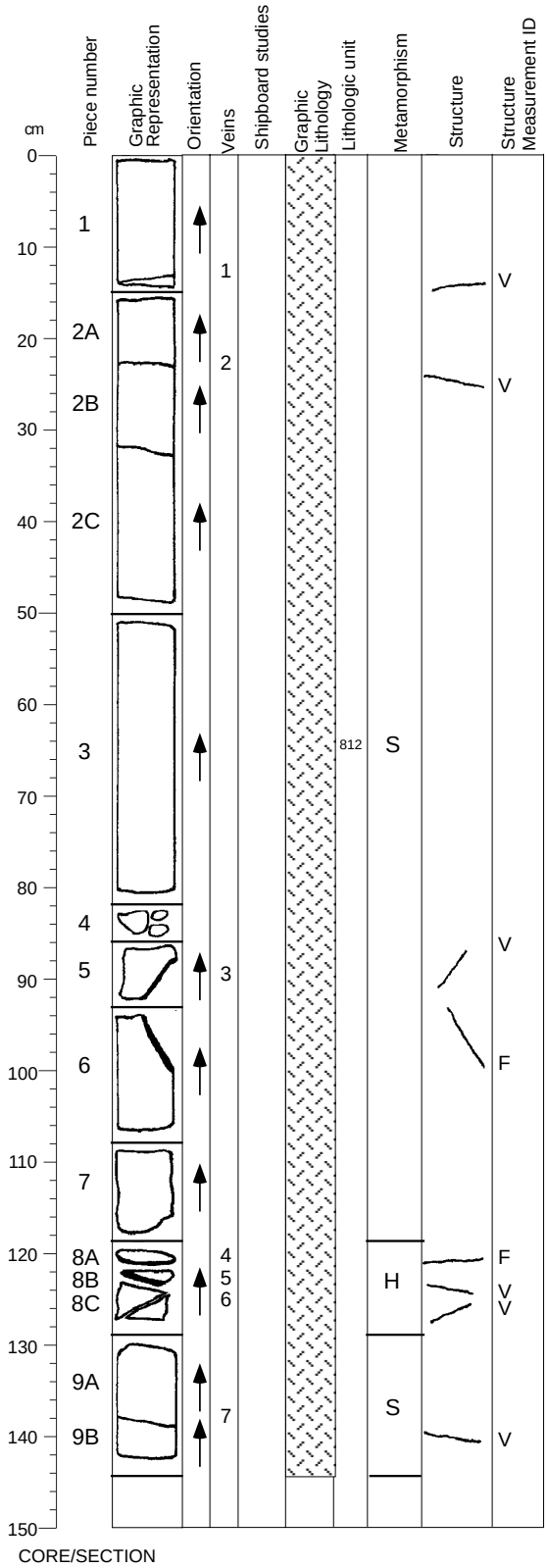
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphiboles or as patches in vein halos.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.3-0.5 mm amphibole+plagioclase veins in Piece 4.

Structures:
Mf>V
The entire section displays a medium-grained igneous texture, with no or a weak magmatic foliation, cut by veins in Piece 4B. Where present, the magmatic foliation dips at 20° to 40°; it is possibly overprinted by a weak crystal-plastic deformation.

Core Image



176-735B-166R-6

Interval 812: GABBRO
(see Section 176-735B-165R-6)

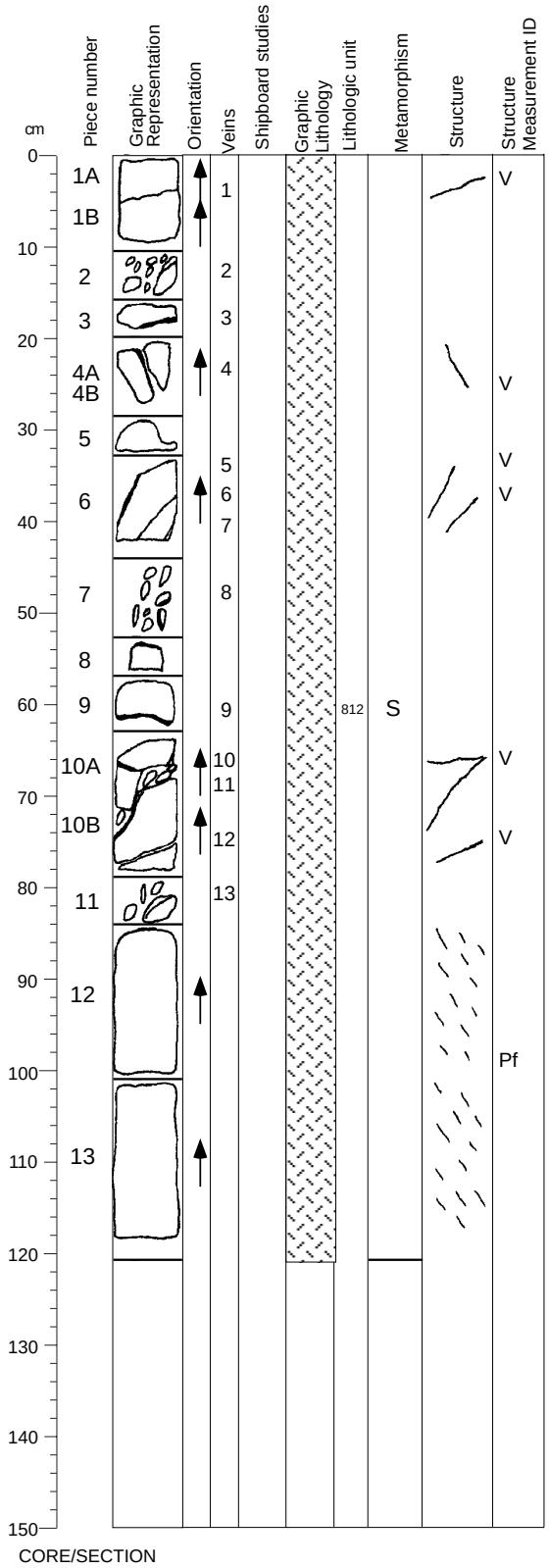
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight to high (3 to 60%). Pieces 1 to 7 and Piece 9: Minor replacement of olivine by amphibole and smectite (10%). Plagioclase and clinopyroxene are negligibly altered/recrystallized (1 to 2%). Piece 8 is cut by numerous smectite veins. Primary minerals are altered to smectite (olivine 100%, clinopyroxene 40%, plagioclase 20%).

Vein/Fracture Filling:
0.2-3 mm smectite veins in Pieces 1, 2A, 4 to 6, 8, and 9.

Structures:
Mf>V; Mf>F
The entire section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a series of veins and a few faults.

Core Image



176-735B-166R-7

Interval 812: GABBRO
(see Section 176-735B-165R-6)

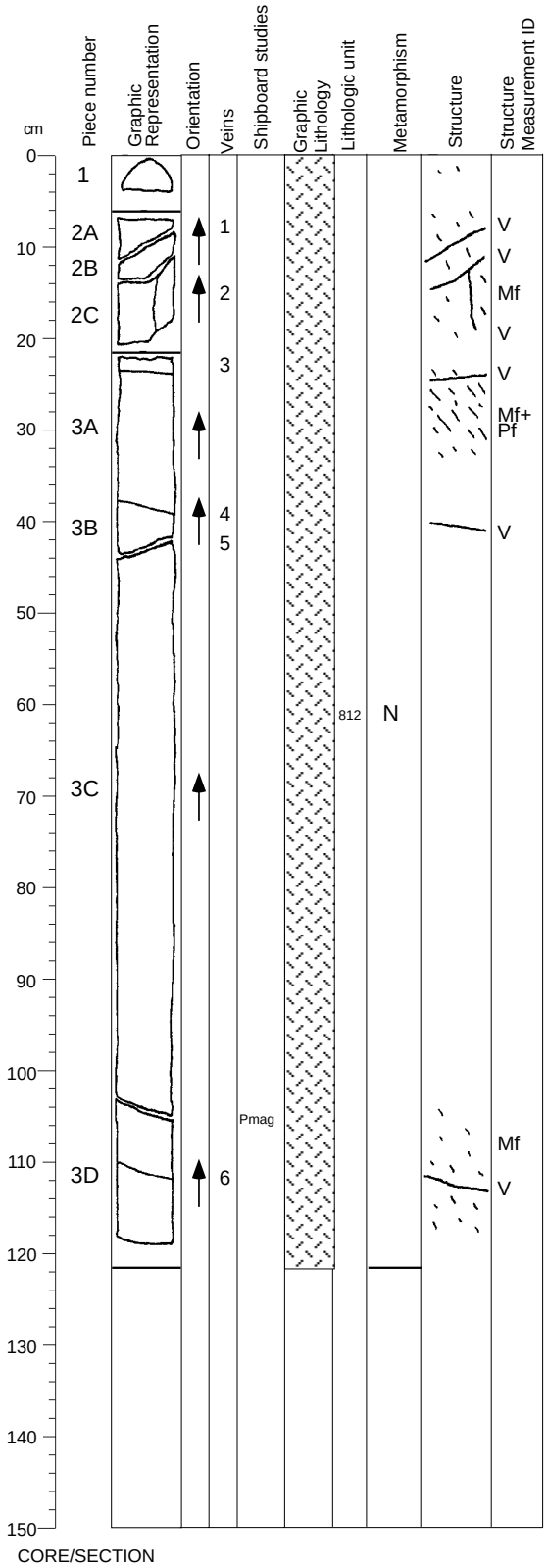
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <3
Mode of occurrence: Dark green smectite after olivine near smectite veins.

Background Alteration:
Degree of alteration: slight (3 to 10%). Piece 1 to 11: Significant alteration of olivine to smectite along cracks and veins (20%). Slight replacement of plagioclase and clinopyroxene by smectite near veins (up to 3%). Pieces 12 to 13: Smectite is less abundant (8% of olivine altered). No replacement of plagioclase and clinopyroxene by smectite, but slightly increased abundance of secondary plagioclase (3%).

Vein/Fracture Filling:
0.2-0.5 mm smectite veins in Pieces 1 to 4 and 6 to 11.

Structures:
Mf>V; Mf>Pf
From 0 to 84 cm, the section displays a fine to coarse-grained ignous texture, with a weak magmatic foliation dipping around 30°, cut by a series of veins and a fault. From 84 cm to the bottom of the section, a weak crystal-plastic foliation, dipping 50°, overprints the weak magmatic foliation.

Core Image



176-735B-167R-1

Interval 812: GABBRO
(see Section 176-735B-165R-6)

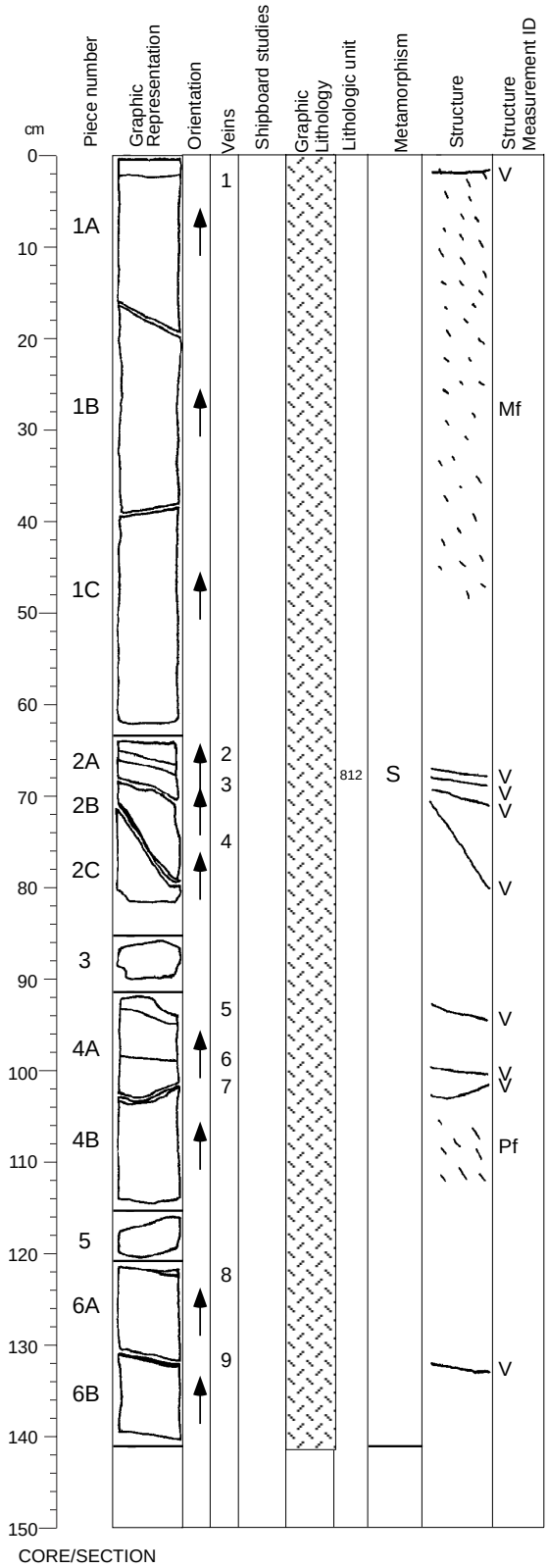
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine near smectite veins.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.2-0.4 mm smectite veins in Pieces 2 and 3.

Structures:
Mf>V; Mf>Pf>V
Most of the section displays a medium-grained igneous texture, with a moderate to weak magmatic foliation, dipping around 45°. A weak crystal-plastic foliation overprints the magmatic foliation from 22 to 31 cm. The earlier fabrics are cut by a few veins throughout the entire section.

Core Image



176-735B-167R-2

Interval 812: GABBRO
(see Section 176-735B-165R-6)

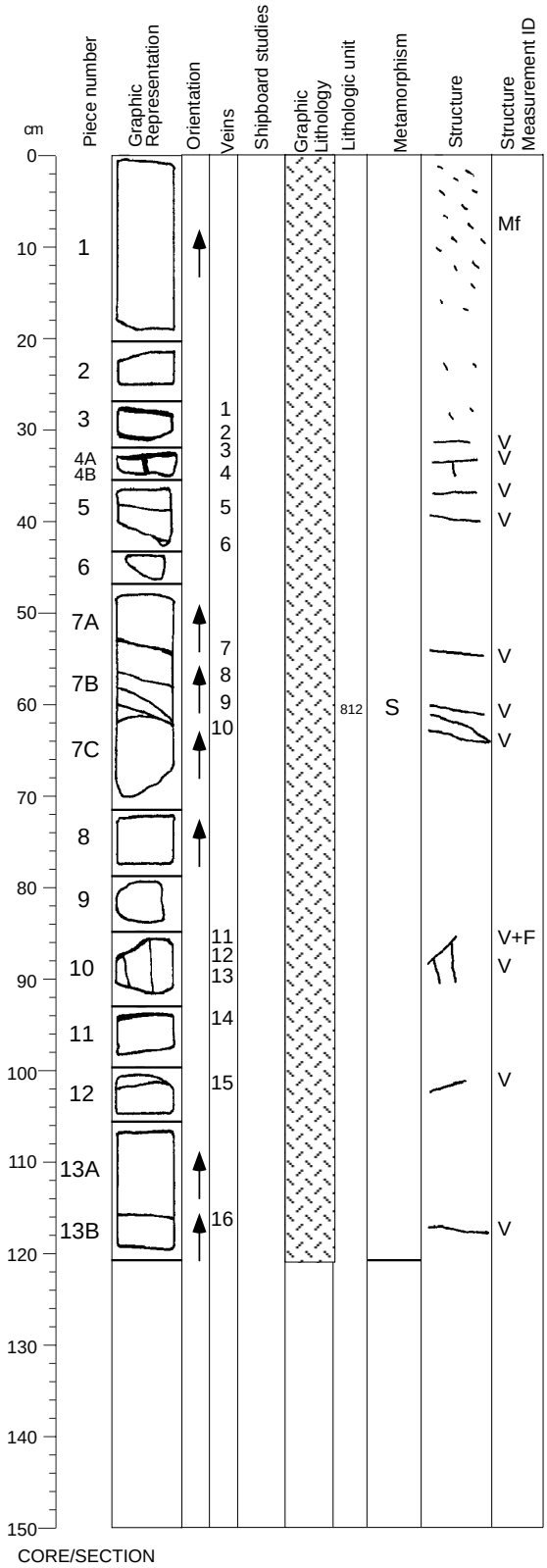
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <2
Mode of occurrence: Dark green smectite after olivine near smectite veins.

Background Alteration:
Degree of alteration: slight (4%). Around 10% of the olivine and 2% of the clinopyroxene are altered to amphibole and smectite. Plagioclase is fresh (<1% altered). Alteration is increased in Pieces 2 to 4 along smectite veins.

Vein/Fracture Filling:
0.2-1 mm smectite veins in Pieces 1, 2, 4, and 6; 0.4 mm plagioclase vein in Piece 1.

Structures:
Mf>V; Mf>Pf
Most of the section displays a medium-grained igneous texture, with a moderate to weak magmatic foliation, regularly dipping around 50°, and cut by a series of veins. A weak crystal-plastic foliation locally overprints the magmatic foliation in Piece 4B (from 106 to 112 cm).

Core Image



176-735B-167R-3

Interval 812: GABBRO
(see Section 176-735B-165R-6)

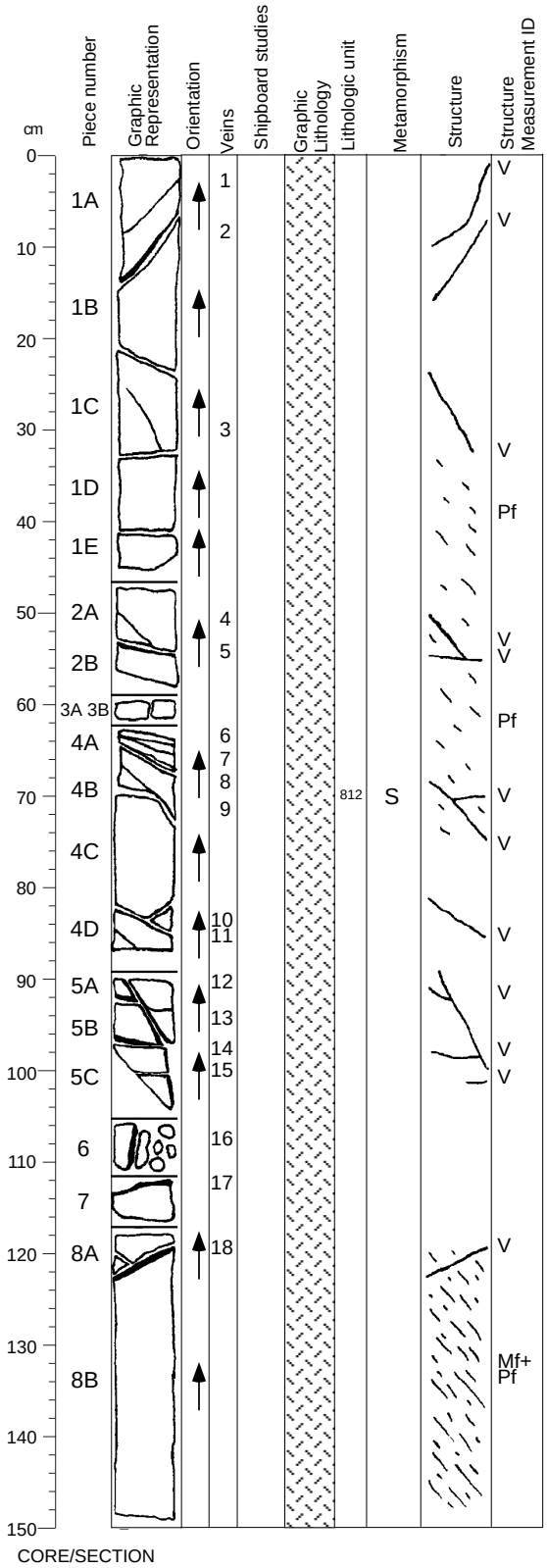
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <3
Mode of occurrence: Dark green smectite after olivine near smectite veins.

Background Alteration:
Degree of alteration: slight (6%). Around 20% of the olivine and 3% of the clinopyroxene are altered to amphibole and smectite. Occasionally plagioclase is altered to smectite (2%). Alteration is increased in Pieces 3 to 7 and 10 to 12 along cracks and smectite veins.

Vein/Fracture Filling:
0.2-1 mm smectite veins in Pieces 3 to 5 and 7 to 16.

Structures:
Mf>V>F
The section displays a fine to medium-grained igneous texture, with a moderate to weak foliation from 0 to 32 cm, dipping around 30°. The igneous texture is cut by a series of veins over the entire section. A vein in Piece 10 grades into a fault.

Core Image



176-735B-167R-4

Interval 812: GABBRO
(see Section 176-735B-165R-6)

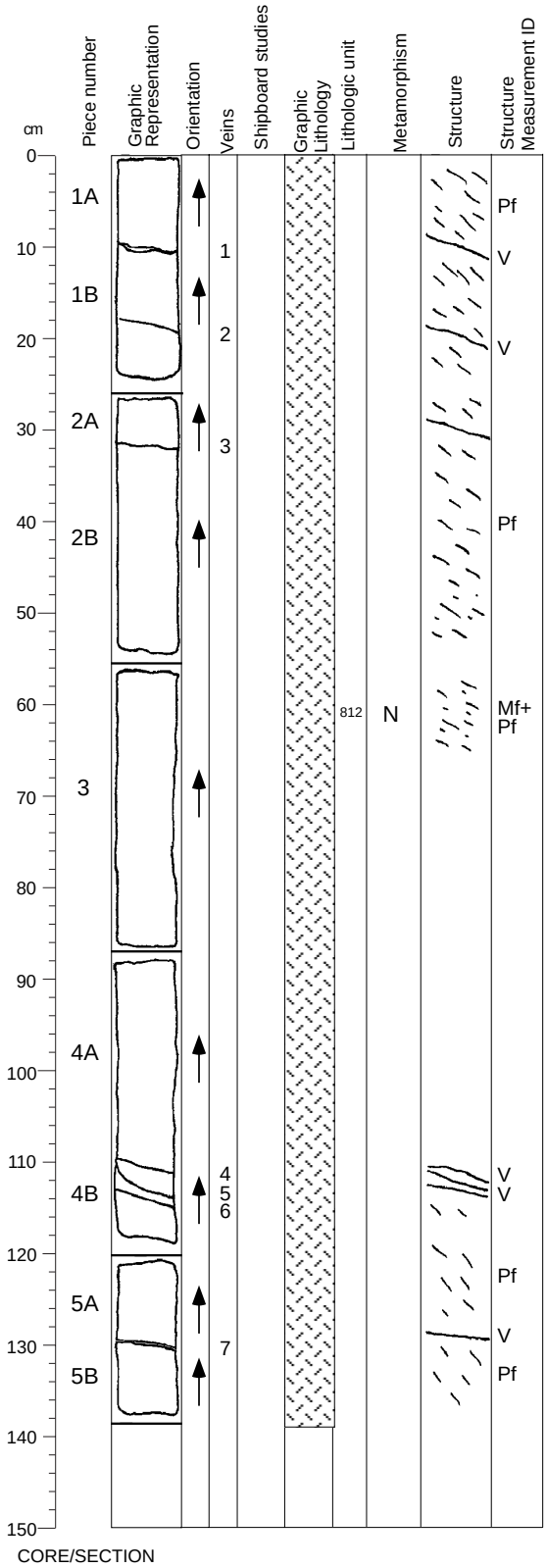
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <3
Mode of occurrence: Dark green smectite after olivine near smectite veins.

Background Alteration:
Degree of alteration: slight. Around 15% of the olivine and 2% of the clinopyroxene are altered to amphibole and smectite. Occasionally plagioclase is altered to smectite (2%).

Vein/Fracture Filling:
0.2-1 mm smectite veins in Pieces 1, 2, and 4 to 8.

Structures:
Mf>V; Mf>Pf>V
From 0 to 32 cm and from 76 to 122 cm the section displays a fine- to medium-grained igneous texture, with no or a weak magmatic foliation. The interval between 32 and 76 cm contains a weak crystal-plastic foliation. At the bottom of the section, Pieces 8A and 8B display a moderate magmatic foliation, overprinted by a strong crystal-plastic foliation, dipping around 45°.
The previous fabrics are cut by a series of veins over the entire section.

Core Image



176-735B-167R-5

Interval 812: GABBRO
(see Section 176-735B-165R-6)

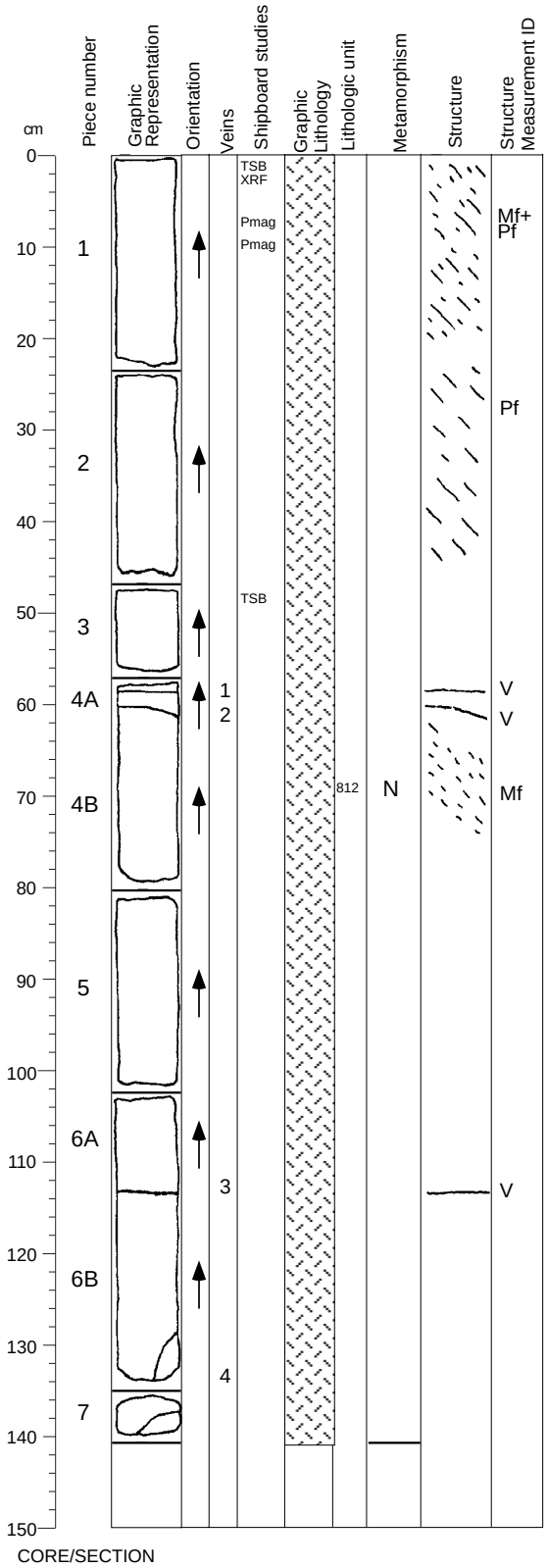
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near smectite veins.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.5-1 mm smectite veins in Pieces 1, 2, and 4; 0.2 mm plagioclase vein in Piece 5; 0.5 mm plagioclase+amphibole vein in Piece 5.

Structures:
Mf>Pf>V; Mf>V
From 0 to 67 cm and from 114 to 135 cm the section displays a weak crystal-plastic foliation, overprinting a weak to moderate magmatic foliation, and cut by a few veins. From 67 to 114 cm the section displays a fine- to medium-grained igneous texture, with no or a weak magmatic foliation, cut by three veins at the base of Piece 4A.

Core Image



176-735B-167R-6

Interval 812: GABBRO
(see Section 176-735B-165R-6)

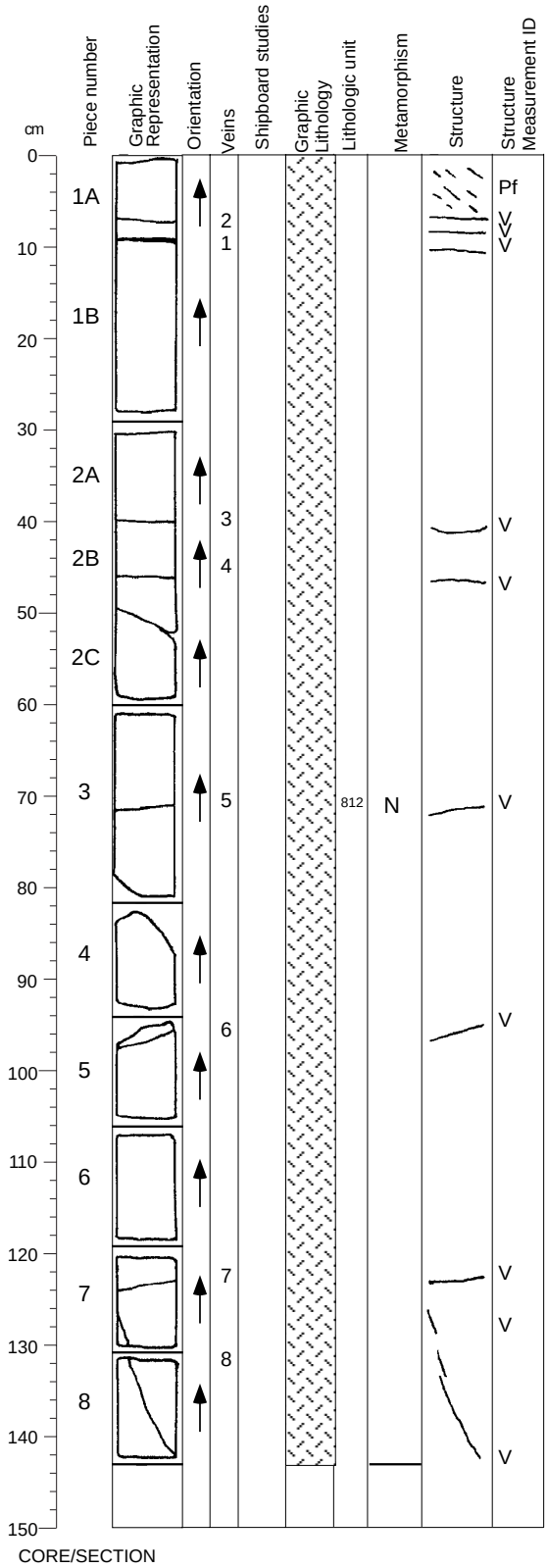
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near smectite veins.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.2 mm plagioclase vein in Piece 4; 0.3 mm smectite vein in Piece 4; 0.8 mm plagioclase+amphibole veins in Pieces 6 to 7.

Structures:
Mf>Pf; Mf>V
From 0 to 45 cm the section displays a weak crystal-plastic foliation, overprinting a moderate magmatic foliation in Piece 1, dipping 40°. From 47 cm to the bottom of the section, the texture is fine- to medium-grained igneous, with mostly a weak magmatic foliation, except for the interval 62 to 72 cm which is fine grained and has a moderate foliation, parallel to a schlieren of medium-grained gabbro.

Core Image



176-735B-167R-7

Interval 812: GABBRO
(see Section 176-735B-165R-6)

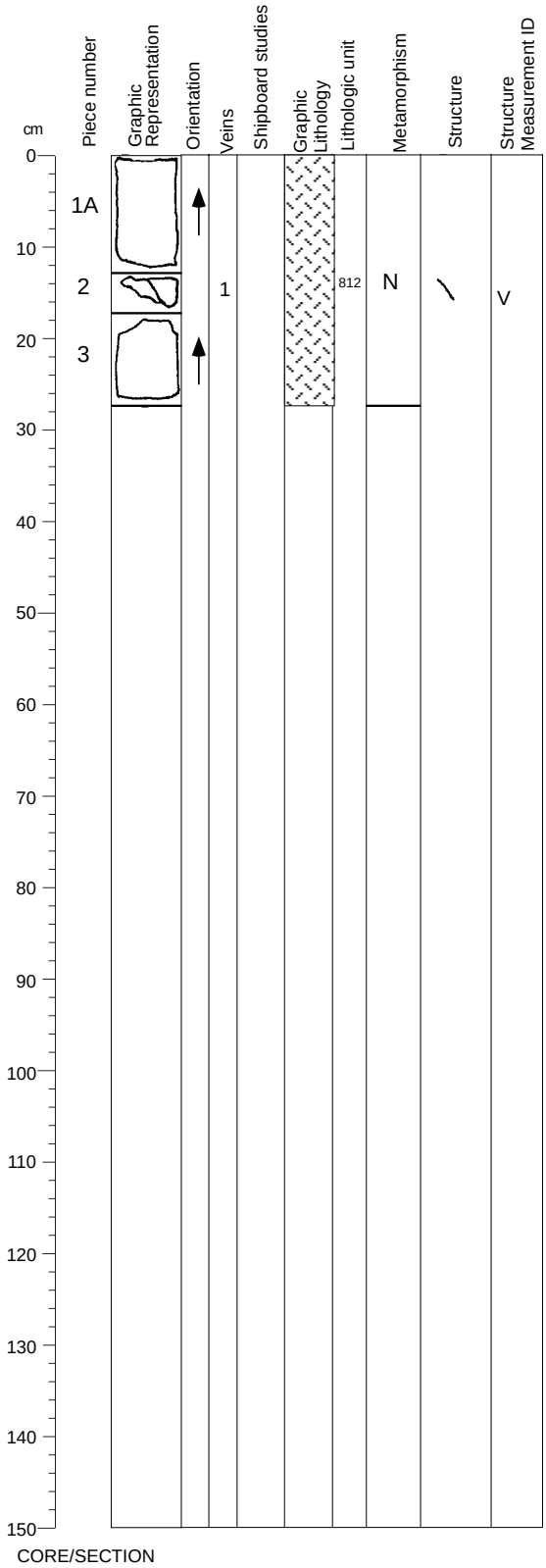
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near cracks.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling: 0.2-1 mm plagioclase + amphibole veins in Pieces 1, 2, 3, 5, and 7; 0.5 mm amphibole vein in Pieces 7 and 8.

Structures:
Mf>Pf; Mf>V
Most of the section displays a fine- to medium-grained igneous texture, with no or a weak magmatic foliation, except for Piece 1A, which has a weak crystal-plastic foliation (from 0 to 8 cm). The igneous texture is cut by a few veins over the entire section.

Core Image



176-735B167R-8

Interval 812: GABBRO
(see Section 176-735B-165R-6)

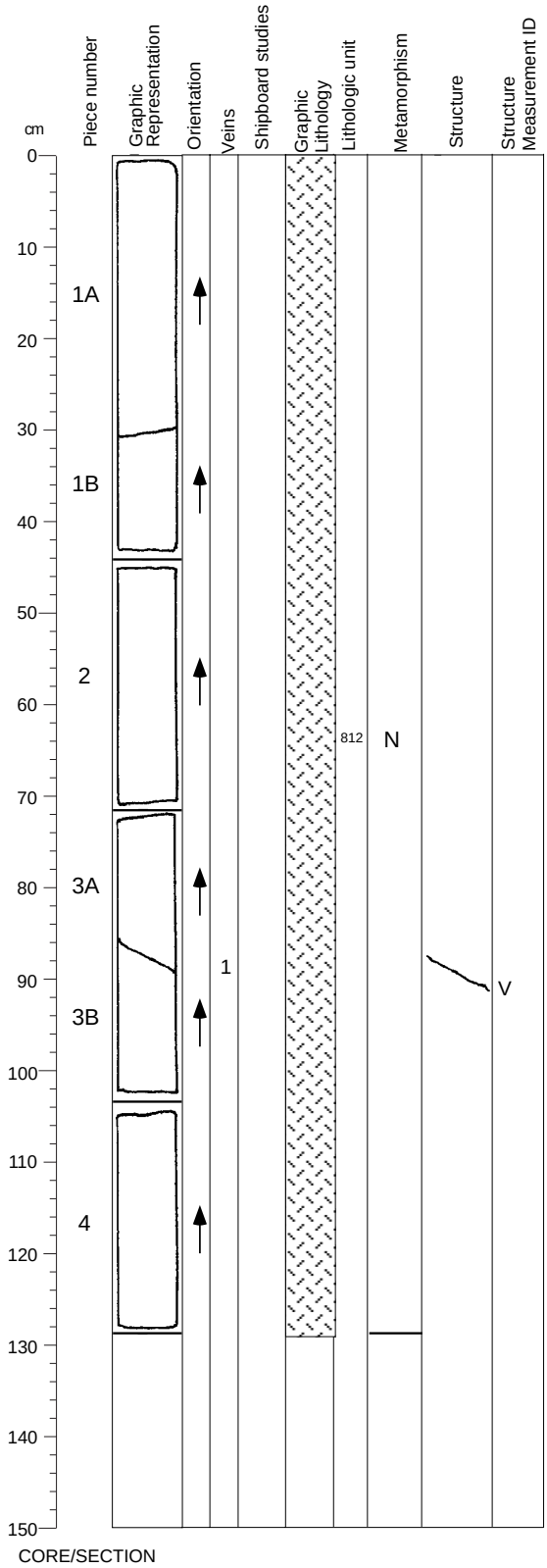
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near cracks.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.6 mm plagioclase vein in Piece 2.

Structures:
Mf>V
This short section displays a medium-grained igneous texture, with a weak, gently dipping (15°) magmatic foliation, cut by a vein in Piece 2.

Core Image



176-735B-168R-1

Interval 812: GABBRO
(see Section 176-735B-165R-6)

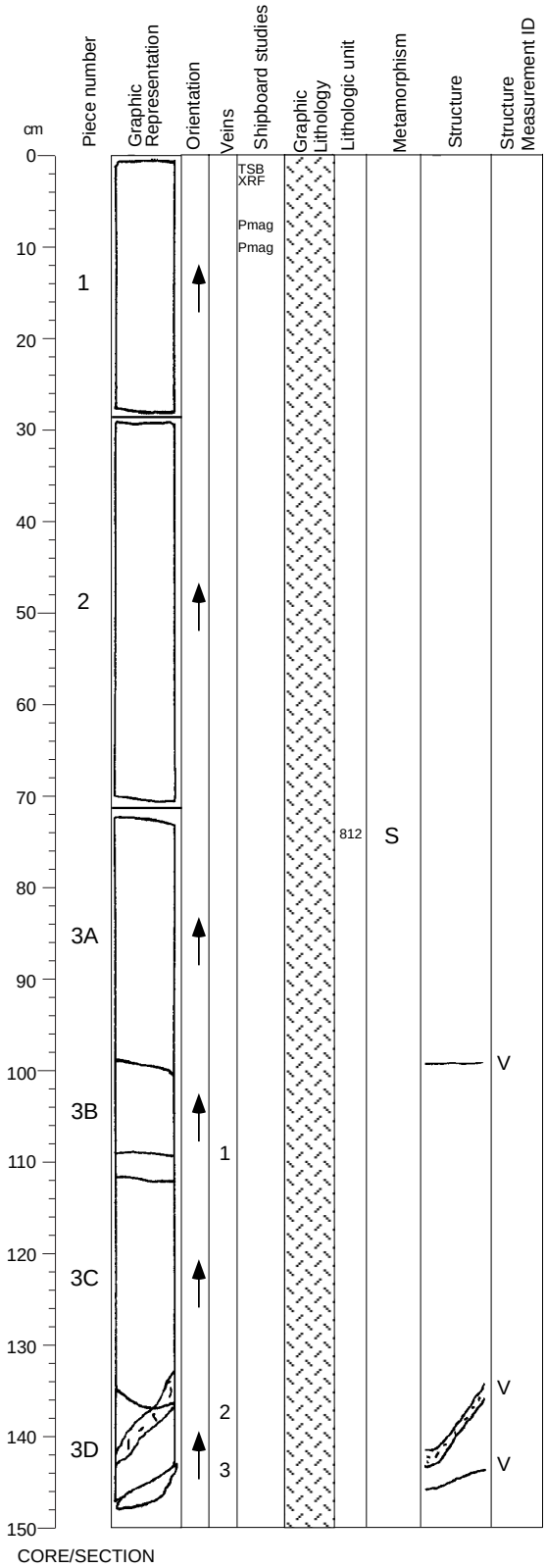
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near cracks.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
1 mm plagioclase+amphibole vein in Piece 3.

Structures:
Mf>V
The entire section displays a medium-grained igneous texture, with no or a weak magmatic foliation. Where present (from 57 to 102 cm), the magmatic foliation dips at 30°. The igneous texture is cut by a vein at the boundary between Pieces 3A and 3B.

