

173-1070A- 7R- 2 (Piece 9, 80-82 cm)**No. 186**

OBSERVER: HEB, SKE, RUB

ROCK NAME: Carbonate-rich breccia with serpentinite clasts.

GRAIN SIZE: Medium to coarse-grained.

TEXTURE: Breccia of rock fragments in a crystalline matrix.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Serpentine	15	-	-	MET/VEIN	Mesh texture: pseudomorphs after olivine. Bastite: pseudomorph after orthopyroxene.
Carbonate	85	0.2-15	Granular/radial	MET	Spheroids of radiating fibers.
Spinel	<1	0.5	Anhedral	IG	Red brown.
Fe-oxides	<2	<0.3	Granular	MET	Opaque to yellow brown.

STRUCTURAL COMMENTS: Breccia is matrix-supported. Clasts are small (<1 mm) angular rock fragments. Matrix calcite occurs as (i) crystalline aggregate, (ii) distinct 1-2 mm diameter spheroids of radiating fibers, and (iii) a thin, often optically continuous grain boundary film. Many other calcite crystals show radial extinction.



Site 1070

173-1070A-7R-3 (Piece 1, 12-16 cm)

No. 180

OBSERVER: GAR, FRO, RUB

ROCK NAME: Serpentinized peridotite.

GRAIN SIZE: Formerly medium-grained

TEXTURE: Serpentine mesh with bastite pseudomorphs.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Serpentine	65	0.1	Mesh	MET	Both replacing olivine and as vein fill.
Bastite	25	up to 5	Anhedral	MET	Replacing clinopyroxene (?).
Bastite	5	up to 0.5	Anhedral	MET	Replacing orthopyroxene (?).
Opaque minerals	5	up to 2	Granular	MET	Replacing spinel, olivine and pyroxene.
Tremolite	<1	0.1		MET	Corona around spinel.

STRUCTURAL COMMENTS:

Slightly bent and kinked lamellae in bastite. Veins filled with fibrous serpentine, opaque mineral and tremolite(?).

173-1070A-7R-3 (Piece 6 , 89-93 cm)**No. 187**

OBSERVER: GAR, SKE, RUB

ROCK NAME: Breccia with serpentized peridotite clasts.

GRAIN SIZE: Medium to coarse-grained.

TEXTURE: Breccia of rock fragments in a crystalline matrix.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Carbonate	85	0.2-15	Granular/radial	MET	Spheroids of radiating fibers in matrix and veins.
Serpentine	15	0.1	Mesh	MET	Pseudomorphs after olivine, mesh texture and orthopyroxene.
Spinel	<1	0.5	Anhedral	IG	Red brown.
Opaque minerals	<2	<0.3	Granular	MET	Black to brown, replacing spinel and olivine.

STRUCTURAL COMMENTS: Breccia is largely matrix supported. 15% rock fragments and clasts range in size from <0.1 mm to 3 mm. 85% matrix calcite occurs as (i) crystalline aggregate (many grains show radiating extinction) and (ii) a grain boundary film. Vein calcite occurs as partially formed spheroidal aggregates of radiating fibers.

Site 1070

173-1070A-8R-1 (Piece 2C, 48-52 cm)

No. 181

OBSERVER: GAR, FRO, RUB

ROCK NAME: Serpentinized peridotite.

GRAIN SIZE: Formerly medium-grained.

TEXTURE: Serpentine mesh with bastite pseudomorphs.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Serpentine	65	0.1	Mesh	MET	Replacing olivine.
Clinopyroxene	2	up to 5	Anhedral	IG	Partially replaced by bastite.
Bastite	25	up to 2	Anhedral	IG	Replacing orthopyroxene (?).
Spinel	<1	0.1	Granular	IG	Partially replaced by opaque mineral.
Plagioclase	<1	?	?	MET	Replaced by cloudy material , possibly hydrogarnet.
Calcite	5	0.3	Subhedral	VEIN	

STRUCTURAL COMMENTS: Relict high-T foliation oblique to the length of the thin section suggested by alignment of elongate spinel grains. Serpentine mesh replaces olivine. "Pseudo-foliation" formed by preferred orientation of serpentine veinlets parallel to the length of the thin section. Several generations of veins. Earlier veins filled with serpentine and opaque mineral. Later veins, up to 0.5 mm thick, filled with calcite exhibiting radial extinction.