Core Image



176-735B-168R-2

Interval 812: GABBRO
(see Section 176-735B-165R-6)

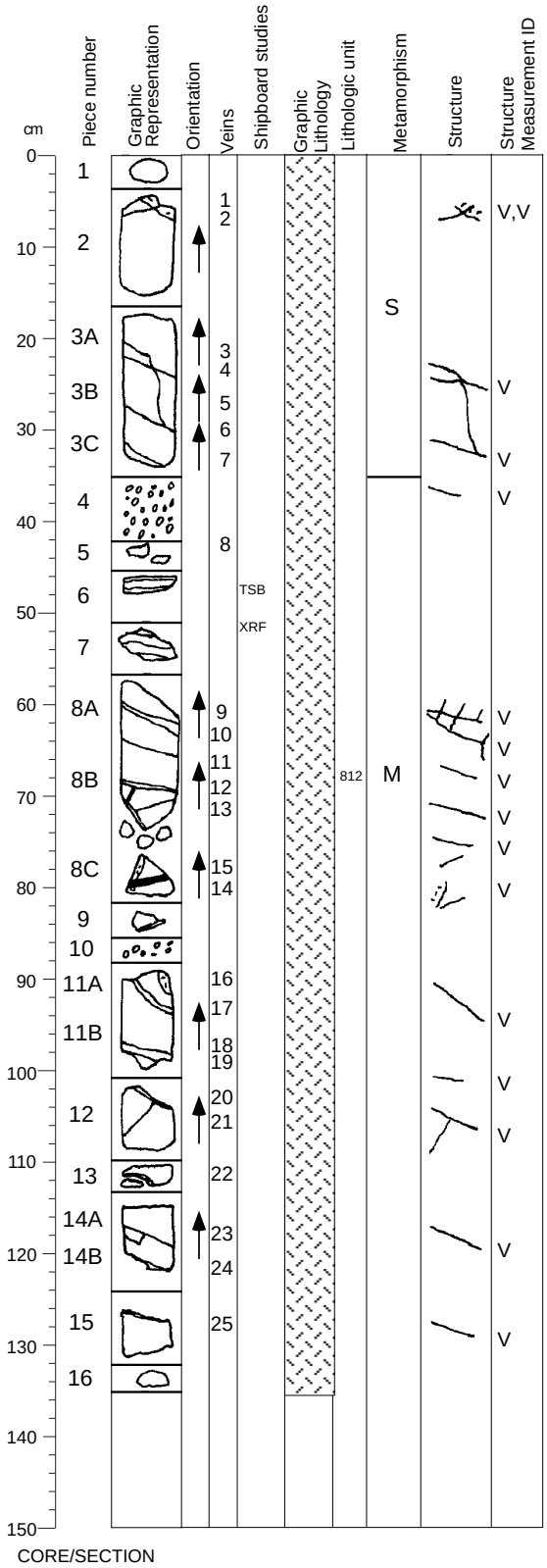
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: in felsic veins.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic areas.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine and surrounding felsic veins.

Background Alteration:
Degree of alteration: slight (3%). 8% of the olivine is altered to amphibole and smectite. Clinopyroxene and plagioclase are negligibly altered (1 to 2%).

Vein/Fracture Filling:
1 mm plagioclase + amphibole vein in Piece 3B; 10 mm compound felsic vein in Pieces 3C and 3D; 0.5 mm smectite vein in Piece 3D.

Structures:
Mf>V
The entire section displays a medium-grained igneous texture, with no magmatic foliation, cut by veins in Pieces 3A to 3D.

Core Image



176-735B-168R-3

Interval 812: GABBRO
(see Section 176-735B-165R-6)

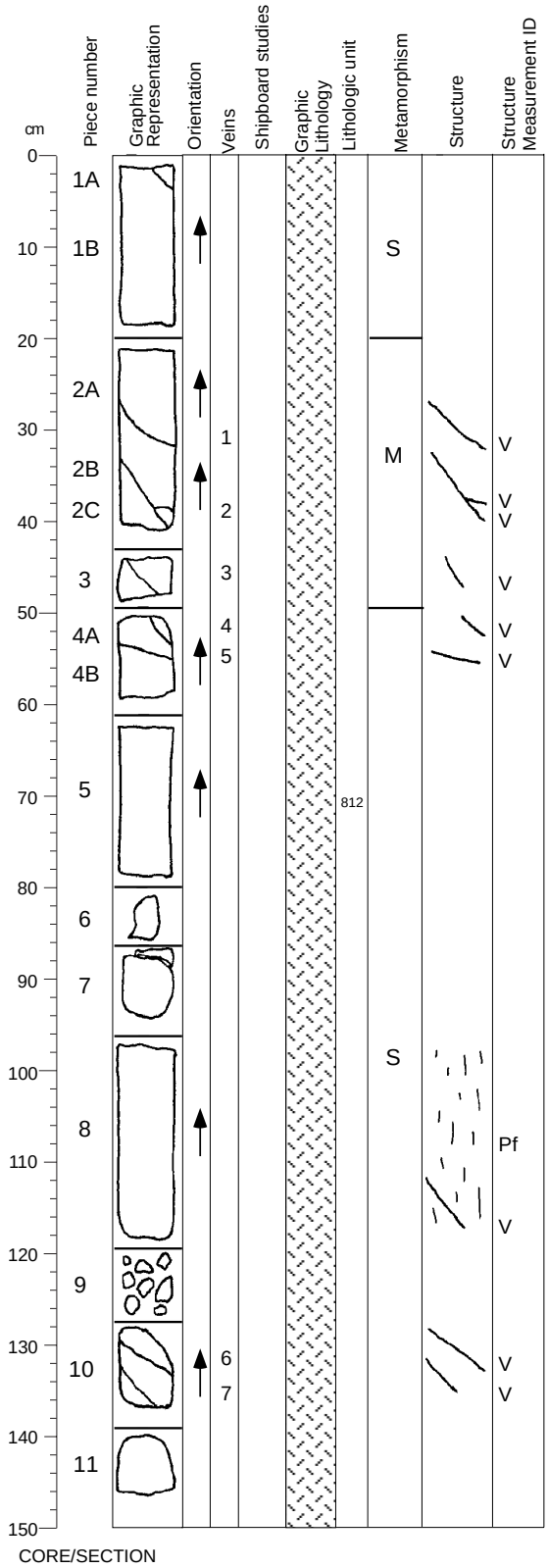
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: in and near felsic veins.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic veins.
Smectite:
Total Percent: 15
Mode of occurrence: Dark green smectite after olivine and some pyroxenes, pale green smectite altering plagioclase in felsic veins.
Sulfides:
Total Percent: <1
Mode of occurrence: Pyrite associated with smectite after olivine.

Background Alteration:
Degree of alteration: Slight to moderate (5 to 30%). Pieces 1 to 3: 25% of the olivine is altered to amphibole and smectite. Clinopyroxene and plagioclase are negligibly altered (1 to 2%). Pieces 4 to 16: 60% of the olivine is replaced by amphibole, smectite, and abundant sulfide. Clinopyroxene is partly altered to smectite along veins and in highly fractured and altered portions of the core. Plagioclase is also partly replaced by smectite (10%). Alteration is highest in Pieces 4 to 8 and can be near complete in some examples.

Vein/Fracture Filling:
0.4-2.5 mm smectite veins in Pieces 2-15; 4-8 mm compound felsic veins in Pieces 2, 8B, and 11.

Structures:
Mf>V; Mf>Pf>V
Most of the section displays an igneous texture, with no magmatic foliation, cut by numerous veins. A weak crystal-plastic fabric is present from 88 to 123 cm, difficult to measure because many pieces are broken fragments.

Core Image



176-735B-168R-4

Interval 812: GABBRO
(see Section 176-735B-165R-6)

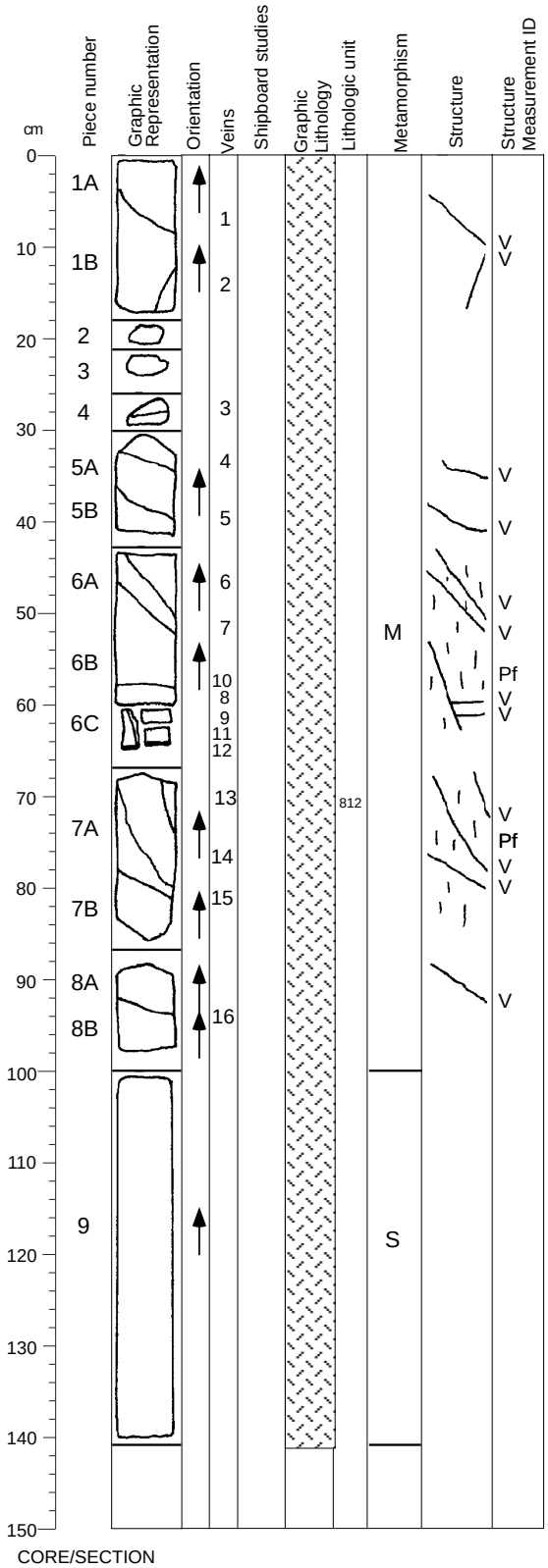
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: In and near felsic veins.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic veins.
Smectite:
Total Percent: 8
Mode of occurrence: Dark green smectite after olivine and some pyroxenes, pale green smectite altering plagioclase and amphibole in felsic veins.

Background Alteration:
Degree of alteration: Slight to moderate (6 to 30%). Pieces 1 and Pieces 4 to 11: 15% of the olivine is altered to amphibole and smectite. Clinopyroxene and plagioclase are weakly altered (2 to 4%). Pieces 2 to 3: 30% of the olivine is replaced by amphibole, smectite, and rare sulfide. Clinopyroxene is partly altered to smectite along veins (15%). Plagioclase is partly replaced by smectite along veins (15%).

Vein/Fracture Filling:
0.4-2 mm smectite veins in Pieces 2, 3, 4, and 10; 1 mm zeolite vein in Piece 3.

Structures:
Mf>V; Mf>Pf>V
Most of the section displays a medium- to coarse-grained igneous texture, with no magmatic foliation, except for Piece 8 (102 to 118 cm) which has a weak, subvertical, crystal-plastic foliation. The previous fabrics are cut by veins over the entire section.

Core Image



176-735B-168R-5

Interval 812: GABBRO
(see Section 176-735B-165R-6)

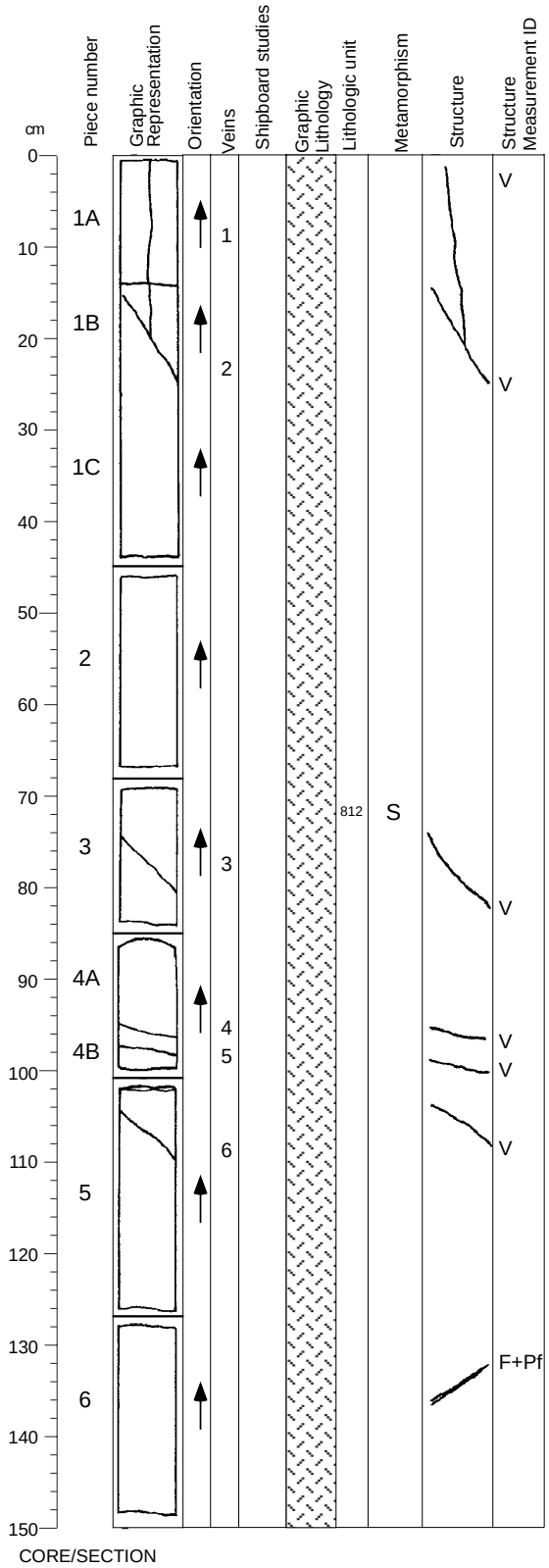
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine in cracks of the crystals.
Smectite:
Total Percent: 8
Mode of occurrence: Dark green smectite after olivine, and patches of pale green smectite.

Background Alteration:
Degree of alteration: Slight to moderate (4 to 15%). Pieces 1 to 8: 30% of the olivine is altered to amphibole and smectite. Clinopyroxene is weakly altered to smectite along veins. Plagioclase is partly replaced by smectite (4%). Piece 9: Olivine is weakly altered (5%). There is a significant amount of amphibole replacing clinopyroxene (6%) and some secondary plagioclase (5%).

Vein/Fracture Filling:
0.2-1 mm smectite veins in Pieces 1 and 4 to 8; 1-1.5 mm plagioclase veins in Pieces 1 and 6.

Structures:
Mf>V; Mf>Pf>V
Most of the section displays a medium to coarse-grained igneous texture, with no magmatic foliation. A weak, subvertical crystal-plastic foliation overprints the igneous texture from 43 to 85 cm. The previous fabrics are cut by veins over the entire section.

Core Image



176-735B-168R-6

Interval 812: GABBRO
(see Section 176-735B-165R-6)

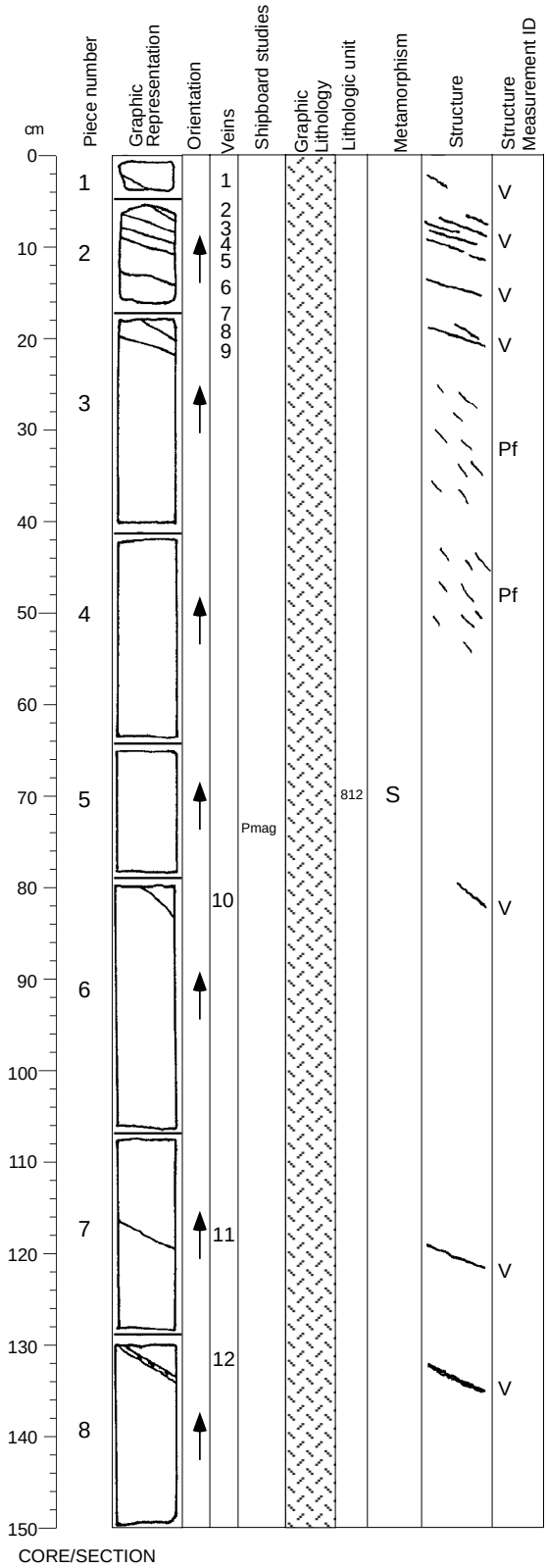
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Patches near an oxide vein.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Chlorite:
Total Percent: trace
Mode of occurrence: In patches of green amphibole.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine near veins.

Background Alteration:
Degree of alteration: slight (6%). Olivine is weakly altered to amphibole and rare smectite (8%). 5% of the clinopyroxene are replaced by amphibole and possibly some secondary clinopyroxene. 6% of the plagioclase are secondary.

Vein/Fracture Filling:
0.3-0.5 mm smectite veins in Pieces 1 and 3 to 5.

Structures:
Mf>V; Mf>F/Pf
The section displays a medium- to coarse-grained igneous texture, with no or a weak magmatic foliation. The igneous texture is cut by a few veins over the entire section, and is overprinted by a semi-brittle fault in Piece 6.

Core Image



176-735B-168R-7

Interval 812: GABBRO
(see Section 176-735B-165R-6)

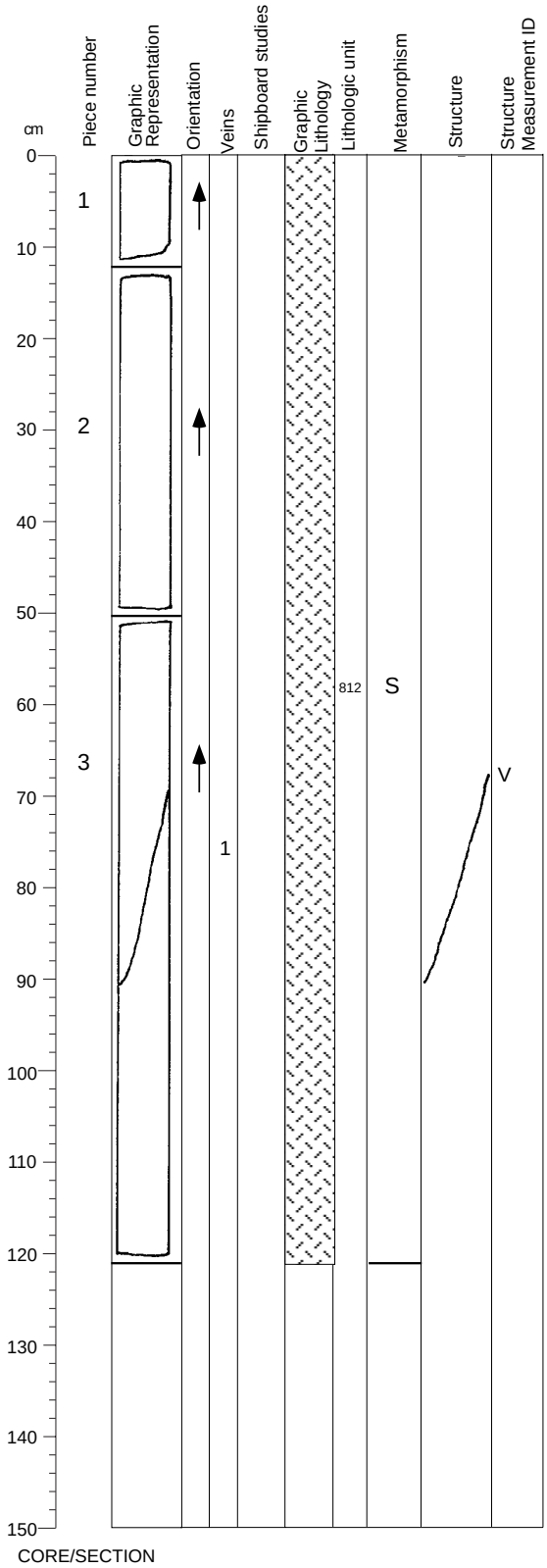
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Small patches.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic veins.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine near felsic and smectite veins.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Vein/Fracture Filling:
0.2-1 mm smectite veins in Pieces 1 to 3, 6, and 7; 2 mm compound felsic vein in Piece 8.

Structures:
Mf>V; Mf>Pf
Most of the section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a series of veins in Pieces 1 to 3 and 6 to 8. A weak crystal-plastic foliation, dipping at 40°, overprints the igneous texture in Pieces 2 and 3 (from 25 to 55 cm).

Core Image



176-735B-169R-1

Interval 812: GABBRO
(see Section 176-735B-165R-6)

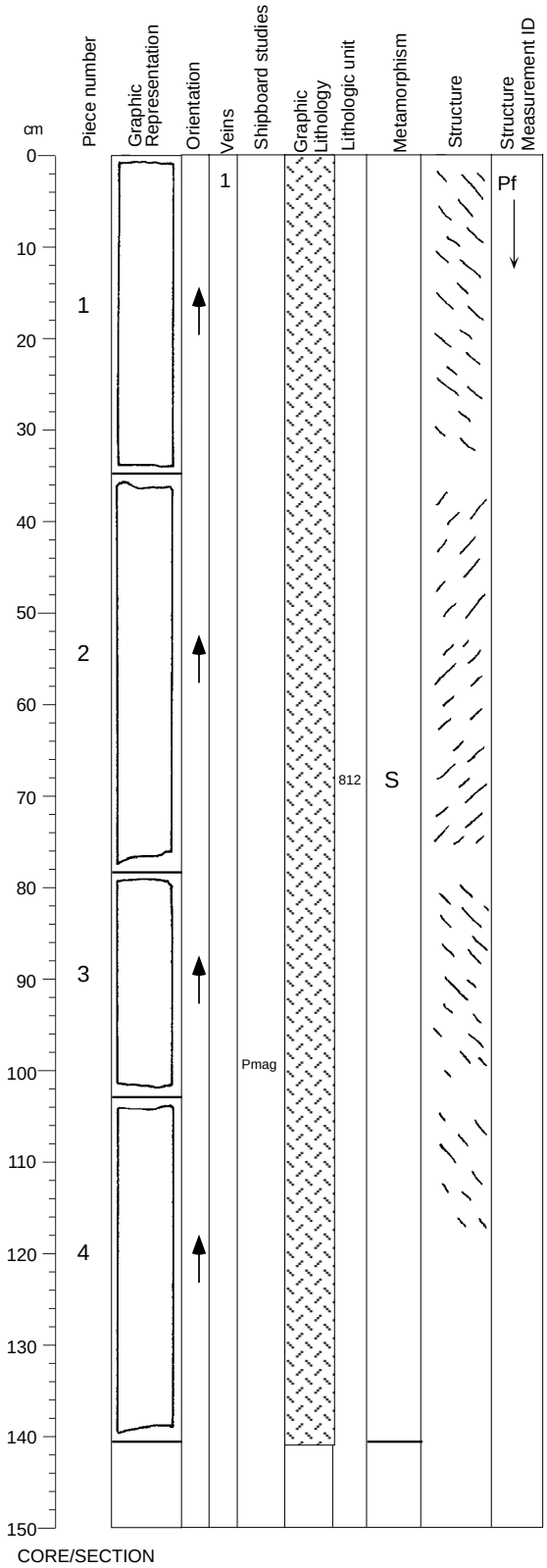
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In the halo of amphibole vein.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine near felsic and smectite veins.

Background Alteration:
Degree of alteration: slight (5%). Olivine is weakly altered to amphibole and smectite (5%). Clinopyroxene is partly altered to amphibole (4%). 6% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.2 mm amphibole vein in Piece 3.

Structures:
Mf>V; Mf>Pf?
The section displays a medium- to coarse-grained igneous texture, with no magmatic foliation, possibly overprinted by a very weak crystal-plastic fabric. The igneous texture is cut by a vein in Piece 3.

Core Image



176-735B-169R-2

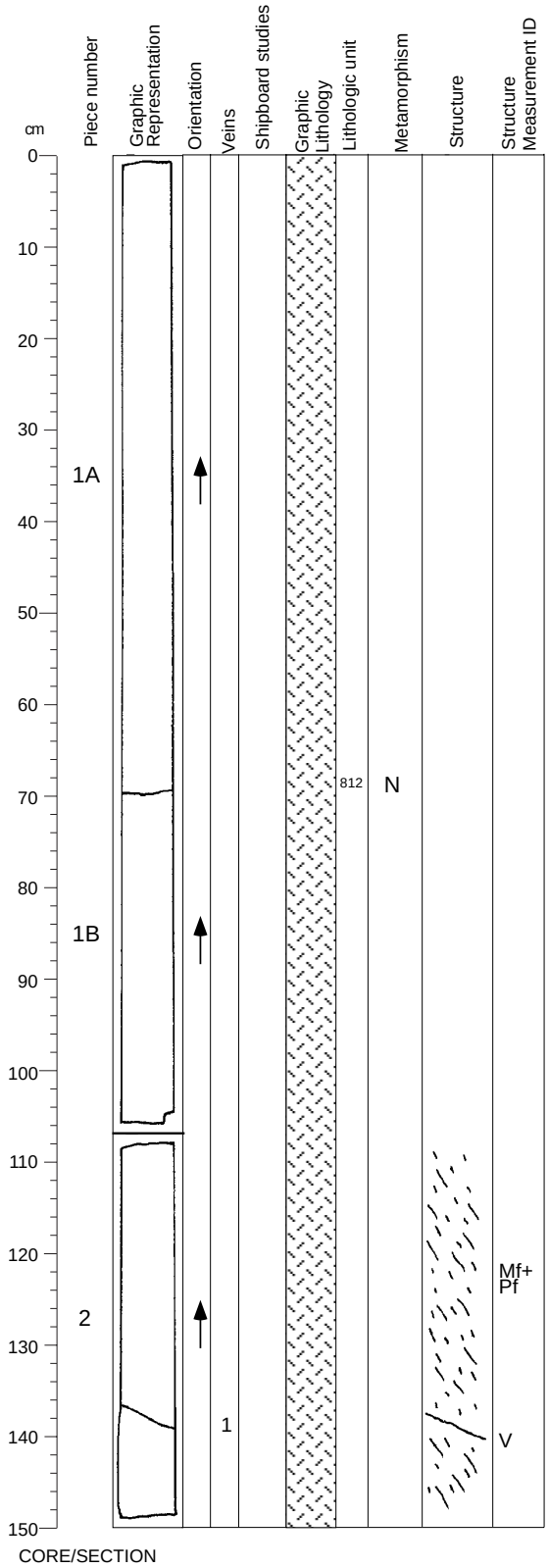
Interval 812: GABBRO
(see Section 176-735B-165R-6)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Dispersed patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (4%). Olivine is weakly altered to amphibole and smectite (5%). Clinopyroxene is partly altered to amphibole (3%). 4% of the plagioclase is recrystallized.

Structures:
Mf>Pf
Most of the section (from 0 to 118 cm) displays a weak crystal-plastic foliation, dipping around 35°, and overprinting locally a weak magmatic foliation. The rest of the section (118 cm to the bottom of the section) has an igneous texture, with no magmatic foliation.

Core Image



176-735B-169R-3

Interval 812: GABBRO
(see Section 176-735B-165R-6)

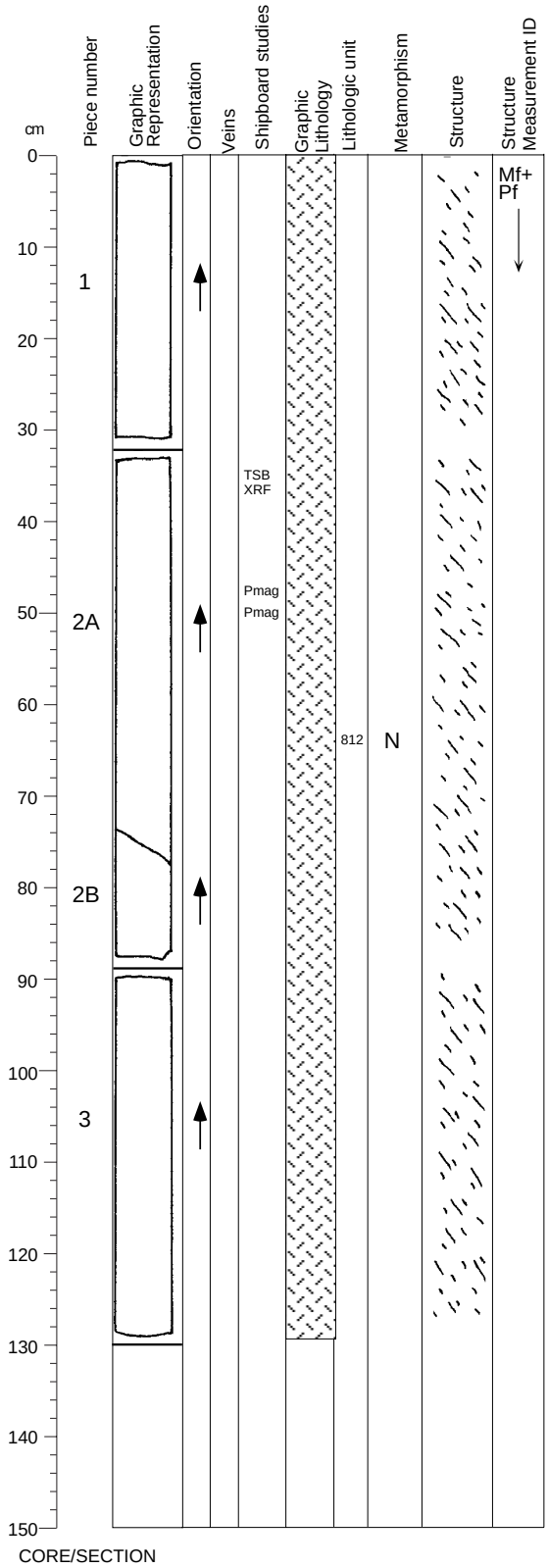
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near a smectite vein.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.3 mm smectite vein in Piece 2.

Structures:
Mf>Pf>V
Pieces 1A and 1B (from 0 to 106 cm) display a medium- to coarse-grained igneous texture with a weak magmatic foliation, dipping around 30°. Piece 2 (from 107 to the bottom of the section) displays a moderate magmatic foliation, overprinted by a weak crystal-plastic foliation, dipping 45-50°. The previous fabrics are cut by a vein.

Core Image



176-735B-169R-4

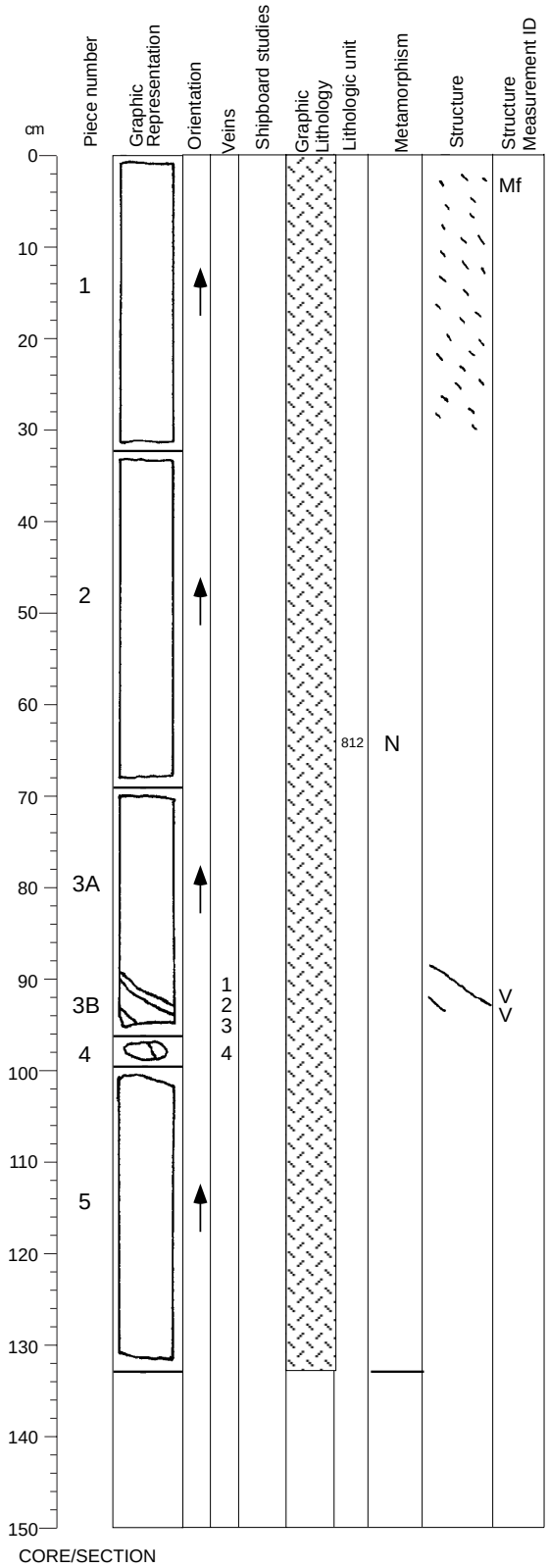
Interval 812: GABBRO
(see Section 176-735B-165R-6)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: negligible (2%).

Structures:
Mf>Pf
The entire section displays a moderate to strong magmatic foliation, overprinted by a weak, parallel, crystal-plastic foliation, regularly dipping 40-45°. A weakly defined mineral lineation can be observed on a cut parallel to the foliation, trending approximately 140° and plunging around 30°.

Core Image



176-735B-169R-5

Interval 812: GABBRO
(see Section 176-735B-165R-6)

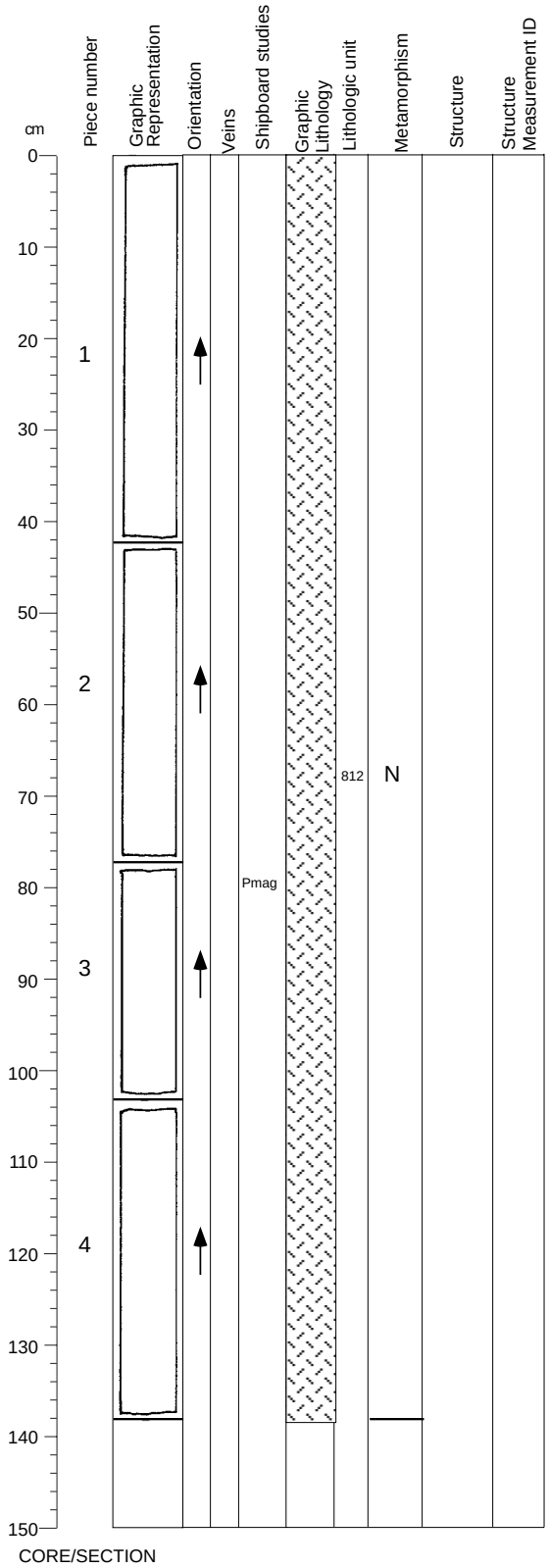
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near a crack.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.3 mm smectite veins in Pieces 3 and 4.

Structures:
Mf>V
The entire section displays a fine- to medium-grained igneous texture, with a moderate to a weak magmatic foliation, dipping 30-35°, and cut by a few veins in Pieces 3A to 4. In Piece 1, the magmatic foliation is moderate, well visible, and clearly steeper than a few anorthositic or pyroxenitic layers (≤1cm thick) present in the bottom half of the piece (dipping 5-10° in the same direction as the foliation).

Core Image



176-735B-169R-6

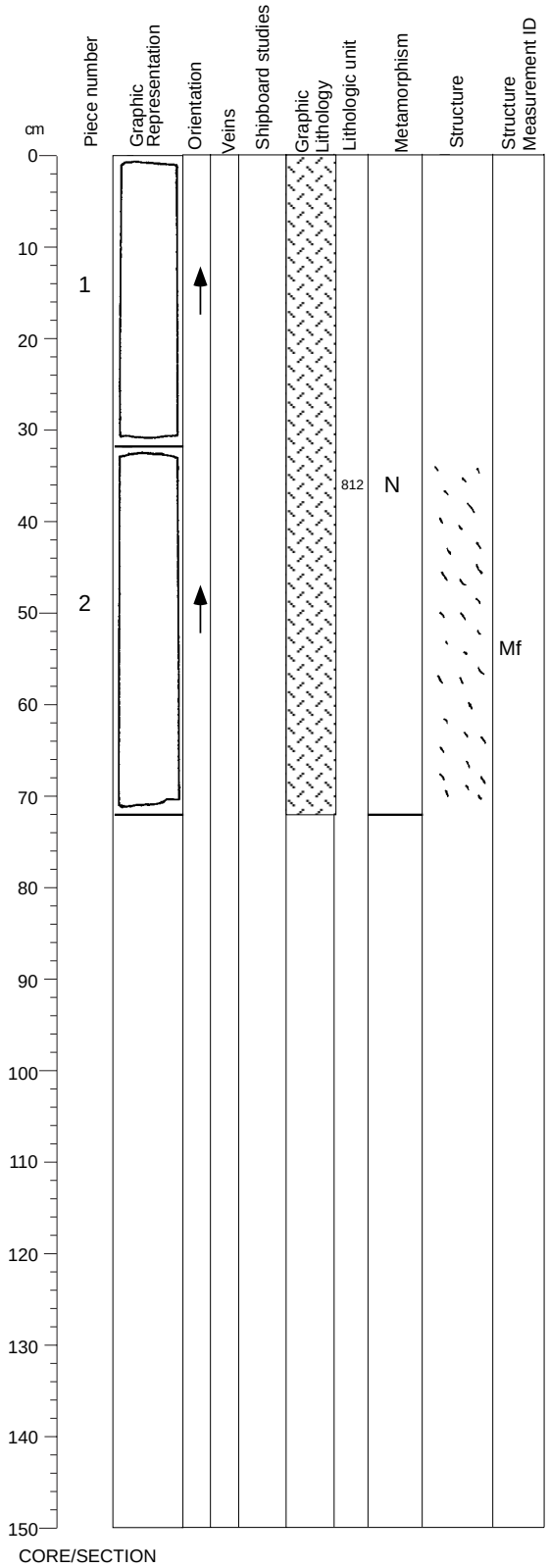
Interval 812: GABBRO
(see Section 176-735B-165R-6)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: negligible (2%).

Structures:
Mf>Pf?
The section displays a medium-grained igneous texture, with a weak to moderate magmatic foliation, dipping 40° (at the top of the section) to 30° (at the bottom of the section). The igneous foliation is possibly overprinted by a local very weak crystal-plastic fabric.

Core Image



176-735B-169R-7

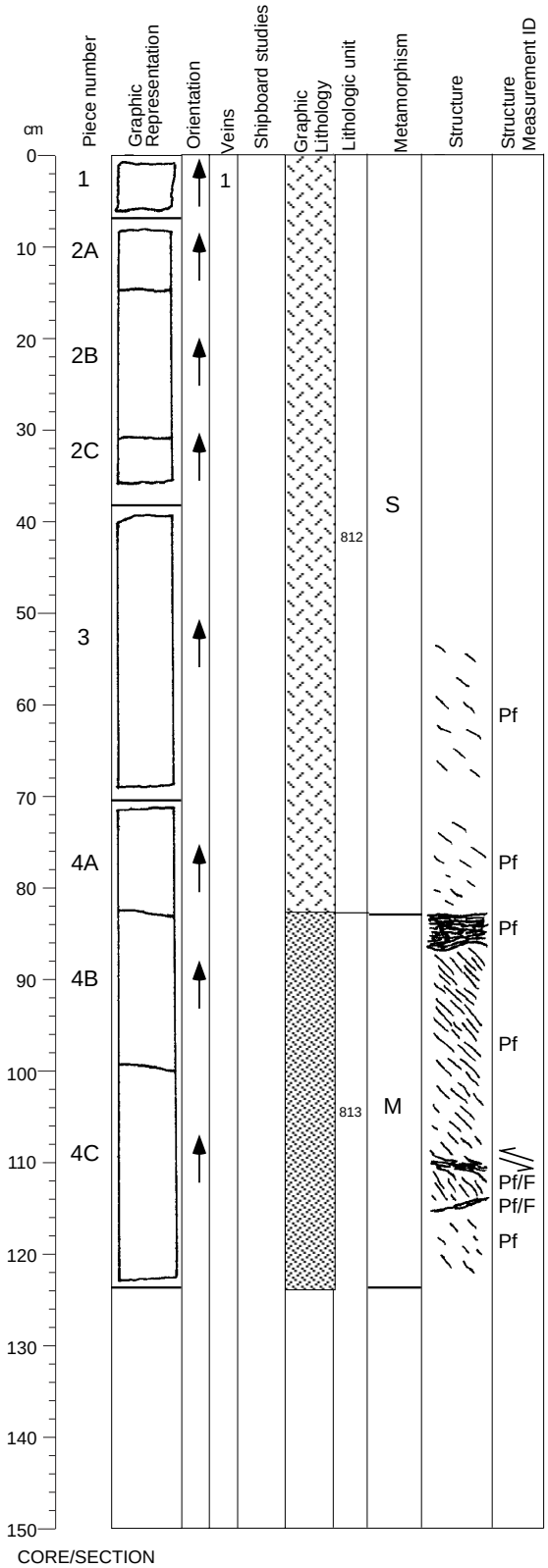
Interval 812: GABBRO
(see Section 176-735B-165R-6)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: negligible (2%).

Structures:
Mf
The entire section displays a medium-grained igneous texture, with a weak (Piece 1) to moderate (Piece 2) magmatic foliation, dipping around 40°.

Core Image



176-735B-170R-1

Interval 812: GABBRO
(see Section 176-735B-165R-6)
Interval 813: DISSEMINATED OXIDE OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	170	1	82	4A	1150.12
Lower contact:	170	1	87	4B	1150.17

Thickness (m): 0.05

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	4	n/a	fine	tabular/ anhedral deformed
Clinopyroxene	20	10	2	medium	equant/ anhedral fractured
Olivine	8	4	1	medium	elongate/ anhedral deformed
Opaque	1				interstitial lenses/ concordant seams
Total	89*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Fine

	Type	Distribution
Texture:	porphyritic	N/A

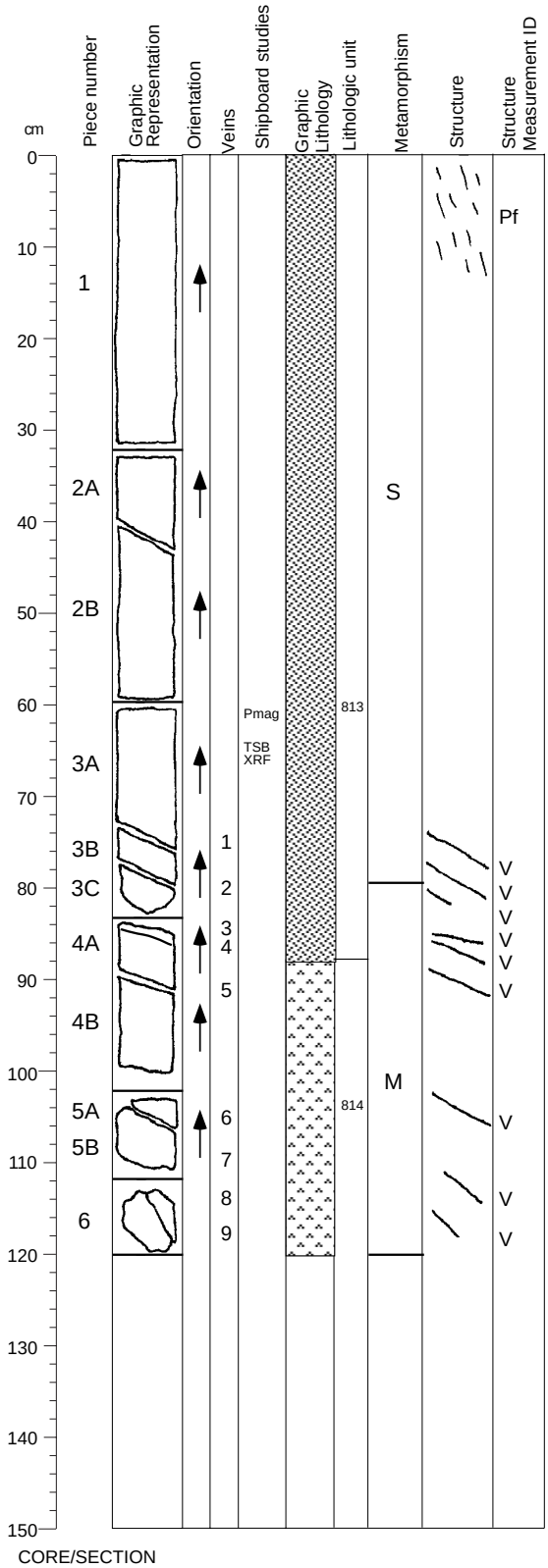
Comments: Mylonitic

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.

Background Alteration:
Degree of alteration: slight to moderate (3 to 40%). Pieces 1 to 4A: slightly altered (3%) with olivine partly replaced by amphibole and smectite (10%) and plagioclase and clinopyroxene negligibly recrystallized. Pieces 4B to 4C: Significant deformation and recrystallization. 60% of the plagioclase is recrystallized. Clinopyroxene is partly replaced by amphibole and secondary clinopyroxene (10%). Around 20% of the olivine is altered to amphibole and possibly talc.

Structures:
Mf>Pf>Pf; Pf>Pf/F
From 0 to 53 cm, the section displays a medium- to coarse-grained igneous texture, with a weak magmatic foliation, dipping 30°. From 53 cm to the bottom, the sections displays a crystal-plastic foliation, overprinted by a 5 cm thick mylonitic zone at the boundary between Pieces 4A and 4B, and by two narrow, semi-brittle shear zones in Piece 4C. The plastic foliation is weak above the mylonite, and strong to moderate below it.

Core Image



176-735B-170R-2

Interval 813: DISSEMINATED OXIDE OLIVINE GABBRO (see previous section)

Interval 814: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	170	1	87	4B	1150.17
Lower contact:	170	6	73	3B	1156.74

Thickness (m): 6.57

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	3	coarse	tabular/ subhedral
Clinopyroxene	20	15	2	coarse	equant/ anhedral
Olivine	10	1	6	medium	oikocrystic equant/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	95.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable

Texture:	Type	Distribution
	granular	N/A

Comments: Medium- to coarse-grained. Locally subophitic. Highly foliated, gneissic, porphroclastic texture from top to 124 cm in 170R-1. Grain-size "layering" locally apparent, but masked by deformation/fragmentation. Highly fragmented/brecciated/altered from 80 cm in 170R-2 to 44 cm in 170R-5. From 44 cm in 170R-4 to 67 cm in 170R-4 (coarse), to 76 cm in 170R-4 (fine), to 93 cm in 170R-4 (coarse/medium), to 98 cm in 170R-4 (fine), to 120 cm in 170R-4 (coarse), to 125 cm in 170R-4 (fine), to 127 cm in 170R-4 (medium; more mafic), to 133 cm in 170R-4 (fine), to 28 cm in 170R-4 (fine), to 53 cm in 170R-5 (coarse), to 84 cm in 170R-5 (fine), to 127 cm in 170R-5 (coarse/medium), and to base (medium). Highly fragmented/altered at 0-73 cm in 170R-6.

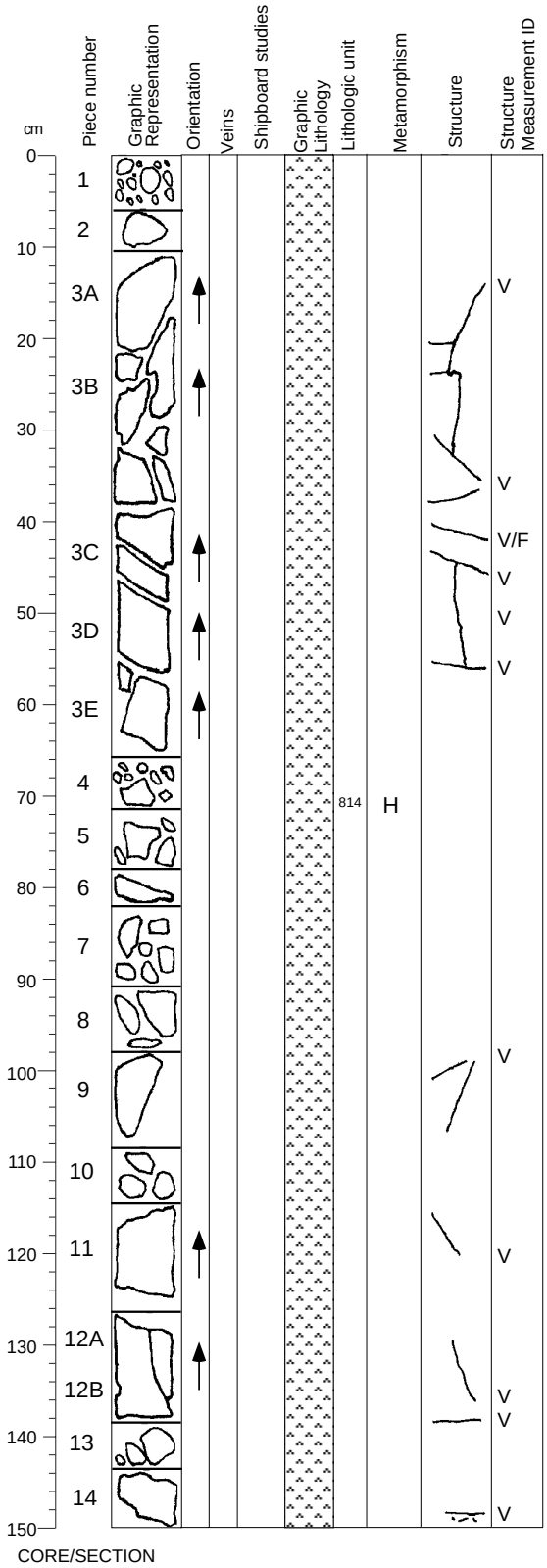
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent:trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <3
Mode of occurrence: Dark green smectite after olivine and some pyroxenes, pale green smectite after plagioclase.
Comments: near smectite veins and cracks.

Background Alteration:
Degree of alteration: slight to moderate (5 to 20%). Pieces 1 to 3B: slightly altered (5%) with olivine partly replaced by amphibole and smectite (15%) and plagioclase and clinopyroxene weakly altered/recrystallized (3 to 5%). Pieces 3C to 6: moderately altered (20%). Olivine is highly altered to amphibole and smectite (50%). 10% of the clinopyroxene is altered to amphibole and smectite. 8% of the plagioclase is recrystallized and replaced by traces of smectite.

Vein/Fracture Filling:
0.3-1 mm smectite veins in Pieces 3 to 6.

Structures:
Mf>Pf; Mf>V
From 0 to 15 cm, the section displays a weak, steeply dipping, crystal-plastic foliation. The rest of the section displays a fine- to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a series of veins in Pieces 3A to 6.

Core Image



176-735B-170R-3

Interval 814: OLIVINE GABBRO
(see previous section)

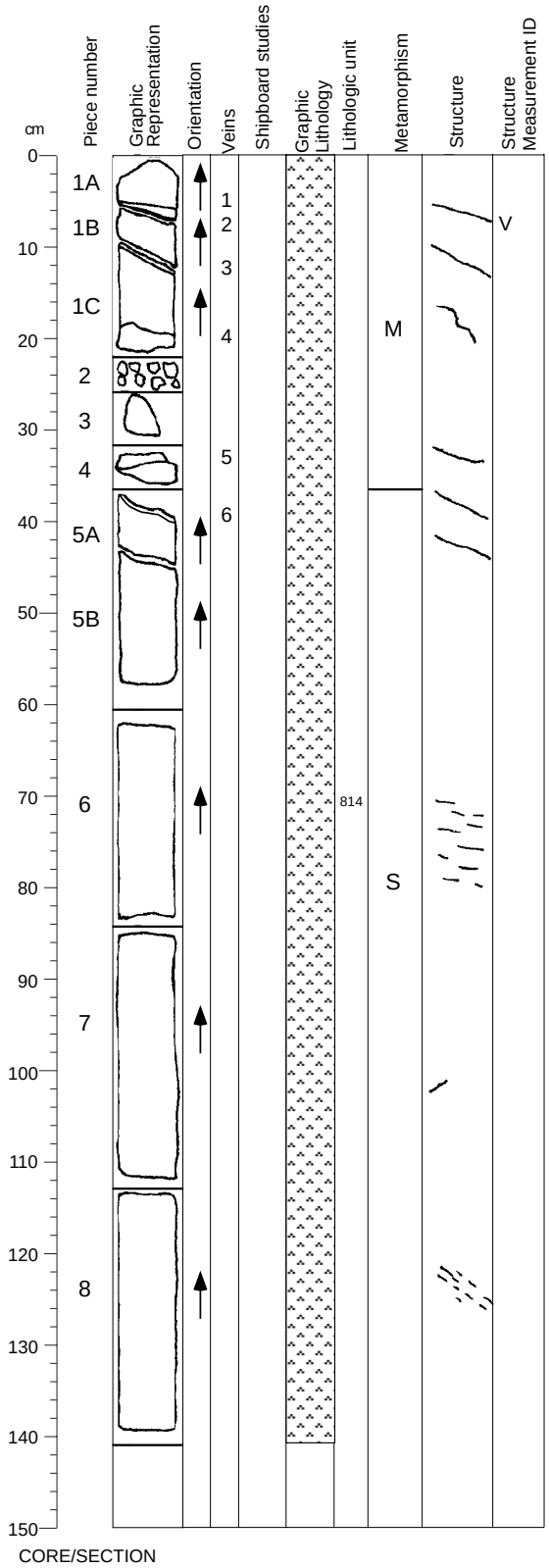
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <35
Mode of occurrence: 25% dark green smectite after olivine and some pyroxenes, and 10% pale green smectite after plagioclase.
Comments: near smectite veins and cracks.
Sulfides:
Total Percent: trace
Mode of occurrence: Associated with smectite in olivine pseudomorphs.

Background Alteration:
Degree of alteration: high (45%). Olivine is heavily altered to amphibole, smectite, and abundant pyrite (80%). 25% of the clinopyroxene is altered to amphibole and smectite. 15% of the plagioclase is replaced by secondary plagioclase and significant smectite.

Vein/Fracture Filling:
Net vein of smectite veins in Pieces 1 to 14, smectite comprises 5% of section.

Structures:
Mf>V>F
The entire section display a coarse-grained igneous texture, with no magmatic foliation, cut by an extensive network of veins and faults.

Core Image



176-735B-170R-4

Interval 814: OLIVINE GABBRO
(see Section 176-735B-170R-2)

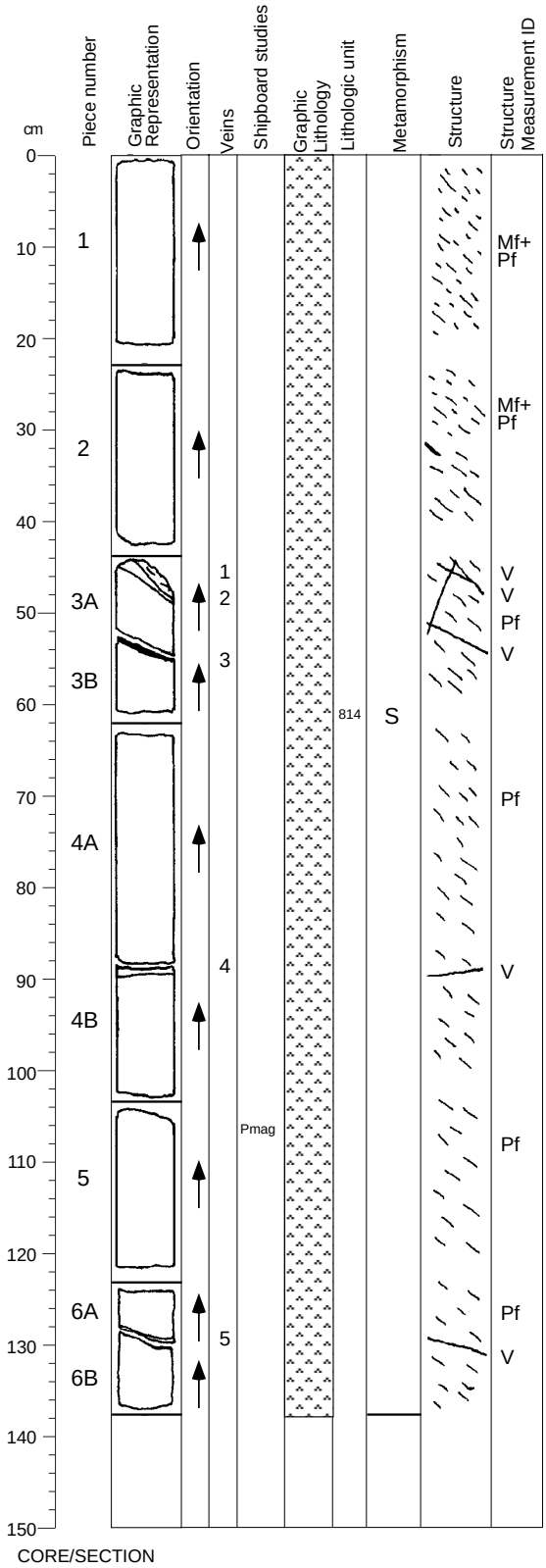
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Small patches.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.
Smectite:
Total Percent: <5
Mode of occurrence: Dark green smectite after olivine.
Albite(?):
Total Percent: trace
Mode of occurrence: Associated green amphibole and chlorite.

Background Alteration:
Degree of alteration: slight to moderate (6 to 25%). Pieces 1 to 4: Olivine is highly altered to amphibole, smectite, and pyrite (60%). 10% of the clinopyroxene is replaced by amphibole and smectite. 5% of the plagioclase is altered to secondary plagioclase and smectite. Pieces 5 to 8: slight alteration (6%). Olivine is weakly altered to amphibole and some smectite (10%). Clinopyroxene is slightly altered to amphibole (3%). 7% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.5-1 mm smectite veins in Pieces 1, 4, and 5.

Structures:
Mf>V; Mf>Pf
Most of the section displays a fine- to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a series of veins, and overprinted by a weak crystal-plastic foliation between 69 and 76 cm. Piece 8 displays magmatic modal layering, with a weak to moderate magmatic foliation parallel to the layers (dipping around 40°); the layers are a few cm thick. The foliation is stronger in a plagioclase-rich layer (from 122 to 125 cm), possibly overprinted by a weak crystal-plastic deformation.

Core Image



176-735B-170R-5

Interval 814: OLIVINE GABBRO
(see Section 176-735B-170R-2)

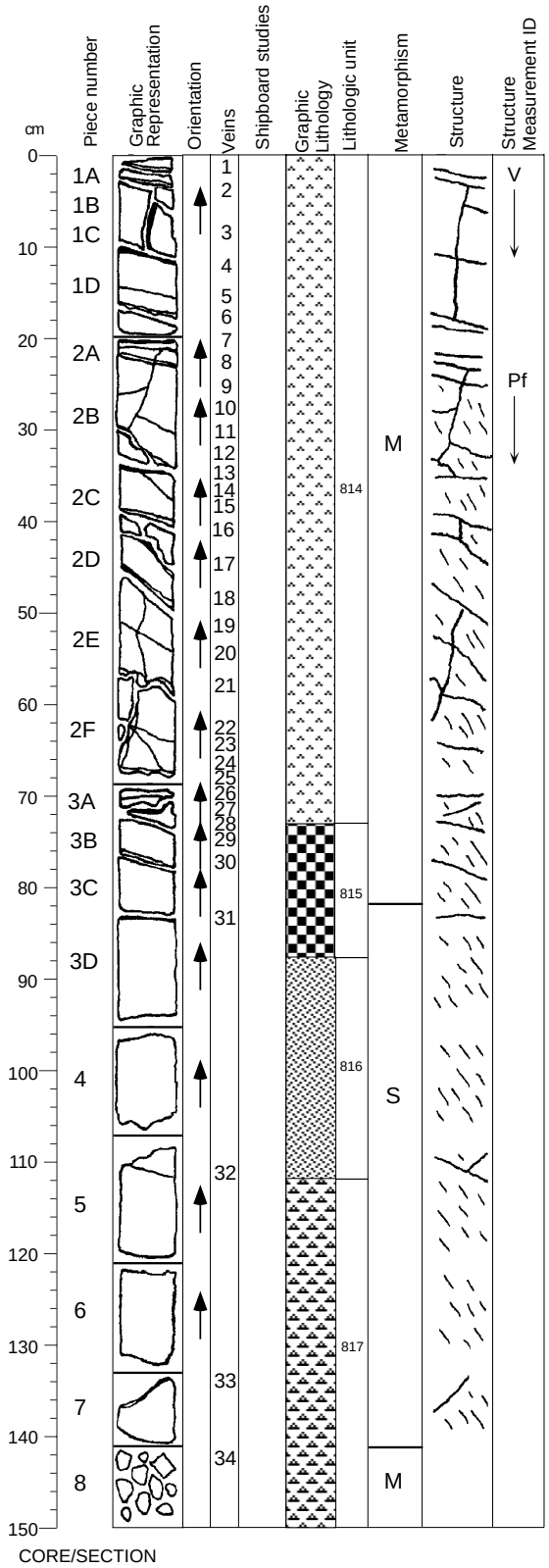
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Small patches, sometimes after brown amphibole.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine.
Albite(?):
Total Percent: trace
Mode of occurrence: Associated green amphibole and chlorite.

Background Alteration:
Degree of alteration: slight (5%). Olivine is partly altered to amphibole and some smectite (15%). Clinopyroxene is slightly altered to amphibole (3%). 3% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3-1 mm smectite veins in Pieces 3, 4, and 6; 1 mm plagioclase+amphibole vein in Piece 3.

Structures:
Mf>Pf>V
The entire section displays a weak (very weak in some places) crystal-plastic foliation, dipping around 30°. The plastic foliation overprints a moderate magmatic foliation from 0 to 30 cm, and little or no magmatic foliation in the rest of the section. A few veins cut the previous fabrics over the entire section.

Core Image



176-735B-170R-6

Interval 814: OLIVINE GABBRO
(see Section 176-735B-170R-2)
Interval 815: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	170	6	73	3B	1156.74
Lower contact:	170	6	88	3D	1156.89

Thickness (m): 0.15

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	5	coarse	tabular/ subhedral
Clinopyroxene	25	15	1	coarse	equant/ anhedral
Olivine	3	3	1	medium	equant/ anhedral
Opaques	6				interstitial lenses/ interstitial network

Total 99* (see explanatory notes)
*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Interval 816: DISSEMINATED OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	170	6	88	3D	1156.89
Lower contact:	170	6	112	5	1157.13

Thickness (m): 0.24

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	3	coarse	tabular/ subhedral
Clinopyroxene	30	15	3	coarse	equant/ anhedral
Olivine	7	4	1	medium	equant/ anhedral
Opaques	1				amoeboidal aggregates/ disseminated

Total 103* (see explanatory notes)
*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Interval 817: OLIVINE MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	170	6	112	5	1157.13
Lower contact:	170	7	68	8	1158.19

Thickness (m): 1.06

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	2	0.5	fine	tabular/ subhedral
Clinopyroxene	15	0.5	N/A	fine	equant/ anhedral
Olivine	12	3	1	medium	elongate/ anhedral
Opaques	0.8				amoeboidal aggregates/ disseminated

Total 92.8* (see explanatory notes)
*Major phases estimated to ± 5%
Grain Size: Fine

	Type	Distribution
Texture:	equigranular	N/A

Comments: Medium-grained patches present.

Continued next page

Core Image

176-735B-170R-6 (cont'd)

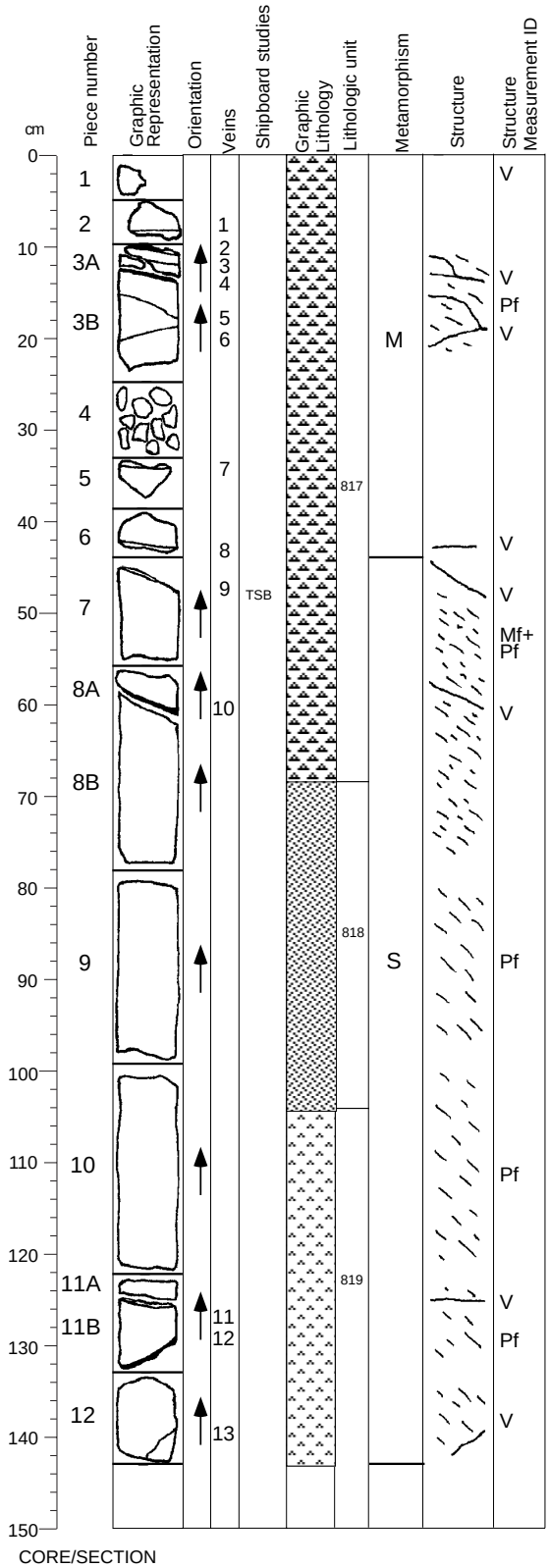
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <20
Mode of occurrence: 15% dark green smectite after olivine , and 5% pale green smectite after plagioclase.
Comments: Near smectite veins.
Sulfide:
Total Percent: <1
Mode of occurrence: Associated with dark smectite in olivine ghosts.

Background Alteration:
Degree of alteration: slight to moderate (5 to 30%). Pieces 1 to 3D: Olivine is highly altered to amphibole, smectite, and pyrite (70%). 15% of the clinopyroxene is replaced by amphibole and smectite. 10% of the plagioclase is altered to secondary plagioclase and smectite. Pieces 3D to 7: slightly altered (5%). Same as previous section. Piece 8: moderately altered (12%). 25% of the olivine is altered to amphibole and smectite. 5% of the clinopyroxene is altered to amphibole. 10% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.4-1 mm smectite veins in Pieces 3, 5, 7, and 8; smectite net vein in Pieces 1 to 2.

Structures:
Mf>Pf>V>F
From 0 to 20 cm, the texture is igneous, with no visible magmatic foliation. The rest of the section displays a weak crystal-plastic foliation (dips at 50°). Both fabrics are cut by an extensive network of veins and faults.

Core Image



176-735B-170R-7

Interval 817: OLIVINE MICROGABBRO
(see previous section)

Interval 818: OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	170	7	68	8	1158.19
Lower contact:	170	7	104	10	1158.55

Thickness (m): 0.36

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	10	3	coarse	tabular/ subhedral
Clinopyroxene	30	15	2	coarse	equant/ anhedral
Olivine	5	4	1	medium	elongate/ anhedral subhedral
Opaques	3				interstitial lenses/ interstitial network
Total	103*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Finer at top, coarser downward.

Interval 819: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	170	7	104	10	1158.55
Lower contact:	171	1	32	2	1159.32

Thickness (m): 0.77

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	3	coarse	tabular/ subhedral
Clinopyroxene	25	15	2	coarse	equant/ anhedral
Olivine	5	4	1	medium	amoeboidal/ anhedral
Opaques	0.7				amoeboidal aggregates/ disseminated
Total	95.7*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse

	Type	Distribution
Texture:	granular	N/A

Comments: Gradational grain size variation defining "layers": top to 120 cm in 170R-7 (coarse), to 24 cm in 170R-8 (fine), to 120 cm in 170R-8 (coarse), to 126 cm in 170R-8 (a fine patch), to 30 cm in 171R-1 (coarse). Locally subophitic in coarser parts.

Continued next page

Core Image

176-735B-170R-7 (cont'd)

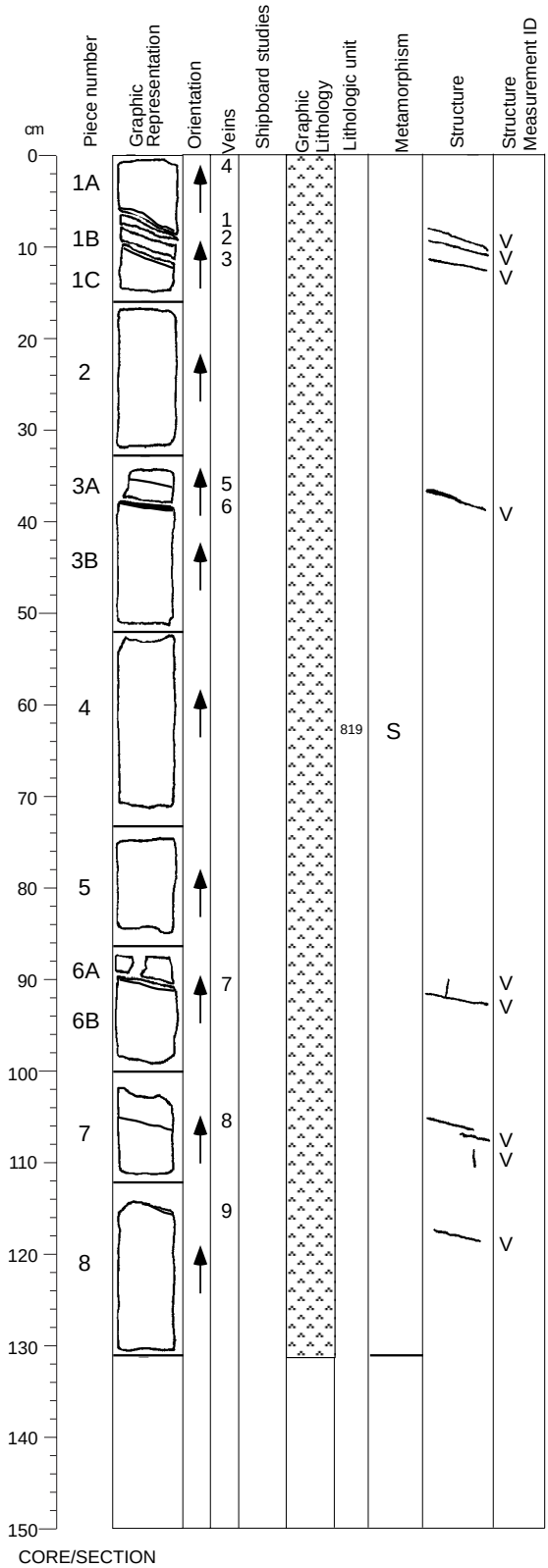
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic zones.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole in and near felsic veins.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic zones.
Smectite:
Total Percent: <3
Mode of occurrence: Dark green smectite after olivine.
Comments: Near felsic zones.

Background Alteration:
Degree of alteration: slight to moderate (6 to 12%). Pieces 1 to 6: 25% of the olivine is altered to amphibole and smectite. 5% of the clinopyroxene is altered to amphibole. 10% of the plagioclase is recrystallized. Pieces 7 to 12: 10% of the olivine is altered to amphibole and smectite. 3% of the clinopyroxene is altered to amphibole. 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3-1 mm smectite veins in Pieces 2, 3, 5 to 8, 11, and 12.

Structures:
Mf>Pf>V
The entire section displays a weak crystal-plastic foliation, dipping from 20° (at the top) to 40° (at the bottom of the section). The plastic foliation overprints a moderate magmatic foliation in Pieces 7 and 8A to 8B, which contains an interval of fine-grained material. The previous fabrics are cut by several veins over the entire section.

Core Image



176-735B-170R-8

Interval 819: OLIVINE GABBRO
(see previous section)

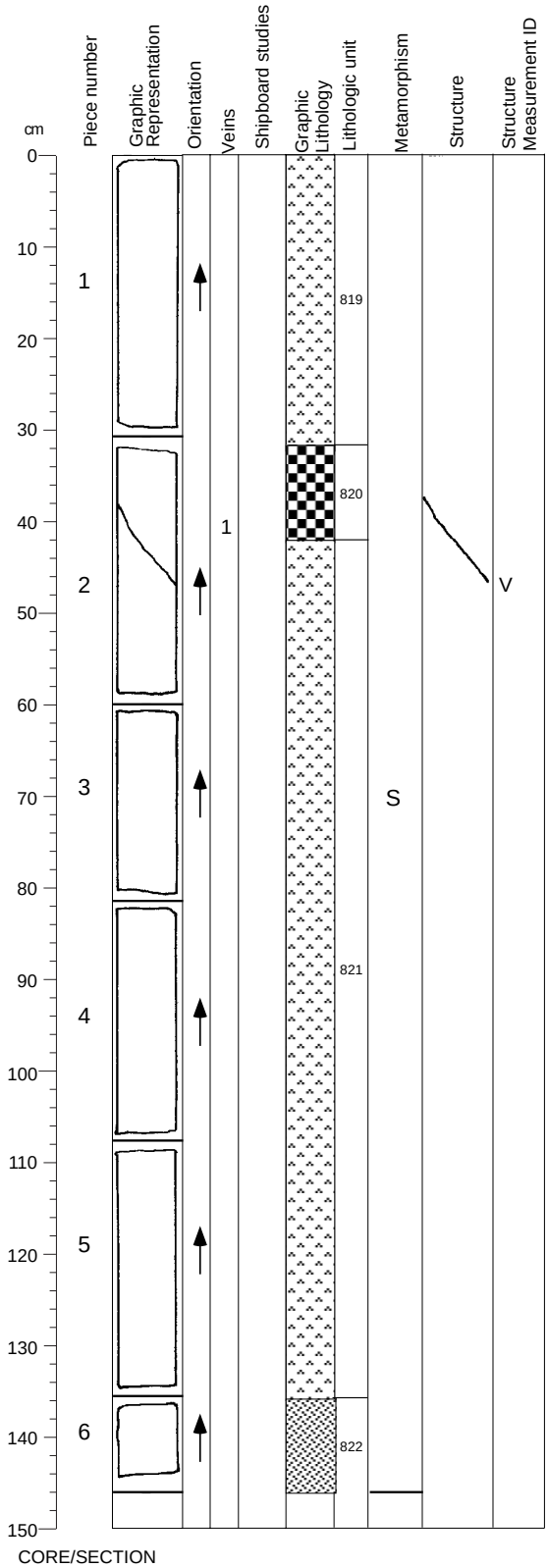
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <2
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (8%). 20% of the olivine is altered to amphibole and smectite. 3% of the clinopyroxene is altered to amphibole. 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3-2.5 mm smectite veins in Pieces 1, 3 to 7, and 8; 2.5 mm plagioclase+ amphibole vein in Piece 6.

Structures:
Mf>V; Mf>Pf?
The section displays a fine- to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a series of veins. Two fine grained intervals are present in Pieces 1 to 2 and 8. A weak crystal-plastic foliation may be present at the bottom of the section.

Core Image



176-735B-171R-1

Interval 819: OLIVINE GABBRO
(see Section 176-735B-170R-7)
Interval 820: DISSEMINATED OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	171	1	32	2	1159.32
Lower contact:	171	1	42	2	1159.42

Thickness (m): 0.10

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	5	coarse	tabular/ subhedral
Clinopyroxene	30	20	2	coarse	equant/ anhedral
Olivine	3	2	1	medium	equant/ anhedral
Opaques	1.5				amoeboidal aggregates/ disseminated
Total	99.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Disseminated FeTi Oxide Gabbro
Type Distribution
Texture: granular N/A
Comments: Grain size somewhat variable.

Interval 821: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	171	1	42	2	1159.42
Lower contact:	171	1	135	5	1160.35

Thickness (m): 0.93

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral
Clinopyroxene	30	15	2	coarse	equant/ anhedral
Olivine	10	4	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A

Continued next page

Core Image

176-735B-171R-1 (cont'd)

Interval 822: OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	171	1	135	5	1160.35
Lower contact:	171	3	11	1	1162.06

Thickness (m): 1.71

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase		65	25	3	coarse tabular/ subhedral
Clinopyroxene	30	20	1	coarse	equant/ anhedral
Olivine	5	3	1	medium	amoeboidal/ anhedral
Opaques	2				interstitial lenses/ interstitial network
Total	102*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): FeTi Oxide Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Mostly medium-grained; locally coarser. Felsic at top, and oxide abundant throughout, locally concentrated (up to 10%).

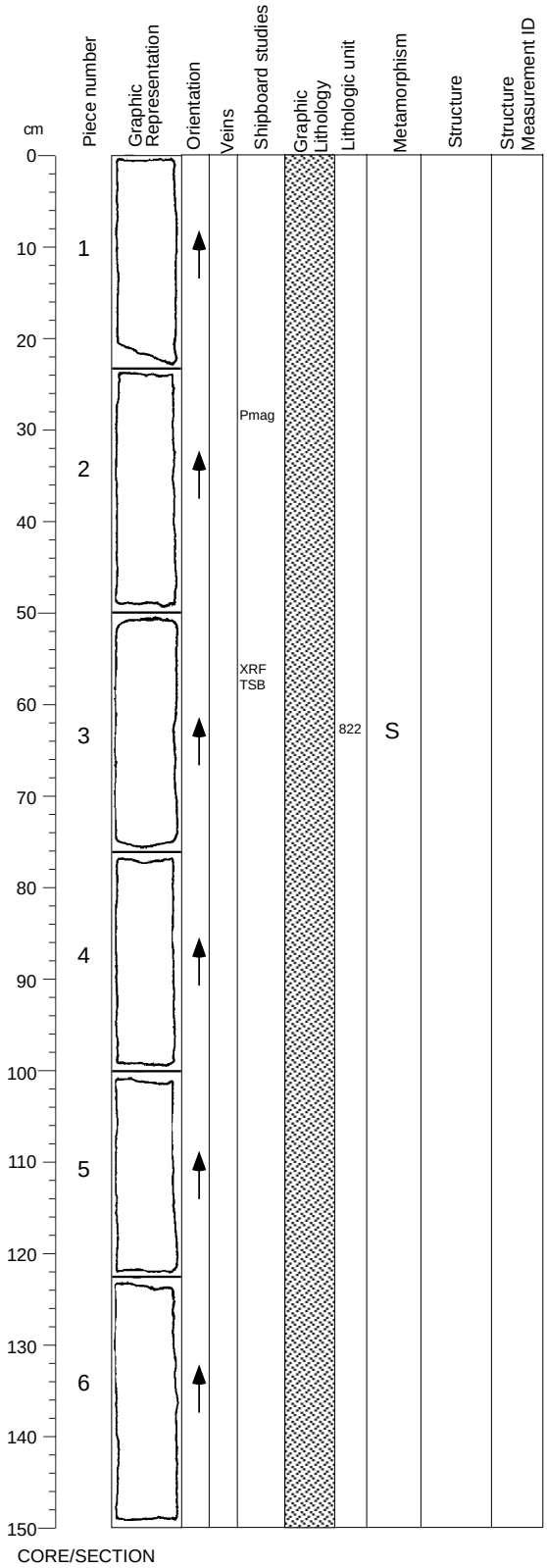
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.
Comments: Near felsic zones.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: slight (6%). 10% of the olivine is altered to amphibole and smectite. 3% of the clinopyroxene is altered to amphibole. 8% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.2 mm amphibole vein in Piece 2.