173-1070A-8R-4 (Piece 1, 9 -13 cm)**No. 182**

OBSERVER: GAR, FRO, RUB

ROCK NAME: Breccia with calcite matrix and leucocratic metagabbro clasts.

GRAIN SIZE: Original igneous rock was coarse-grained.

TEXTURE: Clasts are inequigranular.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Clasts:					
Amphibole	30	<10	Subhedral	IG	
Plagioclase	50	<10	Subhedral	IG	Partially replaced by chlorite and sericite.
Chlorite	15	0.2	Platy.	MET	Replacing plagioclase, radial texture.
Sericite	5	0.05	Platy	MET	Replacing plagioclase.
Matrix:					
Calcite	100	0.3	Subhedral		Matrix of the breccia.

STRUCTURAL COMMENTS: Matrix-supported breccia (80% matrix and 20% clasts). Clasts are angular to subangular and highly fractured. Some clasts are "jigsaw" brecciated. Matrix is calcite, often with radial extinction. Fragmentation of chrysotile fiber vein suggests that serpentinization was, at least in part, before brecciation.

Site 1070

173-1070A- 8R-4 (Piece 6C,115-118 cm)

No. 183

OBSERVER: GAR, FRO, RUB

ROCK NAME: Breccia with clasts of serpentized peridotite .

GRAIN SIZE: The original igneous grain size was medium-grained.

TEXTURE: Breccia of rock fragments in a crystalline matrix.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Fragments:					
Serpentine	70	0.1	Mesh	MET	Replacing olivine as mesh texture. Chrysotile veins.
Bastite	20	2.5	Anhedral	IG	Replacing pyroxenes <1% preserved relicts.
Spinel	5	5	Granular	IG	Surrounded by a pseudomorphed plagioclase corona.
Hydrogarnet?	<1	0.1	Dust	MET	Replacing plagioclase?
Matrix:					
Calcite	100	0.5		Granular	

STRUCTURAL COMMENTS: Matrix-supported breccia. Clasts (60%) are mostly angular to subrounded. Some (0.5-20 mm) serpentinite fragments are highly fractured. Individual mesh lamellae were severed during brecciation. Some clasts are "jigsaw" brecciated. In some serpentinite clasts, bastite pseudomorphs have bent lamellae and undulatory extinction. Matrix (40%) is crystalline calcite.

173-1070A-9R-2 (Piece 2B, 18-22 cm)**No. 188**

OBSERVER:BEA, SKE, RUB

ROCK NAME: Pegmatitic gabbro

GRAIN SIZE: Coarse-grained

TEXTURE: Hypidiomorphic

MINERALOGY: ORIGINAL

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Gabbro					
Plagioclase	65	<1	Sub/anhedral	IG/MET	Largely albitized.
Amphibole	25	<1-10	Anhedral	IG/MET	Mostly bright red-brown, locally green margins, rims clinopyroxene and surrounds ilmenite.
Clinopyroxene	5	2-5	Anhedral	IG	Blocky, generally moderately altered crystals, usually rimmed by amphibole.
Ilmenite	5	<1-3	Anhedral	IG	Contains very fine and sparse hematite exsolution lamellae.
Veins					
Chlorite/sericite	70	Micro		MET/VEIN	Occurs as replacement of plagioclase and amphibole and in interstitial aggregates, probable microcrystalline constituent of veins and plagioclase alteration rims.
Vesuvianite	30	<2 mm		MET/VEIN	Occurs in large vein, anomalous blue colors, biax (-).