Structures:
Mf>V
The section displays a medium- to coarse-grained igneous texture, with no magmatic foliation. The igneous texture is cut in piece 2 by a very thin oxide vein.

Core Image



176-735B-171R-2

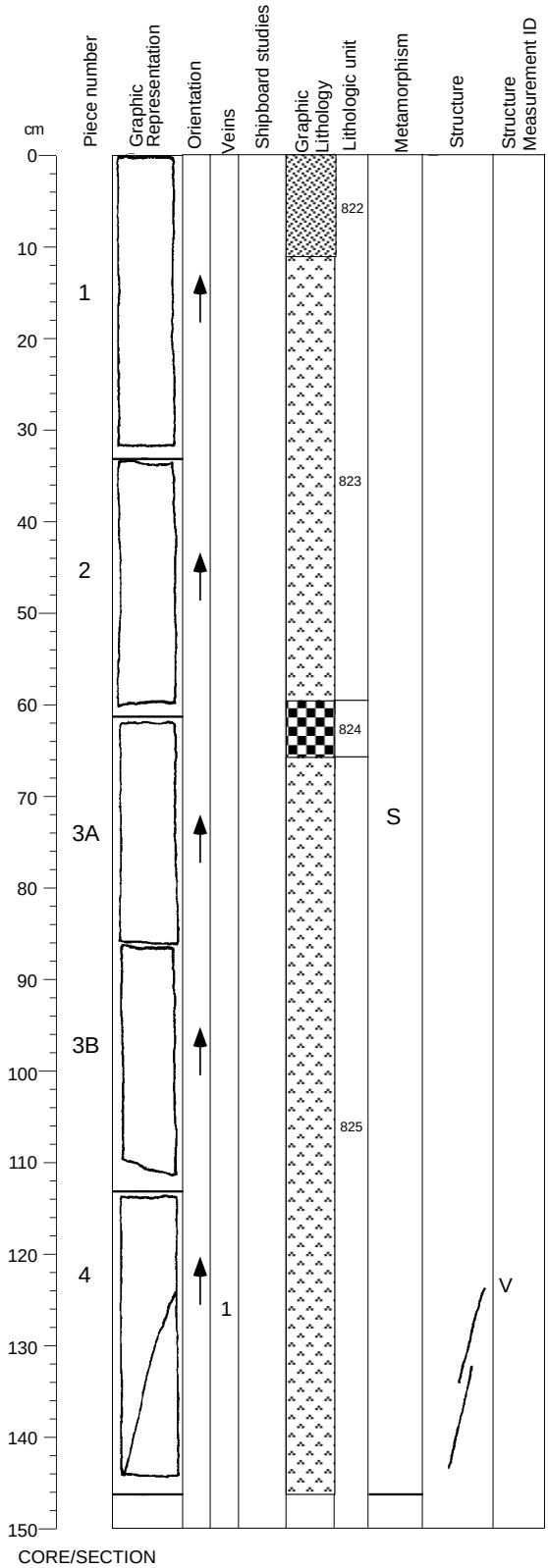
Interval 822: OXIDE OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Structures:
Mf
The entire section displays a medium- to coarse-grained igneous texture, with no or a weak magmatic foliation. Three oxide veins or layers (1 cm thick), variably oriented, with diffuse boundaries, are present in Pieces 1, 3, and 4. The oxide layer in Piece 1 cross-cuts the weak magmatic foliation (from 0 to 43 cm, dips at 30°) at a high angle.

Core Image



176-735B-171R-3

Interval 822: OXIDE OLIVINE GABBRO
(see Section 176-735B-171R-1)

Interval 823: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	171	3	11	1	1162.06
Lower contact:	171	3	59	2	1162.54

Thickness (m): 0.48

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	4	coarse	tabular/ subhedral euhedral
Clinopyroxene	25	25	2	coarse	equant/ anhedral
Olivine	6	4	1	medium	elongate/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	91.6*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Grain size and mode variable. Mostly coarse-grained with local medium-grained patches.

Interval 824: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	171	3	59	2	1162.54
Lower contact:	171	3	65	3A	1162.60

Thickness (m): 0.06

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	4	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	35	2	coarse	equant/ anhedral
Olivine	3	3	1	medium	elongate/ anhedral
Opaques	4				amoeboidal aggregates/ disseminated
Total	102*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro
Type Distribution
Texture: granular N/A
Comments: Sulfide present.

Continued next page

Core Image

176-735B-171R-3 (cont'd)

Interval 825: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	171	3	65	3A	1162.60
Lower contact:	171	4	7	1	1163.48

Thickness (m): 0.88

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase		65	20	1	coarse tabular/ subhedral euhedral
Clinopyroxene	30	20	1	coarse	equant/ anhedral
Olivine	12	4	1	medium	elongate/ anhedral subhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	107.6*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Mode and grain size variable. Mostly fine- to medium-grained; coarser patches present at 67 cm, 94-101 cm, and 128-138 cm in 171R-3.

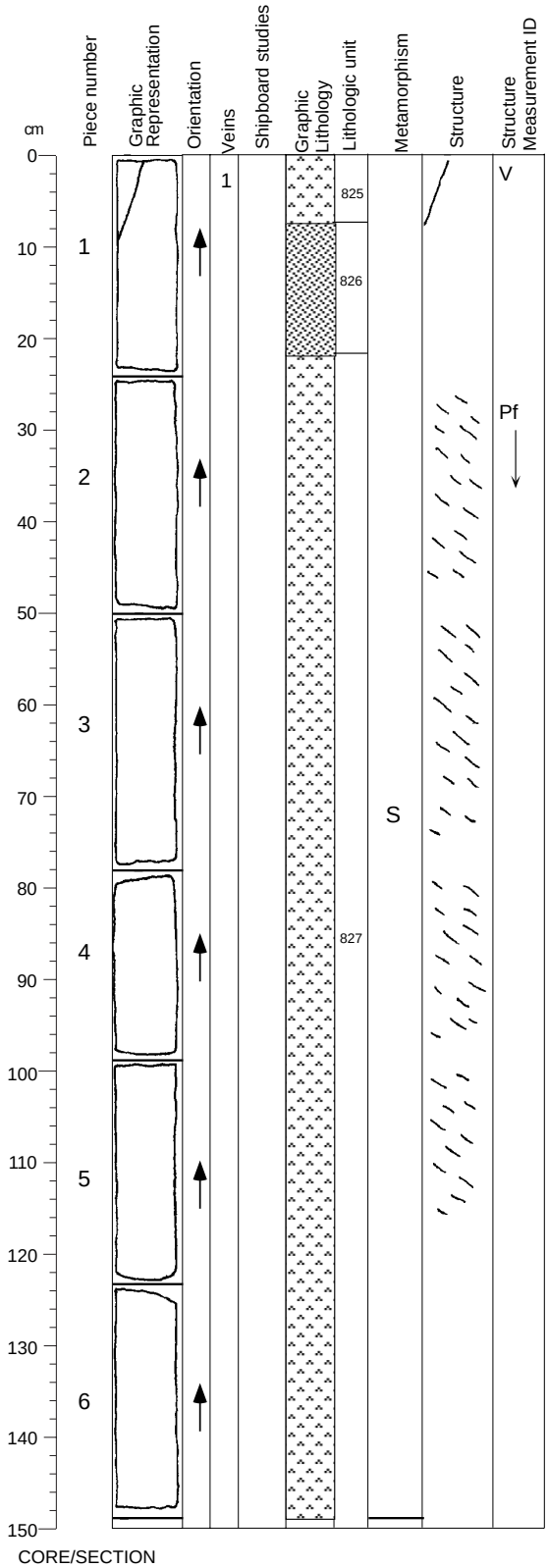
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace.
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in cracks.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: slight (4%). 5% of the olivine is altered to amphibole and rare smectite. 3% of the clinopyroxene is altered to amphibole. 4% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.4 mm amphibole vein in Piece 4.

Structures:
Mf>V
The entire section displays a medium- to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by two en echelon veins in Piece 4.

Core Image



176-735B-171R-4

Interval 825: OLIVINE GABBRO
(see previous section)
Interval 826: OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	171	4	7	1	1163.48
Lower contact:	171	4	22	1	1163.63

Thickness (m): 0.15

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	3	coarse	tabular/ subhedral
Clinopyroxene	30	23	5	coarse	equant/ anhedral
Olivine	5	4	1	medium	equant/ anhedral subhedral
Opaques	5				interstitial lenses/ interstitial network
Total	105*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Locally intergranular. Oxide abundant.

Interval 827: LEUCOCRATIC OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	171	4	22	1	1163.63
Lower contact:	171	5	35	2B	1165.26

Thickness (m): 1.63

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	70	20	5	coarse	tabular/ subhedral
Clinopyroxene	30	20	1	coarse	equant/ anhedral
Olivine	7	8	1	medium	elongate/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	107.6*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Gradational grain size variation defining "layers": top to 55 cm in 171R-4 (fine), to 62 cm in 171R-4 (coarse), to 82 cm in 171R-4 (medium), to 100 cm in 171R-4 (fine/medium), to 111 cm in 171R-4 (coarse), to 119 cm in 171R-4 (fine), to 0 cm in 171R-5 (medium), and to 35 cm in 171R-5.

Continued next page

Core Image

176-735B-171R-4 (cont'd)

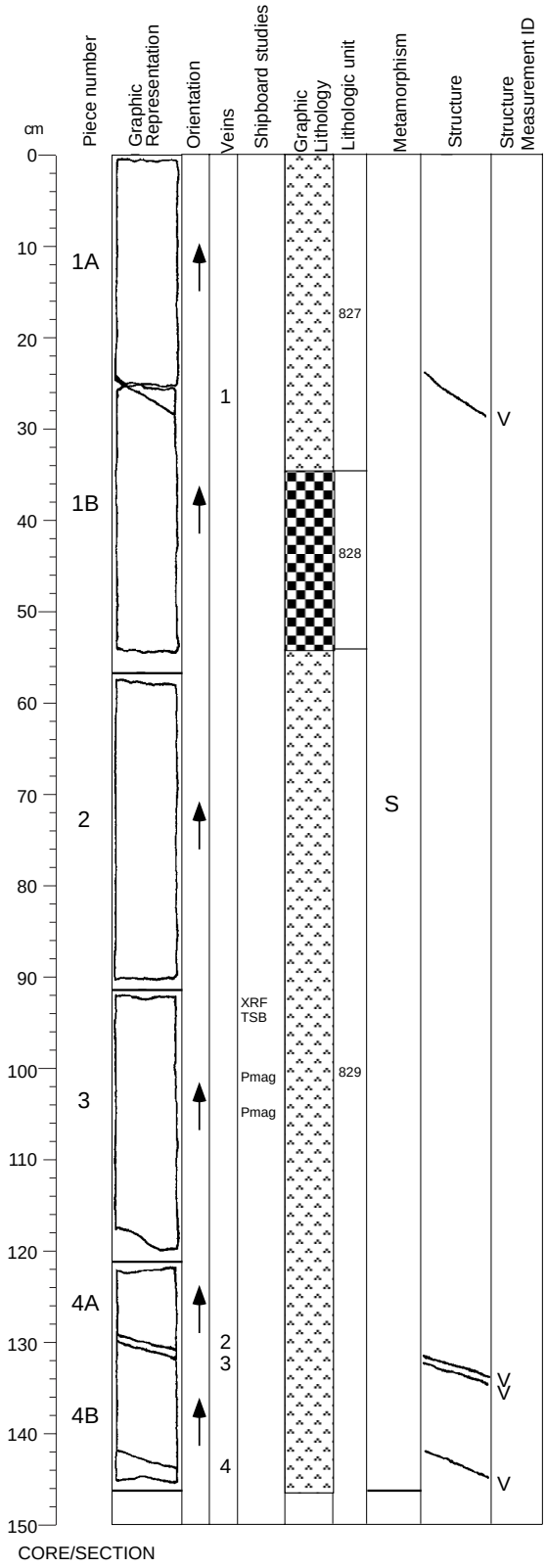
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In halos along an amphibole vein.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: slight (3%). 5% of the olivine is altered to amphibole and rare smectite. 2% of the clinopyroxene is altered to amphibole. 3% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3 mm amphibole vein in Piece 1.

Structures:
Mf>V; Mf>Pf
From 0 to 23 cm, the section displays a medium- to coarse-grained igneous texture, with no magmatic foliation, cut by a vein at the top of Piece 1. From 23 cm to the bottom, the section displays a weak crystal-plastic foliation, that overprints locally (24 to 110 cm) a weak magmatic foliation.

Core Image



176-735B-171R-5

Interval 827: LEUCOCRATIC OLIVINE GABBRO
(see previous section)

Interval 828: LEUCOCRATIC OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	171	5	35	2B	1165.26
Lower contact:	171	5	55	2B	1165.46

Thickness (m): 0.20

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	70	20	5	coarse	tabular/ subhedral
Clinopyroxene	25	20	2	coarse	equant/ anhedral
Olivine	2	2	1	medium	equant/ anhedral
Opaques	3				amoeboidal aggregates/ disseminated
Total	100*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro
Type Distribution
Texture: granular N/A

Interval 829: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	171	5	55	2B	1165.46
Lower contact:	172	3	91	2C	1172.30

Thickness (m): 6.84

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral
Clinopyroxene	25	40	2	coarse	equant/ anhedral
Olivine	7	15	2	medium	elongate/ anhedral subhedral
Opaques	0.8				amoeboidal aggregates/ disseminated
Total	97.8*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Grain size variation could indicate subtle layering. Oxide locally concentrated (up to 5%).

Continued next page

Core Image

176-735B-171R-5 (cont'd)

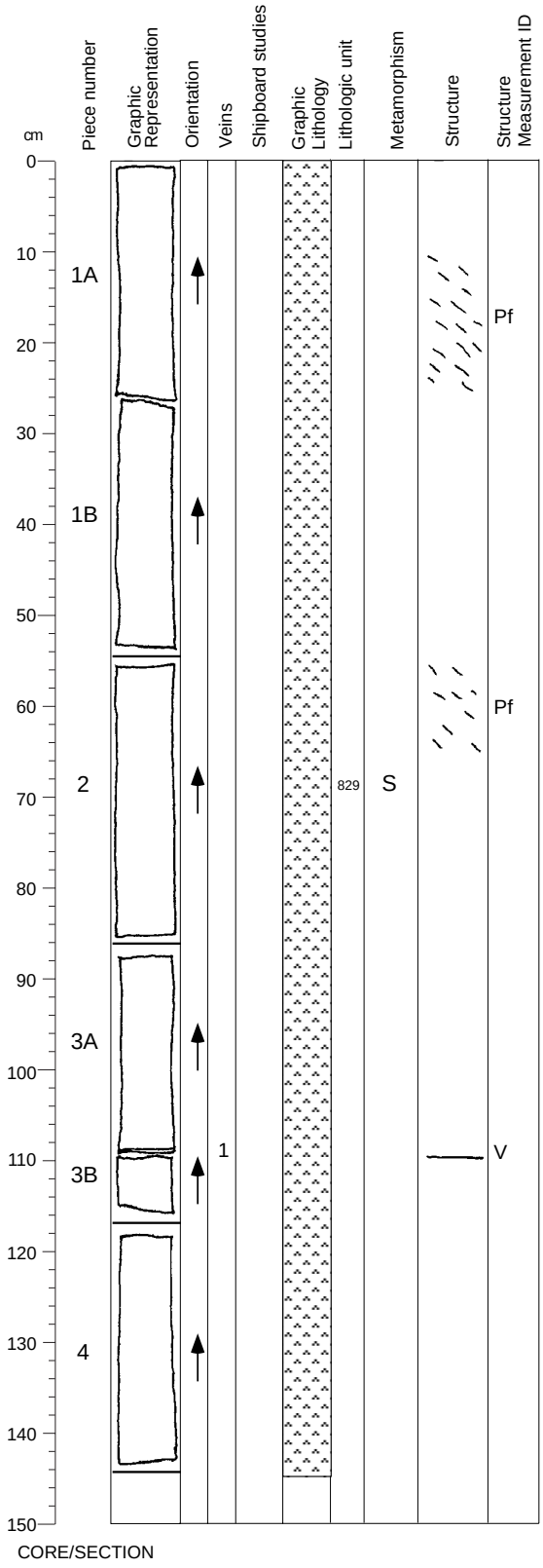
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Scarce small patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.2-1 mm smectite veins in Pieces 1 and 4.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a few veins in Pieces 1B, 4A, and 4B. A weak crystal-plastic foliation, poorly defined, may be present between 30 and 38 cm, and between 100 and 112 cm.

Core Image



176-735B-171R-6

Interval 829: OLIVINE GABBRO
(see previous section)

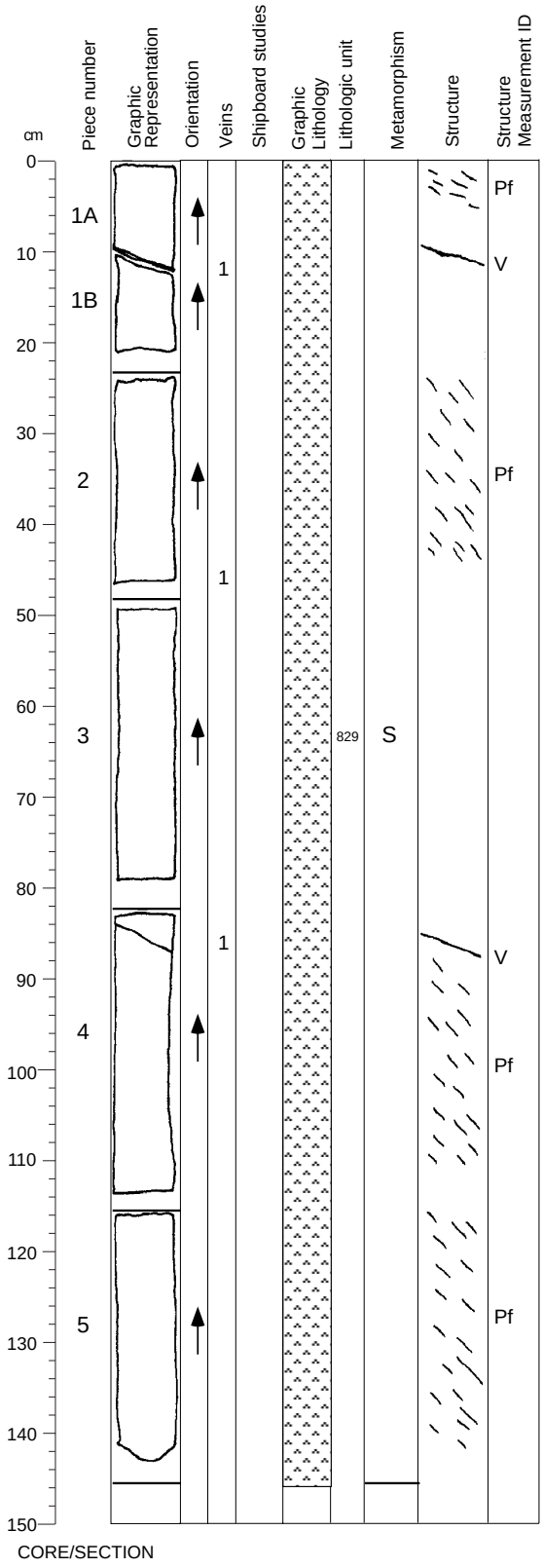
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Scarce small patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace.
Mode of occurrence: After olivine in cracks.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
1.5 mm plagioclase+amphibole vein in Piece 3.

Structures:
Mf>Pf
Most of the entire section displays a medium- to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a vein at the boundary between Pieces 3A and 3B. A weak crystal-plastic foliation is present from 10 to 28 cm and from 55 to 66 cm, overprinting a weak magmatic foliation in both intervals.

Core Image



176-735B-171R-7

Interval 829: OLIVINE GABBRO
(see Section 176-735B-171R-5)

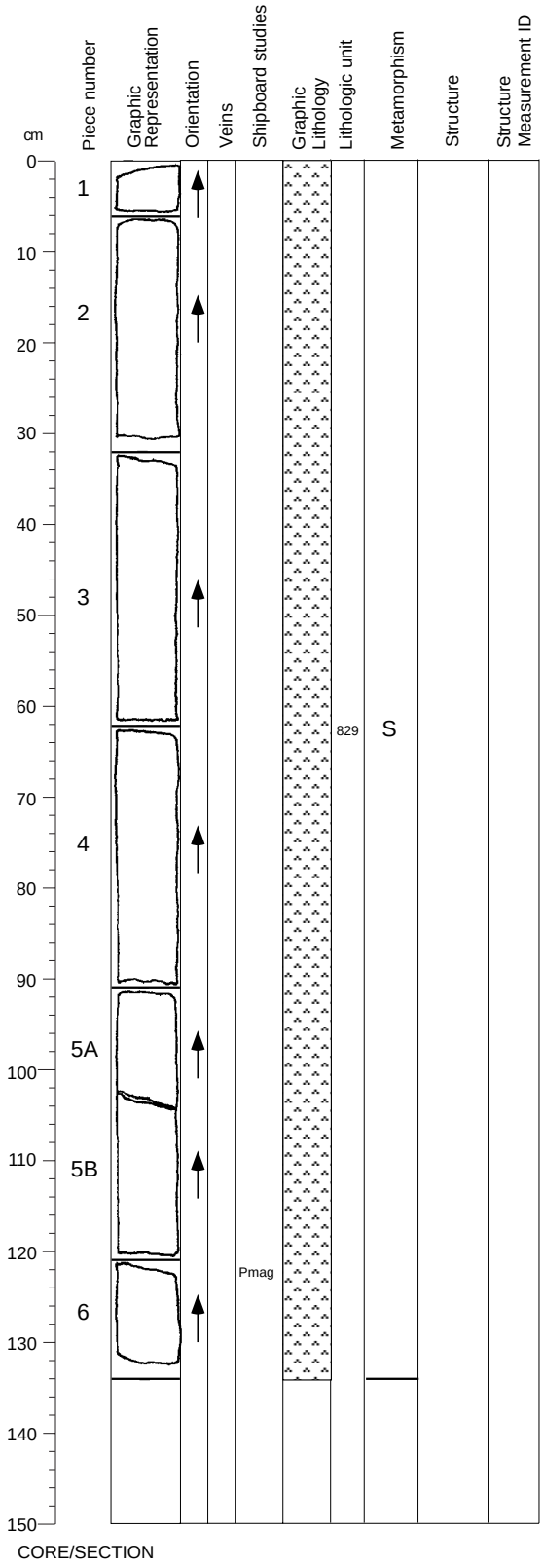
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Scarce small patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in cracks.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.2-0.4 mm smectite+calcite veins in Pieces 1 and 4.

Structures:
Mf>Pf; Mf>V
The section displays zones of weak crystal-plastic foliation (0 to 5 cm, 25 to 47 cm, and 86 to 143 cm), alternating with zones of medium- to coarse-grained igneous texture with no or a weak magmatic foliation, cut by two veins in Pieces 1A to 1B and 4.

Core Image



176-735B-172R-1

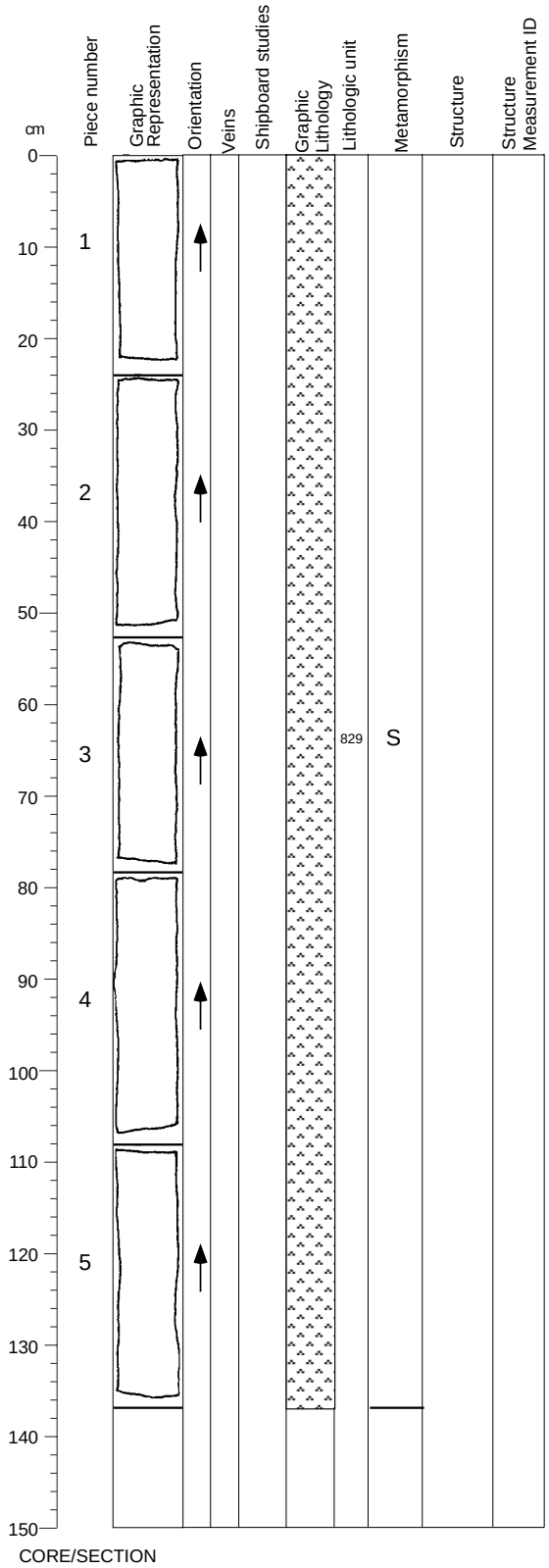
Interval 829: OLIVINE GABBRO
(see Section 176-735B-171R-5)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Scarce small patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in cracks.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Structures:
Mf
The entire section displays a medium- to coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-172R-2

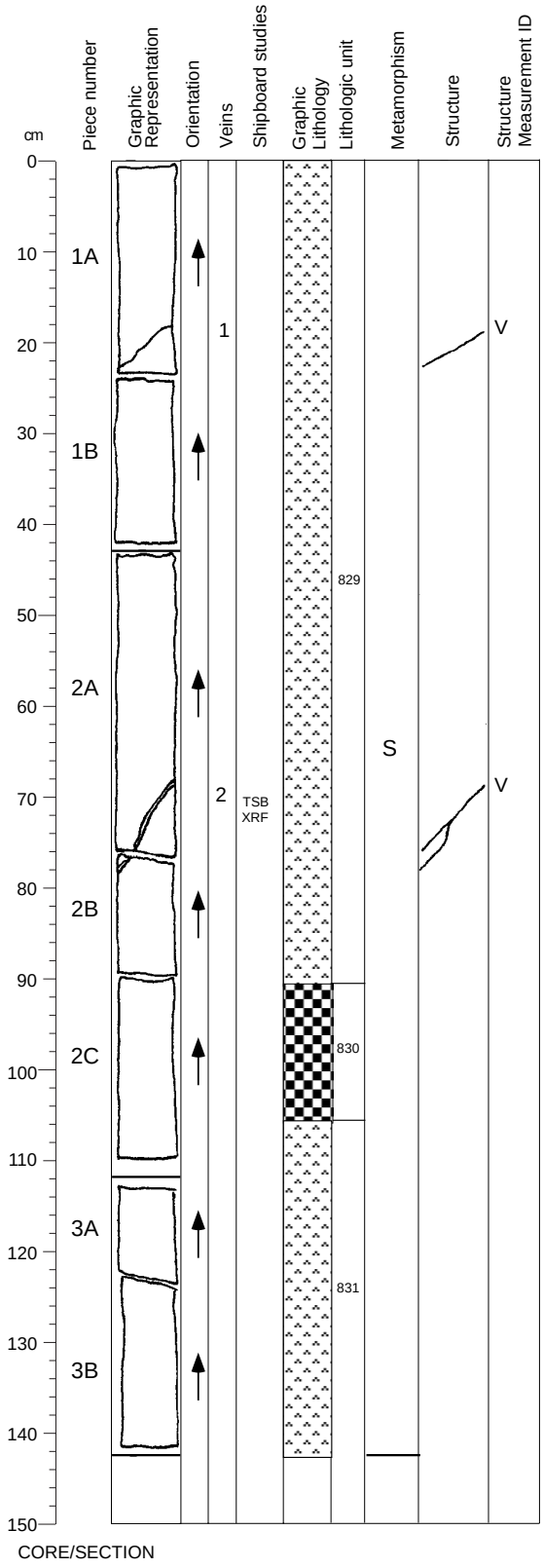
Interval 829: OLIVINE GABBRO
(see Section 176-735B-171R-5)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Scarce small patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in cracks.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Structures:
Mf
The entire section displays a medium- to coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-172R-3

Interval 829: OLIVINE GABBRO
(see Section 176-735B-171R-5)
Interval 830: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	172	3	91	2C	1172.30
Lower contact:	172	3	106	2C	1172.45

Thickness (m): 0.15

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	13	4	coarse	tabular/ subhedral
Clinopyroxene	25	25	2	coarse	equant/ anhedral
Olivine	2	3	1	medium	equant/ anhedral
Opaques	3				interstitial lenses/ disseminated
Total	95*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro
Type Distribution
Texture: granular N/A

Interval 831: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	172	3	106	2C	1172.45
Lower contact:	175	2	31	1A	1192.67

Thickness (m): 20.22

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral
Clinopyroxene	20	25	3	coarse	equant/ anhedral
Olivine	15	15	2	medium	amoeboidal/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	100.6*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A

Comments: Medium- to coarse-grained, varying gradationally. Locally very coarse-grained to pegmatitic at 125-136 cm in 172R-3, 32-37 cm in 172R-7. Locally troctolitic (coarse) at 10-16 cm in 172R-5, 85-105 cm in 173R-1, 105-117 cm in 173R-2, 8-16 cm in 173R-5, and 38-58 cm in 173R-6. Oxide localized at 22-28 cm, 38-40 cm, 66-68 cm in 172R-4, 38-40 cm in 173R-4, 67-68 cm, 115 cm in 173R-6, and 12 cm in 173 R-7. Sulfide present at 123-126 cm in 173R-5.

Continued next page

Core Image

176-735B-172R-3 (cont'd)

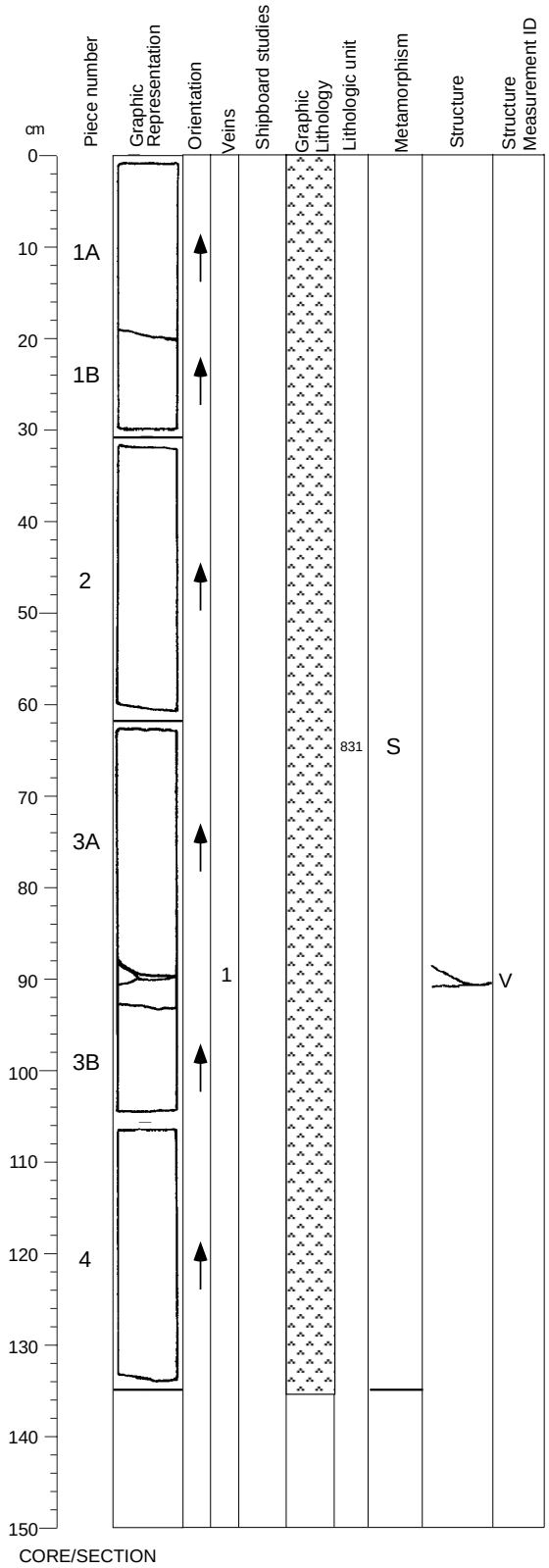
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic zones.
Green amphibole:
Total Percent: <1
Mode of occurrence: Small patches, sometimes after brown amphibole in and near felsic zones.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic zones.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine in and near felsic veins.
Albite(?):
Total Percent: trace
Mode of occurrence: Associated green amphibole and chlorite in felsic veins.

Background Alteration:
Degree of alteration: slight (4%). 5% of the olivine is altered to amphibole and rare smectite. 3% of the clinopyroxene is altered to amphibole. 4% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1 mm smectite+calcite vein in Piece 1; 3 mm plagioclase+amphibole vein in Piece 2.

Structures:
Mf>V
The entire section displays a medium- to coarse-grained igneous texture, with no magmatic foliation, cut by veins in Pieces 1A and 2A-2B. The vein in Piece 1A grades into a fault. A weak crystal-plastic foliation, poorly defined, may be present locally.

Core Image



176-735B-172R-4

Interval 831: OLIVINE GABBRO
(see previous section)

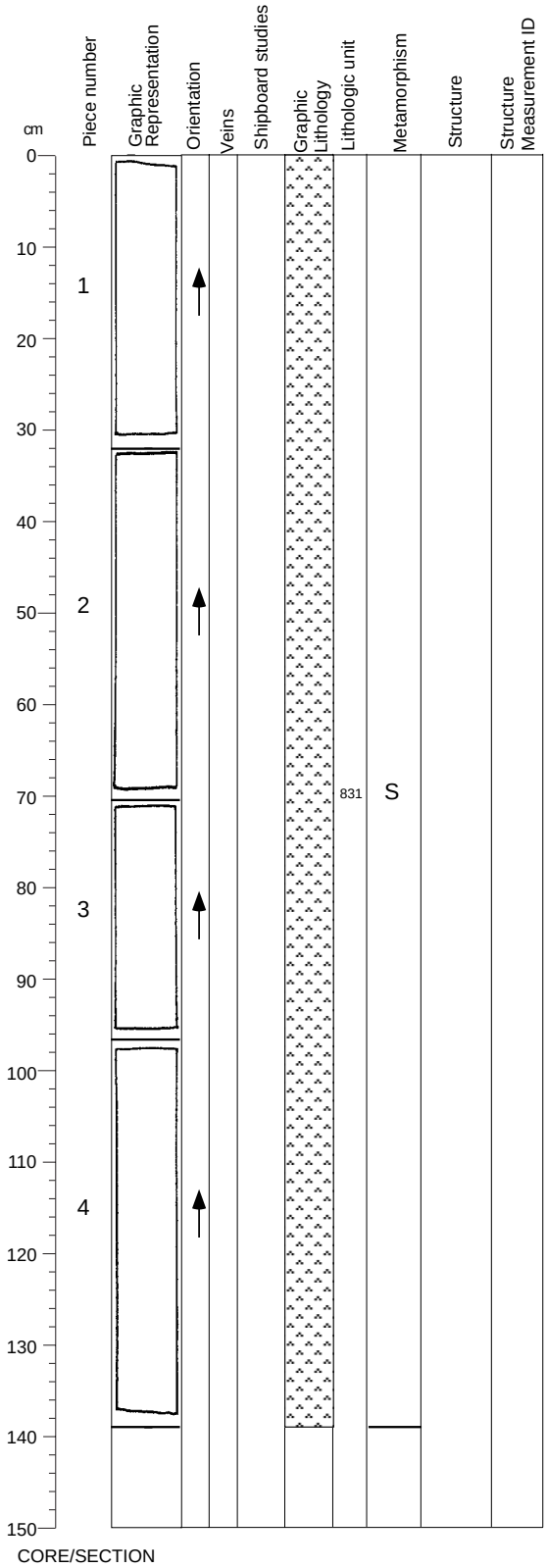
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Small patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near a smectite vein.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Vein/Fracture Filling:
0.5 mm smectite vein in Piece 3.

Structures:
Mf>V
The entire section displays a medium- to coarse-grained igneous texture, with no magmatic foliation, cut by veins in Piece 3A.

Core Image



176-735B-172R-5

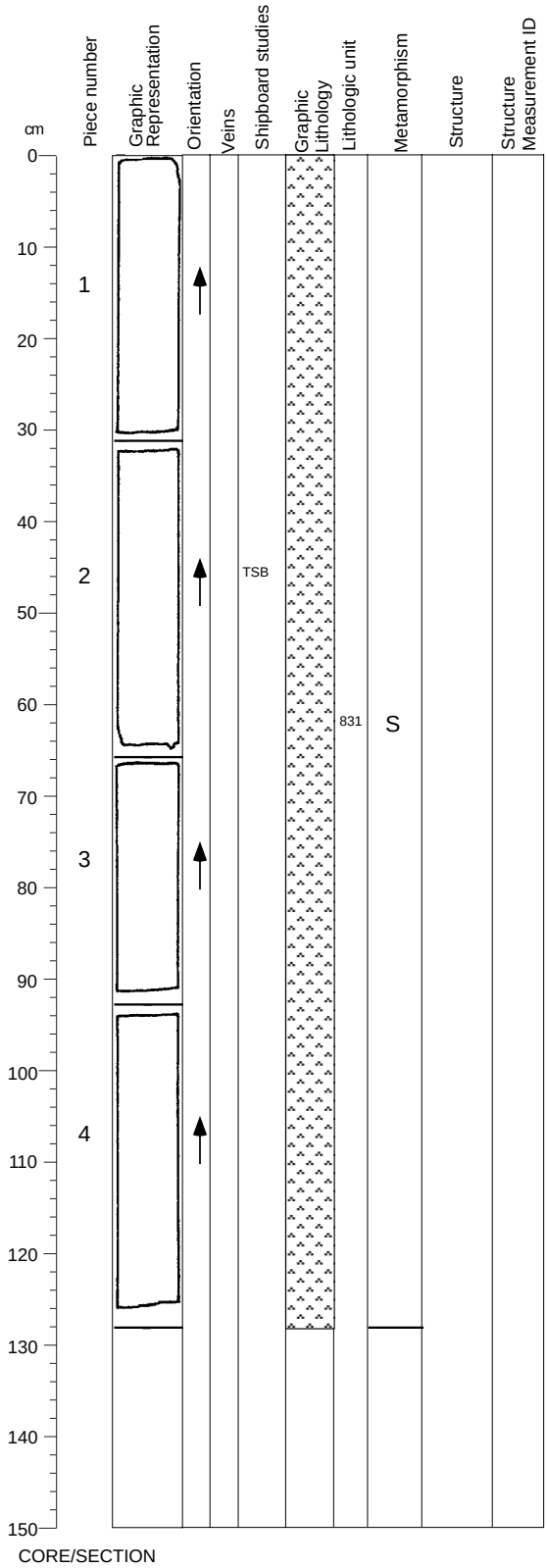
Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Small patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Structures:
Mf
The entire section displays a medium- to coarse-grained igneous texture, with no or a weak magmatic foliation.