STRUCTURAL COMMENTS: Plagioclase shows some undulatory extinction, fractures and sericitization. Cataclasis of vesuvianite in microcrystalline vein.

COMMENTS: More strongly altered than No. 189. Amphibole is partly replaced by virtually colorless chlorite. Optical measurement on one suitable grain suggests An40 or above. If An content is above 50 this rock is correctly termed gabbro. If An content is under 50 the correct term would be diorite.

Site 1070

173-1070A- 9R- 2 (Piece 16, 122- 125 cm)

No. 190

OBSERVER: HEB, RUB

ROCK NAME: Metamorphosed amphibole gabbro.

GRAIN SIZE: Very coarse-grained.

TEXTURE: Pegmatitic.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Amphibole	30	0.4-15	Anhedral to Euhedral	IG	Red brown , rimmed by secondary green to colorless amphibole, also replaced by smectite.
Amphibole	5	0.3-0.6	Anhedral	MET	Green to blue-green, replacing igneous amphibole.
Chlorite	10	<0.4	Platy	MET/VEIN	Pseudomorph after plagioclase, replacing ilmenite. Different colors : green, gray, colorless.
Ilmenite	3	0.3-11	Subhedral	IG	Partly replaced by magnetite.
Biotite	<2	0.5	Euhedral	IG	Red, strong pleochroic, associated with ilmenite.
Prehnite	30	0.4-50 mm	Prismatic	MET	Partly radiating sheaves, undulose. Either vein or replacement of calcite.
Magnetite	<2	<0.2	Granular	MET/VEIN	Associated with metamorphic amphibole, to chlorite and replacing ilmenite.
Muscovite	5	0.1-0.6	Platy	MET	Replacing plagioclase, finer-grained phases could be termed sericite.
Vesuvianite	<1	0.2	Euhedral	MET/VEIN	Included in former plagioclase but also in veins associated with chlorite and zeolites (two types: analcite and laumontite?).
Zeolite	10	0.2-0.7	Euhedral	MET/VEIN	Replacing plagioclase, filling veins, radial texture.
Smectite	5	-	Platy	MET	Yellow-brown, replacing amphibole.

STRUCTURAL COMMENTS: Strongly fractured, veined and altered.

COMMENTS: Three stages of metamorphic events can be recognized: (i) static amphibolite facies recrystallization (red brown amphibole); (ii) dynamic, amphibolite facies recrystallization (blue-green amphibole) ; (iii) zeolite facies overprint. Veins: filled with spectacular radial textures involving prehnite, chlorite, zeolite and euhedral vesuvianite.

173-1070A- 9R-2 (Piece 13 ,106-106 cm)

No. 189

OBSERVER:BEA, FRO, RUB

ROCK NAME:Pegmatitic gabbro.

GRAIN SIZE: Very coarse-grained.

TEXTURE: Pegmatitic.

MINERALOGY:

ORIGINAL:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Gabbro					
Plagioclase	65	<1-20	Subhedral	IG	Zoned, strained, some recrystallization at grain boundaries. altering to chlorite, sericite.
Amphibole	25	<1-10	Anhedral	IG/MET	Very strongly zoned from red-brown cores to blue-green rims. Often occurs in polycrystalline aggregates, rimming clinopyroxene and surrounding ilmenite.
Clinopyroxene	5	2-5	Anhedral	IG	Blocky, generally somewhat altered crystals, usually rimmed by amphibole
Ilmenite	5	<1-3	Anhedral	IG	Contains very fine and sparse hematite exsolution lamellae.
Veins					
Chlorite	50		Micro/crysto-crystalline	MET/VEIN	Occurs as replacement of plagioclase and in interstitial aggregates. probably major constituent of microcrystalline vein.
Calcite	<20	<1	Anhedral	VEIN/MET?	Mostly in vein with microcrystalline chlorite? also locally interstitial to amphibole.
Isotropic phase	10	1-2	Interstitial	MET	Probably analcite or wairakite, "ghost" lamellar twinning.
Sericite	20	<0.1	Anhedral	MET	Replacement of plagioclase, especially at margins of grains.