Core Image



176-735B-172R-6

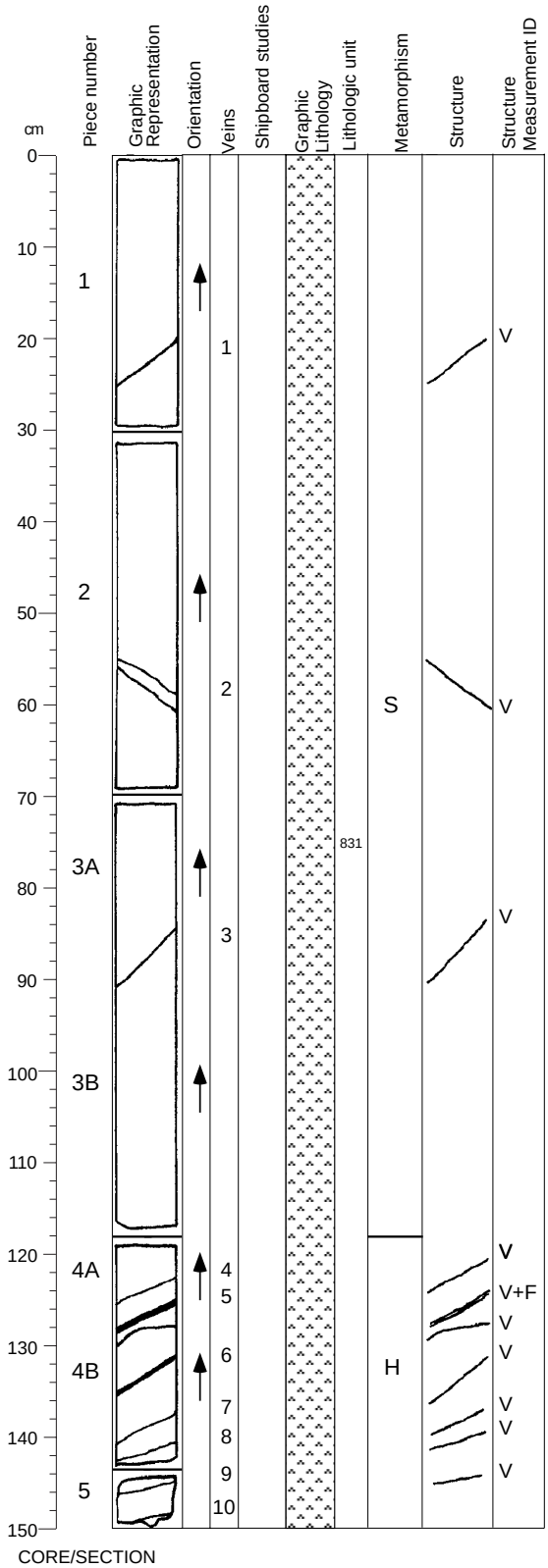
Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Patchy alteration.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.
Albite (?):
Total Percent: trace
Mode of occurrence: Associated with green amphibole and chlorite.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-172R-7

Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

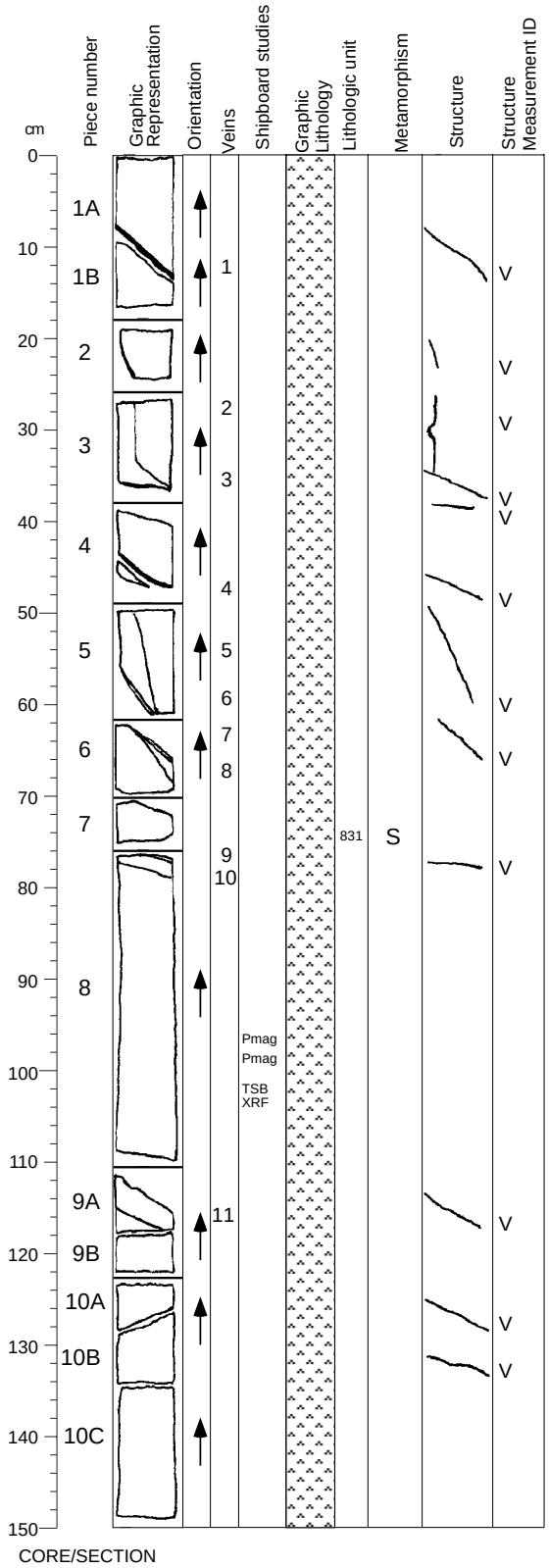
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Small patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <8
Mode of occurrence: 5% dark green smectite after olivine and some pyroxenes, and 3% pale smectite after plagioclase.
Comments: In and near felsic veins.
Sulfides:
Total Percent: trace
Mode of occurrence: Associated with dark smectite in olivine pseudomorphs.

Background Alteration:
Degree of alteration: slight to high (4 to 50%). Pieces 1 to 3: Same as previous section. Pieces 4 to 5: Olivine is heavily altered to amphibole, smectite and pyrite (80%). 30% of the clinopyroxene is altered to smectite and amphibole. 35% of the plagioclase is replaced by abundant smectite and some secondary plagioclase.

Vein/Fracture Filling:
0.2-4 mm smectite veins in Pieces 1-5.

Structures:
Mf
The section displays a medium- to coarse-grained igneous texture, with no magmatic foliation. A series of veins cut the igneous texture over the entire section. One vein in Piece 4A grades into a fault.

Core Image



176-735B-173R-1

Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

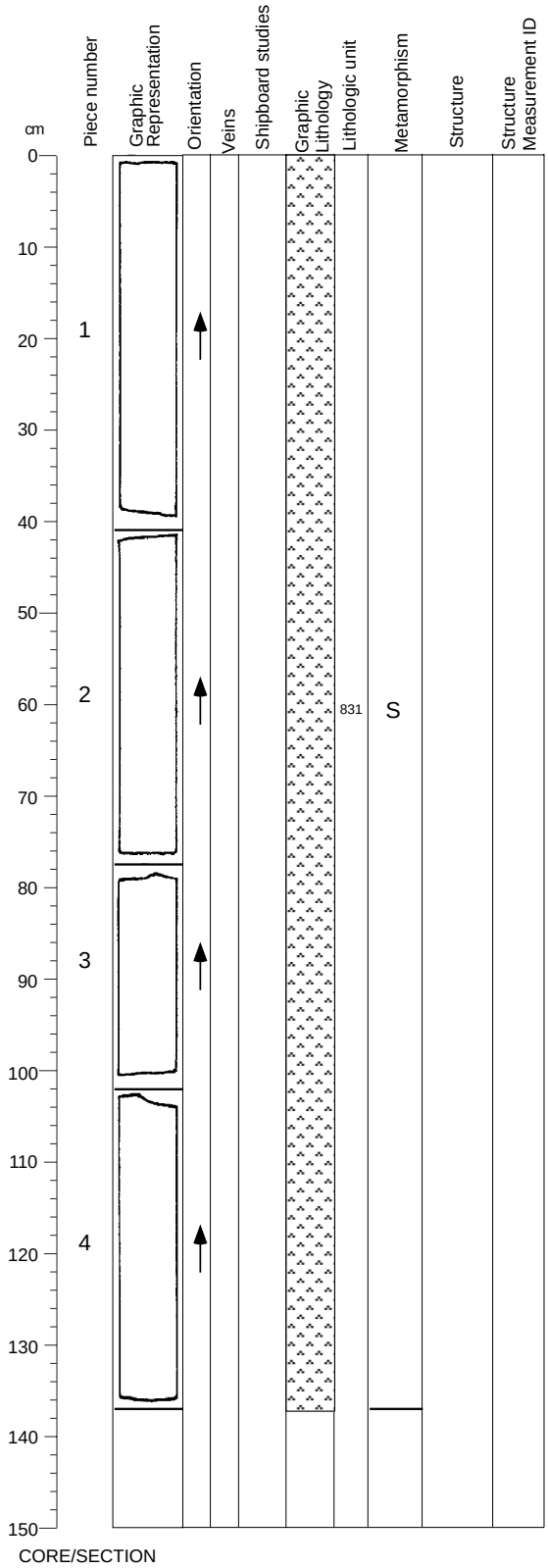
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <5
Mode of occurrence: Dark green smectite after olivine, and pale green smectite after plagioclase.
Comments: Near smectite veins.
Sulfides:
Total Percent: trace
Mode of occurrence: Associated with dark smectite in olivine pseudomorphs.

Background Alteration:
Degree of alteration: slight (10%). 30% of the olivine are replaced by amphibole, smectite and pyrite. Clinopyroxene and plagioclase are weakly altered (5%) and show rare replacement by smectite.

Vein/Fracture Filling:
0.3-1 mm smectite veins in Pieces 1 to 6, 8, and 9.

Structures:
Mf>V
The section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a series of veins over the entire section.

Core Image



176-735B-173R-2

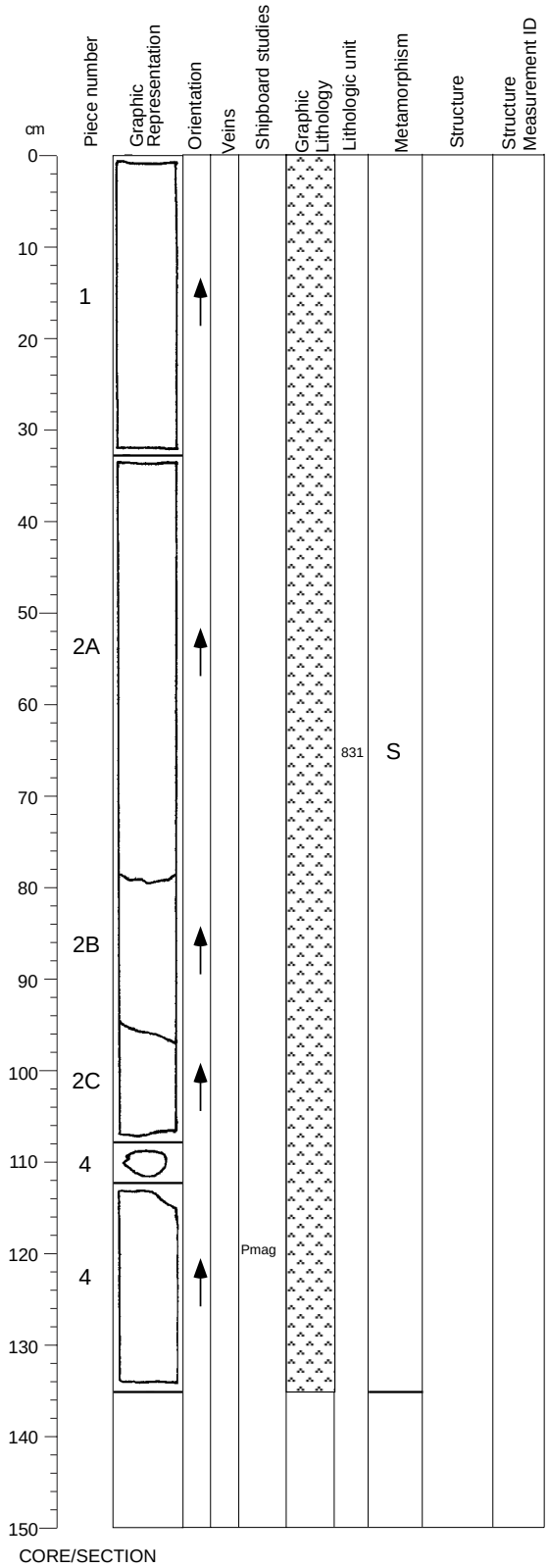
Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace.
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: slight (3%). 5% of the olivine is altered to amphibole and rare smectite. 2% of the clinopyroxene is altered to amphibole. 3% of the plagioclase is recrystallized.

Structures:
Mf
The entire section displays a medium- to coarse-grained igneous texture, with no or a weak, gently dipping magmatic foliation. A weak crystal-plastic foliation, poorly defined, may be present between 30 and 76 cm.

Core Image



176-735B-173R-3

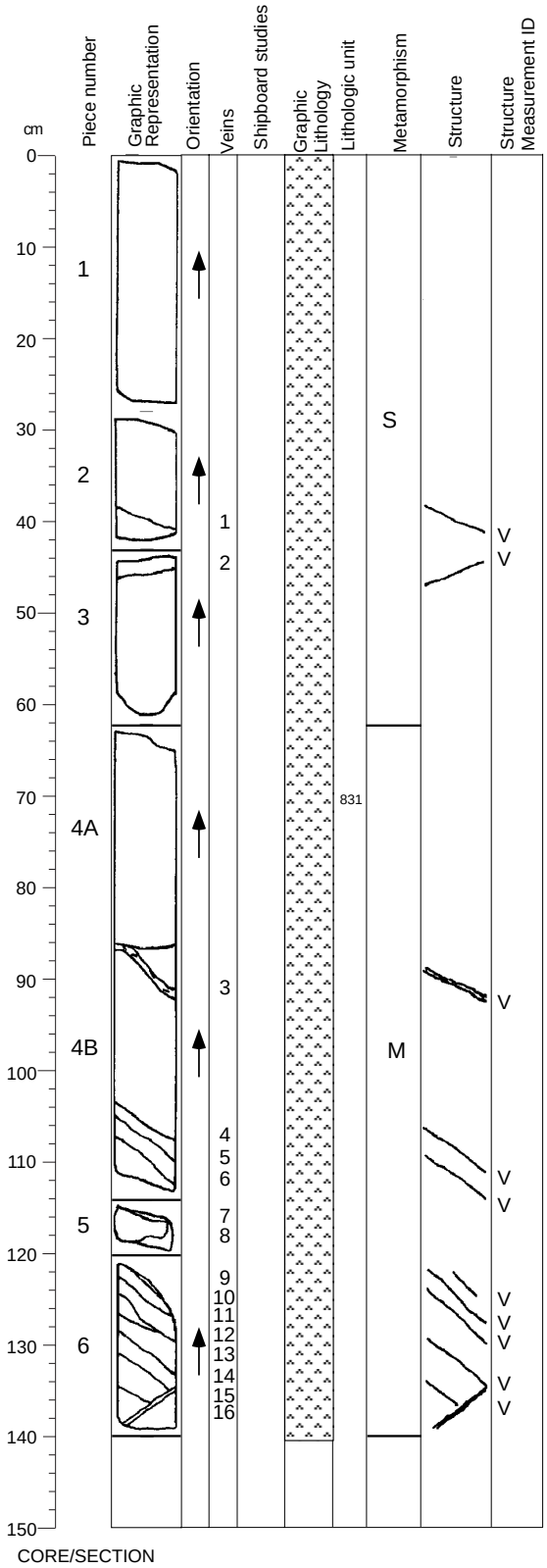
Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: ttrace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Structures:
Mf
The entire section displays a medium- to coarse-grained igneous texture, with no or a weak magmatic foliation.

Core Image



176-735B-173R-4

Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <4
Mode of occurrence: Dark green smectite after olivine.
Sulfides:
Total Percent: <1
Mode of occurrence: Associated with dark smectite in olivine pseudomorphs.

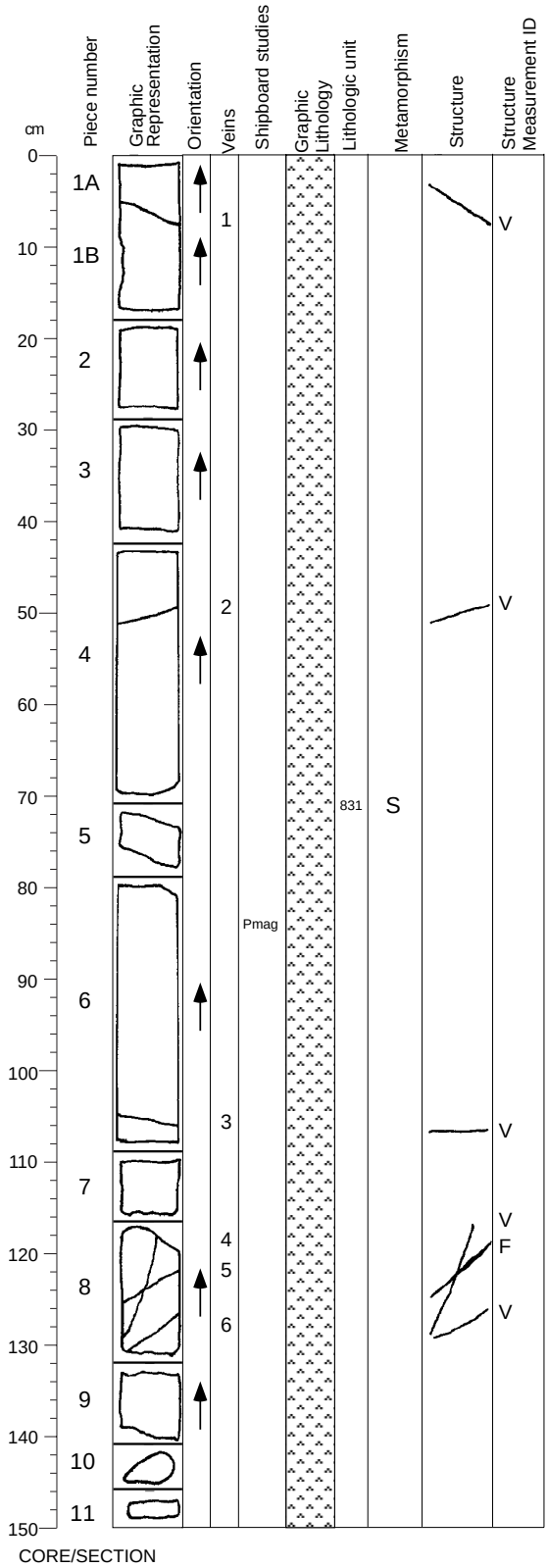
Background Alteration:
Degree of alteration: slight to moderate (4 to 12%). Pieces 1 to 3: 10% of the olivine is altered to amphibole and smectite. Plagioclase and clinopyroxene are negligibly altered (1 to 2%). Pieces 4 to 6: Olivine is partly altered to amphibole, smectite, and abundant pyrite (35%). Clinopyroxene is also significantly replaced by smectite in addition to amphibole (10%). 4% of the plagioclase is recrystallized and altered to smectite.

Vein/Fracture Filling:

0.3-1 mm smectite veins in Pieces 2, 3, 4, and 5; 2.5 mm plagioclase+amphibole vein in Piece 4; smectite + calcite vein in Piece 5.

Structures:
Mf
The section displays a medium- to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a series of veins over the entire section. A weak crystal-plastic foliation, poorly defined, may be present between 10 and 84 cm.

Core Image



176-735B-173R-5

Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

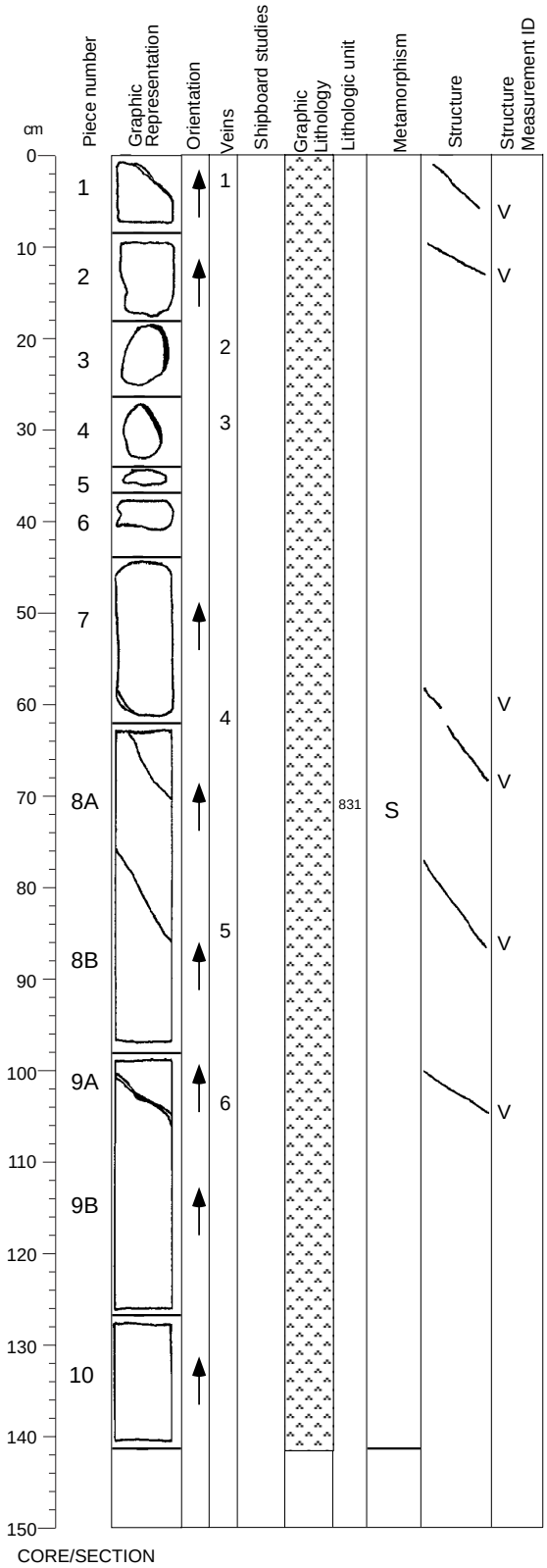
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims, and in the halos of a dark green amphibole vein.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <2
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (6%). 10% of the olivine is altered to amphibole and rare smectite. 6% of the clinopyroxene is altered to amphibole. 4% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.5 mm smectite veins in Pieces 1, 4, and 8; 0.2-2 mm amphibole veins in Pieces 6 and 8.

Structures:
Mf>V; Mf>F>V
The entire section displays a medium- to coarse-grained igneous texture, with no magmatic foliation, cut by a few veins. In Piece 8, a vein cuts a fault.

Core Image



176-735B-173R-6

Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

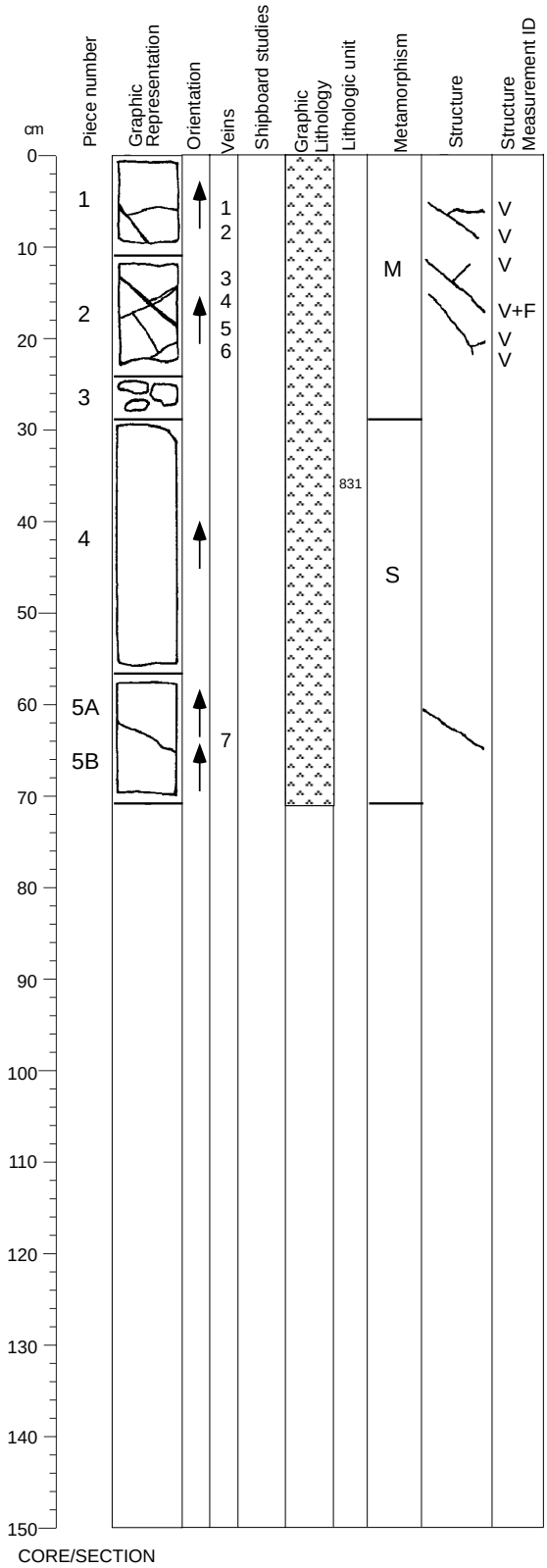
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (4%). 10% of the olivine is altered to amphibole and rare smectite. 3% of the clinopyroxene is altered to amphibole. 2% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1-2 mm smectite veins in Pieces 1, 7, 8, and 9; with calcite in Pieces 3 and 4.

Structures
Mf>V; Mf>F
The entire section displays a medium- to coarse-grained igneous texture, with no magmatic foliation, cut by a few veins, and a fault in Piece 2.

Core Image



176-735B-173R-7

Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

173R7

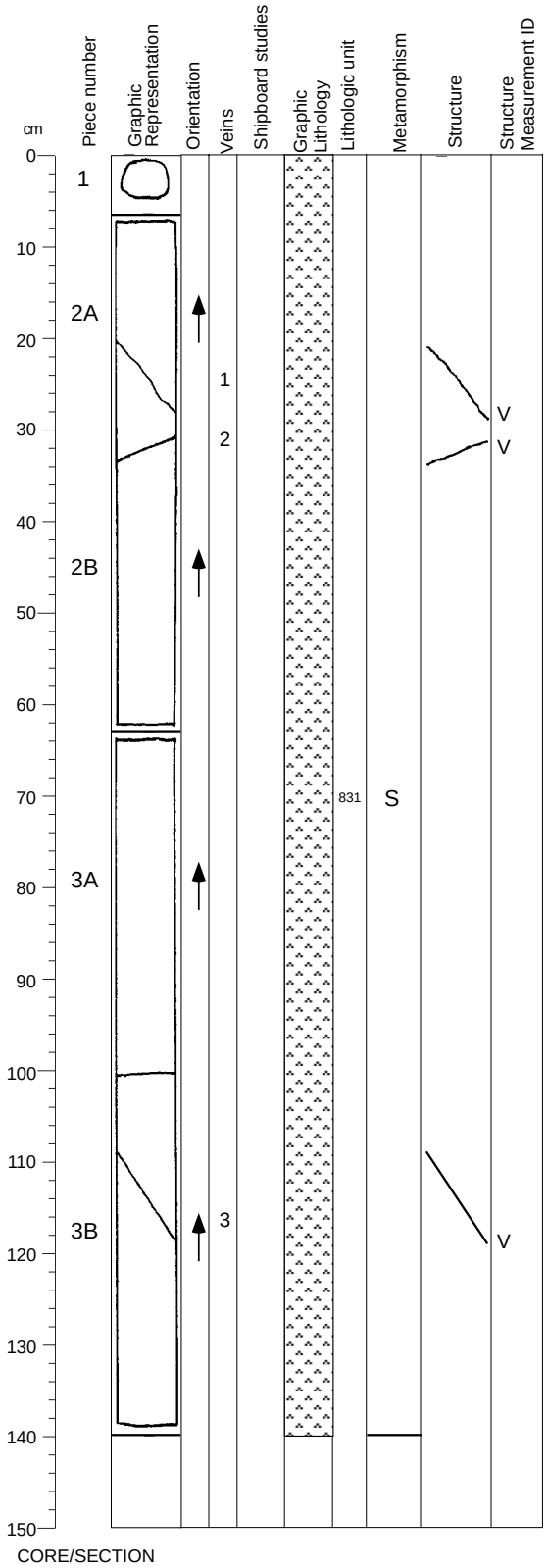
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <4
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight to moderate (3 to 12%). Pieces 1 to 3: Olivine is partly replaced by amphibole and smectite (30%). 5% of the clinopyroxene is altered to amphibole and smectite. 4% of the plagioclase is replaced by secondary plagioclase and rare smectite. Pieces 4 to 5: 10% of the olivine is altered to amphibole and rare smectite. Clinopyroxene and plagioclase are negligibly altered.

Vein/Fracture Filling:
1 mm smectite veins in Pieces 1, 2, and 7.

Structures:
Mf>V>F
The entire section displays a medium- to coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a few veins. One vein grades into a fault in Piece 2A to 2B.

Core Image



176-735B-174R-1

Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

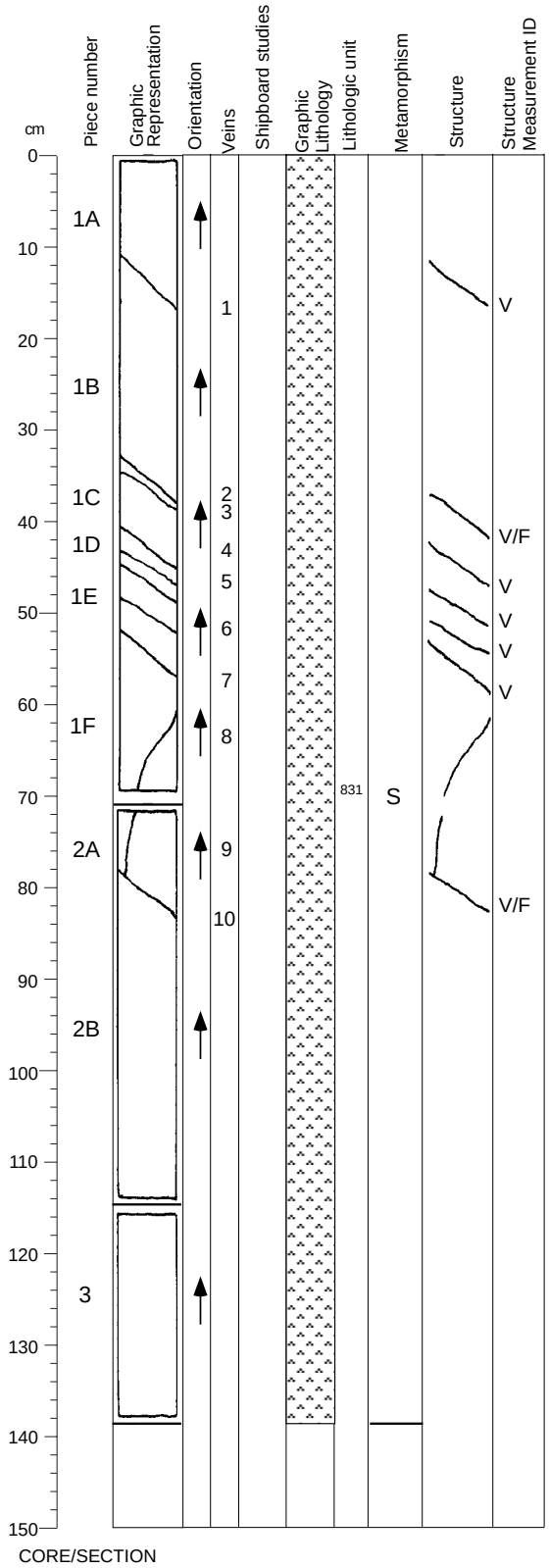
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine near smectite veins.

Background Alteration:
Degree of alteration: slight (3%). 10% of the olivine is altered to amphibole and rare smectite. Clinopyroxene and plagioclase are negligibly altered.

Vein/Fracture Filling:
0.1-0.3 mm smectite veins in Pieces 1 to 3.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a few veins.

Core Image



176-735B-174R-2

Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

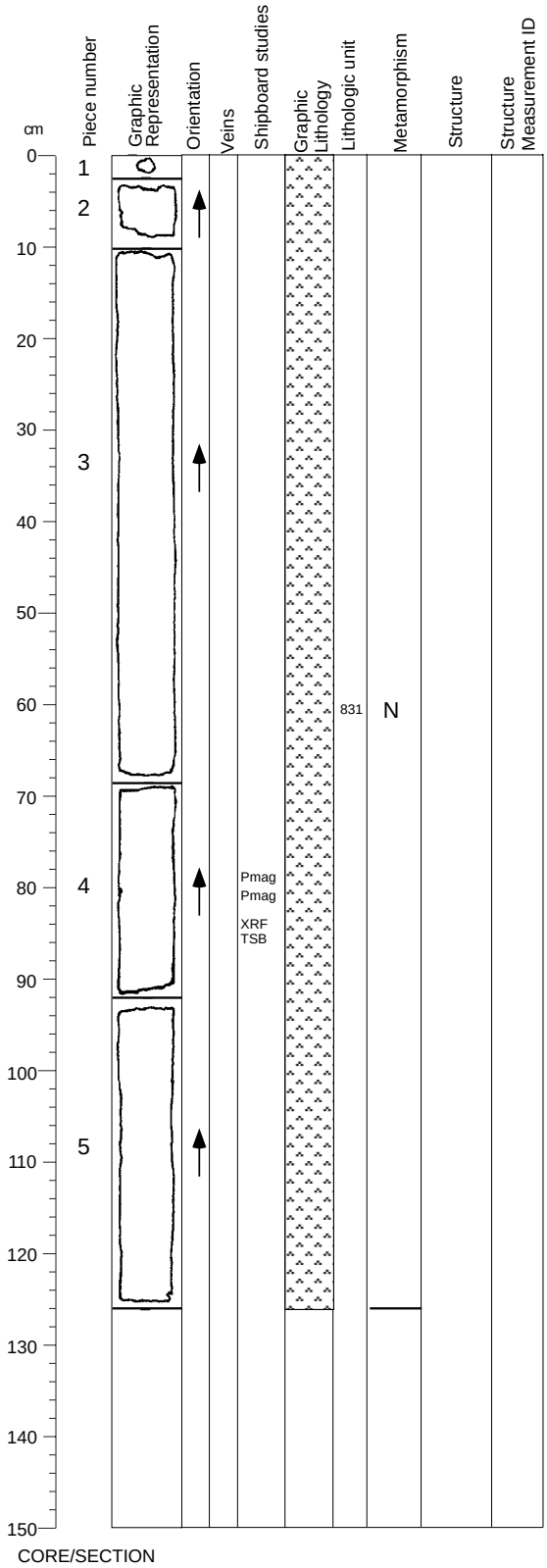
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <4
Mode of occurrence: Dark green smectite after olivine and pale green after plagioclase.
Comments: Near smectite veins.

Background Alteration:
Degree of alteration: slight (6%). 15% of the olivine is altered to amphibole and smectite. 6% of the clinopyroxene is altered to amphibole. 3% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.2-2.5 mm smectite veins in Pieces 1 and 2.

Structures:
Mf>V>F
The entire section displays a medium- to coarse-grained igneous texture, with no magmatic foliation, cut by a series of veins. Two veins (at 35 and 80 cm) grade into faults; the fault at 35 cm is reverse.

Core Image



176-735B-175R-1

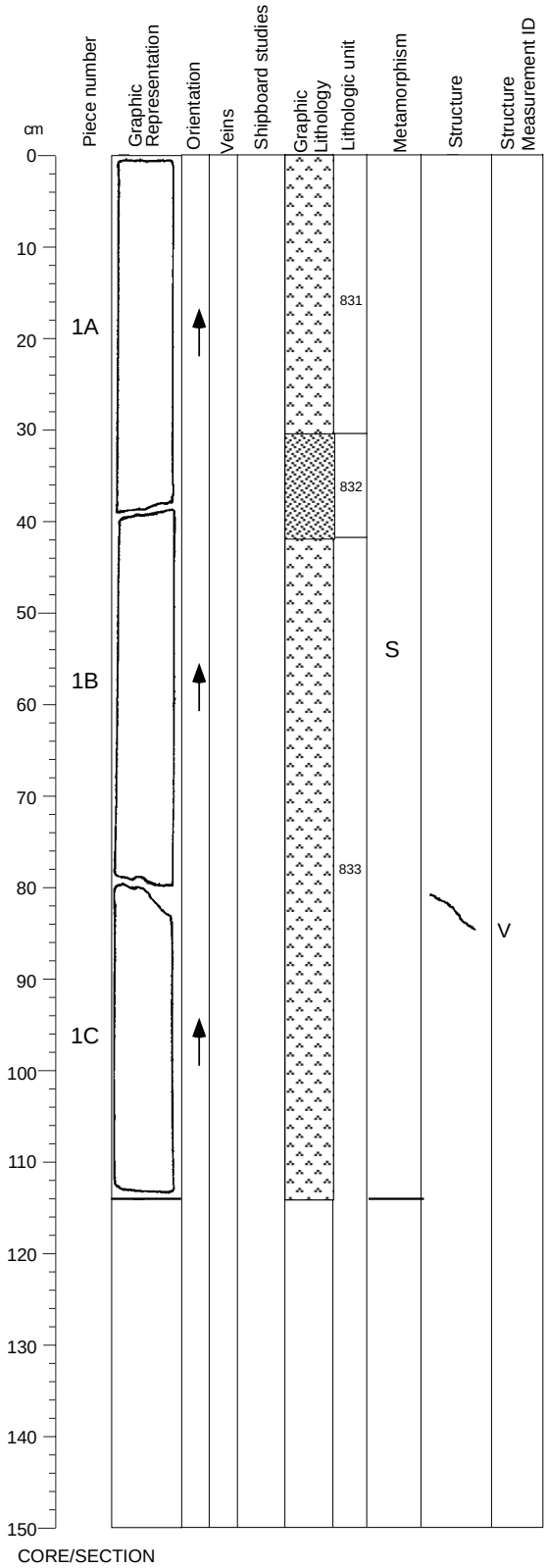
Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.
Albite (?):
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: negligible (2%).

Structures:
Mf
The entire section displays a medium- to coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-175R-2

Interval 831: OLIVINE GABBRO
(see Section 176-735B-172R-3)
Interval 832: OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	175	2	31	1A	1192.67
Lower contact:	175	2	42	1B	1192.78

Thickness (m): 0.11

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	10	4	coarse	tabular/ subhedral
Clinopyroxene	20	20	10	coarse	equant/ anhedral
Olivine	7	6	1	medium	equant/ anhedral subhedral
Opaques	2				angular aggregates/ subhedral
Total	89*		(see explanatory notes)		

*Major phases estimated to ± 5%)
Grain Size: Coarse
Modal IUGS Name (calculated): Not Calculated
Type Distribution
Texture: porphyritic N/A
Comments: Oxide-rich interval is associated with green patches of alteration. Sulfide present.

Interval 833: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	175	2	42	1B	1192.78
Lower contact:	175	3	73	1B	1194.24

Thickness (m): 1.46

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	5	coarse	tabular/ subhedral
Clinopyroxene	20	35	7	coarse	equant/ anhedral
Olivine	15	15	2	coarse	equant/ anhedral subhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	100.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Coarse-grained with fine and very coarse-grained patches locally present.Mostly granular, locally subophitic. Oxide present at 45-46 cm in 175R-2.