STRUCTURAL COMMENTS: Plagioclase shows strong undulatory extinction and deformation twins. Plagioclase sub-grains and polygonal recrystallized grains (0.2 mm) occur along some grain boundaries. Some of the brown amphibole grains are also strained (undulatory to patchy extinction). Polygonal, 0.1-0.2 mm sized, brown amphibole grains may be products of dynamic recrystallization. 2 mm wide vein filled by (1) a mineral forming radial-fibrous, spherical aggregates and (2) calcite.

COMMENTS: The analcite/wairakite at least partly replaces plagioclase and is intergrown with curved fibers of amphibole.

Site 1070

173-1070A-9R-CC

OBSERVER: GAR, FRO

ROCK NAME: Serpentinized peridotite.

GRAIN SIZE: Formerly, medium-grained.

TEXTURE: Serpentine mesh with bastite pseudomorphs.

MINERALOGY:

ORIGINAL:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Serpentine	95	0.1	Subhedral	MET	Serpentine mesh replacing olivine. Bastite pseudomorphs after pyroxene.
Spinel	5	0.7	Granular	IG	Red-brown.
Magnetite	1	<0.1		MET	Partly replacing spinel in veinlets, also disseminated.

STRUCTURAL COMMENTS: Bent lamellae and undulatory extinction in bastite. Vein fill is chrysotile in serpentine and chlorite in spinel.

173-1070A- 10R-1 (Piece 10B , 137- 138 cm)**No. 184**

OBSERVER: HEB, FRO, RUB

ROCK NAME: Serpentinized lherzolite

GRAIN SIZE: Fine- to coarse-grained. Original grain size was medium to coarse-grained

TEXTURE: Serpentine mesh with bastite pseudomorphs.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Serpentine	85	-	-	MET/VEIN	Pseudomorphs after olivine: mesh texture (pseudo-foliation).
Bastite	15	0.3-5	Anhedral	MET	Pseudomorphs after orthopyroxene.
Clinopyroxene	<1	0.2-0.4	Anhedral	IG	Relicts.
Orthopyroxene	tr	0.5-7	Anhedral	IG	Relicts, preserved kink bands.
Spinel	<1	<0.5	An-euhedral	IG	Red brown.
Magnetite	<1	<<0.2	Granular	MET	Associated with mesh texture serpentine, rims around spinel and as inclusions parallel to preserved cleavages in bastite.
Talc<1	0.2	Platy	MET		
Carbonate	<1	0.3	Granular	MET/VEIN	Filling cores of mesh texture, anastomosed veins.
Chlorite	<1	<<0.2	Platy	MET/VEIN	Apple green (kammererite?), as veinlets.

STRUCTURAL COMMENTS: Very weak foliation suggested by alignment of spinel relicts and elongate bastite pseudomorphs parallel to the length of the thin section. Bastite pseudomorphs are partly kinked and show undulatory extinction.

COMMENTS: Cores of serpentine mesh are filled with isotropic serpentine or carbonate. Chrysotile veinlets parallel to mesh texture define a pseudo-foliation.

Site 1070

173-1070A-10R-2 (Piece 9C, 77-81 cm)

No. 185

OBSERVER: GAR, FRO, RUB

ROCK NAME: Partially serpentinized olivine pyroxenite.

GRAIN SIZE: Formerly medium to coarse-grained.

TEXTURE: Serpentine mesh with bastite pseudomorphs.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Orthopyroxene	40	up to 10	Granular	IG	Partially replaced by bastite.
Clinopyroxene	25	up to 5	Granular	IG	Partially replaced by bastite.
Serpentine	30	0.1	Mesh	MET	Replacing olivine.
Spinel	<1	1	Granular	IG	Red-brown spinel.
Opakes	1	1	Granular	MET	Replacing spinel and olivine.
Calcite	5	0.3	Anhedral		In veins and replacing olivine.