Continued next page

Core Image

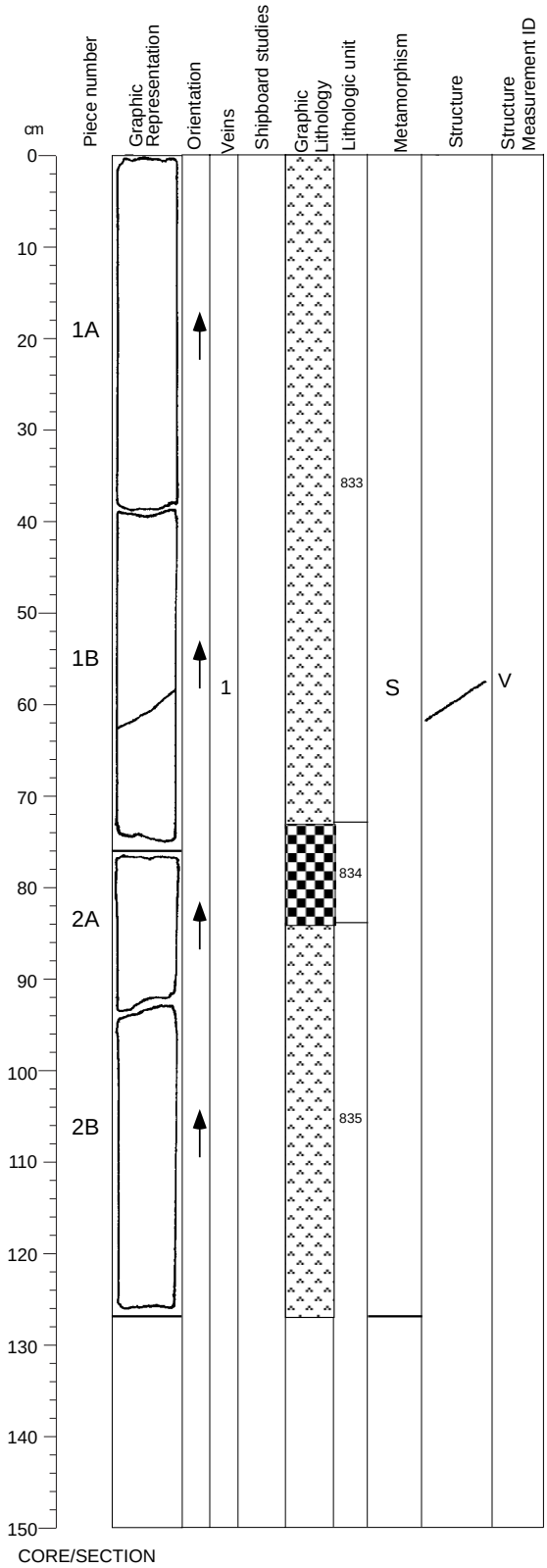
176-735B-175R-2 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: <1
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (3%). 5% of the olivine is altered to amphibole and smectite.Clinopyroxene and plagioclase are negligibly altered (1 to 2%).

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by a vein at the boundary between Pieces 1B and 1C.

Core Image



176-735B-175R-3

Interval 833: OLIVINE GABBRO
(see previous section)

Interval 834: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	175	3	73	1B	1194.24
Lower contact:	175	3	83	2A	1194.34

Thickness (m): 0.10

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	30	10	coarse	tabular/ subhedral anhedral
Clinopyroxene		55	35	pegmatitic	equant/ subhedral
Olivine		20	2	coarse	elongate/ anhedral subhedral
Opaques	2				angular aggregates/ subhedral
Total		57*	(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Pegmatitic
Modal IUGS Name (calculated): Not Calculated
Type Distribution
Texture: granular N/A
Comments: Pegmatitic; oxide-rich interval. Interval is too small and grain size too large for meaningful visual estimate of mode.

Interval 835: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	175	3	83	2A	1194.34
Lower contact:	176	2	94	2	1199.07

Thickness (m): 4.73

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	30	3	coarse	tabular/ subhedral anhedral
Clinopyroxene	20	40	3	N/D	equant/ anhedral subhedral
Olivine	20	20	1	coarse	elongate/ anhedral, subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	95.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Grain size and mode variable, defining layering: top to 103 cm in 175R-3 (very coarse/pegmatitic), to 116 cm in 175R-3 (coarse), to 25 cm in 175R-3 (very coarse/pegmatitic), to 38 cm in 175R-4 (fine/medium), to 98 cm in 175R-4 (coarse), to 30 cm in 175R-4 (very coarse/pegmatitic), to 62 cm in 176R-1 (coarse), to 90 cm in 176R-1 (medium/coarse), and to base (coarse/very coarse; locally medium patches).

Continued next page

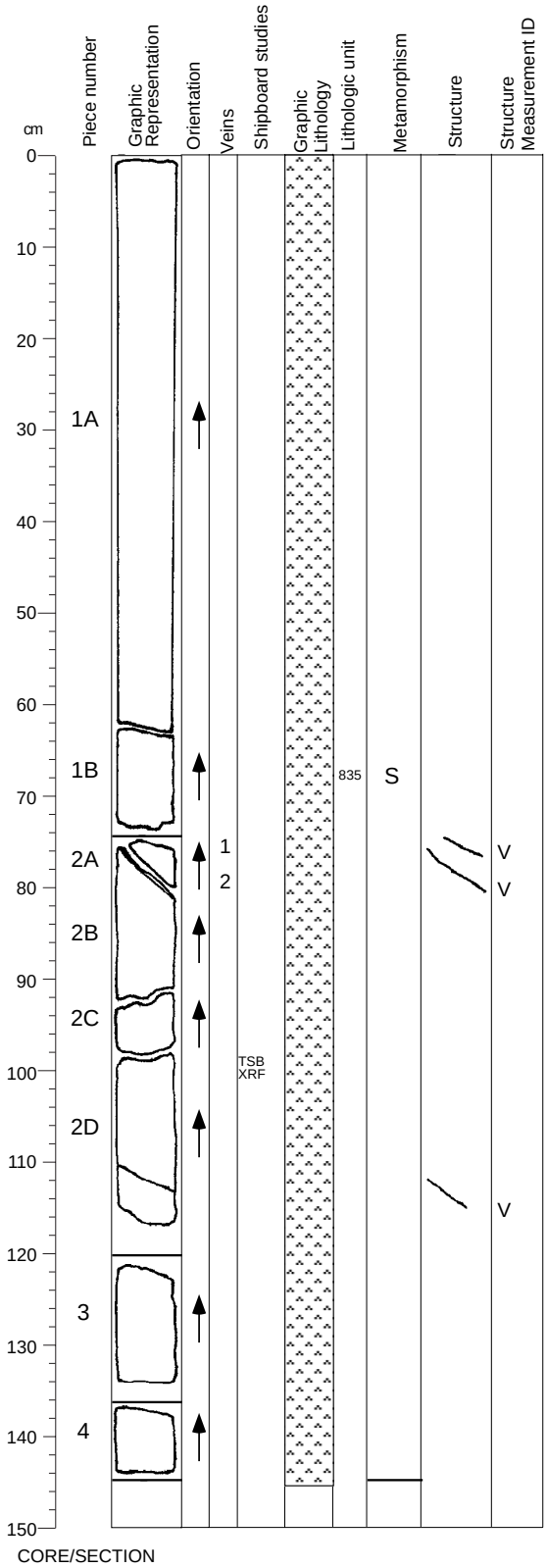
Core Image

176-735B-175R-3 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: <1
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Background Alteration:
Degree of alteration: slight (3%). Same as previous section.
Vein/Fracture Filling:
0.5 mm smectite vein in Piece 1.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by a vein in Piece 1B.

Core Image



176-735B-175R-4

Interval 835: OLIVINE GABBRO
(see previous section)

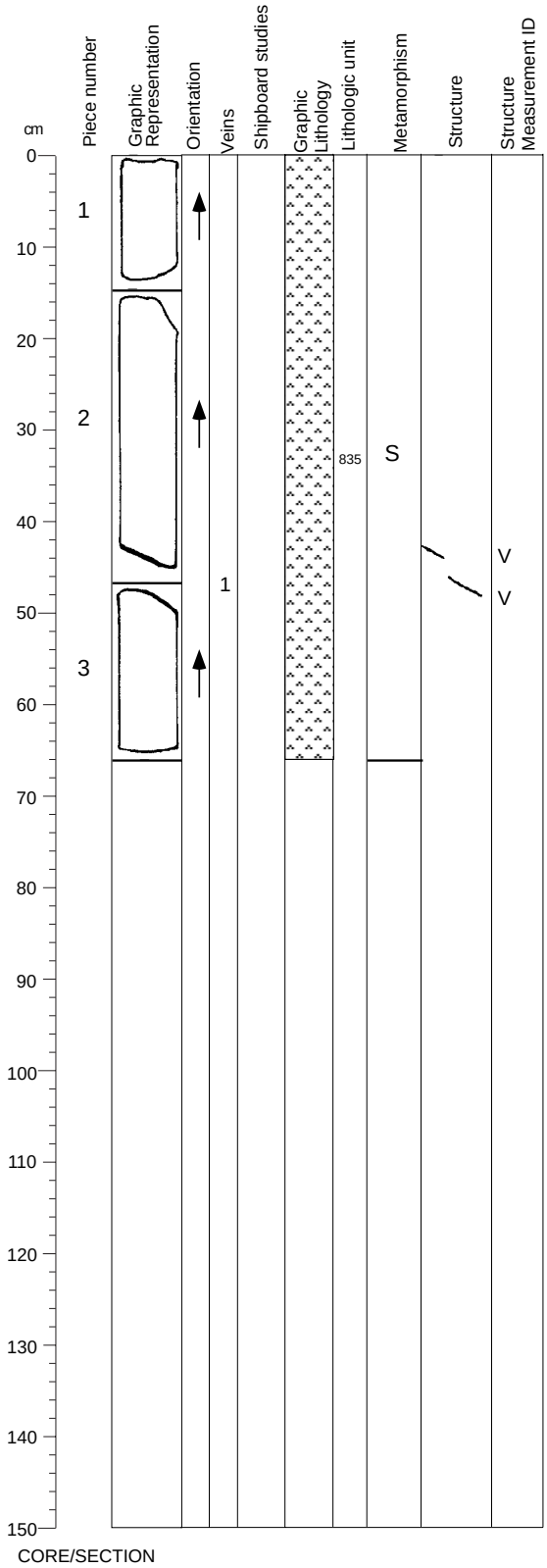
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace.
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace.
Mode of occurrence: Dark green smectite after olivine, near a smectite vein.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.3-1 mm smectite veins in Piece 2.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by a few veins in Pieces 2B and 2D.

Core Image



176-735B-175R-5

Interval 835: OLIVINE GABBRO
(see Section 176-735B-175R-3)

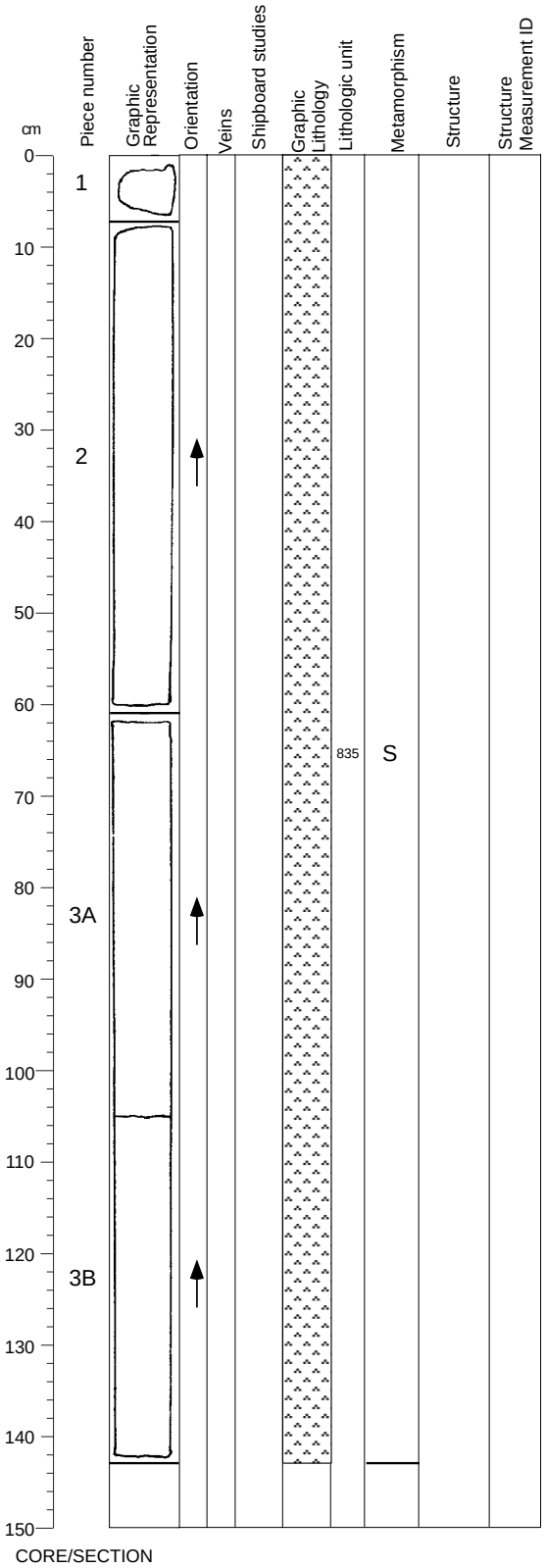
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
1 mm smectite vein in Pieces 2 to 3.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by a vein at the boundary between Pieces 2 and 3.

Core Image



176-735B-176R-1

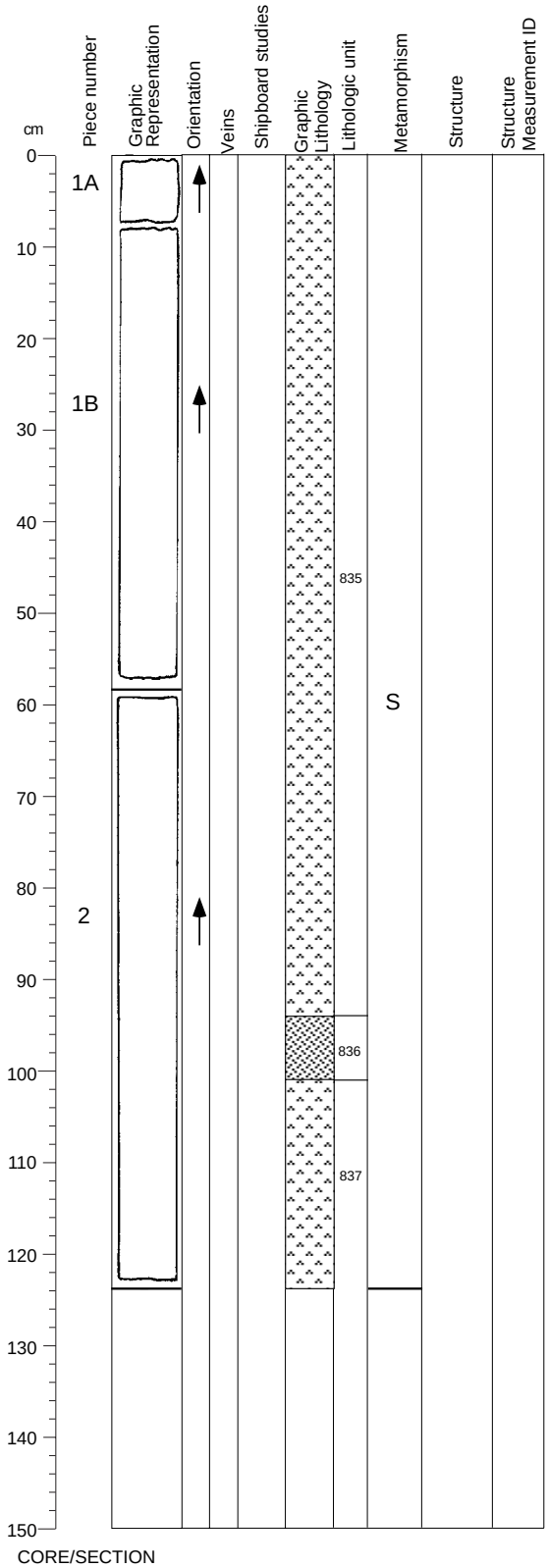
Interval 835: OLIVINE GABBRO
(see Section 176-735B-175R-3)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-176R-2

Interval 835: OLIVINE GABBRO
(see Section 176-735B-175R-3)
Interval 836: OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	176	2	94	2	1199.07
Lower contact:	176	2	101	2	1199.14

Thickness (m): 0.07

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	5	coarse	tabular/ subhedral
Clinopyroxene	30	25	5	coarse	equant/ anhedral
Olivine	12	15	1	medium	amoeboidal/ anhedral
Opaques	4				angular aggregates/ subhedral
Total	106*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Olivine Gabbro
Type Distribution
Texture: granular N/A

Interval 837: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	176	2	101	2	1199.14
Lower contact:	178	6	125	3A	1219.31

Thickness (m): 20.17

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	30	5	coarse	tabular/ subhedral
Clinopyroxene	20	40	3	coarse	equant/ anhedral
Olivine	25	30	3	coarse	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%)
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: variable texture N/A

Comments: Mostly granular, locally subophitic, intergranular, and intergrown. Grain size and mode variable, defining layering: top to 76 cm in 176R-3 (very coarse with finer patches), to 102 cm in 176R-3 (fine/medium), to 130 cm in 176R-3 (coarse/medium), to 0 cm in 177R-1 (fine/medium), to 83 cm in 177R-2 (coarse), to 20 cm in 177R-3 (medium/coarse), to 31 cm in 177R-3 (fine but patchy), to 14 cm in 177R-4 (coarse/very coarse with finer patches), to 47 cm in 177R-4 (fine/medium with coarse patches), to 102 cm in 177R-4 (coarse), to 10 cm in 177R-5 (fine), to 30 cm in 177R-5 (coarse), to 130 cm in 177R-5 (medium), and to base all the way without clear evidence of layering. Modal variation apparent in coarser intervals, and locally troctolitic at 128-140 cm in 177R-4, 138-144 cm in 177R-5, and from 100 cm in 178R-2 to 60 cm in 178R-3. Mostly coarse-grained; locally finer patches, and rarely pegmatitic patches present.

Continued next page

Core Image

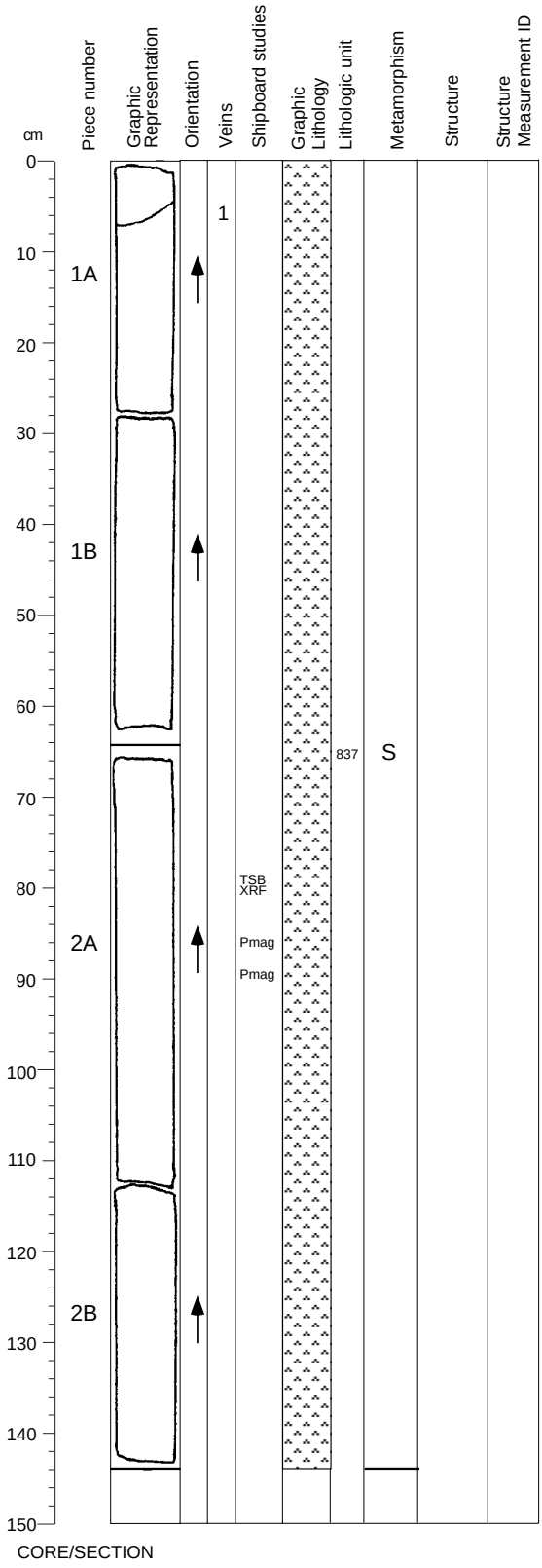
176-735B-176R-2 (cont'd)

Alteration
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-176R-3

Interval 837: OLIVINE GABBRO
(see previous section)

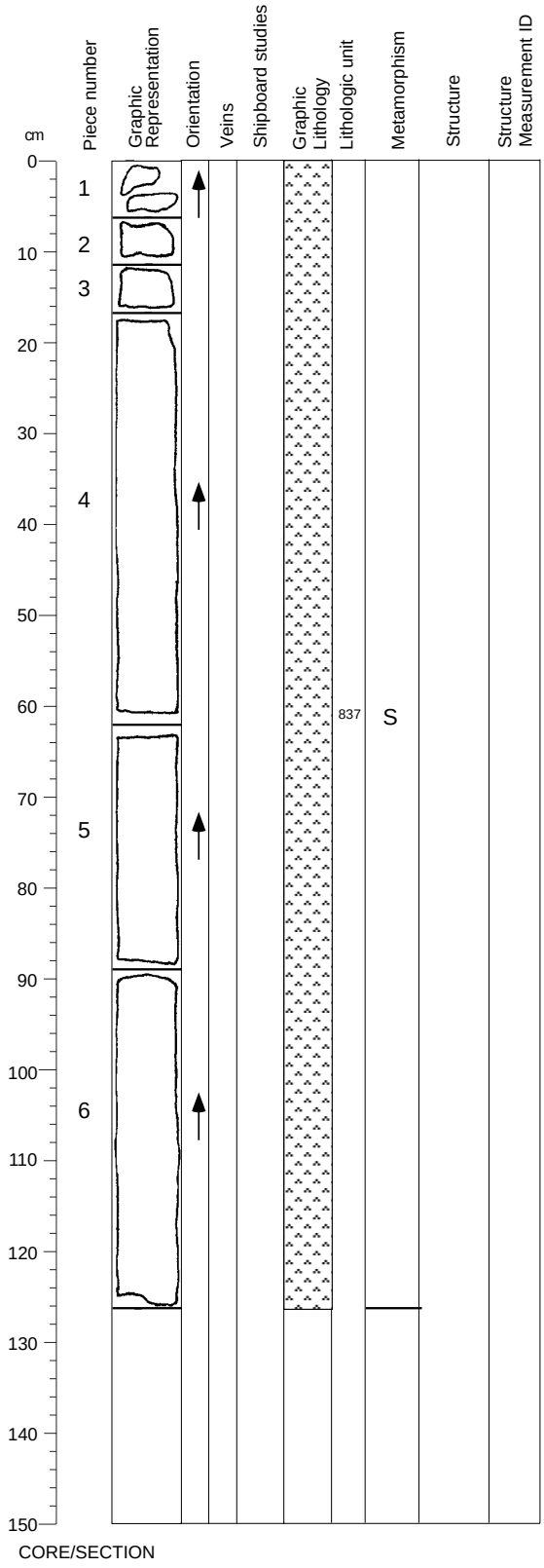
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.1 mm smectite vein in Piece 1.

Structures:
Mf
The entire section displays a coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-177R-1

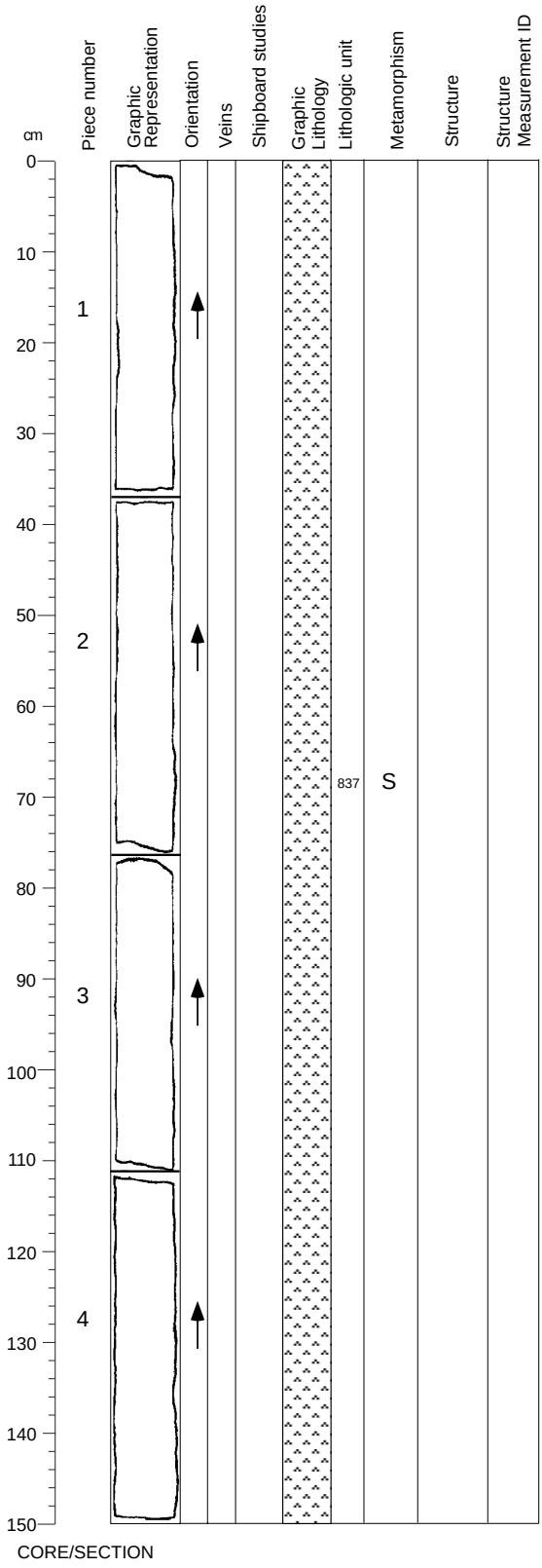
Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: slight (4%). 8% of the olivine is altered to amphibole and smectite. Clinopyroxene and plagioclase are negligibly altered (1 to 2%).

Structures:
Mf
The entire section displays a coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-177R-2

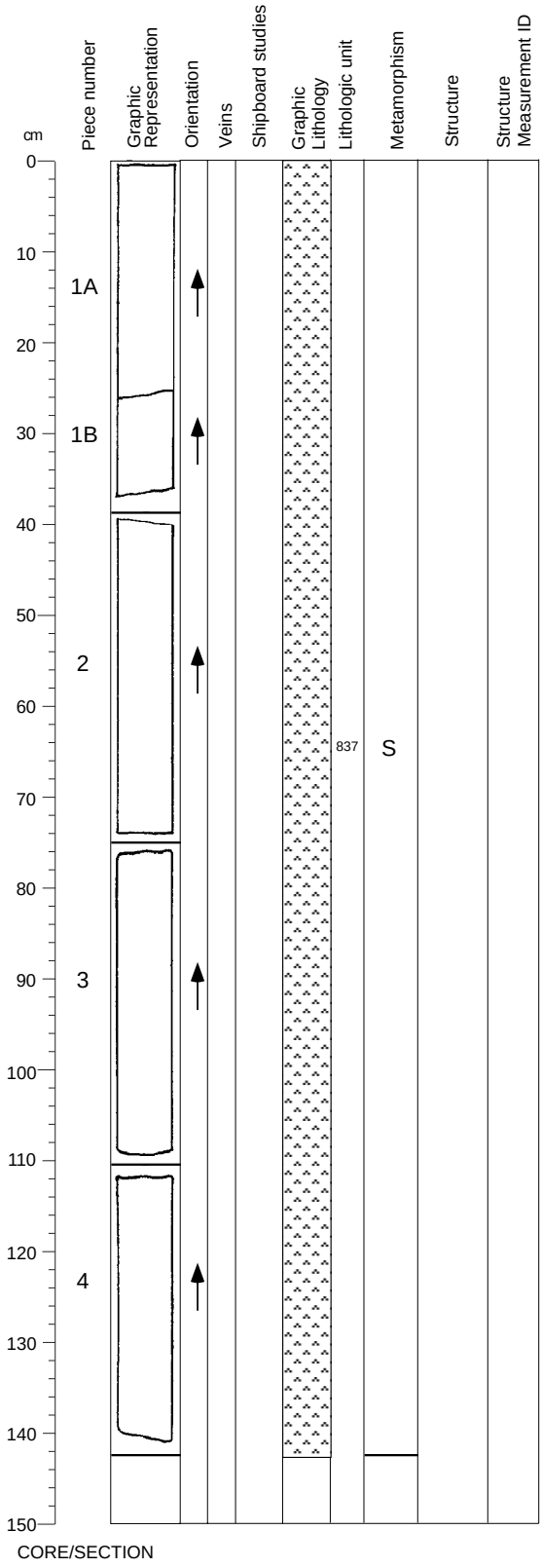
Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: slight (3%). 5% of the olivine is altered to amphibole and smectite. Clinopyroxene and plagioclase are negligibly altered (1 to 2%).

Structures:
Mf
The entire section displays a medium to coarse-grained igneous texture with no magmatic foliation

Core Image



176-735B-177R-3

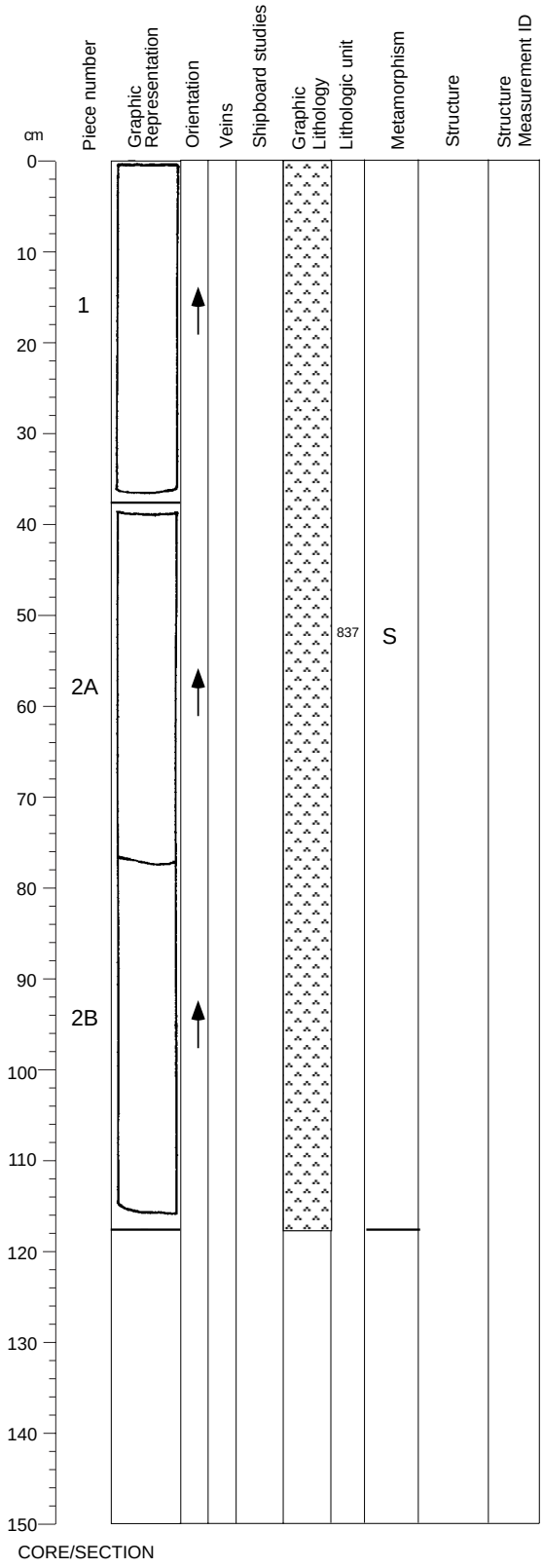
Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (4%). 5% of the olivine is altered to amphibole and smectite.
Clinopyroxene and plagioclase are negligibly altered (1 to 2%).

Structures:
Mf
The entire section displays a medium to coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-177R-4

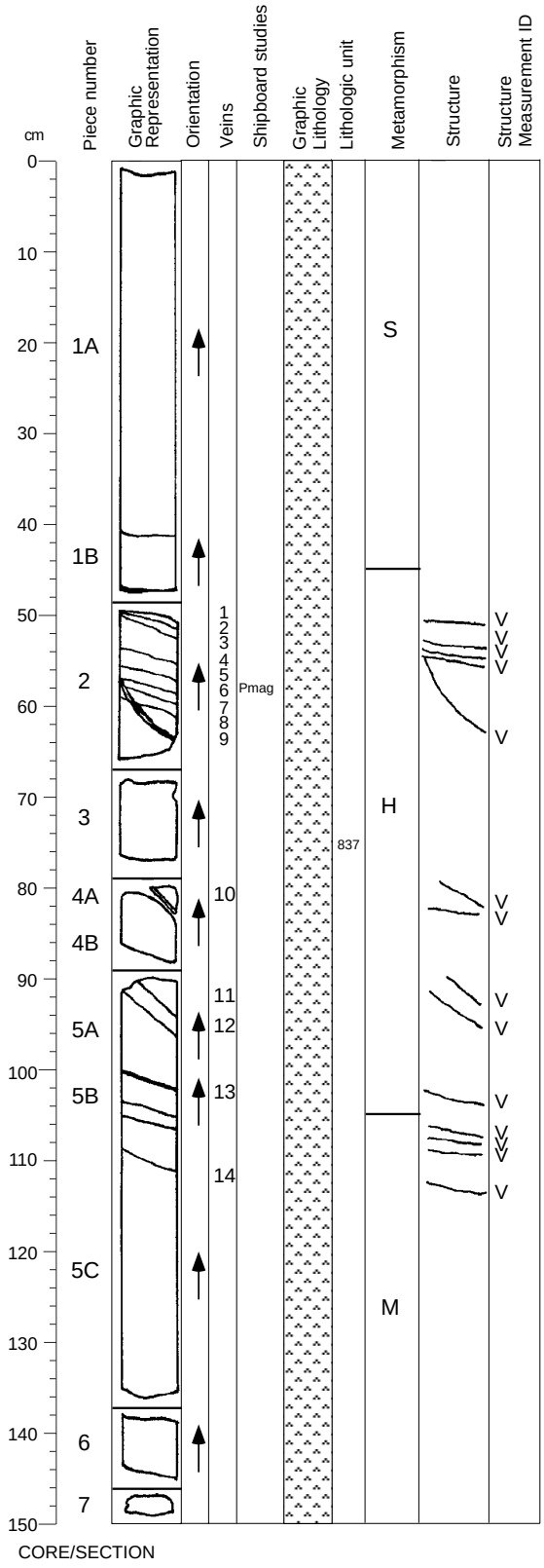
Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (3%). 5% of the olivine is altered to amphibole and smectite. Clinopyroxene and plagioclase are negligibly altered (1 to 2%).

Structures:
Mf
The entire section displays a medium to coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-177R-5

Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

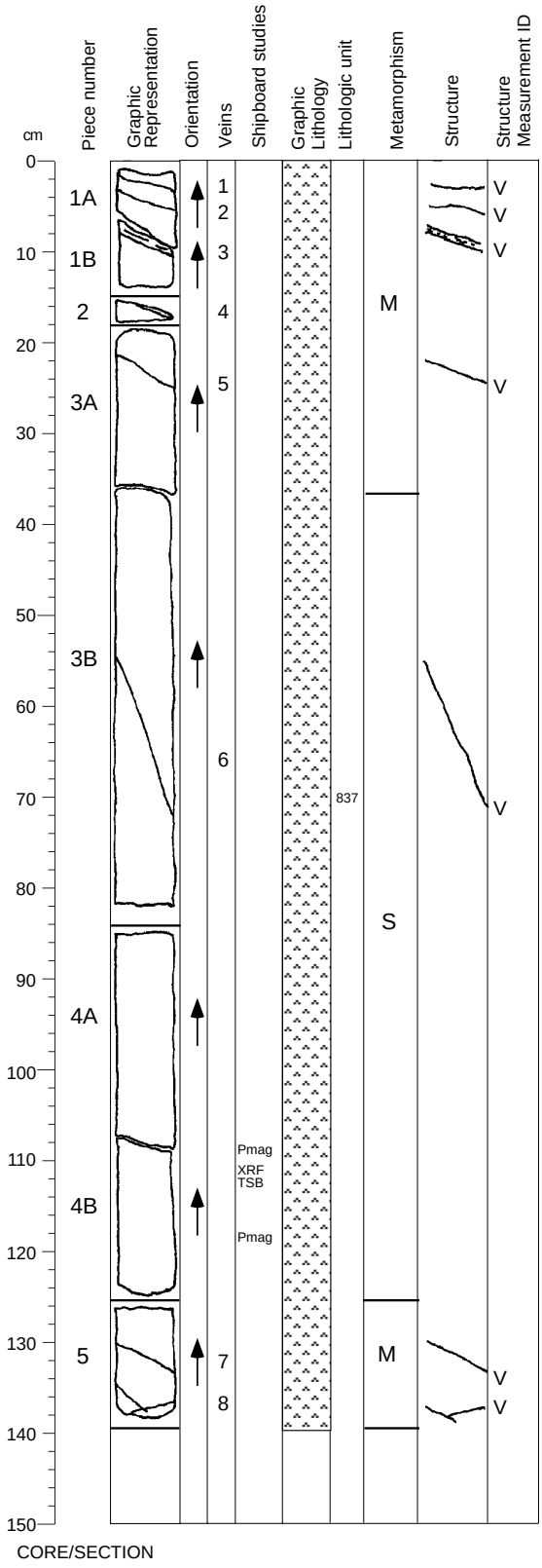
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <10
Mode of occurrence: Dark green smectite after olivine and pale green smectite after plagioclase.
Comments: Near veins.
Sulfides:
Total Percent: trace
Mode of occurrence: Associated with smectite in olivine ghosts.

Background Alteration:
Degree of alteration: slight to high (3 to 50%). Piece 1A: 5% of the olivine is altered to amphibole and smectite. Clinopyroxene and plagioclase are negligibly altered (1 to 2%). Pieces 1B to 5A: Olivine is completely replaced by smectite, oxides and amphibole. Clinopyroxene is partly altered to smectite and amphibole. Plagioclase is locally heavily replaced by smectite (total of 20% altered). Pieces 5B to 7: moderately altered (12%). 30% of the olivine is altered to smectite and amphibole. Clinopyroxene and plagioclase are not altered to smectite and show only 1 to 2% recrystallization.

Vein/Fracture Filling:
0.1 mm smectite veins in Piece 2; 1-4 mm altered plagioclase veins in Pieces 1, 2, 4, and 5; 0.3-1 mm smectite veins in Pieces 2 and 5.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture with no magmatic foliation, cut by a series of veins from Pieces 2 to 5C.

Core Image



176-735B-177R-6

Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

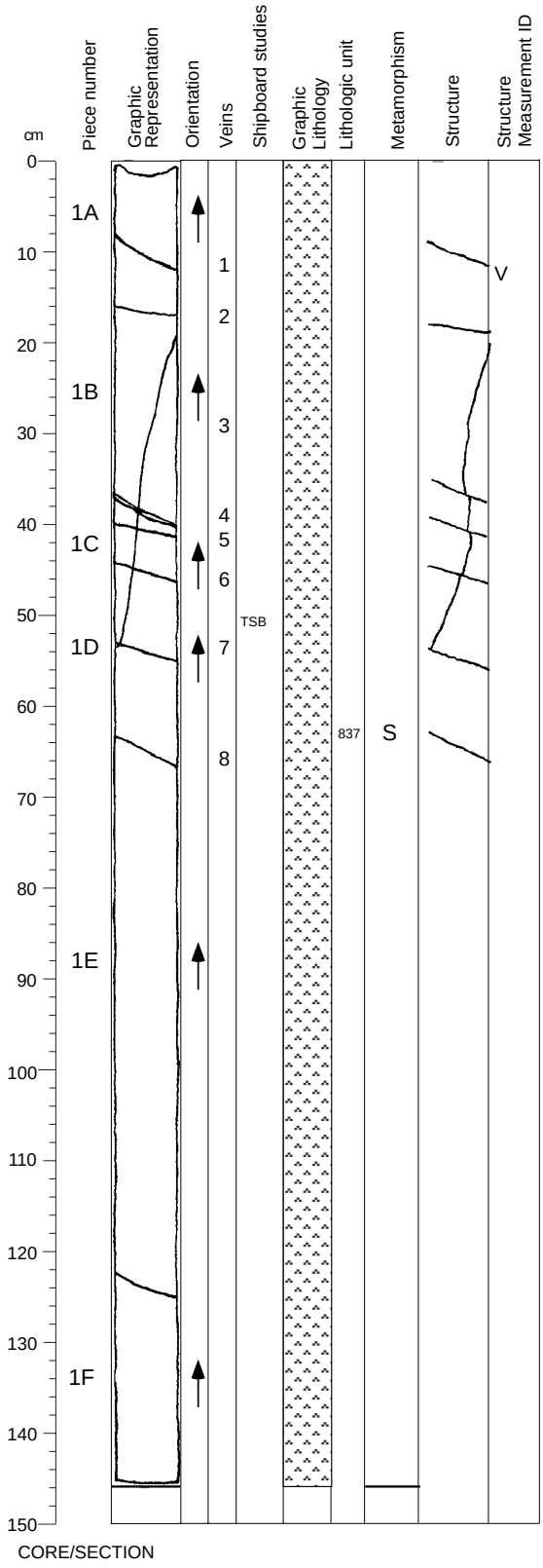
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <5
Mode of occurrence: Dark green smectite after olivine.
Comments: Near veins.
Sulfides:
Total Percent: trace
Mode of occurrence: Associated with smectite in olivine pseudomorphs.