STRUCTURAL COMMENTS: No foliation. Elongated mesh texture in former olivine produces a "pseudo-foliation". Anastomosing veins filled with serpentine (older) and calcite (younger). Calcite occurs also in "windows" of mesh texture. Slightly bent lamellae in some pyroxene crystals.

COMMENTS: Opaque minerals include fine-grained magnetite and larger sulfide grains.

173-1070A-10R-CC

OBSERVER: ABE, FRO

ROCK NAME: Serpentinized peridotite.

GRAIN SIZE: Formerly medium-grained.

TEXTURE: Serpentine mesh with bastite pseudomorphs.

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Spinel	1	0.1-0.7	Anhedral	IG	Reddish brown.
Clinopyroxene	7	<3	Anhedral	IG	
Serpentine	75	<<1	Mesh	MET	Replaces 75% olivine + 25% pyroxene.
Calcite	5	<<1		MET	Replacing orthopyroxene and relict olivine, and in veins.
Fe-oxide	5	< 0.5	Sub- anhedral	MET	Associated with serpentine, magnetite?
Chlorite	1	<<1	Fibrous	MET	Apple-green color.
Dusky phase	5	<<1		MET	Surrounding orthopyroxene.
Olivine	1	0.1		IG	Relict cores

STRUCTURAL COMMENTS: Relict of high T foliation defined by alignment of elongated pyroxene/bastite grains. Olivine in cores of serpentine mesh. Veins filled with serpentine (older) and calcite (younger). Calcite veins cut mesh texture.

173-1070A-11R- 2 (Piece 5, 91- 94 cm)**No. 191**

OBSERVER: HEB, FRO, RUB

ROCK NAME: Contact between serpentinitized peridotite/ metamorphosed gabbro.

GRAIN SIZE: Serpentinite: formerly medium-grained. Gabbro: medium-grained.

TEXTURE: Serpentinite: serpentine mesh with bastites pseudomorphs. Gabbro: inequigranular.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
1) Serpentinized peridotite					
Olivine	tr	0.3	Anhedral	IG	
Clinopyroxene	tr	0.4	Anhedral	IG	
Serpentine	80	-	-	MET	Pseudomorphs after olivine, mesh texture, chrysotile veinlets.
Spinel	<1	0.3	Euhedral	IG	Red brown.
Bastite	10	0.2-0.4	Anhedral	MET	Pseudomorphs after pyroxene.
Magnetite	5	0.1-0.3	Euhedral	MET	Associated with mesh texture serpentine.
Chlorite	5	0.3	Platy	MET/VEIN	Deep green to apple-green, in veinlets around pseudomorphs after pyroxene and near contact with gabbro.
Amphibole	<1	0.3	Fibrous	MET	Associated with pseudomorphs after pyroxene.
2) Metamorphosed gabbro					
Amphibole	10	0.3-0.9	Anhedral	IG	Red-brown, relicts of igneous amphibole, partially replaced by green amphibole, chlorite, magnetite and smectite.
Green amphibole	30	0.4	Anhedral	MET	Replacing igneous amphibole, euhedral overgrowth on igneous amphibole.
Biotite	5	0.5	Subhedral	IG	Kinked, partly replaced by amphibole and magnetite.
Magnetite	<2	0.2	Anhedral	MET	Replacing igneous amphibole and in serpentine.
Chlorite	35	0.3	Platy	MET	Colorless, replacing plagioclase, associated with zeolite.
Zeolite	10	0.4	Euhedral	MET	Radial texture, replacing plagioclase, associated with chlorite.
Smectite	10	-	Platy	MET	Dark brown color, replacing amphibole.

STRUCTURAL COMMENTS: Biotite is kinked. The original contact is cut by late serpentine veins. Gabbro is invaded by serpentine and chlorite patches.

173-1070A-12R- 2 (Piece 1A, 51-54 cm)**No. 192**

OBSERVER: HEB, FRO

ROCK NAME: Serpentinized plagioclase lherzolite.

GRAIN SIZE: Formerly medium-grained.

TEXTURE: Serpentine mesh with bastite pseudomorphs.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Olivine	5	0-0.4	Anhedral	IG	Partially replaced by serpentine, mesh texture, twin lamellae.
Clinopyroxene	5	0.4-0.8	Anhedral	IG	Partially replaced by serpentine.
Plagioclase	5	0.7-1	Interstitial	IG	Totally replaced by serpentine surrounding relicts of spinel.
Orthopyroxene	tr	0.3	Anhedral	IG	Partially altered to bastite
Spinel	<1	<0.1-0.3	Anhedral	IG	Irregular, dark red.
Serpentine	70	-	Fibrous	MET/VEIN	Pseudomorphs after olivine, mesh texture , small veinlets cut mesh texture.
Bastite	15	0.1-0.6	Anhedral	MET	Pseudomorphs after pyroxene, interstitial to original olivine.
Magnetite	<2	<0.2	Anhedral	MET	Associated with serpentine, partially replacing spinel.

STRUCTURAL COMMENTS: Mesh texture. Olivine preserved in the "windows" of the mesh. Relict of high-T foliation suggested by alignment of elongate pyroxene/bastite grains parallel to the length of the thin section. Ghost of plagioclase totally replaced by serpentine products.

Site 1070

173-1070A-13R-4 (Piece 4, 100-104 cm)

No. 193

OBSERVER: GAR, FRO

ROCK NAME: Serpentinized lherzolite.

GRAIN SIZE: Formerly medium-grained.

TEXTURE: Serpentine mesh with bastite pseudomorphs.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Olivine	15	4	?	IG	Partially replaced by serpentine.
Clinopyroxene	10	0.7	Interstitial	IG	Partially replaced by bastite.
Orthopyroxene	5	0.7	Interstitial	IG	Partially replaced by bastite.
Spinel	<1	0.6	Granular	IG	Partially replaced by opaque mineral.
Serpentine	65	0.1	Mesh	MET	Replacing olivine, mesh texture.
Plagioclase	<1	0.1		MET	Surrounding orthopyroxene, and totally replaced by hydrogarnet and epidote.
Magnetite	1	<0.01		MET	In matrix and interconnected serpentine/magnetite veinlets.

STRUCTURAL COMMENTS: Mesh texture with olivine preserved in the "windows". Undulatory extinction and some deformation bands in olivine. Bastite is partially kinked and has undulatory extinction. Veins filled with serpentine and fine-grained opaque mineral.

173-1070A-13R-CC

OBSERVER: ABE, RUB

ROCK NAME: Serpentinized peridotite.

GRAIN SIZE: Formerly medium-grained.

TEXTURE: Serpentine mesh with bastite pseudomorphs.

MINERALOGY:

NAME	MODE (%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Olivine	12	<0.4	Anhedral	IG	Original grains (~10 mm) are cut by serpentine mesh texture.
Spinel	1	0.1-0.7	Anhedral	IG	Reddish brown.
Orthopyroxene	2	<7	Anhedral	IG	Surrounded by unidentified dusky material.
Serpentine	73		Mesh	MET	Replaces 75% olivine and pyroxene 20%.
Magnetite (?)	6	< 0.5	Sub- anhedral	MET	Associated with serpentine. Dust-like dissemination.
Chlorite	1	<<1	Fibrous	MET	Apple-green color.
Dusky phase	5	<<1		MET	Surrounding bastite after orthopyroxene.

STRUCTURAL COMMENTS: Mesh texture, olivine preserved in the "windows" of the mesh. Bastite pseudomorphs kinked and with undulatory extinction. Veins filled with serpentine and opaque mineral.