Background Alteration:
Degree of alteration: slight to moderate (4 to 30%). Pieces 1 to 3A: 80% of the olivine is altered to smectite, oxide, and amphibole. Clinopyroxene and plagioclase are negligibly altered (1 to 2%). Pieces 1B to 5A: Olivine is completely replaced by smectite, oxides and amphibole. Clinopyroxene and plagioclase are weakly altered to smectite (5%). Pieces 3B to 4: 8% of the olivine is altered to smectite and amphibole. Clinopyroxene and plagioclase are negligibly altered (1 to 2%). Piece 5: Moderately altered (20%). 60% of the olivine is replaced by smectite, amphibole and oxide. Clinopyroxene is partly replaced by amphibole and rare smectite. 2% of the plagioclase are recrystallized.

Vein/Fracture Filling:
2-5 mm altered plagioclase veins in Pieces 1 and 2; 0.5-1 mm smectite veins in Pieces 1, 3, and 5.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by a series of veins.

Core Image



176-735B-177R-7

Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

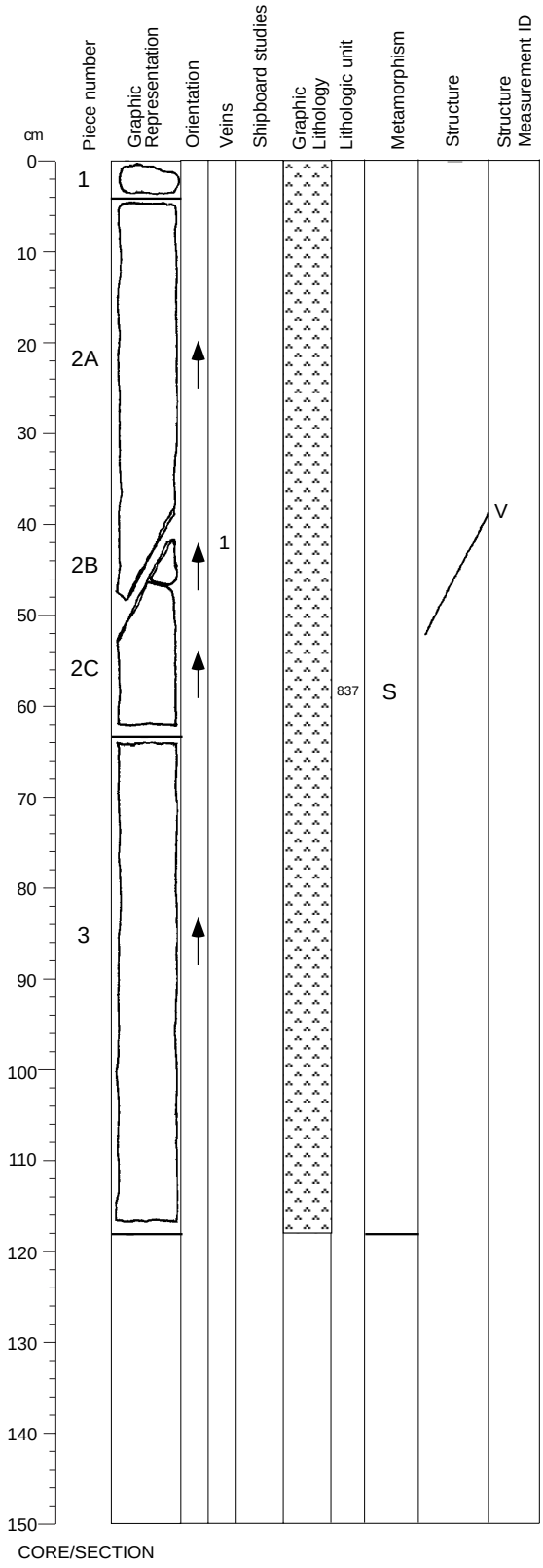
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <2
Mode of occurrence: Dark green smectite after.
Comments: In and near veins.

Background Alteration:
Degree of alteration: slight (4 to 10%). 5 to 15% of the olivine is altered to amphibole and smectite. Clinopyroxene and plagioclase are negligibly altered (1 to 2%). In Pieces 1A to 1D, clinopyroxene is weakly altered to smectite near veins (3%). 3% of the plagioclase are recrystallized.

Vein/Fracture Filling:
0.2-2.5 mm smectite veins in Piece 1; 0.5 mm plagioclase vein in Piece 1.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by a series of veins in Pieces 1A to 1E.

Core Image



176-735B-178R-1

Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

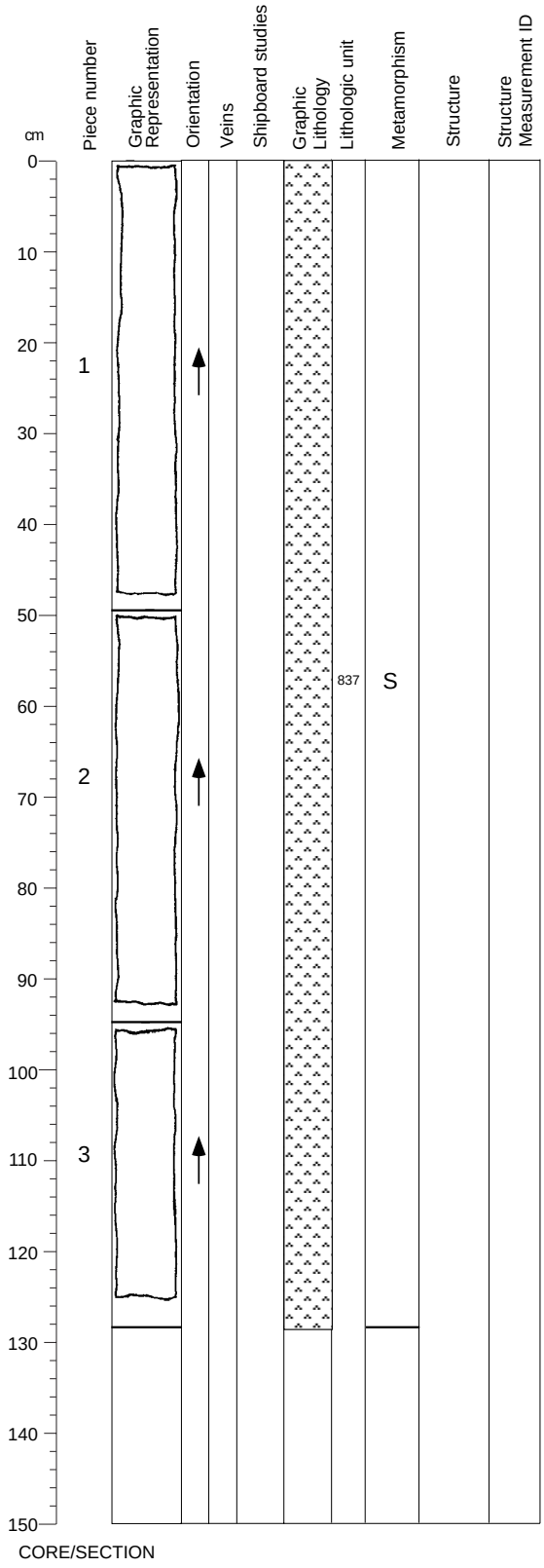
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (4%). 5% of the olivine is altered to amphibole and rare smectite. 3% of the clinopyroxene is altered to amphibole. 2% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1 mm plagioclase vein in Piece 2.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by a vein at the boundary between Pieces 2B and 2C.

Core Image



176-735B-178R-2

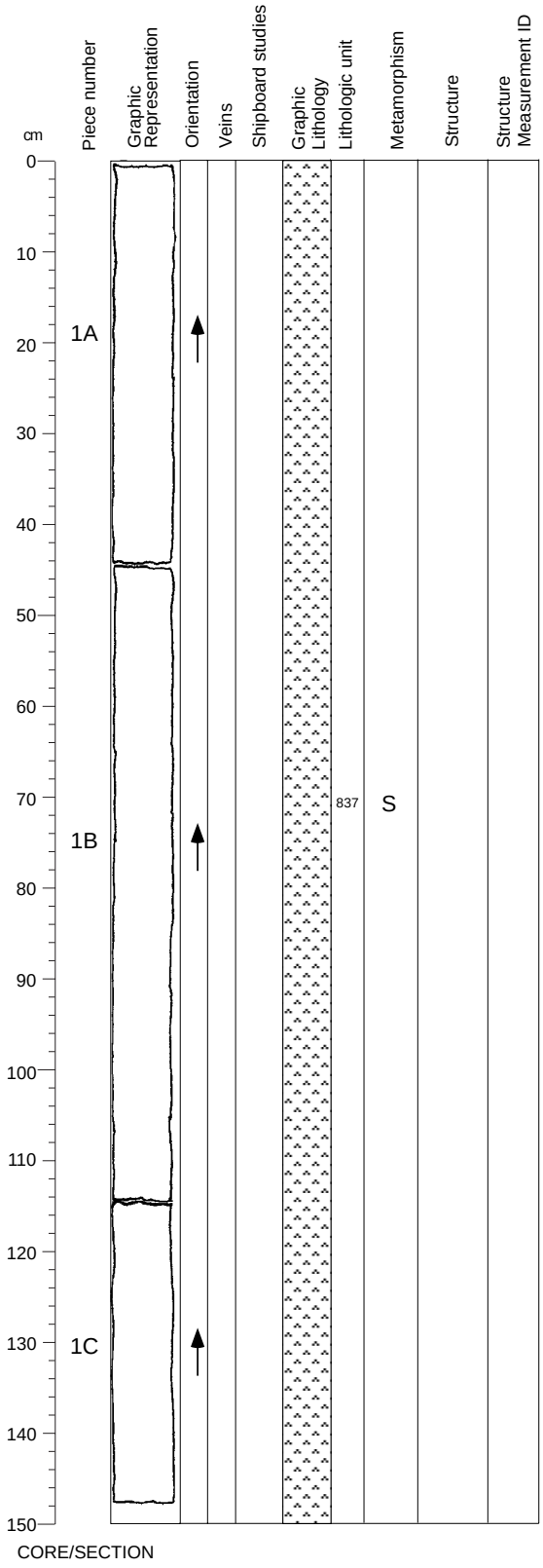
Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches in and near felsic zones.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.
Albite(?):
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-178R-3

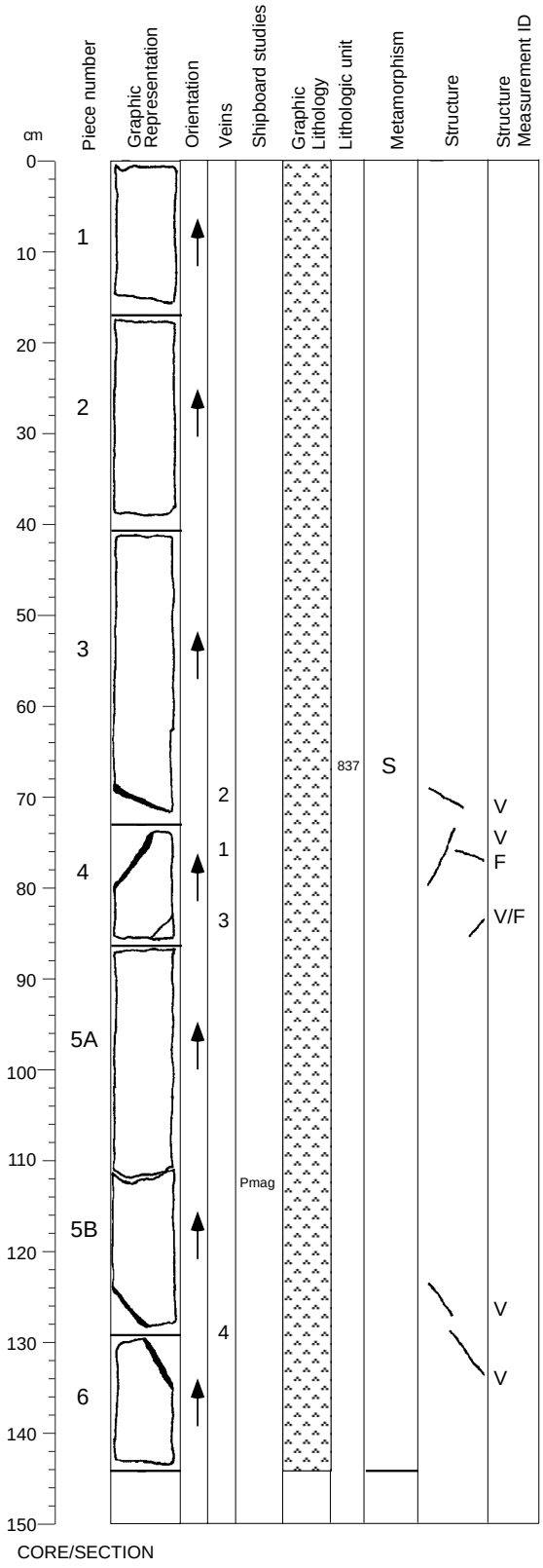
Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: slight (3%). 5% of the olivine is altered to amphibole and rare smectite. Clinopyroxene and plagioclase are negligibly altered.

Structures:
Mf
The entire section displays a coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-178R-4

Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

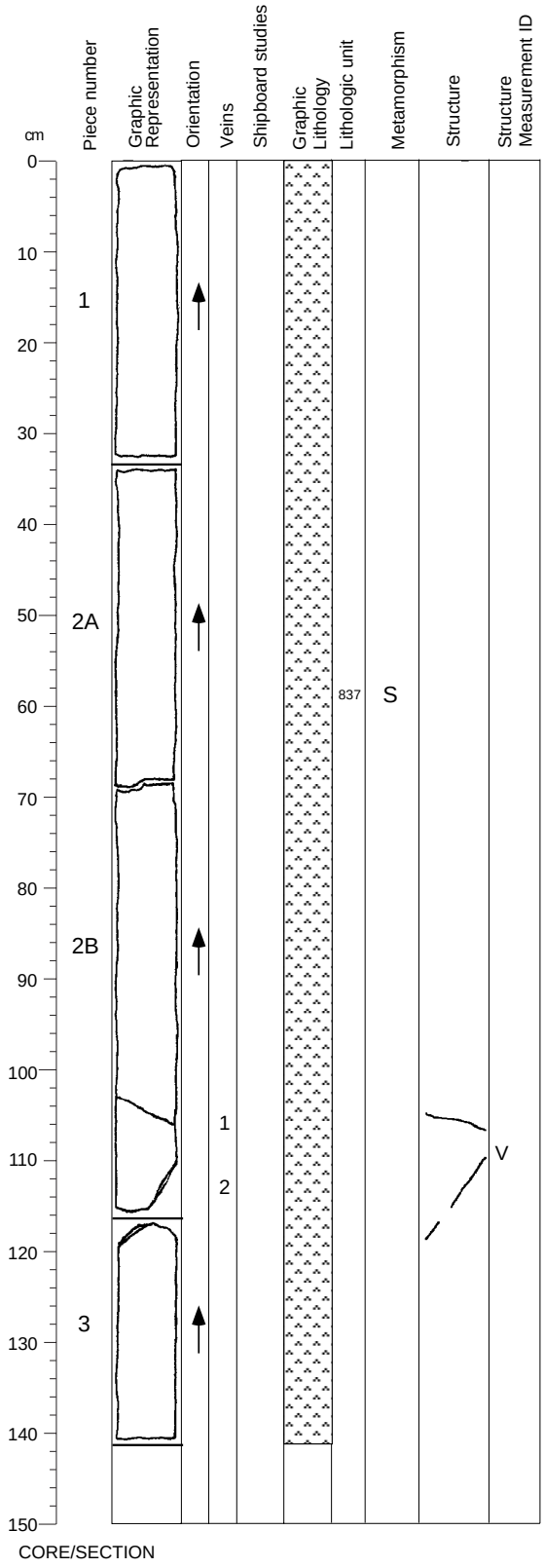
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace.
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.2-2 mm altered plagioclase veins in Pieces 3 to 6.

Structures:
Mf>V; Mf>F; Mf>F>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by a few veins and faults.

Core Image



176-735B-178R-5

Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)

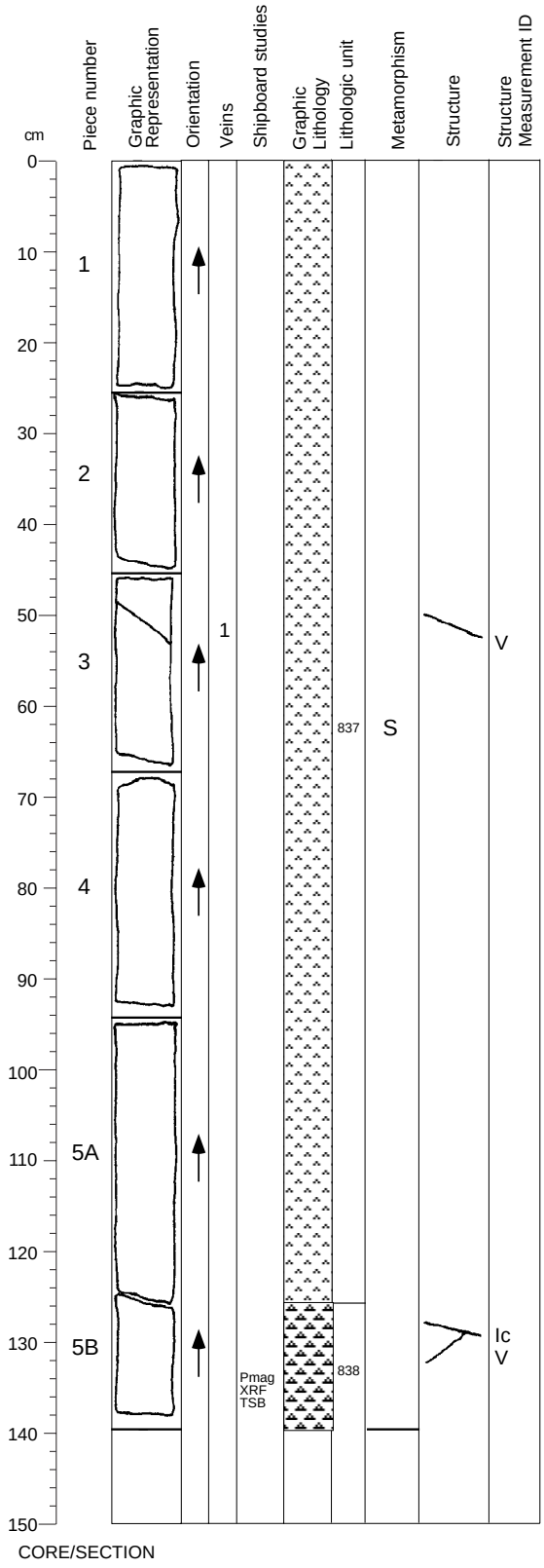
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.
Albite(?):
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.5 mm plagioclase vein in Pieces 2 and 3.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by two veins in Pieces 2B and 3.

Core Image



176-735B-178R-6

Interval 837: OLIVINE GABBRO
(see Section 176-735B-176R-2)
Interval 838: LEUCOCRATIC MICROTROCTOLITE

			Depth in		Depth	
Interval Location:	Core	Section	Section	Piece	mbsf	
Upper contact:	178	6	125	3A	1219.31	
Lower contact:	178	7	25	1B	1219.70	
Thickness (m): 0.39						
		Grain Size (mm):				
	Mode	Max	Min	Avg. Size	Shape/Habit	
Plagioclase	70	2	N/A	fine	tabular/ anhedral,/ subhedral	
Clinopyroxene		N/A	N/A	N/A	equant	N/A
Olivine	35	1	1	fine	equant/ anhedral subhedral	
Opaques	0.1				amoeboidal aggregates/ disseminated	
Total	105.1*		(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Troctolite
Texture: Type: equigranular; Distribution: uniform

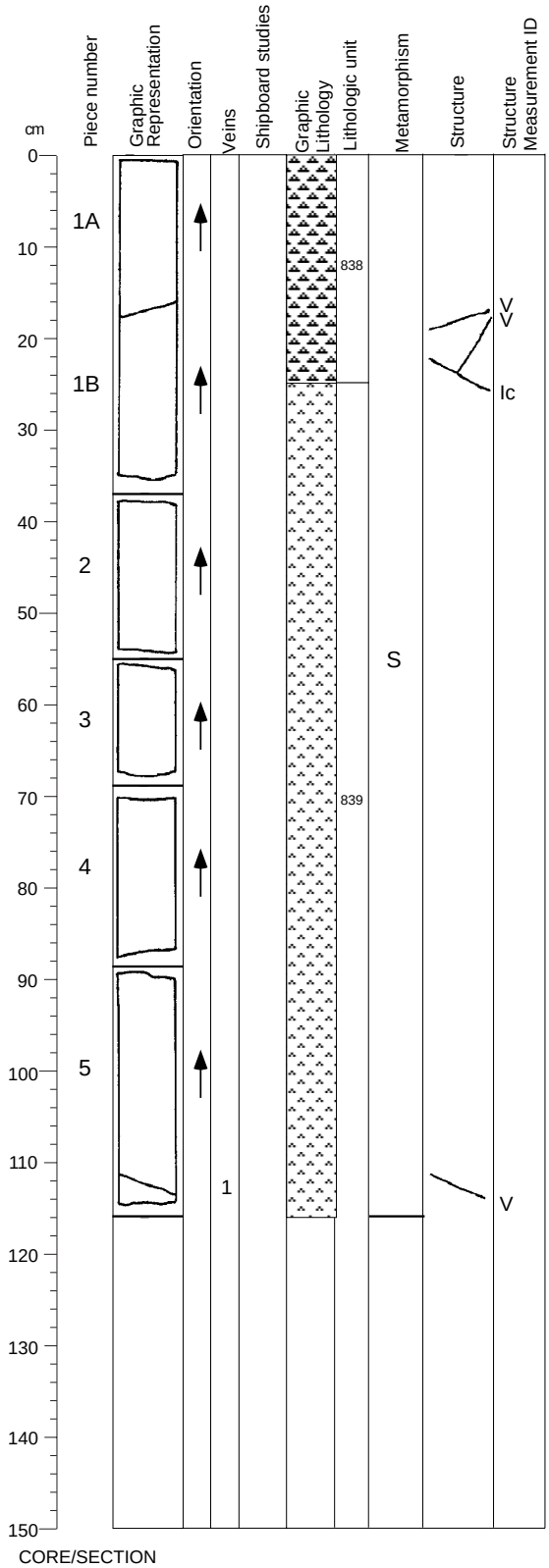
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.1 mm plagioclase vein in Piece 3.

Structures:
Mf>V; Mf>Ic>V
Most of the section displays a coarse-grained igneous texture with no magmatic foliation, cut by a vein in Piece 3. The boundary between Pieces 5A and 5B corresponds to a sharp igneous contact between the coarse-grained gabbro (above) and a very fine-grained material, intrusive (cross-cuts large crystals of the coarse-grained igneous texture), cut by a late, thin vein. This fine-grained interval continues in the next section (178R-7).

Core Image



176-735B-178R-7

Interval 838: LEUCOCRATIC MICROTROCTOLITE
(see previous section)
Interval 839: TROCTOLITIC GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	178	7	25	1B	1219.70
Lower contact:	179	1	118	3B	1222.08

Thickness (m): 2.38

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	8	coarse	tabular/ subhedral
Clinopyroxene	15	20	5	coarse	equant/ anhedral
Olivine	20	15	2	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	95.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Coarser in upper 1/2, and finer in lower 1/2 of the interval.

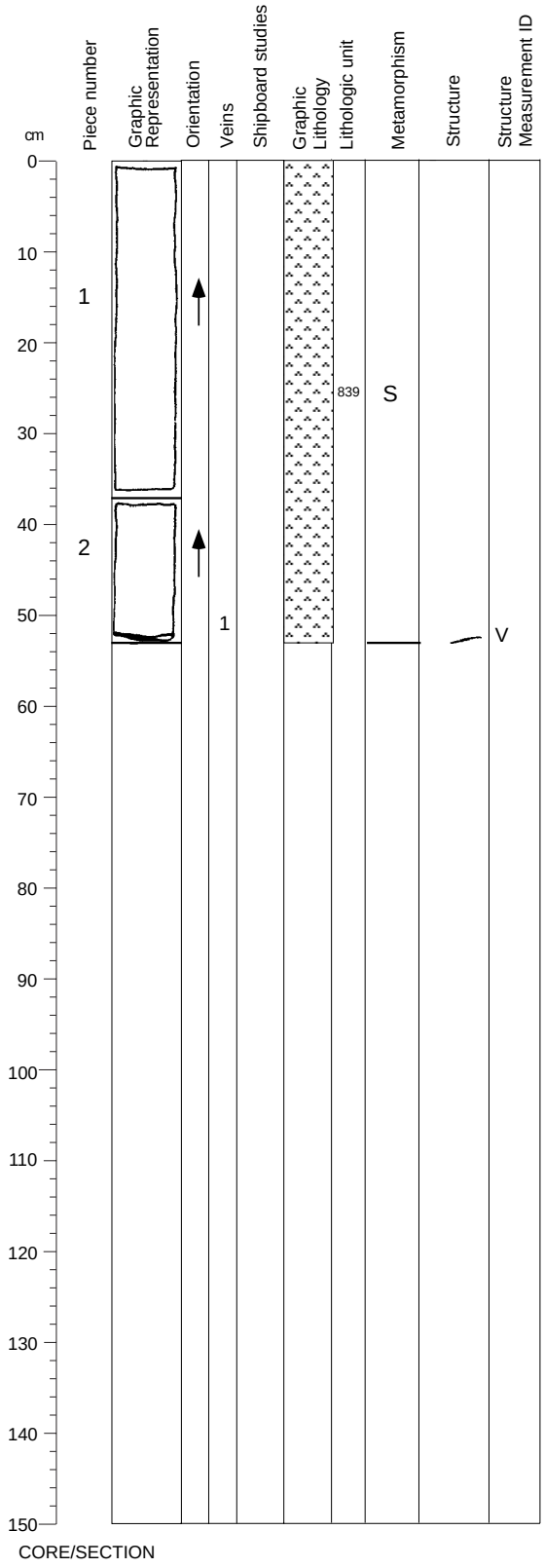
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.2 mm plagioclase vein in Piece 5.

Structures:
Mf>V; Mf>Ic>V
Most of the section displays a coarse-grained igneous texture with no magmatic foliation, cut by a vein at the bottom of Piece 5. The top of the section contains a very fine-grained material, continuous with the previous section (178R-6), intrusive (cross-cuts large crystals of the coarse-grained igneous texture), cut by two late, thin veins.

Core Image



176-735B-178R-8

Interval 839: TROCTOLITIC GABBRO
(see previous section)

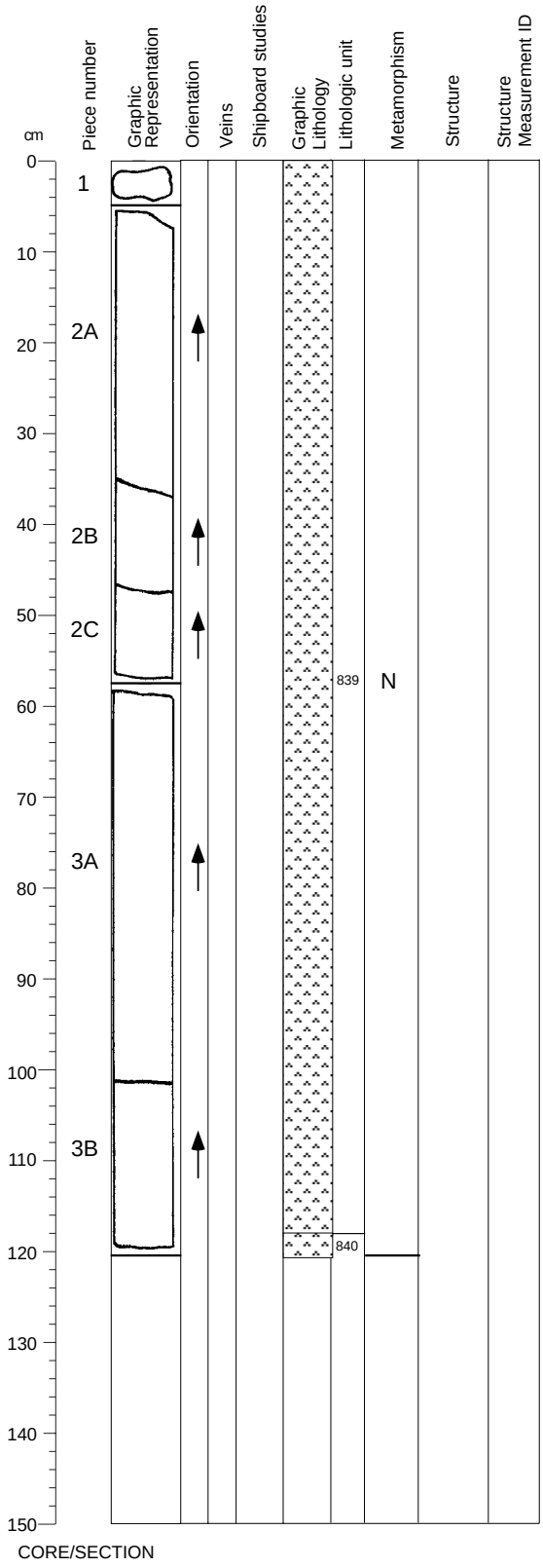
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.5 mm plagioclase vein in Piece 2.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by a vein at the bottom of Piece 2.

Core Image



176-735B-179R-1

Interval 839: TROCTOLITIC GABBRO
(see Section 176-735B-178R-7)
Interval 840: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	179	1	118	3B	1222.08
Lower contact:	179	2	13	1B	1222.23

Thickness (m): 0.15

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	35	30	10	coarse	tabular/ subhedral anhedral
Clinopyroxene	55	45	10	pegmatitic	equant/ subhedral anhedral
Olivine	10	10	4	coarse	elongate/ subhedral anhedral
Opaques	0.8				angular aggregates/ subhedral
Total	100.8*		(see explanatory notes)		

*Major phases estimated to ± 5%)
Grain Size: Pegmatitic
Modal IUGS Name (calculated): Olivine Gabbro

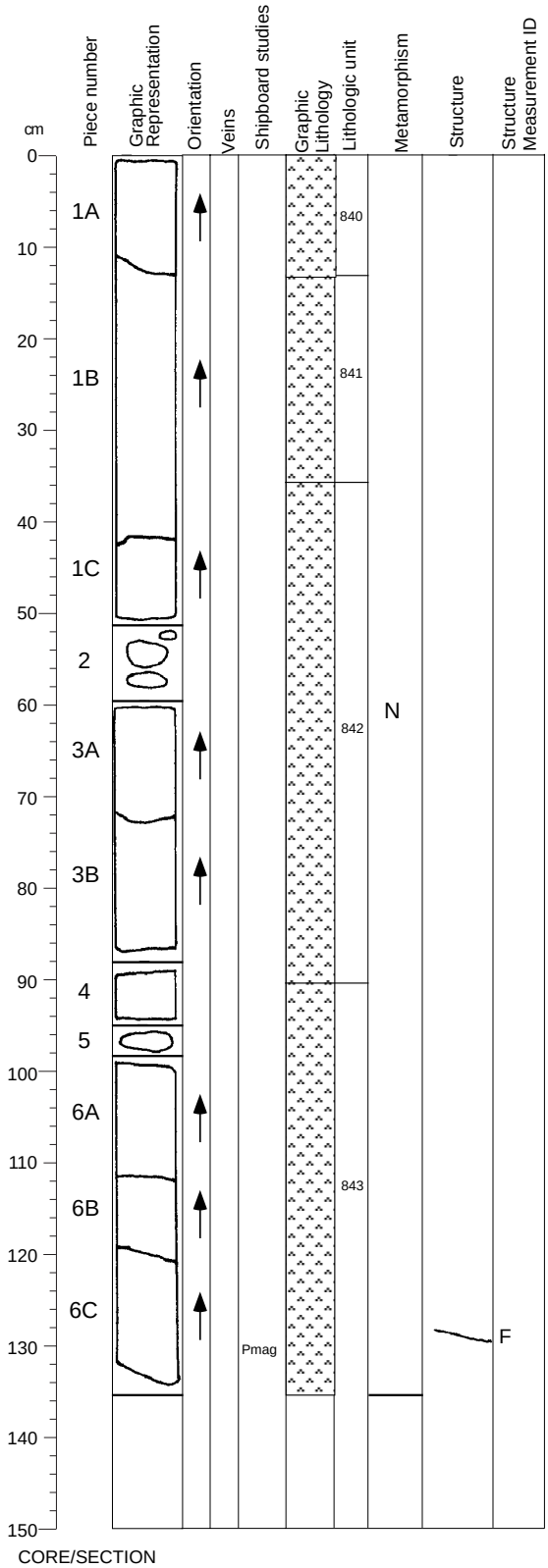
	Type	Distribution
Texture:	granular	N/A

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: negligible (2%).

Structures:
Mf
The entire section displays a coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-179R-2

Interval 840: OLIVINE GABBRO
(see previous section)

Interval 841: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	179	2	13	1B	1222.23
Lower contact:	179	2	35	1B	1222.45

Thickness (m): 0.22

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	10	6	coarse	tabular/ subhedral
Clinopyroxene	25	25	3	coarse	equant/ anhedral
Olivine	20	15	2	medium	equant/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	95.5*		(see explanatory notes)		

*Major phases estimated to ± 5%)
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Grain size and mode variable. Coarser at top and bottom, medium-grained in middle. Locally subophitic. Locally troctolitic.

Interval 842: TROCTOLITIC GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	179	2	35	1B	1222.45
Lower contact:	179	2	90	4	1223.00

Thickness (m): 0.55

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	30	10	coarse	tabular/ anhedral subhedral
Clinopyroxene	15	25	5	coarse	equant/ anhedral oikocrystic
Olivine	30	35	5	coarse	equant/ subhedral anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	100.5*		(see explanatory notes)		

*Major phases estimated to ± 5%)
Grain Size: Coarse
Modal IUGS Name (calculated): Troctolitic Gabbro

	Type	Distribution
Texture:	granular	N/A

Continued next page

Core Image

176-735B-179R-2 (cont'd)

Interval 843: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	179	2	90	4	1223.00
Lower contact:	179	3	5	2B	1223.50

Thickness (m): 0.50

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	35	10	coarse	tabular/ subhedral
Clinopyroxene	30	30	4	coarse	equant/ anhedral
Olivine	20	10	2	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	variable texture	N/A

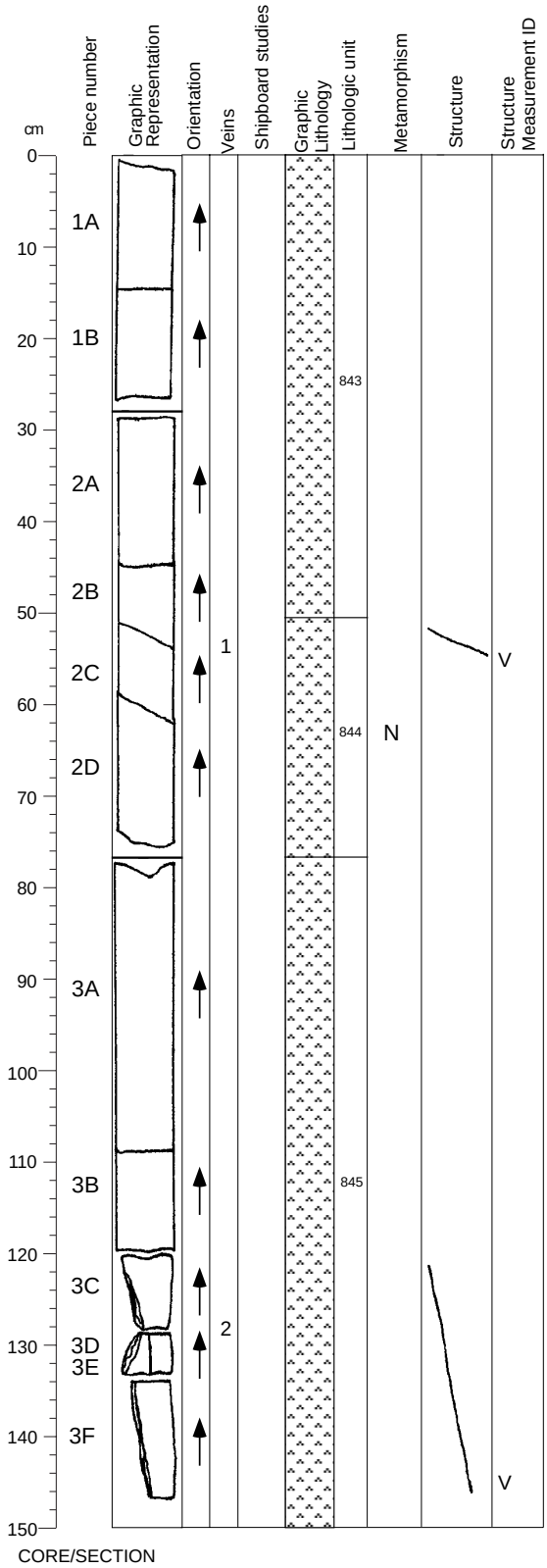
Comments: Coarse-grained. Mostly granular, subophitic, and ophitic. Local intergrowths. Large oxide patch at 27 cm in 179R-3.

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: negligible (2%).

Structures:
Mf>F
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by a thin fault in Piece 6C.

Core Image



176-735B-179R-3

Interval 843: OLIVINE GABBRO
(see previous section)
Interval 844: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	179	3	5	2B	1223.50
Lower contact:	179	3	76	2C	1224.21

Thickness (m): 0.71

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	15	3	coarse	tabular/ subhedral
Clinopyroxene	40	25	3	coarse	equant/ anhedral
Olivine	10	10	1	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	100.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro
Type: granular — Distribution: N/A
Comments: Mostly fine-grained, equigranular olivine gabbro. Coarse patches of olivine and clinopyroxene (wehrlitic?) locally present.

Interval 845: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	179	3	76	2C	1224.21
Lower contact:	180	1	4	1	1230.54

Thickness (m): 6.33

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	20	4	coarse	tabular/ subhedral
Clinopyroxene	25	25	6	coarse	equant/ anhedral
Olivine	20	10	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	100.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro
Type: granular — Distribution: N/A
Comments: Medium to coarse-grained. Locally coarse/pegmatitic patches present at 14-25 cm in 179R-4, 55-76 cm in 179R-4, 43-70 cm in 179R-5, 53-70 cm in 179R-7, and49-59 cm in 179R-8.

Continued next page

Core Image

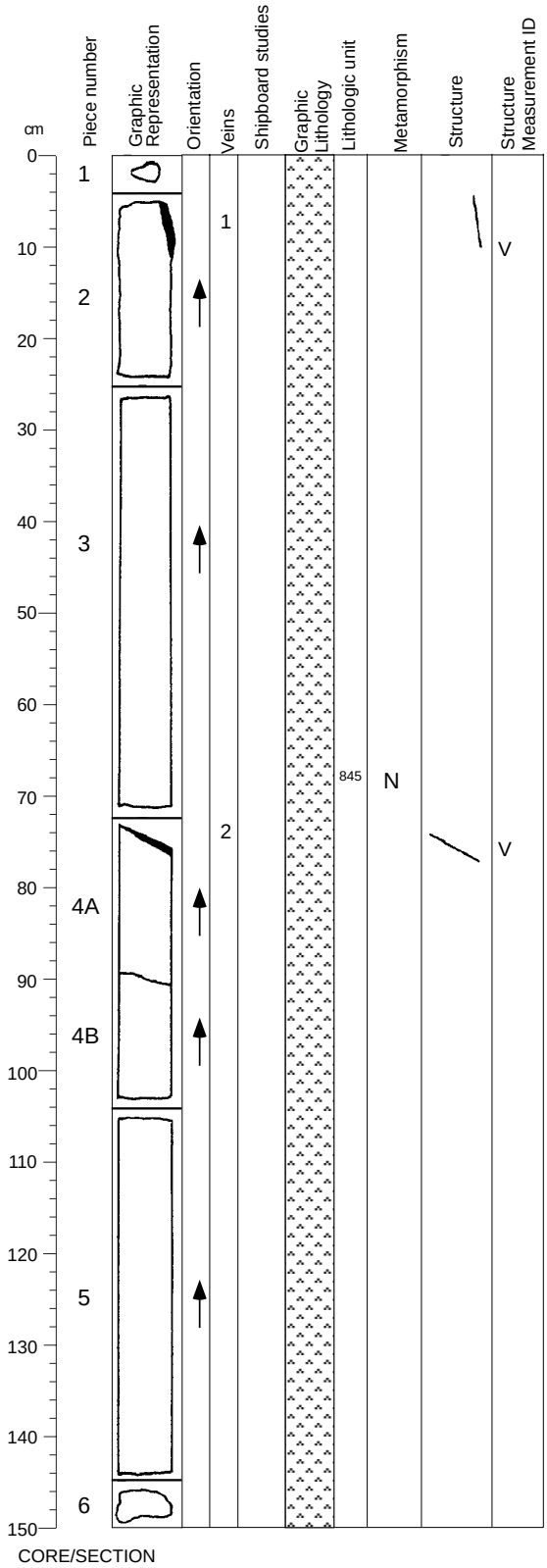
176-735B-179R-3 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near a smectite vein.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.4 mm smectite vein in Piece 2; 3 mm plagioclase + amphibole vein in Pieces 3C to 3F.
Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture with no magmatic foliation, cut by two veins in Pieces 2B and 3C to 3F.