Site 1070

173-1070A-14R-1 (Piece 2B, 31-36 cm)

No. 194

OBSERVER: HEB, FRO

ROCK NAME: Serpentinized peridotite.

GRAIN SIZE: Formerly medium-grained

TEXTURE: Serpentine mesh with bastite pseudomorphs.

MINERALOGY:

NAME	MODE((%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Olivine	5	0.3-0.6	Anhedral	IG	Partially replaced by serpentine, some deformation lamellae.
Orthopyroxene	tr	0.4	Anhedral	IG	Relict in larger bastite grain.
Clinopyroxene	2	<0.1	Anhedral	IG	One 3.5 mm grain largely preserved, several small relicts.
Spinel	<1	<0.2	Anhedral	IG	Dark red to opaque, very fine-grained , worm-like, partially replaced by magnetite.
Bastite	10	0.4-0.8	Anhedral	MET	Pseudomorphs after pyroxene.
Serpentine	85	-	Fibrous	MET/VEIN	Pseudomorphs after olivine, mesh texture.
Magnetite	<2	<0.3	Granular	MET	Associated with serpentine.

STRUCTURAL COMMENTS: Mesh texture, olivine preserved in "windows". Relict of high-T foliation defined by alignment of elongate bastite pseudomorphs and spinel. Undulatory extinction and kinks in the bastite. Veinlets filled with unidentified brown material and chrysotile.

COMMENTS: Isotropic brown material filling some cores in the mesh textures.

173-1070A-14R-2 (Piece 2B, 31-36 cm)**No. 195**

OBSERVER: HEB, FRO

ROCK NAME: Leucocratic metagabbro (?).

GRAIN SIZE: Coarse-grained

TEXTURE: Inequigranular.

MINERALOGY:

NAME	MODE(%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Plagioclase	50	0.5-15	Anhedral	IG	Replaced by chlorite and zeolite. Some polysynthetic twinning preserved.
Zeolite (?)	15	0.05	Euhedral	MET	Replacing plagioclase, cluster and radial textures.
Chlorite (?)	15	0.3	Platy	MET/VEIN	Gray to colorless, cryptocrystalline, replacing plagioclase.
Talc20	<0.3		Euhedral	MET/VEIN	Pale yellow, fibrous, pseudomorphs after rounded to rectangular phase (pyroxene?).
Sphene	<1	0.1-0.3	Euhedral	IG/MET?	Included in plagioclase.
Magnetite	<1	<0.2	Anhedral	MET	Associated with talc.

STRUCTURAL COMMENTS: Static alteration. Anastomosing veinlets in former plagioclase.

COMMENTS: Hydrothermally altered leucogabbro (?): large percentage of plagioclase, small percentage of ferromagnesian phases. Serpentine identified in adjacent interval by XRD.

Site 1070

173-1070A-14R-CC

ROCK NAME: Serpentinized peridotite.

GRAIN SIZE: Formerly medium-grained

TEXTURE: Serpentine mesh with bastite pseudomorphs.

OBSERVER: HEB, FRO

MINERALOGY:

NAME	MODE(%)	SIZE (mm)	SHAPE	IG/MET/VEIN	COMMENTS
Olivine	5	<0.4	Anhedral	IG	Original grains (~10 mm) are replaced by serpentine mesh.
Spinel	~1	<0.4	Subhedral	IG	Red-brown.
Orthopyroxene	<1	<0.4	Anhedral	IG	Relicts in bastite.
Serpentine	85	<<1	Mesh	MET	Replacing 75% olivine + 25% pyroxene (bastite).
Magnetite	5	<0.5	Anhedral	MET	Associated with serpentine. Disseminated particles.
Tremolite	<2	<0.4		MET	
Dusky phase	5	<<1		MET	Rims orthopyroxene.

STRUCTURAL COMMENTS: Slightly folded lamellae in a bastite pseudomorph. Veinlets filled with serpentine, opaque mineral and unidentified phase with yellow to purple anomalous birefringence.