Core Image



176-735B-179R-4

Interval 845: OLIVINE GABBRO
(see previous section)

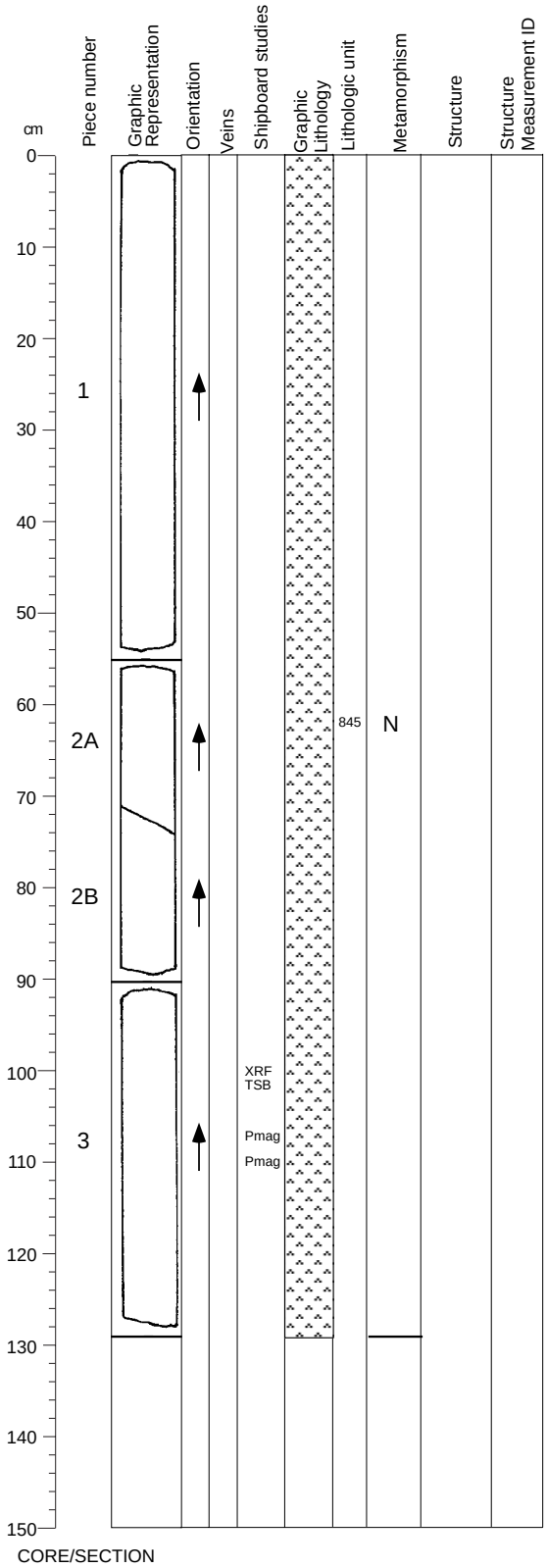
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine and pale green after plagioclase.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
2.5 mm plagioclase+amphibole vein in Piece 2; 1 mm plagioclase vein in Piece 4.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by two veins in Pieces 2 and 4A.

Core Image



176-735B-179R-5

Interval 845: OLIVINE GABBRO
(see Section 176-735B-179R-3)

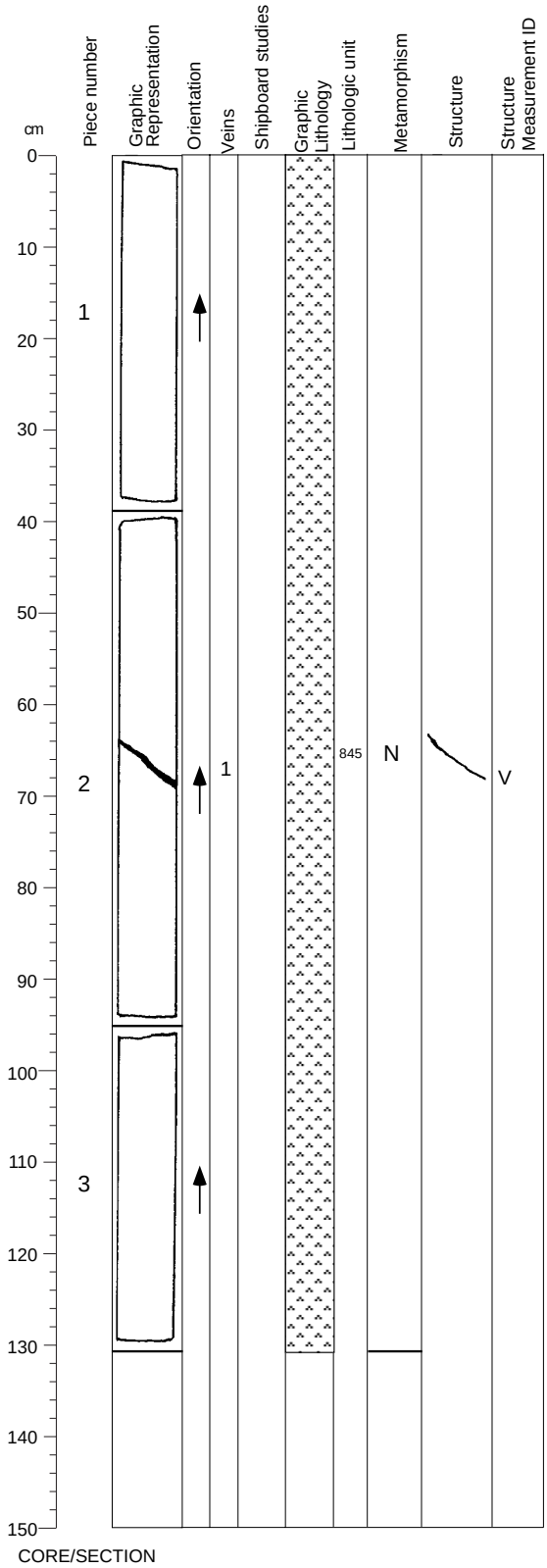
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.2 mm smectite vein in Piece 2.

Structures:
Mf
The entire section displays a medium to coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-179R-6

Interval 845: OLIVINE GABBRO
(see Section 176-735B-179R-3)

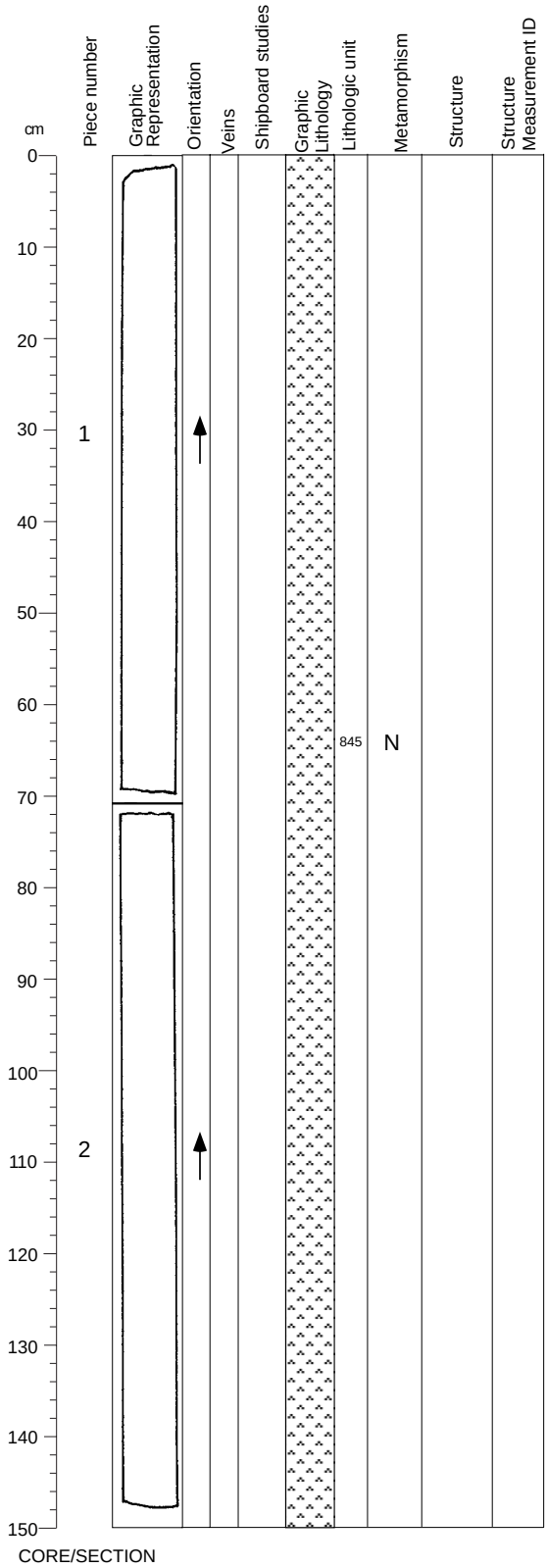
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near a smectite vein.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
2 mm smectite vein in Piece 2.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture with no magmatic foliation cut by a vein at the boundary between Pieces 2A and 2B.

Core Image



176-735B-179R-7

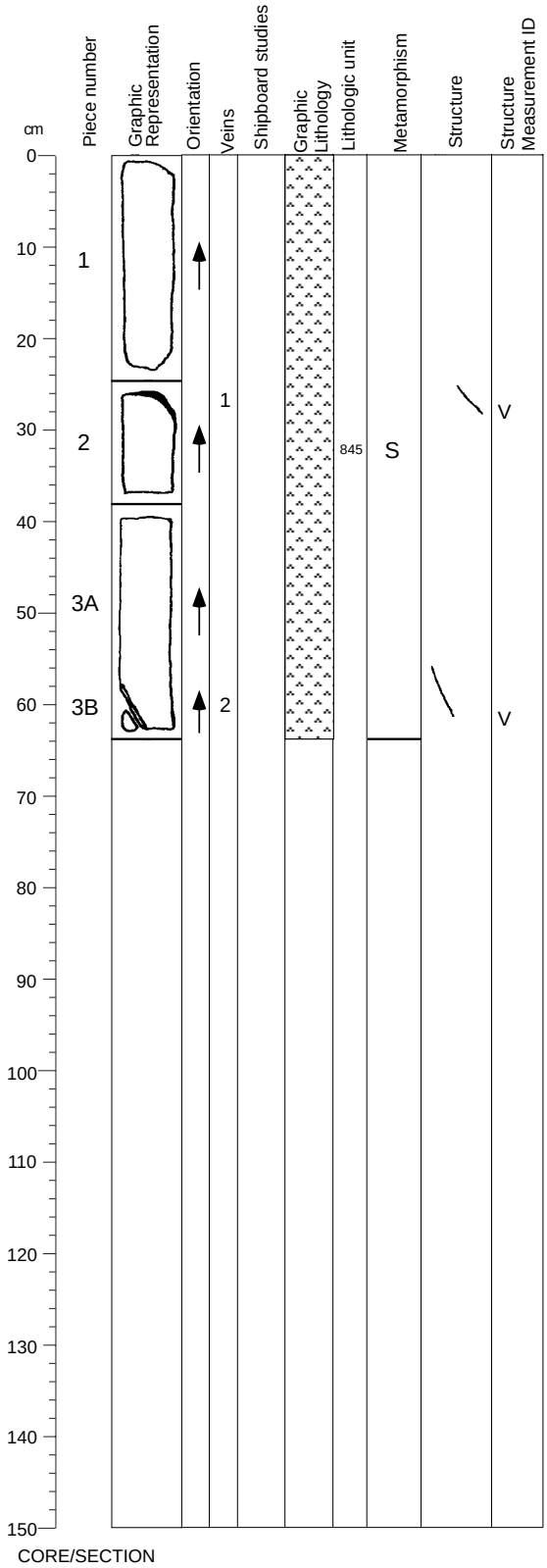
Interval 845: OLIVINE GABBRO
(see Section 176-735B-179R-3)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: negligible (2%).

Structures:
Mf
The entire section displays a medium to coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-179R-8

Interval 845: OLIVINE GABBRO
(see Section 176-735B-179R-3)

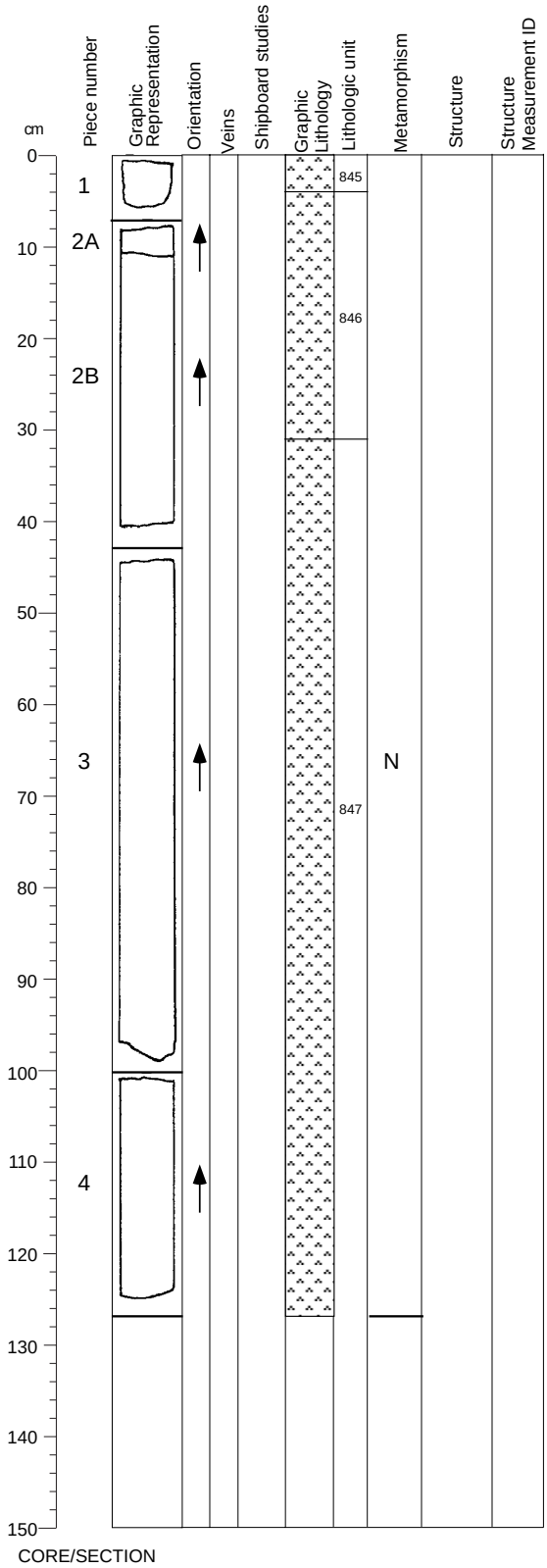
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine near veins.

Background Alteration:
Degree of alteration: slight (3%). 5% of the olivine is altered to amphibole and rare smectite.Clinopyroxene and plagioclase are negligibly altered.

Vein/Fracture Filling:
2 mm plagioclase+amphibole vein in Piece 2; 1 mm smectite vein in Piece 3.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no or a weak magmatic foliation, cut by two veins in Pieces 2 and 3A. Where present (Piece 1), the magmatic foliation dips at 30°.

Core Image



176-735B-180R-1

Interval 845: OLIVINE GABBRO
(see Section 176-735B-179R-3)
Interval 846: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	180	1	4	1	1230.54
Lower contact:	180	1	31	2B	1230.81

Thickness (m): 0.27

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	35	20	8	coarse	tabular/ subhedral
Clinopyroxene	60	35	4	coarse	equant/ anhedral
Olivine	7	10	2	medium	elongate/ anhedral
Opaques	0.8				amoeboidal aggregates/ disseminated
Total	102.8*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Clinopyroxene pegmatitic at top.

Interval 847: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	180	1	31	2B	1230.81
Lower contact:	180	2	29	1A	1232.07

Thickness (m): 1.26

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	5	coarse	tabular/ subhedral
Clinopyroxene	30	35	3	coarse	equant/ anhedral
Olivine	15	10	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Mostly granular, locally intergranular. Mode variable.

Continued next page

Core Image

176-735B-180R-1 (cont'd)

Alteration:
Dark green amphibole:
- Total Percent: <1
- Mode of occurrence: After pyroxene and olivine.
- Comments: As alteration rims.

Brown amphibole:
- Total Percent: trace
- Mode of occurrence: Along pyroxene cleavages, as rims.

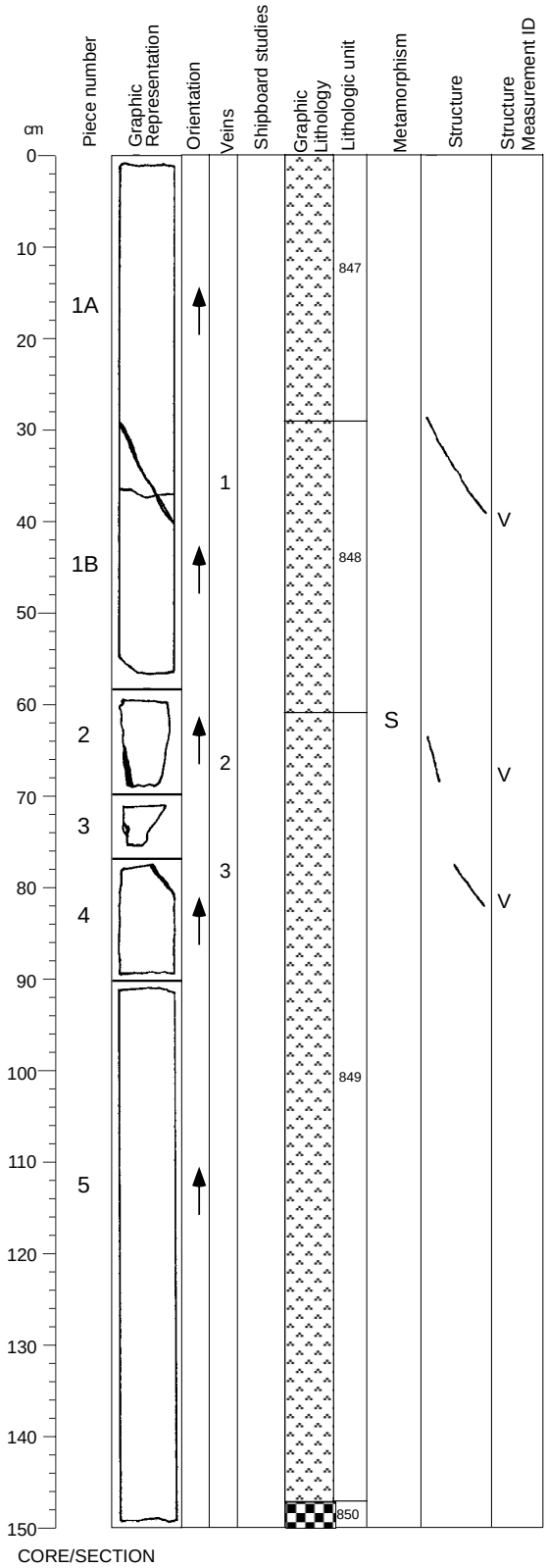
Secondary plagioclase:
- Total Percent: <2
- Mode of occurrence: Replacing primary plagioclase.
- Comments: Irregularly distributed.

Talc and oxides:
- Total Percent: trace
- Mode of occurrence: After olivine in crystal cracks.

Background Alteration:
Degree of alteration: negligible (2%).

Structures:
Mf
The entire section displays a medium- to coarse-grained igneous texture with no magmatic foliation.

Core Image



176-735B-180R-2

Interval 847: OLIVINE GABBRO
(see previous section)

Interval 848: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	180	2	29	1A	1232.07
Lower contact:	180	2	61	2B	1232.39

Thickness (m): 0.32

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	25	8	coarse	tabular/ subhedral anhedral
Clinopyroxene	35	40	5	pegmatitic	equant/ subhedral
Olivine	10	30	5	coarse	prismatic/ subhedral anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	95.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Pegmatitic
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A

Interval 849: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	180	2	61	2B	1232.39
Lower contact:	180	2	147	5	1233.25

Thickness (m): 0.86

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	5	coarse	tabular/ subhedral
Clinopyroxene	25	45	7	coarse	equant/ anhedral
Olivine	8	10	1	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	93.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A

Continued next page

Core Image

176-735B-180R-2 (cont'd)

Interval 850: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	180	2	147	5	1233.25
Lower contact:	180	3	2	1	1233.30

Thickness (m): 0.05

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase		60	20	5	coarse tabular/ subhedral
Clinopyroxene	25	15	10	coarse	equant/ anhedral
Olivine	2	3	1	medium	amoeboidal/ anhedral
Opaques	3				angular aggregates/ subhedral
Total	90*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro

	Type	Distribution
Texture:	granular	N/A

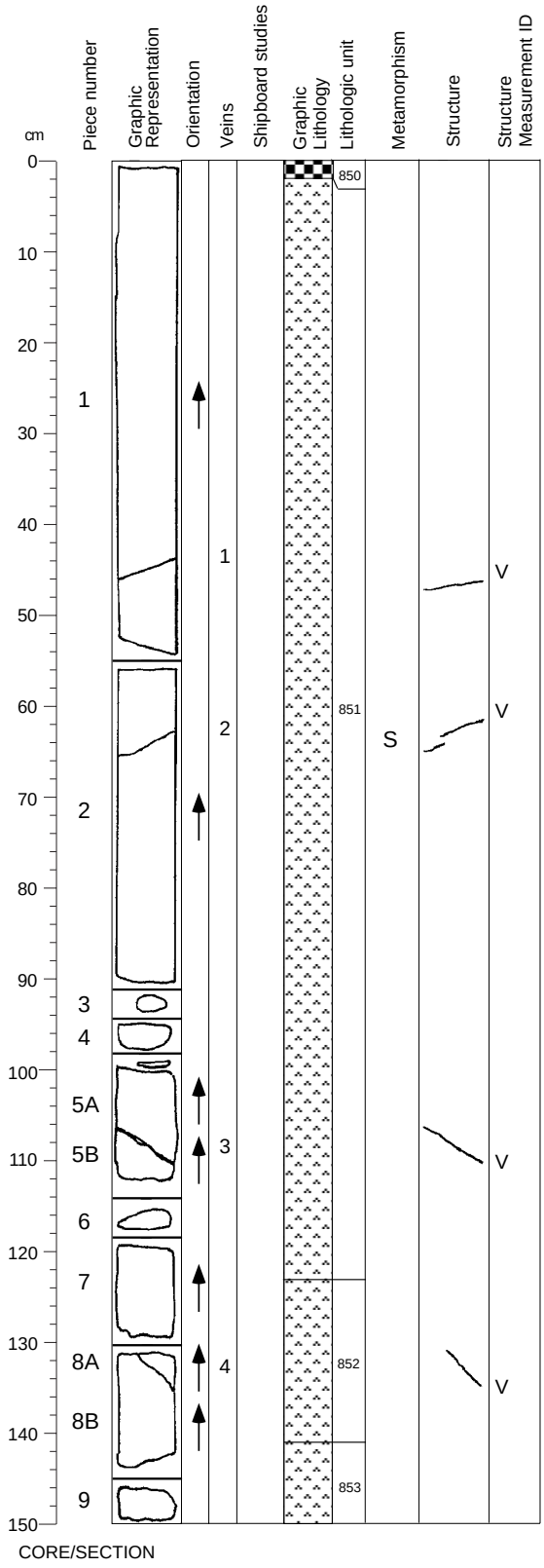
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: slight (3%). 3% of the olivine is altered to amphibole and rare smectite. Clinopyroxene is slightly altered to amphibole (3%). Plagioclase is negligibly recrystallized (2%).

Vein/Fracture Filling:
2 mm plagioclase + amphibole vein in Pieces 1 to 2.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by veins in Pieces 1A to 4.

Core Image



176-735B-180R-3

Interval 850: OXIDE GABBRO
(see previous section)

Interval 851: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	180	3	2	1	1233.30
Lower contact:	180	3	123	7	1234.51

Thickness (m): 1.21

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	30	5	coarse	tabular/ subhedral
Clinopyroxene	25	30	3	coarse	equant/ anhedral
Olivine	8	10	1	medium	elongate/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	93.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A

Comments: Locally medium-grained patches present.

Interval 852: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	180	3	123	7	1234.51
Lower contact:	180	3	141	8B	1234.69

Thickness (m): 0.18

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	25	8	coarse	tabular/ subhedral anhedral
Clinopyroxene	35	70	10	coarse	tabular/ subhedral oikocrystic
Olivine	7	10	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	92.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Pegmatitic
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A

Continued next page

Core Image

176-735B-180R-3 (cont'd)

Interval 853: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	180	3	141	8B	1234.69
Lower contact:	180	5	20	2	1236.48

Thickness (m): 1.79

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase		55	20	5	coarse tabular/ subhedral
Clinopyroxene	30	25	5	coarse	equant/ anhedral
Olivine	6	5	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	91.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

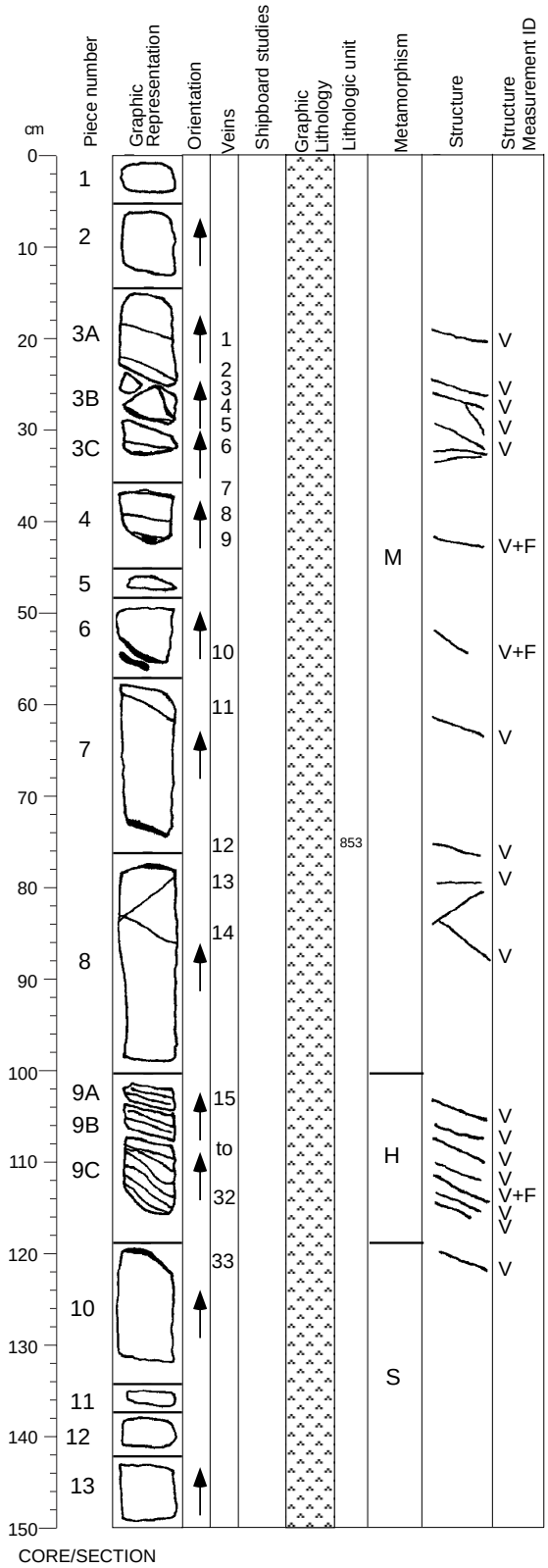
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: After olivine in crystal cracks.
Smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite after olivine and pale green after plagioclase.

Background Alteration:
Degree of alteration: slight (5%). 10% of the olivine is altered to amphibole and rare smectite. Clinopyroxene is slightly altered to amphibole (3%). Plagioclase is negligibly recrystallized (2%).

Vein/Fracture Filling:
0.2-0.3 mm smectite veins in Pieces 1, 2, 5, and 8.

Structures:
Mf>V
The entire section displays a medium- to coarse-grained igneous texture with no magmatic foliation, cut by a few veins in Pieces 1, 2, 5A to 5B and 8A to 8B.

Core Image



176-735B-180R-4

Interval 853: OLIVINE GABBRO
(see previous section)

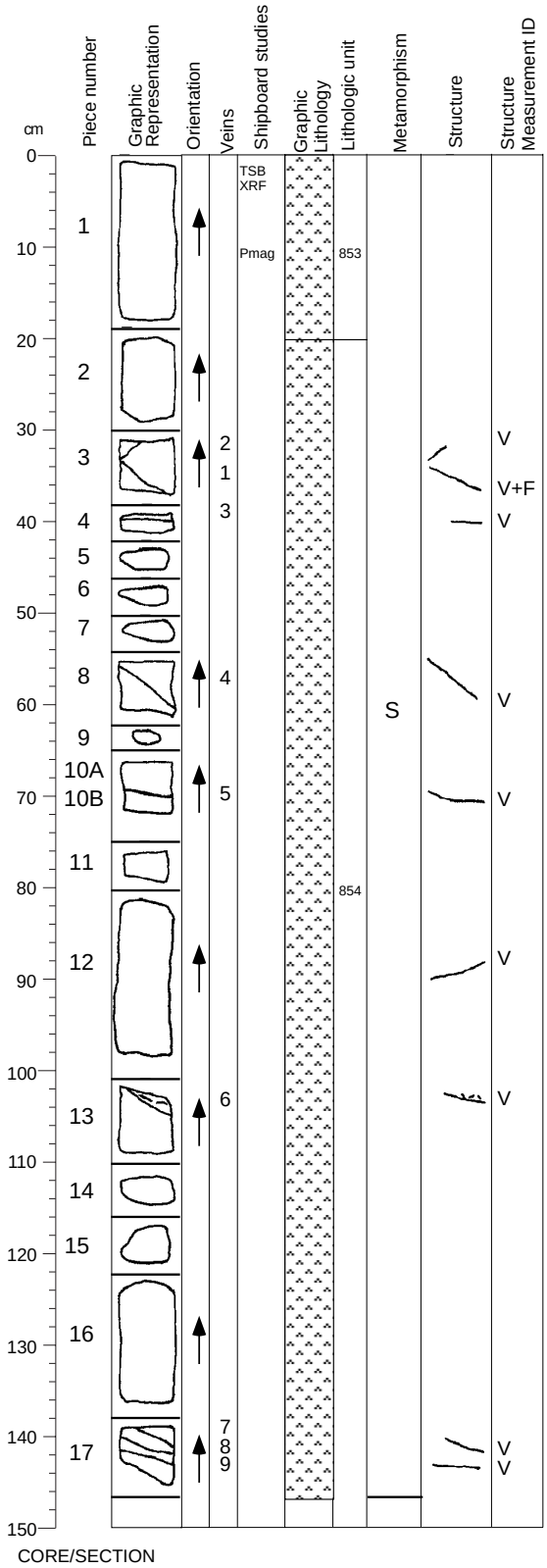
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <20
Mode of occurrence: 15% dark green smectite after olivine and some pyroxene, and 5% after plagioclase.
Comments: Around smectite veins.
Sulfides:
Total Percent: <1
Mode of occurrence: Associated with smectites in olivine pseudomorphs.

Background Alteration:
Degree of alteration: slight to high (8 to 70%). Pieces 1 to 8: 50% of the olivine is altered to amphibole, oxide and abundant smectite. Clinopyroxene is significantly altered to amphibole and smectite (6%). Plagioclase is slightly recrystallized and altered to smectite near veins (5%). Piece 9: Olivine is completely altered, and between 50 and 60% of the plagioclase and clinopyroxene are replaced mainly by smectite. Pieces 10 to 13: Slight alteration (8%). 20% of the olivine is altered to amphibole and smectite. Clinopyroxene is slightly altered to amphibole (3%). Plagioclase is negligibly recrystallized (2%).

Vein/Fracture Filling:
0.1-3 mm smectite veins in Pieces 3, 4, 6, 7, 8, 9, and 10; smectite vein net in Piece 9; 0.3-3 mm altered plagioclase veins in Pieces 8 and 6.

Structures:
Mf>V>F
The section displays a coarse-grained igneous texture with no magmatic foliation. The igneous texture is cut by an extensive set of veins over the entire section; a few of the veins grade into faults.

Core Image



176-735B-180R-5

Interval 853: OLIVINE GABBRO
(see Section 176-735B-180R-3)
Interval 854: OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	180	5	20	2	1236.48
Lower contact:	181	1	70	11	1240.90

Thickness (m): 4.42

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	30	5	coarse	tabular/ subhedral
Clinopyroxene	30	45	3	coarse	equant/ anhedral
Olivine	5	12	1	medium	amoeboidal/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	100.6*		(see explanatory notes)		

*Major phases estimated to ± 5%)
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Mode and grain size somewhat variable.

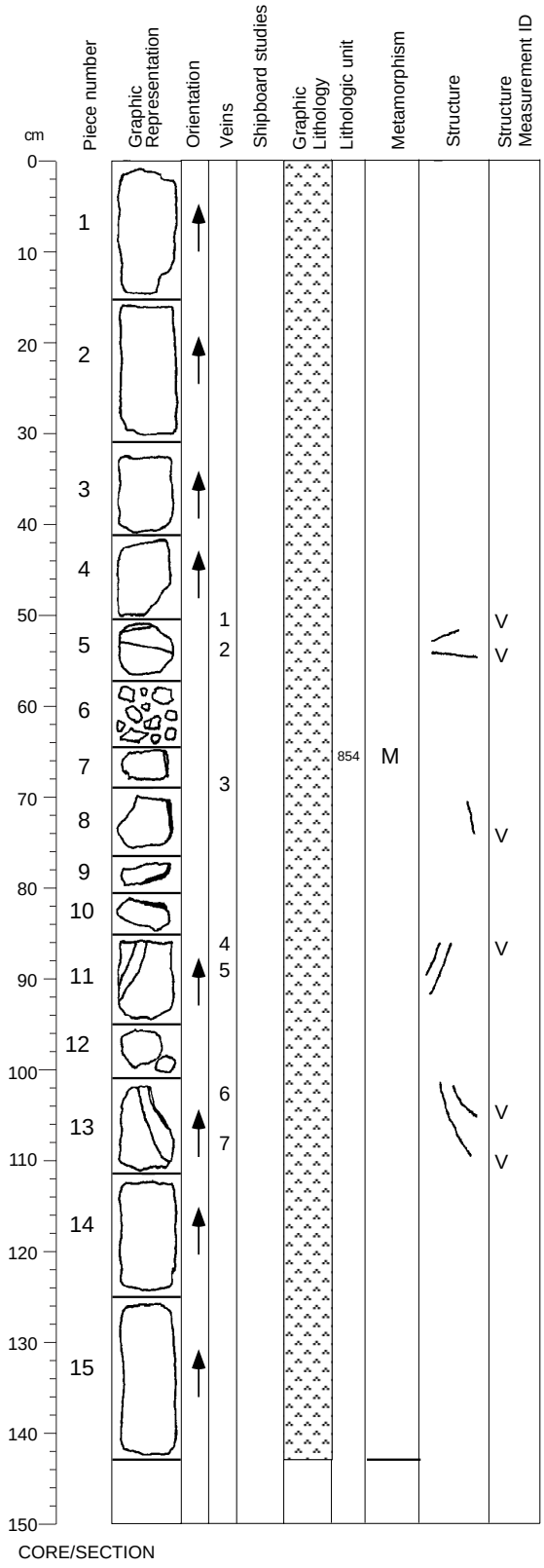
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <5
Mode of occurrence: Dark green smectite after olivine and pale green smectite after plagioclase.
Comments: Near smectite veins.

Background Alteration:
Degree of alteration: slight (8%). 20% of the olivine is altered to amphibole and smectite. Clinopyroxene is slightly altered to amphibole (3%). Plagioclase is negligibly recrystallized (2%).

Vein/Fracture Filling:
0.1-1 mm smectite veins in Pieces 3, 4, 8, 10, and 17; 0.2 mm amphibole vein in Piece 3; 4 mm altered plagioclase vein in Piece 13.

Structures:
Mf>V>F
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by a series of veins. A vein in Piece 3 grades into a fault.

Core Image



176-735B-180R-6

Interval 854: OLIVINE GABBRO
(see previous section)

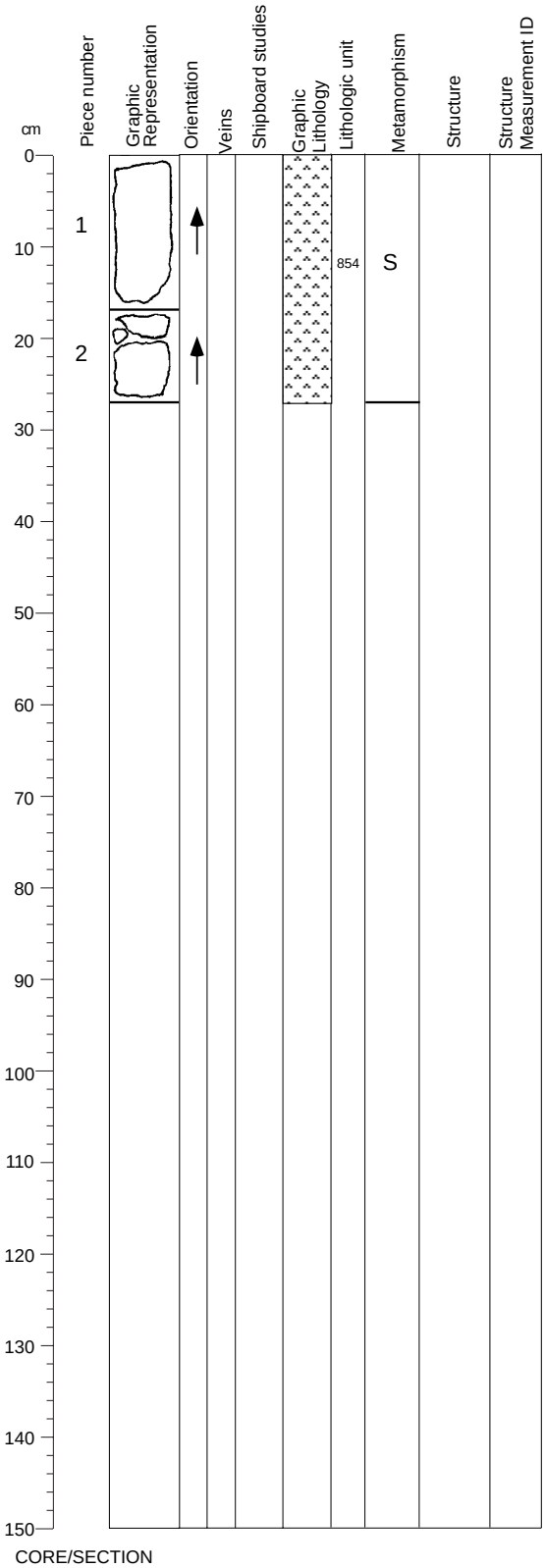
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: 10
Mode of occurrence: Dark green smectite after olivine and pale green smectite after plagioclase.
Comments: Near smectite veins.
Sulfides:
Total Percent: trace.
Mode of occurrence: Associated with smectite after olivine.

Background Alteration:
Degree of alteration: moderate (14%). 35% of the olivine is altered to amphibole and smectite. Clinopyroxene is slightly altered to amphibole and smectite (6%). Plagioclase is slightly recrystallized and altered to smectite (4%).

Vein/Fracture Filling:
0.5-1.5 mm smectite veins in Pieces 5-11 and 13.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture with no magmatic foliation, cut by an extensive network of veins.

Core Image



176-735B-180R-7

Interval 854: OLIVINE GABBRO
(see Section 176-735B-180R-5)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectite:
Total Percent: <2
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: moderate (5%). 10% of the olivine is altered to amphibole and smectite. Clinopyroxene is negligibly altered to amphibole (2%). Plagioclase is negligibly recrystallized and altered to smectite (2%).

Structures:
Mf
This short section displays a coarse-grained igneous texture with no magmatic foliation.